

# Hypertext marks in $\text{\LaTeX}$

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## 1 Documentation overview for `hyperref`

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

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

**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 Euro $\text{\TeX}$  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  $\text{\LaTeX}$ ”

## 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 hyccheck.tex</b>	<b>7</b>
<b>4</b>	<b>Package options and setup</b>	<b>10</b>
4.1	Save catcodes . . . . .	10
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 . . . . .	18
<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 . . . . .	30
6.3.1	XeTeX . . . . .	30
6.3.2	Workaround for package linguex . . . . .	32
6.3.3	PD1 encoding . . . . .	32
6.3.4	PU encoding . . . . .	32
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 . . . . .	34
6.5.3	CJK patch . . . . .	39
6.5.4	CJK bookmarks . . . . .	40
6.5.5	CJK unicode . . . . .	41
6.5.6	<code>\@inmathwarn-Patch</code> . . . . .	46
6.5.7	Unexpandable spaces . . . . .	47
6.5.8	Marker for commands . . . . .	47
6.5.9	<code>\hspace fix</code> . . . . .	48
6.5.10	Fix for AMS classes . . . . .	48
6.5.11	Reference commands . . . . .	48
6.5.12	Redefining the defining commands . . . . .	50
6.5.13	<code>\ifnextchar</code> . . . . .	52
6.5.14	<code>\@protected@testoptifnextchar</code> . . . . .	52
6.6	Help macros for postprocessing . . . . .	52
6.6.1	Generic warning. . . . .	52
6.6.2	Protecting spaces . . . . .	52
6.6.3	Remove grouping braces . . . . .	54
6.6.4	Catcode check . . . . .	55

6.6.5	Check for wrong glyphs . . . . .	58
6.6.6	Replacing tokens . . . . .	59
6.6.7	Support for package <code>xspace</code> . . . . .	60
6.6.8	Converting to Unicode . . . . .	60
6.6.9	Support for UTF-8 input encoding . . . . .	62
<b>7</b>	<b>Support of other packages</b>	<b>66</b>
7.1	Class memoir . . . . .	66
7.2	Package subfigure . . . . .	66
7.3	Package xr and xr-hyper . . . . .	67
<b>8</b>	<b>Help macros for links</b>	<b>67</b>
<b>9</b>	<b>Options</b>	<b>69</b>
9.1	Help macros . . . . .	69
9.2	Defining the options . . . . .	71
<b>10</b>	<b>Options for different drivers</b>	<b>75</b>
<b>11</b>	<b>Options to add extra features</b>	<b>79</b>
<b>12</b>	<b>Language options</b>	<b>80</b>
<b>13</b>	<b>Options to change appearance of links</b>	<b>87</b>
<b>14</b>	<b>Bookmarking</b>	<b>87</b>
<b>15</b>	<b>PDF-specific options</b>	<b>89</b>
15.1	PDF/A . . . . .	100
15.2	Patch for babel's <code>\texttilde</code> . . . . .	101
15.2.1	Driver loading . . . . .	102
15.2.2	Bookmarks . . . . .	106
<b>16</b>	<b>User hypertext macros</b>	<b>109</b>
<b>17</b>	<b>Underlying basic hypertext macros</b>	<b>114</b>
<b>18</b>	<b>Compatibility with the <i>BT<sub>E</sub>X2html</i> package</b>	<b>118</b>
<b>19</b>	<b>Forms creation</b>	<b>119</b>
19.1	Field flags . . . . .	119
19.1.1	Declarations of field flags . . . . .	121
19.1.2	Set submit flags . . . . .	123
19.1.3	Set annot flags in fields . . . . .	124
19.1.4	Pushbutton field . . . . .	124
19.1.5	Check box field . . . . .	124
19.1.6	Radio button field . . . . .	125
19.1.7	Text fields . . . . .	125
19.1.8	Choice fields . . . . .	126
19.2	Choice field . . . . .	126
19.3	Forms . . . . .	128
<b>20</b>	<b>Setup</b>	<b>135</b>
<b>21</b>	<b>Low-level utility macros</b>	<b>136</b>

<b>22 Localized nullifying of package</b>	<b>137</b>
<b>23 Package nohyperref</b>	<b>137</b>
<b>24 The Mangling Of Aux and Toc Files</b>	<b>138</b>
<b>25 Title strings</b>	<b>140</b>
<b>26 Page numbers</b>	<b>141</b>
<b>27 Every page</b>	<b>141</b>
27.1 PDF /PageLabels . . . . .	142
27.1.1 pdfTeX and VTeX . . . . .	145
27.1.2 xetex . . . . .	146
27.1.3 pdfmarkbase, dvipdfm, xetex . . . . .	147
<b>28 Automated L<sup>A</sup>T<sub>E</sub>X hypertext cross-references</b>	<b>149</b>
<b>29 Package lastpage support</b>	<b>153</b>
<b>30 Package ifthen support</b>	<b>155</b>
<b>31 Package titlesec and titletoc support</b>	<b>155</b>
<b>32 Package varioref support</b>	<b>155</b>
<b>33 Package longtable support</b>	<b>156</b>
<b>34 Equations</b>	<b>157</b>
<b>35 Footnotes</b>	<b>160</b>
<b>36 Float captions</b>	<b>164</b>
<b>37 Bibliographic references</b>	<b>167</b>
37.1 Package harvard . . . . .	170
37.2 Package chicago . . . . .	172
<b>38 Page numbers</b>	<b>172</b>
<b>39 Table of contents</b>	<b>173</b>
<b>40 New counters</b>	<b>175</b>
<b>41 AMSL<sup>A</sup>T<sub>E</sub>X compatibility</b>	<b>175</b>
41.1 \@addtoreset and \numberwithin patches . . . . .	176
<b>42 Included figures</b>	<b>177</b>
<b>43 hyperindex entries</b>	<b>177</b>
<b>44 Compatibility with foiltex</b>	<b>180</b>
<b>45 Compatibility with seminar slide package</b>	<b>181</b>

<b>46</b>	<b>Configuration files</b>	<b>189</b>
46.1	PS/PDF strings	189
46.2	pdftex	190
46.2.1	Fix for problem with different nesting levels	203
46.3	hypertex	203
46.4	dviwindo	206
46.5	dvipdfm/xetex dvi to PDF converter	211
46.6	VT <sub>E</sub> X typesetting system	219
46.7	Fix for Adobe bug number 466320	231
46.8	Direct pdfmark support	232
46.9	Rokicki's dvips	245
46.10	VT <sub>E</sub> X's vtexpdfmark driver	247
46.11	Textures	249
46.12	dvipsone	253
46.13	TeX4ht	256
<b>47</b>	<b>Driver-specific form support</b>	<b>259</b>
47.1	pdfmarks	259
47.2	HyperTeX	266
47.3	TeX4ht	266
47.4	pdfTeX	269
47.5	dvipdfm, xetex	276
47.6	Common forms part	283
<b>48</b>	<b>Bookmarks in the PDF file</b>	<b>290</b>
48.1	Bookmarks	290
48.1.1	Rerun warning	293
48.1.2	Driver stuff	293
<b>49</b>	<b>Compatibility with koma-script classes</b>	<b>299</b>
<b>50</b>	<b>Encoding definition files for encodings of PDF strings</b>	<b>300</b>
50.1	PD1 encoding	300
50.2	PU encoding	308
50.2.1	NFSS2 accents	308
50.2.2	Basic Latin: U+0000 to U+007F	310
50.2.3	Latin-1 Supplement: U+0080 to U+00FF	312
50.2.4	Latin Extended-A: U+0080 to U+017F	315
50.2.5	Latin Extended-B: U+0180 to U+024F	320
50.2.6	Spacing Modifier Letters: U+02B0 to U+02FF	322
50.2.7	Combining Diacritical Marks: U+0300 to U+036F	322
50.2.8	Greek and Coptic: U+0370 to U+03FF	322
50.2.9	Cyrillic: U+0400 to U+04FF	325
50.2.10	Thai: U+0E00 to U+0E7F	336
50.2.11	Latin Extended Additional: U+1E00 to U+1EFF	336
50.2.12	General Punctuation: U+2000 to U+206F	338
50.2.13	Superscripts and Subscripts: U+2070 to U+209F	339
50.2.14	Currency Symbols: U+20A0 to U+20CF	340
50.2.15	Letterlike Symbols: U+2100 to U+214F	341
50.2.16	Arrows: U+2190 to U+21FF	341
50.2.17	Mathematical Operators: U+2200 to U+22FF	341
50.2.18	Miscellaneous Technical: U+2300 to U+23FF	341
50.2.19	Control Pictures: U+2400 to U+243F	341

50.2.20 Enclosed Alphanumerics: U+2460 to U+24FF . . . . .	341
50.2.21 Box Drawing: U+2500 to U+257F . . . . .	344
50.2.22 Miscellaneous Symbols: U+2600 to U+26FF . . . . .	344
50.2.23 Miscellaneous Mathematical Symbols-A: U+27C0 to U+27EF . . . . .	344
50.2.24 Alphabetic Presentation Forms: U+FB00 to U+FB4F . . . . .	344
50.2.25 Miscellaneous . . . . .	345
50.2.26 Aliases . . . . .	345
50.3 PU encoding, additions for VnT <sub>E</sub> X . . . . .	345
50.4 PU encoding, additions for Arabi . . . . .	347
<b>51 End of file hycheck.tex</b>	<b>349</b>
<b>52 Index</b>	<b>350</b>

### 3 File hyccheck.tex

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

```

1 \check
2 \documentclass{article}
3 \makeatletter

\checklatex Optional argument: release date of  $\LaTeX$ .
4 \newcommand*{\checklatex}[1]{}{
5   \typeout{}%
6   \typeout{* Format: 'LaTeX2e' #1}%
7   \typeout{\space\space Loaded: '\fmtname' \fmtversion}%
8 }%
```

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

```

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

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

```

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

`\HyC@checkPackage`

```

18 \def\HyC@checkPackage{%
19  \typeout{}%
20  \begingroup
21  \edef\x{\endgroup
22    \noexpand\RequirePackage{\HyC@package}%
23    \ifx\HyC@date\@empty\relax\else\HyC@date\fi%
24  }%
25  \x
26  \typeout{}%
27  \typeout{%
28    * Package '\HyC@package'%
29    \ifx\HyC@date\@empty
30      \else
31        \space\HyC@date
32      \fi
33  }%
34  \@ifundefined{ver@\HyC@package.sty}{%
35  }{%
36    \typeout{%
37      \space\space Loaded: '\HyC@package' %
38      \csname ver@\HyC@package.sty\endcsname
39    }%
40  }%
41 }
```

`\checkcommand` The macro `\checkcommand` parses the next tokens as a  $\text{\LaTeX}$  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{hyccheck}{%
62       Unknown command '\expandafter\strip@prefix\meaning\HyC@cmd'%
63     }\@ehd
64     \expandafter\endinput
65   \fi
66   \@ifstar{%
67     \def\HyC@star{*}%
68     \HyC@check
69   }{%
70     \let\HyC@star\@empty
71     \HyC@check
72   }%
73 }
```

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

```

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

`\HyC@noValue`

```

85 \def\HyC@noValue{NoValue}
```

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



```

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

```

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

```

90 \newtoks\HyC@Toks

```

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

```

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

```

`\HyC@nc@opt` This macro scans the first optional argument of a  $\LaTeX$  definition (number of arguments).

```

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

```

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

```

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

```

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

```

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

```

`\HyC@def` The parameter text of `\def` or `\edef` is stored in the token register `\HyC@Toks`.

```

\HyC@edef
125 \def\HyC@def#1#{%
126   \HyC@Toks={#1}%

```

```

127 \HyC@nc@noopt
128 }
129 \let\HyC@edef\HyC@def

```

`\HyC@doCheck` This command performs the checks and prints the result.

```

130 \def\HyC@doCheck{%
131 \typeout{* Checking '\HyC@string\HyC@cmd':}%
132 \HyC@checkItem{cmd}%
133 \HyC@checkItem{robustcmd}%
134 \HyC@checkItem{optcmd}%
135 \HyC@checkItem{robustoptcmd}%
136 \endgroup
137 }

```

`\HyC@checkItem` A single check.

```

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

```

`\HyC@string` Some shorthands.

```

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

```

`\HyC@checkOk` The result, if the check succeeds.

```

154 \def\HyC@checkOk#1{%
155 \typeout{\space\space'\HyC@string#1' ok.}%
156 }

```

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

```

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

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

```

## 4 Package options and setup

### 4.1 Save catcodes

There are many packages that change the standard catcodes.

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

```

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

```

\Hy@SetCatcodes

```

181 \def\Hy@SetCatcodes{%
182   \makeother\‘%
183   \makeother\=%
184   \catcode'\$=3 %
185   \catcode'\&=4 %
186   \catcode'\^=7 %
187   \catcode'\_ =8 %
188   \makeother\| %
189   \makeother\: %
190   \makeother\(%
191   \makeother\)%
192   \makeother\[ %
193   \makeother\] %
194   \makeother\/ %
195   \makeother\! %
196   \makeother\< %
197   \makeother\> %
198   \makeother\. %
199   \makeother\; %
200   \makeother\+ %
201   \makeother\- %
202   \makeother\" %
203   \makeother\' %
204 }

```

\Hy@RestoreCatcodes

```

205 \begingroup
206 \def\x#1{\catcode'\noexpand#1=\the\catcode'#1\relax}%
207 \xdef\Hy@RestoreCatcodes{%
208   \the\toks@
209   \x\$%
210   \x\&%
211   \x\^%
212   \x\_ %
213   \x\| %
214   \x\: %
215   \x\(%

```

```

216 \x\)%
217 \x\[%
218 \x\l%
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!

```

232 \RequirePackage{ltxcmds}[2010/03/09]
233 \@ifpackagelater{ltxcmds}{2010/10/25}{%}{%
234 \long\def\ltx@LocalAppendToMacro#1#2{%
235 \global\let\LTxcmds@gtemp#1%
236 \ifx\ltx@undefined\LTxcmds@gtemp
237 \global\let\LTxcmds@gtemp\ltx@empty
238 \else
239 \ifx\relax\LTxcmds@gtemp
240 \global\let\LTxcmds@gtemp\ltx@empty
241 \fi
242 \fi
243 \begingroup
244 \toks0\expandafter{\LTxcmds@gtemp#2}%
245 \xdef\LTxcmds@gtemp{\the\toks0}%
246 \endgroup
247 \let#1\LTxcmds@gtemp
248 }%
249 }

250 \RequirePackage{ifpdf}[2006/02/20]
251 \RequirePackage{pdftexcmds}[2009/04/10]
252 \@ifpackagelater{pdftexcmds}{2010/11/04}{%}{%
253 \ltx@ifundefined{pdfdraftmode}{%
254 \let\pdf@ifdraftmode\ltx@secondoftwo
255 }{%
256 \ifpdf
257 \def\pdf@ifdraftmode{%
258 \ifnum\pdfdraftmode=\ltx@one
259 \expandafter\ltx@firstoftwo
260 \else
261 \expandafter\ltx@secondoftwo
262 \fi
263 }%
264 \else
265 \let\pdf@ifdraftmode\ltx@secondoftwo
266 \fi
267 }%
268 }

```

```

269 \RequirePackage{infwarerr}[2010/04/08]
270 \RequirePackage{keyval}[1997/11/10]
271 \RequirePackage{kvsetkeys}[2007/09/29]
272 \RequirePackage{pdfescape}[2007/11/11]
273 \RequirePackage{ifvtex}
274 \RequirePackage{ifxetex}[2006/08/21]
275 \RequirePackage{hycolor}
276 \RequirePackage{letltxmacro}[2008/06/13]
277 \def\Hy@Error{\@PackageError{hyperref}}
278 \def\Hy@Warning{\@PackageWarning{hyperref}}
279 \def\Hy@WarningNoLine{\@PackageWarningNoLine{hyperref}}
280 \def\Hy@Info{\@PackageInfo{hyperref}}
281 \def\Hy@InfoNoLine{\@PackageInfoNoLine{hyperref}}
282 \def\Hy@Message#1{%
283   \GenericWarning{%
284     (hyperref)\@spaces\@spaces\@spaces
285   }{%
286     Package hyperref Message: #1\ltx@gobble
287   }%
288 }

```

## 4.2 Version check

\Hy@VersionChecked

```

289 \chardef\Hy@VersionChecked=0 %

```

\Hy@VersionCheck

```

290 \def\Hy@VersionCheck#1{%
291   \begingroup
292   \ltx@ifundefined{ver@hyperref.sty}{%
293     \Hy@Error{%
294       This should not happen!\MessageBreak
295       Missing hyperref version%
296     }\@ehd
297   }{%
298     \ltx@ifundefined{ver@#1}{%
299       \Hy@Error{%
300         This should not happen!\MessageBreak
301         Missing version of '#1'%
302       }\@ehd
303     }{%
304       \def\x##1##2##3{%
305         \expandafter\expandafter\expandafter\Hy@@VersionCheck
306         \expandafter\expandafter\expandafter##2%
307         \csname ver@##3\endcsname##1##1\@nil
308       }%
309       \x{ }\y{hyperref.sty}%
310       \x{ }\z{#1}%
311       \ifx\y\z
312         \else
313           \Hy@Error{%
314             Version mismatch!\MessageBreak
315             * \y: hyperref.sty\MessageBreak
316             * \z: #1%
317           }\@ehd
318         \fi
319       }%

```

```

320 }%
321 \endgroup
322 \chardef\Hy@VersionChecked=1 %
323 }

```

\Hy@@VersionCheck

```

324 \def\Hy@@VersionCheck #1#2 #3 #4\@nil{%
325 \def#1{#2 #3}%
326 }

```

### 4.3 Checks with regular expressions

```

327 \ltx@ifundefined{pdfmatch}{%
328 \def\Hy@Match#1#2#3#4{%
329 }{%
330 \def\Hy@Match#1#2{%
331 \begingroup
332 \edef\~{\ltx@backslashchar\string~}%
333 \edef\.\{\ltx@backslashchar.}%
334 \edef\[\{\ltx@backslashchar[]}%
335 \edef\${\ltx@backslashchar$}%
336 \edef\(\{\ltx@backslashchar(}%
337 \edef\)\{\ltx@backslashchar)}%
338 \edef\|{\ltx@backslashchar|}%
339 \edef\*{\ltx@backslashchar*}%
340 \edef\+{\ltx@backslashchar+}%
341 \edef\?{\ltx@backslashchar?}%
342 \edef\{\{\ltx@backslashchar\ltx@leftbracechar}%
343 \edef\}\{\ltx@rightbracechar}%
344 \edef\\{\ltx@backslashchar\ltx@backslashchar}%
345 \let\ \ltx@space
346 \ifcase\pdfmatch{#2}{#1} %
347 \endgroup
348 \expandafter\ltx@secondoftwo
349 \or
350 \endgroup
351 \expandafter\ltx@firstoftwo
352 \else
353 \Hy@Warning{%
354 Internal error: Wrong pattern!\MessageBreak
355 --> #2 <--\MessageBreak
356 Pattern check ignored%
357 }%
358 \endgroup
359 \expandafter\ltx@firstoftwo
360 \fi
361 }%
362 \ltx@ifpackagelater{ltxcmds}{2010/09/11}{}{%
363 \begingroup
364 \lccode'0='\{\relax
365 \lowercase{\endgroup
366 \def\ltx@leftbracechar{0}%
367 }%
368 \begingroup
369 \lccode'0='\}\relax
370 \lowercase{\endgroup
371 \def\ltx@rightbracechar{0}%

```

```

372 }%
373 }%
374 }

```

## 4.4 Compatibility with format dumps

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

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

```

375 \ifundefined{AfterBeginDocument}{%
376   \def\AfterBeginDocument{\AtBeginDocument}%
377 }{}%

```

`\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.

```

378 \def\Hy@AtBeginDocument{%
379   \ltx@LocalAppendToMacro\Hy@AtBeginDocumentHook
380 }

```

`\Hy@AtEndOfPackage`

```

381 \def\Hy@AtEndOfPackage{%
382   \ltx@LocalAppendToMacro\Hy@AtEndOfPackageHook
383 }

```

`\Hy@AtBeginDocumentHook`

```

384 \def\Hy@AtBeginDocumentHook{}

```

`\Hy@AtEndOfPackageHook`

```

385 \def\Hy@AtEndOfPackageHook{}

```

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

```

386 \AtEndOfPackage{%
387   \Hy@AtEndOfPackageHook
388   \let\Hy@AtEndOfPackageHook\@undefined
389   \AfterBeginDocument{%
390     \Hy@AtBeginDocumentHook}%
391   \let\Hy@AtBeginDocumentHook\@undefined
392 }%
393 }

```

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

```

394 \RequirePackage{kvoptions}[2009/07/21]

```

## 4.5 Switches

```

395 \newif\ifHy@typexml
396 \newif\ifHy@activeanchor
397 \newif\ifHy@backref
398 \newif\ifHy@bookmarks
399 \newif\ifHy@bookmarksnumbered

```

```

400 \newif\ifHy@bookmarksopen
401 \newif\ifHy@breaklinks
402 \newif\ifHy@centerwindow
403 \newif\ifHy@CJKbookmarks
404 \newif\ifHy@colorlinks
405 \newif\ifHy@draft
406 \let\Hy@finaltrue\Hy@draftfalse
407 \let\Hy@finalfalse\Hy@drafttrue
408 \newif\ifHy@escapeform
409 \newif\ifHy@figures
410 \newif\ifHy@fitwindow
411 \newif\ifHy@frenchlinks
412 \newif\ifHy@hyperfootnotes
413 \newif\ifHy@hyperindex
414 \newif\ifHy@hypertextnames
415 \newif\ifHy@implicit
416 \newif\ifHy@linktocpage
417 \newif\ifHy@localanchorname
418 \newif\ifHy@menubar
419 \newif\ifHy@naturalnames
420 \newif\ifHy@nesting
421 \newif\ifHy@newwindowset
422 \newif\ifHy@newwindow
423 \newif\ifHy@ocgcolorlinks
424 \newif\ifHy@pageanchor
425 \newif\ifHy@pagelabels
426 \newif\ifHy@pdfpagehidden
427 \newif\ifHy@pdfstring
428 \newif\ifHy@plainpages
429 \newif\ifHy@psize
430 \newif\ifHy@raiselinks
431 \newif\ifHy@seminarslides
432 \newif\ifHy@setpagesize
433 \newif\ifHy@texht
434 \newif\ifHy@toolbar
435 \newif\ifHy@unicode
436 \newif\ifHy@usetitle
437 \newif\ifHy@verbose
438 \newif\ifHy@windowui
439 \newif\ifHy@displaydoctitle
440 \newif\ifHy@pdfa

```

Defaults for the switches are now set.

```

441 \Hy@backreffalse
442 \Hy@bookmarksnumberedfalse
443 \Hy@bookmarksopenfalse
444 \Hy@bookmarkstrue
445 \Hy@breaklinksfalse
446 \Hy@centerwindowfalse
447 \Hy@CJKbookmarksfalse
448 \Hy@escapeformfalse
449 \Hy@figuresfalse
450 \Hy@fitwindowfalse
451 \Hy@hyperfootnotesttrue
452 \Hy@hyperindextrue
453 \Hy@hypertextnamestrue
454 \Hy@implicittrue
455 \Hy@linktocpagefalse

```



```

456 \Hy@localanchornamefalse
457 \Hy@menubartrue
458 \Hy@naturalnamesfalse
459 \Hy@nestingfalse
460 \Hy@newwindowsetfalse
461 \Hy@newwindowfalse
462 \Hy@pageanchortrue
463 \Hy@pagelabelstrue
464 \Hy@pdfpagehiddenfalse
465 \Hy@pdfstringfalse
466 \Hy@plainpagesfalse
467 \Hy@raiselinksfalse
468 \Hy@setpagesizetrue
469 \Hy@texhtfalse
470 \Hy@toolbartrue
471 \Hy@typexmlfalse
472 \Hy@unicodedefalse
473 \Hy@usetitlefalse
474 \Hy@verbosefalse
475 \Hy>windowuitrue
476 \Hy@displaydoctitlefalse
477 \Hy@pdfafalse

```

## 5 Common help macros

\Hy@StepCount

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

\Hy@GlobalStepCount

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

```

480 \newdimen\@linkdim
481 \let\Hy@driver\@empty
482 \let\MaybeStopEarly\relax
483 \newcount\Hy@linkcounter
484 \newcount\Hy@pagecounter
485 \Hy@linkcounter0
486 \Hy@pagecounter0

```

### 5.1 Macros for recursions

\Hy@ReturnAfterElseFi The commands \Hy@ReturnAfterElseFi and \Hy@ReturnAfterFi avoid a too deep \if-nesting especially for recursive macros.

```

487 \long\def\Hy@ReturnAfterElseFi#1\else#2\fi{\fi#1}
488 \long\def\Hy@ReturnAfterFi#1\fi{\fi#1}

489 \let\Hy@ReturnEnd\@empty
490 \long\def\Hy@ReturnAfterFiFiEnd#1\fi#2\Hy@ReturnEnd{\fi\fi#1}
491 \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 \Hy@safe@activesfalse babel is not loaded.

```

492 \def\Hy@safe@activetrue{\csname @safe@activetrue\endcsname}
493 \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`

```
494 \begingroup\expandafter\expandafter\expandafter\endgroup
495 \expandafter\ifx\csname dimexpr\endcsname\relax
496   \def\hypercalcbpdef#1#2{%
497     \begingroup
498       \toks@{}%
499       \HyCal@scan#2\hypercalcbp\@nil
500     \expandafter\endgroup
501     \expandafter\def\expandafter#1\expandafter{\the\toks@}%
502   }%
503 \def\HyCal@scan#1\hypercalcbp#2\@nil{%
504   \toks@\expandafter{\the\toks@ #1}%
505   \ifx\#2\%
506     \else
507       \Hy@ReturnAfterFi{%
508         \HyCal@do#2\@nil
509       }%
510     \fi
511   }%
512 \def\HyCal@do#1#2\@nil{%
513   \ifpackageloaded{calc}{}%
514   \Hy@Warning{%
515     For calculations \string\hypercalcbp\space needs\MessageBreak
516     package calc or e-TeX%
517   }%
518 }%
519 \setlength{\dimen@}{#1}%
```

```

520 \setlength{\dimen@}{0.99626401\dimen@}%
521 \edef\x{%
522   \toks@{%
523     \the\toks@
524     \strip@pt\dimen@
525   }%
526   }\x
527   \HyCal@scan#2\@nil
528 }%
529 \else
530 \def\hypercalcbp#1{%
531   \strip@pt\dimexpr 0.99626401\dimexpr #1\relax\relax
532 }%
533 \def\hypercalcbpdef{\def}%
534 \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 <i>ddd</i>
- Strings are stored either in `PDFDocEncoding`, which is a superset of `ISOLatin1` 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  $\TeX$ , because the tokens have only catcodes 10 until 12.

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

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

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

```
536 \begingroup
```

### 6.2.1 Preprocessing

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

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

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

```
537 \escapechar'\%
```

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

```
538 \edef\0{\string\0}%
```

```
539 \edef\1{\string\1}%
```

```
540 \edef\2{\string\2}%
```

```
541 \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.

```
542 \ifHy@unicode
```

```
543 \edef\8{\string\8}%
```

```
544 \edef\9{\string\9}%
```

```
545 \fontencoding{PU}%
```

```
546 \HyPsd@UTFviii
```

```
547 \def\ifpdfstringunicode##1##2{##1}%
```

```
548 \else
```

```
549 \fontencoding{PD1}%
```

```
550 \def\ifpdfstringunicode##1##2{##2}%
```

```
551 \fi
```

```
552 \let\utf@viii@undeferr\HyPsd@utf@viii@undeferr
```

```
553 \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).

```
554 \let\@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).

```
555 \let\@inmathwarn\HyPsd@inmathwarn
```

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

```
556 \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.

```
557 \let\{\textbraceleft
558 \let\}\textbraceright
559 \let\\\textbackslash
560 \let\#\textnumbersign
561 \let\$\textdollar
562 \let\%\textpercent
563 \let\&\textampersand
564 % \let\~\textasciitilde
565 \let\_ \textunderscore
566 \let\P\textparagraph
567 \let\ldots\textellipsis
568 \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.

```
569 \def\\\pdfstringdefWarn\\}%
570 \def\newline{\pdfstringdefWarn\newline}%
```

**Logos.** Because the box shifting used in the  $\TeX$  logo does not work while writing to a file, the standard  $\TeX$  logos are redefined.

```
571 \def\TeX{\TeX}%
572 \def\LaTeX{\LaTeX}%
573 \def\LaTeXe{%
```

```

574 \LaTeX2%
575 \ifHy@unicode\textepsilon\else e\fi
576 }%
577 \def\TeX{%
578 \ifHy@unicode\textepsilon\else e\fi
579 -\TeX%
580 }%
581 \def\SliTeX{Sli\TeX}%
582 \def\MF{Metafont}%
583 \def\MP{Metapost}%

```

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

```

584 \let\fontencoding\@gobble
585 \let\fontfamily\@gobble
586 \let\fontseries\@gobble
587 \let\fontshape\@gobble
588 \let\fontsize\@gobbletwo
589 \let\selectfont\@empty
590 \let\usefont\@gobblefour
591 \let\emph\@firstofone
592 \let\textnormal\@firstofone
593 \let\textrm\@firstofone
594 \let\textsf\@firstofone
595 \let\texttt\@firstofone
596 \let\textbf\@firstofone
597 \let\textmd\@firstofone
598 \let\textit\@firstofone
599 \let\textsc\@firstofone
600 \let\textsl\@firstofone
601 \let\textup\@firstofone
602 \let\normalfont\@empty
603 \let\rmfamily\@empty
604 \let\sfamily\@empty
605 \let\ttfamily\@empty
606 \let\bfseries\@empty
607 \let\mdseries\@empty
608 \let\itshape\@empty
609 \let\scshape\@empty
610 \let\slshape\@empty
611 \let\upshape\@empty
612 \let\em\@empty
613 \let\rm\@empty
614 \let\Huge\@empty
615 \let\LARGE\@empty
616 \let\Large\@empty
617 \let\footnotesize\@empty
618 \let\huge\@empty
619 \let\large\@empty
620 \let\normalsize\@empty
621 \let\scriptsize\@empty
622 \let\small\@empty
623 \let\tiny\@empty
624 \let\mathversion\@gobble
625 \let\phantom\@gobble
626 \let\vphantom\@gobble
627 \let\hphantom\@gobble

```

**Package color.**

```
628 \def\textcolor##1##{\@secondoftwo}%
```

**Upper- and lowercase.**

```
629 \def\MakeUppercase{\MakeUppercaseUnsupportedInPdfStrings}%
630 \def\MakeLowercase{\MakeLowercaseUnsupportedInPdfStrings}%
```

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

```
631 \let\textlatin\@firstofone
632 \ltx@ifundefined{language@group}{\relax}{%
633   \csname HyPsd@babel@language@group\endcsname
634 }%
635 \HyPsd@GreekPatch
636 \HyPsd@SpanishPatch
637 \HyPsd@RussianPatch
638 \HyPsd@BabelPatch
639 \let\@safe@activestrue\relax
640 \let\@safe@activesfalse\relax
```

Disable \cyr, used in russianb.ldf.

```
641 \let\cyr\relax
```

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

```
642 \let\es@roman\@Roman
```

**Package german.**

```
643 \let\glqq\textglqq
644 \let\grqq\textgrqq
645 \let\glq\textglq
646 \let\grq\textgrq
647 \let\flqq\textflqq
648 \let\frqq\textfrqq
649 \let\flq\textflq
650 \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}
651 \let\if@mid@expandable\@firstoftwo
```

**AMS classes.**

```
652 \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.

```
653 \let\hspace\HyPsd@hspace
```

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

```
654 \let\label\@gobble
655 \let\index\@gobble
656 \let\glossary\@gobble
657 \let\href\HyPsd@href
658 \let\@mkboth\@gobbletwo
```

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

```
659 \let\ref\HyPsd@ref
660 \let\pageref\HyPsd@pageref
661 \let\nameref\HyPsd@nameref
662 \let\autoref\HyPsd@autoref
```

**Miscellaneous commands.**

```
663 \let\leavevmode\@empty
664 \let\mbox\@empty
```

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

```
665 \def\halign{\pdfstringdefWarn\halign\@gobble}%
666 \let\ignorespaces\HyPsd@ignorespaces
667 \let\Hy@SectionAnchorHref\@gobble
```

**Patch for cjk bookmarks.**

```
668 \HyPsd@CJKhook
```

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

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

```
669 \Hy@pdfstringtrue
670 \pdfstringdefPreHook
```

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

```
671 \HyPsd@LetUnexpandableSpace\space
672 \HyPsd@LetUnexpandableSpace\ %
673 \HyPsd@LetUnexpandableSpace~%
674 \HyPsd@LetUnexpandableSpace\nobreakspace
```

**Package xspace.**

```
675 \ltx@ifundefined{@xspace}{%
676 \let\xspace\HyPsd@ITALCORR
677 }{%
678 \let\xspace\HyPsd@XSPACE
679 }%
680 \let\/\HyPsd@ITALCORR
681 \let\bgroup\/%
682 \let\egroup\/%
```



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

```
683 \let\discretionary\@gobbletwo
```

\@ifstar is defined in L<sup>A</sup>T<sub>E</sub>X 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:

```
684 \def\@ifnextchar{\HyPsd@ifnextchar\@ifnextchar}%
685 \def\kernel@ifnextchar{\HyPsd@ifnextchar\kernel@ifnextchar}%
686 \def\new@ifnextchar{\HyPsd@ifnextchar\new@ifnextchar}%
687 \let\@protected@testopt\HyPsd@protected@testopt
```

Support for package 'xargs':

```
688 \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 be processed without errors. Mainly the error message is very cryptic and for the normal user hard to understand. T<sub>E</sub>X provides no way to catch the error caused by \csname or allows to support the user with a descriptive error message. Therefore the experienced user had to enable this behaviour by an option `exactdef` in previous versions less or equal 6.50.

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

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

```
689 \begingroup
690 \let\GenericError\@gobblefour
691 \let\GenericWarning\@gobbletwo
692 \let\GenericInfo\@gobbletwo
```

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

```
693 \ifx\nofrenchguillemets\@undefined
694 \else
695 \nofrenchguillemets
696 \fi
```

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

```
697 \let\Hy@temp\xdef
698 \let\def\HyPsd@DefCommand
699 \let\gdef\HyPsd@DefCommand
700 \let\edef\HyPsd@DefCommand
701 \let\xdef\HyPsd@DefCommand
702 \let\futurelet\HyPsd@LetCommand
703 \let\let\HyPsd@LetCommand
704 \Hy@temp#1{#2}%
705 \endgroup
```

### 6.2.3 Postprocessing

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

```
706 \ifx#1\@empty
707 \else
```

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

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

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

```

708 \HyPsd@ProtectSpaces#1%
709 \let\HyPsd@String\@empty
710 \expandafter\HyPsd@RemoveBraces\expandafter{#1|}%
711 \global\let#1\HyPsd@String

```

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

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

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

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

```

712 \let\HyPsd@SPACEOPTI\relax
713 {%
714 \let\HyPsd@String\@empty
715 \expandafter\HyPsd@CheckCatcodes#1\HyPsd@end
716 \global\let#1\HyPsd@String
717 }%
718 \expandafter\HyPsd@RemoveMask\expandafter
719 |\expandafter\@empty#1\HyPsd@end#1%

```

`\HyPsd@CheckCatcodes` should not have removed the tokens with catcode 3, 4, 7, and 8. Because a parameter token (6) would cause too 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.

```

720 \expandafter\HyPsd@Subst\expandafter{\HyPsd@GLYPHERR}{\relax}#1%
721 \let\HyPsd@String\@empty
722 \expandafter\HyPsd@GlyphProcess#1\relax\@empty
723 \global\let#1\HyPsd@String

```

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

```
724 \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.

```

725 \ifHy@unicode
726 \expandafter\HyPsd@StringSubst\csname 80\040\endcsname
727 \HyPsd@SPACEOPTI#1%
728 \edef\Hy@temp@A{\HyPsd@SPACEOPTI\HyPsd@SPACEOPTI\80\273}%
729 \expandafter\HyPsd@Subst\expandafter{\Hy@temp@A}%
730 {\HyPsd@SPACEOPTI\80\273}#1%
731 \else
732 \HyPsd@StringSubst{\040}\HyPsd@SPACEOPTI#1%
733 \expandafter\HyPsd@Subst\expandafter{%
734 \expandafter\HyPsd@SPACEOPTI\expandafter\HyPsd@SPACEOPTI
735 \string\273}\HyPsd@SPACEOPTI\273}#1%
736 \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.

```

737 \ifHy@unicode
738 \HyPsd@StringSubst{\}){\80\051}#1%
739 \HyPsd@Subst){\80\051}#1%
740 \let\HyPsd@empty\relax
741 \expandafter\HyPsd@StringSubst\csname 80\051\endcsname
742 {\HyPsd@empty\80\051}#1%
743 \else
744 \HyPsd@StringSubst{\}){\051}#1%
745 \HyPsd@Subst){\051}#1%
746 \let\HyPsd@empty\relax
747 \HyPsd@StringSubst{\051}{\HyPsd@empty\string\)}#1%
748 \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`.

```

749 \expandafter\HyPsd@Subst\expandafter{\/\}\HyPsd@empty#1%
750 \ltx@ifundefined{\xspace}{%
751 }{%
752 \let\HyPsd@xspace\relax
753 \expandafter\HyPsd@Subst\expandafter
754 {\HyPsd@XSPACE}\HyPsd@xspace#1%
755 \let\HyPsd@xspace\HyPsd@doxspace
756 }%
757 \xdef#1{#1\HyPsd@empty}%

```

**Ligatures.** T<sub>E</sub>X forms ligatures in its stomach, but the PDF strings are treated only by T<sub>E</sub>X's mouth. The PDFDocEncoding contains some ligatures, but the current version 3 of the AcrobatReader lacks the fi and fl glyphs, and the Linux version lacks the emdash and endash glyphs. So the necessary code is provided here, but currently disabled, hoping that version 4 of the AcrobatReader is better. To break the ligatures the user can use an empty group, because it leads to an insertion of an \HyPsd@empty. If this ligature code will be enabled some day, then the italic correction should also break the ligatures. Currently this occurs only, if package xspace is loaded.

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

```

758 \HyPsd@Subst{---}\textendash#1%
759 \HyPsd@Subst{--}\textendash#1%
760 % \HyPsd@Subst{fi}\textfi#1%
761 % \HyPsd@Subst{fl}\textfl#1%
762 \HyPsd@Subst{'}\textexclamdown#1%
763 \HyPsd@Subst{?'}\textquestiondown#1%
```

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

```

764 \let\HyPsd@empty\@empty
```

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

An optimization is possible. Matched parentheses can be replaced by a () pair. But this code is removed to save T<sub>E</sub>X memory and time.

```

765 \ifHy@unicode
766 \HyPsd@StringSubst{\textparenleft#1%
767 \HyPsd@Subst(\textparenleft#1%
768 \else
769 \HyPsd@StringSubst\({\050}\#1%
770 \HyPsd@Subst({\050}\#1%
771 \HyPsd@StringSubst{\050}\string\{}\#1%
772 \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.

```

773 \ifHy@unicode
774 \edef\HyPsd@SPACEOPTI{\80\040}%
775 \else
776 \let\HyPsd@SPACEOPTI\HyPsd@spaceopti
777 \fi
778 \xdef#1{#1\@empty}%
779 \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.

```

780 \endgroup
781 \begingroup
782 \ifHy@unicode
783 \HyPsd@ConvertToUnicode#1%
```

### Try conversion back to PDFDocEncoding.

```
784 \ifx\HyPsd@pdfencoding\HyPsd@pdfencoding@auto
785 \ltx@ifundefined{StringEncodingConvertTest}{%
786 }{%
787 \EdefUnescapeString\HyPsd@temp#1%
788 \ifxetex
789 \let\HyPsd@UnescapedString\HyPsd@temp
790 \StringEncodingConvertTest\HyPsd@temp\HyPsd@temp
791 {utf16be}{ascii-print}{%
792 \EdefEscapeString\HyPsd@temp\HyPsd@temp
793 \global\let#1\HyPsd@temp
794 \HyPsd@EscapeTeX#1%
795 \Hy@unicodedefalse
796 }{%
797 \HyPsd@ToBigChars#1%
798 }%
799 \else
800 \StringEncodingConvertTest\HyPsd@temp\HyPsd@temp
801 {utf16be}{pdfdoc}{%
802 \EdefEscapeString\HyPsd@temp\HyPsd@temp
803 \global\let#1\HyPsd@temp
804 \HyPsd@EscapeTeX#1%
805 \Hy@unicodedefalse
806 }{ }%
807 \fi
808 }%
809 \fi
810 \fi
811 \HyPsd@XeTeXBigCharsfalse
```

**User hook.** The hook `\pdfstringdefPostHook` can be used for the purpose to post-process the string further.

```
812 \pdfstringdefPostHook#1%
813 \endgroup
814 }
```

`\Hy@pdfstringdef`

```
815 \def\Hy@pdfstringdef#1#2{%
816 \pdfstringdef\Hy@gtemp{#2}%
817 \let#1\Hy@gtemp
818 }
```

## 6.3 Encodings

### 6.3.1 XeTeX

```
819 \edef\Hy@temp{\catcode0=\the\catcode0\relax}
820 \catcode\z@=12 %
821 \ifxetex
822 \expandafter\@firstofone
823 \else
824 \let\HyPsd@XeTeXBigCharstrue\@empty
825 \let\HyPsd@XeTeXBigCharsfalse\@empty
826 \expandafter\@gobble
827 \fi
828 {%
```

```

829 \newif\ifHyPsd@XeTeXBigChars
830 \def\HyPsd@XeTeXBigCharsfalse{%
831   \global\let\ifHyPsd@XeTeXBigChars\iffalse
832 }%
833 \def\HyPsd@XeTeXBigCharstrue{%
834   \global\let\ifHyPsd@XeTeXBigChars\iftrue
835 }%
836 \def\HyPsd@ToBigChars#1{%
837   \ifHyPsd@XeTeXBigChars
838     \EdefEscapeHex\HyPsd@UnescapedString{%
839       \expandafter\@gobbletwo\HyPsd@UnescapedString
840     }%
841     \begingroup
842     \toks@{%}%
843     \escapechar=92\relax
844     \let\x\HyPsd@ToBigChar
845     \expandafter\HyPsd@ToBigChar\HyPsd@UnescapedString
846     \relax\relax\relax\relax\relax\relax\relax\relax
847     \edef\x{%
848       \endgroup
849       \gdef\noexpand#1{\the\toks@}%
850     }%
851     \x
852   \fi
853 }%
854 \def\HyPsd@ToBigChar#1#2#3#4{%
855   \ifx\relax#1\relax
856     \let\x\relax
857   \else
858     \count@=#1#2#3#4\relax
859     \let\y\@empty
860     \lccode\z@=\count@
861     \ifnum\count@=40 % (
862       \let\y\@backslashchar
863     \else
864       \ifnum\count@=41 % )
865         \let\y\@backslashchar
866       \else
867         \ifnum\count@=92 % backslash
868           \let\y\@backslashchar
869         \else
870           \ifnum\count@=10 % newline
871             \edef\y##1{\string\n}%
872           \else
873             \ifnum\count@=13 % carriage return
874               \edef\y##1{\string\r}%
875             \fi
876           \fi
877         \fi
878       \fi
879     \fi
880   \lowercase{%
881     \toks@\expandafter{%
882       \the\expandafter\toks@
883     }%
884     \y
885     ^^@%
886   }%

```

```

886 }%
887 \fi
888 \x
889 }%
890 }
891 \Hy@temp

```

### 6.3.2 Workaround for package linguex

```

892 \@ifpackageloaded{linguex}{%
893 \let\HyLinguex@OrgB\b
894 \let\HyLinguex@OrgC\c
895 \let\HyLinguex@OrgD\d
896 \def\HyLinguex@Restore{%
897 \let\b\HyLinguex@OrgB
898 \let\c\HyLinguex@OrgC
899 \let\d\HyLinguex@OrgD
900 }%
901 \Hy@AtEndOfPackage{%
902 \pdfstringdefDisableCommands{%
903 \let\oldb\b\oldb}%
904 \let\oldc\c\oldc}%
905 \let\oldd\d\oldd}%
906 }%
907 }%
908 }{%
909 \let\HyLinguex@Restore\relax
910 }%

```

### 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.

```

911 \@ifundefined{T@PD1}{%
912 \input{pdlenc.def}%
913 \HyLinguex@Restore
914 }{}
915 \DeclareFontFamily{PD1}{pdf}{}
916 \DeclareFontShape{PD1}{pdf}{m}{n}{<-> cmr10 }{}
917 \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.

```

918 \def\HyPsd@InitUnicode{%
919 \@ifundefined{T@PU}{%
920 \input{puenc.def}%
921 \HyLinguex@Restore

```



```

922 }{}%
923 \DeclareFontFamily{PU}{pdf}{}%
924 \DeclareFontShape{PU}{pdf}{m}{n}{ <-> cmr10 }{}%
925 \DeclareFontSubstitution{PU}{pdf}{m}{n}%
926 \let\HyPsd@InitUnicode\relax
927 }

```

## 6.4 Additional user commands

### 6.4.1 `\texorpdfstring`

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

```

928 \def\texorpdfstring{%
929   \ifHy@pdfstring
930     \expandafter\@secondoftwo
931   \else
932     \expandafter\@firstoftwo
933   \fi
934 }

```

### 6.4.2 Hooks for `\pdfstringdef`

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

```

935 \@ifundefined{pdfstringdefPreHook}{%
936   \let\pdfstringdefPreHook\@empty
937 }{}
938 \@ifundefined{pdfstringdefPostHook}{%
939   \let\pdfstringdefPostHook\@gobble
940 }{}

```

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

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

```

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

```

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

```

941 \def\pdfstringdefDisableCommands{%
942   \begingroup
943     \makeatletter
944     \HyPsd@DisableCommands
945 }

```

`\HyPsd@DisableCommands`

```
946 \long\def\HyPsd@DisableCommands#1{%
947   \toks0=\expandafter{\pdfstringdefPreHook}%
948   \toks1={#1}%
949   \xdef\pdfstringdefPreHook{\the\toks0 \the\toks1}%
950   \endgroup
951 }
```

`\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`.

```
952 \def\pdfstringdefWarn#1{%
953   \expandafter\noexpand\csname<>-string#1\endcsname
954 }
```

## 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.

```
955 \begingroup
956   \catcode0=12 %
957   \def\x{\endgroup
958     \def\HyPsd@ignorespaces{%
959       \romannumeral\expandafter'\expandafter^^@%
960       \romannumeral'^^@%
961     }%
962   }%
963   \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`.

```
964 \def\HyPsd@BabelPatch{%
965   \let\HyOrg@languageshorthands\languageshorthands
966   \let\languageshorthands\HyPsd@LanguageShorthands
967 }
968 \begingroup\expandafter\expandafter\expandafter\endgroup
```

```

969 \expandafter\ifx\csname pdf@strcmp\endcsname\relax
970   \let\HyPsd@langshort@system\@empty
971   \def\HyPsd@LanguageShorthands#1{%
972     \expandafter\ifx\csname HyPsd@langshort@#1\endcsname
973       \HyPsd@langshort@system
974     \expandafter\@gobble
975   \else
976     \expandafter\@firstofone
977   \fi
978   {%
979     \HyOrg@languageshorthands{#1}%
980   }%
981 }%
982 \else
983 \def\HyPsd@LanguageShorthands#1{%
984   \ifnum\pdf@strcmp{#1}{system}=\z@
985     \expandafter\@gobble
986   \else
987     \expandafter\@firstofone
988   \fi
989   {%
990     \HyOrg@languageshorthands{#1}%
991   }%
992 }%
993 \fi
994 \def\Hy@temp{%
995   \@ifpackageloaded{babel}{%
996     \@ifpackagelater{babel}{2008/03/16}{%
997       \let\Hy@temp\@empty
998     }{%
999       \def\HyPsd@BabelPatch{%
1000         \let\HyOrg@languageshorthands\languageshorthands
1001       }%
1002     }%
1003   }{%
1004 }
1005 \Hy@temp
1006 \expandafter\Hy@AtBeginDocument\expandafter{\Hy@temp}
1007 \newif\ifHy@next

  Nothing to do for english.

1008 \ltx@ifundefined{danish@sh@"@sel}{-}{%
1009   \def\HyPsd@babel@danish{%
1010     \declare@shorthand{danish}{-}{-}%
1011     \declare@shorthand{danish}{-}{-}%
1012   }%
1013 }
1014 \ltx@ifundefined{dutch@sh@"@sel}{-}{%
1015   \def\HyPsd@babel@dutch{%
1016     \declare@shorthand{dutch}{-}{-}%
1017     \declare@shorthand{dutch}{-}{-}%
1018   }%
1019 }
1020 \ltx@ifundefined{finnish@sh@"@sel}{-}{%
1021   \def\HyPsd@babel@finnish{%
1022     \declare@shorthand{finnish}{-}{-}%
1023   }%

```

```

1024 }
1025 \ltx@ifundefined{french@sh@:@sel}{-}{%
1026   \def\HyPsd@babel@frenchb{%
1027     \def\guill@spacing{ }%
1028   }%
1029 }
1030 \ltx@ifundefined{german@sh@"@sel}{-}{%
1031   \def\HyPsd@babel@german{%
1032     \declare@shorthand{german}{-f}{f}%
1033     \declare@shorthand{german}{-|}{|}%
1034     \declare@shorthand{german}{-~}{-}%
1035   }%
1036 }
1037 \ltx@ifundefined{macedonian@sh@"@sel}{-}{%
1038   \def\HyPsd@babel@macedonian{%
1039     \declare@shorthand{macedonian}{-|}{|}%
1040     \declare@shorthand{macedonian}{-~}{-}%
1041   }%
1042 }{}
1043 \ltx@ifundefined{ngerman@sh@"@sel}{-}{%
1044   \def\HyPsd@babel@ngerman{%
1045     \declare@shorthand{ngerman}{-|}{|}%
1046     \declare@shorthand{ngerman}{-~}{-}%
1047   }%
1048 }
1049 \ltx@ifundefined{portuges@sh@"@sel}{-}{%
1050   \def\HyPsd@babel@portuges{%
1051     \declare@shorthand{portuges}{-|}{|}%
1052   }%
1053 }
1054 \ltx@ifundefined{russian@sh@"@sel}{-}{%
1055   \def\HyPsd@babel@russian{%
1056     \declare@shorthand{russian}{-|}{|}%
1057     \declare@shorthand{russian}{-~}{-}%
1058   }%
1059 }
1060 \ltx@ifundefined{slovene@sh@"@sel}{-}{%
1061   \def\HyPsd@babel@slovene{%
1062     \declare@shorthand{slovene}{-|}{|}%
1063   }%
1064 }

```

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

```

1065 \ltx@ifundefined{spanish@sh@>@sel}{-}{%
1066   \def\HyPsd@babel@spanish{%
1067     \declare@shorthand{spanish}{<<}{\guillemotleft}%
1068     \declare@shorthand{spanish}{>>}{\guillemotright}%
1069     \declare@shorthand{spanish}{=}{-}%
1070     \declare@shorthand{spanish}{~}{-}%
1071     \declare@shorthand{spanish}{!}{\textexclamdown}%
1072     \declare@shorthand{spanish}{?}{\textquestiondown}%
1073   }%
1074 }
1075 \ltx@ifundefined{swedish@sh@"@sel}{-}{%
1076   \def\HyPsd@babel@swedish{%
1077     \declare@shorthand{swedish}{-|}{|}%
1078     \declare@shorthand{swedish}{-~}{-}%
1079   }%

```

```

1080 }
1081 \ltx@ifundefined{ukrainian@sh@"@sel}{-}{%
1082   \def\HyPsd@babel@ukrainian{%
1083     \declare@shorthand{ukrainian}{-}{-}%
1084     \declare@shorthand{ukrainian}{-}{-}%
1085   }%
1086 }
1087 \ltx@ifundefined{usorbian@sh@"@sel}{-}{%
1088   \def\HyPsd@babel@usorbian{%
1089     \declare@shorthand{usorbian}{-}{-}%
1090     \declare@shorthand{usorbian}{-}{-}%
1091   }%
1092 }

1093 \ltx@ifundefined{greek@sh@\string~@sel}{-}{%
1094   \let\HyPsd@GreekPatch\@empty
1095 }{-}%
1096 \def\HyPsd@GreekPatch{%
1097   \let\greeknumeral\HyPsd@greeknumeral
1098   \let\Greeknnumeral\HyPsd@Greeknnumeral
1099 }%
1100 }
1101 \def\HyPsd@greeknumeral#1{%
1102   \HyPsd@GreekNum\@firstoftwo{#1}%
1103 }
1104 \def\HyPsd@Greeknnumeral#1{%
1105   \HyPsd@GreekNum\@secondoftwo{#1}%
1106 }
1107 \def\HyPsd@GreekNum#1#2{%
1108   \ifHy@unicode
1109     \ifnum#2<\@one
1110       \@arabic{#2}%
1111     \else
1112       \ifnum#2<1000000 %
1113         \HyPsd@@GreekNum#1{#2}%
1114       \else
1115         \@arabic{#2}%
1116       \fi
1117     \fi
1118   \else
1119     \@arabic{#2}%
1120   \fi
1121 }
1122 \def\HyPsd@@GreekNum#1#2{%
1123   \ifnum#2<\@m
1124     \ifnum#2<10 %
1125       \expandafter\HyPsd@GreekNumI
1126       \expandafter\@gobble\expandafter#1\number#2%
1127     \else
1128       \ifnum#2<100 %
1129         \expandafter\HyPsd@GreekNumII
1130         \expandafter\@gobble\expandafter#1\number#2%
1131       \else
1132         \expandafter\HyPsd@GreekNumIII
1133         \expandafter\@gobble\expandafter#1\number#2%
1134       \fi
1135     \fi
1136   \ifnum#2>\z@

```

```

1137     \textnumeralsigngreek
1138     \fi
1139 \else
1140     \ifnum#2<\@M
1141         \expandafter\HyPsd@GreekNumIV\expandafter#1\number#2%
1142     \else
1143         \ifnum#2<100000 %
1144             \expandafter\HyPsd@GreekNumV\expandafter#1\number#2%
1145         \else
1146             \expandafter\HyPsd@GreekNumVI\expandafter#1\number#2%
1147         \fi
1148     \fi
1149 \fi
1150 }
1151 \def\HyPsd@GreekNumI#1#2#3{%
1152 #1{%
1153     \ifnum#3>\z@
1154         \textnumeralsignlowergreek
1155     \fi
1156 }%
1157 \expandafter#2%
1158 \ifcase#3 %
1159     {}{}%
1160 \or\textalpha\textAlpha
1161 \or\textbeta\textBeta
1162 \or\textgamma\textGamma
1163 \or\textdelta\textDelta
1164 \or\textepsilon\textEpsilon
1165 \or\textstigmagreek\textStigmagreek
1166 \or\textzeta\textZeta
1167 \or\texteta\textEta
1168 \or\texttheta\textTheta
1169 \else
1170     {}{}%
1171 \fi
1172 }
1173 \def\HyPsd@GreekNumII#1#2#3#4{%
1174 #1{%
1175     \ifnum#3>\z@
1176         \textnumeralsignlowergreek
1177     \fi
1178 }%
1179 \expandafter#2%
1180 \ifcase#3 %
1181     {}{}%
1182 \or\textiota\textIota
1183 \or\textkappa\textKappa
1184 \or\textlambda\textLambda
1185 \or\textmu\textMu
1186 \or\textnu\textNu
1187 \or\textxi\textXi
1188 \or\textomicron\textOmicron
1189 \or\textpi\textPi
1190 \or\textkoppagreek\textKoppagreek
1191 \else
1192     {}{}%
1193 \fi

```

```

1194 \HyPsd@GreekNumI#1#2#4%
1195 }
1196 \def\HyPsd@GreekNumIII#1#2#3#4#5{%
1197   #1{%
1198     \ifnum#3>\z@
1199       \textnumeralsignlowergreek
1200       \fi
1201     }%
1202     \expandafter#2%
1203     \ifcase#3 %
1204       {}{}%
1205     \or\textrho\textRho
1206     \or\textsigma\textSigma
1207     \or\texttau\textTau
1208     \or\textupsilon\textUpsilon
1209     \or\textphi\textPhi
1210     \or\textchi\textChi
1211     \or\textpsi\textPsi
1212     \or\textomega\textOmega
1213     \or\textsampigreek\textSampigreek
1214     \else
1215       {}{}%
1216     \fi
1217 \HyPsd@GreekNumII#1#2#4#5%
1218 }
1219 \def\HyPsd@GreekNumIV#1#2#3#4#5{%
1220 \HyPsd@GreekNumI\@firstofone#1#2%
1221 \HyPsd@@GreekNum#1{#3#4#5}%
1222 }
1223 \def\HyPsd@GreekNumV#1#2#3#4#5#6{%
1224 \HyPsd@GreekNumII\@firstofone#1#2#3%
1225 \HyPsd@@GreekNum#1{#4#5#6}%
1226 }
1227 \def\HyPsd@GreekNumVI#1#2#3#4#5#6#7{%
1228 \HyPsd@GreekNumIII\@firstofone#1#2#3#4%
1229 \HyPsd@@GreekNum#1{#5#6#7}%
1230 }

1231 \def\HyPsd@SpanishPatch{%
1232 \ltx@ifundefined{es@save@dot}{}%
1233 }{%
1234 \let\.\es@save@dot
1235 }%
1236 }

```

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

.-.

```

1237 \def\HyPsd@RussianPatch{%
1238 \ltx@ifundefined{russian@sh@"@-@}{}%
1239 }{%
1240 \@namedef{russian@sh@"@-@}{-}%
1241 }%
1242 }

```

### 6.5.3 CJK patch

```

1243 \RequirePackage{intcalc}[2007/09/27]

```

\HyPsd@CJKhook

```

1244 \def\HyPsd@CJKhook{%
1245   \ltx@ifpackageloaded{CJK}{%
1246     \let\CJK@kern\relax
1247     \let\CJKkern\relax
1248     \let\CJK@CJK\relax
1249     \ifHy@CJKbookmarks
1250       \HyPsd@CJKhook@bookmarks
1251     \fi
1252     \HyPsd@CJKhook@unicode
1253   }{}%
1254 }

```

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

```

1255 \begingroup
1256   \catcode"7F=\active
1257   \toks@{%
1258     \let\CJK@ignorespaces\empty
1259     \def\CJK@char#1{\@gobbletwo}%
1260     \let\CJK@charx\@gobblefour
1261     \let\CJK@punctchar\@gobblefour
1262     \def\CJK@punctcharx#1{\@gobblefour}%
1263     \catcode"7F=\active
1264     \def^^7f#1^^7f#2^^7f{%
1265       \string #1\HyPsd@DecimalToOctal{#2}%
1266     }%
1267     % ... ?
1268     \ifHy@unicode
1269       \def\Hy@cjkpu{\80}%
1270     \else
1271       \let\Hy@cjkpu\@empty
1272     \fi
1273     \HyPsd@CJKActiveChars
1274   }%
1275   \count@=127 %
1276   \@whilenum\count@<255 \do{%
1277     \advance\count@ by 1 %
1278     \lccode'\~= \count@
1279     \lowercase{%
1280       \toks@\expandafter{\the\toks@ ~}%
1281     }%
1282   }%
1283   \toks@\expandafter{\the\toks@ !}%
1284   \xdef\HyPsd@CJKhook@bookmarks{%
1285     \the\toks@
1286   }%
1287 \endgroup

```



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

```

1288 \def\HyPsd@CJKActiveChars#1{%
1289   \ifx#1!%
1290     \let\HyPsd@CJKActiveChars\relax
1291   \else
1292     \edef#1{\noexpand\Hy@cjku\string#1}%
1293   \fi
1294   \HyPsd@CJKActiveChars
1295 }
```

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

```

1296 \def\HyPsd@DecimalToOctal#1{%
1297   \ifcase #1 %
1298     \000\or \001\or \002\or \003\or \004\or \005\or \006\or \007%
1299     \or \010\or \011\or \012\or \013\or \014\or \015\or \016\or \017%
1300     \or \020\or \021\or \022\or \023\or \024\or \025\or \026\or \027%
1301     \or \030\or \031\or \032\or \033\or \034\or \035\or \036\or \037%
1302     \or \040\or \041\or \042\or \043\or \044\or \045\or \046\or \047%
1303     \or \050\or \051\or \052\or \053\or \054\or \055\or \056\or \057%
1304     \or 0\or 1\or 2\or 3\or 4\or 5\or 6\or 7%
1305     \or 8\or 9\or \072\or \073\or \074\or \075\or \076\or \077%
1306     \or @\or A\or B\or C\or D\or E\or F\or G%
1307     \or H\or I\or J\or K\or L\or M\or N\or O%
1308     \or P\or Q\or R\or S\or T\or U\or V\or W%
1309     \or X\or Y\or Z\or \133\or \134\or \135\or \136\or \137%
1310     \or \140\or a\or b\or c\or d\or e\or f\or g%
1311     \or h\or i\or j\or k\or l\or m\or n\or o%
1312     \or p\or q\or r\or s\or t\or u\or v\or w%
1313     \or x\or y\or z\or \173\or \174\or \175\or \176\or \177%
1314     \or \200\or \201\or \202\or \203\or \204\or \205\or \206\or \207%
1315     \or \210\or \211\or \212\or \213\or \214\or \215\or \216\or \217%
1316     \or \220\or \221\or \222\or \223\or \224\or \225\or \226\or \227%
1317     \or \230\or \231\or \232\or \233\or \234\or \235\or \236\or \237%
1318     \or \240\or \241\or \242\or \243\or \244\or \245\or \246\or \247%
1319     \or \250\or \251\or \252\or \253\or \254\or \255\or \256\or \257%
1320     \or \260\or \261\or \262\or \263\or \264\or \265\or \266\or \267%
1321     \or \270\or \271\or \272\or \273\or \274\or \275\or \276\or \277%
1322     \or \300\or \301\or \302\or \303\or \304\or \305\or \306\or \307%
1323     \or \310\or \311\or \312\or \313\or \314\or \315\or \316\or \317%
1324     \or \320\or \321\or \322\or \323\or \324\or \325\or \326\or \327%
1325     \or \330\or \331\or \332\or \333\or \334\or \335\or \336\or \337%
1326     \or \340\or \341\or \342\or \343\or \344\or \345\or \346\or \347%
1327     \or \350\or \351\or \352\or \353\or \354\or \355\or \356\or \357%
1328     \or \360\or \361\or \362\or \363\or \364\or \365\or \366\or \367%
1329     \or \370\or \371\or \372\or \373\or \374\or \375\or \376\or \377%
1330   \fi
1331 }
```

### 6.5.5 CJK unicode

`\HyPsd@CJKhook@unicode`

```

1332 \def\HyPsd@CJKhook@unicode{%
1333   \let\Unicode\HyPsd@CJK@Unicode
1334   \let\CJKnumber\HyPsd@CJKnumber
1335   \let\CJKdigits\HyPsd@CJKdigits
1336 }
```

\HyPsd@CJK@Unicode

```
1337 \def\HyPsd@CJK@Unicode#1#2{%
1338   \ifnum#1<256 %
1339     \HyPsd@DecimalToOctalFirst{#1}%
1340     \HyPsd@DecimalToOctalSecond{#2}%
1341   \else
1342     \933%
1343     \expandafter\expandafter\expandafter\HyPsd@HighA
1344     \intcalcDiv{#1}{4}!%
1345     \933%
1346     \ifcase\intcalcMod{#1}{4} %
1347       4\or 5\or 6\or 7%
1348     \fi
1349     \HyPsd@DecimalToOctalSecond{#2}%
1350   \fi
1351 }

1352 \def\HyPsd@HighA#1{%
1353   \expandafter\expandafter\expandafter\HyPsd@HighB
1354   \IntCalcDiv#1!64!!%
1355   \expandafter\expandafter\expandafter\HyPsd@HighD
1356   \IntCalcMod#1!64!!%
1357 }
1358 \def\HyPsd@HighB#1{%
1359   \expandafter\expandafter\expandafter\HyPsd@HighC
1360   \IntCalcDec#1!!%
1361 }
1362 \def\HyPsd@HighC#1{%
1363   \IntCalcDiv#1!4!%
1364   \@backslashchar
1365   \IntCalcMod#1!4!%
1366 }
1367 \def\HyPsd@HighD#1{%
1368   \ifcase\IntCalcDiv#1!8! %
1369     0\or 1\or 2\or 3\or 4\or 5\or 6\or 7%
1370   \fi
1371   \ifcase\IntCalcMod#1!8! %
1372     0\or 1\or 2\or 3\or 4\or 5\or 6\or 7%
1373   \fi
1374 }
1375 \def\HyPsd@DecimalToOctalFirst#1{%
1376   \9%
1377   \ifcase#1 %
1378     000\or 001\or 002\or 003\or 004\or 005\or 006\or 007%
1379     \or 010\or 011\or 012\or 013\or 014\or 015\or 016\or 017%
1380     \or 020\or 021\or 022\or 023\or 024\or 025\or 026\or 027%
1381     \or 030\or 031\or 032\or 033\or 034\or 035\or 036\or 037%
1382     \or 040\or 041\or 042\or 043\or 044\or 045\or 046\or 047%
1383     \or 050\or 051\or 052\or 053\or 054\or 055\or 056\or 057%
1384     \or 060\or 061\or 062\or 063\or 064\or 065\or 066\or 067%
1385     \or 070\or 071\or 072\or 073\or 074\or 075\or 076\or 077%
1386     \or 100\or 101\or 102\or 103\or 104\or 105\or 106\or 107%
1387     \or 120\or 111\or 112\or 113\or 114\or 115\or 116\or 117%
1388     \or 120\or 121\or 122\or 123\or 124\or 125\or 126\or 127%
1389     \or 130\or 131\or 132\or 133\or 134\or 135\or 136\or 137%
1390     \or 140\or 141\or 142\or 143\or 144\or 145\or 146\or 147%
1391     \or 150\or 151\or 152\or 153\or 154\or 155\or 156\or 157%
```

```

1392 \or 160\or 161\or 162\or 163\or 164\or 165\or 166\or 167%
1393 \or 170\or 171\or 172\or 173\or 174\or 175\or 176\or 177%
1394 \or 200\or 201\or 202\or 203\or 204\or 205\or 206\or 207%
1395 \or 210\or 211\or 212\or 213\or 214\or 215\or 216\or 217%
1396 \or 220\or 221\or 222\or 223\or 224\or 225\or 226\or 227%
1397 \or 230\or 231\or 232\or 233\or 234\or 235\or 236\or 237%
1398 \or 240\or 241\or 242\or 243\or 244\or 245\or 246\or 247%
1399 \or 250\or 251\or 252\or 253\or 254\or 255\or 256\or 257%
1400 \or 260\or 261\or 262\or 263\or 264\or 265\or 266\or 267%
1401 \or 270\or 271\or 272\or 273\or 274\or 275\or 276\or 277%
1402 \or 300\or 301\or 302\or 303\or 304\or 305\or 306\or 307%
1403 \or 310\or 311\or 312\or 313\or 314\or 315\or 316\or 317%
1404 \or 320\or 321\or 322\or 323\or 324\or 325\or 326\or 327%
1405 \or 330\or 331\or 332\or 333\or 334\or 335\or 336\or 337%
1406 \or 340\or 341\or 342\or 343\or 344\or 345\or 346\or 347%
1407 \or 350\or 351\or 352\or 353\or 354\or 355\or 356\or 357%
1408 \or 360\or 361\or 362\or 363\or 364\or 365\or 366\or 367%
1409 \or 370\or 371\or 372\or 373\or 374\or 375\or 376\or 377%
1410 \fi
1411 }
1412 \def\HyPsd@DecimalToOctalSecond#1{%
1413 \ifcase #1 %
1414 \000\or \001\or \002\or \003\or \004\or \005\or \006\or \007%
1415 \or \010\or \011\or \012\or \013\or \014\or \015\or \016\or \017%
1416 \or \020\or \021\or \022\or \023\or \024\or \025\or \026\or \027%
1417 \or \030\or \031\or \032\or \033\or \034\or \035\or \036\or \037%
1418 \or \040\or \041\or \042\or \043\or \044\or \045\or \046\or \047%
1419 \or \050\or \051\or \052\or \053\or \054\or \055\or \056\or \057%
1420 \or \060\or \061\or \062\or \063\or \064\or \065\or \066\or \067%
1421 \or \070\or \071\or \072\or \073\or \074\or \075\or \076\or \077%
1422 \or \100\or \101\or \102\or \103\or \104\or \105\or \106\or \107%
1423 \or \110\or \111\or \112\or \113\or \114\or \115\or \116\or \117%
1424 \or \120\or \121\or \122\or \123\or \124\or \125\or \126\or \127%
1425 \or \130\or \131\or \132\or \133\or \134\or \135\or \136\or \137%
1426 \or \140\or \141\or \142\or \143\or \144\or \145\or \146\or \147%
1427 \or \150\or \151\or \152\or \153\or \154\or \155\or \156\or \157%
1428 \or \160\or \161\or \162\or \163\or \164\or \165\or \166\or \167%
1429 \or \170\or \171\or \172\or \173\or \174\or \175\or \176\or \177%
1430 \or \200\or \201\or \202\or \203\or \204\or \205\or \206\or \207%
1431 \or \210\or \211\or \212\or \213\or \214\or \215\or \216\or \217%
1432 \or \220\or \221\or \222\or \223\or \224\or \225\or \226\or \227%
1433 \or \230\or \231\or \232\or \233\or \234\or \235\or \236\or \237%
1434 \or \240\or \241\or \242\or \243\or \244\or \245\or \246\or \247%
1435 \or \250\or \251\or \252\or \253\or \254\or \255\or \256\or \257%
1436 \or \260\or \261\or \262\or \263\or \264\or \265\or \266\or \267%
1437 \or \270\or \271\or \272\or \273\or \274\or \275\or \276\or \277%
1438 \or \300\or \301\or \302\or \303\or \304\or \305\or \306\or \307%
1439 \or \310\or \311\or \312\or \313\or \314\or \315\or \316\or \317%
1440 \or \320\or \321\or \322\or \323\or \324\or \325\or \326\or \327%
1441 \or \330\or \331\or \332\or \333\or \334\or \335\or \336\or \337%
1442 \or \340\or \341\or \342\or \343\or \344\or \345\or \346\or \347%
1443 \or \350\or \351\or \352\or \353\or \354\or \355\or \356\or \357%
1444 \or \360\or \361\or \362\or \363\or \364\or \365\or \366\or \367%
1445 \or \370\or \371\or \372\or \373\or \374\or \375\or \376\or \377%
1446 \fi
1447 }
1448 \def\HyPsd@CJKnumber#1{%

```

```

1449 \ifnum#1<\z@
1450 \CJK@minus
1451 \expandafter\HyPsd@@CJKnumber\expandafter{\number-\number#1}%
1452 \else
1453 \expandafter\HyPsd@@CJKnumber\expandafter{\number#1}%
1454 \fi
1455 }
1456 \def\HyPsd@@CJKnumber#1{%
1457 \ifcase#1 %
1458 \CJK@zero\or\CJK@one\or\CJK@two\or\CJK@three\or\CJK@four\or
1459 \CJK@five\or\CJK@six\or\CJK@seven\or\CJK@eight\or\CJK@nine\or
1460 \CJK@ten\or\CJK@ten\CJK@one\or\CJK@ten\CJK@two\or
1461 \CJK@ten\CJK@three\or\CJK@ten\CJK@four\or\CJK@ten\CJK@five\or
1462 \CJK@ten\CJK@six\or\CJK@ten\CJK@seven\or\CJK@ten\CJK@eight\or
1463 \CJK@ten\CJK@nine
1464 \else
1465 \ifnum#1<10000 %
1466 \HyPsd@CJKnumberFour#1!\@empty{20}%
1467 \@empty
1468 \else
1469 \ifnum#1<100000000 %
1470 \expandafter\expandafter\expandafter\HyPsd@CJKnumberFour
1471 \IntCalcDiv#1!10000!%
1472 !{}{20}%
1473 \CJK@tenthousand
1474 \expandafter\expandafter\expandafter\HyPsd@CJKnumberFour
1475 \IntCalcMod#1!10000!%
1476 !\CJK@zero{10}%
1477 \@empty
1478 \else
1479 \expandafter\HyPsd@CJKnumberLarge
1480 \number\IntCalcDiv#1!100000000!\expandafter!%
1481 \number\IntCalcMod#1!100000000!!%
1482 \fi
1483 \fi
1484 \fi
1485 }
1486 \def\HyPsd@CJKnumberLarge#1!#2!{%
1487 \HyPsd@CJKnumberFour#1!{}{20}%
1488 \CJK@hundredmillion
1489 \ifnum#2=\z@
1490 \else
1491 \expandafter\expandafter\expandafter\HyPsd@CJKnumberFour
1492 \IntCalcDiv#2!10000!%
1493 !\CJK@zero{10}%
1494 \CJK@tenthousand
1495 \expandafter\expandafter\expandafter\HyPsd@CJKnumberFour
1496 \IntCalcMod#2!10000!%
1497 !\CJK@zero{10}%
1498 \@empty
1499 \fi
1500 }
1501 \def\HyPsd@CJKnumberFour#1!#2#3{%
1502 \ifnum#1=\z@
1503 \expandafter\@gobble
1504 \else
1505 \ifnum#1<1000 %

```

```

1506     #2%
1507     \HyPsd@CJKnumberThree#1!#{#3}%
1508 \else
1509     \HyPsd@@CJKnumber{\IntCalcDiv#1!1000!}%
1510     \CJK@thousand
1511     \expandafter\expandafter\expandafter\HyPsd@CJKnumberThree
1512         \IntCalcMod#1!1000!%
1513     !\CJK@zero{10}%
1514 \fi
1515 \fi
1516 }
1517 \def\HyPsd@CJKnumberThree#1!#2#3{%
1518 \ifnum#1=\z@
1519 \else
1520 \ifnum#1<100 %
1521     #2%
1522     \HyPsd@CJKnumberTwo#1!#{#3}%
1523 \else
1524     \HyPsd@@CJKnumber{\IntCalcDiv#1!100!}%
1525     \CJK@hundred
1526     \expandafter\expandafter\expandafter\HyPsd@CJKnumberTwo
1527         \IntCalcMod#1!100!%
1528     !\CJK@zero{10}%
1529 \fi
1530 \fi
1531 }
1532 \def\HyPsd@CJKnumberTwo#1!#2#3{%
1533 \ifnum#1=\z@
1534 \else
1535 \ifnum#1<#3 %
1536     #2%
1537     \HyPsd@@CJKnumber{#1}%
1538 \else
1539     \HyPsd@@CJKnumber{\IntCalcDiv#1!10!}%
1540     \CJK@ten
1541     \ifnum\IntCalcMod#1!10!=\z@
1542     \else
1543         \HyPsd@@CJKnumber{\IntCalcMod#1!10!}%
1544     \fi
1545 \fi
1546 \fi
1547 }
1548 \def\HyPsd@CJKdigits#1{%
1549 \ifx*#1\relax
1550 \expandafter\HyPsd@@CJKdigits\expandafter\CJK@zero
1551 \else
1552 \HyPsd@@CJKdigits\CJK@null{#1}%
1553 \fi
1554 }
1555 \def\HyPsd@@CJKdigits#1#2{%
1556 \ifx\#2\%
1557 \else
1558 \HyPsd@@@CJKdigits#1#2\@nil
1559 \fi
1560 }%
1561 \def\HyPsd@@@CJKdigits#1#2#3\@nil{%
1562 \HyPsd@CJKdigit#1{#2}%

```

```

1563 \ifx\|#3\%
1564 \expandafter\@gobble
1565 \else
1566 \expandafter\@firstofone
1567 \fi
1568 {%
1569 \HyPsd@@@CJKdigits#1#3\@nil
1570}%
1571}
1572\def\HyPsd@CJKdigit#1#2{%
1573 \ifcase#2 %
1574 #1\or
1575 \CJK@one\or\CJK@two\or\CJK@three\or\CJK@four\or
1576 \CJK@five\or\CJK@six\or\CJK@seven\or\CJK@eight\or\CJK@nine
1577 \fi
1578}

```

### 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<sub>ε</sub> versions [1998/06/01] and [1998/12/01]. I expect that versions below [1995/12/01] don't work.

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

```

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

```

```

\@latex@warning{Command \protect#1 invalid in math mode}%
\fi}

1579 \def\HyPsd@inmathwarn#1#2{%
1580 \ifx#2\expandafter
1581 \expandafter\ifx\csname\cf@encoding\string#1\endcsname\relax
1582 \HyPsd@GLYPHERR
1583 \expandafter\@gobble\string#1%
1584 >%
1585 \expandafter\expandafter\expandafter\HyPsd@EndWithElse
1586 \else
1587 \expandafter\expandafter\expandafter\HyPsd@GobbleFiFi
1588 \fi
1589 \else
1590 \expandafter#2%
1591 \fi
1592 }
1593 \def\HyPsd@GobbleFiFi#1\fi#2\fi{}
1594 \def\HyPsd@EndWithElse#1\else{\else}

```

\HyPsd@add@accent

```

1595 \def\HyPsd@add@accent#1#2{%
1596 \HyPsd@GLYPHERR\expandafter\@gobble\string#1+\string#2>%
1597 #2%
1598 }%

```

### 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.

```

1599 \def\HyPsd@LetUnexpandableSpace#1{%
1600 \expandafter\futurelet\expandafter#1\expandafter\@gobble\space\relax
1601 }

```

\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.

```

1602 \HyPsd@LetUnexpandableSpace\HyPsd@UnexpandableSpace

```

### 6.5.8 Marker for commands

\HyPsd@XSPACE \HyPsd@ITALCORR \HyPsd@GLYPHERR 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.

```

1603 \edef\HyPsd@XSPACE{\string#\string X}
1604 \edef\HyPsd@ITALCORR{\string#\string I}
1605 \edef\HyPsd@GLYPHERR{\string#\string G}

```

### 6.5.9 \hspace fix

\HyPsd@hspace

```
1606 \def\HyPsd@hspace#1{\HyPsd@@hspace#1*\END}
```

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

```
1607 \def\HyPsd@@hspace#1*#2\END{%
1608   \ifx\#2\%
1609     \HyPsd@hspacetest{#1}%
1610   \else
1611     \expandafter\HyPsd@hspacetest
1612   \fi
1613 }
```

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

```
1614 \def\HyPsd@hspacetest#1{\ifdim#1>\z@\space\fi}
```

### 6.5.10 Fix for AMS classes

```
1615 \ltx@ifundefined{tocsection}{%
1616   \let\HyPsd@AMSclassfix\relax
1617 }{%
1618   \def\HyPsd@AMSclassfix{%
1619     \let\tocpart\HyPsd@tocsection
1620     \let\tocchapter\HyPsd@tocsection
1621     \let\tocappendix\HyPsd@tocsection
1622     \let\tocsection\HyPsd@tocsection
1623     \let\tocsubsection\HyPsd@tocsection
1624     \let\tocsubsubsection\HyPsd@tocsection
1625     \let\tocparagraph\HyPsd@tocsection
1626   }%
1627   \def\HyPsd@tocsection#1#2#3{%
1628     \if @#2@\else\if @#1@\else#1 \fi#2. \fi
1629     #3%
1630   }%
1631 }
```

### 6.5.11 Reference commands

\HyPsd@href

```
1632 \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.

```
1633 \def\HyPsd@ref#1{\HyPsd@@ref#1*\END}%
```

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

```
1634 \def\HyPsd@@ref#1*#2\END{%
1635   \ifx\#2\%
1636     \HyPsd@@@ref{#1}%
1637   \else
1638     \expandafter\HyPsd@@@ref
1639   \fi
1640 }
```



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

```
1641 \def\HyPsd@@@ref#1{%
1642   \expandafter\ifx\csname r@#1\endcsname\relax
1643     ??%
1644   \else
1645     \expandafter\expandafter\expandafter
1646     \@car\csname r@#1\endcsname\@nil
1647   \fi
1648 }
```

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

```
1649 \def\HyPsd@pageref#1{\HyPsd@@pageref#1*\END}
```

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

```
1650 \def\HyPsd@@pageref#1*#2\END{%
1651   \ifx\#2\%
1652     \HyPsd@@@pageref{#1}%
1653   \else
1654     \expandafter\HyPsd@@@pageref
1655   \fi
1656 }
```

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

```
1657 \def\HyPsd@@@pageref#1{%
1658   \expandafter\ifx\csname r@#1\endcsname\relax
1659     ??%
1660   \else
1661     \expandafter\expandafter\expandafter\expandafter
1662     \expandafter\expandafter\expandafter\@car
1663     \expandafter\expandafter\expandafter\@gobble
1664     \csname r@#1\endcsname{}\@nil
1665   \fi
1666 }
```

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

```
1667 \def\HyPsd@nameref#1{\HyPsd@@nameref#1*\END}
```

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

```
1668 \def\HyPsd@@nameref#1*#2\END{%
1669   \ifx\#2\%
1670     \HyPsd@@@nameref{#1}%
1671   \else
1672     \expandafter\HyPsd@@@nameref
1673   \fi
1674 }
```

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

```
1675 \def\HyPsd@@@nameref#1{%
1676   \expandafter\ifx\csname r@#1\endcsname\relax
1677     ??%
1678   \else
1679     \expandafter\expandafter\expandafter\expandafter
1680     \expandafter\expandafter\expandafter\@car
1681     \expandafter\expandafter\expandafter\@gobbletwo
```

```

1682 \csname r@#1\endcsname{}\}\@nil
1683 \fi
1684 }

```

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

```

1685 \def\HyPsd@autoref#1{\HyPsd@@autoref#1*\END}

```

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

```

1686 \def\HyPsd@@autoref#1*#2\END{%
1687 \ifx\#2\%
1688 \HyPsd@@@autoref{#1}%
1689 \else
1690 \expandafter\HyPsd@@@autoref
1691 \fi
1692 }

```

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

```

1693 \def\HyPsd@@@autoref#1{%
1694 \expandafter\ifx\csname r@#1\endcsname\relax
1695 ??%
1696 \else
1697 \expandafter\expandafter\expandafter\HyPsd@autorefname
1698 \csname r@#1\endcsname{}\}\}\}\@nil
1699 \expandafter\expandafter\expandafter
1700 \@car\csname r@#1\endcsname\@nil
1701 \fi
1702 }

```

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

```

1703 \def\HyPsd@autorefname#1#2#3#4#5\@nil{%
1704 \ifx\#4\%
1705 \else
1706 \HyPsd@@autorefname#4.\@nil
1707 \fi
1708 }

```

`\HyPsd@@autorefname`

```

1709 \def\HyPsd@@autorefname#1.#2\@nil{%
1710 \ltx@ifundefined{#1autorefname}{%
1711 \ltx@ifundefined{#1name}{%
1712 }{%
1713 \csname#1name\endcsname\space
1714 }%
1715 }{%
1716 \csname#1autorefname\endcsname\space
1717 }%
1718 }

```

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

```

\HyPsd@DefCommand
\HyPsd@LetCommand
1719 \begingroup
1720 \def\x#1#2{%
1721   \endgroup
1722   \let#1\def
1723   \def\HyPsd@DefCommand##1##2##{%
1724     #1%
1725     \expandafter\noexpand
1726     \csname\expandafter\@gobble\string##1\@empty\endcsname
1727     \@gobble
1728   }%
1729   \let#2\let
1730   \def\HyPsd@@LetCommand##1{%
1731     \expandafter\ifx\csname##1\expandafter\endcsname
1732       \csname iftrue\endcsname
1733     \pdfstringdefWarn\let
1734     \expandafter\@gobble
1735   \else
1736     \expandafter\ifx\csname##1\expandafter\endcsname
1737       \csname iffalse\endcsname
1738     \pdfstringdefWarn\let
1739     \expandafter\expandafter\expandafter\@gobble
1740   \else
1741     #2%
1742     \expandafter\noexpand
1743     \csname##1\expandafter\expandafter\expandafter\endcsname
1744   \fi
1745   \fi
1746 }%
1747 }%
1748 \expandafter\x\csname <def>-command\expandafter\endcsname
1749   \csname <let>-command\endcsname
1750 \def\HyPsd@LetCommand#1{%

```

```

1751 \expandafter\expandafter\expandafter\HyPsd@@LetCommand
1752 \expandafter\expandafter\expandafter{%
1753 \expandafter\@gobble\string#1\@empty
1754 }%
1755 }

```

### 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).

```

1756 \def\HyPsd@ifnextchar#1{%
1757 \pdfstringdefWarn#1%
1758 \expandafter\@gobbletwo\@gobble
1759 }

```

### 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`.

```

1760 \def\HyPsd@protected@testopt#1{%
1761 \pdfstringdefWarn#1%
1762 \@gobbletwo
1763 }

```

## 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:

```

1764 \def\HyPsd@Warning#1{%
1765 \begingroup
1766 \def\space{ }%
1767 \Hy@Warning{#1}%
1768 \endgroup
1769 }

```

### 6.6.2 Protecting spaces

```

1770 \RequirePackage{etexcmds}[2007/09/09]
1771 \ifetex@unexpanded
1772 \expandafter\@secondoftwo
1773 \else
1774 \expandafter\@firstoftwo
1775 \fi

```

1776 {%

\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.

```
1777 \def\HyPsd@ProtectSpaces#1{%
1778   \iftrue
1779     \expandafter\HyPsd@@ProtectSpacesFi
1780     \expandafter|\expandafter\@empty#1| \HyPsd@End#1%
1781   \fi
1782 }%
```

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

```
1783 \def\HyPsd@@ProtectSpacesFi#1 #2\HyPsd@End#3\fi{%
1784   \fi
1785   \ifx\scrollmode#2\scrollmode
1786     \HyPsd@RemoveMask#1\HyPsd@End#3%
1787   \else
1788     \gdef#3{#1\HyPsd@UnexpandableSpace#2}%
1789     \expandafter\HyPsd@@ProtectSpacesFi#3\HyPsd@End#3%
1790   \fi
1791 }%
```

### 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.

```
1792 \def\HyPsd@RemoveMask|#1|\HyPsd@End#2{%
1793   \toks@{\expandafter{#1}}%
1794   \xdef#2{\the\toks@}%
1795 }%

1796 }{%
1797   \let\HyPsd@fi\fi
1798   \def\HyPsd@ProtectSpaces#1{%
1799     \xdef#1{%
1800       \iftrue
1801         \expandafter\HyPsd@@ProtectSpacesFi
1802         \expandafter|\expandafter\@empty#1| %
1803       \HyPsd@fi
1804     }%
1805     \expandafter\HyPsd@RemoveMask#1\HyPsd@End#1%
1806   }%
1807   \def\HyPsd@@ProtectSpacesFi#1 #2\HyPsd@fi{%
1808     \fi
1809     \etex@unexpanded{#1}%
1810     \ifx\scrollmode#2\scrollmode
1811     \else
1812       \HyPsd@@ProtectSpacesFi\HyPsd@UnexpandableSpace#2%
1813     \HyPsd@fi
1814   }%
1815   \def\HyPsd@RemoveMask|#1|\HyPsd@End#2{%
1816     \xdef#2{\etex@unexpanded\expandafter{#1}}%
1817   }%
1818 }
```

### 6.6.3 Remove grouping braces

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

```
1819 \def\HyPsd@RemoveBraces#1{%
1820   \ifx\scrollmode#1\scrollmode
1821   \else
1822     \HyPsd@@RemoveBracesFi#1\HyPsd@End{#1}%
1823   \fi
1824 }
```

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

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

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

```
1825 \def\HyPsd@@RemoveBracesFi#1#2\HyPsd@End#3\fi{%
1826   \fi
1827   \def\Hy@temp@A{#1#2}%
1828   \def\Hy@temp@B{#3}%
1829   \ifx\Hy@temp@A\Hy@temp@B
1830     \expandafter\def\expandafter\HyPsd@String\expandafter{%
1831       \HyPsd@String#1%
1832     }%
1833     \ifx\scrollmode#2\scrollmode
1834     \else
1835       \Hy@ReturnAfterFiFiEnd{%
1836         \HyPsd@RemoveBraces{#2}%
1837       }%
1838     \fi
1839   \else
1840     \def\Hy@temp@A{#1}%
1841     \HyPsd@AppendItalcorr\HyPsd@String
1842     \ifx\Hy@temp@A\@empty
1843       \Hy@ReturnAfterElseFiFiEnd{%
1844         \HyPsd@RemoveBraces{#2}%
1845       }%
1846     \else
1847       \HyPsd@ProtectSpaces\Hy@temp@A
1848       \HyPsd@AppendItalcorr\Hy@temp@A
1849       \Hy@ReturnAfterFiFiEnd{%
1850         \expandafter\HyPsd@RemoveBraces\expandafter
1851           {\Hy@temp@A#2}%
1852       }%
1853     \fi
1854   \fi
1855   \Hy@ReturnEnd
1856 }
```

`\HyPsd@AppendItalcorr` The string can contain commands yet, so it is better to use `\def` instead of a shorter `\edef`.

`\HyPsd@@AppendItalcorr` The two help macros limit the count of `\expandafter`.

```
1857 \def\HyPsd@AppendItalcorr#1{%
1858   \expandafter\HyPsd@@AppendItalcorr\expandafter{\/#1%
```

```

1859 }
1860 \def\HyPsd@@AppendItalcrr#1#2{%
1861   \expandafter\def\expandafter#2\expandafter{#2#1}%
1862 }

```

#### 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).

```

1863 \def\HyPsd@CheckCatcodes#1#2\HyPsd@End{%
1864   \global\let\HyPsd@Rest\relax
1865   \ifcat\relax\noexpand#1\relax
1866     \ifx#1\protect
1867       \else
1868         \ifx#1\penalty
1869           \setbox\z@=\hbox{%
1870             \afterassignment\HyPsd@AfterCountRemove
1871             \count@=#2\HyPsd@End
1872           }%
1873         \else
1874           \ifx#1\kern
1875             \setbox\z@=\hbox{%
1876               \afterassignment\HyPsd@AfterDimenRemove
1877               \dimen@=#2\HyPsd@End
1878             }%
1879           \else
1880             \ifx#1\hskip
1881               \setbox\z@=\hbox{%
1882                 \afterassignment\HyPsd@AfterSkipRemove
1883                 \skip@=#2\HyPsd@End
1884               }%
1885             \else
1886               \HyPsd@CatcodeWarning{#1}%
1887             \fi
1888           \fi
1889         \fi
1890       \fi
1891     \else
1892       \ifcat#1A% letter
1893         \expandafter\def\expandafter\HyPsd@String\expandafter{%
1894           \HyPsd@String#1%
1895         }%
1896       \else
1897         \ifcat#1 % SPACE
1898           \expandafter\def\expandafter\HyPsd@String\expandafter{%
1899             \HyPsd@String\HyPsd@SPACEOPTI
1900           }%
1901         \else

```

```

1902 \ifcat$#1%
1903 \HyPsd@CatcodeWarning{math shift}%
1904 \else
1905 \ifcat&#1%
1906 \HyPsd@CatcodeWarning{alignment tab}%
1907 \else
1908 \ifcat^#1%
1909 \HyPsd@CatcodeWarning{superscript}%
1910 \else
1911 \ifcat_#1%
1912 \HyPsd@CatcodeWarning{subscript}%
1913 \else
1914 \expandafter\def\expandafter\HyPsd@String\expandafter{%
1915 \HyPsd@String#1%
1916 }%
1917 \fi
1918 \fi
1919 \fi
1920 \fi
1921 \fi
1922 \fi
1923 \fi
1924 \ifx\HyPsd@Rest\relax
1925 \ifx\scrollmode#2\scrollmode
1926 \else
1927 \Hy@ReturnAfterFiFiEnd{%
1928 \HyPsd@CheckCatcodes#2\HyPsd@End
1929 }%
1930 \fi
1931 \else
1932 \ifx\HyPsd@Rest\@empty
1933 \else
1934 \Hy@ReturnAfterFiFiEnd{%
1935 \expandafter\HyPsd@CheckCatcodes\HyPsd@Rest\HyPsd@End
1936 }%
1937 \fi
1938 \fi
1939 \Hy@ReturnEnd
1940 }

```

### Remove counts, dimens, skips.

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

```

1941 \def\HyPsd@AfterCountRemove#1\HyPsd@End{%
1942 \gdef\HyPsd@Rest{#1}%
1943 }

```

`\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.

```

1944 \def\HyPsd@AfterDimenRemove#1\HyPsd@End{%
1945 \ifdim\ifx\HyPsd@String\@empty\z@\else\dimen@\fi>1ex %
1946 \HyPsd@ReplaceSpaceWarning{string\kern\space\the\dimen@}%
1947 \gdef\HyPsd@Rest{\HyPsd@UnexpandableSpace #1}%
1948 \else
1949 \ifdim\dimen@=\z@

```



```

1950 \else
1951 \HyPsd@RemoveSpaceWarning{\string\kern\space\the\dimen@}%
1952 \fi
1953 \gdef\HyPsd@Rest{#1}%
1954 \fi
1955 }

```

`\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).

```

1956 \def\HyPsd@AfterSkipRemove#1\HyPsd@end{%
1957 \ifdim\ifx\HyPsd@String\@empty\z@ \else \skip@ \fi > 1ex %
1958 \HyPsd@ReplaceSpaceWarning{\string\hskip\space\the\skip@}%
1959 \gdef\HyPsd@Rest{\HyPsd@UnexpandableSpace #1}%
1960 \else
1961 \ifdim\skip@ = \z@
1962 \else
1963 \HyPsd@RemoveSpaceWarning{\string\kern\space\the\skip@}%
1964 \fi
1965 \gdef\HyPsd@Rest{#1}%
1966 \fi
1967 }

```

### Catcode warnings.

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

```

1968 \def\HyPsd@CatcodeWarning#1{%
1969 \HyPsd@Warning{%
1970 Token not allowed in a PDF string (%
1971 \ifHy@unicode
1972 Unicode%
1973 \else
1974 PDFDocEncoding%
1975 \fi
1976 ):%
1977 \MessageBreak removing ‘\HyPsd@RemoveCmdPrefix#1’%
1978 }%
1979 }
1980 \begingroup
1981 \catcode'\|=0 %
1982 \catcode'\|=12 %
1983 \gdef\HyPsd@RemoveCmdPrefix#1{%
1984 |expandafter\HyPsd@@RemoveCmdPrefix
1985 |string#1|@empty\<-|@empty|@empty
1986 }%
1987 \gdef\HyPsd@@RemoveCmdPrefix#1\<-#2|@empty#3|@empty{#1#2}%
1988 |endgroup

```

`\HyPsd@RemoveSpaceWarning`

```

1989 \def\HyPsd@RemoveSpaceWarning#1{%
1990 \HyPsd@Warning{%
1991 Token not allowed in a PDF string (%
1992 \ifHy@unicode
1993 Unicode%
1994 \else
1995 PDFDocEncoding%
1996 \fi
1997 ):%

```

```

1998 \MessageBreak #1\MessageBreak
1999 removed%
2000 }%
2001 }

```

\HyPsd@ReplaceSpaceWarning

```

2002 \def\HyPsd@ReplaceSpaceWarning#1{%
2003 \HyPsd@Warning{%
2004 Token not allowed in a PDF string (%
2005 \ifHy@unicode
2006 Unicode%
2007 \else
2008 PDFDocEncoding%
2009 \fi
2010 }:%
2011 \MessageBreak #1\MessageBreak
2012 replaced by space%
2013 }%
2014 }

```

### 6.6.5 Check for wrong glyphs

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

```

2015 \def\HyPsd@GlyphProcess#1\relax#2\@empty{%
2016 \expandafter\def\expandafter\HyPsd@String\expandafter{%
2017 \HyPsd@String#1%
2018 }%
2019 \ifx\#2\%
2020 \else
2021 \Hy@ReturnAfterFi{%
2022 \HyPsd@GlyphProcessWarning#2\@empty
2023 }%
2024 \fi
2025 }
2026 \def\HyPsd@GlyphProcessWarning#1>#2\@empty{%
2027 \HyPsd@@@GlyphProcessWarning#1++>%
2028 \HyPsd@GlyphProcess#2\@empty
2029 }
2030 \def\HyPsd@@@GlyphProcessWarning#1+#2+#3>{%
2031 \ifx\#2\%
2032 \HyPsd@Warning{%
2033 Glyph not defined in %
2034 P\ifHy@unicode U\else D1\fi\space encoding,\MessageBreak
2035 removing '@backslashchar#1'%
2036 }%
2037 \else
2038 \HyPsd@Warning{%
2039 Composite letter '@backslashchar#1+#2'\MessageBreak
2040 not defined in P\ifHy@unicode U\else D1\fi\space encoding,%
2041 \MessageBreak
2042 removing '@backslashchar#1'%
2043 }%
2044 \fi
2045 }

```

## 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`.

```
2046 \def\HyPsd@spaceopti#1{ % first space
2047   \ifx\HyPsd@spaceopti#1%
2048     \040%
2049   \else
2050     #1%
2051   \fi
2052 }%
```

### 6.6.6 Replacing tokens

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

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

```
2053 \def\HyPsd@Subst#1#2#3{%
2054   \def\HyPsd@@ReplaceFi##1#1##2\END\fi{%
2055     \fi
2056     ##1%
2057     \ifx\scrollmode##2\scrollmode
2058     \else
2059       #2%
2060     \HyPsd@@ReplaceFi##2\END
2061     \fi
2062   }%
2063   \xdef#3{%
2064     \iftrue
2065       \expandafter\HyPsd@@ReplaceFi#3#1\END
2066     \fi
2067   }%
2068 }
```

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

```
2069 \def\HyPsd@StringSubst#1{%
2070   \expandafter\HyPsd@Subst\expandafter{\string#1}%
2071 }
```

`\HyPsd@EscapeTeX`

```
2072 \begingroup
2073   \lccode'\!='\%%
2074   \lccode'\|= '\%%
2075   \lccode'\(= '\{%
2076   \lccode'\)= '\}%
2077   \lccode'0=\ltx@zero
2078   \lccode'1=\ltx@zero
2079   \lccode'3=\ltx@zero
2080   \lccode'4=\ltx@zero
2081   \lccode'5=\ltx@zero
2082   \lccode'7=\ltx@zero
```

```

2083 \lowercase{\endgroup
2084 \def\HyPsd@EscapeTeX#1{%
2085   \HyPsd@Subst!{|045}#1%
2086   \HyPsd@Subst({|173}#1%
2087   \HyPsd@Subst){|175}#1%
2088 }%
2089 }

```

### 6.6.7 Support for package xspace

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

```

2090 \def\HyPsd@doxspace#1{%
2091   \ifx#1\relax\else
2092     \ifx#1.\else
2093       \ifx#1:\else
2094         \ifx#1,\else
2095           \ifx#1;\else
2096             \ifx#1'\else
2097               \ifx#1?\else
2098                 \ifx#1/\else
2099                   \ifx#1-\else
2100                     \ifx#1'\else
2101                       \HyPsd@SPACEOPTI
2102                     \fi
2103                   \fi
2104                 \fi
2105               \fi
2106             \fi
2107           \fi
2108         \fi
2109       \fi
2110     \fi
2111   \fi
2112   #1%
2113 }%

```

### 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.

```

2114 \begingroup
2115 \catcode'\|=0 %
2116 \catcode'\|=12 %

```

`\HyPsd@ConvertToUnicode`

```

2117 |gdef|HyPsd@ConvertToUnicode#1{%
2118   |xdef#1{%
2119     |expandafter|HyPsd@DoConvert#1|@empty|@empty|@empty
2120   }%
2121   |ifx#1|@empty
2122   |else
2123     |xdef#1{%
2124       \376\377%

```

```

2125     #1%
2126     }%
2127     |fi
2128 }%

```

\HyPsd@DoConvert

```

2129 |gdef|HyPsd@DoConvert#1{%
2130 |ifx#1|@empty
2131 |else
2132 |Hy@ReturnAfterFi{%
2133 |ifx#1\%%
2134 \%%
2135 |expandafter|HyPsd@DoEscape
2136 |else
2137 |HyPsd@Char{#1}%
2138 |expandafter|HyPsd@DoConvert
2139 |fi
2140 }%
2141 |fi
2142 }%

```

\HyPsd@DoEscape

```

2143 |gdef|HyPsd@DoEscape#1{%
2144 |ifx#19%
2145 |expandafter|HyPsd@GetTwoBytes
2146 |else
2147 |Hy@ReturnAfterFi{%
2148 |ifx#18%
2149 00%
2150 |expandafter|HyPsd@GetTwoBytes
2151 |else
2152 #1%
2153 |expandafter|HyPsd@GetOneByte
2154 |fi
2155 }%
2156 |fi
2157 }%

```

\HyPsd@GetTwoBytes

```

2158 |gdef|HyPsd@GetTwoBytes#1\#2#3#4{%
2159 #1\#2#3#4%
2160 |HyPsd@DoConvert
2161 }%

```

\HyPsd@GetOneByte

```

2162 |gdef|HyPsd@GetOneByte#1#2{%
2163 #1#2%
2164 |HyPsd@DoConvert
2165 }%
2166 |endgroup

```

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

```

2167 \def\HyPsd@GetNextTwoTokens#1#2#3\END#4{%
2168 \xdef#4{#4#1#2}%
2169 \HyPsd@@ConvertToUnicode#3\END#4%
2170 }

```

\HyPsd@Char

```
2171 \begingroup
2172 \catcode0=9 %
2173 \catcode'\^=7 %
2174 \catcode'\^^=12 %
2175 \def\x{^^^0000}%
2176 \expandafter\endgroup
2177 \ifx\x\@empty
2178 \def\HyPsd@Char#1{%
2179 \ifnum'#1<128 %
2180 \@backslashchar 000#1%
2181 \else
2182 \ifnum'#1<65536 %
2183 \expandafter\HyPsd@CharTwoByte\number'#1%
2184 \else
2185 \expandafter\expandafter\expandafter\HyPsd@CharSurrogate
2186 \intcalcSub{'#1}{65536}!%
2187 \fi
2188 \fi
2189 }%
2190 \def\HyPsd@CharTwoByte#1{%
2191 \expandafter\expandafter\expandafter\HyPsd@CharOctByte
2192 \IntCalcDiv#1!256!!%
2193 \expandafter\expandafter\expandafter\HyPsd@CharOctByte
2194 \IntCalcMod#1!256!!%
2195 }%
2196 \def\HyPsd@CharOctByte#1{%
2197 \@backslashchar
2198 \IntCalcDiv#1!64!%
2199 \intcalcDiv{\IntCalcMod#1!64!}{8}%
2200 \IntCalcMod#1!8!%
2201 }%
2202 \def\HyPsd@CharSurrogate#1{%
2203 \@backslashchar 33%
2204 \IntCalcDiv#1!262144!%
2205 \expandafter\expandafter\expandafter\HyPsd@CharOctByte
2206 \intcalcDiv{\IntCalcMod#1!262144!}{1024}!%
2207 \@backslashchar 33%
2208 \expandafter\expandafter\expandafter\IntCalcAdd
2209 \intcalcDiv{\IntCalcMod#1!1024!}{256}!4!%
2210 \expandafter\expandafter\expandafter\HyPsd@CharOctByte
2211 \IntCalcMod#1!256!!%
2212 }%
2213 \else
2214 \def\HyPsd@Char#1{%
2215 \@backslashchar 000#1%
2216 }%
2217 \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

2218 \begingroup\expandafter\expandafter\expandafter\endgroup
2219 \expandafter\ifx\csname numexpr\endcsname\relax
2220 \let\HyPsd@UTFviii\relax
2221 \else
2222 \begingroup
2223 \lccode'\~='^f4\relax
2224 \lowercase{\endgroup
2225 \def\HyPsd@UTFviii{%
2226 \let\UTFviii@two@octets\HyPsd@UTFviii@two
2227 \let\UTFviii@three@octets\HyPsd@UTFviii@three
2228 \let\UTFviii@four@octets\HyPsd@UTFviii@four
2229 \ifx~\HyPsd@UTFviii@ccxliv@undef
2230 \let~\HyPsd@UTFviii@ccxliv@def
2231 \fi
2232 \let\unichar\HyPsd@unichar
2233 }%
2234 }%
2235 \def\HyPsd@UTFviii@ccxliv@undef{\@inpcnc@undefined@{utf8}}%
2236 \edef\HyPsd@UTFviii@ccxliv@def{%
2237 \noexpand\UTFviii@four@octets\string ^f4%
2238 }%

```

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.

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

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

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

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

$$(5)$$

```

2239 \def\HyPsd@UTFviii@two#1#2{%
2240 \expandafter\HyPsd@UTFviii@@two
2241 \number\dimexpr.25\dimexpr'#1sp\expandafter\relax\expandafter| %
2242 \number'#1\expandafter| %
2243 \number\dimexpr.125\dimexpr'#2sp\expandafter\relax\expandafter| %
2244 \number'#2 \@nil
2245 }%
2246 \def\HyPsd@UTFviii@@two#1|#2|#3|#4\@nil{%
2247 \expandafter\8%
2248 \number\numexpr #1-48\expandafter\relax
2249 \csname\number\numexpr #2-4*#1\relax\expandafter\endcsname
2250 \number\numexpr #3-8*%
2251 \number\dimexpr.125\dimexpr#3sp\relax\relax\expandafter\relax
2252 \number\numexpr #4-8*#3\relax
2253 }%

```

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

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

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

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

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

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

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

$$(12)$$

```

2254 \def\HyPsd@UTFviii@three#1#2#3{%
2255   \expandafter\HyPsd@UTFviii@@three
2256   \number\dimexpr.25\dimexpr'#1sp\expandafter\relax\expandafter| %
2257   \number'#1\expandafter| %
2258   \number\ifnum\dimexpr'#2-128\relax <32 0\else 1\fi\expandafter| %
2259   \number\dimexpr.25\dimexpr'#2sp\expandafter\relax\expandafter| %
2260   \number'#2\expandafter| %
2261   \number\dimexpr.125\dimexpr'#3sp\expandafter\relax\expandafter| %
2262   \number'#3 \@nil
2263 }%
2264 \def\HyPsd@UTFviii@@three#1|#2|#3|#4|#5|#6|#7\@nil{%
2265   \expandafter\9%
2266   \number\dimexpr #1-56\expandafter\relax
2267   \number\dimexpr 2*(#2-4*#1)+#3\expandafter\relax
2268   \number\dimexpr #4 - 32 -\ifcase#3 0\else 8\fi\expandafter\relax
2269   \csname\number\dimexpr #5-4*#4\relax\expandafter\endcsname
2270   \number\dimexpr #6-16\expandafter\relax
2271   \number\dimexpr #7-8*#6\relax
2272 }%

```

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

```

```

2273 \def\HyPsd@UTFviii@four#1#2{%
2274   \expandafter\HyPsd@@@UTFviii@four\number
2275   \numexpr-1+('#1-240)*4+\dimexpr.0625\dimexpr'#2sp-128sp%
2276   \expandafter|\number
2277   \numexpr'#2-16*\dimexpr.0625\dimexpr'#2sp| %
2278 }%
2279 \def\HyPsd@@@UTFviii@four#1|#2|#3{%
2280   \933\number\dimexpr.25\dimexpr#1sp\relax\relax
2281   \csname\number\dimexpr#1-4*\dimexpr.25\dimexpr#1sp\endcsname
2282   \ifodd#2 %
2283     \number\dimexpr(#2-1)/2\relax
2284   \else
2285     \number\dimexpr#2/2\relax
2286   \fi
2287   \number\dimexpr\ifodd#2 4+\fi
2288   \dimexpr.0625\dimexpr'#3sp-128sp\relax\relax\relax
2289   \933%
2290   \expandafter\HyPsd@@@UTFviii@four\number
2291   \numexpr'#3-16*\dimexpr.0625\dimexpr'#3sp| %
2292 }%
2293 \def\HyPsd@@@UTFviii@four#1|#2{%
2294   \number\dimexpr4+\dimexpr.25\dimexpr#1sp\relax\relax\relax
2295   \csname\number\dimexpr#1-4*\dimexpr.25\dimexpr#1sp\endcsname

```



```

2296 \number\dimexpr.125\dimexpr'#2sp-128sp\relax\relax
2297 \number\dimexpr'#2-8*\dimexpr.125\dimexpr'#2sp\relax\relax\relax
2298 }%

```

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

```

2299 \def\HyPsd@unichar#1{%
2300 \ifHy@unicode
2301 \ifnum#1>"10FFFF %
2302 \HyPsd@UnicodeReplacementCharacter % illegal
2303 \else
2304 \ifnum#1>"FFFF %

```

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

```

2305 \expandafter\HyPsd@unichar\expandafter{%
2306 \number\dimexpr 55296+%
2307 \dimexpr.0009765625\dimexpr\number#1sp-\p@
2308 \relax\relax\relax
2309 }%

```

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

```

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

```

```

2347 \csname\number\dimexpr.015625\dimexpr#1sp\relax\relax\endcsname
2348 \expandafter\HyPsd@unichar@octtwo\expandafter{%
2349 \number
2350 \numexpr#1-64*\number\dimexpr.015625\dimexpr#1sp%
2351 \relax\relax\relax
2352 }%
2353 }%
2354 \def\HyPsd@unichar@octtwo#1{%
2355 \number\dimexpr.125\dimexpr#1sp\relax\relax
2356 \number\numexpr#1-8*\number\dimexpr.125\dimexpr#1sp%
2357 \relax\relax\relax
2358 }%
2359 \fi

```

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

```

2360 \def\HyPsd@utf@viii@undeferr#1#2#3#4#5#6{%
2361 \ifx\@gobble#1%
2362 \else
2363 [Please insert \textbackslash PrerenderUnicode%
2364 \textbraceleft#1\textbraceright\space
2365 into preamble]%
2366 \fi
2367 }%

```

## 7 Support of other packages

### 7.1 Class memoir

```

2368 \@ifclassloaded{memoir}{%
2369 \Hy@AtEndOfPackage{\RequirePackage{memhfixc}}}%
2370 }{}

```

### 7.2 Package subfigure

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

```

2371 \@ifpackageloaded{subfigure}{%
2372 \ltx@ifundefined{sub@label}{%
2373 \Hy@hypertexnamesfalse
2374 }{%
2375 \renewcommand*{\sub@label}[1]{%
2376 \@bsphack
2377 \subfig@oldlabel{#1}%
2378 \if@filesw
2379 \begingroup
2380 \edef\@currentlabstr{%
2381 \expandafter\strip@prefix\meaning\@currentlabelname
2382 }%
2383 \protected@write\@auxout{}{%
2384 \string\newlabel{sub@#1}{%
2385 {\@nameuse{\@thesub\@capttype}}%
2386 {\thepage}%
2387 }%
2388 \expandafter\strip@period\@currentlabstr
2389 \relax.\relax\@@@%
2390 }%
2391 {\@currentHref}%

```

```

2392         {}%
2393     }%
2394 }%
2395 \endgroup
2396 \fi
2397 \@esphack
2398 }%
2399 \@ifpackagelater{subfigure}{2002/03/26}{}%
2400 \providecommand*{\toclevel@subfigure}{1}%
2401 \providecommand*{\toclevel@subtable}{1}%
2402 }%
2403 }%
2404 }{}

```

### 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:

```

2405 \ltx@ifUndefined{XR@addURL}{%
2406 }{%

```

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.

```

2407 \def\XR@addURL#1{\XR@dURL#1{}{}{}\\}%
2408 \def\XR@dURL#1#2#3#4#5\\{%
2409   {#1}{#2}%
2410   \if!#4!%
2411   \else
2412     {#3}{#4}{\XR@URL}%
2413   \fi
2414 }%
2415 }

2416 \def\Hy@true{true}
2417 \def\Hy@false{false}

```

Providing dummy definitions.

```

2418 \let\literalps@out\@gobble
2419 \newcommand\pdfbookmark[3]{}{}
2420 \def\Acrobatmenu#1#2{\leavevmode#2}
2421 \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

```

2422 \let\HyperRaiseLinkHook\@empty
2423 \def\HyperRaiseLinkDefault{\baselineskip}

```

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

```

2424 \newcount\Hy@SavedSpaceFactor
2425 \def\Hy@SaveSpaceFactor{%
2426   \global\Hy@SavedSpaceFactor=\ifhmode\spacefactor\else\z@\fi
2427 }
2428 \def\Hy@RestoreSpaceFactor{%
2429   \relax
2430   \ifhmode
2431     \ifnum\Hy@SavedSpaceFactor>\z@
2432       \spacefactor=\Hy@SavedSpaceFactor
2433     \fi
2434   \fi
2435 }
2436 \def\Hy@SaveSavedSpaceFactor{%
2437   \edef\Hy@RestoreSavedSpaceFactor{%
2438     \global\Hy@SavedSpaceFactor=\the\Hy@SavedSpaceFactor\relax
2439   }%
2440 }
2441 \def\Hy@raisedlink#1{%
2442   \ifvmode
2443     #1%
2444   \else
2445     \Hy@SaveSpaceFactor
2446     \penalty\@M
2447     \smash{%
2448       \begingroup
2449         \let\HyperRaiseLinkLength\@tempdima
2450         \setlength\HyperRaiseLinkLength\HyperRaiseLinkDefault
2451         \HyperRaiseLinkHook
2452       \expandafter\endgroup
2453       \expandafter\raise\the\HyperRaiseLinkLength\hbox{%
2454         \Hy@RestoreSpaceFactor
2455         #1%
2456         \Hy@SaveSpaceFactor
2457       }%
2458     }%
2459     \Hy@RestoreSpaceFactor
2460   \fi
2461 }

```

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

```

2462 \def\Hy@SaveLastskip{%
2463   \let\Hy@RestoreLastskip\relax
2464   \ifvmode
2465     \ifdim\lastskip=\z@
2466       \let\Hy@RestoreLastskip\nobreak
2467     \else
2468       \begingroup
2469         \skip@=-\lastskip
2470       \edef\x{%
2471         \endgroup
2472         \def\noexpand\Hy@RestoreLastskip{%
2473           \noexpand\ifvmode
2474             \noexpand\nobreak
2475             \vskip\the\skip@
2476             \vskip\the\lastskip\relax
2477           \noexpand\fi

```

```

2478     }%
2479     }%
2480     \x
2481     \fi
2482 \else
2483 \ifhmode
2484 \ifdim\lastskip=\z@
2485 \let\Hy@RestoreLastskip\nobreak
2486 \else
2487 \begingroup
2488 \skip@=-\lastskip
2489 \edef\x{%
2490 \endgroup
2491 \def\noexpand\Hy@RestoreLastskip{%
2492 \noexpand\ifhmode
2493 \noexpand\nobreak
2494 \hskip\the\skip@
2495 \hskip\the\lastskip\relax
2496 \noexpand\fi
2497 }%
2498 }%
2499 \x
2500 \fi
2501 \fi
2502 \fi
2503 }%

```

## 9 Options

```

2504 \SetupKeyvalOptions{%
2505 family=Hyp,%
2506 prefix=HyOpt%
2507 }

```

### 9.1 Help macros

\Hy@boolkey

```

2508 \def\Hy@boolkey{\@dblarg\Hy@@boolkey}
2509 \def\Hy@@boolkey[#1]#2#3{%
2510 \edef\Hy@tempa{#3}%
2511 \lowercase\expandafter{%
2512 \expandafter\def\expandafter\Hy@tempa\expandafter{\Hy@tempa}%
2513 }%
2514 \ifx\Hy@tempa\@empty
2515 \let\Hy@tempa\Hy@true
2516 \fi
2517 \ifx\Hy@tempa\Hy@true
2518 \else
2519 \ifx\Hy@tempa\Hy@false
2520 \else
2521 \let\Hy@tempa\relax
2522 \fi
2523 \fi
2524 \ifx\Hy@tempa\relax
2525 \Hy@WarnOptionValue{#3}{#1}{‘true’ or ‘false’}%
2526 \else
2527 \Hy@Info{Option ‘#1’ set ‘\Hy@tempa’}%

```

```

2528 \csname Hy@#2\Hy@tempa\endcsname
2529 \fi
2530 }

```

\Hy@WarnOptionValue

```

2531 \def\Hy@WarnOptionValue#1#2#3{%
2532 \Hy@Warning{%
2533 Unexpected value '#1'\MessageBreak
2534 of option '#2' instead of\MessageBreak
2535 #3%
2536 }%
2537 }

```

\Hy@DisableOption

```

2538 \def\Hy@DisableOption#1{%
2539 \@ifundefined{KV@Hyp@#1@default}{%
2540 \define@key{Hyp}{#1}%
2541 }{%
2542 \define@key{Hyp}{#1}[]%
2543 }%
2544 {\Hy@WarnOptionDisabled{#1}}%
2545 }

```

\Hy@WarnOptionDisabled

```

2546 \def\Hy@WarnOptionDisabled#1{%
2547 \Hy@Warning{%
2548 Option '#1' has already been used,\MessageBreak
2549 setting the option has no effect%
2550 }%
2551 }

```

\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.

```

2552 \def\Hy@CheckOptionValue#1#2#3{%
2553 \begingroup
2554 \edef\x{#1}%
2555 \@onelevel@sanitize\x
2556 \let\y=y%
2557 \def\do##1##2{%
2558 \def\z{##1}%
2559 \@onelevel@sanitize\z
2560 \ifx\x\z
2561 \let\y=n%
2562 \let\do\@gobbletwo
2563 \fi
2564 }%
2565 #3%
2566 \ifx\y y%
2567 \def\do##1##2{%
2568 * '#1'%
2569 \ifx\##2\\\else\space(##2)\fi
2570 \MessageBreak
2571 }%
2572 \Hy@Warning{%
2573 Values of option '#2':\MessageBreak
2574 #3%
2575 * An empty value disables the option.\MessageBreak

```

```

2576     Unknown value '\x'%
2577   }%
2578   \fi
2579 \endgroup
2580 }

```

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

```

2581 \def\Hy@DefNameKey#1{%
2582   \expandafter\Hy@@DefNameKey\csname @#1\endcsname{#1}%
2583 }

```

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

```

2584 \def\Hy@@DefNameKey#1#2#3{%
2585   \define@key{Hyp}{#2}{%
2586     \edef#1{#1}%
2587     \ifx#1\@empty
2588       \else
2589         \Hy@CheckOptionValue{#1}{#2}{#3}%
2590       \fi
2591   }%
2592   \let#1\@empty
2593 }

```

`\Hy@UseNameKey`

```

2594 \def\Hy@UseNameKey#1#2{%
2595   \ifx#2\@empty
2596     \else
2597       /#1/#2%
2598     \fi
2599 }

```

## 9.2 Defining the options

```

2600 \define@key{Hyp}{implicit}[true]{%
2601   \Hy@boolkey{implicit}{#1}%
2602 }
2603 \define@key{Hyp}{draft}[true]{%
2604   \Hy@boolkey{draft}{#1}%
2605 }
2606 \define@key{Hyp}{final}[true]{%
2607   \Hy@boolkey{final}{#1}%
2608 }
2609 \let\KV@Hyp@nolinks\KV@Hyp@draft
2610 \def\Hy@ObsoletePaperOption#1{%
2611   \Hy@WarningNoLine{%
2612     Option '#1' is no longer used%
2613   }%
2614   \define@key{Hyp}{#1}[true]{}%
2615 }
2616 \def\Hy@temp#1{%
2617   \define@key{Hyp}{#1}[true]{%
2618     \Hy@ObsoletePaperOption{#1}%

```

```

2619 }%
2620 }
2621 \Hy@temp{a4paper}
2622 \Hy@temp{a5paper}
2623 \Hy@temp{b5paper}
2624 \Hy@temp{letterpaper}
2625 \Hy@temp{legalpaper}
2626 \Hy@temp{executivepaper}

2627 \define@key{Hyp}{setpagesize}[true]{%
2628   \Hy@boolkey{setpagesize}{#1}%
2629 }
2630 \define@key{Hyp}{debug}[true]{%
2631   \Hy@boolkey{debug}{verbose}{#1}%
2632 }
2633 \define@key{Hyp}{linktocpage}[true]{%
2634   \Hy@boolkey{linktocpage}{#1}%
2635   \ifHy@linktocpage
2636     \let\Hy@linktoc\Hy@linktoc@page
2637   \else
2638     \let\Hy@linktoc\Hy@linktoc@section
2639   \fi
2640 }
2641 \chardef\Hy@linktoc@none=0 %
2642 \chardef\Hy@linktoc@section=1 %
2643 \chardef\Hy@linktoc@page=2 %
2644 \chardef\Hy@linktoc@all=3 %
2645 \ifHy@linktocpage
2646   \let\Hy@linktoc\Hy@linktoc@page
2647 \else
2648   \let\Hy@linktoc\Hy@linktoc@section
2649 \fi
2650 \define@key{Hyp}{linktoc}{%
2651   \@ifundefined{Hy@linktoc@#1}{%
2652     \Hy@Warning{%
2653       Unexpected value ‘#1’ of\MessageBreak
2654       option ‘linktoc’ instead of ‘none’,\MessageBreak
2655       ‘section’, ‘page’ or ‘all’%
2656     }%
2657   }{%
2658     \expandafter\let\expandafter\Hy@linktoc
2659     \csname Hy@linktoc@#1\endcsname
2660   }%
2661 }
2662 \define@key{Hyp}{extension}{\def\XR@ext{#1}}
2663 \let\XR@ext\relax
2664 \define@key{Hyp}{verbose}[true]{%
2665   \Hy@boolkey{verbose}{#1}%
2666 }
2667 \define@key{Hyp}{typexml}[true]{%
2668   \Hy@boolkey{typexml}{#1}%
2669 }

```

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.

```

2670 \define@key{Hyp}{raiselinks}[true]{%

```



```

2671 \Hy@boolkey{raiselinks}{#1}%
2672 }

```

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

```

2673 \def\Hy@setbreaklinks#1{%
2674   \csname breaklinks#1\endcsname
2675 }

2676 \def\Hy@breaklinks@unsupported{%
2677   \ifx\Hy@setbreaklinks\@gobble
2678     \ifHy@breaklinks
2679       \Hy@WarningNoLine{%
2680         You have enabled option 'breaklinks'.\MessageBreak
2681         But driver '\Hy@driver.def' does not support this.\MessageBreak
2682         Expect trouble with the link areas of broken links%
2683       }%
2684     \fi
2685   \fi
2686 }

2687 \define@key{Hyp}{breaklinks}[true]{%
2688   \Hy@boolkey{breaklinks}{#1}%
2689   \let\Hy@setbreaklinks\@gobble
2690 }

2691 \define@key{Hyp}{localanchorname}[true]{%
2692   \Hy@boolkey{localanchorname}{#1}%
2693 }

```

Determines whether an automatic anchor is put on each page

```

2694 \define@key{Hyp}{pageanchor}[true]{%
2695   \Hy@boolkey{pageanchor}{#1}%
2696 }

```

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.

```

2697 \define@key{Hyp}{plainpages}[true]{%
2698   \Hy@boolkey{plainpages}{#1}%
2699 }

```

Are the names for anchors made as per the HyperTeX system, or do they simply use what  $\LaTeX$  provides?

```

2700 \define@key{Hyp}{naturalnames}[true]{%
2701   \Hy@boolkey{naturalnames}{#1}%
2702 }

```

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

```

2703 \define@key{Hyp}{hypertextnames}[true]{%
2704   \Hy@boolkey{hypertextnames}{#1}%
2705 }

```

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

```

2706 \define@key{Hyp}{nesting}[true]{%
2707   \Hy@boolkey{nesting}{#1}%
2708 }

2709 \define@key{Hyp}{unicode}[true]{%
2710   \Hy@boolkey{unicode}{#1}%
2711   \ifHy@unicode
2712     \def\HyPsd@pdfencoding{unicode}%
2713     \HyPsd@LoadUnicode
2714   \else
2715     \def\HyPsd@pdfencoding{pdfdoc}%

```

```

2716 \fi
2717 }
2718 \def\HyPsd@LoadUnicode{%
2719 \ifundefined{T@PU}{%
2720 \input{puenc.def}%
2721 \HyLinguex@Restore
2722 }{}%
2723 \DeclareFontFamily{PU}{pdf}{}%
2724 \DeclareFontShape{PU}{pdf}{m}{n}{<-> cmr10 }{}%
2725 \DeclareFontSubstitution{PU}{pdf}{m}{n}%
2726 \global\let\HyPsd@LoadUnicode\relax
2727 }
2728 \Hy@AtBeginDocument{%
2729 \ifx\HyPsd@LoadUnicode\relax
2730 \else
2731 \def\HyPsd@LoadUnicode{%
2732 \Hy@Error{%
2733 Unicode support for bookmarks is not available.\MessageBreak
2734 Activate unicode support by using one of the options\MessageBreak
2735 'unicode', 'pdfencoding=unicode', 'pdfencoding=auto'\MessageBreak
2736 in the preamble%
2737 }\@ehc
2738 \global\let\HyPsd@LoadUnicode\relax
2739 \global\Hy@unicodedefalse
2740 \global\let\Hy@unicodetrue\Hy@unicodedefalse
2741 }%
2742 \fi
2743 }
2744 \define@key{Hyp}{pdfencoding}{%
2745 \edef\HyPsd@temp{#1}%
2746 \ifx\HyPsd@temp\HyPsd@pdfencoding@pdfdoc
2747 \let\HyPsd@pdfencoding\HyPsd@temp
2748 \Hy@unicodedefalse
2749 \else
2750 \ifcase\ifx\HyPsd@temp\HyPsd@pdfencoding@unicode
2751 \z@
2752 \else
2753 \ifx\HyPsd@temp\HyPsd@pdfencoding@auto
2754 \z@
2755 \else
2756 \@ne
2757 \fi
2758 \fi
2759 \let\HyPsd@pdfencoding\HyPsd@temp
2760 \hypersetup{unicode}%
2761 \ifHy@unicode
2762 \def\HyPsd@pdfencoding{#1}%
2763 \ifx\HyPsd@pdfencoding\HyPsd@pdfencoding@auto
2764 \HyPsd@LoadStringEnc
2765 \fi
2766 \else
2767 \Hy@Warning{Cannot switch to unicode bookmarks}%
2768 \let\HyPsd@pdfencoding\HyPsd@pdfencoding@pdfdoc
2769 \fi
2770 \else
2771 \@onelevel@sanitize\HyPsd@temp
2772 \Hy@Warning{%

```

```

2773     Values of option 'pdfencoding':\MessageBreak
2774     'pdfdoc', 'unicode', 'auto':\MessageBreak
2775     Ignoring unknown value '\HyPsd@temp'%
2776   }%
2777   \fi
2778 \fi
2779 }
2780 \def\HyPsd@pdfencoding@auto{auto}
2781 \def\HyPsd@pdfencoding@pdfdoc{pdfdoc}
2782 \def\HyPsd@pdfencoding@unicode{unicode}
2783 \let\HyPsd@pdfencoding\Hy@pdfencoding@pdfdoc
2784 \def\HyPsd@LoadStringEnc{%
2785   \RequirePackage{stringenc}[2009/12/15]%
2786   \let\HyPsd@LoadStringEnc\relax
2787 }
2788 \Hy@AtBeginDocument{%
2789   \ifpackageloaded{stringenc}{%
2790     \let\HyPsd@LoadStringEnc\relax
2791   }{%
2792     \def\HyPsd@LoadStringEnc{%
2793       \Hy@WarningNoLine{%
2794         Missing package 'stringenc'. Use 'pdfencoding=auto'\MessageBreak
2795         in the preamble or load the package there%
2796       }%
2797     }%
2798   }%
2799 }

2800 \def\hypersetup{\kvsetkeys{Hyp}}

2801 \newif\ifHy@setpdfversion
2802 \define@key{Hyp}{pdfversion}{%
2803   \ifundefined{Hy@pdfversion@#1}{%
2804     \PackageWarning{hyperref}{%
2805       Unsupported PDF version '#1'.\MessageBreak
2806       Valid values: 1.2 until 1.9%
2807     }%
2808   }{%
2809     \Hy@setpdfversiontrue
2810     \edef\Hy@pdfversion{\@nameuse{Hy@pdfversion@#1}}%
2811   }%
2812 }
2813 \@namedef{Hy@pdfversion@1.2}{2}%
2814 \@namedef{Hy@pdfversion@1.3}{3}%
2815 \@namedef{Hy@pdfversion@1.4}{4}%
2816 \@namedef{Hy@pdfversion@1.5}{5}%
2817 \@namedef{Hy@pdfversion@1.6}{6}%
2818 \@namedef{Hy@pdfversion@1.7}{7}%
2819 \@namedef{Hy@pdfversion@1.8}{8}%
2820 \@namedef{Hy@pdfversion@1.9}{9}%
2821 \def\Hy@pdfversion{2}

```

## 10 Options for different drivers

```

2822 \newif\ifHy@DviMode
2823 \let\Hy@DviErrMsg\ltx@empty
2824 \ifpdf
2825   \def\Hy@DviErrMsg{pdfTeX or LuaTeX is running in PDF mode}%
2826 \else

```

```

2827 \ifxetex
2828   \def\Hy@DviErrMsg{XeTeX is running}%
2829 \else
2830   \ifvtex
2831     \ifvtexdvi
2832       \Hy@DviModetrue
2833     \else
2834       \def\Hy@DviErrMsg{VTeX is running, but not in DVI mode}%
2835     \fi
2836   \else
2837     \Hy@DviModetrue
2838   \fi
2839 \fi
2840 \fi
2841 \def\HyOpt@CheckDvi#1{%
2842   \ifHy@DviMode
2843     \expandafter\ltx@firstofone
2844   \else
2845     \Hy@Error{%
2846       Wrong DVI mode driver option ‘#1’,\MessageBreak
2847       because \Hy@DviErrMsg
2848     }\@ehc
2849     \expandafter\ltx@gobble
2850   \fi
2851 }
2852 \DeclareVoidOption{tex4ht}{%
2853   \Hy@texhttrue
2854   \kvsetkeys{Hyp}{colorlinks=true}%
2855   \def\BeforeTeXIVht{\RequirePackage{color}}%
2856   \def\Hy@driver{htex4ht}%
2857   \def\MaybeStopEarly{%
2858     \Hy@Message{Stopped early}%
2859     \Hy@AtBeginDocument{%
2860       \PDF@FinishDoc
2861       \gdef\PDF@FinishDoc{}%
2862     }%
2863   \endinput
2864 }%
2865 }
2866 \DeclareVoidOption{pdftex}{%
2867   \ifpdf
2868     \def\Hy@driver{hpdftex}%
2869   \else
2870     \Hy@Error{%
2871       Wrong driver option ‘pdftex’,\MessageBreak
2872       because pdfTeX in PDF mode is not detected%
2873     }\@ehc
2874   \fi
2875 }
2876 \DeclareVoidOption{nativepdf}{%
2877   \HyOpt@CheckDvi{nativepdf}{%
2878     \def\Hy@driver{hdvips}%
2879   }%
2880 }
2881 \DeclareVoidOption{dvipdfm}{%
2882   \HyOpt@CheckDvi{dvipdfm}{%
2883     \def\Hy@driver{hdvipdfm}%

```

```

2884 }%
2885 }
2886 \DeclareVoidOption{dvipdfmx}{%
2887   \HyOpt@CheckDvi{dvipdfmx}{%
2888     \def\Hy@driver{hdvipdfm}%
2889   }%
2890 }
2891 \define@key{Hyp}{dvipdfmx-outline-open}[true]{%
2892   \expandafter\ifx\csname if#1\expandafter\endcsname
2893     \csname iftrue\endcsname
2894     \chardef\SpecialDvipdfmxOutlineOpen\@ne
2895   \else
2896     \chardef\SpecialDvipdfmxOutlineOpen\z@
2897   \fi
2898 }
2899 \DeclareVoidOption{xetex}{%
2900   \ifxetex
2901     \def\Hy@driver{hxetex}%
2902   \else
2903     \Hy@Error{%
2904       Wrong driver option 'xetex',\MessageBreak
2905       because XeTeX is not detected%
2906     }\@ehc
2907   \fi
2908 }
2909 \DeclareVoidOption{pdfmark}{%
2910   \HyOpt@CheckDvi{pdfmark}{%
2911     \def\Hy@driver{hdvips}%
2912   }%
2913 }
2914 \DeclareVoidOption{dvips}{%
2915   \HyOpt@CheckDvi{dvips}{%
2916     \def\Hy@driver{hdvips}%
2917   }%
2918 }
2919 \DeclareVoidOption{hypertex}{%
2920   \HyOpt@CheckDvi{hypertex}{%
2921     \def\Hy@driver{hypertex}%
2922   }%
2923 }
2924 \let\Hy@MaybeStopNow\relax
2925 \DeclareVoidOption{vtex}{%
2926   \ifvtex
2927     \ifnum 0\ifnum\OpMode<1 1\fi \ifnum\OpMode>3 1\fi =0 %
2928     \def\Hy@driver{hvtex}%
2929   \else
2930     \ifnum\OpMode=10\relax
2931       \def\Hy@driver{hvtexhtm}%
2932       \def\MaybeStopEarly{%
2933         \Hy@Message{Stopped early}%
2934         \Hy@AtBeginDocument{%
2935           \PDF@FinishDoc
2936           \gdef\PDF@FinishDoc{}}%
2937       }%
2938       \endinput
2939     }%
2940   \else

```

```

2941     \Hy@Error{%
2942       Wrong driver option 'vtex',\MessageBreak
2943       because of wrong OpMode (\the\OpMode)%
2944     }\@ehc
2945   \fi
2946 \fi
2947 \else
2948   \Hy@Error{%
2949     Wrong driver option 'vtex',\MessageBreak
2950     because VTeX is not running%
2951   }\@ehc
2952 \fi
2953 }
2954 \DeclareVoidOption{vtexpdfmark}{%
2955   \ifvtex
2956     \ifnum 0\ifnum\OpMode<1 1\fi \ifnum\OpMode>3 1\fi =0 %
2957     \def\Hy@driver{hvtexmrk}%
2958   \else
2959     \Hy@Error{%
2960       Wrong driver option 'vtexpdfmark',\MessageBreak
2961       because of wrong OpMode (\the\OpMode)%
2962     }\@ehc
2963   \fi
2964 \else
2965   \Hy@Error{%
2966     Wrong driver option 'vtexpdfmark,\MessageBreak
2967     because VTeX is not running%
2968   }\@ehc
2969 \fi
2970 }
2971 \DeclareVoidOption{dviwindo}{%
2972   \HyOpt@CheckDvi{dviwindo}{%
2973     \def\Hy@driver{hdviwind}%
2974     \kvsetkeys{Hyp}{colorlinks}%
2975     \PassOptionsToPackage{dviwindo}{color}%
2976   }%
2977 }
2978 \DeclareVoidOption{dvipsone}{%
2979   \HyOpt@CheckDvi{dvipsone}{%
2980     \def\Hy@driver{hdvipson}%
2981   }%
2982 }
2983 \DeclareVoidOption{textures}{%
2984   \HyOpt@CheckDvi{textures}{%
2985     \def\Hy@driver{htexture}%
2986   }%
2987 }
2988 \DeclareVoidOption{latex2html}{%
2989   \HyOpt@CheckDvi{latex2html}{%
2990     \Hy@AtBeginDocument{\@@latextohtmlX}%
2991   }%
2992 }

```

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

```

2993 \DeclareVoidOption{ps2pdf}{%
2994   \HyOpt@CheckDvi{ps2pdf}{%
2995     \def\Hy@driver{hdvips}%
2996   }%

```

```

2997 }
2998 \let\HyOpt@DriverFallback\ltx@empty
2999 \define@key{Hyp}{driverfallback}{%
3000   \ifHy@DviMode
3001     \def\HyOpt@DriverFallback{#1}%
3002     \Hy@Match\HyOpt@DriverFallback{%
3003       ^(|dvipdfm|dvipdfmx|dvips|dvipsone|dviwindo|hypertex|ps2pdf| %
3004       latex2html|tex4ht)$%
3005     }{}{%
3006       \let\HyOpt@DriverFallback\ltx@empty
3007     }%
3008   \fi
3009 }

```

## 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.

```

3010 \define@key{Hyp}{hyperfigures}[true]{%
3011   \Hy@boolkey[hyperfigures]{figures}{#1}%
3012 }

```

The automatic footnote linking can be disabled by option hyperfootnotes.

```

3013 \define@key{Hyp}{hyperfootnotes}[true]{%
3014   \Hy@boolkey[hyperfootnotes]{#1}%
3015 }

```

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

```

3016 \def\back@none{none}
3017 \def\back@section{section}
3018 \def\back@page{page}
3019 \def\back@slide{slide}
3020 \define@key{Hyp}{backref}[section]{%
3021   \lowercase{\def\Hy@tempa{#1}}%
3022   \ifx\Hy@tempa@empty
3023     \let\Hy@tempa\back@section
3024   \fi
3025   \ifx\Hy@tempa\Hy@false
3026     \let\Hy@tempa\back@none
3027   \fi
3028   \ifx\Hy@tempa\back@slide
3029     \let\Hy@tempa\back@section
3030   \fi
3031   \ifx\Hy@tempa\back@page
3032     \PassOptionsToPackage{hyperpageref}{backref}%
3033     \Hy@backreftrue
3034   \else
3035     \ifx\Hy@tempa\back@section
3036       \PassOptionsToPackage{hyperref}{backref}%
3037       \Hy@backreftrue
3038     \else
3039       \ifx\Hy@tempa\back@none
3040         \Hy@backreffalse
3041       \else
3042         \Hy@WarnOptionValue{#1}{backref}{%
3043           'section', 'slide', 'page', 'none',\MessageBreak
3044           or 'false'}%
3045       \fi

```

```

3046 \fi
3047 \fi
3048 }
3049 \define@key{Hyp}{pagebackref}[true]{%
3050 \edef\Hy@tempa{#1}%
3051 \lowercase\expandafter{%
3052 \expandafter\def\expandafter\Hy@tempa\expandafter{\Hy@tempa}%
3053 }%
3054 \ifx\Hy@tempa\@empty
3055 \let\Hy@tempa\Hy@true
3056 \fi
3057 \ifx\Hy@tempa\Hy@true
3058 \PassOptionsToPackage{hyperpageref}{backref}%
3059 \Hy@backreftrue
3060 \else
3061 \ifx\Hy@tempa\Hy@false
3062 \Hy@backreffalse
3063 \else
3064 \Hy@WarnOptionValue{#1}{pagebackref}{‘true’ or ‘false’}%
3065 \fi
3066 \fi
3067 }

```

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

```

3068 \define@key{Hyp}{hyperindex}[true]{%
3069 \Hy@boolkey{hyperindex}{#1}%
3070 }

```

Configuration of encap char.

```

3071 \define@key{Hyp}{encap}[|]{%
3072 \def\HyInd@EncapChar{#1}%
3073 }

```

## 12 Language options

The `\autoref` feature depends on the language.

```

3074 \def\HyLang@afrikaans{%
3075 \def\equationautorefname{Vergelyking}%
3076 \def\footnoteautorefname{Voetnota}%
3077 \def\itemautorefname{Item}%
3078 \def\figureautorefname{Figuur}%
3079 \def\tableautorefname{Tabel}%
3080 \def\partautorefname{Deel}%
3081 \def\appendixautorefname{Bylae}%
3082 \def\chapterautorefname{Hoofstuk}%
3083 \def\sectionautorefname{Afdeling}%
3084 \def\subsectionautorefname{Subafdeling}%
3085 \def\subsubsectionautorefname{Subsubafdeling}%
3086 \def\paragraphautorefname{Paragraaf}%
3087 \def\subparagraphautorefname{Subparagraaf}%
3088 \def\FancyVerbLineautorefname{Lyn}%
3089 \def\theoremautorefname{Teorema}%
3090 \def\pageautorefname{Bladsy}%
3091 }
3092 \def\HyLang@english{%
3093 \def\equationautorefname{Equation}%

```



```

3094 \def\footnoteautorefname{footnote}%
3095 \def\itemautorefname{item}%
3096 \def\figureautorefname{Figure}%
3097 \def\tableautorefname{Table}%
3098 \def\partautorefname{Part}%
3099 \def\appendixautorefname{Appendix}%
3100 \def\chapterautorefname{chapter}%
3101 \def\sectionautorefname{section}%
3102 \def\subsectionautorefname{subsection}%
3103 \def\subsubsectionautorefname{subsubsection}%
3104 \def\paragraphautorefname{paragraph}%
3105 \def\subparagraphautorefname{subparagraph}%
3106 \def\FancyVerbLineautorefname{line}%
3107 \def\theoremautorefname{Theorem}%
3108 \def\pageautorefname{page}%
3109 }
3110 \def\HyLang@french{%
3111 \def\equationautorefname{'Equation}%
3112 \def\footnoteautorefname{note}%
3113 \def\itemautorefname{item}%
3114 \def\figureautorefname{Figure}%
3115 \def\tableautorefname{Tableau}%
3116 \def\partautorefname{Partie}%
3117 \def\appendixautorefname{Appendice}%
3118 \def\chapterautorefname{chapitre}%
3119 \def\sectionautorefname{section}%
3120 \def\subsectionautorefname{sous-section}%
3121 \def\subsubsectionautorefname{sous-sous-section}%
3122 \def\paragraphautorefname{paragraphe}%
3123 \def\subparagraphautorefname{sous-paragraphe}%
3124 \def\FancyVerbLineautorefname{ligne}%
3125 \def\theoremautorefname{Th\'eor\`eme}%
3126 \def\pageautorefname{page}%
3127 }
3128 \def\HyLang@german{%
3129 \def\equationautorefname{Gleichung}%
3130 \def\footnoteautorefname{Fu\ss note}%
3131 \def\itemautorefname{Punkt}%
3132 \def\figureautorefname{Abbildung}%
3133 \def\tableautorefname{Tabelle}%
3134 \def\partautorefname{Teil}%
3135 \def\appendixautorefname{Anhang}%
3136 \def\chapterautorefname{Kapitel}%
3137 \def\sectionautorefname{Abschnitt}%
3138 \def\subsectionautorefname{Unterabschnitt}%
3139 \def\subsubsectionautorefname{Unterunterabschnitt}%
3140 \def\paragraphautorefname{Absatz}%
3141 \def\subparagraphautorefname{Unterabsatz}%
3142 \def\FancyVerbLineautorefname{Zeile}%
3143 \def\theoremautorefname{Theorem}%
3144 \def\pageautorefname{Seite}%
3145 }
3146 \def\HyLang@italian{%
3147 \def\equationautorefname{Equazione}%
3148 \def\footnoteautorefname{nota}%
3149 \def\itemautorefname{punto}%
3150 \def\figureautorefname{Figura}%

```

```

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

```

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`.

```
3200 \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`?

```
3201 \def\equationautorefname{\cyr\cyrv\cyrery\cyr.}%
```

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`.

```
3202 % \def\equationautorefname{%
```

```
3203 %   \cyr\cyrv\cyrery\cyr\cyrzh\cyre\cyrn\cyri\cyre
```

```
3204 % }%
```

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

```
3205 \def\footnoteautorefname{%
```

```
3206   \cyr\cyrp\cyro\cyrd\cyrs\cyrt\cyr.\ \cyrp\cyr\cyri\cyrm.%
```

```
3207 }%
```

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}`”

```
3208 % \def\footnoteautorefname{%
```

```
3209 %   \cyr\cyrp\cyro\cyrd\cyrs\cyrt\cyr\cyro\cyrch\cyrn\cyro\cyre\ %
```

```
3210 %   \cyrp\cyr\cyri\cyrm\cyre\cyrch\cyra\cyrn\cyri\cyre
```

```
3211 % }%
```

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

```
3212 % \def\Nomfootnoteautorefname{\cyr\cyrs\cyrn\cyro\cyrs\cyrk\cyra}%
```

```
3213 % \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.

```
3214 \def\itemautorefname{\cyr\cyrp.}%
```

```
3215 % \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.

```
3216 \def\figureautorefname{\cyr\cyr\cyri\cyrs.}%
```

```
3217 \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.

```
3218 \def\partautorefname{\cyr\cyrch.}%
```

```
3219 \def\chapterautorefname{\cyr\cyr\cyrl.}%
```

```
3220 \def\sectionautorefname{\cyr\cyr\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.

```
3221 \def\appendixautorefname{\cyr\cyrp\cyr\cyri\cyrl.}%
```

```
3222 % \def\appendixautorefname{%
```

```
3223 %   \cyr\cyrp\cyr\cyri\cyrl\cyro\cyrzh\cyre\cyrn\cyri\cyre
```

```
3224 % }%
```

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.

```
3225 \def\subsectionautorefname{\cyr\cyrr\cyra\cyrz\cyrd.}%
3226 \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.

```
3227 \def\paragraphautorefname{\cyr\cyrp.}%
3228 \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.

```
3229 % \def\paragraphautorefname{\cyr\cyrp\cyru\cyrn\cyrk\cyrt}%
3230 % \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.

```
3231 \def\FancyVerbLineautorefname{\cyr\cyrs\cyrt\cyrr.}%
```

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

```
3232 % \def\NomFancyVerbLineautorefname{\cyr\cyrs\cyrt\cyrr\cyro\cyrk\cyra}%
3233 % \def\AccFancyVerbLineautorefname{\cyr\cyrs\cyrt\cyrr\cyro\cyrk\cyru}%
```

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

```
3234 % \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 . . .

```
3235 \def\theoremautorefname{\cyr\cyrt\cyre\cyro\cyrr.}%
```

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

```
3236 % \def\Nomtheoremautorefname{\cyr\cyrt\cyre\cyro\cyrr\cyre\cyrm\cyra}%
3237 % \def\Acctheoremautorefname{\cyr\cyrt\cyre\cyro\cyrr\cyre\cyrm\cyru}%
```

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

```
3238 \def\pageautorefname{\cyr\cyrs.}%
3239 }
```

```
3240 \def\HyLang@spanish{%
3241   \def\equationautorefname{Ecuaci'on}%
3242   \def\footnoteautorefname{Nota a pie de p'agina}%
3243   \def\itemautorefname{Elemento}%
3244   \def\figureautorefname{Figura}%
3245   \def\tableautorefname{Tabla}%
3246   \def\partautorefname{Parte}%
3247   \def\appendixautorefname{Ap'endice}%
3248   \def\chapterautorefname{Cap'itulo}%
3249   \def\sectionautorefname{Secci'on}%
3250   \def\subsectionautorefname{Subsecci'on}%
3251   \def\subsubsectionautorefname{Subsubsecci'on}%
3252   \def\paragraphautorefname{P'arrafo}%
3253   \def\subparagraphautorefname{Subp'arrafo}%
3254   \def\FancyVerbLineautorefname{L'inea}%
```

```

3255 \def\theoremautorefname{Teorema}%
3256 \def\pageautorefname{P\'agina}%
3257 }
3258 \def\HyLang@vietnamese{%
3259 \def\equationautorefname{Ph\uhorn{}}\ohorn{ng tr\'inh}%
3260 \def\footnoteautorefname{Ch\'u th\'ich}%
3261 \def\itemautorefname{m\du{c}}%
3262 \def\figureautorefname{H\'inh}%
3263 \def\tableautorefname{B\h{a}ng}%
3264 \def\partautorefname{Ph\'acircumflex{n}}%
3265 \def\appendixautorefname{Ph\du{ }l\du{c}}%
3266 \def\chapterautorefname{ch\uhorn{}}\ohorn{ng}%
3267 \def\sectionautorefname{m\du{c}}%
3268 \def\subsectionautorefname{m\du{c}}%
3269 \def\subsubsectionautorefname{m\du{c}}%
3270 \def\paragraphautorefname{\dj{ }o\da{n}}%
3271 \def\subparagraphautorefname{\dj{ }o\da{n}}%
3272 \def\FancyVerbLineautorefname{d\'ong}%
3273 \def\theoremautorefname{DJ{ }\di{nh l\'y}}%
3274 \def\pageautorefname{Trang}%
3275 }

```

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

```

3276 \def\HyLang@addto#1#2{%
3277   #2%
3278   \@temptokena{#2}%
3279   \ifx#1\relax
3280     \let#1\@empty
3281   \fi
3282   \ifx#1\@undefined
3283     \edef#1{\the\@temptokena}%
3284   \else
3285     \toks@\expandafter{#1}%
3286     \edef#1{\the\toks@\the\@temptokena}%
3287   \fi
3288   \@temptokena{}\toks@\@temptokena
3289 }
3290 \def\HyLang@DeclareLang#1#2#3{%
3291   \@ifpackagewith{babel}{#1}{%
3292     \expandafter\HyLang@addto
3293     \csname extras#1\expandafter\endcsname
3294     \csname HyLang@#2\endcsname
3295     \begingroup
3296     \edef\x{\endgroup
3297       #3%
3298     }%
3299     \x
3300     \@namedef{HyLang@#1@done}{}%
3301   }{%
3302     \begingroup
3303     \edef\x##1##2{%
3304       \noexpand\ifx##2\relax
3305         \errmessage{No definitions for language #2' found!}%
3306       \noexpand\fi
3307     \endgroup
3308     \noexpand\define@key{Hyp}{#1}[]{}%

```

```

3309 \noexpand\@ifundefined{HyLang@#1@done}{}%
3310 \noexpand\HyLang@addto{\noexpand##1}{\noexpand##2}%
3311 #3%
3312 \noexpand\@namedef{HyLang@#1@done}{}%
3313 }{}%
3314 }%
3315 }%
3316 \expandafter\x\csname extras#1\expandafter\endcsname
3317 \csname HyLang@#2\endcsname
3318 }
3319 \HyLang@DeclareLang{english}{english}{}
3320 \HyLang@DeclareLang{UKenglish}{english}{}
3321 \HyLang@DeclareLang{british}{english}{}
3322 \HyLang@DeclareLang{USenglish}{english}{}
3323 \HyLang@DeclareLang{american}{english}{}
3324 \HyLang@DeclareLang{german}{german}{}
3325 \HyLang@DeclareLang{austrian}{german}{}
3326 \HyLang@DeclareLang{ngerman}{german}{}
3327 \HyLang@DeclareLang{naustrian}{german}{}
3328 \HyLang@DeclareLang{russian}{russian}{\noexpand\hypersetup{unicode}}
3329 \HyLang@DeclareLang{brazil}{portuges}{}
3330 \HyLang@DeclareLang{brazilian}{portuges}{}
3331 \HyLang@DeclareLang{portuguese}{portuges}{}
3332 \HyLang@DeclareLang{spanish}{spanish}{}
3333 \HyLang@DeclareLang{afrikaans}{afrikaans}{}
3334 \HyLang@DeclareLang{french}{french}{}
3335 \HyLang@DeclareLang{frenchb}{french}{}
3336 \HyLang@DeclareLang{français}{french}{}
3337 \HyLang@DeclareLang{acadian}{french}{}
3338 \HyLang@DeclareLang{canadien}{french}{}
3339 \HyLang@DeclareLang{italian}{italian}{}
3340 \HyLang@DeclareLang{magyar}{magyar}{}
3341 \HyLang@DeclareLang{hungarian}{magyar}{}

```

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

```

3342 \DeclareVoidOption{vietnamese}{}%
3343 \HyLang@addto\extrasvietnamese\HyLang@vietnamese
3344 \Hy@AtEndOfPackage{%
3345 \@ifundefined{T@PU}{}{}%
3346 \input{pvnenc.def}%
3347 }%
3348 }%
3349 }
3350 \DeclareVoidOption{vietnam}{}%
3351 \HyLang@addto\extravietnam\HyLang@vietnamese
3352 \Hy@AtEndOfPackage{%
3353 \@ifundefined{T@PU}{}{}%
3354 \input{pvnenc.def}%
3355 }%
3356 }%
3357 }

```

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

```

3358 \DeclareVoidOption{arabic}{}%
3359 \Hy@AtEndOfPackage{%
3360 \@ifundefined{T@PU}{}{}%
3361 \input{puarenc.def}%
3362 }%

```

```

3363 }%
3364 }

```

## 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.

```

3365 \define@key{Hyp}{colorlinks}[true]{%
3366   \Hy@boolkey{colorlinks}{#1}%
3367 }
3368 \define@key{Hyp}{ocgcolorlinks}[true]{%
3369   \Hy@boolkey{ocgcolorlinks}{#1}%
3370 }
3371 \Hy@AtBeginDocument{%
3372   \begingroup
3373     \ifundefined{OBJ@OCG@view}{%
3374       \ifHy@ocgcolorlinks
3375         \Hy@Warning{%
3376           Driver does not support ‘ocgcolorlinks’,\MessageBreak
3377             using ‘colorlinks’ instead%
3378         }%
3379       \fi
3380     }{}%
3381   \endgroup
3382 }
3383 \define@key{Hyp}{frenchlinks}[true]{%
3384   \Hy@boolkey{frenchlinks}{#1}%
3385 }

```

## 14 Bookmarking

```

3386 \begingroup\expandafter\expandafter\expandafter\endgroup
3387 \expandafter\ifx\csname chapter\endcsname\relax
3388   \def\toclevel@part{0}%
3389 \else
3390   \def\toclevel@part{-1}%
3391 \fi
3392 \def\toclevel@chapter{0}
3393 \def\toclevel@section{1}
3394 \def\toclevel@subsection{2}
3395 \def\toclevel@subsubsection{3}
3396 \def\toclevel@paragraph{4}
3397 \def\toclevel@subparagraph{5}
3398 \def\toclevel@figure{0}
3399 \def\toclevel@table{0}
3400 \ifpackageloaded{listings}{%
3401   \providecommand*\theHlstlisting{\thelstlisting}%
3402   \providecommand*\toclevel@lstlisting{0}%
3403 }{}
3404 \ifpackageloaded{listing}{%
3405   \providecommand*\theHlisting{\thelisting}%
3406   \providecommand*\toclevel@listing{0}%
3407 }{}
3408 \define@key{Hyp}{bookmarks}[true]{%
3409   \Hy@boolkey{bookmarks}{#1}%
3410 }

```

```

3411 \define@key{Hyp}{bookmarksopen}[true]{%
3412   \Hy@boolkey{bookmarksopen}{#1}%
3413 }

```

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.

```

3414 \let\Hy@bookmarksdepth\c@tocdepth
3415 \define@key{Hyp}{bookmarksdepth}[]{%
3416   \begingroup
3417     \edef\x{#1}%
3418     \ifx\x\empty
3419       \global\let\Hy@bookmarksdepth\c@tocdepth
3420     \else
3421       \ifundefined{toclevel@\x}{%
3422         \@onelevel@sanitize\x
3423         \edef\y{\expandafter\@car\x\@nil}%
3424         \ifcase 0\expandafter\ifx\y-1\fi
3425           \expandafter\ifnum\expandafter\y>47 %
3426             \expandafter\ifnum\expandafter\y<58 1\fi\fi\relax
3427           \Hy@Warning{Unknown document division name (\x)}%
3428         \else
3429           \setbox\z@=\hbox{%
3430             \count@=\x
3431             \xdef\Hy@bookmarksdepth{\the\count@}%
3432           }%
3433         \fi
3434       }{%
3435         \setbox\z@=\hbox{%
3436           \count@=\csname toclevel@\x\endcsname
3437           \xdef\Hy@bookmarksdepth{\the\count@}%
3438         }%
3439       }%
3440     \fi
3441   \endgroup
3442 }

```

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

```

3443 \define@key{Hyp}{bookmarksopenlevel}{%
3444   \def\@bookmarksopenlevel{#1}%
3445 }
3446 \def\@bookmarksopenlevel{\maxdimen}
3447 % ‘bookmarkstype’ to specify which ‘toc’ file to mimic
3448 \define@key{Hyp}{bookmarkstype}{%
3449   \def\Hy@bookmarkstype{#1}%
3450 }
3451 \def\Hy@bookmarkstype{toc}

```

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

```

3452 \define@key{Hyp}{bookmarksnumbered}[true]{%

```



```

3453 \Hy@boolkey{bookmarksnumbered}{#1}%
3454 }

Option CJKbookmarks enables the patch for CJK bookmarks.

3455 \define@key{Hyp}{CJKbookmarks}[true]{%
3456 \Hy@boolkey{CJKbookmarks}{#1}%
3457 }

3458 \def\Hy@temp#1{%
3459 \expandafter\Hy@@temp\csname @#1color\endcsname{#1}%
3460 }
3461 \def\Hy@@temp#1#2#3{%
3462 \define@key{Hyp}{#2color}{%
3463 \HyColor@HyperrefColor{##1}#1%
3464 }%
3465 \def#1{#3}%
3466 }
3467 \Hy@temp{link}{red}
3468 \Hy@temp{anchor}{black}
3469 \Hy@temp{cite}{green}
3470 \Hy@temp{file}{cyan}
3471 \Hy@temp{url}{magenta}
3472 \Hy@temp{menu}{red}
3473 \Hy@temp{run}{\@filecolor}
3474 \define@key{Hyp}{pagecolor}{%
3475 \Hy@WarningPageColor
3476 }
3477 \def\Hy@WarningPageColor{%
3478 \Hy@WarningNoLine{Option 'pagecolor' is not available anymore}%
3479 \global\let\Hy@WarningPageColor\relax
3480 }

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

```

## 15 PDF-specific options

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

```

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

```

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

```

3491 \let\@pdfpageduration\relax
3492 \define@key{Hyp}{pdfpageduration}{%
3493 \def\@pdfpageduration{#1}%
3494 \Hy@Match\@pdfpageduration{%
3495 ^([0-9]+\.[0-9]*|[0-9]*\.[0-9]+)$%

```

```

3496 }{}{%
3497   \Hy@Warning{%
3498     Invalid value '\@pdfpageduration'\MessageBreak
3499     of option 'pdfpageduration'\MessageBreak
3500     is replaced by an empty value%
3501   }%
3502   \let\@pdfpageduration\ltx@empty
3503 }%
3504 }

```

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.

```

3505 \newif\ifHy@useHidKey
3506 \Hy@useHidKeyfalse
3507 \define@key{Hyp}{pdfpagehidden}[true]{%
3508   \Hy@boolkey{pdfpagehidden}{#1}%
3509   \ifHy@pdfpagehidden
3510     \global\Hy@useHidKeytrue
3511   \fi
3512 }

```

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).

```

3513 \def\Hy@ColorList{cite,file,link,menu,run,url}
3514 \@for\Hy@temp:=\Hy@ColorList\do{%
3515   \edef\Hy@temp{%
3516     \noexpand\define@key{Hyp}{\Hy@temp bordercolor}{%
3517       \noexpand\Hy@Color@HyperrefBorderColor
3518       {##1}%
3519       \expandafter\noexpand\csname @\Hy@temp bordercolor\endcsname
3520       {hyperref}%
3521       {\Hy@temp bordercolor}%
3522     }%
3523   }%
3524   \Hy@temp
3525 }
3526 \define@key{Hyp}{pagebordercolor}{%
3527   \Hy@WarningPageBorderColor
3528 }
3529 \def\Hy@WarningPageBorderColor{%
3530   \Hy@WarningNoLine{Option 'pagebordercolor' is not available anymore}%
3531   \global\let\Hy@WarningPageBorderColor\relax
3532 }
3533 \define@key{Hyp}{pdfhighlight}{\def\@pdfhighlight{#1}}
3534 \Hy@DefNameKey{pdfhighlight}{%
3535   \do{/I}{Invert}%
3536   \do{/N}{None}%
3537   \do{/O}{Outline}%
3538   \do{/P}{Push}%
3539 }
3540 \define@key{Hyp}{pdfborder}{%

```

```

3541 \let\Hy@temp\@pdfborder
3542 \def\@pdfborder{#1}%
3543 \Hy@Match\@pdfborder{%
3544   ^\HyPat@NonNegativeReal/ %
3545   \HyPat@NonNegativeReal/ %
3546   \HyPat@NonNegativeReal/%
3547   ( ?[\HyPat@NonNegativeReal/( \HyPat@NonNegativeReal/))*]?%%
3548 }{}{%
3549   \Hy@Warning{%
3550     Invalid value '\@pdfborder'\MessageBreak
3551     for option 'pdfborder'\MessageBreak
3552     Option setting is ignored%
3553   }%
3554   \let\@pdfborder\Hy@temp
3555 }%
3556 }
3557 \define@key{Hyp}{pdfborderstyle}{%
3558   \let\Hy@temp\@pdfborderstyle
3559   \def\@pdfborderstyle{#1}%
3560   \Hy@Match\@pdfborderstyle{%
3561     ^%
3562     ( */Type */Border%
3563     | */W +\HyPat@NonNegativeReal/%
3564     | */S */[SDBIU]%
3565     | */D *[ ( \HyPat@NonNegativeReal/( \HyPat@NonNegativeReal/))]?)%
3566     )* *%%
3567 }{}{%
3568   \Hy@Warning{%
3569     Invalid value '\@pdfborderstyle'\MessageBreak
3570     for option 'pdfborderstyle'\MessageBreak
3571     Option setting is ignored%
3572   }%
3573   \let\@pdfborderstyle\Hy@temp
3574 }%
3575 }
3576 \def\Hy@setpdfborder{%
3577   \ifx\@pdfborder\@empty
3578   \else
3579     /Border[\@pdfborder]%
3580   \fi
3581   \ifx\@pdfborderstyle\@empty
3582   \else
3583     /BS<<\@pdfborderstyle>>%
3584   \fi
3585 }
3586 \Hy@DefNameKey{pdfpagemode}{%
3587   \do{UseNone}{}%
3588   \do{UseOutlines}{}%
3589   \do{UseThumbs}{}%
3590   \do{FullScreen}{}%
3591   \do{UseOC}{PDF 1.5}%
3592   \do{UseAttachments}{PDF 1.6}%
3593 }
3594 \Hy@DefNameKey{pdfnonfullscreenpagemode}{%
3595   \do{UseNone}{}%
3596   \do{UseOutlines}{}%
3597   \do{UseThumbs}{}%

```

```

3598 \do{FullScreen}{}%
3599 \do{UseOC}{PDF 1.5}%
3600 \do{UseAttachments}{PDF 1.6}%
3601 }
3602 \Hy@DefNameKey{pdfdirection}{%
3603 \do{L2R}{Left to right}%
3604 \do{R2L}{Right to left}%
3605 }
3606 \Hy@DefNameKey{pdfviewarea}{%
3607 \do{MediaBox}{}%
3608 \do{CropBox}{}%
3609 \do{BleedBox}{}%
3610 \do{TrimBox}{}%
3611 \do{ArtBox}{}%
3612 }
3613 \Hy@DefNameKey{pdfviewclip}{%
3614 \do{MediaBox}{}%
3615 \do{CropBox}{}%
3616 \do{BleedBox}{}%
3617 \do{TrimBox}{}%
3618 \do{ArtBox}{}%
3619 }
3620 \Hy@DefNameKey{pdfprintarea}{%
3621 \do{MediaBox}{}%
3622 \do{CropBox}{}%
3623 \do{BleedBox}{}%
3624 \do{TrimBox}{}%
3625 \do{ArtBox}{}%
3626 }
3627 \Hy@DefNameKey{pdfprintclip}{%
3628 \do{MediaBox}{}%
3629 \do{CropBox}{}%
3630 \do{BleedBox}{}%
3631 \do{TrimBox}{}%
3632 \do{ArtBox}{}%
3633 }
3634 \Hy@DefNameKey{pdfprintscaling}{%
3635 \do{AppDefault}{}%
3636 \do{None}{}%
3637 }
3638 \Hy@DefNameKey{pdfduplex}{%
3639 \do{Simplex}{}%
3640 \do{DuplexFlipShortEdge}{}%
3641 \do{DuplexFlipLongEdge}{}%
3642 }
3643 \Hy@DefNameKey{pdfpicktraybypdfsize}{%
3644 \do{true}{}%
3645 \do{false}{}%
3646 }
3647 \define@key{Hyp}{pdfprintpagerange}{%
3648 \def\@pdfprintpagerange{#1}%
3649 }
3650 \Hy@DefNameKey{pdfnumcopies}{%
3651 \do{2}{two copies}%
3652 \do{3}{three copies}%
3653 \do{4}{four copies}%
3654 \do{5}{five copies}%

```

```

3655 }
3656 \define@key{Hyp}{pdfusetitle}[true]{%
3657   \Hy@boolkey[pdfusetitle]{usetitle}{#1}%
3658 }
3659 \def\HyXeTeX@CheckUnicode{%
3660   \ifxetex
3661     \ifHy@unicode
3662     \else
3663       \Hy@WarningNoLine{%
3664         XeTeX driver only supports unicode.\MessageBreak
3665         Enabling option 'unicode'%
3666       }%
3667       \kvsetkeys{Hyp}{unicode}%
3668     \fi
3669   \else
3670     \let\HyXeTeX@CheckUnicode\relax
3671   \fi
3672 }
3673 \def\HyPsd@PrerenderUnicode#1{%
3674   \begingroup
3675   \expandafter\ifx\csname PrerenderUnicode\endcsname\relax
3676   \else
3677     \sbox0{%
3678       \let\GenericInfo\@gobbletwo
3679       \let\GenericWarning\@gobbletwo
3680       \let\GenericError\@gobblefour
3681       \PrerenderUnicode{#1}%
3682     }%
3683   \fi
3684   \endgroup
3685 }
3686 \define@key{Hyp}{pdftitle}{%
3687   \HyXeTeX@CheckUnicode
3688   \HyPsd@XeTeXBigCharstrue
3689   \HyPsd@PrerenderUnicode{#1}%
3690   \pdfstringdef\@pdftitle{#1}%
3691 }
3692 \define@key{Hyp}{pdfauthor}{%
3693   \HyXeTeX@CheckUnicode
3694   \HyPsd@XeTeXBigCharstrue
3695   \HyPsd@PrerenderUnicode{#1}%
3696   \pdfstringdef\@pdfauthor{#1}%
3697 }
3698 \define@key{Hyp}{pdfproducer}{%
3699   \HyXeTeX@CheckUnicode
3700   \HyPsd@XeTeXBigCharstrue
3701   \HyPsd@PrerenderUnicode{#1}%
3702   \pdfstringdef\@pdfproducer{#1}%
3703 }
3704 \define@key{Hyp}{pdfcreator}{%
3705   \HyXeTeX@CheckUnicode
3706   \HyPsd@XeTeXBigCharstrue
3707   \HyPsd@PrerenderUnicode{#1}%
3708   \pdfstringdef\@pdfcreator{#1}%
3709 }
3710 \define@key{Hyp}{pdfcreationdate}{%
3711   \begingroup

```

```

3712 \Hy@unicodedefalse
3713 \pdfstringdef\@pdfcreationdate{#1}%
3714 \endgroup
3715 }
3716 \define@key{Hyp}{pdfmoddate}{%
3717 \begingroup
3718 \Hy@unicodedefalse
3719 \pdfstringdef\@pdfmoddate{#1}%
3720 \endgroup
3721 }
3722 \define@key{Hyp}{pdfsubject}{%
3723 \HyXeTeX@CheckUnicode
3724 \HyPsd@XeTeXBigCharstrue
3725 \HyPsd@PrerenderUnicode{#1}%
3726 \pdfstringdef\@pdfsubject{#1}%
3727 }
3728 \define@key{Hyp}{pdfkeywords}{%
3729 \HyXeTeX@CheckUnicode
3730 \HyPsd@XeTeXBigCharstrue
3731 \HyPsd@PrerenderUnicode{#1}%
3732 \pdfstringdef\@pdfkeywords{#1}%
3733 }
3734 \define@key{Hyp}{pdftrapped}{%
3735 \lowercase{\edef\Hy@temp{#1}}%
3736 \ifx\Hy@temp\HyInfo@trapped@true
3737 \def\@pdftrapped{True}%
3738 \else
3739 \ifx\Hy@temp\HyInfo@trapped@false
3740 \def\@pdftrapped{False}%
3741 \else
3742 \ifx\Hy@temp\HyInfo@trapped@unknown
3743 \def\@pdftrapped{Unknown}%
3744 \else
3745 \ifx\Hy@temp\@empty
3746 \else
3747 \Hy@Warning{%
3748 Unsupported value '#1'\MessageBreak
3749 for option 'pdftrapped'%
3750 }%
3751 \fi
3752 \def\@pdftrapped{}%
3753 \fi
3754 \fi
3755 \fi
3756 }
3757 \def\HyInfo@trapped@true{true}
3758 \def\HyInfo@trapped@false{false}
3759 \def\HyInfo@trapped@unknown{unknown}
3760 \def\HyInfo@TrappedUnsupported{%
3761 \ifx\@pdftrapped\@empty
3762 \else
3763 \Hy@WarningNoLine{'pdftrapped' is not supported by this driver}%
3764 \gdef\HyInfo@TrappedUnsupported{}%
3765 \fi
3766 }
3767 \define@key{Hyp}{pdfinfo}{%
3768 \kvsetkeys{pdfinfo}{#1}%

```

```

3769 }
3770 \def\Hy@temp#1{%
3771   \lowercase{\Hy@temp@A{#1}}{#1}%
3772 }
3773 \def\Hy@temp@A#1#2{%
3774   \define@key{pdfinfo}{#2}{%
3775     \hypersetup{pdf#1={##1}}%
3776   }%
3777 }
3778 \Hy@temp{Title}
3779 \Hy@temp{Author}
3780 \Hy@temp{Keywords}
3781 \Hy@temp{Subject}
3782 \Hy@temp{Creator}
3783 \Hy@temp{Producer}
3784 \Hy@temp{CreationDate}
3785 \Hy@temp{ModDate}
3786 \Hy@temp{Trapped}
3787 \newif\ifHyInfo@AddonUnsupported
3788 \kv@set@family@handler{pdfinfo}{%
3789   \HyInfo@AddonHandler{#1}{#2}%
3790 }
3791 \let\HyInfo@do\relax
3792 \def\HyInfo@AddonHandler#1#2{%
3793   \ifx\kv@value\relax
3794     \Hy@Warning{%
3795       Option 'pdfinfo': ignoring key '\kv@key' without value%
3796     }%
3797   \else
3798     \EdefEscapeName\HyInfo@KeyEscaped{\kv@key}%
3799     \EdefUnescapeName\HyInfo@Key{\HyInfo@KeyEscaped}%
3800     \expandafter\ifx\csname KV@pdfinfo@\HyInfo@Key\endcsname\relax
3801       \ifHyInfo@AddonUnsupported
3802         \Hy@Warning{%
3803           This driver does not support additional\MessageBreak
3804           information entries, therefore\MessageBreak
3805           '\kv@key' is ignored%
3806         }%
3807       \else
3808         \define@key{pdfinfo}{\HyInfo@Key}{%
3809           \HyXeTeX@CheckUnicode
3810           \HyPsd@XeTeXBigCharstrue
3811           \HyPsd@PrerenderUnicode{##1}%
3812           \pdfstringdef\HyInfo@Value{##1}%
3813           \expandafter\let\csname HyInfo@Value@\HyInfo@Key\endcsname
3814             \HyInfo@Value
3815         }%
3816       \edef\HyInfo@AddonList{%
3817         \HyInfo@AddonList
3818         \HyInfo@do{\HyInfo@Key}%
3819       }%
3820       \kv@parse@normalized{%
3821         \HyInfo@Key={#2}%
3822       }{%
3823         \kv@processor@default{pdfinfo}%
3824       }%
3825     \fi

```

```

3826 \else
3827 \kv@parse@normalized{%
3828 \HyInfo@Key={#2}%
3829 }{%
3830 \kv@processor@default{pdfinfo}%
3831 }%
3832 \fi
3833 \fi
3834 }
3835 \def\HyInfo@GenerateAddons{%
3836 \ifHyInfo@AddonUnsupported
3837 \def\HyInfo@Addons{}%
3838 \else
3839 \beginingroup
3840 \toks@{}%
3841 \def\HyInfo@do##1{%
3842 \EdefEscapeName\HyInfo@Key{##1}%
3843 \edef\x{%
3844 \toks@{%
3845 \the\toks@
3846 /\HyInfo@Key(\csname HyInfo@Value@##1\endcsname)%
3847 }%
3848 }%
3849 \x
3850 }%
3851 \HyInfo@AddonList
3852 \edef\x{\endgroup
3853 \def\noexpand\HyInfo@Addons{\the\toks@}%
3854 }%
3855 \x
3856 \fi
3857 }
3858 \def\HyInfo@AddonList{}
3859 \define@key{Hyp}{pdfview}{\calculate@pdfview#1 \}
3860 \define@key{Hyp}{pdfinkmargin}{\setpdfinkmargin{#1}}
3861 \let\setpdfinkmargin\gobble
3862 \def\calculate@pdfview#1 #2\{%
3863 \def\@pdfview{#1}%
3864 \ifx\#2\%
3865 \def\@pdfviewparams{-32768}%
3866 \else
3867 \def\@pdfviewparams{#2}%
3868 \fi
3869 }
3870 \beginingroup\expandafter\expandafter\expandafter\endgroup
3871 \expandafter\ifx\csname numexpr\endcsname\relax
3872 \def\Hy@number#1{%
3873 \expandafter\@firstofone\expandafter{\number#1}%
3874 }%
3875 \else
3876 \def\Hy@number#1{%
3877 \the\numexpr#1\relax
3878 }%
3879 \fi
3880 \define@key{Hyp}{pdfstartpage}{%
3881 \ifx\#1\%
3882 \def\@pdfstartpage{}%

```



```

3883 \else
3884 \edef\@pdfstartpage{\Hy@number{#1}}%
3885 \fi
3886 }%
3887 \define@key{Hyp}{pdfstartview}{%
3888 \ifx\#1\%
3889 \def\@pdfstartview{}%
3890 \else
3891 \hypercalcbpdef\@pdfstartview{/#1}%
3892 \fi
3893 }
3894 \def\HyPat@NonNegativeReal/{%
3895 \ *([0-9]+\.[0-9]*|[0-9]*\.[0-9]+) *%
3896 }
3897 \define@key{Hyp}{pdfremotestartview}{%
3898 \ifx\#1\%
3899 \def\@pdfremotestartview{/Fit}%
3900 \else
3901 \hypercalcbpdef\@pdfremotestartview{#1}%
3902 \edef\@pdfremotestartview{\@pdfremotestartview}%
3903 \Hy@Match\@pdfremotestartview{%
3904 ^{XYZ -(null|\HyPat@NonNegativeReal/) %
3905 -(null|\HyPat@NonNegativeReal/) %
3906 (null|\HyPat@NonNegativeReal/)| %
3907 Fit|B| %
3908 (H|V|BH|BV) (null|\HyPat@NonNegativeReal/)| %
3909 R \HyPat@NonNegativeReal/ \HyPat@NonNegativeReal/ %
3910 \HyPat@NonNegativeReal/ \HyPat@NonNegativeReal/%
3911 )}$%
3912 }{}{%
3913 \Hy@Warning{%
3914 Invalid value '\@pdfremotestartview'\MessageBreak
3915 of 'pdfremotestartview'\MessageBreak
3916 is replaced by 'Fit'%
3917 }%
3918 \let\@pdfremotestartview\@empty
3919 }%
3920 \ifx\@pdfremotestartview\@empty
3921 \def\@pdfremotestartview{/Fit}%
3922 \else
3923 \edef\@pdfremotestartview{/ \@pdfremotestartview}%
3924 \fi
3925 \fi
3926 }
3927 \define@key{Hyp}{pdfpagescrop}{\edef\@pdfpagescrop{#1}}
3928 \define@key{Hyp}{pdftoolbar}[true]{%
3929 \Hy@boolkey[pdftoolbar]{toolbar}{#1}%
3930 }
3931 \define@key{Hyp}{pdfmenubar}[true]{%
3932 \Hy@boolkey[pdfmenubar]{menubar}{#1}%
3933 }
3934 \define@key{Hyp}{pdfwindowui}[true]{%
3935 \Hy@boolkey[pdfwindowui]{windowui}{#1}%
3936 }
3937 \define@key{Hyp}{pdffitwindow}[true]{%
3938 \Hy@boolkey[pdffitwindow]{fitwindow}{#1}%
3939 }

```

```

3940 \define@key{Hyp}{pdfcenterwindow}[true]{%
3941   \Hy@boolkey[pdfcenterwindow]{centerwindow}{#1}%
3942 }
3943 \define@key{Hyp}{pdfdisplaydoctitle}[true]{%
3944   \Hy@boolkey[pdfdisplaydoctitle]{displaydoctitle}{#1}%
3945 }
3946 \define@key{Hyp}{pdfa}[true]{%
3947   \Hy@boolkey[pdfa]{#1}%
3948 }
3949 \define@key{Hyp}{pdfnewwindow}[true]{%
3950   \def\Hy@temp{#1}%
3951   \ifx\Hy@temp\empty
3952     \Hy@newwindowsetfalse
3953   \else
3954     \Hy@newwindowsettrue
3955     \Hy@boolkey[pdfnewwindow]{newwindow}{#1}%
3956   \fi
3957 }
3958 \def\Hy@SetNewWindow{%
3959   \ifHy@newwindowset
3960     /NewWindow %
3961   \ifHy@newwindow true\else false\fi
3962   \fi
3963 }
3964 \Hy@DefNameKey{pdfpagelayout}{%
3965   \do{SinglePage}{}%
3966   \do{OneColumn}{}%
3967   \do{TwoColumnLeft}{}%
3968   \do{TwoColumnRight}{}%
3969   \do{TwoPageLeft}{PDF 1.5}%
3970   \do{TwoPageRight}{PDF 1.5}%
3971 }
3972 \define@key{Hyp}{pdflang}{%
3973   \def\@pdflang{#1}%
3974 }
3975 \define@key{Hyp}{pdfpagelabels}[true]{%
3976   \Hy@boolkey[pdfpagelabels]{pagelabels}{#1}%
3977 }
3978 \define@key{Hyp}{pdfescapeform}[true]{%
3979   \Hy@boolkey[pdfescapeform]{escapeform}{#1}%
3980 }

```

Default values:

```

3981 \def\@linkbordercolor{1 0 0}
3982 \def\@urlbordercolor{0 1 1}
3983 \def\@menubordercolor{1 0 0}
3984 \def\@filebordercolor{0 .5 .5}
3985 \def\@runbordercolor{0 .7 .7}
3986 \def\@citebordercolor{0 1 0}
3987 \def\@pdfhighlight{/I}
3988 \def\@pdftitle{}
3989 \def\@pdfauthor{}
3990 \let\@pdfproducer\relax
3991 \def\@pdfcreator{LaTeX with hyperref package}
3992 \def\@pdfcreationdate{}
3993 \def\@pdfmoddate{}
3994 \def\@pdfsubject{}
3995 \def\@pdfkeywords{}

```

```

3996 \def\@pdftrapped{}
3997 \def\@pdfpagescrop{}
3998 \def\@pdfstartview{/Fit}
3999 \def\@pdfremotestartview{/Fit}
4000 \def\@pdfstartpage{1}
4001 \def\@pdfprintpagerange{}
4002 \def\@pdflang{}
4003 \let\PDF@SetupDoc\@empty
4004 \let\PDF@FinishDoc\@empty
4005 \let\phantomsection\@empty
4006 \let\special@paper\@empty
4007 \def\HyperDestNameFilter#1{#1}
4008 \Hy@AtBeginDocument{%
4009   \begingroup
4010     \edef\x{\@ifundefined{stockheight}\paperheight\stockheight}%
4011     \dimen@=\x\relax
4012     \ifdim\dimen@>\z@
4013     \else
4014       \dimen@=11in\relax
4015       \Hy@WarningNoLine{%
4016         Height of page (\expandafter\string\x) %
4017         is invalid (\the\x),\MessageBreak
4018         using 11in%
4019       }%
4020     \fi
4021     \dimen@=0.99626401\dimen@
4022     \xdef\Hy@pageheight{\strip@pt\dimen@}%
4023   \endgroup
4024 }
4025 \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.

```

4026 \let\hyper@normalise\ExecuteOptions
4027 \let\ExecuteOptions\hypersetup
4028 \Hy@RestoreCatcodes
4029 \InputIfFileExists{hyperref.cfg}{\}{}
4030 \Hy@SetCatcodes
4031 \let\ExecuteOptions\hyper@normalise
4032 \Hy@MaybeStopNow

```

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.

```

4033 \SetupKeyvalOptions{family=Hyp}
4034 \DeclareLocalOptions{%
4035   a4paper,a5paper,b5paper,letterpaper,legalpaper,executivepaper%
4036 }

```

Add option tex4ht if package tex4ht is loaded.

```

4037 \ifpackageloaded{tex4ht}{%
4038   \ifpackagewith{hyperref}{tex4ht}{\}{}%
4039   \PassOptionsToPackage{tex4ht}{hyperref}%
4040 }%
4041 \}{}

4042 \let\ReadBookmarks\relax
4043 \ProcessKeyvalOptions{Hyp}

```

After processing options.

```
4044 \Hy@AtBeginDocument{%
4045   \ifHy@draft
4046     \let\hyper@@anchor\@gobble
4047     \gdef\hyper@link#1#2#3{#3}%
4048     \let\hyper@anchorstart\@gobble
4049     \let\hyper@anchorend\@empty
4050     \let\hyper@linkstart\@gobbletwo
4051     \let\hyper@linkend\@empty
4052     \def\hyper@linkurl#1#2{#1}%
4053     \def\hyper@linkfile#1#2#3{#1}%
4054     \def\hyper@link@{#1}#2#3{}%
4055     \def\Acrobatmenu#1#2{\leavevmode#2}%
4056     \let\PDF@SetupDoc\@empty
4057     \let\PDF@FinishDoc\@empty
4058     \let\@fifthoffive\@secondoftwo
4059     \let\@secondoffive\@secondoftwo
4060     \let\ReadBookmarks\relax
4061     \let\WriteBookmarks\relax
4062     \Hy@WarningNoLine{Draft mode on}%
4063   \fi
4064   \Hy@DisableOption{draft}%
4065   \Hy@DisableOption{nolinks}%
4066   \Hy@DisableOption{final}%
4067 }
```

## 15.1 PDF/A

```
4068 \Hy@DisableOption{pdfa}
4069 \ifHy@pdfa
4070   \kvsetkeys{Hyp}{pdfversion=1.4}%
4071   \def\Hy@Acrobatmenu#1#2{%
4072     \leavevmode
4073     \begingroup
4074       \edef\x{#1}%
4075       \@onelevel@sanitize\x
4076       \ifx\x\Hy@NextPage
4077         \let\y=Y%
4078       \else
4079         \ifx\x\Hy@PrevPage
4080           \let\y=Y%
4081         \else
4082           \ifx\x\Hy@FirstPage
4083             \let\y=Y%
4084           \else
4085             \ifx\x\Hy@LastPage
4086               \let\y=Y%
4087             \else
4088               \let\y=N%
4089             \fi
4090           \fi
4091         \fi
4092       \expandafter\endgroup
4093       \ifx\y Y%
4094       \else
```

```

4096 \Hy@Error{%
4097 PDF/A: Named action '#1' is not permitted%
4098 } \@ehc
4099 {#2}%
4100 \expandafter \@gobble
4101 \fi
4102 }%
4103 \def\Hy@temp#1{%
4104 \expandafter\def\csname Hy@#1\endcsname{#1}%
4105 \expandafter \@onelevel@sanitize\csname Hy@#1\endcsname
4106 }%
4107 \Hy@temp{NextPage}%
4108 \Hy@temp{PrevPage}%
4109 \Hy@temp{FirstPage}%
4110 \Hy@temp{LastPage}%
4111 \else
4112 \def\Hy@Acrobatmenu#1#2{\leavevmode}%
4113 \fi

```

## 15.2 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.

```

4114 \Hy@nextfalse
4115 \ltx@ifundefined{spanish@sh@}{\Hy@nexttrue}
4116 \ltx@ifundefined{galician@sh@}{\Hy@nexttrue}
4117 \ltx@ifundefined{estonian@sh@}{\Hy@nexttrue}
4118 \ifHy@next
4119 \let\texttilde\~%
4120 \fi

4121 \def\Hy@wrapper@babel#1#2{%
4122 \begingroup
4123 \Hy@safe@activetrue
4124 \set@display@protect
4125 \edef\x{#2}%
4126 \@onelevel@sanitize\x
4127 \toks@{#1}%
4128 \edef\x{\endgroup\the\toks@{\x}}%
4129 \x
4130 }

4131 \def\Hy@WrapperDef#1{%
4132 \begingroup
4133 \escapechar=\m@ne
4134 \xdef\Hy@gtemp{%
4135 \expandafter\noexpand\csname HyWrap@\string#1\endcsname
4136 }%
4137 \endgroup
4138 \edef#1{%
4139 \noexpand\Hy@wrapper@babel
4140 \expandafter\noexpand\Hy@gtemp
4141 }%
4142 \expandafter\def\Hy@gtemp
4143 }

4144 \ifHy@figures
4145 \Hy@Info{Hyper figures ON}%
4146 \else
4147 \Hy@Info{Hyper figures OFF}%

```

```

4148 \fi
4149 \ifHy@nesting
4150   \Hy@Info{Link nesting ON}%
4151 \else
4152   \Hy@Info{Link nesting OFF}%
4153 \fi
4154 \ifHy@hyperindex
4155   \Hy@Info{Hyper index ON}%
4156 \else
4157   \Hy@Info{Hyper index OFF}%
4158 \fi
4159 \ifHy@plainpages
4160   \Hy@Info{Plain pages ON}%
4161 \else
4162   \Hy@Info{Plain pages OFF}%
4163 \fi
4164 \ifHy@backref
4165   \Hy@Info{Backreferencing ON}%
4166 \else
4167   \Hy@Info{Backreferencing OFF}%
4168 \fi
4169 \ifHy@typexml
4170   \Hy@AtEndOfPackage{%
4171     \RequirePackage{color}%
4172     \RequirePackage{nameref}%
4173   }%
4174 \fi
4175 \Hy@DisableOption{typexml}
4176 \ifHy@implicit
4177   \Hy@InfoNoLine{Implicit mode ON; LaTeX internals redefined}%
4178 \else
4179   \Hy@InfoNoLine{Implicit mode OFF; no redefinition of LaTeX internals}%
4180   \def\MaybeStopEarly{%
4181     \Hy@Message{Stopped early}%
4182     \Hy@AtBeginDocument{%
4183       \PDF@FinishDoc
4184       \gdef\PDF@FinishDoc{}%
4185     }%
4186     \endinput
4187   }%
4188   \Hy@AtBeginDocument{%
4189     \let\autoref\ref
4190     \let\autopageref\pageref
4191     \ifx\@pdfpagemode\@empty
4192       \gdef\@pdfpagemode{UseNone}%
4193     \fi
4194     \global\Hy@backreffalse
4195   }%
4196   \Hy@AtEndOfPackage{%
4197     \global\let\ReadBookmarks\relax
4198     \global\let\WriteBookmarks\relax
4199   }%
4200 \fi
4201 \Hy@DisableOption{implicit}

```

### 15.2.1 Driver loading

```

4202 \Hy@AtEndOfPackage{%
4203   \@ifpackageloaded{tex4ht}{%
4204     \def\Hy@driver{htex4ht}%
4205     \Hy@texhttrue
4206   }{}%

```

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.

```

4207   \ifx\Hy@driver\@empty
4208   \else
4209     \def\Hy@temp{hpdfTeX}%
4210     \ifpdf
4211       \ifx\Hy@driver\Hy@temp
4212       \else
4213         \Hy@WarningNoLine{%
4214           Wrong driver ‘\Hy@driver.def’;\MessageBreak
4215           pdfTeX is running in PDF mode.\MessageBreak
4216           Forcing driver ‘\Hy@temp.def’%
4217         }%
4218         \let\Hy@driver\Hy@temp
4219       \fi
4220     \else
4221       \ifx\Hy@driver\Hy@temp
4222       \Hy@WarningNoLine{%
4223         Wrong driver ‘\Hy@driver.def’;\MessageBreak
4224         pdfTeX is not running in PDF mode.\MessageBreak
4225         Using default driver%
4226       }%
4227       \let\Hy@driver\@empty
4228     \fi
4229   \fi
4230 \fi
4231 \ifx\Hy@driver\@empty
4232 \else
4233   \def\Hy@temp{hxeTeX}%
4234   \ifxeTeX
4235     \ifx\Hy@driver\Hy@temp
4236     \else
4237       \Hy@WarningNoLine{%
4238         Wrong driver ‘\Hy@driver.def’;\MessageBreak
4239         XeTeX is running.\MessageBreak
4240         Forcing driver ‘\Hy@temp.def’ for XeTeX%
4241       }%
4242       \let\Hy@driver\Hy@temp
4243     \fi
4244   \fi
4245 \fi
4246 \ifx\Hy@driver\@empty
4247 \else
4248   \def\Hy@temp{hvtexhtm}%
4249   \ifvtexhtml
4250     \ifx\Hy@driver\Hy@temp
4251     \else
4252       \Hy@WarningNoLine{%
4253         Wrong driver ‘\Hy@driver.def’;\MessageBreak
4254         VTeX is running in HTML mode.\MessageBreak
4255         Forcing driver ‘\Hy@temp.def’%
4256       }%

```

```

4257     \let\Hy@driver\Hy@temp
4258   \fi
4259 \else
4260   \ifx\Hy@driver\Hy@temp
4261     \Hy@WarningNoLine{%
4262       Wrong driver ‘\Hy@driver.def’;\MessageBreak
4263       VTeX is not running in HTML mode.\MessageBreak
4264       Using default driver%
4265     }%
4266     \let\Hy@driver\@empty
4267   \fi
4268 \fi
4269 \fi

```

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

```

4270 \def\HyOpt@DriverType{}%
4271 \ifx\Hy@driver\@empty
4272   \def\HyOpt@DriverType{ (autodetected)}%
4273   \providecommand*{\Hy@defaultdriver}{hypertex}%
4274   \ifpdf
4275     \def\Hy@driver{hpdfTeX}%
4276   \else
4277     \ifxetex
4278       \def\Hy@driver{hxetex}%
4279     \else
4280       \ifvtexhtml
4281         \def\Hy@driver{hvtexhtm}%
4282         \def\MaybeStopEarly{%
4283           \Hy@Message{Stopped early}%
4284           \Hy@AtBeginDocument{%
4285             \PDF@FinishDoc
4286             \gdef\PDF@FinishDoc{}}%
4287         }%
4288         \endinput
4289       }%
4290     \else
4291       \ifvtexpdf
4292         \def\Hy@driver{hvtex}%
4293       \else
4294         \ifvtexps
4295           \def\Hy@driver{hvtex}%
4296         \else
4297           \ifx\HyOpt@DriverFallback\ltx@empty
4298             \let\Hy@driver\Hy@defaultdriver
4299             \def\HyOpt@DriverType{ (default)}%
4300           \else
4301             \begingroup
4302             \toks@{\expandafter{\HyOpt@DriverFallback}}%
4303             \edef\x{\endgroup
4304               \noexpand\kvsetkeys{Hyp}{\the\toks@}}%
4305             }%
4306             \x
4307           \ifx\Hy@driver\ltx@empty
4308             \let\Hy@driver\Hy@defaultdriver
4309             \def\HyOpt@DriverType{ (default)}%
4310           \else
4311             \def\HyOpt@DriverType{ (fallback)}%
4312           \fi

```



```

4313         \fi
4314     \fi
4315 \fi
4316 \fi
4317 \fi
4318 \fi
4319 \ifx\Hy@driver\Hy@defaultdriver
4320     \def\Hy@temp{hdvwind}%
4321     \ifx\Hy@temp\Hy@driver
4322         \kvsetkeys{Hyp}{colorlinks}%
4323         \PassOptionsToPackage{dviwindo}{color}%
4324     \fi
4325 \fi
4326 \fi
4327 \Hy@Message{Driver\HyOpt@DriverType: \Hy@driver}%
4328 \chardef\Hy@VersionChecked=0 %
4329 \input{\Hy@driver.def}%
4330 \ifcase\Hy@VersionChecked
4331     \Hy@VersionCheck{\Hy@driver.def}%
4332 \fi
4333 \let\@unprocessedoptions\relax
4334 \Hy@RestoreCatcodes
4335 \Hy@DisableOption{tex4ht}%
4336 \Hy@DisableOption{pdftex}%
4337 \Hy@DisableOption{nativepdf}%
4338 \Hy@DisableOption{dvipdfm}%
4339 \Hy@DisableOption{dvipdfmx}%
4340 \Hy@DisableOption{dvipdfmx-outline-open}%
4341 \Hy@DisableOption{pdfmark}%
4342 \Hy@DisableOption{dvips}%
4343 \Hy@DisableOption{hypertex}%
4344 \Hy@DisableOption{vtex}%
4345 \Hy@DisableOption{vtexpdfmark}%
4346 \Hy@DisableOption{dviwindo}%
4347 \Hy@DisableOption{dvipsone}%
4348 \Hy@DisableOption{textures}%
4349 \Hy@DisableOption{latex2html}%
4350 \Hy@DisableOption{ps2pdf}%
4351 \Hy@DisableOption{xetex}%
4352 \Hy@DisableOption{pdfversion}%
4353 }

```

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.

```

4354 \newif\ifHy@DvipdfmxOutlineOpen
4355 \ifxetex
4356     \ifdim\number\XeTeXversion\XeTeXrevision in<0.9995in %
4357     \else
4358         \chardef\SpecialDvipdfmxOutlineOpen\@ne
4359         \Hy@DvipdfmxOutlineOpentrue
4360     \fi
4361 \fi
4362 \begingroup\expandafter\expandafter\expandafter\endgroup
4363 \expandafter\ifx\csname SpecialDvipdfmxOutlineOpen\endcsname\relax
4364 \else
4365     \ifnum\SpecialDvipdfmxOutlineOpen>\z@
4366         \Hy@DvipdfmxOutlineOpentrue

```

```

4367 \fi
4368 \fi

```

## 15.2.2 Bookmarks

```

4369 \def\WriteBookmarks{0}
4370 \def\@bookmarkopenstatus#1{%
4371   \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:

```

4372   \ifnum#1<\expandafter\@firstofone\expandafter
4373     {\number\@bookmarksopenlevel} % explicit space
4374   \else
4375     -%
4376   \fi
4377 \else
4378   -%
4379 \fi
4380 }
4381 \ifHy@bookmarks
4382   \Hy@Info{Bookmarks ON}%
4383   \ifx\@pdfpagemode\@empty
4384     \def\@pdfpagemode{UseOutlines}%
4385   \fi
4386 \else
4387   \def\@bookmarkopenstatus#1{%}%
4388   \Hy@Info{Bookmarks OFF}%
4389   \Hy@AtEndOfPackage{%
4390     \global\let\ReadBookmarks\relax
4391     \global\let\WriteBookmarks\relax
4392   }%
4393   \ifx\@pdfpagemode\@empty
4394     \def\@pdfpagemode{UseNone}%
4395   \fi
4396 \fi
4397 \Hy@DisableOption{bookmarks}

```

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

```

4398 \def\Hy@CatcodeWrapper#1{%
4399   \def\Hy@endWrap{%}%
4400   \def\TMP@EnsureCode##1##2{%
4401     \edef\Hy@endWrap{%
4402       \Hy@endWrap
4403       \catcode##1 \the\catcode##1\relax
4404     }%
4405     \catcode##1 ##2\relax
4406   }%
4407   \TMP@EnsureCode{10}{12}% ^^J
4408   \TMP@EnsureCode{33}{12}% !
4409   \TMP@EnsureCode{34}{12}% "
4410   \TMP@EnsureCode{36}{3}% $ (math)
4411   \TMP@EnsureCode{38}{4}% & (alignment)
4412   \TMP@EnsureCode{39}{12}% '
4413   \TMP@EnsureCode{40}{12}% (
4414   \TMP@EnsureCode{41}{12}% )
4415   \TMP@EnsureCode{42}{12}% *
4416   \TMP@EnsureCode{43}{12}% +
4417   \TMP@EnsureCode{44}{12}% ,
4418   \TMP@EnsureCode{45}{12}% -

```

```

4419 \TMP@EnsureCode{46}{12}% .
4420 \TMP@EnsureCode{47}{12}% /
4421 \TMP@EnsureCode{58}{12}% :
4422 \TMP@EnsureCode{59}{12}% ;
4423 \TMP@EnsureCode{60}{12}% <
4424 \TMP@EnsureCode{61}{12}% =
4425 \TMP@EnsureCode{62}{12}% >
4426 \TMP@EnsureCode{63}{12}% ?
4427 \TMP@EnsureCode{91}{12}% [
4428 \TMP@EnsureCode{93}{12}% ]
4429 \TMP@EnsureCode{94}{7}% ^ (superscript)
4430 \TMP@EnsureCode{95}{8}% _ (subscript)
4431 \TMP@EnsureCode{96}{12}% '
4432 \TMP@EnsureCode{124}{12}% |
4433 \TMP@EnsureCode{126}{13}% ~ (active)
4434 #1\relax
4435 \Hy@endWrap
4436 }

```

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

```

4437 \Hy@AtBeginDocument{%
4438   \ifHy@ocgcolorlinks
4439     \kvsetkeys{Hyp}{colorlinks}%
4440     \ifHy@pdfa
4441       \Hy@Warning{%
4442         PDF/A: Optional Content Groups are prohibited,\MessageBreak
4443         using 'colorlinks' instead of 'ocgcolorlinks'%
4444       }%
4445       \Hy@ocgcolorlinksfalse
4446     \fi
4447   \fi
4448   \ifHy@ocgcolorlinks
4449   \else
4450     \Hy@DisableOption{ocgcolorlinks}%
4451   \fi
4452   \ifHy@colorlinks
4453     \def\@pdfborder{0 0 0}%
4454     \let\@pdfborderstyle\@empty
4455     \ifHy@typexml
4456     \else
4457       \Hy@CatcodeWrapper{%
4458         \RequirePackage{color}%
4459       }%
4460     \fi
4461     \def\Hy@colorlink#1{%
4462       \begingroup
4463       \HyColor@UseColor#1%
4464     }%
4465     \def\Hy@endcolorlink{\endgroup}%
4466     \Hy@Info{Link coloring ON}%
4467   \else
4468     \ifHy@frenchlinks
4469       \def\Hy@colorlink#1{\begingroup\fontshape{sc}\selectfont}%
4470       \def\Hy@endcolorlink{\endgroup}%
4471       \Hy@Info{French linking ON}%
4472     \else

```

for grouping consistency:

```

4473 \def\Hy@colorlink#1{\begingroup}%
4474 \def\Hy@endcolorlink{\endgroup}%
4475 \Hy@Info{Link coloring OFF}%
4476 \fi
4477 \fi
4478 \Hy@DisableOption{colorlinks}%
4479 \Hy@DisableOption{frenchlinks}%
4480 \ifHy@texht
4481 \long\def\@firstoffive#1#2#3#4#5{#1}%
4482 \long\def\@secondoffive#1#2#3#4#5{#2}%
4483 \long\def\@thirdoffive#1#2#3#4#5{#3}%
4484 \long\def\@fourthoffive#1#2#3#4#5{#4}%
4485 \long\def\@fifthoffive#1#2#3#4#5{#5}%
4486 \providecommand*\@safe@activetrue{}%
4487 \providecommand*\@safe@activesfalse{}%
4488 \def\T@ref#1{%
4489 \Hy@safe@activetrue
4490 \expandafter\@setref\csname r@#1\endcsname\@firstoffive{#1}%
4491 \Hy@safe@activesfalse
4492 }%
4493 \def\T@pageref#1{%
4494 \Hy@safe@activetrue
4495 \expandafter\@setref\csname r@#1\endcsname\@secondoffive{#1}%
4496 \Hy@safe@activesfalse
4497 }%
4498 \else
4499 \ifHy@typexml
4500 \else
4501 \Hy@CatcodeWrapper{%
4502 \RequirePackage{nameref}%
4503 }%
4504 \fi
4505 \fi
4506 \DeclareRobustCommand\ref{%
4507 \@ifstar\@refstar\T@ref
4508 }%
4509 \DeclareRobustCommand\pageref{%
4510 \@ifstar\@pagerefstar\T@pageref
4511 }%
4512 % \@ifclassloaded{memoir}{%
4513 % \ltx@ifundefined{@mem@titlerefno link}\ltx@secondoftwo{%
4514 % \ltx@ifundefined{@mem@titleref}\ltx@secondoftwo\ltx@firstoftwo
4515 % }%
4516 % }\ltx@secondoftwo
4517 % {%
4518 % \DeclareRobustCommand*{\nameref}{%
4519 % \@ifstar\@mem@titlerefno link\@mem@titleref
4520 % }%
4521 % }{%
4522 \DeclareRobustCommand*{\nameref}{%
4523 \@ifstar\@namerefstar\T@nameref
4524 }%
4525 % }%
4526 }
4527 \Hy@AtBeginDocument{%
4528 \ifHy@texht
4529 \else

```

```

4530 \Hy@CatcodeWrapper\ReadBookmarks
4531 \fi
4532 }

4533 \ifHy@backref
4534 \RequirePackage{backref}%
4535 \else
4536 \let\Hy@backout\@gobble
4537 \fi
4538 \Hy@DisableOption{backref}
4539 \Hy@DisableOption{pagebackref}

4540 \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.

```

4541 \begingroup
4542 \endlinechar=-1 %
4543 \catcode'\^^A=14 %
4544 \catcode'\^^M\active
4545 \catcode'\%\active
4546 \catcode'\#\active
4547 \catcode'\_\active
4548 \catcode'\$\active
4549 \catcode'\&\active
4550 \gdef\hyper@normalise{^^A
4551 \begingroup
4552 \catcode'\^^M\active
4553 \def^^M{ }^^A
4554 \catcode'\%\active
4555 \let%\@percentchar
4556 \let%\@percentchar
4557 \catcode'\#\active
4558 \def#{\hyper@hash}^^A
4559 \def\#{\hyper@hash}^^A
4560 \@makeother\&^^A
4561 \edef&{\string&}^^A
4562 \edef\&{\string&}^^A
4563 \edef\textunderscore{\string_}^^A
4564 \let\_ \textunderscore
4565 \catcode'\_\active
4566 \let\_ \textunderscore
4567 \let~\hyper@tilde
4568 \let~\hyper@tilde
4569 \let\textasciitilde\hyper@tilde
4570 \let\\ \@backslashchar
4571 \edef$\string$}^^A
4572 \Hy@safe@activetrue
4573 \hyper@n@rmalise
4574 }^^A
4575 \catcode'\#=6 ^^A
4576 \gdef\Hy@ActiveCarriageReturn{^^M}^^A

```

```

4577 \gdef\hyper@n@rmalise#1#2{^^A
4578 \def\Hy@tempa{#2}^^A
4579 \ifx\Hy@tempa\Hy@ActiveCarriageReturn
4580 \Hy@ReturnAfterElseFi{^^A
4581 \hyper@@normalise{#1}^^A
4582 }^^A
4583 \else
4584 \Hy@ReturnAfterFi{^^A
4585 \hyper@@normalise{#1}{#2}^^A
4586 }^^A
4587 \fi
4588 }^^A
4589 \gdef\hyper@@normalise#1#2{^^A
4590 \edef\Hy@tempa{^^A
4591 \endgroup
4592 \noexpand#1{\Hy@RemovePercentCr#2%^^M\@nil}^^A
4593 }^^A
4594 \Hy@tempa
4595 }^^A
4596 \gdef\Hy@RemovePercentCr#1%^^M#2\@nil{^^A
4597 #1^^A
4598 \ifx\limits#2\limits
4599 \else
4600 \Hy@ReturnAfterFi{^^A
4601 \Hy@RemovePercentCr #2\@nil
4602 }^^A
4603 \fi
4604 }^^A
4605 \endgroup
4606 \providecommand*\hyper@chars{%
4607 \let\#\hyper@hash
4608 \let\%\@percentchar
4609 \Hy@safe@activestru
4610 }

4611 \def\hyperlink#1#2{%
4612 \hyper@@link{#1}{#2}%
4613 }

4614 \def\Hy@VerboseLinkStart#1#2{%
4615 \ifHy@verbose
4616 \begingroup
4617 \Hy@safe@activestru
4618 \xdef\Hy@VerboseGlobalTemp{(#1) '#2'}%
4619 \Hy@Info{Reference \Hy@VerboseGlobalTemp}%
4620 \xdef\Hy@VerboseGlobalTemp{%
4621 \Hy@VerboseGlobalTemp, %
4622 line \the\inputlineno
4623 }%
4624 \endgroup
4625 \let\Hy@VerboseLinkInfo\Hy@VerboseGlobalTemp
4626 \@onelevel@sanitize\Hy@VerboseLinkInfo
4627 \fi
4628 }

4629 \def\Hy@VerboseLinkInfo{<VerboseLinkInfo>}
4630 \def\Hy@VerboseLinkStop{%
4631 \ifHy@verbose
4632 \begingroup

```

```

4633 \edef\x{\endgroup
4634 \write\m@ne{%
4635 Package 'hyperref' Info: %
4636 End of reference \Hy@VerboseLinkInfo.%
4637 }%
4638 }%
4639 \x
4640 \fi
4641 }

4642 \def\Hy@VerboseAnchor#1{%
4643 \ifHy@verbose
4644 \begingroup
4645 \Hy@safe@activetrue
4646 \Hy@Info{Anchor '\HyperDestNameFilter{#1}'}%
4647 \endgroup
4648 \fi
4649 }

4650 \def\Hy@AllowHyphens{%
4651 \relax
4652 \ifhmode
4653 \penalty\@M
4654 \hskip\z@skip
4655 \fi
4656 }

4657 \DeclareRobustCommand*\href[1][]{%
4658 \begingroup
4659 \setkeys{href}{#1}%
4660 \@ifnextchar\bgroup\Hy@href{\hyper@normalise\href@}%
4661 }

4662 \def\Hy@href#1{%
4663 \hyper@normalise\href@
4664 }

4665 \begingroup
4666 \catcode'\$=6 %
4667 \catcode'\#=12 %
4668 \gdef\href$1{\expandafter\href@split$1##\}%
4669 \gdef\href@split$1#2#3\4{%
4670 \hyper@@link{$1}{$2}{$3}\4}%
4671 \endgroup
4672 }%
4673 \endgroup

```

Option ‘page’.

```

4674 \define@key{href}{page}{%
4675 \def\Hy@href@page{#1}%
4676 }

4677 \let\Hy@href@page\@empty
4678 \newcount\c@Hy@tempcnt
4679 \def\theHy@tempcnt{\the\c@Hy@tempcnt}
4680 \def\Hy@MakeRemoteAction{%
4681 \ifx\Hy@href@page\@empty
4682 \def\Hy@href@page{0}%
4683 \else
4684 \setcounter{Hy@tempcnt}{\Hy@href@page}%
4685 \ifnum\c@Hy@tempcnt<\@ne
4686 \Hy@Warning{%
4687 Invalid page number (\theHy@tempcnt)\MessageBreak

```

```

4688     for remote PDF file.\MessageBreak
4689     Using page 1%
4690 }%
4691 \def\Hy@href@page{0}%
4692 \else
4693 \global\advance\c@Hy@tempcnt\m@ne
4694 \edef\Hy@href@page{\theHy@tempcnt}%
4695 \fi
4696 \fi

```

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

```

4697 \ifx\Hy@href@nextactionraw\@empty
4698 \else
4699 \Hy@newwindowsettrue
4700 \Hy@newwindowtrue
4701 \fi
4702 }

```

Option ‘pdfremotestartview’.

```

4703 \define@key{href}{pdfremotestartview}{%
4704 \setkeys{Hyp}{pdfremotestartview={#1}}}%
4705 }

```

Option ‘pdfnewwindow’.

```

4706 \let\KV@href@pdfnewwindow\KV@Hyp@pdfnewwindow
4707 \let\KV@href@pdfnewwindow@default\KV@Hyp@pdfnewwindow@default

```

Option ‘ismap’.

```

4708 \newif\ifHy@href@ismap
4709 \define@key{href}{ismap}[true]{%
4710 \ltx@ifundefined{Hy@href@ismap#1}{%
4711 \Hy@Error{%
4712 Invalid value (#1) for key ‘ismap’.\MessageBreak
4713 Permitted values are ‘true’ or ‘false’.\MessageBreak
4714 Ignoring ‘ismap’%
4715 } \@ehc
4716 }{%
4717 \csname Hy@href@ismap#1\endcsname
4718 }%
4719 }

```

Option ‘nextactionraw’.

```

4720 \let\Hy@href@nextactionraw\@empty
4721 \define@key{href}{nextactionraw}{%
4722 \edef\Hy@href@nextactionraw{#1}%
4723 \ifx\Hy@href@nextactionraw\@empty
4724 \else
4725 \Hy@Match\Hy@href@nextactionraw{%
4726 ^(\HyPat@ObjRef/|<<.*[/S[/].+>>|
4727 \[( ?\HyPat@ObjRef/|<<.*[/S[/].+>>)+ ?])$%
4728 }{ }{%
4729 \Hy@Warning{Invalid value for ‘nextactionraw’:\MessageBreak
4730 \Hy@href@nextactionraw\MessageBreak
4731 The action is discarded%
4732 }%
4733 }%
4734 \ifx\Hy@href@nextactionraw\@empty
4735 \else

```



```

4736 \edef\Hy@href@nextactionraw{/Next \Hy@href@nextactionraw}%
4737 \fi
4738 \fi
4739 }
4740 \def\HyPat@ObjRef/{.+}

```

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

```

4741 \RequirePackage{url}
4742 \let\HyOrg@url\url
4743 \def\Hurl{\begingroup \Url}
4744 \DeclareRobustCommand*\nolinkurl{\hyper@normalise\nolinkurl@}
4745 \def\nolinkurl@#1{\Hurl{#1}}
4746 \DeclareRobustCommand*\url{\hyper@normalise\url@}
4747 \def\url@#1{\hyper@linkurl{\Hurl{#1}}{#1}}
4748 \DeclareRobustCommand*\hyperimage{\hyper@normalise\hyper@image}
4749 \providecommand\hyper@image[2]{#2}
4750 \def\hypertarget#1#2{%
4751 \ifHy@nesting
4752 \hyper@@anchor{#1}{#2}%
4753 \else
4754 \hyper@@anchor{#1}{\relax}#2%
4755 \fi
4756 }

```

\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 L<sup>A</sup>T<sub>E</sub>X label which can be used in a short form of \hyperref later, to avoid remembering the name and category.

```

4757 \DeclareRobustCommand*\hyperref{%
4758 \@ifnextchar[{\Hy@babelnormalise\label@hyperref}\hyperref
4759 }
4760 \def\Hy@babelnormalise#1[#2]{%
4761 \begingroup
4762 \Hy@safe@activetrue
4763 \edef\Hy@tempa{%
4764 \endgroup
4765 \noexpand#1[#2]}%
4766 }%
4767 \Hy@tempa
4768 }
4769 \def\@hyperref{\hyper@normalise\@hyperref}
4770 \def\@hyperref#1#2#3{%
4771 \edef\ref@one{\ifx\#2\\\else#2.\fi#3}%
4772 \expandafter\tryhyper@link\ref@one\{#1}%
4773 }
4774 \def\tryhyper@link#1\#2{%
4775 \hyper@@link{#2}{#1}%
4776 }
4777 \def\hyperdef{\@ifnextchar[{\label@hyperdef}\@hyperdef}
4778 \def\@hyperdef#1#2#3{%, category, name, text
4779 \ifx\#1\%
4780 \def\Hy@AnchorName{#2}%
4781 \else
4782 \def\Hy@AnchorName{#1.#2}%

```

```

4783 \fi
4784 \ifHy@nesting
4785   \expandafter\hyper@@anchor\expandafter{\Hy@AnchorName}{#3}%
4786 \else
4787   \expandafter\hyper@@anchor\expandafter{\Hy@AnchorName}{\relax}#3%
4788 \fi
4789 }

```

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.

```

4790 \def\label@hyperref[#1]{%
4791   \expandafter\label@@hyperref\csname r@#1\endcsname{#1}%
4792 }%
4793 \def\label@@hyperref#1#2#3{%
4794   \ifx#1\relax
4795     \protect\G@refundefinedtrue
4796     \@latex@warning{%
4797       Hyper reference ‘#2’ on page \thepage \space undefined%
4798     }%
4799     \hyper@@link{}{??}{#3}%
4800 \else
4801   \hyper@@link{\expandafter\@fifthoffive#1}%
4802     {\expandafter\@fourthoffive#1\@empty\@empty}{#3}%
4803 \fi
4804 }
4805 \def\label@hyperdef[#1]#2#3#4{% label name, category, name,
4806                               % anchor text
4807   \@bsphack
4808   \ifx\#2\%
4809     \def\Hy@AnchorName{#3}%
4810 \else
4811   \def\Hy@AnchorName{#2.#3}%
4812 \fi
4813 \if@filesw
4814   \protected@write\@auxout{}{%
4815     \string\newlabel{#1}{#2}{#3}{\Hy@AnchorName}}%
4816   }%
4817 \fi
4818 \@esphack
4819 \ifHy@nesting
4820   \expandafter\hyper@@anchor\expandafter{\Hy@AnchorName}{#4}%
4821 \else
4822   \expandafter\hyper@@anchor\expandafter{\Hy@AnchorName}{\relax}#4%
4823 \fi
4824 }

```

## 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.

```

4825 \def\hyper@@link{\let\Hy@reserved@a\relax
4826   \@ifnextchar[{\hyper@link@}{\hyper@link@[link]}}%
4827 }
4828 \def\hyper@link@[#1]#2#3#4{%

```

```

4829 \begingroup
4830 \protected@edef\Hy@tempa{#2}%
4831 \Hy@safe@activetrue
4832 \edef\x{#3}%
4833 \ifx\Hy@tempa\@empty
4834 \toks0{\hyper@link{#1}}%
4835 \else
4836 \toks0{\expandafter\hyper@readexternallink#2\{#1}}%
4837 \fi
4838 \toks2{%
4839 \Hy@safe@activesfalse
4840 #4%
4841 }%
4842 \edef\Hy@tempa{\the\toks2}%
4843 \edef\x{\endgroup
4844 \ifx\Hy@tempa\@empty
4845 \noexpand\Hy@Warning{Suppressing empty link}%
4846 \else
4847 \the\toks0 {\x}{\the\toks2}}%
4848 \fi
4849 }%
4850 \x
4851 }

```

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.

```

4852 \def\hyper@readexternallink#1\#2#3#4{%
4853 \begingroup
4854 \let\relax
4855 \expandafter\endgroup
4856 \expandafter\@hyper@@readexternallink#1\{#2}{#3}{#4}%
4857 }
4858 \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.

```

4859 \@hyper@readexternallink{#2}{#3}{#4}#1::\{#1}%
4860 }

```

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

```

4861 \def\@pdftempwordfile{file}%
4862 \def\@pdftempwordrun{run}%
4863 \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:

```

4864 \ifx\\#6\\%
4865 \@hyper@linkfile file:#7\\{#3}{#2}{#7}%
4866 \else
4867 \ifx\\#4\\%
4868 \@hyper@linkfile file:#7\\{#3}{#2}{#7}%
4869 \else

```

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

```

4870 \def\@pdftempa{#4}%
4871 \ifx\@pdftempa\@pdftempwordfile
4872 \@hyper@linkfile#7\\{#3}{#2}{#7}%
4873 \else

```

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

```

4874 \ifx\@pdftempa\@pdftempwordrun
4875 \ifHy@pdfa
4876 \Hy@Error{%
4877 PDF/A: Launch action is prohibited%
4878 }\@ehc
4879 \begingroup
4880 \leavevmode
4881 #2%
4882 \endgroup
4883 \else
4884 \@hyper@launch#7\\{#3}{#2}%
4885 \fi
4886 \else

```

otherwise its a URL

```

4887 \hyper@linkurl{#3}{#7\ifx\\#2\\else\hyper@hash#2\fi}%
4888 \fi
4889 \fi
4890 \fi
4891 \fi
4892 }

```

By default, turn run: into file:

```

4893 \def\@hyper@launch run:#1\\#2#3{% filename, anchor text, linkname
4894 \hyper@linkurl{#2}{%
4895 \Hy@linkfileprefix
4896 #1%
4897 \ifx\\#3\\%
4898 \else
4899 \hyper@hash
4900 #3%
4901 \fi
4902 }%
4903 }

```

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

```

4904 \def\@hyper@linkfile file:#1\\#2#3#4{%
4905 %file url,link string, name, original uri
4906 \filename@parse{#1}%
4907 \ifx\filename@ext\relax

```

```

4908 \edef\filename@ext{\XR@ext}%
4909 \fi
4910 \def\use@file{\filename@area\filename@base.\filename@ext}%
4911 \Hy@ifStringEndsWith\filename@ext\XR@ext{%
4912 \hyper@linkfile{#2}{\use@file}{#3}%
4913 }{%
4914 \ifx\@baseurl\@empty
4915 \hyper@linkurl{#2}{%
4916 #4\ifx\\#3\\else\hyper@hash#3\fi
4917 }%
4918 \else
4919 \hyper@linkurl{#2}{\use@file\ifx\\#3\\else\hyper@hash#3\fi}%
4920 \fi
4921 }%
4922 }

4923 \def\Hy@ifStringEndsWith#1#2{%
4924 \begingroup
4925 \edef\x{#1}%
4926 \@onelevel@sanitize\x
4927 \edef\x{.\x}%
4928 \edef\y{#2}%
4929 \@onelevel@sanitize\y
4930 \edef\y{.\y}%
4931 \expandafter\def\expandafter\z\expandafter##\expandafter1\y##2\@nil{%
4932 \endgroup
4933 \ifx\relax##2\relax
4934 \expandafter\ltx@secondoftwo
4935 \else
4936 \expandafter\ltx@firstoftwo
4937 \fi
4938 }%
4939 \expandafter\expandafter\expandafter\z\expandafter\x\y\@nil
4940 }

4941 \def\Hy@StringLocalhost{localhost}
4942 \@onelevel@sanitize\Hy@StringLocalhost
4943 \def\Hy@CleanupFile#1{%
4944 \edef#1{#1}%
4945 \expandafter\Hy@@CleanupFile#1\hbox{//\hbox\@nil{#1}%
4946 }
4947 \def\Hy@@CleanupFile#1//#2/#3\hbox#4\@nil#5{%
4948 \begingroup
4949 \toks@{\endgroup}%
4950 \def\x{#1}%
4951 \ifx\x\@empty
4952 \def\x{#2}%
4953 \ifx\x\@empty
4954 \toks@{\endgroup\def#5{/#3}}%
4955 \else
4956 \@onelevel@sanitize\x
4957 \ifx\x\Hy@StringLocalhost
4958 \toks@{\endgroup\def#5{/#3}}%
4959 \fi
4960 \fi
4961 \fi
4962 \the\toks@
4963 }

```

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.

```

4964 \long\def\hyper@@anchor#1#2{\@hyper@@anchor#1\relax#2\relax}
4965 \long\def\@hyper@@anchor#1\relax#2#3\relax{%
4966   \ifx\#1\%
4967     #2\Hy@Warning{Ignoring empty anchor}%
4968   \else
4969     \def\anchor@spot{#2#3}%
4970     \let\put@me@back\@empty
4971     \ifx\relax#2\relax
4972     \else
4973       \ifHy@nesting
4974       \else
4975         \ifcat a\noexpand#2\relax
4976         \else
4977           \ifcat 0\noexpand#2 \relax
4978           \else
4979             \typeout{Anchor start is not alphanumeric %
4980               on input line\the\inputlineno%
4981             }%
4982             \let\anchor@spot\@empty
4983             \def\put@me@back{#2#3}%
4984           \fi
4985         \fi
4986       \fi
4987     \fi
4988     \ifHy@activeanchor
4989       \anchor@spot
4990     \else
4991       \hyper@anchor{#1}%
4992     \fi
4993     \expandafter\put@me@back
4994   \fi
4995   \let\anchor@spot\@empty
4996 }
4997 \def\anchor@spot{}
```

## 18 Compatibility with the *LT<sub>ε</sub>2html* 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.

```

4998 \let\htmladdimg\hyperimage
4999 \def\htmladdnormallink#1#2{\href{#2}{#1}}
5000 \def\htmladdnormallinkfoot#1#2{\href{#2}{#1}\footnote{#2}}
5001 \def\htmlref#1#2{% anchor text, label
```

```

5002 \label@hyperref[#{#2}]{#1}%
5003 }

```

This is really too much. The  $\LaTeX$ 2html 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.

```

5004 \def\@latex2htmlX{%
5005   \let\hhyperref\hyperref
5006   \def\hyperref##1##2##3##4{% anchor text for HTML
5007     % text to print before label in print
5008     % label
5009     % post-label text in print
5010     ##2\ref{##4}##3%
5011   }%
5012 }

```

## 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.

```

5013 \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
5014 \def\HyField@NewFlag#1#2{%
5015   \lowercase{\HyField@NewOption{#2}}%
5016   \lowercase{\HyField@NewBitsetFlag{#2}}{#2}{#1}%
5017 }

```

```

\HyField@NewFlagOnly
5018 \def\HyField@NewFlagOnly#1#2{%
5019   \lowercase{\HyField@NewBitsetFlag{#2}}{#2}{#1}%
5020 }

```

```

\HyField@NewOption #1: option name
5021 \def\HyField@NewOption#1{%
5022   \expandafter\newif\csname ifFld@#1\endcsname
5023   \define@key{Field}{#1}[true]{%
5024     \lowercase{\Field@boolkey{##1}}{#1}%
5025   }%
5026 }

```

\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

5027 \def\HyField@NewBitsetFlag#1#2#3#4{%
5028   \begingroup
5029   \count@=#4\relax
5030   \advance\count@\m@ne
5031   \def\x##1{%
5032     \endgroup
5033     \expandafter\def\csname HyField@#3@#1\endcsname{##1}%
5034     \expandafter\ifx\csname HyField@#3@##1\endcsname\relax
5035       \expandafter\edef\csname HyField@#3@##1\endcsname{%
5036         (\number#4) #2%
5037       }%
5038     \else
5039       \expandafter\edef\csname HyField@#3@##1\endcsname{%
5040         \csname HyField@#3@##1\endcsname
5041         /#2%
5042       }%
5043     \fi
5044   }%
5045   \expandafter\x\expandafter{\the\count@}%
5046 }
```

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

```
5047 \def\HyField@UseFlag#1#2{%
5048   \lowercase{\HyField@@UseFlag{#2}}{#1}%
5049 }
```

\HyField@@UseFlag

```
5050 \def\HyField@@UseFlag#1#2{%
5051   \bitsetSetValue{HyField@#2}{%
5052     \csname HyField@#2@#1\endcsname
5053   }{%
5054     \csname ifFld@#1\endcsname 1\else 0\fi
5055   }%
5056 }
```

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

```
5057 \def\HyField@SetFlag#1#2{%
5058   \lowercase{\HyField@@SetFlag{#2}}{#1}%
5059 }
```

\HyField@@SetFlag

```
5060 \def\HyField@@SetFlag#1#2{%
5061   \bitsetSetValue{HyField@#2}{%
5062     \csname HyField@#2@#1\endcsname
5063   }{1}%
5064 }
```

\HyField@PrintFlags

```
5065 \def\HyField@PrintFlags#1#2{%
5066   \ifHy@verbose
5067     \begingroup
```



```

5068 \let\Hy@temp\@empty
5069 \let\MessageBreak\relax
5070 \expandafter\@for\expandafter\x\expandafter:\expandafter=%
5071 \bitsetGetSetBitList{HyField@#1}\do{%
5072 \edef\Hy@temp{%
5073 \Hy@temp
5074 \csname HyField@#1@\x\endcsname\MessageBreak
5075 }%
5076 }%
5077 \edef\x{\endgroup
5078 \noexpand\Hy@Info{%
5079 Field flags: %
5080 \expandafter\ifx\@car#1\@nil S\else/\fi
5081 #1 %
5082 \bitsetGetDec{HyField@#1} %
5083 (0x\bitsetGetHex{HyField@#1}{32})\MessageBreak
5084 \Hy@temp
5085 for #2%
5086 }%
5087 }\x
5088 \fi
5089 }

```

### 19.1.1 Declarations of field flags

“Table 8.70 Field flags common to all field types”

```

5090 \HyField@NewFlag{Ff}{ReadOnly}{1}
5091 \HyField@NewFlag{Ff}{Required}{2}
5092 \HyField@NewFlag{Ff}{NoExport}{3}

```

“Table 8.75 Field flags specific to button fields”

```

5093 \HyField@NewFlag{Ff}{NoToggleToOff}{15}
5094 \HyField@NewFlag{Ff}{Radio}{16}
5095 \HyField@NewFlag{Ff}{Pushbutton}{17}
5096 \HyField@NewFlag{Ff}{RadiosInUnison}{26}

```

“Table 8.77 Field flags specific to text fields”

```

5097 \HyField@NewFlag{Ff}{Multiline}{13}
5098 \HyField@NewFlag{Ff}{Password}{14}
5099 \HyField@NewFlag{Ff}{FileSelect}{21}% PDF 1.4
5100 \HyField@NewFlag{Ff}{DoNotSpellCheck}{23}% PDF 1.4
5101 \HyField@NewFlag{Ff}{DoNotScroll}{24}% PDF 1.4
5102 \HyField@NewFlag{Ff}{Comb}{25}% PDF 1.4
5103 \HyField@NewFlag{Ff}{RichText}{26}% PDF 1.5

```

“Table 8.79 field flags specific to choice fields”

```

5104 \HyField@NewFlag{Ff}{Combo}{18}
5105 \HyField@NewFlag{Ff}{Edit}{19}
5106 \HyField@NewFlag{Ff}{Sort}{20}
5107 \HyField@NewFlag{Ff}{MultiSelect}{22}% PDF 1.4
5108 % \HyField@NewFlag{Ff}{DoNotSpellCheck}{23}% PDF 1.4
5109 \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.

```

5110 \newif\iffld@popdown
5111 \define@key{Field}{popdown}[true]{%

```

```

5112 \lowercase{\Field@boolkey{#1}}{popdown}%
5113 }

```

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.

```

5114 \HyField@NewFlag{F}{Invisible}{1}
5115 \HyField@NewFlag{F}{Hidden}{2}% PDF 1.2
5116 \HyField@NewFlag{F}{Print}{3}% PDF 1.2
5117 \HyField@NewFlag{F}{NoZoom}{4}% PDF 1.2
5118 \HyField@NewFlag{F}{NoRotate}{5}% PDF 1.3
5119 \HyField@NewFlag{F}{NoView}{6}% PDF 1.3
5120 \HyField@NewFlag{F}{Locked}{8}% PDF 1.4
5121 \HyField@NewFlag{F}{ToggleNoView}{9}% PDF 1.5
5122 \HyField@NewFlag{F}{LockedContents}{10}% PDF 1.7

5123 \ifHy@pdfa
5124 \def\HyField@PDFAFldWarning#1#2{%
5125   \Hy@Warning{%
5126     PDF/A: Annotation flag '#1' must\MessageBreak
5127     be set to '#2'%
5128   }%
5129 }%
5130 \Fld@invisiblefalse
5131 \def\Fld@invisibletrue{%
5132   \HyField@PDFAFldWarning{invisible}{false}%
5133 }%
5134 \Fld@hiddenfalse
5135 \def\Fld@hiddentrue{%
5136   \HyField@PDFAFldWarning{hidden}{false}%
5137 }%
5138 \Fld@printtrue
5139 \def\Fld@printfalse{%
5140   \HyField@PDFAFldWarning{print}{true}%
5141 }%
5142 \Fld@nozoomtrue
5143 \def\Fld@nozoomfalse{%
5144   \HyField@PDFAFldWarning{nozoom}{true}%
5145 }%
5146 \Fld@norotatefalse
5147 \def\Fld@norotatefalse{%
5148   \HyField@PDFAFldWarning{norotate}{true}%
5149 }%
5150 \Fld@noviewfalse
5151 \def\Fld@noviewtrue{%
5152   \HyField@PDFAFldWarning{noview}{false}%
5153 }%
5154 \fi

```

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

```

5155 \HyField@NewFlag{Submit}{IncludeNoValueFields}{2}
5156 \HyField@NewFlagOnly{Submit}{ExportFormat}{3}
5157 \HyField@NewFlag{Submit}{GetMethod}{4}
5158 \HyField@NewFlag{Submit}{SubmitCoordinates}{5}
5159 \HyField@NewFlagOnly{Submit}{XFDF}{6}
5160 \HyField@NewFlag{Submit}{IncludeAppendSaves}{7}

```

```

5161 \HyField@NewFlag{Submit}{IncludeAnnotations}{8}
5162 \HyField@NewFlagOnly{Submit}{SubmitPDF}{9}
5163 \HyField@NewFlag{Submit}{CanonicalFormat}{10}
5164 \HyField@NewFlag{Submit}{ExclNonUserAnnots}{11}
5165 \HyField@NewFlag{Submit}{ExclFKey}{12}
5166 \HyField@NewFlag{Submit}{EmbedForm}{14}

5167 \define@key{Field}{export}{%
5168   \lowercase{\def\Hy@temp{#1}}%
5169   \@ifundefined{Fld@export@\Hy@temp}{%
5170     \@onelevel@sanitize\Hy@temp
5171     \Hy@Error{%
5172       Unknown export format '\Hy@temp'.\MessageBreak
5173       Known formats are 'FDF', 'HTML', 'XFDF', and 'PDF'%
5174     }\@ehc
5175   }{%
5176     \let\Fld@export\Hy@temp
5177   }%
5178 }
5179 \def\Fld@export{fdf}
5180 \@namedef{Fld@export@fdf}{0}%
5181 \@namedef{Fld@export@html}{1}%
5182 \@namedef{Fld@export@xfdf}{2}%
5183 \@namedef{Fld@export@pdf}{3}%

```

### 19.1.2 Set submit flags

\HyField@FlagsSubmit

```

5184 \def\HyField@FlagsSubmit{%
5185   \bitsetReset{HyField@Submit}%
5186   \ifcase\@nameuse{Fld@export@\Fld@export} %
5187     % FDF
5188     \HyField@UseFlag{Submit}{IncludeNoValueFields}%
5189     \HyField@UseFlag{Submit}{SubmitCoordinates}%
5190     \HyField@UseFlag{Submit}{IncludeAppendSaves}%
5191     \HyField@UseFlag{Submit}{IncludeAnnotations}%
5192     \HyField@UseFlag{Submit}{CanonicalFormat}%
5193     \HyField@UseFlag{Submit}{ExclNonUserAnnots}%
5194     \HyField@UseFlag{Submit}{ExclFKey}%
5195     \HyField@UseFlag{Submit}{EmbedForm}%
5196   \or % HTML
5197     \HyField@SetFlag{Submit}{ExportFormat}%
5198     \HyField@UseFlag{Submit}{IncludeNoValueFields}%
5199     \HyField@UseFlag{Submit}{GetMethod}%
5200     \HyField@UseFlag{Submit}{SubmitCoordinates}%
5201     \HyField@UseFlag{Submit}{CanonicalFormat}%
5202   \or % XFDF
5203     \HyField@SetFlag{Submit}{XFDF}%
5204     \HyField@UseFlag{Submit}{IncludeNoValueFields}%
5205     \HyField@UseFlag{Submit}{SubmitCoordinates}%
5206     \HyField@UseFlag{Submit}{CanonicalFormat}%
5207   \or % PDF
5208     \HyField@SetFlag{Submit}{SubmitPDF}%
5209     \HyField@UseFlag{Submit}{GetMethod}%
5210   \fi
5211   \HyField@PrintFlags{Submit}{submit button field}%
5212   \bitsetIsEmpty{HyField@Submit}{%
5213     \def\Fld@submitflags{%

```

```

5214 }{%
5215     \edef\Fld@submitflags{/Flags \bitsetGetDec{HyField@Submit}}}%
5216 }%
5217 }

```

### 19.1.3 Set annot flags in fields

\HyField@FlagsAnnot

```

5218 \def\HyField@FlagsAnnot#1{%
5219     \bitsetReset{HyField@F}%
5220     \HyField@UseFlag{F}{Invisible}%
5221     \HyField@UseFlag{F}{Hidden}%
5222     \HyField@UseFlag{F}{Print}%
5223     \HyField@UseFlag{F}{NoZoom}%
5224     \HyField@UseFlag{F}{NoRotate}%
5225     \HyField@UseFlag{F}{NoView}%
5226     \HyField@UseFlag{F}{Locked}%
5227     \HyField@UseFlag{F}{ToggleNoView}%
5228     \HyField@UseFlag{F}{LockedContents}%
5229     \HyField@PrintFlags{F}{#1}%
5230     \bitsetIsEmpty{HyField@F}{%
5231         \def\Fld@annotflags{%
5232             }{%
5233                 \edef\Fld@annotflags{/F \bitsetGetDec{HyField@F}}}%
5234             }%
5235         }

```

### 19.1.4 Pushbutton field

\HyField@FlagsPushButton

```

5236 \def\HyField@FlagsPushButton{%
5237     \HyField@FlagsAnnot{push button field}%
5238     \bitsetReset{HyField@Ff}%
5239     \HyField@UseFlag{Ff}{ReadOnly}%
5240     \HyField@UseFlag{Ff}{Required}%
5241     \HyField@UseFlag{Ff}{NoExport}%
5242     \HyField@SetFlag{Ff}{Pushbutton}%
5243     \HyField@PrintFlags{Ff}{push button field}%
5244     \bitsetIsEmpty{HyField@Ff}{%
5245         \def\Fld@flags{%
5246             }{%
5247                 \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}}%
5248             }%
5249         }

```

### 19.1.5 Check box field

\HyField@FlagsCheckBox

```

5250 \def\HyField@FlagsCheckBox{%
5251     \HyField@FlagsAnnot{check box field}%
5252     \bitsetReset{HyField@Ff}%
5253     \HyField@UseFlag{Ff}{ReadOnly}%
5254     \HyField@UseFlag{Ff}{Required}%
5255     \HyField@UseFlag{Ff}{NoExport}%
5256     \HyField@PrintFlags{Ff}{check box field}%
5257     \bitsetIsEmpty{HyField@Ff}{%

```

```

5258 \def\Fld@flags{%
5259 }{%
5260 \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
5261 }%
5262 }

```

### 19.1.6 Radio button field

\HyField@FlagsRadioButton

```

5263 \def\HyField@FlagsRadioButton{%
5264 \HyField@FlagsAnnot{radio button field}%
5265 \bitsetReset{HyField@Ff}%
5266 \HyField@UseFlag{Ff}{ReadOnly}%
5267 \HyField@UseFlag{Ff}{Required}%
5268 \HyField@UseFlag{Ff}{NoExport}%
5269 \HyField@UseFlag{Ff}{NoToggleToOff}%
5270 \HyField@SetFlag{Ff}{Radio}%
5271 \HyField@UseFlag{Ff}{RadiosInUnison}%
5272 \HyField@PrintFlags{Ff}{radio button field}%
5273 \bitsetIsEmpty{HyField@Ff}{%
5274 \def\Fld@flags{%
5275 }{%
5276 \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
5277 }%
5278 }

```

### 19.1.7 Text fields

\HyField@FlagsText

```

5279 \def\HyField@FlagsText{%
5280 \HyField@FlagsAnnot{text field}%
5281 \bitsetReset{HyField@Ff}%
5282 \HyField@UseFlag{Ff}{ReadOnly}%
5283 \HyField@UseFlag{Ff}{Required}%
5284 \HyField@UseFlag{Ff}{NoExport}%
5285 \HyField@UseFlag{Ff}{Multiline}%
5286 \HyField@UseFlag{Ff}{Password}%
5287 \HyField@UseFlag{Ff}{FileSelect}%
5288 \HyField@UseFlag{Ff}{DoNotSpellCheck}%
5289 \HyField@UseFlag{Ff}{DoNotScroll}%
5290 \ifFld@comb
5291 \ifcase0\ifFld@multiline
5292 \else\ifFld@password
5293 \else\ifFld@fileselect
5294 \else 1\fi\fi\fi\relax
5295 \Hy@Error{%
5296 Field option 'comb' cannot used together with\MessageBreak
5297 'multiline', 'password', or 'fileselect'%
5298 }\@ehc
5299 \else
5300 \HyField@UseFlag{Ff}{Comb}%
5301 \fi
5302 \fi
5303 \HyField@UseFlag{Ff}{RichText}%
5304 \HyField@PrintFlags{Ff}{text field}%
5305 \bitsetIsEmpty{HyField@Ff}{%

```

```

5306 \def\Fld@flags{%
5307 }{%
5308 \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
5309 }%
5310 }

```

### 19.1.8 Choice fields

\HyField@FlagsChoice

```

5311 \def\HyField@FlagsChoice{%
5312 \HyField@FlagsAnnot{choice field}%
5313 \bitsetReset{HyField@Ff}%
5314 \HyField@UseFlag{Ff}{ReadOnly}%
5315 \HyField@UseFlag{Ff}{Required}%
5316 \HyField@UseFlag{Ff}{NoExport}%
5317 \HyField@UseFlag{Ff}{Combo}%
5318 \ifFld@combo
5319 \HyField@UseFlag{Ff}{Edit}%
5320 \fi
5321 \HyField@UseFlag{Ff}{Sort}%
5322 \HyField@UseFlag{Ff}{MultiSelect}%
5323 \ifFld@combo
5324 \ifFld@edit
5325 \HyField@UseFlag{Ff}{DoNotSpellCheck}%
5326 \fi
5327 \fi
5328 \HyField@UseFlag{Ff}{CommitOnSelChange}%
5329 \HyField@PrintFlags{Ff}{choice field}%
5330 \bitsetIsEmpty{HyField@Ff}{%
5331 \def\Fld@flags{%
5332 }{%
5333 \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
5334 }%
5335 }

```

## 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.

```

5336 \def\HyField@PDFChoices#1{%
5337 \begingroup
5338 \gdef\Fld@choices{%
5339 \def\HyTmp@Optlist{%
5340 \let\HyTmp@Optitem\relax
5341 \count@=0 %
5342 \kv@parse{#1}{%
5343 \Hy@pdfstringdef\kv@key\kv@key
5344 \ifx\kv@value\relax
5345 \ifnum\Hy@pdfversion<3 % implementation note 122, PDF spec 1.7
5346 \xdef\Fld@choices{\Fld@choices[(\kv@key)(\kv@key)]}%
5347 \else
5348 \xdef\Fld@choices{\Fld@choices(\kv@key)}%
5349 \fi
5350 \else
5351 \Hy@pdfstringdef\kv@value\kv@value

```

```

5352 \xdef\Fld@choices{\Fld@choices[(\kv@value)(\kv@key)]}%
5353 \fi
5354 \edef\HyTmp@optlist{%
5355 \HyTmp@optlist
5356 \HyTmp@optitem{\the\count@}{\kv@key}0%
5357 }%
5358 \advance\count@ by 1 %
5359 \@gobbletwo
5360 }%
5361 \xdef\Fld@choices{/Opt[\Fld@choices]}%
5362 \ifFld@multiselect
5363 \HyField@@PDFChoices{DV}\Fld@default
5364 \HyField@@PDFChoices{V}\Fld@value
5365 \else
5366 \ifx\Fld@default\relax
5367 \else
5368 \pdfstringdef\Hy@gtemp\Fld@default
5369 \xdef\Fld@choices{\Fld@choices/DV(\Hy@gtemp)}%
5370 \fi
5371 \ifx\Fld@value\relax
5372 \else
5373 \pdfstringdef\Hy@gtemp\Fld@value
5374 \xdef\Fld@choices{\Fld@choices/V(\Hy@gtemp)}%
5375 \fi
5376 \fi
5377 \endgroup
5378 }

```

\HyField@@PDFChoices

```

5379 \def\HyField@@PDFChoices#1#2{%
5380 \ifx#2\relax
5381 \else
5382 \count@=0 %
5383 \def\HyTmp@optitem##1##2##3{%
5384 \def\HyTmp@key{##2}%
5385 \ifx\HyTmp@key\Hy@gtemp
5386 \expandafter\def\expandafter\HyTmp@optlist\expandafter{%
5387 \HyTmp@optlist
5388 \HyTmp@optitem{##1}{##2}1%
5389 }%
5390 \let\HyTmp@found=Y%
5391 \else
5392 \expandafter\def\expandafter\HyTmp@optlist\expandafter{%
5393 \HyTmp@optlist
5394 \HyTmp@optitem{##1}{##2}##3%
5395 }%
5396 \fi
5397 }%
5398 \expandafter\comma@parse\expandafter{#2}{%
5399 \pdfstringdef\Hy@gtemp\comma@entry
5400 \let\HyTmp@found=N %
5401 \expandafter\let\expandafter\HyTmp@optlist\expandafter\@empty
5402 \HyTmp@optlist
5403 \ifx\HyTmp@found Y%
5404 \advance\count@ by 1 %
5405 \else
5406 \@onelevel@sanitize\comma@entry

```

```

5407 \PackageWarning{hyperref}{%
5408 \string\ChoiceBox: Ignoring value '\comma@entry',%
5409 \MessageBreak
5410 it cannot be found in the choices%
5411 }%
5412 \fi
5413 \@gobble
5414 }%
5415 \def\HyTmp@optitem##1##2##3{%
5416 \ifnum##3=1 %
5417 (##2)%
5418 \fi
5419 }%
5420 \ifcase\count@
5421 \or
5422 \xdef\Fld@choices{\Fld@choices/#1\HyTmp@optlist}%
5423 \else
5424 \xdef\Fld@choices{\Fld@choices/#1[\HyTmp@optlist]}%
5425 \ifx#1V%
5426 \def\HyTmp@optitem##1##2##3{%
5427 \ifnum##3=1 %
5428 \@firstofone{ ##1}%
5429 \fi
5430 }%
5431 \edef\HyTmp@optlist{\HyTmp@optlist}%
5432 \xdef\Fld@choices{%
5433 \Fld@choices
5434 /I[\expandafter\@firstofone\HyTmp@optlist]%
5435 }%
5436 \fi
5437 \fi
5438 \fi
5439 }

```

## 19.3 Forms

\HyField@SetKeys

```

5440 \def\HyField@SetKeys{%
5441 \kvsetkeys{Field}%
5442 }

5443 \newif\ifFld@checked
5444 \newif\ifFld@disabled
5445 \Fld@checkedfalse
5446 \Fld@disabledfalse
5447 \newcount\Fld@menulength
5448 \newdimen\Fld@Width
5449 \newdimen\Fld@charsize
5450 \Fld@charsize=10\p@
5451 \def\Fld@maxlen{0}
5452 \def\Fld@align{0}
5453 \def\Fld@color{0 0 0 rg}
5454 \def\Fld@bcolor{1 1 1}
5455 \def\Fld@bordercolor{1 0 0}
5456 \def\Fld@bordersep{1\p@}
5457 \def\Fld@borderwidth{1}
5458 \def\Fld@borderstyle{S}

```



```

5459 \def\Fld@cbsymbol{4}
5460 \def\Fld@radiosymbol{H}
5461 \def\Fld@rotation{0}
5462 \def\Form{\@ifnextchar[{\@Form}{\@Form[]}}
5463 \def\endForm{\@endForm}
5464 \newif\ifForm@html
5465 \Form@htmlfalse
5466 \def\Form@boolkey#1#2{%
5467   \csname Form@#2\ifx\relax#1\relax true\else#1\fi\endcsname
5468 }
5469 \define@key{Form}{action}{%
5470   \hyper@normalise\Hy@DefFormAction{#1}%
5471 }
5472 \def\Hy@DefFormAction{\def\Form@action}
5473 \def\enc@html{html}
5474 \define@key{Form}{encoding}{%
5475   \def\Hy@tempa{#1}%
5476   \ifx\Hy@tempa\enc@html
5477     \Form@htmltrue
5478     \def\Fld@export{html}%
5479   \else
5480     \Hy@Warning{%
5481       Form 'encoding' key with \MessageBreak
5482       unknown value '#1'%
5483     }%
5484     \Form@htmlfalse
5485   \fi
5486 }
5487 \define@key{Form}{method}{%
5488   \lowercase{\def\Hy@temp{#1}}%
5489   \@ifundefined{Form@method@\Hy@temp}{%
5490     \@onelevel@sanitize\Hy@temp
5491     \Hy@Error{%
5492       Unknown method '\Hy@temp'\MessageBreak
5493       Known values are 'post' and 'get'%
5494     }\@ehc
5495   }{%
5496     \let\Form@method\Hy@temp
5497     \ifcase\@nameuse{Form@method@\Hy@temp} %
5498       \Fld@getmethodfalse
5499     \else
5500       \Fld@getmethodtrue
5501     \fi
5502   }%
5503 }
5504 \def\Form@method{}
5505 \@namedef{Form@method@post}{0}
5506 \@namedef{Form@method@get}{1}
5507 \newif\ifHyField@NeedAppearances
5508 \def\HyField@NeedAppearancesfalse{%
5509   \global\let\ifHyField@NeedAppearances\iffalse
5510 }
5511 \def\HyField@NeedAppearancetrue{%
5512   \global\let\ifHyField@NeedAppearances\iftrue
5513 }
5514 \HyField@NeedAppearancetrue
5515 \define@key{Form}{NeedAppearances}[true]{%

```

```

5516 \edef\Hy@tempa{#1}%
5517 \ifx\Hy@tempa\Hy>true
5518   \HyField@NeedAppearancestrue
5519 \else
5520   \ifx\Hy@tempa\Hy>false
5521     \HyField@NeedAppearancesfalse
5522   \else
5523     \Hy@Error{%
5524       Unexpected value '\Hy@tempa'\MessageBreak
5525       of option 'NeedAppearances' instead of\MessageBreak
5526       'true' or 'false'%
5527     }\@ehc
5528   \fi
5529 \fi
5530 }
5531 \def\Field@boolkey#1#2{%
5532   \csname Fld@#2\ifx\relax#1\relax true\else#1\fi\endcsname
5533 }
5534 \ifHy@texht
5535   \newtoks\Field@toks
5536   \Field@toks={ }%
5537   \def\Field@addtoks#1#2{%
5538     \edef\@processme{\Field@toks{\the\Field@toks\space #1="#2"}}%
5539     \@processme
5540   }%
5541 \else
5542   \def\Hy@WarnHTMLFieldOption#1{%
5543     \Hy@Warning{%
5544       HTML field option '#1'\MessageBreak
5545       is ignored%
5546     }%
5547   }%
5548 \fi
5549 \def\Fld@checkequals#1=#2=#3\{\{%
5550   \def\@currDisplay{#1}%
5551   \ifx\#2\%
5552     \def\@currValue{#1}%
5553   \else
5554     \def\@currValue{#2}%
5555   \fi
5556 }
5557 \define@key{Field}{loc}{%
5558   \def\Fld@loc{#1}%
5559 }
5560 \define@key{Field}{checked}[true]{%
5561   \lowercase{\Field@boolkey{#1}}{checked}%
5562 }
5563 \define@key{Field}{disabled}[true]{%
5564   \lowercase{\Field@boolkey{#1}}{disabled}%
5565 }
5566 \ifHy@texht
5567   \define@key{Field}{accesskey}{%
5568     \Field@addtoks{accesskey}{#1}%
5569   }%
5570   \define@key{Field}{tabkey}{%
5571     \Field@addtoks{tabkey}{#1}%
5572   }%

```

```

5573 \else
5574   \define@key{Field}{accesskey}{%
5575     \Hy@WarnHTMLFieldOption{accesskey}%
5576   }%
5577   \define@key{Field}{tabkey}{%
5578     \Hy@WarnHTMLFieldOption{tabkey}%
5579   }%
5580 \fi
5581 \define@key{Field}{name}{%
5582   \def\Fld@name{#1}%
5583 }
5584 \let\Fld@altname\relax
5585 \define@key{Field}{altname}{%
5586   \def\Fld@altname{#1}%
5587 }
5588 \let\Fld@mappingname\relax
5589 \define@key{Field}{mappingname}{%
5590   \def\Fld@mappingname{#1}%
5591 }
5592 \define@key{Field}{width}{%
5593   \def\Fld@width{#1}%
5594   \Field@Width#1\setbox0=\hbox{m}%
5595 }
5596 \define@key{Field}{maxlen}{%
5597   \def\Fld@maxlen{#1}%
5598 }
5599 \define@key{Field}{menulength}{%
5600   \Fld@menulength=#1\relax
5601 }
5602 \define@key{Field}{height}{%
5603   \def\Fld@height{#1}%
5604 }
5605 \define@key{Field}{charsize}{%
5606   \Fld@charsize#1%
5607 }
5608 \define@key{Field}{borderwidth}{%
5609   \def\Fld@borderwidth{#1}%
5610 }
5611 \define@key{Field}{borderstyle}{%
5612   \let\Hy@temp\Fld@borderstyle
5613   \def\Fld@borderstyle{#1}%
5614   \Hy@Match\Fld@borderstyle{%
5615     ~[SDBIU]$%
5616   }{}{%
5617     \Hy@Warning{%
5618       Invalid value ‘\@pdfborderstyle’\MessageBreak
5619       for option ‘pdfborderstyle’. Valid values:\MessageBreak
5620       \space\space S (Solid), D (Dashed), B (Beveled),\MessageBreak
5621       \space\space I (Inset), U (Underline)\MessageBreak
5622       Option setting is ignored%
5623     }%
5624     \let\Fld@borderstyle\Hy@temp
5625   }%
5626 }
5627 \define@key{Field}{bordersep}{%
5628   \def\Fld@bordersep{#1}%
5629 }

```

```

5630 \define@key{Field}{default}{%
5631   \def\Fld@default{#1}%
5632 }
5633 \define@key{Field}{align}{%
5634   \def\Fld@align{#1}%
5635 }
5636 \define@key{Field}{value}{%
5637   \def\Fld@value{#1}%
5638 }
5639 \define@key{Field}{checkboxsymbol}{%
5640   \Fld@DingDef\Fld@cbsymbol{#1}%
5641 }
5642 \define@key{Field}{radiosymbol}{%
5643   \Fld@DingDef\Fld@radiosymbol{#1}%
5644 }
5645 \def\Fld@DingDef#1#2{%
5646   \def\Fld@temp{}%
5647   \Fld@@DingDef#2\ding{}\@nil
5648   \let#1\Fld@temp
5649 }
5650 \def\Fld@@DingDef#1\ding#2#3\@nil{%
5651   \expandafter\def\expandafter\Fld@temp\expandafter{%
5652     \Fld@temp
5653     #1%
5654   }%
5655   \ifx\\#3\\%
5656     \expandafter\@gobble
5657   \else
5658     \begingroup
5659     \lccode'0=#2\relax
5660     \lowercase{\endgroup
5661       \expandafter\def\expandafter\Fld@temp\expandafter{%
5662         \Fld@temp
5663         0%
5664       }%
5665     }%
5666     \expandafter\@firstofone
5667   \fi
5668   {%
5669     \Fld@@DingDef#3\@nil
5670   }%
5671 }

5672 \define@key{Field}{rotation}{%
5673   \def\Fld@rotation{#1}%
5674 }

5675 \define@key{Field}{backgroundcolor}{%
5676   \HyColor@FieldBColor{#1}\Fld@bcolor{hyperref}{backgroundcolor}%
5677 }
5678 \define@key{Field}{bordercolor}{%
5679   \HyColor@FieldBColor{#1}\Fld@bordercolor{hyperref}{bordercolor}%
5680 }
5681 \define@key{Field}{color}{%
5682   \HyColor@FieldColor{#1}\Fld@color{hyperref}{color}%
5683 }

5684 \def\Fld@onclick@code{}
5685 \def\Fld@format@code{}

```

```

5686 \def\Fld@validate@code{}
5687 \def\Fld@calculate@code{}
5688 \def\Fld@keystroke@code{}
5689 \def\Fld@onfocus@code{}
5690 \def\Fld@onblur@code{}
5691 \def\Fld@onmousedown@code{}
5692 \def\Fld@onmouseup@code{}
5693 \def\Fld@onenter@code{}
5694 \def\Fld@onexit@code{}
5695 \def\Hy@temp#1{%
5696   \expandafter\Hy@@temp\csname Fld@#1@code\endcsname{#1}%
5697 }
5698 \def\Hy@@temp#1#2{%
5699   \ifHy@pdfa
5700     \define@key{Field}{#2}{%
5701       \Hy@Error{%
5702         PDF/A: Additional action ‘#2’ is prohibited%
5703       }\@ehc
5704     }%
5705   \else
5706     \define@key{Field}{#2}{%
5707       \def#1{##1}%
5708     }%
5709   \fi
5710 }
5711 \Hy@temp{keystroke}
5712 \Hy@temp{format}
5713 \Hy@temp{validate}
5714 \Hy@temp{calculate}
5715 \Hy@temp{onfocus}
5716 \Hy@temp{onblur}
5717 \Hy@temp{onenter}
5718 \Hy@temp{onexit}
5719 \ifHy@texht
5720   \def\Hy@temp#1{%
5721     \define@key{Field}{#1}{%
5722       \Field@addtoks{#1}{##1}%
5723     }%
5724   }%
5725 \else
5726   \def\Hy@temp#1{%
5727     \define@key{Field}{#1}{%
5728       \Hy@WarnHTMLFieldOption{#1}%
5729     }%
5730   }%
5731 \fi
5732 \Hy@temp{ondblclick}
5733 \Hy@temp{onmousedown}
5734 \Hy@temp{onmouseup}
5735 \Hy@temp{onmouseover}
5736 \Hy@temp{onmousemove}
5737 \Hy@temp{onmouseout}
5738 \Hy@temp{onkeydown}
5739 \Hy@temp{onkeyup}
5740 \Hy@temp{onselect}
5741 \Hy@temp{onchange}
5742 \Hy@temp{onkeypress}

```

```

5743 \ifHy@texht
5744   \define@key{Field}{onclick}{%
5745     \Field@addtoks{onclick}{#1}%
5746   }%
5747 \else
5748   \ifHy@pdfa
5749     \define@key{Field}{onclick}{%
5750       \Hy@Error{%
5751         PDF/A: Action 'onclick' is prohibited%
5752       }\@ehc
5753     }%
5754   \else
5755     \define@key{Field}{onclick}{%
5756       \def\Fld@onclick@code{#1}%
5757     }%
5758   \fi
5759 \fi

5760 \DeclareRobustCommand\TextField{%
5761   \@ifnextchar[{\@TextField}{\@TextField[]}%
5762 }
5763 \DeclareRobustCommand\ChoiceMenu{%
5764   \@ifnextchar[{\@ChoiceMenu}{\@ChoiceMenu[]}%
5765 }
5766 \DeclareRobustCommand\CheckBox{%
5767   \@ifnextchar[{\@CheckBox}{\@CheckBox[]}%
5768 }
5769 \DeclareRobustCommand\PushButton{%
5770   \@ifnextchar[{\@PushButton}{\@PushButton[]}%
5771 }
5772 \DeclareRobustCommand\Gauge{%
5773   \@ifnextchar[{\@Gauge}{\@Gauge[]}%
5774 }
5775 \DeclareRobustCommand\Submit{%
5776   \@ifnextchar[{\@Submit}{\@Submit[]}%
5777 }
5778 \DeclareRobustCommand\Reset{%
5779   \@ifnextchar[{\@Reset}{\@Reset[]}%
5780 }
5781 \def\LayoutTextField#1#2{% label, field
5782   #1 #2%
5783 }
5784 \def\LayoutChoiceField#1#2{% label, field
5785   #1 #2%
5786 }
5787 \def\LayoutCheckField#1#2{% label, field
5788   #1 #2%
5789 }
5790 \def\LayoutPushButtonField#1{% button
5791   #1%
5792 }
5793 \def\MakeRadioField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
5794 \def\MakeCheckField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
5795 \def\MakeTextField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
5796 \def\MakeChoiceField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
5797 \def\MakeButtonField#1{%
5798   \sbox0{%
5799     \hskip\Fld@borderwidth bp#1\hskip\Fld@borderwidth bp%

```

```

5800 }%
5801 \@tempdima\ht0 %
5802 \advance\@tempdima by \Fld@borderwidth bp %
5803 \advance\@tempdima by \Fld@borderwidth bp %
5804 \ht0\@tempdima
5805 \@tempdima\dp0 %
5806 \advance\@tempdima by \Fld@borderwidth bp %
5807 \advance\@tempdima by \Fld@borderwidth bp %
5808 \dp0\@tempdima
5809 \box0\relax
5810 }
5811 \def\DefaultHeightofSubmit{14pt}
5812 \def\DefaultWidthofSubmit{2cm}
5813 \def\DefaultHeightofReset{14pt}
5814 \def\DefaultWidthofReset{2cm}
5815 \def\DefaultHeightofCheckBox{\baselineskip}
5816 \def\DefaultWidthofCheckBox{\baselineskip}
5817 \def\DefaultHeightofChoiceMenu{\baselineskip}
5818 \def\DefaultWidthofChoiceMenu{\baselineskip}
5819 \def\DefaultHeightofText{\baselineskip}
5820 \def\DefaultHeightofTextMultiline{4\baselineskip}
5821 \def\DefaultWidthofText{3cm}
5822 \def\DefaultOptionsofSubmit{print,name=Submit,noexport}
5823 \def\DefaultOptionsofReset{print,name=Reset,noexport}
5824 \def\DefaultOptionsofPushButton{print}
5825 \def\DefaultOptionsofCheckBox{print}
5826 \def\DefaultOptionsofText{print}

```

Default options for the types of \ChoiceMenu.

```

5827 \def\DefaultOptionsofListBox{print}
5828 \def\DefaultOptionsofComboBox{print,edit,sort}
5829 \def\DefaultOptionsofPopdownBox{print}
5830 \def\DefaultOptionsofRadio{print,notoggletooff}

```

## 20 Setup

```

5831 \ifHy@figures
5832 \Hy@Info{Hyper figures ON}%
5833 \else
5834 \Hy@Info{Hyper figures OFF}%
5835 \fi
5836 \ifHy@nesting
5837 \Hy@Info{Link nesting ON}%
5838 \else
5839 \Hy@Info{Link nesting OFF}%
5840 \fi
5841 \ifHy@hyperindex
5842 \Hy@Info{Hyper index ON}%
5843 \else
5844 \Hy@Info{Hyper index OFF}%
5845 \fi
5846 \ifHy@backref
5847 \Hy@Info{backreferencing ON}%
5848 \else
5849 \Hy@Info{backreferencing OFF}%
5850 \fi
5851 \ifHy@colorlinks

```

```

5852 \Hy@Info{Link coloring ON}%
5853 \else
5854 \Hy@Info{Link coloring OFF}%
5855 \fi
5856 \ifHy@ocgcolorlinks
5857 \Hy@Info{Link coloring with OCG ON}%
5858 \else
5859 \Hy@Info{Link coloring with OCG OFF}%
5860 \fi
5861 \ifHy@pdfa
5862 \Hy@Info{PDF/A mode ON}%
5863 \else
5864 \Hy@Info{PDF/A mode OFF}%
5865 \fi

```

## 21 Low-level utility macros

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

```

5866 \edef\hyper@hash{\string#}
5867 \edef\hyper@tilde{\string~}
5868 \edef\hyper@quote{\string"}

```

Support \label before \begin{document}.

```

5869 \def\@currentHref{Doc-Start}
5870 \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.

```

5871 \Hy@AtBeginDocument{%
5872 \Hy@pdfstringtrue
5873 \PDF@SetupDoc
5874 \let\PDF@SetupDoc\@empty
5875 \Hy@DisableOption{pdfpagescrop}%
5876 \Hy@DisableOption{pdfpagemode}%
5877 \Hy@DisableOption{pdfnonfullscreenpagemode}%
5878 \Hy@DisableOption{pdfdirection}%
5879 \Hy@DisableOption{pdfviewarea}%
5880 \Hy@DisableOption{pdfviewclip}%
5881 \Hy@DisableOption{pdfprintarea}%
5882 \Hy@DisableOption{pdfprintclip}%
5883 \Hy@DisableOption{pdfprintscaling}%
5884 \Hy@DisableOption{pdfduplex}%
5885 \Hy@DisableOption{pdfpicktraybypdfsize}%
5886 \Hy@DisableOption{pdfprintpagerange}%
5887 \Hy@DisableOption{pdfnumcopies}%
5888 \Hy@DisableOption{pdfstartview}%
5889 \Hy@DisableOption{pdfstartpage}%
5890 \Hy@DisableOption{pdftoolbar}%
5891 \Hy@DisableOption{pdfmenubar}%
5892 \Hy@DisableOption{pdfwindowui}%
5893 \Hy@DisableOption{pdfitwindow}%
5894 \Hy@DisableOption{pdfcenterwindow}%
5895 \Hy@DisableOption{pdfdisplaydoctitle}%
5896 \Hy@DisableOption{pdfpagelayout}%
5897 \Hy@DisableOption{pdflang}%
5898 \Hy@DisableOption{baseurl}%
5899 \ifHy@texht\else\hyper@anchorstart{Doc-Start}\hyper@anchorend\fi
5900 \Hy@pdfstringfalse

```



```

5901 }
    Ignore star from referencing macros:
5902 \LetLtxMacro\NoHy@OrgRef\ref
5903 \DeclareRobustCommand*\ref{%
5904   \@ifstar\NoHy@OrgRef\NoHy@OrgRef
5905 }
5906 \LetLtxMacro\NoHy@OrgPageRef\pageref
5907 \DeclareRobustCommand*\pageref{%
5908   \@ifstar\NoHy@OrgPageRef\NoHy@OrgPageRef
5909 }

```

## 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.

```

5910 \def\NoHyper{%
5911   \def\hyper@link@{##1}##2##3##4{##4}%
5912   \def\hyper@@anchor##1{%
5913     \global\let\hyper@livelink\hyper@link
5914     \gdef\hyper@link##1##2##3{##3}%
5915     \def\hyper@anchor##1{%
5916       \def\hyper@anchorstart##1{%
5917         \let\hyper@anchorend\@empty
5918         \def\hyper@linkstart##1##2{%
5919           \let\hyper@linkend\@empty
5920           \def\hyper@linkurl##1##2{##1}%
5921           \def\hyper@linkfile##1##2##3{##1}%
5922           \def\hyper@link@{##1}##2##3{%
5923             \let\Hy@backout\@gobble
5924           }
5925           \def\stop@hyper{%
5926             \def\hyper@link@{##1}##2##3##4{##4}%
5927             \let\Hy@backout\@gobble
5928             \def\hyper@@anchor##1{%
5929               \def\hyper@link##1##2##3{##3}%
5930               \def\hyper@anchor##1{%
5931                 \def\hyper@anchorstart##1{%
5932                   \let\hyper@anchorend\@empty
5933                   \def\hyper@linkstart##1##2{%
5934                     \let\hyper@linkend\@empty
5935                     \def\hyper@linkurl##1##2{##1}%
5936                     \def\hyper@linkfile##1##2##3{##1}%
5937                     \def\hyper@link@{##1}##2##3{%
5938                       }
5939                   }
5940                   \global\let\hyper@link\hyper@livelink
5941                 }
5942               }

```

## 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:

```

5943 <*nohyperref>
5944 \RequirePackage{letltxmacro}[2008/06/13]
5945 \let\hyper@@anchor\@gobble
5946 \def\hyper@link#1#2#3{#3}%
5947 \let\hyper@anchorstart\@gobble
5948 \let\hyper@anchorend\@empty
5949 \let\hyper@linkstart\@gobbletwo
5950 \let\hyper@linkend\@empty
5951 \def\hyper@linkurl#1#2{#1}%
5952 \def\hyper@linkfile#1#2#3{#1}%
5953 \def\hyper@link@{#1}#2#3{#3}%
5954 \let\PDF@SetupDoc\@empty
5955 \let\PDF@FinishDoc\@empty
5956 \def\nohyperpage#1{#1}

```

Some top-level commands:

```

5957 \def\Acrobatmenu#1#2{\leavevmode#2}
5958 \let\pdfstringdefDisableCommands\@gobbletwo
5959 \let\texorpdfstring\@firstoftwo
5960 \let\pdfbookmark\@undefined
5961 \newcommand\pdfbookmark[3]{}{}
5962 \let\phantomsection\@empty
5963 \let\hypersetup\@gobble
5964 \let\hyperbaseurl\@gobble
5965 \newcommand*{\href}[3]{}{#3}
5966 \let\hyperdef\@gobbletwo
5967 \let\hyperlink\@gobble
5968 \let\hypertarget\@gobble
5969 \def\hyperref{%
5970   \@ifnextchar[\@gobbleopt{\expandafter\@gobbletwo\@gobble}%
5971 }
5972 \long\def\@gobbleopt[#1]{}
5973 \let\hyperpage\@empty

```

Ignore star from referencing macros:

```

5974 \LetLtxMacro\NoHy@OrgRef\ref
5975 \DeclareRobustCommand*{\ref}{%
5976   \@ifstar\NoHy@OrgRef\NoHy@OrgRef
5977 }
5978 \LetLtxMacro\NoHy@OrgPageRef\pageref
5979 \DeclareRobustCommand*{\pageref}{%
5980   \@ifstar\NoHy@OrgPageRef\NoHy@OrgPageRef
5981 }
5982 </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}

```

5983 <*package>

```

```
5984 \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.

```
5985 \if@filesw
5986 \ifHy@typexml
5987 \immediate\closeout\@mainaux
5988 \immediate\openout\@mainaux\jobname.aux\relax
5989 \immediate\write\@auxout{<relaxxml>\relax}%
5990 \fi
5991 \immediate\write\@auxout{%
5992 \string\providecommand\string\HyperFirstAtBeginDocument{%
5993 \string\AtBeginDocument}^^J%
5994 \string\HyperFirstAtBeginDocument{%
5995 \string\ifx\string\hyper@anchor\string\@undefined^^J%
5996 \string\global\string\let\string\oldcontentsline\string\contentsline^^J%
5997 \string\gdef\string\contentsline%
5998 \string#1\string#2\string#3\string#4{%
5999 \string\oldcontentsline%
6000 {\string#1}{\string#2}{\string#3}}^^J%
6001 \string\global\string\let\string\oldnewlabel\string\newlabel^^J%
6002 \string\gdef\string\newlabel\string#1\string#2{%
6003 \string\newlabelxx{\string#1}\string#2}^^J%
6004 \string\gdef\string\newlabelxx%
6005 \string#1\string#2\string#3\string#4\string#5\string#6{%
6006 \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.

```
6007 \string\AtEndDocument{%
6008 \string\ifx\string\hyper@anchor\string\@undefined^^J%
6009 \string\let\string\contentsline\string\oldcontentsline^^J%
6010 \string\let\string\newlabel\string\oldnewlabel^^J%
6011 \string\fi%
6012 }^^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.

```
6013 \string\fi%
6014 }^^J%
6015 \string\global\string\let\string\hyper@last\relax^^J%
6016 \string\gdef\string\HyperFirstAtBeginDocument\string#1{\string#1}%
6017 }%
6018 \fi
6019 \def\HyperFirstAtBeginDocument#1{#1}%
```

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.

```
6020 \ifx\hyper@last\@undefined
6021 \def\@starttoc#1{%
6022 \begingroup
6023 \makeatletter
6024 \IfFileExists{\jobname.#1}{%
6025 \Hy@WarningNoLine{%
```

```

6026         old #1 file detected, not used; run LaTeX again%
6027     }%
6028 }{}%
6029 \if@filesw
6030     \expandafter\newwrite\csname tf@#1\endcsname
6031     \immediate\openout\csname tf@#1\endcsname \jobname.#1\relax
6032 \fi
6033 \@nobeckfalse
6034 \endgroup
6035 }%
6036 \def\newlabel#1#2{\@newl@bel r{#1}{#2}{-}{-}}%
6037 \fi
6038 }

```

## 25 Title strings

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

```

6039 \ifHy@usetitle
6040 \let\HyOrg@title\title
6041 \let\HyOrg@author\author
6042 \def\title{\@ifnextchar{\Hy@scanopttitle}{\Hy@scantitle}}%
6043 \def\Hy@scanopttitle[#1]{%
6044     \gdef\Hy@title{#1}%
6045     \HyOrg@title{#1}%
6046 }%
6047 \def\Hy@scantitle#1{%
6048     \gdef\Hy@title{#1}%
6049     \HyOrg@title{#1}%
6050 }%
6051 \def\author{\@ifnextchar{\Hy@scanoptauthor}{\Hy@scanauthor}}%
6052 \def\Hy@scanoptauthor[#1]{%
6053     \gdef\Hy@author{#1}%
6054     \HyOrg@author{#1}%
6055 }%
6056 \def\Hy@scanauthor#1{%
6057     \gdef\Hy@author{#1}%
6058     \HyOrg@author{#1}%
6059 }%

```

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.

```

6060 \begingroup
6061 \def\process@me#1\@nil#2{%
6062     \expandafter\let\expandafter\x\csname @#2\endcsname
6063     \edef\y{\expandafter\strip@prefix\meaning\x}%
6064     \def\c##1#1##2\@nil{%
6065         \ifx\##1\%
6066             \else
6067                 \expandafter\gdef\csname Hy@#2\expandafter\endcsname
6068                 \expandafter{x}%
6069             \fi
6070         }%
6071     \expandafter\c\y\relax#1\@nil
6072 }%
6073 \expandafter\process@me\string\@latex@\@nil{title}%

```

```

6074 \expandafter\process@me\string\@latex@\@nil{author}%
6075 \endgroup
6076 \fi
6077 \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.

```

6078 \def\Hy@UseMaketitleString#1{%
6079 \ltx@ifundefined{Hy@#1}{}{}%
6080 \begingroup
6081 \let\Hy@saved@hook\pdfstringdefPreHook
6082 \pdfstringdefDisableCommands{%
6083 \expandafter\let\expandafter\\ \csname Hy@newline@#1\endcsname
6084 \let\newline\\%
6085 }%
6086 \expandafter\ifx\csname @pdf#1\endcsname\@empty
6087 \expandafter\pdfstringdef\csname @pdf#1\endcsname{%
6088 \csname Hy@#1\endcsname\@empty
6089 }%
6090 \fi
6091 \global\let\pdfstringdefPreHook\Hy@saved@hook
6092 \endgroup
6093 }%
6094 }
6095 \def\Hy@newline@title#1{ #1}
6096 \def\Hy@newline@author#1{, #1}
6097 \def\Hy@UseMaketitleInfos{%
6098 \Hy@UseMaketitleString{title}%
6099 \Hy@UseMaketitleString{author}%
6100 }

```

## 26 Page numbers

This stuff is done by Heiko Oberdiek.

## 27 Every page

```

6101 \RequirePackage{atbegshi}[2007/09/09]
6102 \def\Hy@EveryPageHook{}
6103 \def\Hy@EveryPageBoxHook{}
6104 \def\Hy@FirstPageHook{}
6105 \AtBeginShipout{%
6106 \Hy@EveryPageHook
6107 \ifx\Hy@EveryPageBoxHook\@empty
6108 \else
6109 \setbox\AtBeginShipoutBox=\vbox{%
6110 \offinterlineskip
6111 \Hy@EveryPageBoxHook

```

```

6112 \box\AtBeginShipoutBox
6113 }%
6114 \fi
6115 }
6116 \AtBeginShipoutFirst{%
6117 \Hy@FirstPageHook
6118 }
6119 \g@addto@macro\Hy@FirstPageHook{%
6120 \PDF@FinishDoc
6121 \gdef\PDF@FinishDoc{}}%
6122 }

```

## 27.1 PDF /PageLabels

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

```

6123 \ifHy@pagelabels
6124 \begingroup\expandafter\expandafter\expandafter\endgroup
6125 \expandafter\ifx\csname thepage\endcsname\relax
6126 \Hy@pagelabelsfalse
6127 \Hy@WarningNoLine{%
6128 Option 'pdflabels' is turned off\MessageBreak
6129 because \string\thepage\space is undefined%
6130 }%
6131 \csname fi\endcsname
6132 \csname iffalse\expandafter\endcsname
6133 \fi

```

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

```

6134 \def\thispdfpagelabel#1{%
6135 \gdef\HyPL@thisLabel{#1}%
6136 }%
6137 \global\let\HyPL@thisLabel\relax

```

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

```

6138 \def\HyPL@Labels{}%

```

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

```

6139 \newcount\Hy@abspage
6140 \Hy@abspage=0 %

```

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

```

6141 \def\HyPL@LastType{init}%
6142 \def\HyPL@LastNumber{0}%
6143 \def\HyPL@LastPrefix{}%

```

Definitions for the PDF names of the  $\LaTeX$  pendants.

```

6144 \def\HyPL@arabic{D}%
6145 \def\HyPL@Roman{R}%
6146 \def\HyPL@roman{r}%
6147 \def\HyPL@Alph{A}%
6148 \def\HyPL@alph{a}%

```

`\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.

```

6149 \def\HyPL@EveryPage{%
6150 \begingroup

```

```

6151 \ifx\HyPL@thisLabel\relax
6152 \let\HyPL@page\thepage
6153 \else
6154 \let\HyPL@page\HyPL@thisLabel
6155 \global\let\HyPL@thisLabel\relax
6156 \fi
6157 \let\HyPL@Type\relax
6158 \ifnum\the\c@page>0 %
6159 \expandafter\HyPL@CheckThePage\HyPL@page\@nil
6160 \fi
6161 \let\Hy@temp Y%
6162 \ifx\HyPL@Type\HyPL@LastType
6163 \else
6164 \let\Hy@temp N%
6165 \fi
6166 \ifx\HyPL@Type\relax
6167 \pdfstringdef\HyPL@Prefix{\HyPL@page}%
6168 \else
6169 \pdfstringdef\HyPL@Prefix\HyPL@Prefix
6170 \fi
6171 \ifx\HyPL@Prefix\HyPL@LastPrefix
6172 \else
6173 \let\Hy@temp N%
6174 \fi
6175 \if Y\Hy@temp
6176 \advance\c@page by -1 %
6177 \ifnum\HyPL@LastNumber=\the\c@page\relax
6178 \else
6179 \let\Hy@temp N%
6180 \fi
6181 \Hy@StepCount\c@page
6182 \fi
6183 \if N\Hy@temp
6184 \ifx\HyPL@Type\relax
6185 \HyPL@StorePageLabel{/P(\HyPL@Prefix)}%
6186 \else
6187 \HyPL@StorePageLabel{%
6188 \ifx\HyPL@Prefix\@empty
6189 \else
6190 /P(\HyPL@Prefix)%
6191 \fi
6192 /S/\csname HyPL\HyPL@Type\endcsname
6193 \ifnum\the\c@page=1 %
6194 \else
6195 \space/St \the\c@page
6196 \fi
6197 }%
6198 \fi
6199 \fi
6200 \xdef\HyPL@LastNumber{\the\c@page}%
6201 \global\let\HyPL@LastType\HyPL@Type
6202 \global\let\HyPL@LastPrefix\HyPL@Prefix
6203 \endgroup
6204 \Hy@GlobalStepCount\Hy@abspage
6205 }%

```

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

```

6206 \def\HyPL@CheckThePage#1\@nil{%
6207   \HyPL@@CheckThePage{#1}#1\csname\endcsname\c@page\@nil
6208 }%

```

`\HyPL@@CheckThePage` The first check is, is `\thepage` is defined such as in  $\text{\LaTeX}$ , e.g.: `\csname @arabic\endcsname\c@page`. In the current implementation the check fails, if there is another `\csname` before.

The second check tries to detect `\arabic{page}` at the end of the definition text of `\thepage`.

```

6209 \def\HyPL@@CheckThePage#1#2\csname#3\endcsname\c@page#4\@nil{%
6210   \def\Hy@tempa{#4}%
6211   \def\Hy@tempb{\csname\endcsname\c@page}%
6212   \ifx\Hy@tempa\Hy@tempb
6213     \expandafter\ifx\csname HyPL#3\endcsname\relax
6214     \else
6215       \def\HyPL@Type{#3}%
6216       \def\HyPL@Prefix{#2}%
6217       \fi
6218     \else
6219       \begingroup
6220       \let\Hy@next\endgroup
6221       \let\HyPL@found\@undefined
6222       \def\arabic{\HyPL@Format{arabic}}%
6223       \def\Roman{\HyPL@Format{Roman}}%
6224       \def\roman{\HyPL@Format{roman}}%
6225       \def\Alph{\HyPL@Format{Alph}}%
6226       \def\alph{\HyPL@Format{alph}}%
6227       \protected@edef\Hy@temp{#1}%
6228       \ifx\HyPL@found\relax
6229         \toks@{\expandafter{\Hy@temp}}%
6230         \edef\Hy@next{\endgroup
6231           \noexpand\HyPL@@@CheckThePage\the\toks@
6232           \noexpand\HyPL@found\relax\noexpand\@nil
6233         }%
6234         \fi
6235       \Hy@next
6236     \fi
6237   }%

```

`\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`.

```

6238 \def\HyPL@Format#1#2{%
6239   \ifx\HyPL@found\@undefined
6240     \expandafter\ifx\csname c@#2\endcsname\c@page
6241       \expandafter\noexpand\csname HyPL@found\endcsname{#1}%
6242     \else
6243       \expandafter\noexpand\csname#1\endcsname{#2}%
6244     \fi
6245   \else
6246     \expandafter\noexpand\csname#1\endcsname{#2}%
6247   \fi
6248 }%

```

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



```

6249 \def\HyPL@@@CheckThePage#1\HyPL@found#2#3\@nil{%
6250 \def\Hy@tempa{#3}%
6251 \def\Hy@tempb{\HyPL@found\relax}%
6252 \ifx\Hy@tempa\Hy@tempb
6253 \def\HyPL@Type{#2}%
6254 \def\HyPL@Prefix{#1}%
6255 \fi
6256 }%

```

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

```

6257 \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`.

```

6258 \def\HyPL@Useless{0<</S/D>>}%
6259 \@onelevel@sanitize\HyPL@Useless

```

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

```

6260 \def\HyPL@SetPageLabels{%
6261 \@onelevel@sanitize\HyPL@Labels
6262 \ifx\HyPL@Labels\@empty
6263 \else
6264 \ifx\HyPL@Labels\HyPL@Useless
6265 \else
6266 \Hy@PutCatalog{/PageLabels<</Nums[\HyPL@Labels]>>}%
6267 \fi
6268 \fi
6269 }%

```

```

6270 \g@addto@macro\Hy@EveryPageHook{\HyPL@EveryPage}%
6271 \fi

```

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

```

6272 \Hy@DisableOption{pdfpagelabels}
6273 </package>

```

### 27.1.1 pdfTeX and VTeX

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

`\Hy@PutCatalog`

```

6274 <*pdfTeX>
6275 \pdf@ifdraftmode{%
6276 \let\Hy@PutCatalog\ltx@gobble
6277 }{%
6278 \let\Hy@PutCatalog\pdfcatalog
6279 }
6280 </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.

```

6281 <*vTeX>

```

```

6282 \providecommand*{\XR@ext}{pdf}
6283 \edef\Hy@VTeXversion{%
6284   \ifx\VTeXversion\@undefined
6285     \z@
6286   \else
6287     \ifx\VTeXversion\relax
6288       \z@
6289     \else
6290       \VTeXversion
6291     \fi
6292   \fi
6293 }
6294 \begingroup
6295   \ifnum\Hy@VTeXversion<660 %
6296     \gdef\Hy@PutCatalog#1{%
6297       \Hy@WarningNoLine{%
6298         VTeX 6.59g or above required for pdfpagelabels%
6299       }%
6300     }%
6301   \else
6302     \gdef\Hy@PutCatalog#1{%
6303       \Hy@vt@PutCatalog#1/PageLabels<<>>\@nil
6304     }%
6305     \gdef\Hy@vt@PutCatalog#1/PageLabels<<#2>>#3\@nil{%
6306       \ifx\#2\%
6307         \else
6308           \immediate\special{!pdfpagelabels #2}%
6309         \fi
6310       }%
6311     \fi
6312 \endgroup
6313 </vtex>

6314 <*pdfTeX | vtex>

```

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

```

6315 \ifHy@pagelabels
6316   \def\HyPL@StorePageLabel#1{%
6317     \toks@\expandafter{\HyPL@Labels}%
6318     \xdef\HyPL@Labels{%
6319       \the\toks@
6320       \the\Hy@abspage<<#1>>%
6321     }%
6322   }%

```

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.

```

6323 \RequirePackage{atveryend}[2009/12/07]%
6324 \AtVeryEndDocument{%
6325   \HyPL@SetPageLabels
6326 }%

6327 \fi
6328 </pdfTeX | vtex>

```

## 27.1.2 xetex

```

6329 <*xetex>
6330 \HyPsd@LoadUnicode
6331 \Hy@unicodetrue
6332 \ifx\HyPsd@pdfencoding\HyPsd@pdfencoding@unicode
6333 \else
6334 \let\HyPsd@pdfencoding\HyPsd@pdfencoding@auto
6335 \fi
6336 \HyPsd@LoadStringEnc
6337 \define@key{Hyp}{unicode}[true]{%
6338 \Hy@boolkey{unicode}{#1}%
6339 \ifHy@unicode
6340 \else
6341 \Hy@Warning{%
6342 XeTeX driver only supports 'unicode=true'. Ignoring\MessageBreak
6343 option setting 'unicode=false'%
6344 }%
6345 \Hy@unicodetrue
6346 \fi
6347 }
6348 \define@key{Hyp}{pdfencoding}{%
6349 \edef\HyPsd@temp{#1}%
6350 \ifx\HyPsd@temp\HyPsd@pdfencoding@unicode
6351 \let\HyPsd@pdfencoding\HyPsd@temp
6352 \else
6353 \ifx\HyPsd@temp\HyPsd@pdfencoding@auto
6354 \let\HyPsd@pdfencoding\HyPsd@temp
6355 \else
6356 \Hy@Warning{%
6357 XeTeX driver only supports\MessageBreak
6358 'pdfencoding=unicode|auto'. Ignoring option\MessageBreak
6359 setting 'pdfencoding=\HyPsd@temp'%
6360 }%
6361 \fi
6362 \fi
6363 }
6364 \let\HyXeTeX@CheckUnicode\relax
6365 </xetex>

```

### 27.1.3 pdfmarkbase, dvipdfm, xetex

```

6366 <*pdfmarkbase>
6367 \begingroup
6368 \@ifundefined{headerps@out}{}{%
6369 \toks@{\expandafter\Hy@FirstPageHook}%
6370 \xdef\Hy@FirstPageHook{%
6371 \noexpand\headerps@out{%
6372 systemdict /pdfmark known%
6373 {%
6374 userdict /?pdfmark systemdict /exec get put%
6375 }{%
6376 userdict /?pdfmark systemdict /pop get put %
6377 userdict /pdfmark systemdict /cleartomark get put%
6378 }%
6379 ifelse%
6380 }%
6381 \the\toks@
6382 }%
6383 }%

```

```

6384 \endgroup
6385 \pdfmarkbase>

\Hy@PutCatalog

6386 <dvipdfm | xetex>\def\Hy@PutCatalog#1{\@pdfmark{docview << #1 >>}}
6387 <*pdfmarkbase>
6388 \def\Hy@PutCatalog#1{%
6389   \pdfmark{pdfmark=/PUT,Raw={\string{Catalog\string} << #1 >>}}%
6390 }
6391 \pdfmarkbase>

6392 <*pdfmarkbase | dvipdfm | xetex>
6393 \ifHy@pagelabels

```

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

```

6394 \def\HyPL@StorePageLabel#1{%
6395   \if@filesw
6396     \begingroup
6397     \edef\Hy@tempa{\the\Hy@abspage<<#1>>}%
6398     \immediate\write\@mainaux{%
6399       \string\HyPL@Entry{\Hy@tempa}%
6400     }%
6401   \endgroup
6402   \fi
6403 }%

```

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.

```

6404 \Hy@AtBeginDocument{%
6405   \if@filesw
6406     \immediate\write\@mainaux{%
6407       \string\providecommand\string*\string\HyPL@Entry[1]{}%
6408     }%
6409   \fi
6410   \ifx\HyPL@Labels\@empty
6411     \Hy@WarningNoLine{Rerun to get /PageLabels entry}%
6412   \else
6413     \HyPL@SetPageLabels
6414   \fi
6415   \let\HyPL@Entry\@gobble
6416 }%

```

\HyPL@Entry

```

6417 \def\HyPL@Entry#1{%
6418   \expandafter\gdef\expandafter\HyPL@Labels\expandafter{%
6419     \HyPL@Labels
6420     #1%
6421   }%
6422 }%

6423 \fi
6424 \pdfmarkbase | dvipdfm | xetex>
6425 <*package>
6426 \MaybeStopEarly

```

## 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

```

6427 \def\Hy@CounterExists#1{%
6428   \begingroup\expandafter\expandafter\expandafter\endgroup
6429   \expandafter\ifx\csname c@#1\endcsname\relax
6430     \expandafter\@gobble
6431   \else
6432     \begingroup\expandafter\expandafter\expandafter\endgroup
6433     \expandafter\ifx\csname the#1\endcsname\relax
6434       \expandafter\expandafter\expandafter\@gobble
6435     \else
6436       \expandafter\expandafter\expandafter\@firstofone
6437     \fi
6438   \fi
6439 }
6440 \Hy@CounterExists{section}{%
6441   \newcommand\theHequation{\theHsection.\arabic{equation}}}%
6442 }
6443 \Hy@CounterExists{part}{%
6444   \newcommand\theHpart{\arabic{part}}}%
6445 }
6446 \ltx@ifundefined{thechapter}{%
6447   \newcommand\theHsection   {\arabic{section}}%
6448   \newcommand\theHfigure    {\arabic{figure}}%
6449   \newcommand\theHtable     {\arabic{table}}%
6450 }{%
6451   \newcommand\theHchapter    {\arabic{chapter}}%
6452   \newcommand\theHfigure     {\theHchapter.\arabic{figure}}%
6453   \newcommand\theHtable      {\theHchapter.\arabic{table}}%
6454   \newcommand\theHsection    {\theHchapter.\arabic{section}}%
6455 }
6456 \newcommand\theHsubsection   {\theHsection.\arabic{subsection}}
6457 \newcommand\theHsubsubsection{\theHsubsection.\arabic{subsubsection}}
6458 \newcommand\theHparagraph    {\theHsubsubsection.\arabic{paragraph}}
6459 \newcommand\theHsubparagraph {\theHparagraph.\arabic{subparagraph}}
6460 \newcommand\theHtheorem      {\theHsection.\arabic{theorem}}
6461 \newcommand\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.

```

6462 \let\H@item\item
6463 \newcounter{Item}
6464 \def\theHItem{\arabic{Item}}
6465 \def\item{%
6466   \@hyper@itemfalse
6467   \ifnmbrlist\@hyper@itemtrue\fi
6468   \H@item
6469 }

6470 \newcommand\theHenumi   {\theHItem}
6471 \newcommand\theHenumii  {\theHItem}
6472 \newcommand\theHenumiii {\theHItem}
6473 \newcommand\theHenumiv  {\theHItem}
6474 \newcommand\theHHfootnote {\arabic{Hfootnote}}
6475 \newcommand\theHmpfootnote{\arabic{mpfootnote}}
6476 \let\theHHmpfootnote\theHHfootnote

```

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.

```

6477 \let\H@refstepcounter\refstepcounter
6478 \edef\name@of@eq{equation}%
6479 \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.

```

6480 \newif\if@hyper@item
6481 \newif\if@skiphyperref
6482 \@hyper@itemfalse
6483 \@skiphyperreffalse
6484 \def\refstepcounter#1{%
6485   \ifHy@pdfstring
6486   \else
6487     \H@refstepcounter{#1}%
6488     \edef\This@name{#1}%
6489     \ifx\This@name\name@of@slide
6490     \else
6491       \if@skiphyperref
6492       \else
6493         \if@hyper@item
6494           \stepcounter{Item}%
6495           \hyper@refstepcounter{Item}%
6496           \@hyper@itemfalse
6497         \else
6498           \hyper@refstepcounter{#1}%
6499         \fi
6500       \fi
6501     \fi
6502   \fi
6503 }
6504 \let\Hy@saved@refstepcounter\refstepcounter

```

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

```

6505 \@ifpackageloaded{amsmath}{-}{\newif\ifmeasuring@\measuring@false}

```

`\hyper@refstepcounter`

```

6506 \def\hyper@refstepcounter#1{%
6507   \edef\This@name{#1}%
6508   \ifx\This@name\name@of@eq
6509     \@ifundefined{theHequation}{%
6510       \make@stripped@name{\theequation}%
6511       \let\theHequation\newname
6512     }{}%
6513   \fi
6514   \@ifundefined{theH#1}{%
6515     \expandafter\def\csname theH#1\endcsname{\arabic{#1}}%
6516   }{}%
6517   \hyper@makecurrent{#1}%
6518   \ifmeasuring@
6519   \else
6520     \Hy@raisedlink{%
6521       \hyper@anchorstart{\@currentHref}\hyper@anchorend
6522     }%
6523   \fi
6524 }

```

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`.

```

6525 \begingroup\expandafter\expandafter\expandafter\endgroup
6526 \expandafter\ifx\csname chapter\endcsname\relax
6527   \def\Hy@chapterstring{section}%
6528 \else
6529   \def\Hy@chapterstring{chapter}%
6530 \fi
6531 \def\Hy@appendixstring{appendix}
6532 \def\Hy@chapapp{\Hy@chapterstring}
6533 \ltx@ifundefined{appendix}{%
6534 }{%
6535   \let\HyOrg@appendix\appendix
6536   \def\appendix{%
6537     \ltx@ifundefined{chapter}%
6538     {\gdef\theHsection{\Alph{section}}}%
6539     {\gdef\theHchapter{\Alph{chapter}}}%
6540     \xdef\Hy@chapapp{\Hy@appendixstring}%
6541     \HyOrg@appendix
6542   }%
6543 }

```

`\Hy@Test@alph`

```

6544 \def\Hy@Test@alph#1{%
6545   \ifcase#1\or
6546     a\or b\or c\or d\or e\or f\or g\or h\or i\or j\or
6547     k\or l\or m\or n\or o\or p\or q\or r\or s\or t\or
6548     u\or v\or w\or x\or y\or z%
6549   \else
6550     \ctrerr
6551   \fi
6552 }

```

\Hy@Test@Alph

```
6553 \def\Hy@Test@Alph#1{%
6554   \ifcase#1\or
6555     A\or B\or C\or D\or E\or F\or G\or H\or I\or J\or
6556     K\or L\or M\or N\or O\or P\or Q\or R\or S\or T\or
6557     U\or V\or W\or X\or Y\or Z%
6558   \else
6559     \@ctrerr
6560   \fi
6561 }
```

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

```
6562 \def\hyper@makecurrent#1{%
6563   \begingroup
6564   \edef\Hy@param{#1}%
6565   \ifx\Hy@param\Hy@chapterstring
6566     \let\Hy@param\Hy@chapapp
6567   \fi
6568   \ifHy@hypertextnames
6569     \let\@number\@firstofone
6570     \def\@fnsymbol##1{fnsymbol\number##1}%
6571     \def\@arabic##1{\number##1}%
6572     \ifx\@alph\Hy@Test@alph
6573       \else
6574         \def\@alph{alph\number}%
6575       \fi
6576     \ifx\@Alph\Hy@Test@Alph
6577       \else
6578         \def\@Alph{Alph\number}%
6579       \fi
6580     \ifHy@naturalnames
6581       \let\textlatin\@firstofone
6582       \xdef\HyperGlobalCurrentHref{\csname the#1\endcsname}%
6583     \else
6584       \xdef\HyperGlobalCurrentHref{%
6585         \csname
6586           the%
6587           \expandafter\ifx\csname theH#1\endcsname\relax\else H\fi
6588           #1%
6589         \endcsname
6590       }%
6591     \fi
6592     \xdef\HyperGlobalCurrentHref{%
6593       \Hy@param.\expandafter\strip@prefix\meaning\HyperGlobalCurrentHref
6594     }%
6595   \else
6596     \Hy@GlobalStepCount\Hy@linkcounter
6597     \xdef\HyperGlobalCurrentHref{\Hy@param.\the\Hy@linkcounter}%
6598   \fi
6599 \endgroup
6600 \let\HyperLocalCurrentHref\HyperGlobalCurrentHref
6601 \ifHy@localanchorname
6602   \let\@currentHref\HyperLocalCurrentHref
6603 \else
6604   \global\let\@currentHref\HyperGlobalCurrentHref
6605 \fi
```



```
6606 }
```

```
\Hy@MakeCurrentHref
```

```
6607 \def\Hy@MakeCurrentHref#1{%
6608   \edef\HyperLocalCurrentHref{#1}%
6609   \@onelevel@sanitize\HyperLocalCurrentHref
6610   \global\let\HyperGlobalCurrentHref\HyperLocalCurrentHref
6611   \let\HyperLocalCurrentHref\HyperGlobalCurrentHref
6612   \ifHy@localanchorname
6613     \let\@currentHref\HyperLocalCurrentHref
6614   \else
6615     \global\let\@currentHref\HyperGlobalCurrentHref
6616   \fi
6617 }
```

```
\Hy@MakeCurrentHrefAuto
```

```
6618 \def\Hy@MakeCurrentHrefAuto#1{%
6619   \Hy@GlobalStepCount\Hy@linkcounter
6620   \Hy@MakeCurrentHref{#1.\the\Hy@linkcounter}%
6621 }
```

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

```
6622 \def\@currentHlabel{\@currentHref}

6623 \@ifpackageloaded{fancyvrb}{%
6624   \@ifpackagelater{fancyvrb}{1998/05/20}{-}{-}%
6625   \def\FV@StepLineNo{%
6626     \FV@SetLineNo
6627     \def\FV@StepLineNo{\H@refstepcounter{FancyVerbLine}}%
6628     \FV@SetLineNo
6629   }%
6630 }%
6631 }{-}
```

## 29 Package lastpage support

Package lastpage directly writes the `\newlabel` command to the aux file. Because package hyperref requires additional arguments, the internal command `\lastpage@putlabel` is redefined. The patch is deferred by `\AtBeginDocument`, because it is possible that package lastpage is loaded after package hyperref. The same algorithm (options `hypertextnames` and `plainpages`) is used to get the page anchor name as in `\Hy@EveryPageAnchor` (see sec. 38). The link will not work if option `pageanchor` is set to false.

```
\lastpage@putlabel
```

```
6632 \Hy@AtBeginDocument{%
6633   \@ifclassloaded{revtex4}{%
6634     \@namedef{ver@lastpage.sty}{1994/06/25}%
6635   }{-}%
6636   \@ifpackageloaded{lastpage}{%
6637     \ifHy@pageanchor
6638     \else
6639       \Hy@WarningNoLine{%
6640         The \string\pageref{LastPage} link doesn’t work\MessageBreak
6641         with disabled option ‘pageanchor’%

```

```

6642 }%
6643 \fi
6644 \def\lastpage@putlabel{%
6645 \addtocounter{page}{-1}%
6646 \if@filesw
6647 \begingroup
6648 \let\@number\@firstofone
6649 \ifHy@pageanchor
6650 \ifHy@hypertexnames
6651 \ifHy@plainpages
6652 \def\Hy@temp{\arabic{page}}%
6653 \else
6654 \Hy@unicodefalse
6655 \pdfstringdef\Hy@temp{\thepage}%
6656 \fi
6657 \else
6658 \def\Hy@temp{\the\Hy@pagecounter}%
6659 \fi
6660 \fi
6661 \immediate\write\@auxout{%
6662 \string\newlabel
6663 {LastPage}{\thepage}{\thepage}%
6664 \ifHy@pageanchor page.\Hy@temp\fi}%
6665 }%
6666 \endgroup
6667 \fi
6668 \addtocounter{page}{1}%
6669 }%
6670 \@ifclassloaded{revtex4}{%
6671 \begingroup
6672 \toks@{\expandafter\lastpage@putlabel}%
6673 \edef\x{\endgroup
6674 \def\noexpand\lastpage@putlabel{%
6675 \noexpand\stepcounter{page}%
6676 \the\toks@
6677 \noexpand\addtocounter{page}\noexpand\m@ne
6678 }%
6679 }%
6680 \x
6681 }{}%
6682 }{}%
6683 }
6684 \</package>
6685 \< *check>
6686 \checkpackage{lastpage}[1994/06/25]
6687 \checkcommand\def\lastpage@putlabel{%
6688 \addtocounter{page}{-1}%
6689 \immediate\write\@auxout{%
6690 \string\newlabel{LastPage}{\thepage}{\thepage}%
6691 }%
6692 \addtocounter{page}{1}%
6693 }
6694 \</check>
6695 \< *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.

```
6696 \def\hypergetref#1{\getrefbykeydefault{#1}{}{??}}
6697 \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:

```
6698 \@ifpackageloaded{titlesec}{%
6699   \def\ttl@Hy@steplink#1{%
6700     \Hy@MakeCurrentHrefAuto{#1*}%
6701     \edef\ttl@Hy@saveanchor{%
6702       \noexpand\Hy@raisedlink{%
6703         \noexpand\hyper@anchorstart{\@currentHref}%
6704         \noexpand\hyper@anchorend
6705       \def\noexpand\ttl@Hy@SavedCurrentHref{\@currentHref}%
6706       \noexpand\ttl@Hy@PatchSaveWrite
6707     }%
6708   }%
6709 }%
6710 \def\ttl@Hy@PatchSaveWrite{%
6711   \begingroup
6712   \toks@\expandafter{\ttl@savewrite}%
6713   \edef\x{\endgroup
6714     \def\noexpand\ttl@savewrite{%
6715       \let\noexpand\@currentHref
6716       \noexpand\ttl@Hy@SavedCurrentHref
6717       \the\toks@
6718     }%
6719   }%
6720   \x
6721 }%
6722 \def\ttl@Hy@refstepcounter#1{%
6723   \let\ttl@b\Hy@raisedlink
6724   \def\Hy@raisedlink##1{%
6725     \def\ttl@Hy@saveanchor{\Hy@raisedlink{##1}}%
6726   }%
6727   \refstepcounter{#1}%
6728   \let\Hy@raisedlink\ttl@b
6729 }%
6730 }
```

Package titletoc support:

```
6731 \@ifpackageloaded{titletoc}{%
6732   \def\ttl@gobblecontents#1#2#3#4{\ignorespaces}%
6733 }
```

## 32 Package varioref support

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

```

6734 \def\Hy@varioref@undefined{{??}{??}}{}{}
6735 \@ifpackageloaded{varioref}{%
6736   \def\vref@pagenum#1#2{%
6737     \@ifundefined{r@#2}{%
6738       \expandafter\let\csname r@#2\endcsname\Hy@varioref@undefined
6739     }{}%
6740     \edef#1{\getpagerefnumber{#2}}%
6741   }%
6742 }{}

```

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

```

6743 \def\Hy@varioref@refstepcounter#1{%
6744   \stepcounter{#1}%
6745   \protected@edef\@currentlabel{%
6746     \csname p@#1\expandafter\endcsname\csname the#1\endcsname
6747   }%
6748 }
6749 \AtBeginDocument{%
6750   \ifx\refstepcounter\Hy@varioref@refstepcounter
6751     \let\H@refstepcounter\refstepcounter
6752     \let\refstepcounter\Hy@saved@refstepcounter
6753   \fi
6754 }

```

### 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

```

6755 \@ifpackageloaded{longtable}{%
6756   \begingroup
6757   \def\y{\LT@array}%
6758   \@ifundefined{scr@LT@array}{%
6759     \@ifundefined{adl@LT@array}{}{\def\y{\adl@LT@array}}%
6760   }{\def\y{\scr@LT@array}}%
6761   \long\def\x\refstepcounter#1#2\@sharp#3#4\@nil{%
6762     \expandafter\endgroup
6763     \expandafter\def\y[##1]##2{%
6764       \H@refstepcounter{#1}%
6765       \hyper@makecurrent{table}%
6766       \let\Hy@LT@currentHref\@currentHref
6767       #2\@sharp###3#4%
6768     }%
6769   }%
6770   \expandafter\expandafter\expandafter\x\y{#1}{#2}\@nil

```

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

```

6771   \begingroup
6772   \def\x#1\ifvoid\LT@foot#2\fi#3\@nil{%
6773     \endgroup
6774     \def\LT@start{%
6775       #1%
6776       \ifvoid\LT@foot#2\fi

```

```

6777 \let\@currentHref\Hy@LT@currentHref
6778 \Hy@raisedlink{%
6779 \hyper@anchorstart{\@currentHref}\hyper@anchorend
6780 }%
6781 #3%
6782 }%
6783 }%
6784 \expandafter\x\LT@start\@nil
6785 }{}

```

## 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.

```

6786 \let\new@refstepcounter\refstepcounter
6787 \let\H@equation\equation
6788 \let\H@endequation\endequation
6789 \ifpackageloaded{amsmath}{%
6790 \long\def\Hy@temp{%
6791 \incr@eqnum
6792 \mathdisplay@push
6793 \st@rredfalse \global\@eqnswtrue
6794 \mathdisplay{equation}%
6795 }%
6796 \ifx\Hy@temp\equation
6797 \expandafter\ifx\csname if@fleqn\expandafter\endcsname
6798 \csname iftrue\endcsname
6799 \else
6800 \long\def\equation{%
6801 \mathdisplay@push
6802 \st@rredfalse \global\@eqnswtrue
6803 \mathdisplay{equation}%
6804 \incr@eqnum
6805 }%
6806 \fi
6807 \fi
6808 }{%
6809 \def\equation{%
6810 \let\refstepcounter\H@refstepcounter
6811 \H@equation
6812 \@ifundefined{theHequation}{%
6813 \make@stripped@name{\theequation}%
6814 \let\theHequation\newname
6815 }{}%
6816 \hyper@makecurrent{equation}%
6817 \Hy@raisedlink{\hyper@anchorstart{\@currentHref}}%
6818 \let\refstepcounter\new@refstepcounter
6819 }%
6820 \def\endequation{\Hy@raisedlink{\hyper@anchorend}\H@endequation}%
6821 }

```

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.

```

6822 \newif\if@eqnstar
6823 \@eqnstarfalse
6824 \let\H@eqnarray\eqnarray
6825 \let\H@endeqnarray\endeqnarray
6826 \def\eqnarray{%
6827   \let\Hy@reserved@a\relax
6828   \def\@currentHref{}%
6829   \H@eqnarray
6830   \if@eqnstar
6831   \else
6832     \ifx\\ \@currentHref\\%
6833     \else
6834       \ifundefined{theHequation}{%
6835         \make@stripped@name{\theequation}%
6836         \let\theHequation\newname
6837       }{}%
6838       \hyper@makecurrent{equation}%
6839       \hyper@anchorstart{\@currentHref}{ }\hyper@anchorend
6840     \fi
6841   \fi
6842 }
6843 \def\endeqnarray{%
6844   \H@endeqnarray
6845 }

```

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.

```

6846 \@namedef{eqnarray*}{%
6847   \def\@eqncr{\nonumber\@seqncr}\@eqnstartrue\eqnarray
6848 }
6849 \@namedef{endeqnarray*}{%
6850   \nonumber\endeqnarray\@eqnstarfalse
6851 }

```

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

```

6852 \ltx@ifundefined{subeqnarray}{}{%
6853   \let\H@subeqnarray\subeqnarray
6854   \let\H@endsubeqnarray\endsubeqnarray
6855   \def\subeqnarray{%
6856     \let\Hy@reserved@a\relax
6857     \H@subeqnarray
6858     \ifundefined{theHequation}{%
6859       \make@stripped@name{\theequation}%
6860       \let\theHequation\newname
6861     }{}%
6862     \hyper@makecurrent{equation}%
6863     \hyper@anchorstart{\@currentHref}{ }\hyper@anchorend
6864   }%
6865   \def\endsubeqnarray{%
6866     \H@endsubeqnarray
6867   }%
6868   \newcommand\theHsubequation{\theHequation\alpha{subequation}}%
6869 }

```

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

```

6870 \def\make@stripped@name#1{%
6871   \begingroup
6872   \escapechar\m@ne
6873   \global\let\newname\@empty
6874   \protected@edef\Hy@tempa{#1}%
6875   \edef\@tempb{%
6876     \noexpand\@tfor\noexpand\Hy@tempa:=%
6877     \expandafter\strip@prefix\meaning\Hy@tempa
6878   }%
6879   \@tempb\do{%
6880     \if{\Hy@tempa\else
6881     \if}\Hy@tempa\else
6882     \xdef\newname{\newname\Hy@tempa}%
6883     \fi
6884     \fi
6885   }%
6886 \endgroup
6887 }

```

Support for amsmath's subequations:

```

6888 \begingroup\expandafter\expandafter\expandafter\endgroup
6889 \expandafter\ifx\csname subequations\endcsname\relax
6890 \else
6891   \let\HyOrg@subequations\subequations
6892   \def\subequations{%
6893     \stepcounter{equation}%
6894     \protected@edef\theHparentequation{%
6895       \@ifundefined{theHequation}\theequation\theHequation
6896     }%
6897     \addtocounter{equation}{-1}%
6898     \HyOrg@subequations
6899     \def\theHequation{\theHparentequation\alph{equation}}%
6900     \ignorespaces
6901   }%
6902 \fi

```

Support for package amsthm (Daniel Müllner):

```

6903 \@ifpackageloaded{amsthm}{%
6904   \def\@thm#1#2#3{%
6905     \ifhmode
6906       \unskip\unskip\par
6907     \fi
6908     \normalfont
6909     \trivlist
6910     \let\thmheadnl\relax
6911     \let\thm@swap\@gobble
6912     \thm@notefont{\fontseries\mddefault\upshape}%
6913     \thm@headpunct{.}% add period after heading
6914     \thm@headsep 5\p@ plus\p@ minus\p@\relax
6915     \thm@space@setup
6916     #1% style overrides
6917     \@topsep \thm@preskip           % used by thm head
6918     \@topsepadd \thm@postskip       % used by \endparenv
6919     \def\dth@counter{#2}%
6920     \ifx\@empty\dth@counter
6921       \def\@tempa{%

```

```

6922     \oparg{\@begintheorem{#3}{}}{}%
6923   }%
6924 \else
6925   \H@refstepcounter{#2}%
6926   \hyper@makecurrent{#2}%
6927   \let\Hy@dth@currentHref\@currentHref
6928   \def\@tempa{%
6929     \oparg{\@begintheorem{#3}{\csname the#2\endcsname}}{}%
6930   }%
6931   \fi
6932   \@tempa
6933 }%
6934 \dth@everypar={%
6935   \@minipagefalse
6936   \global\@newlistfalse
6937   \@noparitemfalse
6938   \if@inlabel
6939     \global\@inlabelfalse
6940   \begingroup
6941     \setbox\z@\lastbox
6942     \ifvoid\z@
6943       \kern-\itemindent
6944     \fi
6945   \endgroup
6946   \ifx\@empty\dth@counter
6947   \else
6948     \Hy@raisedlink{%
6949       \hyper@anchorstart{%
6950         \ltx@ifundefined{Hy@dth@currentHref}%
6951         \@currentHref\Hy@dth@currentHref
6952       }\hyper@anchorend
6953     }%
6954   \fi
6955   \unhbox\@labels
6956   \fi
6957   \if@nobreak
6958     \@nobreakfalse \clubpenalty\@M
6959   \else
6960     \clubpenalty\@clubpenalty \everypar{}%
6961   \fi
6962 }%
6963 }{}

```

## 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.

Tabularx causes footnote problems, disable the linking if that is loaded.

```

6964 \ifpackageloaded{tabularx}{\Hy@hyperfootnotesfalse}{}
6965 \ifHy@hyperfootnotes
6966   \newcounter{Hfootnote}%
6967   \let\H@@footnotetext\@footnotetext
6968   \let\H@@footnotemark\@footnotemark
6969   \def\@xfootnotenext[#1]{%

```



```

6970 \begingroup
6971   \csname c@\@mpfn\endcsname #1\relax
6972   \unrestored@protected@xdef\@thefnmark{\thempfn}%
6973 \endgroup
6974 \ifx\@footnotetext\@mpfootnotetext
6975   \expandafter\H@\@mpfootnotetext
6976 \else
6977   \expandafter\H@\@footnotetext
6978 \fi
6979 }%
6980 \def\@xfootnotemark[#1]{%
6981   \begingroup
6982     \c@footnote #1\relax
6983     \unrestored@protected@xdef\@thefnmark{\thefootnote}%
6984   \endgroup
6985   \H@\@footnotemark
6986 }%
6987 \let\H@\@mpfootnotetext\@mpfootnotetext
6988 \long\def\@mpfootnotetext#1{%
6989   \H@\@mpfootnotetext{%
6990     \ifHy@nesting
6991       \expandafter\hyper@@anchor\expandafter{%
6992         \Hy@footnote@currentHref
6993       }{#1}%
6994     \else
6995       \Hy@raisedlink{%
6996         \expandafter\hyper@@anchor\expandafter{%
6997           \Hy@footnote@currentHref
6998         }{\relax}%
6999       }#1%
7000     \fi
7001   }%
7002 }%
7003 \long\def\@footnotetext#1{%
7004   \H@\@footnotetext{%
7005     \ifHy@nesting
7006       \expandafter\hyper@@anchor\expandafter{%
7007         \Hy@footnote@currentHref
7008       }{#1}%
7009     \else
7010       \Hy@raisedlink{%
7011         \expandafter\hyper@@anchor\expandafter{%
7012           \Hy@footnote@currentHref
7013         }{\relax}%
7014       }%
7015       \let\@currentHref\Hy@footnote@currentHref
7016       \let\@currentlabelname\@empty
7017       #1%
7018     \fi
7019   }%
7020 }%

```

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.

```

7021 \def\@footnotemark{%
7022   \leavevmode

```

```

7023 \ifhmode\edef\x@sf{\the\spacefactor}\nobreak\fi
7024 \stepcounter{Hfootnote}%
7025 \global\let\Hy@saved@currentHref\@currentHref
7026 \hyper@makecurrent{Hfootnote}%
7027 \global\let\Hy@footnote@currentHref\@currentHref
7028 \global\let\@currentHref\Hy@saved@currentHref
7029 \hyper@linkstart{link}{\Hy@footnote@currentHref}%
7030 \@makefnmark
7031 \hyper@linkend
7032 \ifhmode\spacefactor\x@sf\fi
7033 \relax
7034 }%

```

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

```

7035 \@ifpackageloaded{longtable}{%
7036 \CheckCommand*{\LT@p@ftntext}[1]{%
7037 \edef\@tempa{%
7038 \the\LT@p@ftn
7039 \noexpand\footnotetext[\the\c@footnote]%
7040 }%
7041 \global\LT@p@ftn\expandafter{\@tempa{#1}}%
7042 }%
7043 \long\def\LT@p@ftntext#1{%
7044 \edef\@tempa{%
7045 \the\LT@p@ftn
7046 \begingroup
7047 \noexpand\c@footnote=\the\c@footnote\relax
7048 \noexpand\protected@xdef\noexpand\@thefnmark{%
7049 \noexpand\thempfn
7050 }%
7051 \noexpand\Hy@LT@footnotetext{%
7052 \Hy@footnote@currentHref
7053 }%
7054 }%
7055 \global\LT@p@ftn\expandafter{%
7056 \@tempa{#1}%
7057 \endgroup
7058 }%
7059 }%
7060 \long\def\Hy@LT@footnotetext#1#2{%
7061 \H@@footnotetext{%
7062 \ifHy@nesting
7063 \hyper@@anchor{#1}{#2}%
7064 \else
7065 \Hy@raisedlink{%
7066 \hyper@@anchor{#1}{\relax}%
7067 }%
7068 \def\@currentHref{#1}%
7069 \let\@currentlabelname\@empty
7070 #2%
7071 \fi
7072 }%
7073 }%
7074 }{}%

```

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

```

7075 \ifpackageloaded{fancyvrb}{%
7076 \def\V@@footnotetext{%
7077 \insert\footins\bgroup
7078 \csname reset@font\endcsname
7079 \footnotesize
7080 \interlinepenalty\interfootnotelinepenalty
7081 \splittopskip\footnotesep
7082 \splitmaxdepth\dp\strutbox
7083 \floatingpenalty \@MM
7084 \hsize\columnwidth
7085 \@parboxrestore
7086 \edef\@currentlabel{\csname p@footnote\endcsname\@thefnmark}%
7087 \@makefnmark{}%
7088 \rule{\z@}{\footnotesep}%
7089 \bgroup
7090 \aftergroup\V@@@footnotetext
7091 \Hy@raisedlink{%
7092 \expandafter\hyper@@anchor\expandafter{%
7093 \Hy@footnote@currentHref
7094 }{\relax}%
7095 }%
7096 \let\@currentHref\Hy@footnote@currentHref
7097 \let\@currentlabelname\@empty
7098 \ignorespaces
7099 }%
7100 }{}%
```

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

```

7101 \def\Hy@temp#1{%
7102 \begingroup
7103 \unrestored@protected\xdef\@thefnmark{\ref{#1}}%
7104 \endgroup
7105 \@footnotemark
7106 }%
7107 \ifx\Hy@temp\footref
7108 \def\footref#1{%
7109 \begingroup
7110 \unrestored@protected\xdef\@thefnmark{\ref{#1}}%
7111 \endgroup
7112 \H@@@footnotemark
7113 }%
7114 \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.

```

7115 \let\HyOrg@maketitle\maketitle
7116 \def\maketitle{%
7117 \let\Hy@saved@footnotemark\@footnotemark
7118 \let\Hy@saved@footnotetext\@footnotetext
7119 \let\@footnotemark\H@@@footnotemark
7120 \let\@footnotetext\H@@@footnotetext
7121 \@ifnextchar[\Hy@maketitle@optarg[% ]
7122 \HyOrg@maketitle
7123 \Hy@maketitle@end
7124 }%
7125 }%
```

```

7126 \def\Hy@maketitle@optarg[#1]{%
7127   \HyOrg@maketitle[{#1}]%
7128   \Hy@maketitle@end
7129 }%
7130 \def\Hy@maketitle@end{%
7131   \ifx\@footnotemark\H@@footnotemark
7132     \let\@footnotemark\Hy@saved@footnotemark
7133   \fi
7134   \ifx\@footnotetext\H@@footnotetext
7135     \let\@footnotetext\Hy@saved@footnotetext
7136   \fi
7137 }%

```

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

```

7138 \def\realfootnote{%
7139   \@ifnextchar[\@xfootnote{%
7140     \stepcounter{\@mpfn}%
7141     \protected@xdef\@thefnmark{\thempfn}%
7142     \H@@@footnotemark\H@@@footnotetext
7143   }%
7144 }%

7145 \fi
7146 \Hy@DisableOption{hyperfootnotes}

7147 </package>
7148 <*check>
7149 \checklatex
7150 \checkcommand\def\@xfootnotenext[#1]{%
7151   \begingroup
7152     \csname c@\@mpfn\endcsname #1\relax
7153     \unrestored@protected@xdef\@thefnmark{\thempfn}%
7154   \endgroup
7155   \@footnotetext
7156 }
7157 \checkcommand\def\@xfootnotemark[#1]{%
7158   \begingroup
7159     \c@footnote #1\relax
7160     \unrestored@protected@xdef\@thefnmark{\thefootnote}%
7161   \endgroup
7162   \@footnotemark
7163 }
7164 \checkcommand\def\@footnotemark{%
7165   \leavevmode
7166   \ifhmode\edef\@x@sf{\the\spacefactor}\nobreak\fi
7167   \@makefnmark
7168   \ifhmode\spacefactor\@x@sf\fi
7169   \relax
7170 }
7171 </check>
7172 <*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.

```

7173 \def\caption{%

```

```

7174 \ifx\@capttype\@undefined
7175 \latexerror{\noexpand\caption outside float}\@ehd
7176 \expandafter\@gobble
7177 \else
7178 \H@refstepcounter\@capttype
7179 \let\Hy@tempa\@caption
7180 \ifundefined{float@caption}{%
7181 }{%
7182 \expandafter\ifx\csname @float@c@\@capttype\endcsname
7183 \float@caption
7184 \let\Hy@tempa\Hy@float@caption
7185 \fi
7186 }%
7187 \expandafter\@firstofone
7188 \fi
7189 {\@dblarg{\Hy@tempa\@capttype}}%
7190 }
7191 \long\def\@caption#1[#2]#3{%
7192 \expandafter\ifx\csname if@capstart\expandafter\endcsname
7193 \csname iftrue\endcsname
7194 \global\let\@currentHref\hc@currentHref
7195 \else
7196 \hyper@makecurrent{\@capttype}%
7197 \fi
7198 \ifundefined{NR@getttitle}{%
7199 \def\@currentlabelname{#2}%
7200 }{%
7201 \NR@getttitle{#2}%
7202 }%
7203 \par\addcontentsline{\csname ext@#1\endcsname}{#1}{%
7204 \protect\numberline{\csname the#1\endcsname}{\ignorespaces #2}%
7205 }%
7206 \begingroup
7207 \@parboxrestore
7208 \if@minipage
7209 \@setminipage
7210 \fi
7211 \normalsize
7212 \expandafter\ifx\csname if@capstart\expandafter\endcsname
7213 \csname iftrue\endcsname
7214 \global\@capstartfalse
7215 \@makecaption{\csname fnum@#1\endcsname}{\ignorespaces#3}%
7216 \else
7217 \@makecaption{\csname fnum@#1\endcsname}{%
7218 \ignorespaces

```

If we cannot have nesting, the anchor is empty.

```

7219 \ifHy@nesting
7220 \expandafter\hyper@@anchor\expandafter{\@currentHref}{#3}%
7221 \else
7222 \Hy@raisedlink{%
7223 \expandafter\hyper@@anchor\expandafter{%
7224 \@currentHref
7225 }{\relax}%
7226 }%
7227 #3%
7228 \fi
7229 }%

```

```

7230 \fi
7231 \par
7232 \endgroup
7233 }

```

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.

```

7234 \let\Hy@float@caption\@caption
7235 \ifpackageloaded{float}{%
7236 \def\Hy@float@caption{%
7237 \ifx\Hy@float@currentHref\@undefined
7238 \hyper@makecurrent{\@capttype}%
7239 \global\let\Hy@float@currentHref\@currentHref
7240 \else
7241 \let\@currentHref\Hy@float@currentHref
7242 \fi
7243 \float@caption
7244 }%
7245 \let\HyOrg@float@makebox\float@makebox
7246 \renewcommand{\float@makebox}[1]{%
7247 \HyOrg@float@makebox{%
7248 #1\relax
7249 \ifx\Hy@float@currentHref\@undefined
7250 \else
7251 \expandafter\hyper@@anchor\expandafter{%
7252 \Hy@float@currentHref
7253 }\relax}%
7254 \global\let\Hy@float@currentHref\@undefined
7255 \fi
7256 }%
7257 }%
7258 }{}

7259 \</package>
7260 \<check>
7261 \checklatex[1999/06/01 - 2000/06/01]
7262 \checkcommand\def\caption{%
7263 \ifx\@capttype\@undefined
7264 \latex@error{\noexpand\caption outside float}\@ehd
7265 \expandafter\@gobble
7266 \else
7267 \refstepcounter\@capttype
7268 \expandafter\@firstofone
7269 \fi
7270 {\@dblarg{\@caption\@capttype}}%
7271 }
7272 \checkcommand\long\def\@caption#1[#2]#3{%
7273 \par
7274 \addcontentsline{\csname ext@#1\endcsname}{#1}{%
7275 \protect\numberline{\csname the#1\endcsname}{\ignorespaces #2}}%
7276 }%
7277 \begingroup
7278 \@parboxrestore
7279 \if@minipage
7280 \@setminipage
7281 \fi
7282 \normalsize
7283 \@makecaption{\csname fnum@#1\endcsname}{\ignorespaces #3}\par

```

```

7284 \endgroup
7285 }
7286 \</check>
7287 \<*package>

```

## 37 Bibliographic references

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

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

```

7288 \def\hyper@natlinkstart#1{%
7289   \Hy@backout{#1}%
7290   \hyper@linkstart{cite}{cite.#1}%
7291   \def\hyper@nat@current{#1}%
7292 }
7293 \def\hyper@natlinkend{%
7294   \hyper@linkend
7295 }
7296 \def\hyper@natlinkbreak#1#2{%
7297   \hyper@linkend#1\hyper@linkstart{cite}{cite.#2}%
7298 }
7299 \def\hyper@natanchorstart#1{%
7300   \Hy@raisedlink{\hyper@anchorstart{cite.#1}}%
7301 }
7302 \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.

```

7303 \ltx@ifundefined{NAT@parse}{%
7304   \providecommand*\@extra@binfo{}%
7305   \providecommand*\@extra@b@citeb{}%
7306   \def\bibcite#1#2{%
7307     \@newl@bel{b}{#1\@extra@binfo}{%
7308       \hyper@link{cite}{cite.#1\@extra@b@citeb}{#2}%
7309     }%
7310   }%
7311   \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.”.

```

7312 \let\Hy@bibcite\bibcite
7313 \begingroup
7314   \ifundefined{bbl@cite@choice}{-}{-}%
7315   \g@addto@macro\bbl@cite@choice{%
7316     \let\bibcite\Hy@bibcite
7317   }%
7318 }%
7319 \endgroup

```

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

```

7320 \providecommand*{\@BIBLABEL}{\@biblabel}%
7321 \def\@lbibitem[#1]#2{%
7322   \@skiphyperreftrue
7323   \H@item{%
7324     \ifx\Hy@raisedlink\@empty
7325       \hyper@anchorstart{cite.#2\@extra@b@citeb}%
7326       \@BIBLABEL{#1}%
7327       \hyper@anchorend
7328     \else
7329       \Hy@raisedlink{%
7330         \hyper@anchorstart{cite.#2\@extra@b@citeb}\hyper@anchorend
7331       }%
7332       \@BIBLABEL{#1}%
7333     \fi
7334     \hfill
7335   }%
7336   \@skiphyperreffalse
7337   \if@filesw
7338     \begingroup
7339     \let\protect\noexpand
7340     \immediate\write\@auxout{%
7341       \string\bibcite{#2}{#1}%
7342     }%
7343     \endgroup
7344   \fi
7345   \ignorespaces
7346 }%
```

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

```

7347 \def\@bibitem#1{%
7348   \@skiphyperreftrue\H@item\@skiphyperreffalse
7349   \Hy@raisedlink{%
7350     \hyper@anchorstart{cite.#1\@extra@b@citeb}\relax\hyper@anchorend
7351   }%
7352   \if@filesw
7353     \begingroup
7354     \let\protect\noexpand
7355     \immediate\write\@auxout{%
7356       \string\bibcite{#1}{\the\value{\@listctr}}%
7357     }%
7358     \endgroup
7359   \fi
7360   \ignorespaces
7361 }%
7362 }{}

7363 </package>
7364 <*check>
7365 \checklatex
7366 \checkcommand\def\@lbibitem[#1]#2{%
7367   \item[\@biblabel{#1}\hfill]%
7368   \if@filesw
7369     {%
7370       \let\protect\noexpand
7371       \immediate\write\@auxout{%
7372         \string\bibcite{#2}{#1}%
```



```

7373 }%
7374 }%
7375 \fi
7376 \ignorespaces
7377 }
7378 \checkcommand\def\@bibitem#1{%
7379 \item
7380 \if@filesw
7381 \immediate\write\@auxout{%
7382 \string\bibcite{#1}{\the\value{\@listctr}}}%
7383 }%
7384 \fi
7385 \ignorespaces
7386 }
7387 </check>
7388 <*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.

```

7389 \ifclassloaded{revtex}{%
7390 \Hy@Info{*** compatibility with revtex **** }%
7391 \def\revtex@checking#1#2{%
7392 \expandafter\let\expandafter\T@temp\csname b@#1\endcsname
7393 \expandafter\def\csname b@#1\endcsname{#2}%
7394 \@SetMaxRnhefLabel{#1}%
7395 \expandafter\let\csname b@#1\endcsname\T@temp
7396 }%

```

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

```

7397 \ifundefined{CITE}{\def\CITE{\cite}}{%
7398 \providecommand*\@extra@b@citeb{}%
7399 \def\CITEX[#1]#2{%
7400 \let\@citea\@empty
7401 \leavevmode
7402 \unskip
7403 $^{}%
7404 \scriptstyle
7405 \CITE{%
7406 \@for\@citeb:=#2\do{%
7407 \@citea
7408 \def\@citea{,\penalty\@m\ }%
7409 \edef\@citeb{\expandafter\@firstofone\@citeb}%
7410 \if@filesw
7411 \immediate\write\@auxout{\string\citation{\@citeb}}%
7412 \fi
7413 \ifundefined{b@\@citeb\extra@b@citeb}{%
7414 \mbox{\reset@font\bfseries ?}%
7415 \G@refundefinedtrue
7416 \@latex@warning{%
7417 Citation '\@citeb' on page \thepage \space undefined%
7418 }%
7419 }{%
7420 {\csname b@\@citeb\extra@b@citeb\endcsname}%
7421 }%
7422 }%
7423 }{#1}%

```

```

7424 }$%
7425 }%

```

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.

```

7426 \def\@citex[#1]#2{%
7427   \let\@citea\@empty
7428   \@cite{%
7429     \@for\@citeb:=#2\do{%
7430       \@citea
7431       \def\@citea{\penalty\@m\ }%
7432       \edef\@citeb{\expandafter\@firstofone\@citeb}%
7433       \if@filesw
7434         \immediate\write\@auxout{\string\citation{\@citeb}}%
7435       \fi
7436       \@ifundefined{b@\@citeb\@extra@b@citeb}{%
7437         \mbox{\reset@font\bfseries ?}%
7438         \@latex@warningtrue
7439         \@latex@warning{%
7440           Citation '\@citeb' on page \thepage \space undefined%
7441         }}%
7442       }{%
7443         \hbox{\csname b@\@citeb\@extra@b@citeb\endcsname}%
7444       }%
7445     }%
7446   }{#1}%
7447 }%
7448 }{}

```

### 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.

```

7449 \@ifpackageloaded{harvard}{%
7450   \Hy@AtBeginDocument{%
7451     \Hy@Info{*** compatibility with harvard **** }%
7452     \Hy@raiselinksfalse
7453     \def\harvardcite#1#2#3#4{%
7454       \global\@namedef{HAR@fn@#1}{\hyper@link[cite]{}{cite.#1}{#2}}%
7455       \global\@namedef{HAR@an@#1}{\hyper@link[cite]{}{cite.#1}{#3}}%
7456       \global\@namedef{HAR@yr@#1}{\hyper@link[cite]{}{cite.#1}{#4}}%
7457       \global\@namedef{HAR@df@#1}{\csname HAR@fn@#1\endcsname}%
7458     }%
7459     \def\HAR@citetoaux#1{%
7460       \if@filesw\immediate\write\@auxout{\string\citation{#1}}\fi%
7461       \ifHy@backref
7462         \ifx\@empty\@currentlabel
7463         \else
7464           \@bsphack
7465           \if@filesw
7466             \protected@write\@auxout{}{%
7467               \string\@writefile{brf}{%
7468                 \string\backcite{#1}{%

```

```

7469         {\thepage}{\@currentlabel}{\@currentHref}%
7470     }%
7471 }%
7472 }%
7473 \fi
7474 \@esphack
7475 \fi
7476 \fi
7477 }%
7478 \def\harvarditem{%
7479   \@ifnextchar[{\@harvarditem}{\@harvarditem[\null]}%
7480 }%
7481 \def\@harvarditem[#1]#2#3#4#5\par{%
7482   \item[]%
7483   \hyper@anchorstart{cite.#4}\relax\hyper@anchorend
7484   \if@filesw
7485     \begingroup
7486     \def\protect##1{\string ##1\space}%
7487     \ifthenelse{\equal{#1}{\null}}{%
7488       {\def\next{{#4}{#2}{#2}{#3}}}%
7489       {\def\next{{#4}{#2}{#1}{#3}}}%
7490     \immediate\write\@auxout{\string\harvardcite\codeof\next}%
7491   \endgroup
7492   \fi
7493   \protect\hspace*{-\labelwidth}%
7494   \protect\hspace*{-\labelsep}%
7495   \ignorespaces
7496   #5%
7497   \ifHy@backref
7498     \newblock
7499     \backref{\csname br@#4\endcsname}%
7500   \fi
7501   \par
7502 }%

```

\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:

```

7503 \long\def\HAR@checkcitations#1#2#3#4{%
7504   \def\HAR@tempa{\hyper@@link[cite]{\cite.#1}{#2}}%
7505   \expandafter\ifx\csname HAR@fn@#1\endcsname\HAR@tempa
7506     \def\HAR@tempa{\hyper@@link[cite]{\cite.#1}{#3}}%
7507     \expandafter\ifx\csname HAR@an@#1\endcsname\HAR@tempa
7508       \def\HAR@tempa{\hyper@@link[cite]{\cite.#1}{#4}}%
7509       \expandafter\ifx\csname HAR@yr@#1\endcsname\HAR@tempa
7510         \else
7511           \@tempswatrue
7512         \fi
7513       \else
7514         \@tempswatrue
7515       \fi
7516     \else
7517       \@tempswatrue
7518     \fi
7519   }%
7520 }%
7521 }{}

```

## 37.2 Package chicago

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

```
7522 \@ifpackageloaded{chicago}{%
```

`\citeN`

```
7523 \def\citeN{%
7524   \def\@citesep{-1000}%
7525   \def\@cite##1##2{##1}%
7526   \def\citeauthoryear##1##2##3{##1 (##3\@cite@opt)}}%
7527   \@citedata@opt
7528 }%
```

`\shortciteN`

```
7529 \def\shortciteN{%
7530   \def\@citesep{-1000}%
7531   \def\@cite##1##2{##1}%
7532   \def\citeauthoryear##1##2##3{##2 (##3\@cite@opt)}}%
7533   \@citedata@opt
7534 }%
```

`\@citedata@opt`

```
7535 \def\@citedata@opt{%
7536   \let\@cite@opt\@empty
7537   \@ifnextchar [{%
7538     \@tempswatrue
7539     \@citedatax@opt
7540   }{%
7541     \@tempswafalse
7542     \@citedatax[]%
7543   }%
7544 }%
```

`\@citedatax@opt`

```
7545 \def\@citedatax@opt[#1]{%
7546   \def\@cite@opt{, #1}%
7547   \@citedatax[{#1}]%
7548 }%
7549 }{-}
```

## 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.

```
7550 \def\Hy@EveryPageAnchor{%
7551   \Hy@DistillerDestFix
7552   \ifHy@pageanchor
7553     \ifHy@hypertextnames
7554       \ifHy@plainpages
7555         \def\Hy@TempPageAnchor{\hyper@anchor{page.\the\c@page}}}%

```

```

7556 \else
7557 \begingroup
7558 \let\@number\@firstofone
7559 \Hy@unicodedefalse
7560 \pdfstringdef\@the@H@page{\thepage}%
7561 \endgroup
7562 \def\Hy@TempPageAnchor{\hyper@@anchor{page.\@the@H@page}}%
7563 \fi
7564 \else
7565 \Hy@GlobalStepCount\Hy@pagecounter
7566 \def\Hy@TempPageAnchor{%
7567 \hyper@@anchor{page.\the\Hy@pagecounter}%
7568 }%
7569 \fi
7570 \vbox to 0pt{%
7571 \kern\voffset
7572 \kern\topmargin
7573 \kern-1bp\relax
7574 \hbox to 0pt{%
7575 \kern\hoffset
7576 \kern\ifodd\value{page}%
7577 \oddsidemargin
7578 \else
7579 \evensidemargin
7580 \fi
7581 \kern-1bp\relax
7582 \Hy@TempPageAnchor\relax
7583 \hss
7584 }%
7585 \vss
7586 }%
7587 \fi
7588 }
7589 \g@addto@macro\Hy@EveryPageBoxHook{%
7590 \Hy@EveryPageAnchor
7591 }

```

## 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.

```

7592 \def\addcontentsline#1#2#3{% toc extension, type, tag
7593 \begingroup
7594 \let\label\@gobble
7595 \ifx\@currentHref\@empty
7596 \Hy@Warning{%
7597 No destination for bookmark of \string\addcontentsline,%
7598 \MessageBreak destination is added%
7599 }%
7600 \phantomsection
7601 \fi
7602 \expandafter\ifx\csname toplevel@#2\endcsname\relax
7603 \begingroup
7604 \def\Hy@tempa{#1}%
7605 \ifx\Hy@tempa\Hy@bookmarkstype

```

```

7606     \Hy@WarningNoLine{%
7607         bookmark level for unknown #2 defaults to 0%
7608     }%
7609     \else
7610         \Hy@Info{bookmark level for unknown #2 defaults to 0}%
7611     \fi
7612 \endgroup
7613 \expandafter\gdef\csname toplevel@#2\endcsname{0}%
7614 \fi
7615 \edef\Hy@toplevel{\csname toplevel@#2\endcsname}%
7616 \Hy@writebookmark{\csname the#2\endcsname}%
7617     {#3}%
7618     {\@currentHref}%
7619     {\Hy@toplevel}%
7620     {#1}%
7621 \ifHy@verbose
7622     \begingroup
7623         \def\Hy@tempa{#3}%
7624         \@onelevel@sanitize\Hy@tempa
7625         \let\temp@online\on@line
7626         \let\on@line\@empty
7627         \Hy@Info{%
7628             bookmark\temp@online:\MessageBreak
7629             thecounter {\csname the#2\endcsname}\MessageBreak
7630             text {\Hy@tempa}\MessageBreak
7631             reference {\@currentHref}\MessageBreak
7632             toplevel {\Hy@toplevel}\MessageBreak
7633             type {#1}%
7634         }%
7635     \endgroup
7636 \fi
7637 \addtocontents{#1}{%
7638     \protect\contentsline{#2}{#3}{\thepage}{\@currentHref}%
7639 }%
7640 \endgroup
7641 }
7642 \def\contentsline#1#2#3#4{%
7643     \ifx\\#4\\%
7644         \csname l@#1\endcsname{#2}{#3}%
7645     \else
7646         \ifcase\Hy@linktoc % none
7647             \csname l@#1\endcsname{#2}{#3}%
7648         \or % section
7649             \csname l@#1\endcsname{%
7650                 \hyper@linkstart{link}{#4}{#2}\hyper@linkend
7651             }{#3}%
7652         \or % page
7653             \csname l@#1\endcsname{#{#2}}{%
7654                 \hyper@linkstart{link}{#4}{#3}\hyper@linkend
7655             }%
7656         \else % all
7657             \csname l@#1\endcsname{%
7658                 \hyper@linkstart{link}{#4}{#2}\hyper@linkend
7659             }{%
7660                 \hyper@linkstart{link}{#4}{#3}\hyper@linkend
7661             }%
7662         \fi

```

```

7663 \fi
7664 }

7665 </package>
7666 <*check>
7667 \checklatex
7668 \checkcommand\def\addcontentsline#1#2#3{%
7669 \addtocontents{#1}{\protect\contentsline{#2}{#3}{\thepage}}%
7670 }
7671 \checkcommand\def\contentsline#1{\csname l@#1\endcsname}
7672 </check>
7673 <*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.

```

7674 \let\H@definecounter\@definecounter
7675 \def\@definecounter#1{%
7676 \H@definecounter{#1}%
7677 \expandafter\def\csname theH#1\endcsname{\arabic{#1}}%
7678 }

```

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.

```

7679 \let\H@newctr\@newctr
7680 \def\@newctr#1[#2]{%
7681 \H@newctr#1[{#2}]%
7682 \expandafter\def\csname theH#1\endcsname{%
7683 \csname the\@ifundefined{theH#2}{}{H}#2\endcsname.\arabic{#1}%
7684 }%
7685 }

```

## 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.

```

7686 \ifpackageloaded{amsmath}{%
7687 \def\Hy@make@anchor{%
7688 \Hy@MakeCurrentHrefAuto{AMS}%
7689 \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
7690 }%
7691 \def\Hy@make@df@tag@@#1{%
7692 \gdef\df@tag{%
7693 \maketag@@@{\Hy@make@anchor#1}%
7694 \def\@currentlabel{#1}%
7695 }%
7696 }%
7697 \def\Hy@make@df@tag@@@#1{%
7698 \gdef\df@tag{%
7699 \tagform@{\Hy@make@anchor#1}%

```

```

7700 \toks@{\xp{\p@equation{#1}}}%
7701 \edef\@currentlabel{\the\toks@}%
7702 }%
7703 }%
7704 \let\HyOrg@make@df@tag@@\make@df@tag@@
7705 \let\HyOrg@make@df@tag@@@\make@df@tag@@@
7706 \let\make@df@tag@@\Hy@make@df@tag@@
7707 \let\make@df@tag@@@\Hy@make@df@tag@@@
7708 }{}

```

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

```

7709 \ifpackagewith{hyperref}{pdfTeX}{%
7710 \let\H@seteqlabel\@seteqlabel
7711 \def\@seteqlabel#1{%
7712 \H@seteqlabel{#1}%
7713 \xdef\@currentHref{AMS.\the\Hy@linkcounter}%
7714 \Hy@raisedlink{%
7715 \hyper@anchorstart{\@currentHref}\hyper@anchorend
7716 }%
7717 }%
7718 }{}

```

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.

```

7719 \let\HyOrg@addtoreset\@addtoreset
7720 \def\@addtoreset#1#2{%
7721 \HyOrg@addtoreset{#1}{#2}%
7722 \expandafter\xdef\csname theH#1\endcsname{%
7723 \expandafter\noexpand
7724 \csname the\@ifundefined{theH#2}{H#2}\endcsname
7725 .\noexpand\the\noexpand\value{#1}%
7726 }%
7727 }

```

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

```

7728 \</package>
7729 \<check>
7730 \checkpackage{amsmath}[1999/12/14 - 2000/06/06]
7731 \checkcommand\newcommand{\numberwithin}[3][\arabic]{%
7732 \@ifundefined{c@#2}{\@nocounterr{#2}}{%
7733 \@ifundefined{c@#3}{\@nocnterr{#3}}{%
7734 \@addtoreset{#2}{#3}%
7735 \xp\xdef\csname the#2\endcsname{%

```



```

7736 \xp\@nx\csname the#3\endcsname .\@nx#1{#2}%
7737 }%
7738 }%
7739 }%
7740 }%
7741 </check>
7742 <*package>
7743 \ifpackageloaded{amsmath}{%
7744 \ifpackagelater{amsmath}{1999/12/14}{%
7745 \renewcommand*{\numberwithin}{3}[\arabic]{%
7746 \ifundefined{c@#2}{\nocounterr{#2}}{%
7747 \ifundefined{c@#3}{\nocnterr{#3}}{%
7748 \HyOrg@addtoreset{#2}{#3}%
7749 \xp\xdef\csname the#2\endcsname{%
7750 \xp\@nx\csname the#3\endcsname .\@nx#1{#2}%
7751 }%
7752 \xp\xdef\csname theH#2\endcsname{%
7753 \xp\@nx
7754 \csname the\ifundefined{theH#3}{H#3\endcsname
7755 .\@nx#1{#2}%
7756 }%
7757 }%
7758 }%
7759 }%
7760 }{%
7761 \Hy@WarningNoLine{%
7762 \string\numberwithin\space of package 'amsmath' %
7763 only fixed\MessageBreak
7764 for version 2000/06/06 v2.12 or newer%
7765 }%
7766 }%
7767 }{}

```

## 42 Included figures

Simply intercept the low level graphics package macro.

```

7768 \ifHy@figures
7769 \let\Hy@Gin@setfile\Gin@setfile
7770 \def\Gin@setfile#1#2#3{%
7771 \hyperimage{#3}{\Hy@Gin@setfile{#1}{#2}{#3}}%
7772 }%
7773 \fi
7774 \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.

```

7775 \ifHy@hyperindex
7776 \def\HyInd@ParenLeft{ }%
7777 \def\HyInd@ParenRight{ }%
7778 \def\hyperindexformat#1#2{%
7779 \let\HyOrg@hyperpage\hyperpage
7780 \let\hyperpage\@firstofone
7781 #1{\HyOrg@hyperpage{#2}}%
7782 \let\hyperpage\HyOrg@hyperpage
7783 }%
7784 \Hy@nextfalse
7785 \@ifpackageloaded{multind}{\Hy@nexttrue}{}%
7786 \@ifpackageloaded{index}{\Hy@nexttrue}{}%
7787 \@ifpackageloaded{amsmidx}{\Hy@nexttrue}{}%
7788 \begingroup
7789 \lccode'\|=\expandafter'\HyInd@EncapChar\relax
7790 \lccode'\|/='\\ \relax
7791 \lowercase{\endgroup
7792 \ifHy@next
7793 \let\HyInd@org@wrindex\@wrindex
7794 \def\@wrindex#1#2{\HyInd@@wrindex{#1}#2||\}%
7795 \def\HyInd@@wrindex#1#2|#3|#4\{%
7796 \ifx\\#3\%
7797 \HyInd@org@wrindex{#1}{#2|hyperpage}%
7798 \else
7799 \HyInd@@@wrindex{#1}{#2}#3\%
7800 \fi
7801 }%
7802 \def\HyInd@@@wrindex#1#2#3#4\{%
7803 \def\Hy@temp@A{#3}%
7804 \ifcase0\ifx\Hy@temp@A\HyInd@ParenLeft 1\fi
7805 \ifx\Hy@temp@A\HyInd@ParenRight 1\fi
7806 \relax
7807 \HyInd@org@wrindex{#1}{%
7808 #2|hyperindexformat{/#3#4}%
7809 }%
7810 \else
7811 \ifx\\#4\%
7812 \ifx\Hy@temp@A\HyInd@ParenRight
7813 \HyInd@org@wrindex{#1}{#2|#3}%
7814 \else
7815 \HyInd@org@wrindex{#1}{#2|#3hyperpage}%
7816 \fi
7817 \else
7818 \HyInd@org@wrindex{#1}{%
7819 #2|#3hyperindexformat{/#4}%
7820 }%
7821 \fi
7822 \fi
7823 }%
7824 \else
7825 \def\@wrindex#1{\@@wrindex#1||\}%
7826 \def\@@wrindex#1|#2|#3\%
7827 \if@filesw
7828 \ifx\\#2\%
7829 \protected@write\@indexfile{}{%

```

```

7830         \string\indexentry{#1|hyperpage}{\thepage}%
7831     }%
7832     \else
7833         \HyInd@@@wrindex{#1}#2\\%
7834     \fi
7835 \fi
7836 \endgroup
7837 \@esphack
7838 }%
7839 \def\HyInd@@@wrindex#1#2#3\\{%
7840     \def\Hy@temp@A{#2}%
7841     \ifcase0\ifx\Hy@temp@A\HyInd@ParenLeft 1\fi
7842         \ifx\Hy@temp@A\HyInd@ParenRight 1\fi
7843         \relax
7844     \protected@write\@indexfile{}{%
7845         \string\indexentry{%
7846             #1|hyperindexformat{/#2#3}%
7847         }{\thepage}%
7848     }%
7849     \else
7850         \ifx\\#3\\%
7851             \ifx\Hy@temp@A\HyInd@ParenRight
7852                 \protected@write\@indexfile{}{%
7853                     \string\indexentry{#1|#2}{\thepage}%
7854                 }%
7855             \else
7856                 \protected@write\@indexfile{}{%
7857                     \string\indexentry{#1|#2hyperpage}{\thepage}%
7858                 }%
7859             \fi
7860         \else
7861             \protected@write\@indexfile{}{%
7862                 \string\indexentry{%
7863                     #1|#2hyperindexformat{/#3}%
7864                 }{\thepage}%
7865             }%
7866         \fi
7867     \fi
7868 }%
7869 \fi
7870 }%
7871 \fi
7872 \Hy@DisableOption{hyperindex}
7873 \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.

```
7874 \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.

```

7875 \def\hyperpage#1{%
7876     \HyInd@hyperpage#1\nohyperpage{}\@nil
7877 }
7878 \def\HyInd@hyperpage#1\nohyperpage#2#3\@nil{%
7879     \HyInd@@@hyperpage{#1}%
7880     #2%

```

```

7881 \def\Hy@temp{#3}%
7882 \ifx\Hy@temp\@empty
7883 \else
7884 \Hy@ReturnAfterFi{%
7885 \HyInd@hyperpage#3\@nil
7886 }%
7887 \fi
7888 }
7889 \def\HyInd@@hyperpage#1{\@hyperpage#1----\}
7890 \def\@hyperpage#1--#2--#3\{\{%
7891 \ifx\#2\}%
7892 \@commahyperpage{#1}%
7893 \else
7894 \HyInd@pagelink{#1}--\HyInd@pagelink{#2}%
7895 \fi
7896 }
7897 \def\@commahyperpage#1{\@commahyperpage#1, ,\}
7898 \def\@commahyperpage#1, #2,#3\{\{%
7899 \ifx\#2\}%
7900 \HyInd@pagelink{#1}%
7901 \else
7902 \HyInd@pagelink{#1}, \HyInd@pagelink{#2}%
7903 \fi
7904 }

```

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

```

7905 \def\HyInd@pagelink#1{%
7906 \begingroup
7907 \toks@={}%
7908 \HyInd@removespaces#1 \@nil
7909 \endgroup
7910 }
7911 \def\HyInd@removespaces#1 #2\@nil{%
7912 \toks@=\expandafter{\the\toks@#1}%
7913 \ifx\#2\}%
7914 \edef\x{\the\toks@}%
7915 \ifx\x\@empty
7916 \else
7917 \hyperlink{page.\the\toks@}{\the\toks@}%
7918 \fi
7919 \else
7920 \Hy@ReturnAfterFi{%
7921 \HyInd@removespaces#2\@nil
7922 }%
7923 \fi
7924 }

```

## 44 Compatibility with foiltex

```

7925 \@ifclassloaded{foils}{%
7926 \providecommand*\ext@table{lot}%
7927 \providecommand*\ext@figure{lof}%
7928 }{}

```

## 45 Compatibility with seminar slide package

This requires seminar.bg2, version 1.6 or later. Contributions by Denis Girou (denis.girou@idris.fr).

```

7929 \ifclassloaded{seminar}{%
7930   \Hy@seminarslidestrue\newcommand\theHslide{\arabic{slide}}}%
7931 }{%
7932   \Hy@seminarslidesfalse
7933 }
7934 \ifpackageloaded{slidesec}{%
7935   \newcommand\theHslidesection {\arabic{slidesection}}%
7936   \newcommand\theHslidesubsection{%
7937     \theHslidesection.\arabic{slidesubsection}}%
7938 }%
7939 \def\slide@heading[#1]#2{%
7940   \H@refstepcounter{slidesection}%
7941   \@addtoreset{slidesubsection}{slidesection}%
7942   \addtocontents{los}{%
7943     \protect\l@slide{\the\c@slidesection}{\ignorespaces#1}%
7944     {\@SCTR}{slideheading.\theslidesection}}%
7945 }%
7946 \def\Hy@tempa{#2}%
7947 \ifx\Hy@tempa\@empty
7948   \else
7949     {%
7950       \edef\@currentlabel{%
7951         \csname p@slidesection\endcsname\theslidesection
7952       }%
7953       \makeslideheading{#2}%
7954     }%
7955   \fi
7956   \gdef\theslideheading{#1}%
7957   \gdef\theslidesubheading{}%
7958   \ifHy@bookmarksnumbered
7959     \def\Hy@slidetitle{\theslidesection\space #1}%
7960   \else
7961     \def\Hy@slidetitle{#1}%
7962   \fi
7963   \ifHy@hypertextnames
7964     \ifHy@naturalnames
7965       \hyper@@anchor{slideheading.\theslidesection}{\relax}%
7966       \Hy@writebookmark
7967         {\theslidesection}%
7968         {\Hy@slidetitle}%
7969         {slideheading.\theslidesection}%
7970         {1}%
7971         {toc}%
7972     \else
7973       \hyper@@anchor{slideheading.\theHslidesection}{\relax}%
7974       \Hy@writebookmark
7975         {\theslidesection}%
7976         {\Hy@slidetitle}%
7977         {slideheading.\theHslidesection}%
7978         {1}%
7979         {toc}%
7980     \fi
7981   \else

```

```

7982 \Hy@GlobalStepCount\Hy@linkcounter
7983 \hyper@@anchor{slideheading.\the\Hy@linkcounter}{\relax}%
7984 \Hy@writebookmark
7985 {\theslidesubsection}%
7986 {\Hy@slidetitle}%
7987 {slideheading.\the\Hy@linkcounter}%
7988 {1}%
7989 {toc}%
7990 \fi
7991 }%
7992 \def\slide@subheading[#1]#2{%
7993 \H@refstepcounter{slidesubsection}%
7994 \addtocontents{los}{%
7995 \protect\l@subslide{\the\c@slidesubsection}{\ignorespaces#1}%
7996 {\@SCTR}{slideheading.\theslidesubsection}%
7997 }%
7998 \def\Hy@tempa{#2}%
7999 \ifx\Hy@tempa\@empty
8000 \else
8001 {%
8002 \edef\@currentlabel{%
8003 \csname p@slidesubsection\endcsname\theslidesubsection
8004 }%
8005 \makeslidesubheading{#2}%
8006 }%
8007 \fi
8008 \gdef\theslidesubheading{#1}%
8009 \ifHy@bookmarksnumbered
8010 \def\Hy@slidetitle{\theslidesubsection\space #1}%
8011 \else
8012 \def\Hy@slidetitle{#1}%
8013 \fi
8014 \ifHy@hypertexnames
8015 \ifHy@naturalnames
8016 \hyper@@anchor{slideheading.\theslidesubsection}{\relax}%
8017 \Hy@writebookmark
8018 {\theslidesubsection}%
8019 {\Hy@slidetitle}%
8020 {slideheading.\theslidesubsection}%
8021 {2}%
8022 {toc}%
8023 \else
8024 \hyper@@anchor{slideheading.\theHslidesubsection}{\relax}%
8025 \Hy@writebookmark
8026 {\theslidesubsection}%
8027 {\Hy@slidetitle}%
8028 {slideheading.\theHslidesubsection}%
8029 {2}%
8030 {toc}%
8031 \fi
8032 \else
8033 \Hy@GlobalStepCount\Hy@linkcounter
8034 \hyper@@anchor{slideheading.\the\Hy@linkcounter}{\relax}%
8035 \Hy@writebookmark
8036 {\theslidesubsection}%
8037 {\Hy@slidetitle}%
8038 {slideheading.\the\Hy@linkcounter}%

```

```

8039 {1}%
8040 {toc}%
8041 \fi
8042 }%
8043 \providecommand*{\listslidenam}{List of Slides}%
8044 \def\listofslides{%
8045 \section*{%
8046 \listslidenam
8047 \@mkboth{%
8048 \expandafter\MakeUppercase\listslidenam
8049 }{%
8050 \expandafter\MakeUppercase\listslidenam
8051 }%
8052 }%
8053 \def\l@slide##1##2##3##4{%
8054 \slide@undottedcline{%
8055 \slidenumberline{##3}{\hyperlink{##4}{##2}}}%
8056 }{}%
8057 }%
8058 \let\l@subslide\l@slide
8059 \@startlos
8060 }%
8061 \def\slide@contents{%
8062 \def\l@slide##1##2##3##4{%
8063 \slide@ccline{\slidenumberline{##3}{\hyperlink{##4}{##2}}}{##3}%
8064 }%
8065 \let\l@subslide\@gobblefour
8066 \@startlos
8067 }%
8068 \def\Slide@contents{%
8069 \def\l@slide##1##2##3##4{%
8070 \ifcase\lslide@flag
8071 \message{##1 ** \the\c@slidesection}%
8072 \ifnum##1>\c@slidesection
8073 \def\lslide@flag{1}%
8074 {%
8075 \large
8076 \slide@ccline{%
8077 \slidenumberline{$\rightarrow\bullet$}%
8078 {\hyperlink{##4}{##2}}}%
8079 }{##3}%
8080 }%
8081 \else
8082 {%
8083 \large
8084 \slide@ccline{%
8085 \slidenumberline{$\surd\;\bullet$}%
8086 {\hyperlink{##4}{##2}}}%
8087 }{##3}%
8088 }%
8089 \fi
8090 \or
8091 \def\lslide@flag{2}%
8092 {%
8093 \large
8094 \slide@ccline{%
8095 \slidenumberline{$\bullet$}%

```

```

8096         {\hyperlink{##4}{##2}}%
8097     }{##3}%
8098 }%
8099 \or
8100 {%
8101     \large
8102     \slide@cline{%
8103         \slidenumberline{$\bullet$}%
8104         {\hyperlink{##4}{##2}}%
8105     }{##3}%
8106 }%
8107 \fi
8108 }%
8109 \def\l@subslide##1##2##3##4{%
8110     \ifnum\lslide@flag=1 %
8111         \@undottedtocline{2}{3.8em}{3.2em}{\hyperlink{##4}{##2}}{}%
8112     \fi
8113 }%
8114 \def\lslide@flag{0}%
8115 \@startlos
8116 }%
8117 }{}

```

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.)

```

8118 \ifHy@texht
8119   \expandafter\endinput
8120 \fi
8121 \let\real@setref\@setref
8122 \def\@setref#1#2#3{% csname, extract group, refname
8123   \ifx#1\relax
8124     \protect\G@refundefinedtrue
8125     \nfss@text{\reset@font\bfseries ??}%
8126     \@latex@warning{%
8127       Reference '#3' on page \thepage \space undefined%
8128     }%
8129   \else
8130     \expandafter\Hy@setref@link#1\@empty\@empty\@nil{#2}%
8131   \fi
8132 }

```

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

```

8133 \def\Hy@setref@link#1#2#3#4#5#6\@nil#7{%
8134   \begingroup
8135     \toks0={\hyper@@link{#5}{#4}}%
8136     \toks1=\expandafter{#7{#1}{#2}{#3}{#4}{#5}}%
8137   \edef\x{\endgroup
8138     \the\toks0 {\the\toks1 }%
8139   }%
8140   \x
8141 }
8142 \def\@pagesetref#1#2#3{% csname, extract macro, ref
8143   \ifx#1\relax
8144     \protect\G@refundefinedtrue
8145     \nfss@text{\reset@font\bfseries ??}%
8146     \@latex@warning{%

```



```

8147   Reference '#3' on page \thepage \space undefined%
8148   }%
8149   \else
8150     \protect\hyper@@link
8151     {\expandafter\@fifthoffive#1}%
8152     {page.\expandafter\@secondoffive#1}%
8153     {\expandafter\@secondoffive#1}%
8154   \fi
8155 }

8156 </package>
8157 <*check>
8158 \checklatex
8159 \checkcommand\def\@setref#1#2#3{%
8160   \ifx#1\relax
8161     \protect\G@refundefinedtrue
8162     \nfss@text{\reset@font\bfseries ??}%
8163     \@latex@warning{%
8164       Reference '#3' on page \thepage \space undefined%
8165     }%
8166   \else
8167     \expandafter#2#1\null
8168   \fi
8169 }
8170 </check>
8171 <*package>

```

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

```

8172 \def\HyRef@StarSetRef#1{%
8173   \begingroup
8174   \Hy@safe@activetrue
8175   \edef\x{#1}%
8176   \@onelevel@sanitize\x
8177   \edef\x{\endgroup
8178     \noexpand\HyRef@@StarSetRef
8179     \expandafter\noexpand\csname r@\x\endcsname{\x}%
8180   }%
8181   \x
8182 }
8183 \def\HyRef@@StarSetRef#1#2#3{%
8184   \ifx#1\@undefined
8185     \let#1\relax
8186   \fi
8187   \real@setref#1#3{#2}%
8188 }
8189 \def\@refstar#1{%
8190   \HyRef@StarSetRef{#1}\@firstoffive
8191 }
8192 \def\@pagerefstar#1{%
8193   \HyRef@StarSetRef{#1}\@secondoffive
8194 }
8195 \def\@namerefstar#1{%
8196   \HyRef@StarSetRef{#1}\@thirdoffive
8197 }
8198 \Hy@AtBeginDocument{%
8199   \@ifpackageloaded{varioref}{%
8200     \def\@Refstar#1{%

```

```

8201 \HyRef@StarSetRef{#1}\HyRef@MakeUppercaseFirstOfFive
8202 }%
8203 \def\HyRef@MakeUppercaseFirstOfFive#1#2#3#4#5{%
8204 \MakeUppercase#1%
8205 }%
8206 \DeclareRobustCommand*\Ref{%
8207 \@ifstar\@Refstar\HyRef@Ref
8208 }%
8209 \def\HyRef@Ref#1{%
8210 \hyperref[{#1}]{\Ref*{#1}}%
8211 }%
8212 \def\vr@f#1{%
8213 \leavevmode\unskip\vref@space
8214 \hyperref[{#1}]{%
8215 \Ref*{#1}%
8216 \let\vref@space\nobreakspace
8217 \@vpageref\unskip}{#1}%
8218 }%
8219 }%
8220 \def\vr@f#1{%
8221 \leavevmode\unskip\vref@space
8222 \begingroup
8223 \let\T@pageref\@pagerefstar
8224 \hyperref[{#1}]{%
8225 \ref*{#1}%
8226 \vpageref\unskip}{#1}%
8227 }%
8228 \endgroup
8229 }%
8230 }{}%
8231 }
8232 \DeclareRobustCommand*\autopageref{%
8233 \@ifstar{%
8234 \HyRef@autopagerefname\pageref*%
8235 }\HyRef@autopageref
8236 }
8237 \def\HyRef@autopageref#1{%
8238 \hyperref[{#1}]{\HyRef@autopagerefname\pageref*{#1}}%
8239 }
8240 \def\HyRef@autopagerefname{%
8241 \ltx@ifundefined{pageautorefname}{%
8242 \ltx@ifundefined{pagename}{%
8243 \Hy@Warning{No autoref name for 'page'}%
8244 }{%
8245 \pagename\nobreakspace
8246 }%
8247 }{}%
8248 \pageautorefname\nobreakspace
8249 }%
8250 }
8251 \DeclareRobustCommand*\autoref{%
8252 \@ifstar{\HyRef@autoref@gobbletwo}{\HyRef@autoref\hyper@link}%
8253 }
8254 \def\HyRef@autoref#1#2{%
8255 \begingroup
8256 \Hy@safe@activetrue
8257 \expandafter\HyRef@autosetref\csname r@#2\endcsname{#2}{#1}%

```

```

8258 \endgroup
8259 }
8260 \def\HyRef@autosetref#1#2#3{% link command, csname, refname
8261 \HyRef@ShowKeysRef{#2}%
8262 \ifcase 0\ifx#1\relax 1\fi\ifx#1\Hy@varioref@undefined 1\fi\relax
8263 \edef\HyRef@thisref{%
8264 \expandafter\@fourthoffive#1\@empty\@empty\@empty
8265 }%
8266 \expandafter\HyRef@testreftype\HyRef@thisref.\\%
8267 \Hy@safe@activesfalse
8268 #3{%
8269 \expandafter\@fifthoffive#1\@empty\@empty\@empty
8270 }{%
8271 \expandafter\@fourthoffive#1\@empty\@empty\@empty
8272 }{%
8273 \HyRef@currentHtag
8274 \expandafter\@firstoffive#1\@empty\@empty\@empty
8275 \null
8276 }%
8277 \else
8278 \protect\G@refundefinedtrue
8279 \nfss@text{\reset@font\bfseries ??}%
8280 \@latex@warning{%
8281 Reference '#2' on page \thepage\space undefined%
8282 }%
8283 \fi
8284 }
8285 \def\HyRef@testreftype#1.#2\\{%
8286 \ltx@ifundefined{#1autorefname}{%
8287 \ltx@ifundefined{#1name}{%
8288 \HyRef@StripStar#1\*\@nil{#1}%
8289 \ltx@ifundefined{\HyRef@name autorefname}{%
8290 \ltx@ifundefined{\HyRef@name name}{%
8291 \def\HyRef@currentHtag{}%
8292 \Hy@Warning{No autoref name for '#1'}%
8293 }{%
8294 \edef\HyRef@currentHtag{%
8295 \expandafter\noexpand\csname\HyRef@name name\endcsname
8296 \noexpand~%
8297 }%
8298 }%
8299 }{%
8300 \edef\HyRef@currentHtag{%
8301 \expandafter\noexpand
8302 \csname\HyRef@name autorefname\endcsname
8303 \noexpand~%
8304 }%
8305 }%
8306 }{%
8307 \edef\HyRef@currentHtag{%
8308 \expandafter\noexpand\csname#1name\endcsname
8309 \noexpand~%
8310 }%
8311 }%
8312 }{%
8313 \edef\HyRef@currentHtag{%
8314 \expandafter\noexpand\csname#1autorefname\endcsname

```

```

8315 \noexpand~%
8316 }%
8317 }%
8318 }
8319 \def\HyRef@StripStar#1*\#2\@nil#3{%
8320 \def\HyRef@name{#2}%
8321 \ifx\HyRef@name\HyRef@CaseStar
8322 \def\HyRef@name{#1}%
8323 \else
8324 \def\HyRef@name{#3}%
8325 \fi
8326 }
8327 \def\HyRef@CaseStar{*\\}
8328 \def\HyRef@currentHtag{}

```

Support for package showkeys.

\HyRef@ShowKeysRef

```

8329 \let\HyRef@ShowKeysRef\@gobble
8330 \def\HyRef@ShowKeysInit{%
8331 \begingroup\expandafter\expandafter\expandafter\endgroup
8332 \expandafter\ifx\csname SK@@label\endcsname\relax
8333 \else
8334 \ifx\SK@ref\@empty
8335 \else
8336 \def\HyRef@ShowKeysRef{%
8337 \SK@\SK@@ref
8338 }%
8339 \fi
8340 \fi
8341 }
8342 \@ifpackageloaded{showkeys}{%
8343 \HyRef@ShowKeysInit
8344 }{%
8345 \Hy@AtBeginDocument{%
8346 \@ifpackageloaded{showkeys}{%
8347 \HyRef@ShowKeysInit
8348 }{}%
8349 }%
8350 }

```

Defaults for the names that \autoref uses.

```

8351 \providecommand*{\AMSautorefname}{\equationautorefname}
8352 \providecommand*{\Hfootnoteautorefname}{\footnoteautorefname}
8353 \providecommand*{\Itemautorefname}{\itemautorefname}
8354 \providecommand*{\itemautorefname}{item}
8355 \providecommand*{\equationautorefname}{Equation}
8356 \providecommand*{\footnoteautorefname}{footnote}
8357 \providecommand*{\itemautorefname}{item}
8358 \providecommand*{\figureautorefname}{Figure}
8359 \providecommand*{\tableautorefname}{Table}
8360 \providecommand*{\partautorefname}{Part}
8361 \providecommand*{\appendixautorefname}{Appendix}
8362 \providecommand*{\chapterautorefname}{chapter}
8363 \providecommand*{\sectionautorefname}{section}
8364 \providecommand*{\subsectionautorefname}{subsection}
8365 \providecommand*{\subsubsectionautorefname}{subsubsection}
8366 \providecommand*{\paragraphautorefname}{paragraph}

```

```

8367 \providecommand*\subparagraphautorefname{subparagraph}
8368 \providecommand*\FancyVerbLineautorefname{line}
8369 \providecommand*\theoremautorefname{Theorem}
8370 \providecommand*\pageautorefname{page}
8371 \end{package}

```

## 46 Configuration files

### 46.1 PS/PDF strings

Some drivers write PS or PDF strings. These strings are delimited by parentheses, therefore a lonely unmatched parenthesis must be avoided to avoid PS or PDF syntax errors. Also the backslash character itself has to be protected.

`\Hy@pstringdef` Therefore such strings should be passed through `\Hy@pstringdef`. The first argument holds a macro for the result, the second argument is the string that needs protecting. Since version 1.30.0 pdf<sub>T</sub>E<sub>X</sub> offers `\pdfescapestring`.

```

8372 < *pdfTex | dvipdfm | xetex | vtex | pdfmarkbase | dviwindo >
8373 \begingroup\expandafter\expandafter\expandafter\endgroup
8374 \expandafter\ifx\csname pdf@escapestring\endcsname\relax
8375   \begingroup
8376     \catcode'\=0 %
8377     \@makeother\%
8378     |@firstofone{ \endgroup
8379     |def|Hy@pstringdef#1#2{%
8380       |begingroup
8381       |edef~{|string~}%
8382       |xdef|Hy@gtemp{#2}%
8383       |endgroup
8384       |let#1|Hy@gtemp
8385       |@onelevel@sanitize#1%
8386       |edef#1{|expandafter|Hy@ExchangeBackslash#1\|@nil}%
8387       |edef#1{|expandafter|Hy@ExchangeLeftParenthesis#1(|@nil}%
8388       |edef#1{|expandafter|Hy@ExchangeRightParenthesis#1)|@nil}%
8389     }%
8390     |def|Hy@ExchangeBackslash#1\#2|@nil{%
8391       #1%
8392       |ifx|\#2\|%%
8393       |else
8394         \|%
8395         |Hy@ReturnAfterFi{%
8396           |Hy@ExchangeBackslash#2|@nil
8397         }%
8398       |fi
8399     }%
8400   }%
8401   \def|Hy@ExchangeLeftParenthesis#1( #2\|@nil{%
8402     #1%
8403     \ifx\#2\|%%
8404     \else
8405       \@backslashchar(%
8406       |Hy@ReturnAfterFi{%
8407         |Hy@ExchangeLeftParenthesis#2\|@nil
8408       }%
8409     \fi
8410   }%

```

```

8411 \def\Hy@ExchangeRightParenthesis#1)#2\@nil{%
8412   #1%
8413   \ifx\#2\%
8414   \else
8415     \@backslashchar)%
8416     \Hy@ReturnAfterFi{%
8417       \Hy@ExchangeRightParenthesis#2\@nil
8418     }%
8419   \fi
8420 }%
8421 \else
8422 \def\Hy@pstringdef#1#2{%
8423   \begingroup
8424     \edef~{\string~}%
8425     \xdef\Hy@gtemp{\pdf@escapestring{#2}}%
8426   \endgroup
8427   \let#1\Hy@gtemp
8428 }%
8429 \fi
8430 \pdfTeX | dvipdfm | xetex | vtex | pdfmarkbase | dviwindo)

```

## 46.2 pdftex

```

8431 \langle *pdftex \rangle
8432 \providecommand*{\XR@ext}{pdf}
8433 \Hy@setbreaklinks{true}
8434 \def\HyPat@ObjRef{%
8435   [0-9]*[1-9][0-9]* 0 R%
8436 }

```

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`

```

8437 \let\Hy@pdfminorversion\relax
8438 \begingroup\expandafter\expandafter\expandafter\endgroup
8439 \expandafter\ifx\csname pdfminorversion\endcsname\relax
8440   \begingroup\expandafter\expandafter\expandafter\endgroup
8441   \expandafter\ifx\csname pdfoptionpdfminorversion\endcsname\relax
8442     \else
8443       \def\Hy@pdfminorversion{\pdfoptionpdfminorversion}%
8444     \fi
8445   \else
8446     \def\Hy@pdfminorversion{\pdfminorversion}%
8447   \fi
8448 \ifundefined{Hy@pdfminorversion}{%
8449   \PackageInfo{hyperref}{%
8450     PDF version is not set, because pdfTeX is too old (<1.10a)%
8451   }%
8452 }{%
8453   \ifHy@ocgcolorlinks
8454     \ifnum\Hy@pdfminorversion<5 %
8455       \kvsetkeys{Hyp}{pdfversion=1.5}%
8456     \fi

```

```

8457 \fi
8458 \ifHy@setpdfversion
8459 \ifnum\Hy@pdfminorversion=\Hy@pdfversion\relax
8460 \else
8461 \Hy@pdfminorversion=\Hy@pdfversion\relax
8462 \fi
8463 \PackageInfo{hyperref}{%
8464 \expandafter\string\Hy@pdfminorversion
8465 :=\number\Hy@pdfversion\space
8466 }%
8467 \fi
8468 \edef\Hy@pdfversion{\number\Hy@pdfminorversion}%
8469 }
8470 \Hy@DisableOption{pdfversion}%

8471 \ifHy@ocgcolorlinks
8472 \pdf@ifdraftmode{ }{%
8473 \immediate\pdfobj{%
8474 <<%
8475 /Type/OCG%
8476 /Name(View)%
8477 /Usage<<%
8478 /Print<<%
8479 /PrintState/OFF%
8480 >>%
8481 /View<<%
8482 /ViewState/ON%
8483 >>%
8484 >>%
8485 >>%
8486 }%
8487 \edef\OBJ@OCG@view{\the\pdflastobj\space 0 R}%
8488 \immediate\pdfobj{%
8489 <<%
8490 /Type/OCG%
8491 /Name(Print)%
8492 /Usage<<%
8493 /Print<<%
8494 /PrintState/ON%
8495 >>%
8496 /View<<%
8497 /ViewState/OFF%
8498 >>%
8499 >>%
8500 >>%
8501 }%
8502 \edef\OBJ@OCG@print{\the\pdflastobj\space 0 R}%
8503 \immediate\pdfobj{%
8504 [%
8505 \OBJ@OCG@view\space\OBJ@OCG@print
8506 ]%
8507 }%
8508 \edef\OBJ@OCGs{\the\pdflastobj\space 0 R}%
8509 \pdfcatalog{%
8510 /OCProperties<<%
8511 /OCGs \OBJ@OCGs
8512 /D<<%
8513 /OFF[\OBJ@OCG@print]%

```

```

8514      /AS[%
8515      <<%
8516      /Event/View%
8517      /OCGs \OBJ@OCGs
8518      /Category[/View]%
8519      >>%
8520      <<%
8521      /Event/Print%
8522      /OCGs \OBJ@OCGs
8523      /Category[/Print]%
8524      >>%
8525      <<%
8526      /Event/Export%
8527      /OCGs \OBJ@OCGs
8528      /Category[/Print]%
8529      >>%
8530      ]%
8531      >>%
8532      >>%
8533      }%
8534      \begingroup
8535      \edef\x{\endgroup
8536      \pdfpageresources{%
8537      /Properties<<%
8538      /OCView \OBJ@OCG@view
8539      /OCPrint \OBJ@OCG@print
8540      >>%
8541      }%
8542      }%
8543      \x
8544      }%
8545      \Hy@AtBeginDocument{%
8546      \def\Hy@colorlink#1{%
8547      \begingroup
8548      \ifHy@ocgcolorlinks
8549      \def\Hy@ocgcolor{#1}%
8550      \setbox0=\hbox\bgroup\color@begingroup
8551      \else
8552      \HyColor@UseColor#1%
8553      \fi
8554      }%
8555      \def\Hy@endcolorlink{%
8556      \ifHy@ocgcolorlinks
8557      \color@endgroup\egroup
8558      \mbox{%
8559      \pdfliteral page{/OC/OCPrint BDC}%
8560      \rlap{\copy0}%
8561      \pdfliteral page{EMC/OC/OCView BDC}%
8562      \begingroup
8563      \expandafter\HyColor@UseColor\Hy@ocgcolor
8564      \box0 %
8565      \endgroup
8566      \pdfliteral page{EMC}%
8567      }%
8568      \fi
8569      \endgroup
8570      }%

```



```

8571 }%
8572 \else
8573 \Hy@DisableOption{ocgcolorlinks}%
8574 \fi

```

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

```

8575 \def\setpdfinkmargin#1{\pdfinkmargin#1}
8576 \ifx\pdfstartlink\@undefined% less than version 14
8577 \let\pdfstartlink\pdfannotlink
8578 \let\pdfinkmargin\@tempdima
8579 \let\pdfxform\pdfform
8580 \let\pdflastxform\pdfastform
8581 \let\pdfrefxform\pdfrefform
8582 \else
8583 \pdfinkmargin1pt %
8584 \fi

```

First set up the default linking

```

8585 \providecommand*\@pdfview{XYZ}

```

First define the anchors:

```

8586 \Hy@WrapperDef\new@pdfink#1{%
8587 \ifhmode
8588 \savesf\spacefactor
8589 \fi
8590 \Hy@SaveLastskip
8591 \Hy@VerboseAnchor{#1}%
8592 \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
8593 \Hy@DestName\Hy@pstringDest\@pdfview
8594 \Hy@RestoreLastskip
8595 \ifhmode
8596 \spacefactor\@savesf
8597 \fi
8598 }
8599 \let\pdf@endanchor\@empty

```

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

```

8600 \def\Hy@DestName#1#2{%
8601 \pdfdest name{#1}#2\relax
8602 }

```

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.

```

8603 \providecommand*\@pdfborder{0 0 1}
8604 \providecommand*\@pdfborderstyle{}
8605 \def\Hy@undefinedname{UNDEFINED}
8606 \def\find@pdfink#1#2{%
8607 \leavevmode
8608 \protected@edef\Hy@testname{#2}%
8609 \ifx\Hy@testname\@empty
8610 \Hy@Warning{%
8611 Empty destination name,\MessageBreak
8612 using '\Hy@undefinedname'%
8613 }%
8614 \let\Hy@testname\Hy@undefinedname

```

```

8615 \else
8616   \Hy@pstringdef\Hy@testname{%
8617     \expandafter\HyperDestNameFilter\expandafter{\Hy@testname}%
8618   }%
8619 \fi
8620 \Hy@StartlinkName{%
8621   \ifHy@pdfa /F 4\fi
8622   \Hy@setpdfborder
8623   \ifx\@pdfhighlight\@empty
8624   \else
8625     /H\@pdfhighlight
8626   \fi
8627   \ifx\CurrentBorderColor\relax
8628   \else
8629     /C[\CurrentBorderColor]%
8630   \fi
8631 } \Hy@testname
8632 \expandafter\Hy@colorlink\csname @#1color\endcsname
8633 }
8634 \def\Hy@StartlinkName#1#2{%
8635   \pdfstartlink attr{#1}goto name{#2}\relax
8636 }
8637 \def\close@pdfink{%
8638   \Hy@endcolorlink
8639   \Hy@VerboseLinkStop
8640   \pdfendlink
8641 }
8642 \def\hyper@anchor#1{%
8643   \new@pdfink{#1}\anchor@spot\pdf@endanchor
8644 }
8645 \def\hyper@anchorstart#1{%
8646   \new@pdfink{#1}%
8647   \Hy@activeanchortrue
8648 }
8649 \def\hyper@anchorend{%
8650   \pdf@endanchor
8651   \Hy@activeanchorfalse
8652 }
8653 \def\hyper@linkstart#1#2{%
8654   \Hy@VerboseLinkStart{#1}{#2}%
8655   \ltx@ifundefined{@#1bordercolor}{%
8656     \let\CurrentBorderColor\relax
8657   }{%
8658     \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
8659   }%
8660   \find@pdfink{#1}{#2}%
8661 }
8662 \def\hyper@linkend{\close@pdfink}
8663 \def\hyper@link#1#2#3{%
8664   \Hy@VerboseLinkStart{#1}{#2}%
8665   \ltx@ifundefined{@#1bordercolor}{%
8666     \let\CurrentBorderColor\relax
8667   }{%
8668     \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
8669   }%
8670   \find@pdfink{#1}{#2}#3%
8671   \close@pdfink

```

```

8672 }
8673 \let\CurrentBorderColor\@linkbordercolor
8674 \def\hyper@linkurl#1#2{%
8675   \begingroup
8676     \Hy@pstringdef\Hy@pstringURI{#2}%
8677     \hyper@chars
8678     \leavevmode
8679     \pdfstartlink
8680     attr{%
8681       \Hy@setpdfborder
8682       \ifx\@pdfhighlight\@empty
8683       \else
8684         /H\@pdfhighlight
8685       \fi
8686       \ifx\@urlbordercolor\relax
8687       \else
8688         /C[\@urlbordercolor]%
8689       \fi
8690     }%
8691     user{%
8692       /Subtype/Link%
8693       \ifHy@pdfa /F 4\fi
8694       /A<<%
8695       /Type/Action%
8696       /S/URI%
8697       /URI(\Hy@pstringURI)%
8698       \ifHy@href@ismap
8699       /IsMap true%
8700     \fi
8701     \Hy@href@nextactionraw
8702     >>%
8703   }%
8704   \relax
8705   \Hy@colorlink\@urlcolor#1%
8706   \close@pdfink
8707 \endgroup
8708 }
8709 \def\hyper@linkfile#1#2#3{% anchor text, filename, linkname
8710   \begingroup
8711     \def\Hy@pstringF{#2}%
8712     \Hy@CleanupFile\Hy@pstringF
8713     \Hy@pstringdef\Hy@pstringF\Hy@pstringF
8714     \Hy@pstringdef\Hy@pstringD{#3}%
8715     \Hy@MakeRemoteAction
8716     \leavevmode
8717     \pdfstartlink
8718     attr{%
8719       \Hy@setpdfborder
8720       \ifx\@pdfhighlight\@empty
8721       \else
8722         /H\@pdfhighlight
8723       \fi
8724       \ifx\@filebordercolor\relax
8725       \else
8726         /C[\@filebordercolor]%
8727       \fi
8728     }%

```

```

8729     user {%
8730         /Subtype/Link%
8731         \ifHy@pdfa /F 4\fi
8732         /A<<%
8733         /F(\Hy@pstringF)%
8734         /S/GoToR%
8735         \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}

```

```

8736     \ifx\#3\%
8737       /D[\Hy@href@page\@pdfremotestartview]%
8738     \else
8739       /D(\Hy@pstringD)%
8740     \fi
8741     \Hy@href@nextactionraw
8742     >>%
8743   }%
8744   \relax
8745   \Hy@colorlink\@filecolor#1%
8746   \close@pdflink
8747 \endgroup
8748 }
8749 \def\@hyper@launch run:#1\#2#3{% filename, anchor text linkname
8750   \begingroup
8751     \Hy@pstringdef\Hy@pstringF{#1}%
8752     \Hy@pstringdef\Hy@pstringP{#3}%
8753     \leavevmode
8754     \pdfstartlink
8755     attr{%
8756       \Hy@setpdfborder
8757       \ifx\@pdfhighlight\@empty
8758       \else
8759         /H\@pdfhighlight
8760       \fi
8761       \ifx\@runbordercolor\relax
8762       \else
8763         /C[\@runbordercolor]%
8764       \fi
8765     }%
8766     user {%
8767       /Subtype/Link%
8768       \ifHy@pdfa /F 4\fi
8769       /A<<%
8770       /F(\Hy@pstringF)%
8771       /S/Launch%
8772       \Hy@SetNewWindow
8773       \ifx\#3\%
8774       \else

```

```

8775      /Win<</P(\Hy@pstringP)/F(\Hy@pstringF)>>%
8776      \fi
8777      \Hy@href@nextactionraw
8778      >>%
8779      }%
8780      \relax
8781      \Hy@colorlink\@runcolor#2%
8782      \close@pdflink
8783      \endgroup
8784      }

```

\@pdfproducer

```

8785 \ifx \@pdfproducer\relax
8786 \begingroup\expandafter\expandafter\expandafter\endgroup
8787 \expandafter\ifx\csname luatexversion\endcsname\relax
8788 \def \@pdfproducer{pdfTeX}%
8789 \ifx \eTeXversion \@undefined
8790 \else
8791 \ifx \eTeXversion \relax
8792 \else
8793 \ifnum \eTeXversion > 0 %
8794 \def \@pdfproducer{pdfTeX}%
8795 \fi
8796 \fi
8797 \fi
8798 \ifx \pdfTeXversion \@undefined
8799 \else
8800 \ifnum \pdfTeXversion < 100 %
8801 \edef \@pdfproducer{%
8802 \the \@pdfproducer
8803 \the \pdfTeXversion.\pdfTeXrevision
8804 }%
8805 \else
8806 \ifnum \pdfTeXversion < 130 %
8807 \edef \@pdfproducer{%
8808 \@pdfproducer-%
8809 \expandafter \@car \the \pdfTeXversion \@empty \@nil.%
8810 \expandafter \@cdr \the \pdfTeXversion \@empty \@nil.%
8811 \pdfTeXrevision
8812 }%
8813 \else
8814 \ifnum \pdfTeXversion < 140 %
8815 \else
8816 \def \@pdfproducer{pdfTeX}%
8817 \fi
8818 \edef \@pdfproducer{%
8819 \@pdfproducer-%
8820 \expandafter \@car \the \pdfTeXversion \@empty \@nil.%
8821 \expandafter \@cdr \the \pdfTeXversion \@empty \@nil.%
8822 \pdfTeXrevision
8823 }%
8824 \fi
8825 \fi
8826 \fi
8827 \else
8828 \begingroup
8829 \count@=\luatexversion

```

```

8830 \divide\count@ by 100 %
8831 \edef\x{\the\count@}%
8832 \count@=-\x\relax
8833 \multiply\count@ by 100 %
8834 \advance\count@ by \luatexversion
8835 \edef\x{\endgroup
8836 \def\noexpand\@pdfproducer{%
8837 LuaTeX-\x.\the\count@.\luatexrevision
8838 }%
8839 }%
8840 \x
8841 \fi
8842 \fi

```

\PDF@SetupDox

```

8843 \def\PDF@SetupDoc{%
8844 \ifx\@pdfpagescrop\@empty
8845 \else
8846 \edef\process@me{%
8847 \pdfpagesattr={%
8848 /CropBox[\@pdfpagescrop]%
8849 \expandafter\ifx\expandafter\\\the\pdfpagesattr\\%
8850 \else
8851 ^^J\the\pdfpagesattr
8852 \fi
8853 }%
8854 }%
8855 \process@me
8856 \fi
8857 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
8858 \pdfcatalog{%
8859 /PageMode/\@pdfpagemode
8860 \ifx\@baseurl\@empty
8861 \else
8862 /URI<</Base(\Hy@pstringB)>>%
8863 \fi
8864 }%
8865 \ifx\@pdfstartpage\@empty
8866 \else
8867 \ifx\@pdfstartview\@empty
8868 \else
8869 openaction goto page\@pdfstartpage{\@pdfstartview}%
8870 \fi
8871 \fi
8872 \edef\Hy@temp{%
8873 \ifHy@toolbar\else /HideToolbar true\fi
8874 \ifHy@menubar\else /HideMenubar true\fi
8875 \ifHy>windowui\else /HideWindowUI true\fi
8876 \ifHy@fitwindow /FitWindow true\fi
8877 \ifHy@centerwindow /CenterWindow true\fi
8878 \ifHy@displaydoctitle /DisplayDocTitle true\fi
8879 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
8880 \Hy@UseNameKey{Direction}\@pdfdirection
8881 \Hy@UseNameKey{ViewArea}\@pdfviewarea
8882 \Hy@UseNameKey{ViewClip}\@pdfviewclip
8883 \Hy@UseNameKey{PrintArea}\@pdfprintarea
8884 \Hy@UseNameKey{PrintClip}\@pdfprintclip

```

```

8885 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
8886 \Hy@UseNameKey{Duplex}\@pdfduplex
8887 \ifx\@pdfpicktraybypdfsize\@empty
8888 \else
8889 /PickTrayByPDFSize \@pdfpicktraybypdfsize
8890 \fi
8891 \ifx\@pdfprintpagerange\@empty
8892 \else
8893 /PrintPageRange[\@pdfprintpagerange]%
8894 \fi
8895 \ifx\@pdfnumcopies\@empty
8896 \else
8897 /NumCopies \@pdfnumcopies
8898 \fi
8899 }%
8900 \pdfcatalog{%
8901 \ifx\Hy@temp\@empty
8902 \else
8903 /ViewerPreferences<<\Hy@temp>>%
8904 \fi
8905 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
8906 \ifx\@pdflang\@empty
8907 \else
8908 /Lang(\@pdflang)%
8909 \fi
8910 }%
8911 }

```

\PDF@FinishDoc

```

8912 \def\PDF@FinishDoc{%
8913 \pdf@ifdraftmode{ }{%
8914 \Hy@UseMaketitleInfos
8915 \HyInfo@GenerateAddons
8916 \pdfinfo{%
8917 /Author(\@pdfauthor)%
8918 /Title(\@pdftitle)%
8919 /Subject(\@pdfsubject)%
8920 /Creator(\@pdfcreator)%
8921 \ifx\@pdfcreationdate\@empty
8922 \else
8923 /CreationDate(\@pdfcreationdate)%
8924 \fi
8925 \ifx\@pdfmoddate\@empty
8926 \else
8927 /ModDate(\@pdfmoddate)%
8928 \fi
8929 \ifx\@pdfproducer\relax
8930 \else
8931 /Producer(\@pdfproducer)%
8932 \fi
8933 /Keywords(\@pdfkeywords)%
8934 \ifx\@pdftrapped\@empty
8935 \else
8936 /Trapped/\@pdftrapped
8937 \fi
8938 \HyInfo@Addons
8939 }%

```

```

8940 }%
8941 \Hy@DisableOption{pdfauthor}%
8942 \Hy@DisableOption{pdftitle}%
8943 \Hy@DisableOption{pdfsubject}%
8944 \Hy@DisableOption{pdfcreator}%
8945 \Hy@DisableOption{pdfcreationdate}%
8946 \Hy@DisableOption{pdfmoddate}%
8947 \Hy@DisableOption{pdfproducer}%
8948 \Hy@DisableOption{pdfkeywords}%
8949 \Hy@DisableOption{pdftrapped}%
8950 \Hy@DisableOption{pdfinfo}%
8951 }

```

`\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`.

```

8952 \def\hyper@pagetransition{%
8953   \ifx\@pdfpagetransition\relax
8954   \else
8955     \expandafter\Hy@RemoveTransPageAttr
8956     \the\pdfpageattr^^J/Trans{>>\END
8957     \ifx\@pdfpagetransition\@empty
8958     \else
8959       \edef\@processme{%
8960         \global\pdfpageattr{%
8961           \the\pdfpageattr
8962             ^^J/Trans << /S /\@pdfpagetransition\space >>%
8963         }%
8964       }%
8965       \@processme
8966     \fi
8967   \fi
8968 }

```

`\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.

```

8969 \gdef\Hy@RemoveTransPageAttr#1^^J/Trans#2#3>>#4\END{%
8970   \ifx\#2\%
8971     \global\pdfpageattr{#1}%
8972   \else
8973     \Hy@RemoveTransPageAttr#1#4\END
8974   \fi
8975 }

```

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

```

8976 \def\hyper@pageduration{%
8977   \ifx\@pdfpageduration\relax
8978   \else
8979     \expandafter
8980     \Hy@RemoveDurPageAttr\the\pdfpageattr^^J/Dur{ } \END
8981     \ifx\@pdfpageduration\@empty
8982     \else
8983       \edef\@processme{%

```



```

8984     \global\pdfpageattr{%
8985     \the\pdfpageattr
8986     ^^J/Dur \@pdfpageduration\space
8987     }%
8988     }%
8989     \@processme
8990     \fi
8991     \fi
8992 }

```

**\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.

```

8993 \gdef\Hy@RemoveDurPageAttr#1^^J/Dur#2#3 #4\END{%
8994   \ifx\#2\%
8995     \global\pdfpageattr{#1}%
8996   \else
8997     \Hy@RemoveDurPageAttr#1#4\END
8998   \fi
8999 }

```

**\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).

```

9000 \def\hyper@pagehidden{%
9001   \ifHy@useHidKey
9002     \expandafter
9003     \Hy@RemoveHidPageAttr\the\pdfpageattr^^J/Hid{} \END
9004   \ifHy@pdfpagehidden
9005     \edef\@processme{%
9006       \global\pdfpageattr{%
9007         \the\pdfpageattr
9008         ^^J/Hid true % SPACE
9009       }%
9010     }%
9011     \@processme
9012   \fi
9013   \fi
9014 }

```

**\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.

```

9015 \gdef\Hy@RemoveHidPageAttr#1^^J/Hid#2#3 #4\END{%
9016   \ifx\#2\%
9017     \global\pdfpageattr{#1}%
9018   \else
9019     \Hy@RemoveHidPageAttr#1#4\END
9020   \fi
9021 }

9022 \pdf@ifdraftmode{}{%
9023   \g@addto@macro\Hy@EveryPageHook{%
9024     \hyper@pagetransition
9025     \hyper@pageduration

```

```

9026   \hyper@pagehidden
9027 }%
9028 }

```

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

```

9029 </pdftex>
9030 <*pdftex | xetex>
9031 \Hy@AtBeginDocument{%
9032   \ifHy@setpagesize
9033     \expandafter\@firstofone
9034   \else
9035     \expandafter\@gobble
9036   \fi
9037   {%
9038     \@ifclassloaded{seminar}{%
9039 <*pdftex>
9040     \setlength{\pdfhorigin}{1truein}%
9041     \setlength{\pdfvorigin}{1truein}%
9042 </pdftex>
9043     \ifportrait
9044       \ifdim\paperwidth=\z@
9045       \else
9046         \setlength{\pdfpagewidth}{\strip@pt\paperwidth truept}%
9047       \fi
9048       \ifdim\paperheight=\z@
9049       \else
9050         \setlength{\pdfpageheight}{\strip@pt\paperheight truept}%
9051       \fi
9052     \else
9053       \ifdim\paperheight=\z@
9054       \else
9055         \setlength{\pdfpagewidth}{\strip@pt\paperheight truept}%
9056       \fi
9057       \ifdim\paperwidth=\z@
9058       \else
9059         \setlength{\pdfpageheight}{\strip@pt\paperwidth truept}%
9060       \fi
9061     \fi
9062   }{%
9063     \ltx@ifundefined{stockwidth}{%
9064       \ifdim\paperwidth>\z@
9065         \setlength{\pdfpagewidth}{\paperwidth}%
9066       \fi
9067       \ifdim\paperheight>\z@
9068         \setlength{\pdfpageheight}{\paperheight}%
9069       \fi
9070     }{%
9071       \ifdim\stockwidth>\z@
9072         \setlength{\pdfpagewidth}{\stockwidth}%
9073       \fi
9074       \ifdim\stockheight>\z@
9075         \setlength{\pdfpageheight}{\stockheight}%
9076       \fi
9077     }%
9078   }%
9079 }%
9080 \Hy@DisableOption{setpagesize}%

```

```

9081 }
9082 </pdfTeX | xetex>
9083 <*pdfTeX>
9084 \def\Acrobatmenu#1#2{%
9085   \Hy@Acrobatmenu{#1}{#2}{%
9086     \pdfstartlink
9087     attr{%
9088       \Hy@setpdfborder
9089       \ifx\@pdfhighlight\@empty
9090       \else
9091         /H\@pdfhighlight
9092       \fi
9093       \ifx\@menubordercolor\relax
9094       \else
9095         /C[\@menubordercolor]%
9096       \fi
9097     }%
9098     user{%
9099       /Subtype/Link%
9100       \ifHy@pdfa /F 4\fi
9101       /A<<%
9102       /S/Named%
9103       /N/#1%
9104       \Hy@href@nextactionraw
9105     >>%
9106   }%
9107   \relax
9108   \Hy@colorlink\@menucolor#2%
9109   \close@pdfink
9110 }%
9111 }

```

#### 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`.

```

9112 \def\Hy@FixNotFirstPage{%
9113   \gdef\Hy@FixNotFirstPage{%
9114     \setbox\AtBeginShipoutBox=\hbox{%
9115       \copy\AtBeginShipoutBox
9116     }%
9117   }%
9118 }
9119 \AtBeginShipout{\Hy@FixNotFirstPage}
9120 </pdfTeX>

```

### 46.3 hypertex

The HyperTeX specification (this is borrowed from an article by Arthur Smith) says that conformant viewers/translators must recognize the following set of `\special` commands:

**href:** html:<a href = "href\_string">

**name:** html:<a name = "name\_string">

**end:** html:</a>

**image:** html:<img src = "href\_string">

**base\_name:** html:<base href = "href\_string">

The *href*, *name* and *end* commands are used to do the basic hypertext operations of establishing links between sections of documents. The *image* command is intended (as with current html viewers) to place an image of arbitrary graphical format on the page in the current location. The *base\_name* command is be used to communicate to the *dvi* viewer the full (URL) location of the current document so that files specified by relative URL's may be retrieved correctly.

The *href* and *name* commands must be paired with an *end* command later in the T<sub>E</sub>X file — the T<sub>E</sub>X 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.

```
9121 \*hypertext
9122 \providecommand*{\XR@ext}{dvi}
9123 \def\PDF@FinishDoc{}
9124 \def\PDF@SetupDoc{%
9125   \ifx\@baseurl\@empty
9126   \else
9127     \special{html:<base href="\@baseurl">}%
9128   \fi
9129 }
9130 \Hy@WrapperDef\hyper@anchor#1{%
9131   \Hy@SaveLastskip
9132   \Hy@VerboseAnchor{#1}%
9133   \begingroup
9134     \let\protect=\string
9135     \hyper@chars
9136     \special{html:<a name=%
9137       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
9138   \endgroup
9139   \Hy@activeanchortrue
9140   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
9141   \special{html:</a>}%
9142   \Hy@activeanchorfalse
9143   \Hy@RestoreLastskip
9144 }
9145 \Hy@WrapperDef\hyper@anchorstart#1{%
9146   \Hy@SaveLastskip
9147   \Hy@VerboseAnchor{#1}%
9148   \begingroup
9149     \hyper@chars
9150     \special{html:<a name=%
```

```

9151 \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
9152 \endgroup
9153 \Hy@activeanchortrue
9154 }
9155 \def\hyper@anchorend{%
9156 \special{html:</a>}%
9157 \Hy@activeanchorfalse
9158 \Hy@RestoreLastskip
9159 }
9160 \def\@urlltype{url}
9161 \def\hyper@linkstart#1#2{%
9162 \Hy@VerboseLinkStart{#1}{#2}%
9163 \expandafter\Hy@colorlink\csname @#1color\endcsname
9164 \def\Hy@tempa{#1}%
9165 \ifx\Hy@tempa\@urlltype
9166 \special{html:<a href=\hyper@quote#2\hyper@quote>}%
9167 \else
9168 \begingroup
9169 \hyper@chars
9170 \special{html:<a href=%
9171 \hyper@quote\#\HyperDestNameFilter{#2}\hyper@quote>}%
9172 \endgroup
9173 \fi
9174 }
9175 \def\hyper@linkend{%
9176 \special{html:</a>}%
9177 \Hy@endcolorlink
9178 }
9179 \def\hyper@linkfile#1#2#3{%
9180 \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\#3\\\else\##3\fi}%
9181 }
9182 \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.

```

9183 \leavevmode
9184 \ifHy@raiselinks
9185 \Hy@SaveSpaceFactor
9186 \Hy@SaveSavedSpaceFactor
9187 \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
9188 \Hy@RestoreSavedSpaceFactor
9189 \@linkdim\dp\@tempboxa
9190 \lower\@linkdim\hbox{%
9191 \hyper@chars
9192 \special{html:<a href=\hyper@quote#2\hyper@quote>}%
9193 }%
9194 \Hy@colorlink\@urllcolor
9195 \Hy@RestoreSpaceFactor
9196 #1%
9197 \Hy@SaveSpaceFactor
9198 \@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).

```

9199 \advance\@linkdim by -6.5\p@
9200 \raise\@linkdim\hbox{\special{html:</a>}}%
9201 \Hy@endcolorlink

```

```

9202 \Hy@RestoreSpaceFactor
9203 \else
9204 \begingroup
9205 \hyper@chars
9206 \special{html:<a href=\hyper@quote#2\hyper@quote>}%
9207 \Hy@colorlink\@urlcolor#1%
9208 \special{html:</a>}%
9209 \Hy@endcolorlink
9210 \endgroup
9211 \fi
9212 }

```

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

```

9213 \def\hyper@link#1#2#3{%
9214 \Hy@VerboseLinkStart{#1}{#2}%
9215 \hyper@linkurl{#3}{\# \Hy@HyperDestNameFilter{#2}}%
9216 }

9217 \def\hyper@image#1#2{%
9218 \begingroup
9219 \hyper@chars
9220 \special{html:<img src=\hyper@quote#1\hyper@quote>}%
9221 \endgroup
9222 }
9223 </hypertex>
9224 <*dviwindo>

```

## 46.4 dviwindo

[This was developed by David Carlisle]. Within a file dviwindo hyperlinking is used, for external URL's a call to \wwwbrowser is made. (You can define this command before or after loading the hyperref package if the default c:/netscape/netscape is not suitable) Dviwindo could in fact handle external links to dvi files on the same machine without calling a web browser, but that would mean parsing the URL to recognise such, and this is currently not done.

This was more or less blindly copied from the hypertex cfg. For dviwindo, L<sup>A</sup>T<sub>E</sub>X must specify the size of the active area for links. For some hooks this information is available but for some, the start and end of the link are specified separately in which case a fixed size area of 10000000sp wide by \baselineskip high is used.

```

9225 \providecommand*\XR@ext{dvi}
9226 \providecommand*\wwwbrowser{c:\string\netscape\string\netscape}
9227 \Hy@WrapperDef\hyper@anchor#1{%
9228 \Hy@SaveLastskip
9229 \Hy@VerboseAnchor{#1}%
9230 \begingroup
9231 \let\protect=\string
9232 \special{mark: #1}%
9233 \endgroup
9234 \Hy@activeanchortrue
9235 \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
9236 \Hy@activeanchorfalse
9237 \Hy@RestoreLastskip
9238 }
9239 \Hy@WrapperDef\hyper@anchorstart#1{%
9240 \Hy@SaveLastskip
9241 \Hy@VerboseAnchor{#1}%
9242 \special{mark: #1}%

```

```

9243 \Hy@activeanchortrue
9244 }
9245 \def\hyper@anchorend{%
9246 \Hy@activeanchorfalse
9247 \Hy@RestoreLastskip
9248 }
9249 \def\hyper@linkstart#1#2{%
9250 \Hy@VerboseLinkStart{#1}{#2}%
9251 \expandafter\Hy@colorlink\csname @#1color\endcsname
9252 \special{button: %
9253 10000000 %
9254 \number\baselineskip\space
9255 #2%
9256 }%
9257 }
9258 \def\hyper@linkend{%
9259 \Hy@endcolorlink
9260 }
9261 \def\hyper@link#1#2#3{%
9262 \Hy@VerboseLinkStart{#1}{#2}%
9263 \leavevmode
9264 \ifHy@raiselinks
9265 \Hy@SaveSpaceFactor
9266 \Hy@SaveSavedSpaceFactor
9267 \sbox\@tempboxa{\Hy@RestoreSpaceFactor#3}%
9268 \Hy@RestoreSavedSpaceFactor
9269 \@linkdim\dp\@tempboxa
9270 \lower\@linkdim\hbox{%
9271 \special{button: %
9272 \number\wd\@tempboxa\space
9273 \number\ht\@tempboxa\space
9274 #2%
9275 }%
9276 \expandafter\Hy@colorlink\csname @#1color\endcsname
9277 \Hy@RestoreSpaceFactor
9278 #3%
9279 \Hy@SaveSpaceFactor
9280 \Hy@endcolorlink
9281 }%
9282 \@linkdim\ht\@tempboxa
9283 \advance\@linkdim by -6.5\p@
9284 \raise\@linkdim\hbox{}}%
9285 \Hy@RestoreSpaceFactor
9286 \else
9287 \special{button: %
9288 \number\wd\@tempboxa\space
9289 \number\ht\@tempboxa\space
9290 #2%
9291 }%
9292 \expandafter\Hy@colorlink\csname @#1color\endcsname
9293 #3%
9294 \Hy@endcolorlink
9295 \fi
9296 }
9297 \def\hyper@linkurl#1#2{%
9298 \begingroup
9299 \hyper@chars

```

```

9300 \leavevmode
9301 \ifHy@raiselinks
9302 \Hy@SaveSpaceFactor
9303 \Hy@SaveSavedSpaceFactor
9304 \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
9305 \Hy@RestoreSavedSpaceFactor
9306 \@linkdim\dp\@tempboxa
9307 \lower\@linkdim\hbox{%
9308 \special{button: %
9309 \number\wd\@tempboxa\space
9310 \number\ht\@tempboxa\space
9311 launch: \wwwbrowser\space
9312 #2%
9313 }%
9314 \Hy@colorlink\@urlcolor
9315 \Hy@RestoreSpaceFactor
9316 #1%
9317 \Hy@SaveSpaceFactor
9318 \Hy@endcolorlink
9319 }%
9320 \@linkdim\ht\@tempboxa
9321 \advance\@linkdim by -6.5\p@
9322 \raise\@linkdim\hbox{}%
9323 \Hy@RestoreSpaceFactor
9324 \else
9325 \special{button: %
9326 \number\wd\@tempboxa\space
9327 \number\ht\@tempboxa\space
9328 launch: \wwwbrowser\space
9329 #2%
9330 }%
9331 \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
9332 \fi
9333 \endgroup
9334 }
9335 \def\hyper@linkfile#1#2#3{%
9336 \begingroup
9337 \hyper@chars
9338 \leavevmode
9339 \ifHy@raiselinks
9340 \Hy@SaveSpaceFactor
9341 \Hy@SaveSavedSpaceFactor
9342 \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
9343 \Hy@RestoreSavedSpaceFactor
9344 \@linkdim\dp\@tempboxa
9345 \lower\@linkdim\hbox{%
9346 \special{button: %
9347 \number\wd\@tempboxa\space
9348 \number\ht\@tempboxa\space
9349 #3,%
9350 file: #2%
9351 }%
9352 \Hy@colorlink\@filecolor
9353 \Hy@RestoreSpaceFactor
9354 #1%
9355 \Hy@SaveSpaceFactor
9356 \Hy@endcolorlink

```



```

9357     }%
9358     \@linkdim\ht\@tempboxa
9359     \advance\@linkdim by -6.5\p@
9360     \raise\@linkdim\hbox{}%
9361     \Hy@RestoreSpaceFactor
9362   \else
9363     \special{button: %
9364       \number\wd\@tempboxa\space
9365       \number\ht\@tempboxa\space
9366       #3,%
9367       file: #2%
9368     }%
9369     \Hy@colorlink\@filecolor#1\Hy@endcolorlink
9370   \fi
9371 \endgroup
9372 }
9373 \ifx\@pdfproducer\relax
9374   \def\@pdfproducer{dviwindo + Distiller}%
9375 \fi
9376 \HyInfo@AddonUnsupportedtrue
9377 \def\PDF@FinishDoc{%
9378   \Hy@UseMaketitleInfos
9379   \HyInfo@TrappedUnsupported
9380   \special{PDF: Keywords \@pdfkeywords}%
9381   \special{PDF: Title \@pdftitle}%
9382   \special{PDF: Creator \@pdfcreator}%
9383   \ifx\@pdfcreationdate\@empty
9384   \else
9385     \special{PDF: CreationDate \@pdfcreationdate}%
9386   \fi
9387   \ifx\@pdfmoddate\@empty
9388   \else
9389     \special{PDF: ModDate \@pdfmoddate}%
9390   \fi
9391   \special{PDF: Author \@pdfauthor}%
9392   \ifx\@pdfproducer\relax
9393   \else
9394     \special{PDF: Producer \@pdfproducer}%
9395   \fi
9396   \special{PDF: Subject \@pdfsubject}%
9397   \Hy@DisableOption{pdfauthor}%
9398   \Hy@DisableOption{pdftitle}%
9399   \Hy@DisableOption{pdfsubject}%
9400   \Hy@DisableOption{pdfcreator}%
9401   \Hy@DisableOption{pdfcreationdate}%
9402   \Hy@DisableOption{pdfmoddate}%
9403   \Hy@DisableOption{pdfproducer}%
9404   \Hy@DisableOption{pdfkeywords}%
9405   \Hy@DisableOption{pdftrapped}%
9406   \Hy@DisableOption{pdfinfo}%
9407 }
9408 \def\PDF@SetupDoc{%
9409   \ifx\@baseurl\@empty
9410   \else
9411     \special{PDF: Base \@baseurl}%
9412   \fi
9413   \ifx\@pdfpagescrop\@empty\else

```

```

9414 \special{PDF: BBox \@pdfpagescrop}%
9415 \fi
9416 \def\Hy@temp{}%
9417 \ifx\@pdfstartpage\@empty
9418 \else
9419 \ifx\@pdfstartview\@empty
9420 \else
9421 \edef\Hy@temp{%
9422   ,Page=\@pdfstartpage
9423   ,View=\@pdfstartview
9424 }%
9425 \fi
9426 \fi
9427 \edef\Hy@temp{%
9428 \noexpand\pdfmark{%
9429   pdfmark=/DOCVIEW,%
9430   PageMode=/\@pdfpagemode
9431   \Hy@temp
9432 }%
9433 }%
9434 \Hy@temp
9435 \ifx\@pdfpagescrop\@empty
9436 \else
9437 \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
9438 \fi
9439 \edef\Hy@temp{%
9440 \ifHy@toolbar\else /HideToolbar true\fi
9441 \ifHy@menubar\else /HideMenubar true\fi
9442 \ifHy>windowui\else /HideWindowUI true\fi
9443 \ifHy@fitwindow /FitWindow true\fi
9444 \ifHy@centerwindow /CenterWindow true\fi
9445 \ifHy@displaydoctitle /DisplayDocTitle true\fi
9446 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
9447 \Hy@UseNameKey{Direction}\@pdfdirection
9448 \Hy@UseNameKey{ViewArea}\@pdfviewarea
9449 \Hy@UseNameKey{ViewClip}\@pdfviewclip
9450 \Hy@UseNameKey{PrintArea}\@pdfprintarea
9451 \Hy@UseNameKey{PrintClip}\@pdfprintclip
9452 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
9453 \Hy@UseNameKey{Duplex}\@pdfduplex
9454 \ifx\@pdfpicktraybypdfsize\@empty
9455 \else
9456 /PickTrayByPDFSize \@pdfpicktraybypdfsize
9457 \fi
9458 \ifx\@pdfprintpagerange\@empty
9459 \else
9460 /PrintPageRange[\@pdfprintpagerange]%
9461 \fi
9462 \ifx\@pdfnumcopies\@empty
9463 \else
9464 /NumCopies \@pdfnumcopies
9465 \fi
9466 }%
9467 \pdfmark{pdfmark=/PUT,%
9468   Raw={%
9469     \string{Catalog}\string}<<%
9470     \ifx\Hy@temp\@empty

```

```

9471     \else
9472     /ViewerPreferences<<\Hy@temp>>%
9473     \fi
9474     \Hy@UseNameKey{PageLayout}\@pdfpagelayout
9475     \ifx\@pdflang\@empty
9476     \else
9477     /Lang(\@pdflang)%
9478     \fi
9479     >>%
9480   }%
9481 }%
9482 }
9483 </dviwindo>
9484 <*dvipdfm | xetex>

```

## 46.5 dvipdfm/xetex dvi to PDF converter

Provided by Mark Wicks (mwicks@kettering.edu)

```

9485 \providecommand*{\XR@ext}{pdf}
9486 \Hy@setbreaklinks{true}
9487 \def\HyPat@ObjRef{%
9488   @[\~ ]+%
9489 }
9490 \newsavebox{\pdfm@box}
9491 \def\@pdfm@mark#1{\special{pdf:#1}}
9492 \Hy@WrapperDef\@pdfm@dest#1{%
9493   \Hy@SaveLastskip
9494   \Hy@VerboseAnchor{#1}%
9495   \begingroup
9496     \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
9497     \def\x{XYZ}%
9498     \ifx\x\@pdfview
9499       \def\x{XYZ @xpos @ypos null}%
9500     \else
9501       \def\x{FitH}%
9502       \ifx\x\@pdfview
9503         \def\x{FitH @ypos}%
9504       \else
9505         \def\x{FitBH}%
9506         \ifx\x\@pdfview
9507           \def\x{FitBH @ypos}%
9508         \else
9509           \def\x{FitV}%
9510           \ifx\x\@pdfview
9511             \def\x{FitV @xpos}%
9512           \else
9513             \def\x{FitBV}%
9514             \ifx\x\@pdfview
9515               \def\x{FitBV @xpos}%
9516             \else
9517               \def\x{Fit}%
9518               \ifx\x\@pdfview
9519                 \let\x\@pdfview
9520               \else
9521                 \def\x{FitB}%
9522                 \ifx\x\@pdfview
9523                   \let\x\@pdfview

```

```

9524         \else
9525         \def\x{FitR}%
9526         \ifx\x\@pdfview
9527         \Hy@Warning{'pdfview=FitR' is not supported}%
9528         \def\x{XYZ @xpos @ypos null}%
9529         \else
9530         \@onelevel@sanitize\@pdfview
9531         \Hy@Warning{%
9532         Unknown value '\@pdfview' for pdfview%
9533         }%
9534         \def\x{XYZ @xpos @ypos null}%
9535         \fi
9536     \fi
9537 \fi
9538 \fi
9539 \fi
9540 \fi
9541 \fi
9542 \fi
9543 \@pdfm@mark{dest (\Hy@pstringDest) [@thispage /\x]}%
9544 \endgroup
9545 \Hy@RestoreLastskip
9546 }
9547 \providecommand*\@pdfview{XYZ}
9548 \providecommand*\@pdfborder{0 0 1}
9549 \providecommand*\@pdfborderstyle{}
9550 \def\hyper@anchor#1{%
9551 \@pdfm@dest{#1}%
9552 }
9553 \def\hyper@anchorstart#1{%
9554 \Hy@activeanchortrue
9555 \@pdfm@dest{#1}%
9556 }
9557 \def\hyper@anchorend{%
9558 \Hy@activeanchorfalse
9559 }
9560 \newcounter{Hy@AnnotLevel}
9561 \ifHy@ocgcolorlinks
9562 \def\OBJ@OCG@view{@OCG@view}%
9563 \@pdfm@mark{%
9564 obj \OBJ@OCG@view <<%
9565 /Type/OCG%
9566 /Name(View)%
9567 /Usage<<%
9568 /Print<<%
9569 /PrintState/OFF%
9570 >>%
9571 /View<<%
9572 /ViewState/ON%
9573 >>%
9574 >>%
9575 >>%
9576 }%
9577 \@pdfm@mark{close \OBJ@OCG@view}%
9578 \def\OBJ@OCG@print{@OCG@print}%
9579 \@pdfm@mark{%
9580 obj \OBJ@OCG@print <<%

```

```

9581 /Type/OCG%
9582 /Name(Print)%
9583 /Usage<<%
9584 /Print<<%
9585 /PrintState/ON%
9586 >>%
9587 /View<<%
9588 /ViewState/OFF%
9589 >>%
9590 >>%
9591 >>%
9592 }%
9593 \@pdfm@mark{close \OBJ@OCG@print}%
9594 \def\OBJ@OCGs{@OCGs}%
9595 \@pdfm@mark{%
9596 obj \OBJ@OCGs [%
9597 \OBJ@OCG@view\space\OBJ@OCG@print
9598 ]%
9599 }%
9600 \@pdfm@mark{close \OBJ@OCGs}%
9601 \@pdfm@mark{%
9602 put @catalog <<%
9603 /OCProperties<<%
9604 /OCGs \OBJ@OCGs
9605 /D<<%
9606 /OFF[\OBJ@OCG@print]%
9607 /AS[%
9608 <<%
9609 /Event/View%
9610 /OCGs \OBJ@OCGs
9611 /Category[/View]%
9612 >>%
9613 <<%
9614 /Event/Print%
9615 /OCGs \OBJ@OCGs
9616 /Category[/Print]%
9617 >>%
9618 <<%
9619 /Event/Export%
9620 /OCGs \OBJ@OCGs
9621 /Category[/Print]%
9622 >>%
9623 ]%
9624 >>%
9625 >>%
9626 >>%
9627 }%
9628 \AtBeginShipout{%
9629 \setbox\AtBeginShipoutBox=\hbox{%
9630 \copy\AtBeginShipoutBox
9631 \@pdfm@mark{%
9632 put @resources <<%
9633 /Properties<<%
9634 /OCView \OBJ@OCG@view
9635 /OCPrint \OBJ@OCG@print
9636 >>%
9637 >>%

```

```

9638 }%
9639 }%
9640 }%
9641 \Hy@AtBeginDocument{%
9642 \def\Hy@colorlink#1{%
9643 \begingroup
9644 \ifHy@ocgcolorlinks
9645 \def\Hy@ocgcolor{#1}%
9646 \setbox0=\hbox\bgroup\color@begingroup
9647 \else
9648 \HyColor@UseColor#1%
9649 \fi
9650 }%
9651 \def\Hy@endcolorlink{%
9652 \ifHy@ocgcolorlinks
9653 \color@endgroup\egroup
9654 \mbox{%
9655 \@pdfm@mark{content /OC/OCPrint BDC}%
9656 \rlap{\copy0}%
9657 \@pdfm@mark{content EMC/OC/OCView BDC}%
9658 \begingroup
9659 \expandafter\HyColor@UseColor\Hy@ocgcolor
9660 \box0 %
9661 \endgroup
9662 \@pdfm@mark{content EMC}%
9663 }%
9664 \fi
9665 \endgroup
9666 }%
9667 }%
9668 \else
9669 \Hy@DisableOption{ocgcolorlinks}%
9670 \fi
9671 \def\Hy@BeginAnnot#1{%
9672 \stepcounter{Hy@AnnotLevel}%
9673 \ifnum\value{Hy@AnnotLevel}=\@ne
9674 #1%
9675 \fi
9676 }
9677 \def\Hy@EndAnnot{%
9678 \ifnum\value{Hy@AnnotLevel}=\@ne
9679 \Hy@endcolorlink
9680 \@pdfm@mark{eann}%
9681 \fi
9682 \addtocounter{Hy@AnnotLevel}\m@ne
9683 }
9684 \def\Hy@undefinedname{UNDEFINED}
9685 \def\hyper@linkstart#1#2{%
9686 \Hy@VerboseLinkStart{#1}{#2}%
9687 \Hy@BeginAnnot{%
9688 \protected@edef\Hy@testname{#2}%
9689 \ifx\Hy@testname\@empty
9690 \Hy@Warning{%
9691 Empty destination name,\MessageBreak
9692 using '\Hy@undefinedname'%
9693 }%
9694 \let\Hy@testname\Hy@undefinedname

```

```

9695 \else
9696 \Hy@pstringdef\Hy@testname{%
9697 \expandafter\HyperDestNameFilter\expandafter{%
9698 \Hy@testname
9699 }%
9700 }%
9701 \fi
9702 \@pdfm@mark{%
9703 bann<<%
9704 /Type/Annot%
9705 /Subtype/Link%
9706 \ifHy@pdfa /F 4\fi
9707 \Hy@setpdfborder
9708 \expandafter\ifx\csname @#1bordercolor\endcsname\relax
9709 \else
9710 /C[\csname @#1bordercolor\endcsname]%
9711 \fi
9712 /A<<%
9713 /S/GoTo%
9714 /D(\Hy@testname)%
9715 \Hy@href@nextactionraw
9716 >>%
9717 >>%
9718 }%
9719 \expandafter\Hy@colorlink\csname @#1color\endcsname
9720 }%
9721 }
9722 \def\hyper@linkend{\Hy@EndAnnot}%
9723 \def\hyper@link#1#2#3{%
9724 \hyper@linkstart{#1}{#2}#3\hyper@linkend
9725 }
9726 \def\hyper@linkfile#1#2#3{%
9727 \leavevmode
9728 \Hy@BeginAnnot{%
9729 \def\Hy@pstringF{#2}%
9730 \Hy@CleanupFile\Hy@pstringF
9731 \Hy@pstringdef\Hy@pstringF\Hy@pstringF
9732 \Hy@pstringdef\Hy@pstringD{#3}%
9733 \Hy@MakeRemoteAction
9734 \@pdfm@mark{%
9735 bann<<%
9736 /Type/Annot%
9737 /Subtype/Link%
9738 \ifHy@pdfa /F 4\fi
9739 \Hy@setpdfborder
9740 \ifx\@filebordercolor\relax
9741 \else
9742 /C[\@filebordercolor]%
9743 \fi
9744 /A<<%
9745 /S/GoToR%
9746 /F(\Hy@pstringF)%
9747 /D%
9748 \ifx\\#3\\%
9749 [\Hy@href@page\@pdfremotestartview]%
9750 \else
9751 (\Hy@pstringD)%

```

```

9752      \fi
9753      \Hy@SetNewWindow
9754      \Hy@href@nextactionraw
9755      >>%
9756      >>%
9757      }%
9758      \Hy@colorlink\@filecolor
9759      }%
9760      #1%
9761      \Hy@endAnnot
9762      }
9763      \def\hyper@linkurl#1#2{%
9764      \leavevmode
9765      \Hy@BeginAnnot{%
9766      \Hy@pstringdef\Hy@pstringURI{#2}%
9767      \@pdfm@mark{%
9768      bann<<%
9769      /Type/Annot%
9770      /Subtype/Link%
9771      \ifHy@pdfa /F 4\fi
9772      \Hy@setpdfborder
9773      \ifx\@urlbordercolor\relax
9774      \else
9775      /C[\@urlbordercolor]%
9776      \fi
9777      /A<<%
9778      /S/URI%
9779      /URI(\Hy@pstringURI)%
9780      \ifHy@href@ismap
9781      /IsMap true%
9782      \fi
9783      \Hy@href@nextactionraw
9784      >>%
9785      >>%
9786      }%
9787      \Hy@colorlink\@urlcolor
9788      }%
9789      #1%
9790      \Hy@endAnnot
9791      }
9792      \def\Acrobatmenu#1#2{%
9793      \Hy@Acrobatmenu{#1}{#2}{%
9794      \Hy@BeginAnnot{%
9795      \@pdfm@mark{%
9796      bann<<%
9797      /Type/Annot%
9798      /Subtype/Link%
9799      \ifHy@pdfa /F 4\fi
9800      /A<<%
9801      /S/Named%
9802      /N/#1%
9803      \Hy@href@nextactionraw
9804      >>%
9805      \Hy@setpdfborder
9806      \ifx\@menubordercolor\relax
9807      \relax
9808      /C[\@menubordercolor]%

```



```

9809     \fi
9810     >>%
9811   }%
9812   \Hy@colorlink\@menucolor
9813 }%
9814 #2%
9815 \Hy@endAnnot
9816 }%
9817 }
9818 \ifx\@pdfproducer\relax
9819 \def\@pdfproducer{dvipdfm}%

```

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

```

9820 \begingroup\expandafter\expandafter\expandafter\endgroup
9821 \expandafter\ifx\cename XeTeXversion\endcsname\relax
9822 \else
9823 \edef\@pdfproducer{XeTeX \theXeTeXversionXeTeXrevision}%
9824 \fi
9825 \fi
9826 \def\PDF@FinishDoc{%
9827   \Hy@UseMaketitleInfos
9828   \HyInfo@GenerateAddons
9829   \@pdfm@mark{%
9830     docinfo<<%
9831     /Title(\@pdftitle)%
9832     /Subject(\@pdfsubject)%
9833     /Creator(\@pdfcreator)%
9834     \ifx\@pdfcreationdate\@empty
9835     \else
9836       /CreationDate(\@pdfcreationdate)%
9837     \fi
9838     \ifx\@pdfmoddate\@empty
9839     \else
9840       /ModDate(\@pdfmoddate)%
9841     \fi
9842     /Author(\@pdfauthor)%
9843     \ifx\@pdfproducer\relax
9844     \else
9845       /Producer(\@pdfproducer)%
9846     \fi
9847     /Keywords(\@pdfkeywords)%
9848     \ifx\@pdftrapped\@empty
9849     \else
9850       /Trapped/\@pdftrapped
9851     \fi
9852     \HyInfo@Addons
9853   >>%
9854 }%
9855 \Hy@DisableOption{pdfauthor}%
9856 \Hy@DisableOption{pdftitle}%
9857 \Hy@DisableOption{pdfsubject}%
9858 \Hy@DisableOption{pdfcreator}%
9859 \Hy@DisableOption{pdfcreationdate}%
9860 \Hy@DisableOption{pdfmoddate}%
9861 \Hy@DisableOption{pdfproducer}%
9862 \Hy@DisableOption{pdfkeywords}%
9863 \Hy@DisableOption{pdftrapped}%
9864 \Hy@DisableOption{pdfinfo}%

```

```

9865 }
9866 \def\PDF@SetupDoc{%
9867   \edef\Hy@temp{%
9868     \ifHy@toolbar\else /HideToolbar true\fi
9869     \ifHy@menubar\else /HideMenubar true\fi
9870     \ifHy>windowui\else /HideWindowUI true\fi
9871     \ifHy@fitwindow /FitWindow true\fi
9872     \ifHy@centerwindow /CenterWindow true\fi
9873     \ifHy@displaydoctitle /DisplayDocTitle true\fi
9874     \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
9875     \Hy@UseNameKey{Direction}\@pdfdirection
9876     \Hy@UseNameKey{ViewArea}\@pdfviewarea
9877     \Hy@UseNameKey{ViewClip}\@pdfviewclip
9878     \Hy@UseNameKey{PrintArea}\@pdfprintarea
9879     \Hy@UseNameKey{PrintClip}\@pdfprintclip
9880     \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
9881     \Hy@UseNameKey{Duplex}\@pdfduplex
9882     \ifx\@pdfpicktraybypdfsize\@empty
9883     \else
9884       /PickTrayByPDFSize \@pdfpicktraybypdfsize
9885     \fi
9886     \ifx\@pdfprintpagerange\@empty
9887     \else
9888       /PrintPageRange[\@pdfprintpagerange]%
9889     \fi
9890     \ifx\@pdfnumcopies\@empty
9891     \else
9892       /NumCopies \@pdfnumcopies
9893     \fi
9894   }%
9895   \Hy@pstringdef\Hy@pstringB{\@baseurl}%
9896   \@pdfm@mark{%
9897     docview<<%
9898     \ifx\@pdfstartpage\@empty
9899     \else
9900     \ifx\@pdfstartview\@empty
9901     \else
9902       /OpenAction[page\@pdfstartpage\@pdfstartview]%
9903     \fi
9904     \fi
9905     \ifx\@baseurl\@empty
9906     \else
9907       /URI<</Base(\Hy@pstringB)>>%
9908     \fi
9909     /PageMode/\@pdfpagemode
9910     \ifx\Hy@temp\@empty
9911     \else
9912       /ViewerPreferences<<\Hy@temp>>%
9913     \fi
9914     \Hy@UseNameKey{PageLayout}\@pdfpagelayout
9915     \ifx\@pdflang\@empty
9916     \else
9917       /Lang(\@pdflang)%
9918     \fi
9919   >>%
9920 }%
9921 \ifx\@pdfpagescrop\@empty

```

```

9922 \else
9923 \pdfmark{put @pages <</CropBox[ \@pdfpagescrop]>>}%
9924 \fi
9925 }
9926 </dvipdfm | xetex>

```

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

```

9927 <*dvipdfm>
9928 \AtBeginShipoutFirst{%
9929 \ifHy@setpagesize
9930 \begingroup
9931 \ifundefined{stockwidth}{%
9932 \ifdim\paperwidth>\z@
9933 \ifdim\paperheight>\z@
9934 \special{papersize=\the\paperwidth,\the\paperheight}%
9935 \fi
9936 \fi
9937 }{%
9938 \ifdim\stockwidth>\z@
9939 \ifdim\stockheight>\z@
9940 \special{papersize=\the\stockwidth,\the\stockheight}%
9941 \fi
9942 \fi
9943 }%
9944 \endgroup
9945 \fi
9946 \Hy@DisableOption{setpagesize}%
9947 }
9948 </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.

```

9949 <*vtexhtml>
9950 \providecommand*{\XR@ext}{.htm}
9951 \RequirePackage{vtexhtml}
9952 \newif\if@Localurl
9953 \def\PDF@FinishDoc{}
9954 \def\PDF@SetupDoc{%
9955 \ifx\@baseurl\@empty
9956 \else
9957 \special{!direct <base href="\@baseurl">}%
9958 \fi
9959 }
9960 \def\@urltype{url}
9961 \def\hyper@link#1#2#3{%
9962 \Hy@VerboseLinkStart{#1}{#2}%
9963 \leavevmode
9964 \special{!direct <a href=%
9965 \hyper@quote\hyper@hash\HyperDestNameFilter{#2}\hyper@quote>}%
9966 #3%
9967 \special{!direct </a>}%
9968 }
9969 \def\hyper@linkurl#1#2{%
9970 \begingroup

```

```

9971 \hyper@chars
9972 \leavevmode
9973 \MathBSuppress=1\relax
9974 \special{!direct <a href=%
9975     \hyper@quote\HyperDestNameFilter{#2}\hyper@quote>}%
9976 #1%
9977 \MathBSuppress=0\relax
9978 \special{!direct </a>}%
9979 \endgroup
9980 }
9981 \def\hyper@linkfile#1#2#3{%
9982 \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\else\##3\fi}%
9983 }
9984 \def\hyper@linkstart#1#2{%
9985 \Hy@VerboseLinkStart{#1}{#2}%
9986 \def\Hy@tempa{#1}\ifx\Hy@tempa\@urlltype
9987 \@Localurltrue
9988 \special{!direct <a href=\hyper@quote#2\hyper@quote>}%
9989 \else
9990 \@Localurlfalse
9991 \begingroup
9992 \hyper@chars
9993 \special{!aref \HyperDestNameFilter{#2}}%
9994 \endgroup
9995 \fi
9996 }
9997 \def\hyper@linkend{%
9998 \if@Localurl
9999 \special{!endaref}%
10000 \else
10001 \special{!direct </a>}%
10002 \fi
10003 }
10004 \Hy@WrapperDef\hyper@anchorstart#1{%
10005 \Hy@SaveLastskip
10006 \Hy@VerboseAnchor{#1}%
10007 \begingroup
10008 \hyper@chars
10009 \special{!aname #1}%
10010 \special{!direct <a name=%
10011     \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
10012 \endgroup
10013 \Hy@Activeanchortrue
10014 }
10015 \def\hyper@anchorend{%
10016 \special{!direct </a>}%
10017 \Hy@Activeanchorfalse
10018 \Hy@RestoreLastskip
10019 }
10020 \Hy@WrapperDef\hyper@anchor#1{%
10021 \Hy@SaveLastskip
10022 \Hy@VerboseAnchor{#1}%
10023 \begingroup
10024 \let\protect=\string
10025 \hyper@chars
10026 \leavevmode
10027 \special{!aname #1}%

```

```

10028 \special{!direct <a name=%
10029 \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
10030 \endgroup
10031 \Hy@activeanchortrue
10032 \bgroup\anchor@spot\egroup
10033 \special{!direct </a>}%
10034 \Hy@activeanchorfalse
10035 \Hy@RestoreLastskip
10036 }
10037 \def\@Form[#1]{%
10038 \Hy@Message{Sorry, TeXpider does not yet support FORMs}%
10039 }
10040 \def\@endForm{}
10041 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
10042 \Hy@Message{Sorry, TeXpider does not yet support FORM gauges}%
10043 }
10044 \def\@TextField[#1]#2{% parameters, label
10045 \Hy@Message{Sorry, TeXpider does not yet support FORM text fields}%
10046 }
10047 \def\@CheckBox[#1]#2{% parameters, label
10048 \Hy@Message{Sorry, TeXpider does not yet support FORM checkboxes}%
10049 }
10050 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
10051 \Hy@Message{Sorry, TeXpider does not yet support FORM choice menus}%
10052 }
10053 \def\@PushButton[#1]#2{% parameters, label
10054 \Hy@Message{Sorry, TeXpider does not yet support FORM pushbuttons}%
10055 }
10056 \def\@Reset[#1]#2{%
10057 \Hy@Message{Sorry, TeXpider does not yet support FORMs}%
10058 }
10059 \def\@Submit[#1]#2{%
10060 \Hy@Message{Sorry, TeXpider does not yet support FORMs}%
10061 }
10062 </vtexhtml>
10063 <*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.

```

10064 \ifx\mediaheight\@undefined
10065 \else
10066 \ifx\mediaheight\relax
10067 \else
10068 \ifHy@setpagesize
10069 \providecommand*{\VTeXInitMediaSize}{%
10070 \ltx@IfUndefined{stockwidth}{%
10071 \ifdim\paperheight>0pt %
10072 \setlength\mediaheight\paperheight
10073 \fi
10074 \ifdim\paperheight>0pt %
10075 \setlength\mediawidth\paperwidth
10076 \fi
10077 }{%
10078 \ifdim\stockheight>0pt %
10079 \setlength\mediaheight\stockheight
10080 \fi

```

```

10081      \ifdim\stockwidth>0pt %
10082      \setlength\mediawidth\stockwidth
10083      \fi
10084    }%
10085  }%
10086  \Hy@AtBeginDocument{\VTeXInitMediaSize}%
10087  \fi
10088  \Hy@DisableOption{setpagesize}%
10089  \fi
10090 \fi

Older versions of VTeX require xyz in lower case.

10091 \providecommand*\@pdfview{xyz}
10092 \providecommand*\@pdfborder{0 0 1}
10093 \providecommand*\@pdfborderstyle{}
10094 \let\CurrentBorderColor\@linkbordercolor
10095 \Hy@WrapperDef\hyper@anchor#1{%
10096   \Hy@SaveLastskip
10097   \Hy@VerboseAnchor{#1}%
10098   \begingroup
10099     \let\protect=\string
10100     \hyper@chars
10101     \special{!aname \HyperDestNameFilter{#1};\@pdfview}%
10102   \endgroup
10103   \Hy@activeanchortrue
10104   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
10105   \Hy@activeanchorfalse
10106   \Hy@RestoreLastskip
10107 }
10108 \Hy@WrapperDef\hyper@anchorstart#1{%
10109   \Hy@SaveLastskip
10110   \Hy@VerboseAnchor{#1}%
10111   \begingroup
10112     \hyper@chars
10113     \special{!aname \HyperDestNameFilter{#1};\@pdfview}%
10114   \endgroup
10115   \Hy@activeanchortrue
10116 }
10117 \def\hyper@anchorend{%
10118   \Hy@activeanchorfalse
10119   \Hy@RestoreLastskip
10120 }
10121 \def\@urltype{url}
10122 \def\Hy@undefinedname{UNDEFINED}
10123 \def\hyper@linkstart#1#2{%
10124   \Hy@VerboseLinkStart{#1}{#2}%
10125   \Hy@pstringdef\Hy@pstringURI{#2}%
10126   \expandafter\Hy@colorlink\csname @#1color\endcsname
10127   \ltx@ifundefined{@#1bordercolor}{%
10128     \let\CurrentBorderColor\relax
10129   }{%
10130     \edef\CurrentBorderColor{%
10131       \csname @#1bordercolor\endcsname
10132     }%
10133   }%
10134   \def\Hy@tempa{#1}%
10135   \ifx\Hy@tempa\@urltype
10136     \special{!%

```

```

10137   aref <u=/Type/Action/S/URI/URI(\Hy@pstringURI)%
10138     \ifHy@href@ismap
10139       /IsMap true%
10140     \fi
10141     \Hy@href@nextactionraw
10142   >,%
10143   a=<%
10144     \ifHy@pdfa /F 4\fi
10145     \Hy@setpdfborder
10146     \ifx\CurrentBorderColor\relax
10147     \else
10148       /C [\CurrentBorderColor]%
10149     \fi
10150   >%
10151 }%
10152 \else
10153 \protected@edef\Hy@testname{#2}%
10154 \ifx\Hy@testname\@empty
10155   \Hy@Warning{%
10156     Empty destination name,\MessageBreak
10157     using '\Hy@undefinedname'%
10158   }%
10159   \let\Hy@testname\Hy@undefinedname
10160 \fi
10161 \special{!%
10162   aref \expandafter\HyperDestNameFilter
10163     \expandafter{\Hy@testname};%
10164   a=<%
10165     \ifHy@pdfa /F 4\fi
10166     \Hy@setpdfborder
10167     \ifx\CurrentBorderColor\relax
10168     \else
10169       /C [\CurrentBorderColor]%
10170     \fi
10171   >%
10172 }%
10173 \fi
10174 }
10175 \def\hyper@linkend{%
10176 \special{!endaref}%
10177 \Hy@endcolorlink
10178 }
10179 \def\hyper@linkfile#1#2#3{%
10180 \leavevmode
10181 \def\Hy@pstringF{#2}%
10182 \Hy@CleanupFile\Hy@pstringF
10183 \special{!%
10184   aref <%
10185     \ifnum\Hy@VTeXversion>753 \ifHy@newwindow n\fi\fi
10186     f=\Hy@pstringF>#3;%
10187   a=<%
10188     \ifHy@pdfa /F 4\fi
10189     \Hy@setpdfborder
10190     \ifx\@filebordercolor\relax
10191     \else
10192       /C [\@filebordercolor]%
10193     \fi

```

```

10194 >%
10195 }%
10196 \Hy@colorlink\@filecolor#1\Hy@endcolorlink
10197 \special{!endaref}%
10198 }
10199 \def\hyper@linkurl#1#2{%
10200 \begingroup
10201 \Hy@pstringdef\Hy@pstringURI{#2}%
10202 \hyper@chars
10203 \leavevmode
10204 \special{!%
10205   aref <u=/Type/Action/S/URI/URI(\Hy@pstringURI)%
10206     \ifHy@href@ismap
10207       /IsMap true%
10208     \fi
10209     \Hy@href@nextactionraw
10210   >,%
10211   a=<%
10212     \ifHy@pdfa /F 4\fi
10213     \Hy@setpdfborder
10214     \ifx\@urlbordercolor\relax
10215     \else
10216       /C [\@urlbordercolor]%
10217     \fi
10218   >%
10219 }%
10220 \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
10221 \special{!endaref}%
10222 \endgroup
10223 }
10224 \def\hyper@link#1#2#3{%
10225 \Hy@VerboseLinkStart{#1}{#2}%
10226 \ltx@ifundefined{@#1bordercolor}{%
10227   \let\CurrentBorderColor\relax
10228 }{%
10229   \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
10230 }%
10231 \leavevmode
10232 \protected@edef\Hy@testname{#2}%
10233 \ifx\Hy@testname\@empty
10234   \Hy@Warning{%
10235     Empty destination name,\MessageBreak
10236     using '\Hy@undefinedname'%
10237   }%
10238   \let\Hy@testname\Hy@undefinedname
10239 \fi
10240 \special{!%
10241   aref \expandafter\HyperDestNameFilter
10242     \expandafter{\Hy@testname};%
10243   a=<%
10244     \ifHy@pdfa /F 4\fi
10245     \Hy@setpdfborder
10246     \ifx\CurrentBorderColor\relax
10247     \else
10248       /C [\CurrentBorderColor]%
10249     \fi
10250   >%

```



```

10251 }%
10252 \expandafter
10253 \Hy@colorlink\cscname @#1color\endcscname#3\Hy@endcolorlink
10254 \special{!endaref}%
10255 }
10256 \def\hyper@image#1#2{%
10257 \hyper@linkurl{#2}{#1}%
10258 }
10259 \def\@hyper@launch run:#1\#2#3{%
10260 \Hy@pstringdef\Hy@pstringF{#1}%
10261 \Hy@pstringdef\Hy@pstringP{#3}%
10262 \leavevmode
10263 \special{!aref %
10264 <u=%
10265 /Type/Action%
10266 /S/Launch%
10267 /F(\Hy@pstringF)%
10268 \Hy@SetNewWindow
10269 \ifx\#3\%
10270 \else
10271 /Win<</F(\Hy@pstringF)/P(\Hy@pstringP)>>%
10272 \fi
10273 \Hy@href@nextactionraw
10274 >,%
10275 a=<%
10276 \ifHy@pdfa /F 4\fi
10277 \Hy@setpdfborder
10278 \ifx\@runbordercolor\relax
10279 \else
10280 /C[\@runbordercolor]%
10281 \fi
10282 >%
10283 }%
10284 \Hy@colorlink\@runcolor#2\Hy@endcolorlink
10285 \special{!endaref}%
10286 }
10287 \def\Acrobatmenu#1#2{%
10288 \Hy@Acrobatmenu{#1}{#2}{%
10289 \special{!%
10290 aref <u=/S /Named /N /#1>,%
10291 a=<%
10292 \ifHy@pdfa /F 4\fi
10293 \Hy@setpdfborder
10294 \ifx\@menubordercolor\relax
10295 \else
10296 /C[\@menubordercolor]%
10297 \fi
10298 >%
10299 }%
10300 \Hy@colorlink\@menucolor#2\Hy@endcolorlink
10301 \special{!endaref}%
10302 }%
10303 }

```

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

The code below makes sense for  $\text{\texttt{V\TeX}}$  7.02 or later.

Please never use  $\text{\texttt{@\ifundefined{VTeXversion}\{..\}\{...\}}}$  globally.

```

10304 \ifnum\Hy@VTeXversion<702 %

```

```

10305 \else
10306   \def\hyper@pagetransition{%
10307     \ifx\@pdfpagetransition\relax
10308       \else
10309         \ifx\@pdfpagetransition\@empty

```

Standard incantation.

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

```

10310   \else
10311     \hvtex@parse@trans\@pdfpagetransition
10312   \fi
10313 \fi
10314 }%

```

I have to write an “honest” parser to convert raw PDF code into  $\text{\TeX}$  \special.  
(AVK)

Syntax of  $\text{\TeX}$  \special{!trans <transition\_effect>}:

```

<transition_effect> ::= <transition_style>[,<transition_duration>]
<transition_style> ::= <Blinds_effect> | <Box_effect> |
                       <Dissolve_effect> | <Glitter_effect> |
                       <Split_effect> | <Wipe_effect>
<Blinds_effect> ::= B[<effect_dimension>]
<Box_effect> ::= X[<effect_motion>]
<Dissolve_effect> ::= D
<Glitter_effect> ::= G[<effect_direction>]
<Split_effect> ::= S[<effect_motion>][<effect_dimension>]
<Wipe_effect> ::= W[<effect_direction>]
<Replace_effect> ::= R
<effect_direction> ::= <number>
<effect_dimension> ::= H | V
<effect_motion> ::= I | O
<transition_duration> ::= <number>

```

Transition codes:

```

10315 \def\hvtex@trans@effect@Blinds{\def\hvtex@trans@code{B}}%
10316 \def\hvtex@trans@effect@Box{\def\hvtex@trans@code{X}}%
10317 \def\hvtex@trans@effect@Dissolve{\def\hvtex@trans@code{D}}%
10318 \def\hvtex@trans@effect@Glitter{\def\hvtex@trans@code{G}}%
10319 \def\hvtex@trans@effect@Split{\def\hvtex@trans@code{S}}%
10320 \def\hvtex@trans@effect@Wipe{\def\hvtex@trans@code{W}}%
10321 \def\hvtex@trans@effect@R{\def\hvtex@trans@code{R}}%

```

Optional parameters:

```

10322 \def\hvtex@par@dimension{/Dm}%
10323 \def\hvtex@par@direction{/Di}%
10324 \def\hvtex@par@duration{/D}%
10325 \def\hvtex@par@motion{/M}%

```

Tokenizer:

```

10326 \def\hvtex@gettoken{%
10327   \expandafter\hvtex@gettoken@\hvtex@buffer\@nil
10328 }%

```

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

```

10329 \def\hvtex@gettoken@#1 #2\@nil{%
10330   \edef\hvtex@token{#1}%
10331   \edef\hvtex@buffer{#2}%
10332 }%
10333 \def\hvtex@parse@trans#1{%

```

Initializing code:

```
10334 \let\hvtex@trans@code\@empty
10335 \let\hvtex@param@dimension\@empty
10336 \let\hvtex@param@direction\@empty
10337 \let\hvtex@param@duration\@empty
10338 \let\hvtex@param@motion\@empty
10339 \edef\hvtex@buffer{#1\space}%
```

First token is the PDF transition name without escape.

```
10340 \hvtex@gettoken
10341 \ifx\hvtex@token\@empty
```

Leading space(s)?

```
10342 \ifx\hvtex@buffer\@empty
```

The buffer is empty, nothing to do.

```
10343 \else
10344 \hvtex@gettoken
10345 \fi
10346 \fi
10347 \csname hvtex@trans@effect@\hvtex@token\endcsname
```

Now is time to parse optional parameters.

```
10348 \hvtex@trans@params
10349 }%
```

Reentrant macro to parse optional parameters.

```
10350 \def\hvtex@trans@params{%
10351 \ifx\hvtex@buffer\@empty
10352 \else
10353 \hvtex@gettoken
10354 \let\hvtex@trans@par\hvtex@token
10355 \ifx\hvtex@buffer\@empty
10356 \else
10357 \hvtex@gettoken
10358 \ifx\hvtex@trans@par\hvtex@par@duration
```

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

```
10359 \let\hvtex@param@duration\hvtex@token
10360 \else \ifx\hvtex@trans@par\hvtex@par@motion
```

/M can be either /I or /O

```
10361 \expandafter\edef\expandafter\hvtex@param@motion
10362 \expandafter{\expandafter\@gobble\hvtex@token}%
10363 \else \ifx\hvtex@trans@par\hvtex@par@dimension
```

/Dm can be either /H or /V

```
10364 \expandafter\edef\expandafter\hvtex@param@dimension
10365 \expandafter{\expandafter\@gobble\hvtex@token}%
10366 \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).

```
10367 \let\hvtex@param@direction\hvtex@token
10368 \fi\fi\fi
10369 \fi
10370 \fi
10371 \ifx\hvtex@buffer\@empty
10372 \let\next\hvtex@produce@trans
10373 \else
10374 \let\next\hvtex@trans@params
```

```

10375   \fi
10376   \next
10377 }%

```

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

```

10378 \def\hvtex@produce@trans{%
10379   \let\vtex@trans@special\@empty
10380   \if S\hvtex@trans@code
10381     \edef\vtex@trans@special{\hvtex@trans@code
10382       \hvtex@param@dimension\hvtex@param@motion}%
10383   \else\if B\hvtex@trans@code
10384     \edef\vtex@trans@special{%
10385       \hvtex@trans@code\hvtex@param@dimension
10386     }%
10387   \else\if X\hvtex@trans@code
10388     \edef\vtex@trans@special{%
10389       \hvtex@trans@code\hvtex@param@motion
10390     }%
10391   \else\if W\hvtex@trans@code
10392     \edef\vtex@trans@special{%
10393       \hvtex@trans@code\hvtex@param@direction
10394     }%
10395   \else\if D\hvtex@trans@code
10396     \let\vtex@trans@special\hvtex@trans@code
10397   \else\if R\hvtex@trans@code
10398     \let\vtex@trans@special\hvtex@trans@code
10399   \else\if G\hvtex@trans@code
10400     \edef\vtex@trans@special{%
10401       \hvtex@trans@code\hvtex@param@direction
10402     }%
10403   \fi\fi\fi\fi\fi\fi
10404   \ifx\vtex@trans@special\@empty
10405     \else
10406       \ifx\hvtex@param@duration\@empty
10407         \else
10408           \setlength{\dimen@}{\hvtex@param@duration\p@}%

```

I'm not guilty of possible overflow.

```

10409     \multiply\dimen@\@m
10410     \edef\vtex@trans@special{%
10411       \vtex@trans@special,\strip@pt\dimen@
10412     }%
10413   \fi

```

And all the mess is just for this.

```

10414     \special{!trans \vtex@trans@special}%
10415   \fi
10416 }%

10417 \def\hyper@pageduration{%
10418   \ifx\@pdfpageduration\relax
10419     \else
10420       \ifx\@pdfpageduration\@empty
10421         \special{!duration-}%
10422       \else
10423         \special{!duration \@pdfpageduration}%
10424       \fi
10425     \fi

```

```

10426 }%
10427 \def\hyper@pagehidden{%
10428   \ifHy@useHidKey
10429     \special{!hidden\ifHy@pdfpagehidden +\else -\fi}%
10430   \fi
10431 }%
10432 \g@addto@macro\Hy@EveryPageBoxHook{%
10433   \hyper@pagetransition
10434   \hyper@pageduration
10435   \hyper@pagehidden
10436 }%
10437 \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

```

10438 \ifx\@pdfproducer\relax
10439   \def\@pdfproducer{VTeX}%
10440   \ifnum\Hy@VTeXversion>\z@
10441     \count@\VTeXversion
10442     \divide\count@ 100 %
10443     \edef\@pdfproducer{\@pdfproducer\space v\the\count@}%
10444     \multiply\count@ -100 %
10445     \advance\count@\VTeXversion
10446     \edef\@pdfproducer{%
10447       \@pdfproducer
10448       .\ifnum\count@<10 0\fi\the\count@
10449       \ifx\VTeXOS\@undefined\else
10450         \ifnum\VTeXOS>0 %
10451           \ifnum\VTeXOS<6 %
10452             \space(%
10453             \ifcase\VTeXOS
10454               \or Windows\or Linux\or OS/2\or MacOS\or MacOS/X%
10455             \fi
10456             )%
10457           \fi
10458         \fi
10459       \fi
10460       ,\space
10461       \ifnum\OpMode=\@ne PDF\else PS\fi
10462       \space backend%
10463       \ifx\gexmode\@undefined\else
10464         \ifnum\gexmode>\z@\space with GeX\fi
10465       \fi
10466     }%
10467   \fi
10468 \fi

```

Current `!pdfinfo` key syntax:

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

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

```

10469 \def\PDF@SetupDoc{%
10470 \ifx\@pdfpagescrop\@empty
10471 \else
10472 \special{!pdfinfo b=<\@pdfpagescrop>}%
10473 \fi
10474 \ifx\@pdfstartpage\@empty
10475 \else
10476 \ifx\@pdfstartview\@empty
10477 \else
10478 \special{!onopen Page\@pdfstartpage}%
10479 \fi
10480 \fi
10481 \special{!pdfinfo p=</\@pdfpagemode>}%
10482 \ifx\@baseurl\@empty
10483 \else
10484 \special{!pdfinfo u=<<</Base (\@baseurl)>>>}%
10485 \fi
10486 \special{!pdfinfo v=<<<%
10487 \ifHy@toolbar\else /HideToolbar true\fi
10488 \ifHy@menubar\else /HideMenubar true\fi
10489 \ifHy>windowui\else /HideWindowUI true\fi
10490 \ifHy@fitwindow /FitWindow true\fi
10491 \ifHy@centerwindow /CenterWindow true\fi
10492 \ifHy@displaydoctitle /DisplayDocTitle true\fi
10493 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
10494 \Hy@UseNameKey{Direction}\@pdfdirection
10495 \Hy@UseNameKey{ViewArea}\@pdfviewarea
10496 \Hy@UseNameKey{ViewClip}\@pdfviewclip
10497 \Hy@UseNameKey{PrintArea}\@pdfprintarea
10498 \Hy@UseNameKey{PrintClip}\@pdfprintclip
10499 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
10500 \Hy@UseNameKey{Duplex}\@pdfduplex
10501 \ifx\@pdfpicktraybypdfsize\@empty
10502 \else
10503 /PickTrayByPDFSize \@pdfpicktraybypdfsize
10504 \fi
10505 \ifx\@pdfprintpagerange\@empty
10506 \else
10507 /PrintPageRange[\@pdfprintpagerange]%
10508 \fi
10509 \ifx\@pdfnumcopies\@empty
10510 \else
10511 /NumCopies \@pdfnumcopies

```

```

10512 \fi
10513 >>>}%
10514 \ifx\@pdfpagelayout\@empty
10515 \else
10516 \special{!pdfinfo l=</\@pdfpagelayout\space>}%
10517 \fi
10518 }%
10519 \HyInfo@AddonUnsupportedtrue
10520 \def\PDF@FinishDoc{%
10521 \Hy@UseMaketitleInfos
10522 \HyInfo@TrappedUnsupported
10523 \special{!pdfinfo a=<\@pdfauthor>}%
10524 \special{!pdfinfo t=<\@pdftitle>}%
10525 \special{!pdfinfo s=<\@pdfsubject>}%
10526 \special{!pdfinfo c=<\@pdfcreator>}%
10527 \ifx\@pdfproducer\relax
10528 \else
10529 \special{!pdfinfo r=<\@pdfproducer>}%
10530 \fi
10531 \special{!pdfinfo k=<\@pdfkeywords>}%
10532 \Hy@DisableOption{pdfauthor}%
10533 \Hy@DisableOption{pdftitle}%
10534 \Hy@DisableOption{pdfsubject}%
10535 \Hy@DisableOption{pdfcreator}%
10536 \Hy@DisableOption{pdfcreationdate}%
10537 \Hy@DisableOption{pdfmoddate}%
10538 \Hy@DisableOption{pdfproducer}%
10539 \Hy@DisableOption{pdfkeywords}%
10540 \Hy@DisableOption{pdftrapped}%
10541 \Hy@DisableOption{pdfinfo}%
10542 }
10543 </vtex>

```

## 46.7 Fix for Adobe bug number 466320

If a destination occurs at the very begin of a page, the destination is moved to the previous page by Adobe Distiller 5. As workaround Adobe suggests:

```

/showpage {
  //showpage
  clippath stroke erasepage
} bind def

```

But unfortunately this fix generates an empty page at the end of the document. Therefore another fix is used by writing some clipped text.

```

10544 <dviwindo>\def\literalps@out#1{\special{ps:#1}}%
10545 <package>\providecommand*{\Hy@DistillerDestFix}{%
10546 <*pdfmark | dviwindo>
10547 \def\Hy@DistillerDestFix{%
10548 \beginngroup
10549 \let\x\literalps@out

```

The fix has to be passed unchanged through GeX, if VTeX in PostScript mode with GeX is used.

```

10550 \ifnum \@ifundefined{OpMode}{0}{%
10551 \ifundefined{gexmode}{0}{%
10552 \ifnum\gexmode>0 \OpMode\else 0\fi
10553 }}>1 %

```

```

10554 \def\x##1{%
10555 \immediate\special{!=##1}%
10556 }%
10557 \fi
10558 \x{%
10559 /product where{%
10560 pop %
10561 product(Distiller)search{%
10562 pop pop pop %
10563 version(.)search{%
10564 exch pop exch pop%
10565 (3011)eq{%
10566 gsave %
10567 newpath 0 0 moveto closepath clip%
10568 /Courier findfont 10 scalefont setfont %
10569 72 72 moveto(.)show %
10570 grestore%
10571 }if%
10572 }{pop}ifelse%
10573 }{pop}ifelse%
10574 }if%
10575 }%
10576 \endgroup
10577 }
10578 </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

```

10579 <*pdfmark>
10580 \Hy@breaklinks@unsupported
10581 \def\HyPat@ObjRef{%
10582 \[{\^{}+}\}%
10583 }
10584 \Hy@WrapperDef\hyper@anchor#1{%
10585 \Hy@SaveLastskip
10586 \Hy@VerboseAnchor{#1}%
10587 \begingroup
10588 \pdfmark[\anchor@spot]{%
10589 pdfmark=/DEST,%
10590 linktype=anchor,%
10591 View=/\@pdfview \@pdfviewparams,%
10592 DestAnchor={#1}%
10593 }%
10594 \endgroup

```



```

10595 \Hy@RestoreLastskip
10596 }
10597 \ltx@ifundefined{hyper@anchorstart}{\endinput}
10598 \Hy@WrapperDef\hyper@anchorstart#1{%
10599 \Hy@SaveLastskip
10600 \Hy@VerboseAnchor{#1}%
10601 \literals@out{H.S}%
10602 \Hy@AllowHyphens
10603 \xdef\hyper@currentanchor{#1}%
10604 \Hy@activeanchortrue
10605 }
10606 \def\hyper@anchorend{%
10607 \literals@out{\strip@pt@and@otherjunk\baselineskip\space H.A}%
10608 \pdfmark{%
10609 pdfmark=/DEST,%
10610 linktype=anchor,%
10611 View=/\@pdfview \@pdfviewparams,%
10612 DestAnchor=\hyper@currentanchor,%
10613 }%
10614 \Hy@activeanchorfalse
10615 \Hy@RestoreLastskip
10616 }
10617 \def\hyper@linkstart#1#2{%
10618 \Hy@VerboseLinkStart{#1}{#2}%
10619 \ifHy@breaklinks
10620 \else
10621 \leavevmode
10622 \ifmmode
10623 \def\Hy@LinkMath{$}%
10624 \else
10625 \def\Hy@LinkMath{}%
10626 \fi
10627 \Hy@SaveSpaceFactor
10628 \hbox\bgroup
10629 \Hy@RestoreSpaceFactor
10630 \Hy@LinkMath
10631 \fi
10632 \expandafter\Hy@colorlink\csname @#1color\endcsname
10633 \literals@out{H.S}%
10634 \Hy@AllowHyphens
10635 \xdef\hyper@currentanchor{#2}%
10636 \gdef\hyper@currentlinktype{#1}%
10637 }
10638 \def\hyper@linkend{%
10639 \literals@out{\strip@pt@and@otherjunk\baselineskip\space H.L}%
10640 \ltx@ifundefined{@\hyper@currentlinktype bordercolor}{%
10641 \let\Hy@tempcolor\relax
10642 }{%
10643 \edef\Hy@tempcolor{%
10644 \csname @\hyper@currentlinktype bordercolor\endcsname
10645 }%
10646 }%
10647 \pdfmark{%
10648 pdfmark=/ANN,%
10649 linktype=link,%
10650 Subtype=/Link,%
10651 PDFAMlags=4,%

```

```

10652   Dest=\hyper@currentanchor,%
10653   AcroHighlight=\@pdfhighlight,%
10654   Border=\@pdfborder,%
10655   BorderStyle=\@pdfborderstyle,%
10656   Color=\Hy@tempcolor,%
10657   Raw=H.B%
10658 }%
10659 \Hy@endcolorlink
10660 \ifHy@breaklinks
10661 \else
10662   \Hy@LinkMath
10663   \Hy@SaveSpaceFactor
10664   \egroup
10665   \Hy@RestoreSpaceFactor
10666 \fi
10667 }

```

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.

```

10668 \begingroup
10669   \catcode'P=12 %
10670   \catcode'T=12 %
10671   \lowercase{\endgroup
10672   \gdef\rem@ptetc#1.#2PT#3!{#1\ifnum#2>\z@.#2\fi}%
10673 }
10674 \def\strip@pt@and@otherjunk#1{\expandafter\rem@ptetc\the#1!}

```

`\hyper@pagetransition`

```

10675 \def\hyper@pagetransition{%
10676   \ifx\@pdfpagetransition\relax
10677   \else
10678     \ifx\@pdfpagetransition\@empty
10679       % 1. Does an old entry have to be deleted?
10680       % 2. If 1=yes, how to delete?
10681     \else
10682       \pdfmark{%
10683         pdfmark=/PUT,%
10684         Raw={%
10685           \string{ThisPage\string}%
10686           <</Trans << /S /\@pdfpagetransition\space >> >>%
10687         }%
10688       }%
10689     \fi
10690   \fi
10691 }

```

`\hyper@pageduration`

```

10692 \def\hyper@pageduration{%
10693   \ifx\@pdfpageduration\relax
10694   \else
10695     \ifx\@pdfpageduration\@empty
10696       % 1. Does an old entry have to be deleted?
10697       % 2. If 1=yes, how to delete?
10698     \else
10699       \pdfmark{%
10700         pdfmark=/PUT,%

```

```

10701     Raw={%
10702         \string{ThisPage\string}%
10703         <</Dur \@pdfpageduration>>%
10704     }%
10705 }%
10706 \fi
10707 \fi
10708 }

```

\hyper@pagehidden

```

10709 \def\hyper@pagehidden{%
10710     \ifHy@useHidKey
10711         \pdfmark{%
10712             pdfmark=/PUT,%
10713             Raw={%
10714                 \string{ThisPage\string}%
10715                 <</Hid \ifHy@pdfpagehidden true\else false\fi>>%
10716             }%
10717         }%
10718     \fi
10719 }

10720 \g@addto@macro\Hy@EveryPageBoxHook{%
10721     \hyper@pagetransition
10722     \hyper@pageduration
10723     \hyper@pagehidden
10724 }

10725 \def\hyper@image#1#2{%
10726     \hyper@linkurl{#2}{#1}%
10727 }

10728 \def\Hy@undefinedname{UNDEFINED}
10729 \def\hyper@link#1#2#3{%
10730     \Hy@VerboseLinkStart{#1}{#2}%
10731     \ltx@ifundefined{@#1bordercolor}{%
10732         \let\Hy@tempcolor\relax
10733     }{%
10734         \edef\Hy@tempcolor{\csname @#1bordercolor\endcsname}%
10735     }%
10736     \begingroup
10737     \protected@edef\Hy@testname{#2}%
10738     \ifx\Hy@testname\@empty
10739         \Hy@Warning{%
10740             Empty destination name,\MessageBreak
10741             using '\Hy@undefinedname'%
10742         }%
10743         \let\Hy@testname\Hy@undefinedname
10744     \fi
10745     \pdfmark[{#3}]{%
10746         Color=\Hy@tempcolor,%
10747         linktype={#1},%
10748         AcroHighlight=\@pdfhighlight,%
10749         Border=\@pdfborder,%
10750         BorderStyle=\@pdfborderstyle,%
10751         pdfmark=/ANN,%
10752         Subtype=/Link,%
10753         PDFAFlags=4,%
10754         Dest=\Hy@testname

```

```

10755 }%
10756 \endgroup
10757 }
10758 \newtoks\pdf@docset
10759 \def\PDF@FinishDoc{%
10760 \Hy@UseMaketitleInfos
10761 \HyInfo@GenerateAddons
10762 \let\Hy@temp\@empty
10763 \ifx\@pdfcreationdate\@empty
10764 \else
10765 \def\Hy@temp{CreationDate=\@pdfcreationdate,}%
10766 \fi
10767 \ifx\@pdfmoddate\@empty
10768 \else
10769 \expandafter\def\expandafter\Hy@temp\expandafter{%
10770 \Hy@temp
10771 ModDate=\@pdfmoddate,%
10772 }%
10773 \fi
10774 \ifx\@pdfproducer\relax
10775 \else
10776 \expandafter\def\expandafter\Hy@temp\expandafter{%
10777 \Hy@temp
10778 Producer=\@pdfproducer,%
10779 }%
10780 \fi
10781 \expandafter
10782 \pdfmark\expandafter{%
10783 \Hy@temp
10784 pdfmark=/DOCINFO,%
10785 Title=\@pdftitle,%
10786 Subject=\@pdfsubject,%
10787 Creator=\@pdfcreator,%
10788 Author=\@pdfauthor,%
10789 Keywords=\@pdfkeywords,%
10790 Trapped=\@pdftrapped
10791 }%
10792 \ifx\HyInfo@Addons\@empty
10793 \else
10794 \pdfmark{%
10795 pdfmark=/DOCINFO,%
10796 Raw={\HyInfo@Addons}%
10797 }%
10798 \fi
10799 \Hy@DisableOption{pdfauthor}%
10800 \Hy@DisableOption{pdftitle}%
10801 \Hy@DisableOption{pdfsubject}%
10802 \Hy@DisableOption{pdfcreator}%
10803 \Hy@DisableOption{pdfcreationdate}%
10804 \Hy@DisableOption{pdfmoddate}%
10805 \Hy@DisableOption{pdfproducer}%
10806 \Hy@DisableOption{pdfkeywords}%
10807 \Hy@DisableOption{pdftrapped}%
10808 \Hy@DisableOption{pdfinfo}%
10809 }
10810 \def\PDF@SetupDoc{%
10811 \def\Hy@temp{}%

```

```

10812 \ifx\@pdfstartpage\@empty
10813 \else
10814 \ifx\@pdfstartview\@empty
10815 \else
10816 \edef\Hy@temp{%
10817     ,Page=\@pdfstartpage
10818     ,View=\@pdfstartview
10819 }%
10820 \fi
10821 \fi
10822 \edef\Hy@temp{%
10823     \noexpand\pdfmark{%
10824         pdfmark=/DOCVIEW,%
10825         PageMode=/\@pdfpagemode
10826         \Hy@temp
10827     }%
10828 }%
10829 \Hy@temp
10830 \ifx\@pdfpagescrop\@empty
10831 \else
10832 \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
10833 \fi
10834 \edef\Hy@temp{%
10835     \ifHy@toolbar\else /HideToolbar true\fi
10836     \ifHy@menubar\else /HideMenubar true\fi
10837     \ifHy>windowui\else /HideWindowUI true\fi
10838     \ifHy@fitwindow /FitWindow true\fi
10839     \ifHy@centerwindow /CenterWindow true\fi
10840     \ifHy@displaydoctitle /DisplayDocTitle true\fi
10841     \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
10842     \Hy@UseNameKey{Direction}\@pdfdirection
10843     \Hy@UseNameKey{ViewArea}\@pdfviewarea
10844     \Hy@UseNameKey{ViewClip}\@pdfviewclip
10845     \Hy@UseNameKey{PrintArea}\@pdfprintarea
10846     \Hy@UseNameKey{PrintClip}\@pdfprintclip
10847     \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
10848     \Hy@UseNameKey{Duplex}\@pdfduplex
10849     \ifx\@pdfpicktraybypdfsize\@empty
10850     \else
10851         /PickTrayByPDFSize \@pdfpicktraybypdfsize
10852     \fi
10853     \ifx\@pdfprintpagerange\@empty
10854     \else
10855         /PrintPageRange[\@pdfprintpagerange]%
10856     \fi
10857     \ifx\@pdfnumcopies\@empty
10858     \else
10859         /NumCopies \@pdfnumcopies
10860     \fi
10861 }%
10862 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
10863 \pdfmark{%
10864     pdfmark=/PUT,%
10865     Raw={%
10866         \string{Catalog\string}<<%
10867         \ifx\Hy@temp\@empty
10868         \else

```

```

10869      /ViewerPreferences<<\Hy@temp>>%
10870      \fi
10871      \Hy@UseNameKey{PageLayout}\@pdfpagelayout
10872      \ifx\@pdflang\@empty
10873      \else
10874      /Lang(\@pdflang)%
10875      \fi
10876      \ifx\@baseurl\@empty
10877      \else
10878      /URI<</Base(\Hy@pstringB)>>%
10879      \fi
10880      >>%
10881    }%
10882  }%
10883 }
10884 </pdfmark>
10885 <*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.

```

10886 \newif\ifHy@pdfmarkerror
10887 \def\pdfmark{\@ifnextchar[{\pdfmark@}{\pdfmark@[]}}
10888 \def\pdfmark@[#1]#2{%
10889   \Hy@pdfmarkerrorfalse
10890   \edef\@processme{\noexpand\pdf@toks={\the\pdf@defaulttoks}}%
10891   \@processme
10892   \let\pdf@type\relax
10893   \kvsetkeys{PDF}{#2}%
10894   \ifHy@pdfmarkerror
10895   \else
10896     \ifx\pdf@type\relax
10897       \Hy@WarningNoLine{no pdfmark type specified in #2!!}%
10898       \ifx\#1\%
10899       \else
10900         \pdf@rect{#1}%
10901       \fi
10902     \else
10903       \ifx\#1\%
10904         \literalps@out{%
10905           [\the\pdf@toks\space\pdf@type\space pdfmark%
10906           }%
10907         \else
10908           \ltx@ifundefined{@pdf@linktype color}{%
10909             \Hy@colorlink\@linkcolor
10910           }{%
10911             \expandafter\Hy@colorlink
10912               \csname @\pdf@linktype color\endcsname
10913           }%
10914           \pdf@rect{#1}%
10915           \literalps@out{%
10916             [\the\pdf@toks\space\pdf@type\space pdfmark%
10917             }%
10918           \Hy@endcolorlink
10919         \fi

```

```

10920   \fi
10921   \fi
10922 }

```

The complicated bit is working out the right enclosing rectangle of some piece of TeX text, needed by the /Rect key. This solution originates with Toby Thain (tobyth@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}

```

```

10923 \newsavebox{\pdf@box}
10924 \providecommand*{\Hy@setouterhbox}{\sbox}
10925 \providecommand*{\Hy@breaklinksunhbox}{\unhbox}
10926 \def\Hy@DEST{/DEST}
10927 \def\pdf@rect#1{%
10928   \begingroup
10929   \chardef\x=1 %
10930   \def\Hy@temp{#1}%
10931   \ifx\Hy@temp\ltx@empty
10932     \chardef\x=0 %
10933   \else
10934     \def\y{\anchor@spot}%
10935     \ifx\Hy@temp\y
10936       \def\y{\relax}%
10937       \ifx\anchor@spot\y
10938         \chardef\x=0 %
10939       \fi
10940     \fi
10941   \fi
10942 \expandafter\endgroup
10943 \ifcase\x
10944   \literalps@out{H.S}%
10945   \literalps@out{H.R}%
10946 \else
10947   \leavevmode
10948   \Hy@SaveSpaceFactor
10949   \ifmmode
10950     \def\Hy@LinkMath{$}%
10951   \else
10952     \def\Hy@LinkMath{}%
10953   \fi
10954   \ifHy@breaklinks
10955     \Hy@setouterhbox\pdf@box{%
10956       \Hy@RestoreSpaceFactor
10957       \Hy@LinkMath
10958       \Hy@AllowHyphens#1%
10959       \Hy@LinkMath
10960       \Hy@SaveSpaceFactor
10961     }%
10962   \else
10963     \sbox\pdf@box{%
10964       \Hy@RestoreSpaceFactor
10965       \Hy@LinkMath

```

```

10966      #1%
10967      \Hy@LinkMath
10968      \Hy@SaveSpaceFactor
10969    }%
10970    \fi
10971    \dimen@ \ht \pdf@box
10972    \ifdim \dp \pdf@box = \z@
10973      \literalps@out{H.S}%
10974    \else
10975      \lower \dp \pdf@box \hbox{\literalps@out{H.S}}%
10976    \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...).

```

10977    \ifHy@breaklinks
10978      \expandafter \Hy@breaklinksunhbox
10979    \else
10980      \expandafter \box
10981    \fi
10982    \pdf@box

```

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

10983    \ifdim \dimen@ = \z@
10984      \literalps@out{H.R}%
10985    \else
10986      \raise \dimen@ \hbox{\literalps@out{H.R}}%
10987    \fi
10988    \Hy@RestoreSpaceFactor
10989  \fi
10990  \ifx \pdf@type \Hy@DEST
10991  \else
10992    \pdf@addtoksx{H.B}%
10993  \fi
10994 }

```

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.

```

10995 \newtoks \pdf@toks
10996 \newtoks \pdf@defaulttoks
10997 \pdf@defaulttoks = {}%
10998 \def \pdf@addtoks #1 #2 {%
10999   \edef \@processme {\pdf@toks {\the \pdf@toks / #2 #1}}%
11000   \@processme
11001 }
11002 \def \pdf@addtoksx #1 {%
11003   \edef \@processme {\pdf@toks {\the \pdf@toks \space #1}}%
11004   \@processme
11005 }
11006 \def \PDFdefaults #1 {%
11007   \pdf@defaulttoks = {#1}%
11008 }

```

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

```

11009 % what is the type of pdfmark?

```



```

11010 \define@key{PDF}{pdfmark}{\def\pdf@type{#1}}
11011 % what is the link type?
11012 \define@key{PDF}{linktype}{\def\pdf@linktype{#1}}
11013 \def\pdf@linktype{link}
11014 % parameter is a stream of PDF
11015 \define@key{PDF}{Raw}{\pdf@addtoksx{#1}}
11016 % parameter is a name
11017 \define@key{PDF}{Action}{\pdf@addtoks{#1}{Action}}
11018 % parameter is a array
11019 \define@key{PDF}{Border}{%
11020   \edef\Hy@temp{#1}%
11021   \ifx\Hy@temp\@empty
11022     \else
11023       \pdf@addtoks{[#1]\Hy@BorderArrayPatch}{Border}% hash-ok
11024   \fi
11025 }
11026 \let\Hy@BorderArrayPatch\@empty
11027 % parameter is a dictionary
11028 \define@key{PDF}{BorderStyle}{%
11029   \edef\Hy@temp{#1}%
11030   \ifx\Hy@temp\@empty
11031     \else
11032       \pdf@addtoks{<<#1>>}{BS}%
11033   \fi
11034 }
11035 % parameter is a array
11036 \define@key{PDF}{Color}{%
11037   \ifx\relax#1\relax
11038     \else
11039       \pdf@addtoks{[#1]}{Color}% hash-ok
11040   \fi
11041 }
11042 % parameter is a string
11043 \define@key{PDF}{Contents}{\pdf@addtoks{(#1)}{Contents}}
11044 % parameter is a integer
11045 \define@key{PDF}{Count}{\pdf@addtoks{#1}{Count}}
11046 % parameter is a array
11047 \define@key{PDF}{CropBox}{\pdf@addtoks{[#1]}{CropBox}}% hash-ok
11048 % parameter is a string
11049 \define@key{PDF}{DOSFile}{\pdf@addtoks{(#1)}{DOSFile}}
11050 % parameter is a string or file
11051 \define@key{PDF}{DataSource}{\pdf@addtoks{(#1)}{DataSource}}
11052 % parameter is a destination
11053 \define@key{PDF}{Dest}{%
11054   \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
11055   \ifx\Hy@pstringDest\@empty
11056     \Hy@pdfmarkerrortrue
11057     \Hy@Warning{Destination with empty name ignored}%
11058   \else
11059     \pdf@addtoks{(\Hy@pstringDest) cvn}{Dest}%
11060   \fi
11061 }
11062 \define@key{PDF}{DestAnchor}{%
11063   \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
11064   \ifx\Hy@pstringDest\@empty
11065     \Hy@pdfmarkerrortrue
11066     \Hy@Warning{Destination with empty name ignored}%

```

```

11067 \else
11068 \pdf@addtoks{(\Hy@pstringDest) cvn}{Dest}%
11069 \fi
11070 }
11071 % parameter is a string
11072 \define@key{PDF}{Dir}{\pdf@addtoks{(#1)}{Dir}}
11073 % parameter is a string
11074 \define@key{PDF}{File}{\pdf@addtoks{(#1)}{File}}
11075 % parameter is a int
11076 \define@key{PDF}{Flags}{\pdf@addtoks{#1}{Flags}}
11077 \define@key{PDF}{PDFAFlags}{%
11078 \ifHy@pdfa
11079 \pdf@addtoks{#1}{F}%
11080 \fi
11081 }
11082 % parameter is a name
11083 \define@key{PDF}{AcroHighlight}{%
11084 \begingroup
11085 \edef\x{#1}%
11086 \expandafter\endgroup\ifx\x\@empty
11087 \else
11088 \pdf@addtoks{#1}{H}%
11089 \fi
11090 }
11091 % parameter is a string
11092 \define@key{PDF}{ID}{\pdf@addtoks{[#1]}{ID}}% hash-ok
11093 % parameter is a string
11094 \define@key{PDF}{MacFile}{\pdf@addtoks{(#1)}{MacFile}}
11095 % parameter is a string
11096 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
11097 % parameter is a string
11098 \define@key{PDF}{Op}{\pdf@addtoks{(#1)}{Op}}
11099 % parameter is a Boolean
11100 \define@key{PDF}{Open}{\pdf@addtoks{#1}{Open}}
11101 % parameter is a integer or name
11102 \define@key{PDF}{Page}{\pdf@addtoks{#1}{Page}}
11103 % parameter is a name
11104 \define@key{PDF}{PageMode}{\pdf@addtoks{#1}{PageMode}}
11105 % parameter is a string
11106 \define@key{PDF}{Params}{\pdf@addtoks{(#1)}{Params}}
11107 % parameter is a array
11108 \define@key{PDF}{Rect}{\pdf@addtoks{[#1]}{Rect}}% hash-ok
11109 % parameter is a integer
11110 \define@key{PDF}{SrcPg}{\pdf@addtoks{#1}{SrcPg}}
11111 % parameter is a name
11112 \define@key{PDF}{Subtype}{\pdf@addtoks{#1}{Subtype}}
11113 % parameter is a string
11114 \define@key{PDF}{Title}{\pdf@addtoks{(#1)}{Title}}
11115 % parameter is a string
11116 \define@key{PDF}{Unix}{\pdf@addtoks{(#1)}{Unix}}
11117 % parameter is a string
11118 \define@key{PDF}{UnixFile}{\pdf@addtoks{(#1)}{UnixFile}}
11119 % parameter is an array
11120 \define@key{PDF}{View}{\pdf@addtoks{[#1]}{View}}% hash-ok
11121 % parameter is a string
11122 \define@key{PDF}{WinFile}{\pdf@addtoks{(#1)}{WinFile}}

```

These are the keys used in the DOCINFO section.

```

11123 \define@key{PDF}{Author}{\pdf@addtoks{(#1)}{Author}}
11124 \define@key{PDF}{Creator}{\pdf@addtoks{(#1)}{Creator}}
11125 \define@key{PDF}{CreationDate}{\pdf@addtoks{(#1)}{CreationDate}}
11126 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
11127 \define@key{PDF}{Producer}{\pdf@addtoks{(#1)}{Producer}}
11128 \define@key{PDF}{Subject}{\pdf@addtoks{(#1)}{Subject}}
11129 \define@key{PDF}{Keywords}{\pdf@addtoks{(#1)}{Keywords}}
11130 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
11131 \define@key{PDF}{Base}{\pdf@addtoks{(#1)}{Base}}
11132 \define@key{PDF}{URI}{\pdf@addtoks{(#1)}{URI}}
11133 \define@key{PDF}{Trapped}{%
11134   \edef\Hy@temp{#1}%
11135   \ifx\Hy@temp\@empty
11136     \else
11137       \pdf@addtoks{/#1}{Trapped}%
11138   \fi
11139 }
11140
11141 </pdfmarkbase>
11142 <*pdfmark>
11143 \def\Acrobatmenu#1#2{%
11144   \Hy@Acrobatmenu{#1}{#2}{%
11145     \pdfmark[{#2}]{%
11146       linktype=menu,%
11147       pdfmark=/ANN,%
11148       AcroHighlight=\@pdfhighlight,%
11149       Border=\@pdfborder,%
11150       BorderStyle=\@pdfborderstyle,%
11151       Action={<< /Subtype /Named /N /#1 >>},%
11152       Subtype=/Link,%
11153       PDFAFlags=4%
11154     }%
11155   }%
11156 }

```

And now for some useful examples:

```

11157 \def\PDFNextPage{\@ifnextchar[{\PDFNextPage@}{\PDFNextPage@[]}}
11158 \def\PDFNextPage@[#1]#2{%
11159   \pdfmark[{#2}]{%
11160     #1,%
11161     Border=\@pdfborder,%
11162     BorderStyle=\@pdfborderstyle,%
11163     Color=.2 .1 .5,%
11164     pdfmark=/ANN,%
11165     Subtype=/Link,%
11166     PDFAFlags=4,%
11167     Page=/Next%
11168   }%
11169 }
11170 \def\PDFPreviousPage{%
11171   \@ifnextchar[{\PDFPreviousPage@}{\PDFPreviousPage@[]}%
11172 }
11173 \def\PDFPreviousPage@[#1]#2{%
11174   \pdfmark[{#2}]{%
11175     #1,%
11176     Border=\@pdfborder,%
11177     BorderStyle=\@pdfborderstyle,%
11178     Color=.4 .4 .1,%

```

```

11179 pdfmark=/ANN,%
11180 Subtype=/Link,%
11181 PDFAFlags=4,%
11182 Page=/Prev%
11183 }%
11184 }
11185 \def\PDFOpen#1{%
11186 \pdfmark{#1,pdfmark=/DOCVIEW}%
11187 }

```

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

```

11188 \def\hyper@linkurl#1#2{%
11189 \begingroup
11190 \Hy@pstringdef\Hy@pstringURI{#2}%
11191 \hyper@chars
11192 \leavevmode
11193 \pdfmark[{#1}]{%
11194 pdfmark=/ANN,%
11195 linktype=url,%
11196 AcroHighlight=\@pdfhighlight,%
11197 Border=\@pdfborder,%
11198 BorderStyle=\@pdfborderstyle,%
11199 Color=\@urlbordercolor,%
11200 Action={<<%
11201 /Subtype/URI%
11202 /URI(\Hy@pstringURI)%
11203 \ifHy@href@ismap
11204 /IsMap true%
11205 \fi
11206 >>},%
11207 Subtype=/Link,%
11208 PDFAFlags=4%
11209 }%
11210 \endgroup
11211 }
11212 \def\hyper@linkfile#1#2#3{%
11213 \begingroup
11214 \def\Hy@pstringF{#2}%
11215 \Hy@CleanupFile\Hy@pstringF
11216 \Hy@pstringdef\Hy@pstringF\Hy@pstringF
11217 \Hy@pstringdef\Hy@pstringD{#3}%
11218 \Hy@MakeRemoteAction
11219 \leavevmode
11220 \pdfmark[{#1}]{%
11221 pdfmark=/ANN,%
11222 Subtype=/Link,%
11223 PDFAFlags=4,%
11224 AcroHighlight=\@pdfhighlight,%
11225 Border=\@pdfborder,%
11226 BorderStyle=\@pdfborderstyle,%
11227 linktype=file,%
11228 Color=\@filebordercolor,%
11229 Action={%
11230 <<%
11231 /S/GoToR%
11232 \Hy@SetNewWindow
11233 /F(\Hy@pstringF)%
11234 /D%

```

```

11235     \ifx\|#3\|%
11236     [\Hy@href@page\@pdfremotestartview]%
11237     \else
11238     (\Hy@pstringD)cvn%
11239     \fi
11240     \Hy@href@nextactionraw
11241     >>%
11242     }%
11243     }%
11244     \endgroup
11245 }
11246 \def\@hyper@launch run:#1\|#2#3{%
11247     \begingroup
11248     \Hy@pstringdef\Hy@pstringF{#1}%
11249     \Hy@pstringdef\Hy@pstringP{#3}%
11250     \leavevmode
11251     \pdfmark[{#2}]{%
11252         pdfmark=/ANN,%
11253         Subtype=/Link,%
11254         PDFAFlags=4,%
11255         AcroHighlight=\@pdfhighlight,%
11256         Border=\@pdfborder,%
11257         BorderStyle=\@pdfborderstyle,%
11258         linktype=run,%
11259         Color=\@runbordercolor,%
11260         Action={%
11261             <<%
11262             /S/Launch%
11263             \Hy@SetNewWindow
11264             /F(\Hy@pstringF)%
11265             \ifx\|#3\|%
11266             \else
11267             /Win<</P(\Hy@pstringP)/F(\Hy@pstringF)>>%
11268             \fi
11269             \Hy@href@nextactionraw
11270             >>%
11271             }%
11272         }%
11273     \endgroup
11274 }
11275 \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.

```

11276 < *dvips>
11277 \providecommand*{\XR@ext}{pdf}
11278 \def\Hy@raisedlink{}
11279 \def\literalps@out#1{\special{ps:SDict begin #1 end}}%
11280 \def\headerps@out#1{\special{! #1}}%
11281 \input{pdfmark.def}%
11282 \ifx\@pdfproducer\relax

```

```

11283 \def\@pdfproducer{dvips + Distiller}%
11284 \fi
11285 \providecommand*\@pdfborder{0 0 1}
11286 \providecommand*\@pdfborderstyle{}
11287 \providecommand*\@pdfview{XYZ}
11288 \providecommand*\@pdfviewparams{ H.V}
11289 \def\Hy@BorderArrayPatch{BorderArrayPatch}

11290 \g@addto@macro\Hy@FirstPageHook{%
11291 \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.

```

11292 /DvipsToPDF{72.27 mul Resolution div} def%
11293 /PDFToDvips{72.27 div Resolution mul} def%
11294 /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.

```

11295 /BorderArrayPatch{%
11296   [exch{%
11297     dup dup type/integertype eq exch type/realtype eq or%
11298     {BPToDvips}if%
11299   }forall]%
11300 }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.

```

11301 /HyperBorder {1 PDFToDvips} def%
11302 /H.V {pdf@hoff pdf@voff null} def%
11303 /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

```

11304 /H.S {%
11305   currentpoint %
11306   HyperBorder add /pdf@lly exch def %
11307   dup DvipsToPDF 72 add /pdf@hoff exch def %
11308   HyperBorder sub /pdf@llx exch def%
11309 } def%

```

The calculation of upper left *y* is done without raising the point in T<sub>E</sub>X, by simply adding on the current \baselineskip to the current *y*. This is usually too much, so we remove a notional 2 points.

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

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

```

11310 /H.L {%
11311 2 sub dup%
11312 /HyperBasePt exch def %
11313 PDFToDvips /HyperBaseDvips exch def %
11314 currentpoint %
11315 HyperBaseDvips sub /pdf@ury exch def%
11316 /pdf@urx exch def%
11317 } def%
11318 /H.A {%
11319 H.L %
11320 % | /pdf@voff| = the distance from the top of the page to a point
11321 % | \baselineskip| above the current point in PDF coordinates
11322 currentpoint exch pop %
11323 vsize 72 sub exch DvipsToPDF %
11324 HyperBasePt sub % baseline skip
11325 sub /pdf@voff exch def%
11326 } def%
11327 /H.R {%
11328 currentpoint %
11329 HyperBorder sub /pdf@ury exch def %
11330 HyperBorder add /pdf@urx exch def %
11331 % | /pdf@voff| = the distance from the top of the page to the current point, in
11332 % PDF coordinates
11333 currentpoint exch pop vsize 72 sub %
11334 exch DvipsToPDF sub /pdf@voff exch def%
11335 } def%
11336 }%
11337 }
11338 \AtBeginShipoutFirst{%
11339 \ifHy@setpagesize
11340 \begingroup
11341 \@ifundefined{stockwidth}{%
11342 \ifdim\paperwidth>\z@
11343 \ifdim\paperheight>\z@
11344 \special{papersize=\the\paperwidth,\the\paperheight}%
11345 \fi
11346 \fi
11347 }{%
11348 \ifdim\stockwidth>\z@
11349 \ifdim\stockheight>\z@
11350 \special{papersize=\the\stockwidth,\the\stockheight}%
11351 \fi
11352 \fi
11353 }%
11354 \endgroup
11355 \fi
11356 \Hy@DisableOption{setpagesize}%
11357 }
11358 </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.

```

11359 <*vtexpdfmark>
11360 \providecommand*{\XR@ext}{pdf}
11361 \def\Hy@raisedlink{}
11362 \def\literalps@out#1{\special{pS:#1}}%
11363 \def\headerps@out#1{\immediate\special{pS:#1}}%
11364 \input{pdfmark.def}%
11365 \ifx\@pdfproducer\relax
11366   \ifnum\OpMode=\@ne
11367     \def\@pdfproducer{VTeX}%
11368   \else
11369     \def\@pdfproducer{VTeX + Distiller}%
11370   \fi
11371 \fi
11372 \providecommand*\@pdfborder{0 0 1}
11373 \providecommand*\@pdfborderstyle{}
11374 \providecommand*\@pdfview{XYZ}
11375 \providecommand*\@pdfviewparams{ H.V}
11376 \g@addto@macro\Hy@FirstPageHook{%
11377   \headerps@out{%
11378     /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.

```

11379   /HyperBorder {1} def%
11380   /H.V {pdf@hoff pdf@voff null} def%
11381   /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:  $\text{pdf@lly} = Y_c - \text{HyperBorder}$ ,  $\text{pdf@hoff} = X_c + 72$ ,  $\text{pdf@llx} = X_c - \text{HyperBorder}$

```

11382   /H.S {%
11383     currentpoint %
11384     HyperBorder sub%
11385     /pdf@lly exch def %
11386     dup 72 add /pdf@hoff exch def %
11387     HyperBorder sub%
11388     /pdf@llx exch def%
11389   } def%

```

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

```

11390   /H.L {%
11391     2 sub%
11392     /HyperBasePt exch def %
11393     currentpoint %
11394     HyperBasePt add HyperBorder add%
11395     /pdf@ury exch def %
11396     HyperBorder add%
11397     /pdf@urx exch def%
11398   } def%
11399   /H.A {%
11400     H.L %
11401     currentpoint exch pop %
11402     vsize 72 sub exch %
11403     HyperBasePt add add%
11404     /pdf@voff exch def%
11405   } def%

```



$\text{pdf@ury} = Y_c + \text{HyperBorder}$ ,  $\text{pdf@urx} = X_c + \text{HyperBorder}$

```

11406 /H.R {%
11407   currentpoint %
11408   HyperBorder add%
11409 /pdf@ury exch def %
11410 HyperBorder add%
11411 /pdf@urx exch def %
11412 currentpoint exch pop vsize 72 sub add%
11413 /pdf@voff exch def%
11414 } def%
11415 }%
11416 }
11417 </vtexpdfmark>

```

## 46.11 Textures

```

11418 <*textures>
11419 \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.

```

11420 \begingroup
11421 \obeylines %
11422 \gdef\Hy@ps@CR{\noexpand
11423 }%
11424 \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`.

```

11425 \def\literalps@out#1{%
11426 \special{postscript 0 0 transform}%
11427 \special{rawpostscript itransform moveto\Hy@ps@CR #1}%
11428 }%
11429 %

```

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.

```

11430 \def\headerps@out#1{%
11431 \special{%
11432 prepostscript TeXdict begin\Hy@ps@CR
11433 #1\Hy@ps@CR
11434 end%

```

```

11435 }%
11436 }%
11437 %

```

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.

```

11438 \g@addto@macro\Hy@FirstPageHook{%
11439   \headerps@out{%
11440     /betterpdfmark {%
11441       systemdict begin %
11442         dup /BP eq%
11443         {cleartomark gsave nulldevice []}%
11444         {dup /EP eq%
11445           {cleartomark cleartomark grestore}%
11446           {cleartomark}%
11447         ifelse%
11448       }ifelse %
11449     end%
11450   }def\Hy@ps@CR
11451   ___pdfmark___ not{/pdfmark /betterpdfmark load def}if%
11452 }% end of \headerps@out
11453 }% end of \AtBeginShipoutFirst
11454 %
11455 \input{pdfmark.def}%
11456 %
11457 \ifx\@pdfproducer\relax
11458   \def\@pdfproducer{Textures + Distiller}%
11459 \fi
11460 \providecommand*\@pdfborder{0 0 1}
11461 \providecommand*\@pdfborderstyle{}
11462 \providecommand*\@pdfview{XYZ}
11463 \providecommand*\@pdfviewparams{ H.V}
11464 %

```

These are called at the start and end of unboxed links; their job is to leave available PS variables called pdf@llx pdf@lly pdf@urx pdf@ury, which are the coordinates of the bounding rectangle of the link, and pdf@hoff pdf@voff which are the PDF page offsets. The Rect pair are called at the LL and UR corners of a box known to  $\TeX$ .

```

11465 \Hy@AtBeginDocument{%
11466   \headerps@out{%

```

Textures lives in normal points, I think. So conversion from one coordinate system to another involves doing nothing.

```

11467   /vsize {\Hy@pageheight} def%
11468   /DvipsToPDF {} def%
11469   /PDFToDvips {} def%
11470   /BPTToDvips {} def%
11471   /HyperBorder { 1 PDFToDvips } def\Hy@ps@CR
11472   /H.V {pdf@hoff pdf@voff null} def\Hy@ps@CR
11473   /H.B {/Rect[pdf@llx pdf@lly pdf@urx pdf@ury]} def\Hy@ps@CR
11474   /H.S {%
11475     currentpoint %
11476     HyperBorder add /pdf@lly exch def %
11477     dup DvipsToPDF 72 add /pdf@hoff exch def %
11478     HyperBorder sub /pdf@llx exch def%
11479   } def\Hy@ps@CR
11480   /H.L {%

```

```

11481      2 sub %
11482      PDFToDvips /HyperBase exch def %
11483      currentpoint %
11484      HyperBase sub /pdf@ury exch def%
11485      /pdf@urx exch def%
11486      } def\Hy@ps@CR
11487      /H.A {%
11488      H.L %
11489      currentpoint exch pop %
11490      vsize 72 sub exch DvipsToPDF %
11491      HyperBase sub % baseline skip
11492      sub /pdf@voff exch def%
11493      } def\Hy@ps@CR
11494      /H.R {%
11495      currentpoint %
11496      HyperBorder sub /pdf@ury exch def %
11497      HyperBorder add /pdf@urx exch def %
11498      currentpoint exch pop vsize 72 sub %
11499      exch DvipsToPDF sub /pdf@voff exch def%
11500      } def\Hy@ps@CR
11501      }%
11502      }

11503      \Hy@AtBeginDocument{%
11504      \ifHy@colorlinks
11505      \headerps@out{/PDFBorder{/Border [0 0 0]}def}%
11506      \fi
11507      }

```

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.

```

11508      \expandafter\let\expandafter\keepPDF@SetupDoc
11509      \csname PDF@SetupDoc\endcsname
11510      \def\PDF@SetupDoc{%
11511      \ifx\@baseurl\@empty
11512      \else
11513      \special{html:<base href="\@baseurl">}%
11514      \fi
11515      \keepPDF@SetupDoc
11516      }

11517      \Hy@WrapperDef\hyper@anchor#1{%
11518      \Hy@SaveLastskip
11519      \Hy@VerboseAnchor{#1}%
11520      \begingroup
11521      \let\protect=\string
11522      \special{html:<a name=%
11523      \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
11524      \endgroup
11525      \Hy@activeanchortrue
11526      \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
11527      \special{html:</a>}%
11528      \Hy@activeanchorfalse
11529      \Hy@RestoreLastskip
11530      }

11531      \Hy@WrapperDef\hyper@anchorstart#1{%
11532      \Hy@SaveLastskip
11533      \Hy@VerboseAnchor{#1}%
11534      \begingroup

```

```

11535 \hyper@chars
11536 \special{html:<a name=%
11537 \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
11538 \endgroup
11539 \Hy@activeanchortrue
11540 }
11541 \def\hyper@anchorend{%
11542 \special{html:</a>}%
11543 \Hy@activeanchorfalse
11544 \Hy@RestoreLastskip
11545 }
11546 \def\@urlltype{url}
11547 \def\hyper@linkstart#1#2{%
11548 \Hy@VerboseLinkStart{#1}{#2}%
11549 \expandafter\Hy@colorlink\csname @#1color\endcsname
11550 \def\Hy@tempa{#1}%
11551 \ifx\Hy@tempa\@urlltype
11552 \special{html:<a href=\hyper@quote#2\hyper@quote>}%
11553 \else
11554 \begingroup
11555 \hyper@chars
11556 \special{%
11557 html:<a href=%
11558 \hyper@quote\#\HyperDestNameFilter{#2}\hyper@quote>%
11559 }%
11560 \endgroup
11561 \fi
11562 }
11563 \def\hyper@linkend{%
11564 \special{html:</a>}%
11565 \Hy@endcolorlink
11566 }
11567 \def\hyper@linkfile#1#2#3{%
11568 \hyper@linkurl{#1}{%
11569 \Hy@linkfileprefix#2\ifx\\#3\\else\##3\fi
11570 }%
11571 }
11572 \def\hyper@linkurl#1#2{%
11573 \leavevmode
11574 \ifHy@raiselinks
11575 \Hy@SaveSpaceFactor
11576 \Hy@SaveSavedSpaceFactor
11577 \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
11578 \Hy@RestoreSavedSpaceFactor
11579 \@linkdim\dp\@tempboxa
11580 \lower\@linkdim\hbox{%
11581 \hyper@chars
11582 \special{html:<a href=\hyper@quote#2\hyper@quote>}%
11583 }%
11584 \Hy@colorlink\@urllcolor
11585 \Hy@RestoreSpaceFactor
11586 #1%
11587 \Hy@SaveSpaceFactor
11588 \@linkdim\ht\@tempboxa
11589 \advance\@linkdim by -6.5\p@
11590 \raise\@linkdim\hbox{\special{html:</a>}}%
11591 \Hy@endcolorlink

```

```

11592 \Hy@RestoreSpaceFactor
11593 \else
11594 \begingroup
11595 \hyper@chars
11596 \special{html:<a href=\hyper@quote#2\hyper@quote>}%
11597 \Hy@colorlink\@urlcolor#1%
11598 \special{html:</a>}%
11599 \Hy@endcolorlink
11600 \endgroup
11601 \fi
11602 }

```

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

```

11603 \def\hyper@link#1#2#3{%
11604 \Hy@VerboseLinkStart{#1}{#2}%
11605 \hyper@linkurl{#3}{\# \Hy@DestNameFilter{#2}}%
11606 }
11607 \def\hyper@image#1#2{%
11608 \begingroup
11609 \hyper@chars
11610 \special{html:<img src=\hyper@quote#1\hyper@quote>}%
11611 \endgroup
11612 }
11613 </textures>

```

## 46.12 dvipsone

```

11614 % \subsection{dvipsone driver}
11615 % Over-ride the default setup macro in pdfmark driver to use Y\&Y
11616 % |\special| commands.
11617 <*dvipsone>
11618 \providecommand*\XR@ext}{pdf}
11619 \def\Hy@raisedlink{}
11620 \providecommand*\@pdfborder{0 0 1}
11621 \providecommand*\@pdfborderstyle{}
11622 \def\literalps@out#1{\special{ps:#1}}%
11623 \def\headerps@out#1{\special{headertext=#1}}%
11624 \input{pdfmark.def}%
11625 \ifx\@pdfproducer\relax
11626 \def\@pdfproducer{dvipsone + Distiller}%
11627 \fi
11628 \HyInfo@AddonUnsupportedtrue
11629 \def\PDF@FinishDoc{%
11630 \Hy@UseMaketitleInfos
11631 \HyInfo@TrappedUnsupported
11632 \special{PDF: Keywords \@pdfkeywords}%
11633 \special{PDF: Title \@pdftitle}%
11634 \special{PDF: Creator \@pdfcreator}%
11635 \ifx\@pdfcreationdate\@empty
11636 \else
11637 \special{PDF: CreationDate \@pdfcreationdate}%
11638 \fi
11639 \ifx\@pdfmoddate\@empty
11640 \else
11641 \special{PDF: ModDate \@pdfmoddate}%
11642 \fi
11643 \special{PDF: Author \@pdfauthor}%
11644 \ifx\@pdfproducer\relax

```

```

11645 \else
11646   \special{PDF: Producer \@pdfproducer}%
11647 \fi
11648 \special{PDF: Subject \@pdfsubject}%
11649 \Hy@DisableOption{pdfauthor}%
11650 \Hy@DisableOption{pdftitle}%
11651 \Hy@DisableOption{pdfsubject}%
11652 \Hy@DisableOption{pdfcreator}%
11653 \Hy@DisableOption{pdfcreationdate}%
11654 \Hy@DisableOption{pdfmoddate}%
11655 \Hy@DisableOption{pdfproducer}%
11656 \Hy@DisableOption{pdfkeywords}%
11657 \Hy@DisableOption{pdftrapped}%
11658 \Hy@DisableOption{pdfinfo}%
11659 }
11660 \def\PDF@SetupDoc{%
11661   \def\Hy@temp{}%
11662   \ifx\@pdfstartpage\@empty
11663     \else
11664       \ifx\@pdfstartview\@empty
11665         \else
11666           \edef\Hy@temp{%
11667             ,Page=\@pdfstartpage
11668             ,View=\@pdfstartview
11669           }%
11670         \fi
11671       \fi
11672     \edef\Hy@temp{%
11673       \noexpand\pdfmark{%
11674         pdfmark=/DOCVIEW,%
11675         PageMode=/\@pdfpagemode
11676       }\Hy@temp
11677     }%
11678   }%
11679   \Hy@temp
11680   \ifx\@pdfpagescrop\@empty
11681     \else
11682       \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
11683     \fi
11684   \edef\Hy@temp{%
11685     \ifHy@toolbar\else /HideToolbar true\fi
11686     \ifHy@menubar\else /HideMenubar true\fi
11687     \ifHy>windowui\else /HideWindowUI true\fi
11688     \ifHy@fitwindow /FitWindow true\fi
11689     \ifHy@centerwindow /CenterWindow true\fi
11690     \ifHy@displaydoctitle /DisplayDocTitle true\fi
11691     \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
11692     \Hy@UseNameKey{Direction}\@pdfdirection
11693     \Hy@UseNameKey{ViewArea}\@pdfviewarea
11694     \Hy@UseNameKey{ViewClip}\@pdfviewclip
11695     \Hy@UseNameKey{PrintArea}\@pdfprintarea
11696     \Hy@UseNameKey{PrintClip}\@pdfprintclip
11697     \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
11698     \Hy@UseNameKey{Duplex}\@pdfduplex
11699     \ifx\@pdfpicktraybypdfsize\@empty
11700       \else
11701         /PickTrayByPDFSize \@pdfpicktraybypdfsize

```

```

11702 \fi
11703 \ifx\@pdfprintpagerange\@empty
11704 \else
11705   /PrintPageRange[\@pdfprintpagerange]%
11706 \fi
11707 \ifx\@pdfnumcopies\@empty
11708 \else
11709   /NumCopies \@pdfnumcopies
11710 \fi
11711 }%
11712 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
11713 \pdfmark{%
11714   pdfmark=/PUT,%
11715   Raw={%
11716     \string{Catalog\string}<<%
11717     \ifx\Hy@temp\@empty
11718     \else
11719       /ViewerPreferences<<\Hy@temp>>%
11720     \fi
11721     \Hy@UseNameKey{PageLayout}\@pdfpagelayout
11722     \ifx\@pdflang\@empty
11723     \else
11724       /Lang(\@pdflang)%
11725     \fi
11726     \ifx\@baseurl\@empty
11727     \else
11728       /URI<</Base(\Hy@pstringB)>>%
11729     \fi
11730     >>%
11731   }%
11732 }%
11733 }
11734 \providecommand*\@pdfview{XYZ}
11735 \providecommand*\@pdfviewparams{ %
11736   gsave revscl currentpoint grestore %
11737   72 add exch pop null exch null%
11738 }
11739 \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 T<sub>E</sub>X.

```

11740 \g@addto@macro\Hy@FirstPageHook{%
11741   \headerps@out{%

```

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

```

11742   /DvipsToPDF { 65781 div } def%
11743   /PDFToDvips { 65781 mul } def%
11744   /BPToDvips{65781 mul}def%
11745   /HyperBorder { 1 PDFToDvips } def%
11746   /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.

```

11747   /BorderArrayPatch{%
11748     [exch{%

```

```

11749      dup dup type/integertype eq exch type/realtype eq or%
11750      {BPToDvips}if%
11751    }forall}%
11752  }def%
11753  /H.S {%
11754    currentpoint %
11755    HyperBorder add /pdf@lly exch def %
11756    dup DvipsToPDF 72 add /pdf@hoff exch def %
11757    HyperBorder sub /pdf@llx exch def%
11758  } def%
11759  /H.L {%
11760    2 sub %
11761    PDFToDvips /HyperBase exch def %
11762    currentpoint %
11763    HyperBase sub /pdf@ury exch def%
11764    /pdf@urx exch def%
11765  } def%
11766  /H.A {%
11767    H.L %
11768    currentpoint exch pop %
11769    HyperBase sub % baseline skip
11770    DvipsToPDF /pdf@voff exch def%
11771  } def%
11772  /H.R {%
11773    currentpoint %
11774    HyperBorder sub /pdf@ury exch def %
11775    HyperBorder add /pdf@urx exch def %
11776    currentpoint exch pop DvipsToPDF /pdf@voff exch def%
11777  } def%
11778  }%
11779 }
11780 </dvipsone>

```

### 46.13 TeX4ht

```

11781 <*tex4ht>
11782 \providecommand*{\XR@ext}{html}
11783 \def\Hy@raisedlink{}
11784 \ifpackageloaded{tex4ht}{%
11785   \Hy@InfoNoLine{tex4ht is already loaded}%
11786 }{%
11787   \RequirePackage[hTeX4ht]{tex4ht}%
11788 }
11789 \hyperlinkfileprefix{}
11790 \def\PDF@FinishDoc{}
11791 \def\PDF@SetupDoc{%
11792   \ifx\@baseurl\@empty
11793   \else
11794     \special{t4ht=<base href="\@baseurl">}%
11795   \fi
11796 }
11797 \Hy@WrapperDef\hyper@anchor#1{%
11798   \Hy@SaveLastskip
11799   \Hy@VerboseAnchor{#1}%
11800   \begingroup
11801     \let\protect=\string
11802     \special{t4ht=<a name=%
11803       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%

```



```

11804 \endgroup
11805 \Hy@activeanchortrue
11806 \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
11807 \special{t4ht=</a>}%
11808 \Hy@activeanchorfalse
11809 \Hy@RestoreLastskip
11810 }
11811 \Hy@WrapperDef\hyper@anchorstart#1{%
11812 \Hy@SaveLastskip
11813 \Hy@VerboseAnchor{#1}%
11814 \begingroup
11815 \hyper@chars\special{t4ht=<a name=%
11816 \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
11817 \endgroup
11818 \Hy@activeanchortrue
11819 }
11820 \def\hyper@anchorend{%
11821 \special{t4ht=</a>}%
11822 \Hy@activeanchorfalse
11823 \Hy@RestoreLastskip
11824 }
11825 \def\@urlltype{url}
11826 \def\hyper@linkstart#1#2{%
11827 \Hy@VerboseLinkStart{#1}{#2}%
11828 \expandafter\Hy@colorlink\csname @#1color\endcsname
11829 \def\Hy@tempa{#1}%
11830 \ifx\Hy@tempa\@urlltype
11831 \special{t4ht=<a href=\hyper@quote#2\hyper@quote>}%
11832 \else
11833 \begingroup
11834 \hyper@chars
11835 \special{t4ht=<a href=%
11836 \hyper@quote\#\HyperDestNameFilter{#2}\hyper@quote>}%
11837 \endgroup
11838 \fi
11839 }
11840 \def\hyper@linkend{%
11841 \special{t4ht=</a>}%
11842 \Hy@endcolorlink
11843 }
11844 \def\hyper@linkfile#1#2#3{%
11845 \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\else\##3\fi}%
11846 }
11847 \def\hyper@linkurl#1#2{%
11848 \leavevmode
11849 \ifHy@raiselinks
11850 \Hy@SaveSpaceFactor
11851 \Hy@SaveSavedSpaceFactor
11852 \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
11853 \Hy@RestoreSavedSpaceFactor
11854 \@linkdim\dp\@tempboxa
11855 \lower\@linkdim\hbox{%
11856 \begingroup
11857 \hyper@chars
11858 \special{%
11859 t4ht=<a href=\hyper@quote#2\hyper@quote>%
11860 }%

```

```

11861 \endgroup
11862 }%
11863 \Hy@colorlink\@urlcolor
11864 \Hy@RestoreSpaceFactor
11865 #1%
11866 \Hy@SaveSpaceFactor
11867 \Hy@endcolorlink
11868 \@linkdim\ht\@tempboxa
11869 \advance\@linkdim by -6.5\p@
11870 \raise\@linkdim\hbox{\special{t4ht=</a>}}%
11871 \Hy@RestoreSpaceFactor
11872 \else
11873 \begingroup
11874 \hyper@chars
11875 \special{t4ht=<a href=\hyper@quote#2\hyper@quote>}%
11876 \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
11877 \special{t4ht=</a>}%
11878 \endgroup
11879 \fi
11880 }

```

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

```

11881 \def\hyper@link#1#2#3{%
11882 \Hy@VerboseLinkStart{#1}{#2}%
11883 \hyper@linkurl{#3}{\#\HyperDestNameFilter{#2}}%
11884 }
11885 \def\hyper@image#1#2{%
11886 \begingroup
11887 \hyper@chars
11888 \special{t4ht=<img src=\hyper@quote#1\hyper@quote>}%
11889 \endgroup
11890 }
11891 \let\autoref\ref
11892 \ifx \rEfLiNK \UnDef
11893 \def\rEfLiNK #1#2{#2}%
11894 \fi
11895 \def\backref#1{}

```

Fix for tex4ht.

```

11896 \AtBeginDocument{%
11897 \expandafter\let\expandafter\Hy@OrgMakeLabel\csname Make:Label\endcsname
11898 \expandafter\def\csname Make:Label\endcsname#1#2{%
11899 \ifhmode
11900 \Hy@SaveSpaceFactor
11901 \else
11902 \global\Hy@SavedSpaceFactor=1000 %
11903 \fi
11904 \Hy@OrgMakeLabel{#1}{%
11905 \Hy@RestoreSpaceFactor
11906 #2%
11907 \Hy@SaveSpaceFactor
11908 }%
11909 \Hy@RestoreSpaceFactor
11910 }%
11911 }
11912 </tex4ht>
11913 <*tex4htcfg>
11914 \IfFileExists{\jobname.cfg}{\endinput}{}
11915 \Preamble{html}

```

```

11916 \begin{document}%
11917 \EndPreamble
11918 \def\TeX{\TeX}
11919 \def\OMEGA{\Omega}
11920 \def\LaTeX{\LaTeX}
11921 \def\LaTeXe{\LaTeX2e}
11922 \def\TeX{e-TeX}
11923 \def\MF{Metafont}
11924 \def\MP{MetaPost}
11925 </tex4htcfg>

```

## 47 Driver-specific form support

### 47.1 pdfmarks

```

11926 <*pdfmark>
11927 \long\def\@Form[#1]{%
11928 \g@addto@macro\Hy@FirstPageHook{%
11929 \headerps@out{%
11930 [%
11931 /_objdef{pdfDocEncoding}%
11932 /type/dict%
11933 /OBJ pdfmark%
11934 [%
11935 {pdfDocEncoding}%
11936 <<%
11937 /Type/Encoding%
11938 /Differences[%
11939 24/breve/caron/circumflex/dotaccent/hungarumlaut/ogonek/ring%
11940 /tilde %
11941 39/quotesingle %
11942 96/grave %
11943 128/bullet/dagger/daggerdbl/ellipsis/emdash/endash/florin%
11944 /fraction/guilsinglleft/guilsinglright/minus/perthousand%
11945 /quotedblbase/quotedblleft/quotedblright/quoteleft%
11946 /quoteright/quotesinglbase/trademark/fi/fl/Lslash/OE/Scaron%
11947 /Ydieresis/Zcaron/dotlessi/lslash/oe/scaron/zcaron %
11948 164/currency %
11949 166/brokenbar %
11950 168/dieresis/copyright/ordfeminine %
11951 172/logicalnot/.notdef/registered/macron/degree/plusminus%
11952 /twosuperior/threesuperior/acute/mu %
11953 183/periodcentered/cedilla/onesuperior/ordmasculine %
11954 188/onequarter/onehalf/threequarters %
11955 192/Agrave/Aacute/Acircumflex/Atilde/Adieresis/Aring/AE%
11956 /Ccedilla/Egrave/Eacute/Ecircumflex/Edieresis/Igrave%
11957 /Iacute/Icircumflex/Idieresis/Eth/Ntilde/Ograve/Oacute%
11958 /Ocircumflex/Otilde/Odieresis/multiply/Oslash/Ugrave%
11959 /Uacute/Ucircumflex/Udieresis/Yacute/Thorn/germandbls%
11960 /agrave/aacute/acircumflex/atilde/adieresis/aring/ae%
11961 /ccedilla/egrave/eacute/ecircumflex/edieresis/igrave%
11962 /iacute/icircumflex/idieresis/eth/ntilde/ograde/oacute%
11963 /ocircumflex/otilde/odieresis/divide/oslash/ugrave/uacute%
11964 /ucircumflex/udieresis/yacute/thorn/ydieresis%
11965 ]%
11966 >>%
11967 /PUT pdfmark%
11968 [%

```

```

11969  /__objdef{ZaDb}%
11970  /type/dict%
11971  /OBJ pdfmark%
11972  [%
11973   {ZaDb}%
11974   <<%
11975    /Type/Font%
11976    /Subtype/Type1%
11977    /Name/ZaDb%
11978    /BaseFont/ZapfDingbats%
11979   >>%
11980  /PUT pdfmark%
11981  [%
11982   /__objdef{Helv}%
11983   /type/dict%
11984   /OBJ pdfmark%
11985   [%
11986    {Helv}%
11987    <<%
11988     /Type/Font%
11989     /Subtype/Type1%
11990     /Name/Helv%
11991     /BaseFont/Helvetica%
11992     /Encoding{pdfDocEncoding}%
11993    >>%
11994   /PUT pdfmark%
11995   [%
11996    /__objdef{aform}%
11997    /type/dict%
11998   /OBJ pdfmark%
11999   [%
12000    /__objdef{affields}%
12001    /type/array%
12002   /OBJ pdfmark%
12003   {%
12004    [%
12005     /BBox[0 0 100 100]%
12006     /__objdef{Check}%
12007    /BP pdfmark %
12008    1 0 0 setrgbcolor%
12009    /ZapfDingbats 80 selectfont %
12010    20 20 moveto%
12011    (4)show%
12012   [/EP pdfmark%
12013   [%
12014    /BBox[0 0 100 100]%
12015    /__objdef{Cross}%
12016   /BP pdfmark %
12017   1 0 0 setrgbcolor%
12018   /ZapfDingbats 80 selectfont %
12019   20 20 moveto%
12020   (8)show%
12021   [/EP pdfmark%
12022   [%
12023    /BBox[0 0 250 100]%
12024    /__objdef{Submit}%
12025   /BP pdfmark %

```

```

12026 0.6 setgray %
12027 0 0 250 100 rectfill %
12028 1 setgray %
12029 2 2 moveto %
12030 2 98 lineto %
12031 248 98 lineto %
12032 246 96 lineto %
12033 4 96 lineto %
12034 4 4 lineto %
12035 fill %
12036 0.34 setgray %
12037 248 98 moveto %
12038 248 2 lineto %
12039 2 2 lineto %
12040 4 4 lineto %
12041 246 4 lineto %
12042 246 96 lineto %
12043 fill%
12044 /Helvetica 76 selectfont %
12045 0 setgray %
12046 8 22.5 moveto%
12047 (Submit)show%
12048 [/EP pdfmark%
12049 [%
12050 /BBox[0 0 250 100]%
12051 /_objdef{SubmitP}%
12052 /BP pdfmark %
12053 0.6 setgray %
12054 0 0 250 100 rectfill %
12055 0.34 setgray %
12056 2 2 moveto %
12057 2 98 lineto %
12058 248 98 lineto %
12059 246 96 lineto %
12060 4 96 lineto %
12061 4 4 lineto %
12062 fill %
12063 1 setgray %
12064 248 98 moveto %
12065 248 2 lineto %
12066 2 2 lineto %
12067 4 4 lineto %
12068 246 4 lineto %
12069 246 96 lineto %
12070 fill%
12071 /Helvetica 76 selectfont %
12072 0 setgray %
12073 10 20.5 moveto%
12074 (Submit)show%
12075 [/EP pdfmark%
12076 } ?pdfmark%
12077 [%
12078 {aform}%
12079 <<%
12080 /Fields{afields}%
12081 /DR<<%
12082 /Font<<%

```

```

12083      /ZaDb{ZaDb}%
12084      /Helv{Helv}%
12085      >>%
12086  >>%
12087  /DA(/Helv 10 Tf 0 g)%
12088  /CO{corder}%
12089  \ifHy@pdfa
12090  \else
12091    \ifHyField@NeedAppearances
12092      /NeedAppearances true%
12093    \fi
12094  \fi
12095  >>%
12096  /PUT pdfmark%
12097  [%
12098    {Catalog}%
12099    <<%
12100      /AcroForm{aform}%
12101    >>%
12102  /PUT pdfmark%
12103  [%
12104    /__objdef{corder}%
12105    /type/array%
12106  /OBJ pdfmark% dps
12107  }]%
12108  \kvsetkeys{Form}{#1}%
12109  }
12110  \def\@endForm{}
12111  \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
12112  \Hy\Message{Sorry, pdfmark drivers do not support FORM gauges}%
12113  }
12114  \def\@TextField[#1]#2{% parameters, label
12115  \def\Fld@name{#2}%
12116  \def\Fld@default{}%
12117  \let\Fld@value\@empty
12118  \def\Fld@width{\DefaultWidthofText}%
12119  \def\Fld@height{%
12120    \ifFld@multiline
12121      \DefaultHeightofTextMultiline
12122    \else
12123      \DefaultHeightofText
12124    \fi
12125  }%
12126  \begingroup
12127    \expandafter\HyField@SetKeys\expandafter{%
12128      \DefaultOptionsofText,#1%
12129    }%
12130    \HyField@FlagsText
12131    \ifFld@hidden\def\Fld@width{1sp}\fi
12132    \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
12133    \LayoutTextField{#2}{%
12134      \Hy@escapeform\PDFForm@Text
12135      \pdfmark[\MakeTextField{\Fld@width}{\Fld@height}]{%
12136        pdfmark=/ANN,Raw={\PDFForm@Text}%
12137      }%
12138    }%
12139  \endgroup

```

```

12140 }
12141 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
12142 \def\Fld@name{#2}%
12143 \let\Fld@default\relax
12144 \let\Fld@value\relax
12145 \def\Fld@width{\DefaultWidthofChoiceMenu}%
12146 \def\Fld@height{\DefaultHeightofChoiceMenu}%
12147 \begingroup
12148 \Fld@menulength=0 %
12149 \@tempdima\z@
12150 \@for\@curropt:=#3\do{%
12151 \expandafter\Fld@checkequals\@curropt==\%
12152 \Hy@StepCount\Fld@menulength
12153 \settowidth{\@tempdimb}{\@currDisplay}%
12154 \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
12155 }%
12156 \advance\@tempdima by 15\p@
12157 \begingroup
12158 \HyField@SetKeys{#1}%
12159 \edef\x{\endgroup
12160 \noexpand\expandafter
12161 \noexpand\HyField@SetKeys
12162 \noexpand\expandafter{%
12163 \expandafter\noexpand\csname DefaultOptionsof%
12164 \ifFld@radio
12165 Radio%
12166 \else
12167 \ifFld@combo
12168 \ifFld@popdown
12169 PopdownBox%
12170 \else
12171 ComboBox%
12172 \fi
12173 \else
12174 ListBox%
12175 \fi
12176 \fi
12177 \endcsname
12178 }%
12179 }\x
12180 \HyField@SetKeys{#1}%
12181 \ifFld@hidden\def\Fld@width{1sp}\fi
12182 \ifx\Fld@value\relax
12183 \let\Fld@value\Fld@default
12184 \fi
12185 \LayoutChoiceField{#2}{%
12186 \ifFld@radio
12187 \HyField@FlagsRadioButton
12188 \@@Radio{#3}%
12189 \else
12190 \begingroup
12191 \HyField@FlagsChoice
12192 \ifdim\Fld@width<\@tempdima
12193 \ifdim\@tempdima<1cm\@tempdima1cm\fi
12194 \edef\Fld@width{\the\@tempdima}%
12195 \fi
12196 \ifFld@combo

```

```

12197         \else
12198         \@tempdima=\the\Fld@menulength\Fld@charsize
12199         \advance\@tempdima by \Fld@borderwidth bp %
12200         \advance\@tempdima by \Fld@borderwidth bp %
12201         \edef\Fld@height{\the\@tempdima}%
12202         \fi
12203         \@@Listbox{#3}%
12204     \endgroup
12205     \fi
12206 }%
12207 \endgroup
12208 }
12209 \def\@@Radio#1{%
12210     \Fld@listcount=0 %
12211     \EdefEscapeName\Fld@default{\Fld@default}%
12212     \@for\@curropt:=#1\do{%
12213         \expandafter\Fld@checkequals\@curropt==\%
12214         \EdefEscapeName\@currValue{\@currValue}%
12215         \Hy@StepCount\Fld@listcount
12216         \@currDisplay\space
12217         \Hy@escapeform\PDFForm@Radio
12218         \pdfmark[MakeRadioField{\Fld@width}{\Fld@height}]{%
12219             pdfmark=/ANN,%
12220             Raw={%
12221                 \PDFForm@Radio /AP <</N <</\@currValue\space {Check}>> >>%
12222             }%
12223         } % deliberate space between radio buttons
12224     }%
12225 }
12226 \newcount\Fld@listcount
12227 \def\@@Listbox#1{%
12228     \HyField@PDFChoices{#1}%
12229     \Hy@escapeform\PDFForm@List
12230     \pdfmark[MakeChoiceField{\Fld@width}{\Fld@height}]{%
12231         pdfmark=/ANN,Raw={\PDFForm@List}%
12232     }%
12233 }
12234 \def\@PushButton[#1]#2{% parameters, label
12235     \def\Fld@name{#2}%
12236     \begingroup
12237         \expandafter\HyField@SetKeys\expandafter{%
12238             \DefaultOptionsofPushButton,#1%
12239         }%
12240         \ifHy@pdfa
12241             \Hy@Error{%
12242                 PDF/A: Push button with JavaScript is prohibited%
12243             }\@ehc
12244             \LayoutPushButtonField{%
12245                 \leavevmode
12246                 \MakeButtonField{#2}%
12247             }%
12248         \else
12249             \HyField@FlagsPushButton
12250             \ifFld@hidden\def\Fld@width{1sp}\fi
12251             \LayoutPushButtonField{%
12252                 \leavevmode
12253                 \Hy@escapeform\PDFForm@Push

```



```

12254     \pdfmark[\MakeButtonField{#2}]{%
12255     pdfmark=/ANN,Raw={\PDFForm@Push}%
12256     }%
12257 }%
12258 \fi
12259 \endgroup
12260 }
12261 \def\@Submit[#1]#2{%
12262 \def\Fld@width{\DefaultWidthofSubmit}%
12263 \def\Fld@height{\DefaultHeightofSubmit}%
12264 \begingroup
12265 \expandafter\HyField@SetKeys\expandafter{%
12266 \DefaultOptionsofSubmit,#1%
12267 }%
12268 \HyField@FlagsPushButton
12269 \HyField@FlagsSubmit
12270 \ifFld@hidden\def\Fld@width{1sp}\fi
12271 \Hy@escapeform\PDFForm@Submit
12272 \pdfmark[\MakeButtonField{#2}]{%
12273 pdfmark=/ANN,%
12274 Raw={\PDFForm@Submit /AP << /N {Submit} /D {SubmitP} >>}%
12275 }%
12276 \endgroup
12277 }
12278 \def\@Reset[#1]#2{%
12279 \def\Fld@width{\DefaultWidthofReset}%
12280 \def\Fld@height{\DefaultHeightofReset}%
12281 \begingroup
12282 \expandafter\HyField@SetKeys\expandafter{%
12283 \DefaultOptionsofReset,#1%
12284 }%
12285 \leavevmode
12286 \ifHy@pdfa
12287 \Hy@Error{%
12288 PDF/A: Reset action is prohibited%
12289 }\@ehc
12290 \MakeButtonField{#2}%
12291 \else
12292 \HyField@FlagsPushButton
12293 \ifFld@hidden\def\Fld@width{1sp}\fi
12294 \Hy@escapeform\PDFForm@Reset
12295 \pdfmark[\MakeButtonField{#2}]{%
12296 pdfmark=/ANN,Raw={\PDFForm@Reset}%
12297 }%
12298 \fi
12299 \endgroup
12300 }%
12301 \def\@CheckBox[#1]#2{% parameters, label
12302 \def\Fld@name{#2}%
12303 \def\Fld@default{0}%
12304 \begingroup
12305 \def\Fld@width{\DefaultWidthofCheckBox}%
12306 \def\Fld@height{\DefaultHeightofCheckBox}%
12307 \expandafter\HyField@SetKeys\expandafter{%
12308 \DefaultOptionsofCheckBox,#1%
12309 }%
12310 \HyField@FlagsCheckBox

```

```

12311 \ifFld@hidden\def\Fld@width{1sp}\fi
12312 \LayoutCheckField{#2}{%
12313   \Hy@escapeform\PDFForm@Check
12314   \pdfmark[\MakeCheckField{\Fld@width}{\Fld@height}]{%
12315     pdfmark=/ANN,Raw={\PDFForm@Check}%
12316   }%
12317 }%
12318 \endgroup
12319 }
12320 \pdfmark

```

## 47.2 HyperTeX

```

12321 \hypertex
12322 \def\@Form[#1]{\Hy@Message{Sorry, HyperTeX does not support FORMs}}
12323 \def\@endForm{}
12324 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
12325   \Hy@Message{Sorry, HyperTeX does not support FORM gauges}%
12326 }
12327 \def\@TextField[#1]#2{% parameters, label
12328   \Hy@Message{Sorry, HyperTeX does not support FORM text fields}%
12329 }
12330 \def\@CheckBox[#1]#2{% parameters, label
12331   \Hy@Message{Sorry, HyperTeX does not support FORM checkboxes}%
12332 }
12333 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
12334   \Hy@Message{Sorry, HyperTeX does not support FORM choice menus}%
12335 }
12336 \def\@PushButton[#1]#2{% parameters, label
12337   \Hy@Message{Sorry, HyperTeX does not support FORM pushbuttons}%
12338 }
12339 \def\@Reset[#1]#2{\Hy@Message{Sorry, HyperTeX does not support FORMs}}
12340 \def\@Submit[#1]#2{\Hy@Message{Sorry, HyperTeX does not support FORMs}}
12341 \hypertex

```

## 47.3 TeX4ht

```

12342 \tex4ht
12343 \def\@Form[#1]{%
12344   \kvsetkeys{Form}{#1}%
12345   \HCode{<form action="\Form@action" method="\Form@method">}%
12346 }
12347 \def\@endForm{\HCode{</form>}}
12348 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
12349   \Hy@Message{Sorry, TeX4ht does not support gauges}%
12350 }
12351 \def\@TextField[#1]#2{% parameters, label
12352   \let\Hy@reserved@a\@empty
12353   \def\Fld@name{#2}%
12354   \def\Fld@default{}%
12355   \bgroup
12356     \Field@toks={ }%
12357     \kvsetkeys{Field}{#1}%
12358     \HCode{<label for="\Fld@name">#2</label>}%
12359     \ifFld@password
12360       \@@PasswordField
12361     \else
12362       \@@TextField
12363   \fi

```

```

12364 \egroup
12365 }
12366 \def\@@PasswordField{%
12367   \HCode{%
12368     <input type="password" %
12369     id="\Fld@name" %
12370     name="\Fld@name" %
12371     \ifFld@hidden type="hidden" \fi
12372     value="\Fld@default" %
12373     \the\Field@toks
12374     >%
12375   }%
12376 }
12377 \def\@@TextField{%
12378   \ifFld@multiline
12379     \HCode{<textarea %
12380       \ifFld@readonly readonly \fi
12381       id="\Fld@name" %
12382       name="\Fld@name" %
12383       \ifFld@hidden type="hidden" \fi
12384       \the\Field@toks>%
12385   }%
12386   \Fld@default
12387   \HCode{</textarea>}%
12388 \else
12389   \HCode{<input type="text" %
12390     \ifFld@readonly readonly \fi
12391     id="\Fld@name" %
12392     name="\Fld@name" %
12393     \ifFld@hidden type="hidden" \fi
12394     value="\Fld@default" %
12395     \the\Field@toks>%
12396   }%
12397 \fi
12398 }
12399 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
12400   \def\Fld@name{#2}%
12401   \def\Fld@default{#3}%
12402   \let\Hy@reserved@a\relax
12403   \begingroup
12404     \expandafter\Fld@findlength#3\\%
12405     \Field@toks={ }%
12406     \kvsetkeys{Field}{#1}%
12407     #2%
12408     \ifFld@radio
12409       \expandafter\@@Radio#3\\%
12410     \else
12411       \expandafter\@@Menu#3\\%
12412     \fi
12413   \endgroup
12414 }
12415 \def\Fld@findlength#1\\{%
12416   \Fld@menulength=0 %
12417   \@for\@currupt:=#1\do{\Hy@StepCount\Fld@menulength}%
12418 }
12419 \def\@@Menu#1\\{%
12420   \HCode{<select size="\the\Fld@menulength" %

```

```

12421     name="\Fld@name" %
12422     \the\Field@toks>%
12423 }%
12424 \@for\@curropt:=#1\do{%
12425     \expandafter\Fld@checkequals\@curropt==\\%
12426     \HCode{<option %
12427         \ifx\@curropt\Fld@default selected \fi
12428         value="\@currValue">\@currDisplay</option>%
12429     }%
12430 }%
12431 \HCode{</select>}%
12432 }
12433 \def\@@Radio#1\\{%
12434     \@for\@curropt:=#1\do{%
12435         \expandafter\Fld@checkequals\@curropt==\\%
12436         \HCode{<input type="radio" %
12437             \ifx\@curropt\Fld@default checked \fi
12438             name="\Fld@name" %
12439             value="\@currValue" %
12440             \the\Field@toks>%
12441         }%
12442         \@currDisplay
12443     }%
12444 }
12445 \def\@PushButton[#1]#2{% parameters, label
12446     \def\Fld@name{#2}%
12447     \bgroup
12448     \Field@toks={ }%
12449     \kvsetkeys{Field}{#1}%
12450     \HCode{<input type="button" %
12451         name="\Fld@name" %
12452         value="#2" %
12453         \the\Field@toks>%
12454     }%
12455     \HCode{</button>}%
12456     \egroup
12457 }
12458 \def\@Submit[#1]#2{%
12459     \HCode{<button type="submit">#2</button>}%
12460 }
12461 \def\@Reset[#1]#2{%
12462     \HCode{<button type="reset">#2</button>}%
12463 }
12464 \def\@CheckBox[#1]#2{% parameters, label
12465     \let\Hy@reserved@a\@empty
12466     \def\Fld@name{#2}%
12467     \def\Fld@default{0}%
12468     \bgroup
12469     \Field@toks={ }%
12470     \kvsetkeys{Field}{#1}%
12471     \HCode{<input type="checkbox" %
12472         \ifFld@checked checked \fi
12473         \ifFld@disabled disabled \fi
12474         \ifFld@readonly readonly \fi
12475         name="\Fld@name" %
12476         \ifFld@hidden type="hidden" \fi
12477         value="\Fld@default" %

```

```

12478 \the\Field@toks>%
12479 #2%
12480 }%
12481 \egroup
12482 }
12483 </tex4ht>

```

## 47.4 pdfTeX

```

12484 <*pdfTeX>
12485 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
12486 \Hy@Message{Sorry, pdfTeX does not support FORM gauges}%
12487 }
12488 \def\MakeFieldObject#1#2{\sbox0{#1}%
12489 \immediate\pdfxform0 %
12490 \expandafter\edef\csname #2Object\endcsname{%
12491 \the\pdfastxform\space 0 R%
12492 }%
12493 % \hbox to 0pt{\hskip-\maxdimen{\pdfrefxform \the\pdfastxform}}%
12494 }%
12495 \def\HyField@afields{}
12496 \begingroup\expandafter\expandafter\expandafter\endgroup
12497 \expandafter\ifx\csname pdfastlink\endcsname\relax
12498 \let\HyField@AddToFields\relax
12499 \PackageInfo{hyperref}{%
12500 You need pdfTeX 1.40.0 for setting the /Fields entry.%
12501 \MessageBreak
12502 Adobe Reader/Acrobat accepts an empty /Field array,%
12503 \MessageBreak
12504 but other PDF viewers might complain%
12505 }%
12506 \else
12507 \def\HyField@AuxAddToFields#1{%
12508 \def\HyField@AfterAuxOpen{\Hy@AtBeginDocument}%
12509 \Hy@AtBeginDocument{%
12510 \if@filesw
12511 \immediate\write\@mainaux{%
12512 \string\providecommand\string\HyField@AuxAddToFields[1]{}%
12513 }%
12514 \fi
12515 \let\HyField@AfterAuxOpen\@firstofone
12516 \def\HyField@AuxAddToFields#1{%
12517 \xdef\HyField@afields{%
12518 \ifx\HyField@afields\@empty
12519 \else
12520 \HyField@afields
12521 \space
12522 \fi
12523 #1 0 R%
12524 }%
12525 }%
12526 }%
12527 \def\HyField@AddToFields{%
12528 \expandafter\HyField@@AddToFields\expandafter{%
12529 \the\pdfastlink
12530 }%
12531 }%
12532 \def\HyField@@AddToFields#1{%

```

```

12533 \HyField@AfterAuxOpen{%
12534 \if@filesw
12535 \write\@mainaux{%
12536 \string\HyField@AuxAddToFields{#1}%
12537 }%
12538 \fi
12539 }%
12540 }%
12541 \fi
12542 \def\@Form[#1]{%
12543 \@ifundefined{textcolor}{\let\textcolor\@gobble}{}%
12544 \kvsetkeys{Form}{#1}%
12545 \pdf@ifdraftmode{}{%
12546 \Hy@FormObjects
12547 \ifnum\pdfTeXversion>13 %
12548 \pdfrefobj\OBJ@pdfdocencoding
12549 \pdfrefobj\OBJ@ZaDb
12550 \pdfrefobj\OBJ@Helv
12551 \fi
12552 \AtVeryEndDocument{%
12553 \immediate\pdfobj{%
12554 <<%
12555 /Fields[\HyField@afields]%
12556 /DR<<%
12557 /Font<<%
12558 /ZaDb \OBJ@ZaDb\space 0 R%
12559 /Helv \OBJ@Helv\space 0 R%
12560 >>%
12561 >>%
12562 /DA(/Helv 10 Tf 0 g)%
12563 \ifHy@pdfa
12564 \else
12565 \ifHyField@NeedAppearances
12566 /NeedAppearances true%
12567 \fi
12568 \fi
12569 >>%
12570 }%
12571 \edef\OBJ@acroform{\the\pdfastobj}%
12572 \pdfcatalog{/AcroForm \OBJ@acroform\space 0 R}%
12573 }%
12574 }%
12575 \MakeFieldObject{%

```

Same as \ding{123} of package pifont.

```

12576 \begingroup
12577 \fontfamily{pzd}%
12578 \fontencoding{U}%
12579 \fontseries{m}%
12580 \fontshape{n}%
12581 \selectfont
12582 \char123 %
12583 \endgroup
12584 }{Ding}%
12585 \MakeFieldObject{%
12586 \fbox{\textcolor{yellow}{\textsf{Submit}}}%
12587 }{Submit}%
12588 \MakeFieldObject{%

```

```

12589 \fbox{\textcolor{yellow}{\textsf{SubmitP}}}%
12590 }{SubmitP}%
12591 }
12592 \def\@endForm{}
12593 \def\@TextField[#1]#2{% parameters, label
12594 \def\Fld@name{#2}%
12595 \def\Fld@default{}%
12596 \let\Fld@value\@empty
12597 \def\Fld@width{\DefaultWidthofText}%
12598 \def\Fld@height{%
12599 \ifFld@multiline
12600 \DefaultHeightofTextMultiline
12601 \else
12602 \DefaultHeightofText
12603 \fi
12604 }%
12605 \begingroup
12606 \expandafter\HyField@SetKeys\expandafter{%
12607 \DefaultOptionsofText,#1%
12608 }%
12609 \PDFForm@Name
12610 \HyField@FlagsText
12611 \ifFld@hidden\def\Fld@width{1sp}\fi
12612 \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
12613 \LayoutTextField{#2}{%
12614 \Hy@escapeform\PDFForm@Text
12615 \pdfstartlink user {\PDFForm@Text}\relax
12616 \MakeTextField{\Fld@width}{\Fld@height}\pdfendlink
12617 \HyField@AddToFields
12618 }%
12619 \endgroup
12620 }
12621 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
12622 \def\Fld@name{#2}%
12623 \let\Fld@default\relax
12624 \let\Fld@value\relax
12625 \def\Fld@width{\DefaultWidthofChoiceMenu}%
12626 \def\Fld@height{\DefaultHeightofChoiceMenu}%
12627 \begingroup
12628 \Fld@menulength=0 %
12629 \@tempdima\z@
12630 \@for\@curropt:=#3\do{%
12631 \expandafter\Fld@checkequals\@curropt==\%
12632 \Hy@StepCount\Fld@menulength
12633 \settowidth{\@tempdimb}{\@currDisplay}%
12634 \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
12635 }%
12636 \advance\@tempdima by 15\p@
12637 \begingroup
12638 \HyField@SetKeys{#1}%
12639 \edef\x{\endgroup
12640 \noexpand\expandafter
12641 \noexpand\HyField@SetKeys
12642 \noexpand\expandafter{%
12643 \expandafter\noexpand\csname DefaultOptionsof%
12644 \ifFld@radio
12645 Radio%

```

```

12646     \else
12647     \ifFld@combo
12648     \ifFld@popdown
12649     PopdownBox%
12650     \else
12651     ComboBox%
12652     \fi
12653     \else
12654     ListBox%
12655     \fi
12656     \fi
12657     \endcsname
12658   }%
12659 } \x
12660 \HyField@SetKeys{#1}%
12661 \PDFForm@Name
12662 \ifFld@hidden\def\Fld@width{1sp}\fi
12663 \ifx\Fld@value\relax
12664   \let\Fld@value\Fld@default
12665 \fi
12666 \LayoutChoiceField{#2}{%
12667   \ifFld@radio
12668     \HyField@FlagsRadioButton
12669     \@@Radio{#3}%
12670   \else
12671     \begingroup
12672     \HyField@FlagsChoice
12673     \ifdim\Fld@width<\@tempdima
12674       \ifdim\@tempdima<1cm\@tempdima1cm\fi
12675       \edef\Fld@width{\the\@tempdima}%
12676     \fi
12677     \ifFld@combo
12678     \else
12679       \@tempdima=\the\Fld@menulength\Fld@charsize
12680       \advance\@tempdima by \Fld@borderwidth bp %
12681       \advance\@tempdima by \Fld@borderwidth bp %
12682       \edef\Fld@height{\the\@tempdima}%
12683     \fi
12684     \@@Listbox{#3}%
12685   \endgroup
12686 \fi
12687 }%
12688 \endgroup
12689 }
12690 \def\@@Radio#1{%
12691   \Fld@listcount=0 %
12692   \EdefEscapeName\Fld@default{\Fld@default}%
12693   \@for\@curropt=#1\do{%
12694     \expandafter\Fld@checkequals\@curropt==\%
12695     \EdefEscapeName\@currValue{\@currValue}%
12696     \Hy@StepCount\Fld@listcount
12697     \@currDisplay\space
12698     \leavevmode
12699     \Hy@escapeform\PDFForm@Radio
12700     \pdfstartlink user {%
12701       \PDFForm@Radio
12702       /AP<<%

```



```

12703      /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.
12704      /\@currValue\space \DingObject
12705      >>%
12706      >>%
12707      }%
12708      \relax
12709      \MakeRadioField{\Fld@width}{\Fld@height}\pdfendlink
12710      \ifnum\Fld@listcount=1 %
12711      \HyField@AddToFields
12712      \fi
12713      \space % deliberate space between radio buttons
12714      }%
12715      }
12716      \newcount\Fld@listcount
12717      \def\@@ListBox#1{%
12718      \HyField@PDFChoices{#1}%
12719      \leavevmode
12720      \Hy@escapeform\PDFForm@List
12721      \pdfstartlink user {\PDFForm@List}\relax
12722      \MakeChoiceField{\Fld@width}{\Fld@height}%
12723      \pdfendlink
12724      \HyField@AddToFields
12725      }
12726      \def\@PushButton[#1]#2{% parameters, label
12727      \def\Fld@name{#2}%
12728      \begingroup
12729      \expandafter\HyField@SetKeys\expandafter{%
12730      \DefaultOptionsofPushButton,#1%
12731      }%
12732      \PDFForm@Name
12733      \ifHy@pdfa
12734      \Hy@Error{%
12735      PDF/A: Push button with JavaScript is prohibited%
12736      }\@ehc
12737      \LayoutPushButtonField{%
12738      \leavevmode
12739      \MakeButtonField{#2}%
12740      }%
12741      \else
12742      \HyField@FlagsPushButton
12743      \ifFld@hidden\def\Fld@width{1sp}\fi
12744      \LayoutPushButtonField{%
12745      \leavevmode
12746      \Hy@escapeform\PDFForm@Push
12747      \pdfstartlink user {\PDFForm@Push}\relax
12748      \MakeButtonField{#2}%
12749      \pdfendlink
12750      \HyField@AddToFields
12751      }%
12752      \fi
12753      \endgroup
12754      }
12755      \def\@Submit[#1]#2{%
12756      \def\Fld@width{\DefaultWidthofSubmit}%

```

```

12757 \def\Fld@height{\DefaultHeightofSubmit}%
12758 \begingroup
12759 \expandafter\HyField@SetKeys\expandafter{%
12760   \DefaultOptionsofSubmit,#1%
12761 }%
12762 \HyField@FlagsPushButton
12763 \HyField@FlagsSubmit
12764 \ifFld@hidden\def\Fld@width{1sp}\fi
12765 \leavevmode
12766 \Hy@escapeform\PDFForm@Submit
12767 \pdfstartlink user {%
12768   \PDFForm@Submit
12769   /AP<</N \SubmitObject/D \SubmitPObject>>%
12770 }%
12771 \relax
12772 \MakeButtonField{#2}%
12773 \pdfendlink
12774 \HyField@AddToFields
12775 \endgroup
12776 }
12777 \def\@Reset[#1]#2{%
12778   \def\Fld@width{\DefaultWidthofReset}%
12779   \def\Fld@height{\DefaultHeightofReset}%
12780   \begingroup
12781     \expandafter\HyField@SetKeys\expandafter{%
12782       \DefaultOptionsofReset,#1%
12783     }%
12784     \leavevmode
12785     \ifHy@pdfa
12786       \Hy@Error{%
12787         PDF/A: Reset action is prohibited%
12788       }\@ehc
12789       \MakeButtonField{#2}%
12790     \else
12791       \HyField@FlagsPushButton
12792       \ifFld@hidden\def\Fld@width{1sp}\fi
12793       \Hy@escapeform\PDFForm@Reset
12794       \pdfstartlink user {\PDFForm@Reset}\relax
12795       \MakeButtonField{#2}%
12796       \pdfendlink
12797       \HyField@AddToFields
12798     \fi
12799   \endgroup
12800 }
12801 \def\@CheckBox[#1]#2{% parameters, label
12802   \def\Fld@name{#2}%
12803   \def\Fld@default{0}%
12804   \begingroup
12805     \def\Fld@width{\DefaultWidthofCheckBox}%
12806     \def\Fld@height{\DefaultHeightofCheckBox}%
12807     \expandafter\HyField@SetKeys\expandafter{%
12808       \DefaultOptionsofCheckBox,#1%
12809     }%
12810     \PDFForm@Name
12811     \HyField@FlagsCheckBox
12812     \ifFld@hidden\def\Fld@width{1sp}\fi
12813     \LayoutCheckField{#2}{%

```

```

12814 \Hy@escapeform\PDFForm@Check
12815 \pdfstartlink user {\PDFForm@Check}\relax
12816 \MakeCheckField{\Fld@width}{\Fld@height}%
12817 \pdfendlink
12818 \HyField@AddToFields
12819 }%
12820 \endgroup
12821 }
12822 \def\Hy@FormObjects{%
12823 \pdfobj {%
12824 <<%
12825 /Type/Encoding%
12826 /Differences%
12827 24/breve/caron/circumflex/dotaccent/hungarumlaut/ogonek%
12828 /ring/tilde %
12829 39/quotesingle %
12830 96/grave %
12831 128/bullet/dagger/daggerdbl/ellipsis/emdash/endash/florin%
12832 /fraction/guilsinglleft/guilsinglright/minus/perthousand%
12833 /quotedblbase/quotedblleft/quotedblright/quoteleft%
12834 /quoteright/quotesinglbase/trademark/fi/fl/Lslash/OE%
12835 /Scaron/Ydieresis/Zcaron/dotlessi/lslash/oe/scaron/zcaron %
12836 164/currency %
12837 166/brokenbar %
12838 168/dieresis/copyright/ordfeminine %
12839 172/logicalnot/.notdef/registered/macron/degree/plusminus%
12840 /twosuperior/threesuperior/acute/mu %
12841 183/periodcentered/cedilla/onesuperior/ordmasculine %
12842 188/onequarter/onehalf/threequarters %
12843 192/Agrave/Aacute/Acircumflex/Atilde/Adieresis/Aring/AE%
12844 /Ccedilla/Egrave/Eacute/Ecircumflex/Edieresis/Igrave%
12845 /Iacute/Icircumflex/Idieresis/Eth/Ntilde/Ograve/Oacute%
12846 /Ocircumflex/Otilde/Odieresis/multiply/Oslash/Ugrave%
12847 /Uacute/Ucircumflex/Udieresis/Yacute/Thorn/germandbls%
12848 /agrave/aacute/acircumflex/atilde/adieresis/aring/ae%
12849 /ccedilla/egrave/eacute/ecircumflex/edieresis/igrave%
12850 /iacute/icircumflex/idieresis/eth/ntilde/ograde/oacute%
12851 /ocircumflex/otilde/odieresis/divide/oslash/ugrave%
12852 /uacute/ucircumflex/udieresis/yacute/thorn/ydieresis%
12853 ]%
12854 >>%
12855 }%
12856 \xdef\OBJ@pdfdocencoding{\the\pdflastobj}%
12857 \pdfobj{%
12858 <<%
12859 /Type/Font%
12860 /Subtype/Type1%
12861 /Name/ZaDb%
12862 /BaseFont/ZapfDingbats%
12863 >>%
12864 }%
12865 \xdef\OBJ@ZaDb{\the\pdflastobj}%
12866 \pdfobj{%
12867 <<%
12868 /Type/Font%
12869 /Subtype/Type1%
12870 /Name/Helv%

```

```

12871 /BaseFont/Helvetica%
12872 /Encoding \OBJ@pdfdocencoding\space 0 R%
12873 >>%
12874 }%
12875 \xdef\OBJ@Helv{\the\pdfastobj}%
12876 \global\let\Hy@FormObjects\relax
12877 }
12878 \pdfTeX

```

## 47.5 dvipdfm, xetex

D. P. Story adapted the pdf<sub>TEX</sub> forms part for dvipdfm, of which version 0.12.7b or higher is required because of a bug.

```
12879 \dvipdfm | xetex
```

\@Gauge

```

12880 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
12881 \Hy@Message{Sorry, dvipdfm/XeTeX does not support FORM gauges}%
12882 }

```

\@Form

```

12883 \def\@Form[#1]{%
12884 \ifundefined{textcolor}{\let\textcolor\@gobble}{}%
12885 \kvsetkeys{Form}{#1}%
12886 \Hy@FormObjects
12887 \@pdfm@mark{obj @afields []}%
12888 \@pdfm@mark{obj @corder []}%
12889 \@pdfm@mark{%
12890 obj @aform <<%
12891 /Fields @afields%
12892 /DR<<%
12893 /Font<<%
12894 /ZaDb @OBJZaDb%
12895 /Helv @OBJHelv%
12896 >>%
12897 >>%
12898 /DA(/Helv 10 Tf 0 g)%
12899 /CO @corder%
12900 \ifHy@pdfa
12901 \else
12902 \ifHyField@NeedAppearances
12903 /NeedAppearances true%
12904 \fi
12905 \fi
12906 >>%
12907 }%
12908 \@pdfm@mark{put @catalog <</AcroForm @aform>>}%
12909 }

```

\@endForm

```
12910 \def\@endForm{}
```

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

```

12911 \def\dvipdfm@setdim{%
12912 height \the\ht\pdfm@box\space
12913 width \the\wd\pdfm@box\space
12914 depth \the\dp\pdfm@box\space
12915 }

```

\HyField@AnnotCount

```
12916 \newcount\HyField@AnnotCount
12917 \HyField@AnnotCount=\z@
```

\HyField@AdvanceAnnotCount

```
12918 \def\HyField@AdvanceAnnotCount{%
12919   \global\advance\HyField@AnnotCount\@ne
12920 }
```

\HyField@TheAnnotCount

```
12921 \def\HyField@TheAnnotCount{%
12922   \the\HyField@AnnotCount
12923 }
```

\@TextField

```
12924 \def\@TextField[#1]#2{% parameters, label
12925   \def\Fld@name{#2}%
12926   \def\Fld@default{}%
12927   \let\Fld@value\@empty
12928   \def\Fld@width{\DefaultWidthofText}%
12929   \def\Fld@height{%
12930     \ifFld@multiline
12931       \DefaultHeightofTextMultiline
12932     \else
12933       \DefaultHeightofText
12934     \fi
12935   }%
12936   \begingroup
12937     \expandafter\HyField@SetKeys\expandafter{%
12938       \DefaultOptionsofText,#1%
12939     }%
12940     \PDFForm@Name
12941     \HyField@FlagsText
12942     \ifFld@hidden\def\Fld@width{1sp}\fi
12943     \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
12944     \setbox\pdfm@box=\hbox{%
12945       \MakeTextField{\Fld@width}{\Fld@height}%
12946     }%
12947     \HyField@AdvanceAnnotCount
12948     \LayoutTextField{#2}{%
12949       \Hy@escapeform\PDFForm@Text
12950       \@pdfm@mark{%
12951         ann @text\HyField@TheAnnotCount\space
12952         \dvipdfm@setdim << \PDFForm@Text >>%
12953       }%
12954     }%
12955     \unhbox\pdfm@box
12956     \@pdfm@mark{put @afields @text\HyField@TheAnnotCount}%
12957     % record in @afields array
12958   \endgroup
12959 }
```

\@ChoiceMenu

```
12960 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
12961   \def\Fld@name{#2}%
12962   \let\Fld@default\relax
```

```

12963 \let\Fld@value\relax
12964 \def\Fld@width{\DefaultWidthofChoiceMenu}%
12965 \def\Fld@height{\DefaultHeightofChoiceMenu}%
12966 \begingroup
12967 \Fld@menulength=0 %
12968 \@tempdima\z@
12969 \@for\@curropt:=#3\do{%
12970 \expandafter\Fld@checkequals\@curropt==\%
12971 \Hy@StepCount\Fld@menulength
12972 \settowidth{\@tempdimb}{\@currDisplay}%
12973 \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
12974 }%
12975 \advance\@tempdima by 15\p@
12976 \begingroup
12977 \HyField@SetKeys{#1}%
12978 \edef\x{\endgroup
12979 \noexpand\expandafter
12980 \noexpand\HyField@SetKeys
12981 \noexpand\expandafter{%
12982 \expandafter\noexpand\csname DefaultOptionsof%
12983 \ifFld@radio
12984 Radio%
12985 \else
12986 \ifFld@combo
12987 \ifFld@popdown
12988 PopdownBox%
12989 \else
12990 ComboBox%
12991 \fi
12992 \else
12993 ListBox%
12994 \fi
12995 \fi
12996 \endcsname
12997 }%
12998 }\x
12999 \HyField@SetKeys{#1}%
13000 \PDFForm@Name
13001 \ifFld@hidden\def\Fld@width{1sp}\fi
13002 \ifx\Fld@value\relax
13003 \let\Fld@value\Fld@default
13004 \fi
13005 \LayoutChoiceField{#2}{%
13006 \ifFld@radio
13007 \HyField@FlagsRadioButton
13008 \@@Radio{#3}%
13009 \else
13010 \begingroup
13011 \HyField@FlagsChoice
13012 \ifdim\Fld@width<\@tempdima
13013 \ifdim\@tempdima<1cm\@tempdima1cm\fi
13014 \edef\Fld@width{\the\@tempdima}%
13015 \fi
13016 \ifFld@combo
13017 \else
13018 \@tempdima=\the\Fld@menulength\Fld@charsize
13019 \advance\@tempdima by \Fld@borderwidth bp %

```

```

13020      \advance\@tempdima by \Fld@borderwidth bp %
13021      \edef\Fld@height{\the\@tempdima}%
13022      \fi
13023      \@@Listbox{#3}%
13024      \endgroup
13025      \fi
13026      }%
13027      \endgroup
13028 }

```

#### \@@Radio

```

13029 \def\@@Radio#1{%
13030   \Fld@listcount=0 %
13031   \EdefEscapeName\Fld@default{\Fld@default}%
13032   \setbox\pdfm@box=\hbox{%
13033     \MakeRadioField{\Fld@width}{\Fld@height}%
13034   }%
13035   \@for\@curropt:=#1\do{%
13036     \expandafter\Fld@checkequals\@curropt==\%
13037     \EdefEscapeName\@currValue{\@currValue}%
13038     \Hy@StepCount\Fld@listcount
13039     \@currDisplay\space
13040     \leavevmode
13041     \Hy@escapeform\PDFForm@Radio
13042     \ifnum\Fld@listcount=1 %
13043       \HyField@AdvanceAnnotCount
13044     \fi
13045     \@pdfm@mark{%
13046       ann %
13047       \ifnum\Fld@listcount=1 %
13048         @radio\HyField@TheAnnotCount%
13049         \space
13050       \fi
13051       \dvi pdfm@setdim
13052       <<%
13053       \PDFForm@Radio
13054       /AP<</N<</\@currValue /null>>>>%
13055       >>%
13056     }%
13057     \unhcopy\pdfm@box\space% deliberate space between radio buttons
13058     \ifnum\Fld@listcount=1 %
13059       \@pdfm@mark{%
13060         put @afields @radio\HyField@TheAnnotCount
13061       }%
13062     \fi
13063   }%
13064 }

```

#### \Fld@listcount

```

13065 \newcount\Fld@listcount

```

#### \@@Listbox

```

13066 \def\@@Listbox#1{%
13067   \HyField@PDFChoices{#1}%
13068   \setbox\pdfm@box=\hbox{%
13069     \MakeChoiceField{\Fld@width}{\Fld@height}%
13070   }%

```

```

13071 \leavevmode
13072 \Hy@escapeform\PDFForm@List
13073 \HyField@AdvanceAnnotCount
13074 \@pdfm@mark{%
13075   ann @list\HyField@TheAnnotCount\space
13076   \dvipdfm@setdim
13077   <<\PDFForm@List>>%
13078 }%
13079 \unhbox\pdfm@box
13080 \@pdfm@mark{put @afields @list\HyField@TheAnnotCount}%
13081 }

```

#### \@PushButton

```

13082 \def\@PushButton[#1]#2{% parameters, label
13083   \def\Fld@name{#2}%
13084   \begingroup
13085     \expandafter\HyField@SetKeys\expandafter{%
13086       \DefaultOptionsofPushButton,#1%
13087     }%
13088     \PDFForm@Name
13089     \ifHy@pdfa
13090       \Hy@Error{%
13091         PDF/A: Push button with JavaScript is prohibited%
13092       }\@ehc
13093       \LayoutPushButtonField{%
13094         \leavevmode
13095         \MakeButtonField{#2}%
13096       }%
13097     \else
13098       \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
13099       \HyField@FlagsPushButton
13100       \ifFld@hidden\def\Fld@width{1sp}\fi
13101       \HyField@AdvanceAnnotCount
13102       \LayoutPushButtonField{%
13103         \leavevmode
13104         \Hy@escapeform\PDFForm@Push
13105         \@pdfm@mark{%
13106           ann @push\HyField@TheAnnotCount\space
13107           \dvipdfm@setdim
13108           <<\PDFForm@Push>>%
13109         }%
13110       }%
13111       \unhbox\pdfm@box
13112       \@pdfm@mark{put @afields @push\HyField@TheAnnotCount}%
13113     \fi
13114   \endgroup
13115 }

```

#### \@Submit

```

13116 \def\@Submit[#1]#2{%
13117   \def\Fld@width{\DefaultWidthofSubmit}%
13118   \def\Fld@height{\DefaultHeightofSubmit}%
13119   \begingroup
13120     \expandafter\HyField@SetKeys\expandafter{%
13121       \DefaultOptionsofSubmit,#1%
13122     }%
13123     \HyField@FlagsPushButton

```



```

13124 \HyField@FlagsSubmit
13125 \ifFld@hidden\def\Fld@width{1sp}\fi
13126 \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}}%
13127 \leavevmode
13128 \Hy@escapeform\PDFForm@Submit
13129 \HyField@AdvanceAnnotCount
13130 \@pdfm@mark{%
13131   ann @submit\HyField@TheAnnotCount\space
13132   \dvipdfm@setdim
13133   <<\PDFForm@Submit>>%
13134 }%
13135 \unhbox\pdfm@box%
13136 \@pdfm@mark{put @afields @submit\HyField@TheAnnotCount}%
13137 \endgroup
13138 }

```

#### \@Reset

```

13139 \def\@Reset[#1]#2{%
13140   \def\Fld@width{\DefaultWidthofReset}%
13141   \def\Fld@height{\DefaultHeightofReset}%
13142   \begingroup
13143     \expandafter\HyField@SetKeys\expandafter{%
13144       \DefaultOptionsofReset,#1%
13145     }%
13146     \leavevmode
13147     \ifHy@pdfa
13148       \Hy@Error{%
13149         PDF/A: Reset action is prohibited%
13150       }\@ehc
13151       \MakeButtonField{#2}%
13152     \else
13153       \HyField@FlagsPushButton
13154       \ifFld@hidden\def\Fld@width{1sp}\fi
13155       \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}}%
13156       \Hy@escapeform\PDFForm@Reset
13157       \HyField@AdvanceAnnotCount
13158       \@pdfm@mark{%
13159         ann @reset\HyField@TheAnnotCount\space
13160         \dvipdfm@setdim
13161         <<\PDFForm@Reset>>%
13162       }%
13163       \unhbox\pdfm@box
13164       \@pdfm@mark{put @afields @reset\HyField@TheAnnotCount}%
13165     \fi
13166   \endgroup
13167 }

```

#### \@CheckBox

```

13168 \def\@CheckBox[#1]#2{% parameters, label
13169   \def\Fld@name{#2}%
13170   \def\Fld@default{0}%
13171   \begingroup
13172     \def\Fld@width{\DefaultWidthofCheckBox}%
13173     \def\Fld@height{\DefaultHeightofCheckBox}%
13174     \expandafter\HyField@SetKeys\expandafter{%
13175       \DefaultOptionsofCheckBox,#1%
13176     }%

```

```

13177 \PDFForm@Name
13178 \HyField@FlagsCheckBox
13179 \ifFld@hidden\def\Fld@width{1sp}\fi
13180 \setbox\pdfm@box=\hbox{%
13181   \MakeCheckField{\Fld@width}{\Fld@height}%
13182 }%
13183 \HyField@AdvanceAnnotCount
13184 \LayoutCheckField{#2}{%
13185   \Hy@escapeform\PDFForm@Check
13186   \@pdfm@mark{%
13187     ann @check\HyField@TheAnnotCount\space
13188     \dvipdfm@setdim
13189     <<\PDFForm@Check>>%
13190   }%
13191   \unhbox\pdfm@box
13192   \@pdfm@mark{put @afields @check\HyField@TheAnnotCount}%
13193 }%
13194 \endgroup
13195 }

13196 \def\Hy@FormObjects{%
13197   \@pdfm@mark{obj @OBJpdfdocencoding%
13198     <<%
13199       /Type/Encoding%
13200       /Differences[%
13201         24/breve/caron/circumflex/dotaccent/hungarumlaut/ogonek/ring/tilde %
13202         39/quotesingle %
13203         96/grave %
13204         128/bullet/dagger/daggerdbl/ellipsis/emdash/endash/florin%
13205         /fraction/guilsinglleft/guilsinglright/minus/perthousand%
13206         /quotedblbase/quotedblleft/quotedblright/quoteleft/quoteright%
13207         /quotesinglbase/trademark/fi/fl/Lslash/OE/Scaron/Ydieresis%
13208         /Zcaron/dotlessi/lslash/oe/scaron/zcaron %
13209         164/currency %
13210         166/brokenbar %
13211         168/dieresis/copyright/ordfeminine %
13212         172/logicalnot/.notdef/registered/macron/degree/plusminus%
13213         /twosuperior/threesuperior/acute/mu %
13214         183/periodcentered/cedilla/onesuperior/ordmasculine %
13215         188/onequarter/onehalf/threequarters %
13216         192/Agrave/Aacute/Acircumflex/Atilde/Adieresis/Aring/AE%
13217         /Ccedilla/Egrave/Eacute/Ecircumflex/Edieresis/Igrave/Iacute%
13218         /Icircumflex/Idieresis/Eth/Ntilde/Ograve/Oacute/Ocircumflex%
13219         /Otilde/Odieresis/multiply/Oslash/Ugrave/Uacute/Ucircumflex%
13220         /Udieresis/Yacute/Thorn/germandbls/agrave/aacute/acircumflex%
13221         /atilde/adieresis/aring/ae/ccedilla/egrave/eacute%
13222         /ecircumflex/edieresis/igrave/iacute/icircumflex/idieresis%
13223         /eth/ntilde/ograde/oacute/ocircumflex/otilde/odieresis%
13224         /divide/oslash/ugrave/uacute/ucircumflex/udieresis/yacute%
13225         /thorn/ydieresis%
13226       ]%
13227     >>%
13228   }%
13229   \@pdfm@mark{obj @OBJZaDb%
13230     <<%
13231       /Type/Font%
13232       /Subtype/Type1%
13233       /Name/ZaDb%

```

```

13234 /BaseFont/ZapfDingbats%
13235 >>%
13236 }%
13237 \@pdfm@mark{obj @OBJHelv%
13238 <<%
13239 /Type/Font%
13240 /Subtype/Type1%
13241 /Name/Helv%
13242 /BaseFont/Helvetica%
13243 /Encoding @OBJpdfdocencoding%
13244 >>%
13245 }%
13246 \global\let\Hy@FormObjects\relax
13247 }
13248 </dvipdfm | xetex>

```

## 47.6 Common forms part

```

13249 <*pdfform>

```

\Hy@escapestring

```

13250 \begingroup\expandafter\expandafter\expandafter\endgroup
13251 \expandafter\ifx\csname pdfescapestring\endcsname\relax
13252 \let\Hy@escapestring\@firstofone
13253 \def\Hy@escapeform#1{%
13254 \ifHy@escapeform
13255 \def\Hy@escapestring##1{%
13256 \noexpand\Hy@escapestring{\noexpand##1}%
13257 }%
13258 \edef\Hy@temp{#1}%
13259 \expandafter\Hy@@@escapeform\Hy@temp\Hy@escapestring{}\@nil
13260 \def\Hy@escapestring##1{%
13261 \@ifundefined{Hy@esc@\string##1}{%
13262 ##1%
13263 \ThisShouldNotHappen
13264 }{%
13265 \csname Hy@esc@\string##1\endcsname
13266 }%
13267 }%
13268 \else
13269 \let\Hy@escapestring\@firstofone
13270 \fi
13271 }%
13272 \def\Hy@@@escapeform#1\Hy@escapestring#2#3\@nil{%
13273 \ifx\#3\%
13274 \else
13275 \expandafter
13276 \Hy@pstringdef\csname Hy@esc@\string#2\endcsname{#2}%
13277 \Hy@ReturnAfterFi{%
13278 \Hy@@@escapeform#3\@nil
13279 }%
13280 \fi
13281 }%
13282 \else
13283 \def\Hy@escapeform#1{%
13284 \ifHy@escapeform
13285 \let\Hy@escapestring\pdfescapestring

```

```

13286 \else
13287 \let\Hy@escapestring\@firstofone
13288 \fi
13289 }%
13290 \Hy@escapeform{}%
13291 \fi

```

#### \PDFForm@Name

```

13292 \def\PDFForm@Name{%
13293 \PDFForm@@Name\Fld@name
13294 \ifx\Fld@altname\relax
13295 \else
13296 \PDFForm@@Name\Fld@altname
13297 \fi
13298 \ifx\Fld@mappingname\relax
13299 \else
13300 \PDFForm@@Name\Fld@mappingname
13301 \fi
13302 }

```

#### \PDFForm@@Name

```

13303 \def\PDFForm@@Name#1{%
13304 \begingroup
13305 \ifnum\Hy@pdfversion<5 % implementation note 117, PDF spec 1.7
13306 \ifHy@unicode
13307 \Hy@unicodedefalse
13308 \fi
13309 \fi
13310 \HyPsd@XeTeXBigCharstrue
13311 \pdfstringdef\Hy@gtemp#1%
13312 \endgroup
13313 \let#1\Hy@gtemp
13314 }

```

#### \Fld@additionalactions

```

13315 \def\Fld@@additionalactions{%
K input (keystroke) format
13316 \ifx\Fld@keystroke@code\@empty
13317 \else
13318 /K<</S/JavaScript/JS(\Hy@escapestring{\Fld@keystroke@code})>>%
13319 \fi
F display format
13320 \ifx\Fld@format@code\@empty
13321 \else
13322 /F<</S/JavaScript/JS(\Hy@escapestring{\Fld@format@code})>>%
13323 \fi
V validation
13324 \ifx\Fld@validate@code\@empty
13325 \else
13326 /V<</S/JavaScript/JS(\Hy@escapestring{\Fld@validate@code})>>%
13327 \fi
C calculation
13328 \ifx\Fld@calculate@code\@empty
13329 \else

```

```

13330 /C<</S/JavaScript/JS(\Hy@escapestring{\Fld@calculate@code})>>%
13331 \fi

Fo receiving the input focus
13332 \ifx\Fld@onfocus@code\@empty
13333 \else
13334 /Fo<</S/JavaScript/JS(\Hy@escapestring{\Fld@onfocus@code})>>%
13335 \fi

Bl loosing the input focus (blurred)
13336 \ifx\Fld@onblur@code\@empty
13337 \else
13338 /Bl<</S/JavaScript/JS(\Hy@escapestring{\Fld@onblur@code})>>%
13339 \fi

D pressing the mouse button (down)
13340 \ifx\Fld@onmousedown@code\@empty
13341 \else
13342 /D<</S/JavaScript/JS(\Hy@escapestring{\Fld@onmousedown@code})>>%
13343 \fi

U releasing the mouse button (up)
13344 \ifx\Fld@onmouseup@code\@empty
13345 \else
13346 /U<</S/JavaScript/JS(\Hy@escapestring{\Fld@onmouseup@code})>>%
13347 \fi

E cursor enters the annotation's active area.
13348 \ifx\Fld@onenter@code\@empty
13349 \else
13350 /E<</S/JavaScript/JS(\Hy@escapestring{\Fld@onenter@code})>>%
13351 \fi

X cursor exits the annotation's active area.
13352 \ifx\Fld@onexit@code\@empty
13353 \else
13354 /X<</S/JavaScript/JS(\Hy@escapestring{\Fld@onexit@code})>>%
13355 \fi
13356 }
13357 \def\Fld@additionalactions{%
13358 \if\Fld@@additionalactions-%
13359 \else
13360 \ifHy@pdfa
13361 \else
13362 /AA<<\Fld@@additionalactions>>%
13363 \fi
13364 \fi
13365 }

\Fld@annotnames
13366 \def\Fld@annotnames{%
13367 /T(\Fld@name)%
13368 \ifx\Fld@altname\relax
13369 \else
13370 /TU(\Fld@altname)%
13371 \fi
13372 \ifx\Fld@mappingname\relax
13373 \else
13374 /TM(\Fld@mappingname)%
13375 \fi

```

13376 }

\PDFForm@Check

```
13377 \def\PDFForm@Check{%
13378   /Subtype/Widget%
13379   \Fld@annotflags
13380   \Fld@annotnames
13381   /FT/Btn%
13382   \Fld@flags
13383   /Q \Fld@align
13384   /BS<</W \Fld@borderwidth /S/\Fld@borderstyle>>%
13385   /MK<<%
13386     \ifnum\Fld@rotation=\z@
13387     \else
13388       /R \Fld@rotation
13389     \fi
13390     \ifx\Fld@bordercolor\relax
13391     \else
13392       /BC[\Fld@bordercolor]%
13393     \fi
13394     \ifx\Fld@bcolor\relax
13395     \else
13396       /BG[\Fld@bcolor]%
13397     \fi
13398     /CA(\Hy@escapestring{\Fld@cbsymbol})%
13399   >>%
13400   /DA(/ZaDb \strip@pt\Fld@charsize\space Tf%
13401     \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
13402   /H/P%
13403   \ifFld@checked /V/Yes\else /V/Off\fi
13404   \Fld@additionalactions
13405 }
```

\PDFForm@Push

```
13406 \ifHy@pdfa
13407 \else
13408   \def\PDFForm@Push{%
13409     /Subtype/Widget%
13410     \Fld@annotflags
13411     \Fld@annotnames
13412     /FT/Btn%
13413     \Fld@flags
13414     /H/P%
13415     /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
13416     \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
13417       \ifx\Fld@bordercolor\relax\else 1\fi
13418       \space
13419     \else
13420       /MK<<%
13421       \ifnum\Fld@rotation=\z@
13422       \else
13423         /R \Fld@rotation
13424       \fi
13425       \ifx\Fld@bordercolor\relax
13426       \else
13427         /BC[\Fld@bordercolor]%
13428       \fi
```

```

13429     >>%
13430     \fi
13431     /A<</S/JavaScript/JS(\Hy@escapestring{\Fld@onclick@code})>>%
13432     \Fld@additionalactions
13433   }%
13434 \fi

```

#### \PDFForm@List

```

13435 \def\PDFForm@List{%
13436   /Subtype/Widget%
13437   \Fld@annotflags
13438   \Fld@annotnames
13439   /FT/Ch%
13440   \Fld@flags
13441   /Q \Fld@align
13442   /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
13443   \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
13444     \ifx\Fld@bordercolor\relax\else 1\fi
13445     \ifx\Fld@bcolor\relax \else 1\fi
13446     \space
13447   \else
13448     /MK<<%
13449     \ifnum\Fld@rotation=\z@
13450     \else
13451       /R \Fld@rotation
13452     \fi
13453     \ifx\Fld@bordercolor\relax
13454     \else
13455       /BC[\Fld@bordercolor]%
13456     \fi
13457     \ifx\Fld@bcolor\relax
13458     \else
13459       /BG[\Fld@bcolor]%
13460     \fi
13461     >>%
13462   \fi
13463   /DA(/Helv \strip@pt\Fld@charsize\space Tf%
13464     \ifx\Fld@color@empty\else\space\Fld@color\fi)%
13465   \Fld@choices
13466   \Fld@additionalactions
13467 }

```

#### \PDFForm@Radio

```

13468 \def\PDFForm@Radio{%
13469   /Subtype/Widget%
13470   \Fld@annotflags
13471   \Fld@annotnames
13472   /FT/Btn%
13473   \Fld@flags
13474   /H/P%
13475   /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
13476   /MK<<%
13477   \ifnum\Fld@rotation=\z@
13478   \else
13479     /R \Fld@rotation
13480   \fi
13481   \ifx\Fld@bordercolor\relax

```

```

13482 \else
13483 /BC[\Fld@bordercolor]%
13484 \fi
13485 \ifx\Fld@bcolor\relax
13486 \else
13487 /BG[\Fld@bcolor]%
13488 \fi
13489 /CA[\Fld@radiosymbol]%
13490 >>%
13491 /DA(/ZaDb \strip@pt\Fld@charsize\space Tf%
13492 \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
13493 \ifx\@currValue\Fld@default
13494 /V/\Fld@default
13495 /DV/\Fld@default
13496 \else
13497 /V/Off%
13498 /DV/Off%
13499 \fi
13500 \Fld@additionalactions
13501 }

```

\PDFForm@Text

```

13502 \def\PDFForm@Text{%
13503 /Subtype/Widget%
13504 \Fld@annotflags
13505 \Fld@annotnames
13506 /FT/Tx%
13507 \Fld@flags
13508 /Q \Fld@align
13509 /BS<</W \Fld@borderwidth\space /S /\Fld@borderstyle>>%
13510 \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
13511 \ifx\Fld@bordercolor\relax\else 1\fi
13512 \ifx\Fld@bcolor\relax \else 1\fi
13513 \space
13514 \else
13515 /MK<<%
13516 \ifnum\Fld@rotation=\z@
13517 \else
13518 /R \Fld@rotation
13519 \fi
13520 \ifx\Fld@bordercolor\relax
13521 \else
13522 /BC[\Fld@bordercolor]%
13523 \fi
13524 \ifx\Fld@bcolor\relax
13525 \else
13526 /BG[\Fld@bcolor]%
13527 \fi
13528 >>%
13529 \fi
13530 /DA(/Helv \strip@pt\Fld@charsize\space Tf%
13531 \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
13532 /DV(\Hy@escapestring{\Fld@default})%
13533 /V(\Hy@escapestring{\Fld@value})%
13534 \Fld@additionalactions
13535 \ifnum\Fld@maxlen>\z@/MaxLen \Fld@maxlen \fi
13536 }

```



\PDFForm@Submit

```
13537 \def\PDFForm@Submit{%
13538   /Subtype/Widget%
13539   \Fld@annotflags
13540   \Fld@annotnames
13541   /FT/Btn%
13542   \Fld@flags
13543   /H/P%
13544   /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
13545   \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
13546     \ifx\Fld@bordercolor\relax\else 1\fi
13547     \space
13548   \else
13549     /MK<<%
13550     \ifnum\Fld@rotation=\z@
13551     \else
13552       /R \Fld@rotation
13553     \fi
13554     \ifx\Fld@bordercolor\relax
13555     \else
13556       /BC[\Fld@bordercolor]%
13557     \fi
13558   >>%
13559 \fi
13560 /A<<%
13561 /S/SubmitForm%
13562 /F<<%
13563   /FS/URL%
13564   /F(\Hy@escapestring{\Form@action})%
13565 >>%
13566   \Fld@submitflags
13567 >>%
13568   \Fld@additionalactions
13569 }
```

\PDFForm@Reset

```
13570 \ifHy@pdfa
13571 \else
13572   \def\PDFForm@Reset{%
13573     /Subtype/Widget%
13574     \Fld@annotflags
13575     \Fld@annotnames
13576     /FT/Btn%
13577     \Fld@flags
13578     /H/P%
13579     /DA(/Helv \strip@pt\Fld@charsize\space Tf 0 0 1 rg)%
13580     \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
13581       \ifx\Fld@bordercolor\relax\else 1\fi
13582       \space
13583     \else
13584       /MK<<%
13585       \ifnum\Fld@rotation=\z@
13586       \else
13587         /R \Fld@rotation
13588       \fi
13589       \ifx\Fld@bordercolor\relax
13590       \else
```

```

13591      /BC[\Fld@bordercolor]%
13592      \fi
13593 %      /CA (Clear)
13594 %      /AC (Done)
13595      >>%
13596      \fi
13597      /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
13598      /A<</S/ResetForm>>%
13599      \Fld@additionalactions
13600      }%
13601 \fi

13602 </pdfform>
13603 <*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 L<sup>A</sup>T<sub>E</sub>X 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`

```

13604 \def\phantomsection{%
13605   \Hy@MakeCurrentHrefAuto{section*}%
13606   \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
13607 }
13608 </package>

```

### 48.1 Bookmarks

```

13609 <*outlines>

```

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

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

When using the right-to-left typesetting based on  $\varepsilon$ -T<sub>E</sub>X, the order of the `\BOOKMARK` commands written to the `\@outlinefile` could appear wrong, because of mis-feature of  $\varepsilon$ -T<sub>E</sub>X'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.

```

13610 \def\Hy@writebookmark#1#2#3#4#5{%
13611   % section number, text, label, level, file
13612   \ifx\WriteBookmarks\relax%
13613     \else
13614     \ifnum#4>\Hy@bookmarksdepth\relax
13615     \else
13616     \@@writetorep{#1}{#2}{#3}{#4}{#5}%

```

```

13617 \fi
13618 \fi
13619 }
13620 \def\Hy@currentbookmarklevel{0}
13621 \def\Hy@numberline#1{#1 }
13622 \def\@@writetorep#1#2#3#4#5{%
13623 \begingroup
13624 \edef\Hy@tempa{#5}%
13625 \ifx\Hy@tempa\Hy@bookmarkstype
13626 \edef\Hy@level{#4}%
13627 \ifx\Hy@levelcheck Y%
13628 \@tempcnta\Hy@level\relax
13629 \advance\@tempcnta by -1 %
13630 \ifnum\Hy@currentbookmarklevel<\@tempcnta
13631 \advance\@tempcnta by -\Hy@currentbookmarklevel\relax
13632 \advance\@tempcnta by 1 %
13633 \Hy@Warning{%
13634 Difference (\the\@tempcnta) between bookmark levels is %
13635 greater \MessageBreak than one, level fixed%
13636 }%
13637 \@tempcnta\Hy@currentbookmarklevel
13638 \advance\@tempcnta by 1 %
13639 \edef\Hy@level{\the\@tempcnta}%
13640 \fi
13641 \else
13642 \global\let\Hy@levelcheck Y%
13643 \fi
13644 \global\let\Hy@currentbookmarklevel\Hy@level
13645 \@tempcnta\Hy@level\relax
13646 \expandafter\xdef\csname Parent\Hy@level\endcsname{#3}%
13647 \advance\@tempcnta by -1 %
13648 \edef\Hy@tempa{#3}%
13649 \edef\Hy@tempb{\csname Parent\the\@tempcnta\endcsname}%
13650 \ifx\Hy@tempa\Hy@tempb
13651 \Hy@Warning{%
13652 The anchor of a bookmark and its parent's must not%
13653 \MessageBreak be the same. Added a new anchor%
13654 }%
13655 \phantomsection
13656 \fi
13657 \ifHy@bookmarksnumbered
13658 \let\numberline\Hy@numberline
13659 \let\booknumberline\Hy@numberline
13660 \let\partnumberline\Hy@numberline
13661 \let\chapternumberline\Hy@numberline
13662 \else
13663 \let\numberline\@gobble
13664 \let\booknumberline\@gobble
13665 \let\partnumberline\@gobble
13666 \let\chapternumberline\@gobble
13667 \fi
13668 \HyPsd@XeTeXBigCharstrue
13669 \pdfstringdef\Hy@tempa{#2}%
13670 \HyPsd@SanitizeForOutFile\Hy@tempa
13671 \if@filesw
13672 \stepcounter{bookmark@seq@number}%
13673 \ifundefined{outlinefile}{%

```

```

13674     }{%
13675         \protected@write\@outlinefile{}{%
13676             \protect\BOOKMARK
13677             [\Hy@level][\@bookmarkopenstatus{\Hy@level}]{#3}%
13678             {\Hy@tempa}{\Hy@tempb}%
13679             \@percentchar\space\thebookmark@seq@number
13680         }%
13681     }%
13682     \fi
13683     \fi
13684 \endgroup
13685 }
13686 \newcounter{bookmark@seq@number}

13687 \begingroup
13688 \lccode'('= '{%
13689 \lccode'('= '}%
13690 \lccode'1=\z@
13691 \lccode'2=\z@
13692 \lccode'3=\z@
13693 \lccode'5=\z@
13694 \lccode'7=\z@
13695 \lccode'\#=\z@
13696 \lccode'\'=\z@
13697 \lccode'\{=\z@
13698 \lccode'\}=\z@
13699 \lowercase{%
13700 \endgroup
13701 \def\HyPsd@SanitizeForOutFile#1{%
13702     \@onelevel@sanitize\Hy@tempa
13703     \escapechar'\%
13704     \edef\Hy@tempa{%
13705         \expandafter\HyPsd@SanitizeOut@BraceLeft\Hy@tempa(\@nil
13706     }%
13707     \edef\Hy@tempa{%
13708         \expandafter\HyPsd@SanitizeOut@BraceRight\Hy@tempa)\@nil
13709     }%
13710 }%
13711 \def\HyPsd@SanitizeOut@BraceLeft#1(#2\@nil{%
13712     #1%
13713     \ifx\#2\%
13714         \expandafter\ltx@gobble
13715     \else
13716         \expandafter\ltx@firstofone
13717     \fi
13718     {%
13719         \string\173%
13720         \HyPsd@SanitizeOut@BraceLeft#2\@nil
13721     }%
13722 }%
13723 \def\HyPsd@SanitizeOut@BraceRight#1)#2\@nil{%
13724     #1%
13725     \ifx\#2\%
13726         \expandafter\ltx@gobble
13727     \else
13728         \expandafter\ltx@firstofone
13729     \fi
13730     {%

```

```

13731 \string\175%
13732 \HyPsd@SanitizeOut@BraceRight#2\@nil
13733 }%
13734 }%
13735 }

```

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

```

13736 \newcommand{\currentpdfbookmark}{%
13737 \pdfbookmark{\Hy@currentbookmarklevel}%
13738 }
13739 \newcommand{\subpdfbookmark}{%
13740 \@tempcnta\Hy@currentbookmarklevel
13741 \Hy@StepCount\@tempcnta
13742 \expandafter\pdfbookmark\expandafter[\the\@tempcnta]%
13743 }
13744 \newcommand{\belowpdfbookmark}[2]{%
13745 \@tempcnta\Hy@currentbookmarklevel
13746 \Hy@StepCount\@tempcnta
13747 \expandafter\pdfbookmark\expandafter[\the\@tempcnta]{#1}{#2}%
13748 \advance\@tempcnta by -1 %
13749 \xdef\Hy@currentbookmarklevel{\the\@tempcnta}%
13750 }

```

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.

```

13751 \renewcommand{\pdfbookmark}[3][0]{%
13752 \Hy@writebookmark}{#2}{#3.#1}{#1}{toc}%
13753 \hyper@anchorstart{#3.#1}\hyper@anchorend
13754 }
13755 \def\BOOKMARK{%
13756 \@ifnextchar[{\@BOOKMARK}{\@@BOOKMARK[1][-]}%
13757 }
13758 \def\@BOOKMARK[#1]{%
13759 \@ifnextchar[{\@@BOOKMARK[{#1}]}{\@@BOOKMARK[{#1}][-]}%
13760 }

```

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

#### 48.1.1 Rerun warning

`\Hy@OutlineRerunCheck`

```

13761 \RequirePackage{rerunfilecheck}[2009/12/10]
13762 \def\Hy@OutlineRerunCheck{%
13763 \RerunFileCheck{\jobname.out}{%
13764 \immediate\closeout\@outlinefile
13765 }{%
13766 Rerun to get outlines right\MessageBreak
13767 or use package ‘bookmark’%
13768 }%
13769 }

```

#### 48.1.2 Driver stuff

The `VTEX` section was written originally by `VTEX`, but then amended by Denis Girou (`denis.girou@idris.fr`), then by by Taco Hoekwater (`taco.hoekwater@wkap.nl`). The

problem is that VTEX, with its close integration of the PDF backend, does look at the contents of bookmarks, escaping \ and the like.

```
13770 \*vtex\
```

```
13771 \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.

```
13772 \begingroup
13773 \catcode'\'=12 %
13774 \ifnum\Hy@VTeXversion<650 %
13775 \catcode'\ "=12 %
13776 \gdef\hv@pdf@char#1#2#3{%
13777 \char
13778 \ifcase'#1#2#3 %
13779 "00\or"01\or"02\or"03\or"04\or"05\or"06\or"07%
13780 \or"08\or"09\or"0A\or"0B\or"0C\or"0D\or"0E\or"0F%
13781 \or"10\or"11\or"12\or"13\or"14\or"15\or"16\or"17%
13782 \or"18\or"19\or"1A\or"1B\or"1C\or"1D\or"1E\or"1F%
13783 \or"20\or"21\or"22\or"23\or"24\or"25\or"26\or"27%
13784 \or"28\or"29\or"2A\or"2B\or"2C\or"2D\or"2E\or"2F%
13785 \or"30\or"31\or"32\or"33\or"34\or"35\or"36\or"37%
13786 \or"38\or"39\or"3A\or"3B\or"3C\or"3D\or"3E\or"3F%
13787 \or"40\or"41\or"42\or"43\or"44\or"45\or"46\or"47%
13788 \or"48\or"49\or"4A\or"4B\or"4C\or"4D\or"4E\or"4F%
13789 \or"50\or"51\or"52\or"53\or"54\or"55\or"56\or"57%
13790 \or"58\or"59\or"5A\or"5B\or"5C\or"5D\or"5E\or"5F%
13791 \or"60\or"61\or"62\or"63\or"64\or"65\or"66\or"67%
13792 \or"68\or"69\or"6A\or"6B\or"6C\or"6D\or"6E\or"6F%
13793 \or"70\or"71\or"72\or"73\or"74\or"75\or"76\or"77%
13794 \or"78\or"79\or"7A\or"7B\or"7C\or"7D\or"7E\or"7F%
13795 \or"80\or"81\or"82\or"83\or"84\or"85\or"86\or"87%
13796 \or"88\or"89\or"8A\or"8B\or"8C\or"8D\or"8E\or"8F%
13797 \or"90\or"91\or"92\or"93\or"94\or"95\or"96\or"97%
13798 \or"98\or"99\or"9A\or"9B\or"9C\or"9D\or"9E\or"9F%
13799 \or"A0\or"A1\or"A2\or"A3\or"A4\or"A5\or"A6\or"A7%
13800 \or"A8\or"A9\or"AA\or"AB\or"AC\or"AD\or"AE\or"AF%
13801 \or"B0\or"B1\or"B2\or"B3\or"B4\or"B5\or"B6\or"B7%
13802 \or"B8\or"B9\or"BA\or"BB\or"BC\or"BD\or"BE\or"BF%
13803 \or"C0\or"C1\or"C2\or"C3\or"C4\or"C5\or"C6\or"C7%
13804 \or"C8\or"C9\or"CA\or"CB\or"CC\or"CD\or"CE\or"CF%
13805 \or"D0\or"D1\or"D2\or"D3\or"D4\or"D5\or"D6\or"D7%
13806 \or"D8\or"D9\or"DA\or"DB\or"DC\or"DD\or"DE\or"DF%
13807 \or"E0\or"E1\or"E2\or"E3\or"E4\or"E5\or"E6\or"E7%
13808 \or"E8\or"E9\or"EA\or"EB\or"EC\or"ED\or"EE\or"EF%
13809 \or"F0\or"F1\or"F2\or"F3\or"F4\or"F5\or"F6\or"F7%
13810 \or"F8\or"F9\or"FA\or"FB\or"FC\or"FD\or"FE\or"FF%
13811 \fi
13812 }%
13813 \else
13814 \gdef\hv@pdf@char{\char'}%
13815 \fi
13816 \endgroup
```

\@@BOOKMARK

```
13817 \def\@@BOOKMARK[#1][#2]#3#4#5{%
```

```

13818 \expandafter\edef\csname @count@#3\endcsname{%
13819   \the\@serial@counter
13820 }%
13821 \edef\@mycount{\the\@serial@counter}%
13822 \Hy@StepCount\@serial@counter
13823 \edef\@parcount{%
13824   \expandafter\ifx\csname @count@#5\endcsname\relax
13825     0%
13826   \else
13827     \csname @count@#5\endcsname
13828   \fi
13829 }%
13830 \immediate\special{%
13831   !outline \HyperDestNameFilter{#3};p=\@parcount,i=\@mycount,%
13832   s=\ifx#2-c\else o\fi,t=#4%
13833 }%
13834 }%

```

\ReadBookmarks

```

13835 \def\ReadBookmarks{%
13836   \begingroup
13837   \def\0{\hv@pdf@char 0}%
13838   \def\1{\hv@pdf@char 1}%
13839   \def\2{\hv@pdf@char 2}%
13840   \def\3{\hv@pdf@char 3}%
13841   \def\{({}%
13842   \def\)}{)%
13843   \def\do##1{%
13844     \ifnum\catcode'##1=\active
13845       \@makeother##1%
13846     \else
13847       \ifnum\catcode'##1=6 %
13848         \@makeother##1%
13849       \fi
13850     \fi
13851   }%
13852   \dospecials
13853   \Hy@safe@activetrue
13854   \InputIfFileExists{\jobname.out}{\}{}%
13855 \endgroup
13856 \ifx\WriteBookmarks\relax
13857 \else
13858   \if@files
13859     \newwrite\@outlinefile
13860     \Hy@OutlineRerunCheck
13861     \immediate\openout\@outlinefile=\jobname.out\relax
13862     \ifHy@typexml
13863       \immediate\write\@outlinefile{<relaxxml>\relax}%
13864     \fi
13865   \fi
13866 \fi
13867 }

13868 </vtex>
13869 <!*vtex>
13870 \def\ReadBookmarks{%
13871   \pdf@ifdraftmode{\}{%

```

```

13872 \begingroup
13873 \def\do##1{%
13874 \ifnum\catcode'##1=\active
13875 \@makeother##1%
13876 \else
13877 \ifnum\catcode'##1=6 %
13878 \@makeother##1%
13879 \fi
13880 \fi
13881 }%
13882 \dospecials
13883 \Hy@safe@activetrue
13884 \escapechar='\'%
13885 \def\@@BOOKMARK[##1][##2]###3###4###5{%
13886 \calc@bm@number{##5}%
13887 }%
13888 \InputIfFileExists{\jobname.out}{\relax}{\relax}%
13889 \ifx\WriteBookmarks\relax
13890 \global\let\WriteBookmarks\relax
13891 \fi
13892 \def\@@BOOKMARK[##1][##2]###3###4###5{%
13893 \def\Hy@temp{##4}%
13894 \pdfmark{
13895 \Hy@pstringdef\Hy@pstringName{\HyperDestNameFilter{##3}}%
13896 \Hy@OutlineName{\Hy@pstringName{
13897 ##2\check@bm@number{##3}}%
13898 }-%
13899 \expandafter\strip@prefix\meaning\Hy@temp
13900 }%
13901 \pdfmark}
13902 \pdfmark{
13903 \pdfmark=/OUT,%
13904 Count={##2\check@bm@number{##3}},%
13905 Dest={##3},%
13906 Title=\expandafter\strip@prefix\meaning\Hy@temp
13907 }%
13908 \pdfmark}
13909 \pdfmark}
13910 \dviopdfm | xetex)
13911 \Hy@pstringdef\Hy@pstringName{\HyperDestNameFilter{##3}}%
13912 \pdfm@mark{%
13913 outline \ifHy@DvipdfmxOutlineOpen
13914 [%
13915 \ifnum##21>\z@
13916 \else
13917 -%
13918 \fi
13919 ] %
13920 \fi
13921 ##1<<%
13922 /Title(\expandafter\strip@prefix\meaning\Hy@temp)%
13923 /A<<%
13924 /S/GoTo%
13925 /D(\Hy@pstringName)%
13926 >>%
13927 >>%
13928 }%

```



```

13929 </dvipdfm | xetex>
13930 }%
13931 \begingroup
13932 \def\WriteBookmarks{0}%
13933 \InputIfFileExists{\jobname.out}{-}{-}%
13934 \endgroup
13935 %{\escapechar\m@ne\InputIfFileExists{\jobname.out}{-}{-}}%
13936 \endgroup
13937 }%
13938 \ifx\WriteBookmarks\relax
13939 \else
13940 \if@filesw
13941 \newwrite\@outlinefile
13942 \Hy@OutlineRerunCheck
13943 \immediate\openout\@outlinefile=\jobname.out\relax
13944 \ifHy@typexml
13945 \immediate\write\@outlinefile{<relaxxml>\relax}%
13946 \fi
13947 \fi
13948 \fi
13949 }
13950 <*pdfTeX>
13951 \def\Hy@OutlineName#1#2#3#4{%
13952 \pdfoutline goto name{#2}count#3{#4}%
13953 }
13954 </pdfTeX>
13955 \def\check@bm@number#1{%
13956 \expandafter\ifx\csname B_#1\endcsname\relax
13957 0%
13958 \else
13959 \csname B_#1\endcsname
13960 \fi
13961 }
13962 \def\calc@bm@number#1{%
13963 \@tempcnta=\check@bm@number{#1}\relax
13964 \advance\@tempcnta by 1 %
13965 \expandafter\xdef\csname B_#1\endcsname{the\@tempcnta}%
13966 }
13967 </!vTeX>

13968 \ifHy@implicit
13969 \else
13970 \expandafter\endinput
13971 \fi

13972 </outlines>
13973 <*outlines | hypertex>

13974 \newlength\Hy@SectionHShift
13975 \def\Hy@SectionAnchorHref#1{%
13976 \ifx\protect\@typeset@protect
13977 \Hy@@@SectionAnchor{#1}%
13978 \fi
13979 }
13980 \DeclareRobustCommand*\Hy@@@SectionAnchor}[1]{%
13981 \leavevmode
13982 \hbox to 0pt{%
13983 \kern-\Hy@SectionHShift
13984 \Hy@raisedlink{%

```

```

13985 \hyper@anchorstart{#1}\hyper@anchorend
13986 }%
13987 \hss
13988 }%
13989 }
13990 \let\H@old@ssect\@ssect
13991 \def\@ssect#1#2#3#4#5{%
13992 \Hy@MakeCurrentHrefAuto{section*}%
13993 \setlength{\Hy@SectionHShift}{#1}%
13994 \begingroup
13995 \toks@{\H@old@ssect{#1}{#2}{#3}{#4}}%
13996 \toks\tw@\expandafter{%
13997 \expandafter\Hy@SectionAnchorHref\expandafter{\@currentHref}%
13998 #5%
13999 }%
14000 \edef\x{\endgroup
14001 \the\toks@\the\toks\tw@}%
14002 }\x
14003 }
14004 \let\H@old@schapter\@schapter
14005 \def\@schapter#1{%
14006 \begingroup
14007 \let\@mkboth\@gobbletwo
14008 \Hy@MakeCurrentHrefAuto{\Hy@chapapp*}%
14009 \Hy@raisedlink{%
14010 \hyper@anchorstart{\@currentHref}\hyper@anchorend
14011 }%
14012 \endgroup
14013 \H@old@schapter{#1}%
14014 }

```

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:

```

14015 \ltx@ifundefined{@chapter}{%}{%
14016 \let\Hy@org@chapter\@chapter
14017 \def\@chapter{%
14018 \def\Hy@next{%
14019 \Hy@MakeCurrentHrefAuto{\Hy@chapapp*}%
14020 \Hy@raisedlink{%
14021 \hyper@anchorstart{\@currentHref}\hyper@anchorend
14022 }%
14023 }%
14024 \ifnum\c@secnumdepth>\m@ne
14025 \ltx@ifundefined{if@mainmatter}%
14026 \iftrue{\csname if@mainmatter\endcsname}%
14027 \let\Hy@next\relax
14028 \fi
14029 \fi
14030 \Hy@next
14031 \Hy@org@chapter
14032 }%
14033 }
14034 \let\H@old@part\@part
14035 \begingroup\expandafter\expandafter\expandafter\endgroup
14036 \expandafter\ifx\csname chapter\endcsname\relax
14037 \let\Hy@secnum@part\z@

```

```

14038 \else
14039   \let\Hy@secnum@part\m@ne
14040 \fi
14041 \def\@part{%
14042   \ifnum\Hy@secnum@part>\c@secnumdepth
14043     \phantomsection
14044   \fi
14045   \H@old@part
14046 }

14047 \let\H@old@spart\@spart
14048 \def\@spart#1{%
14049   \Hy@MakeCurrentHrefAuto{part*}%
14050   \Hy@raisedlink{%
14051     \hyper@anchorstart{\@currentHref}\hyper@anchorend
14052   }%
14053   \H@old@spart{#1}%
14054 }

14055 \let\H@old@sect\@sect
14056 \def\@sect#1#2#3#4#5#6[#7]#8{%
14057   \ifnum #2>\c@secnumdepth
14058     \expandafter\@firstoftwo
14059   \else
14060     \expandafter\@secondoftwo
14061   \fi
14062   {%
14063     \Hy@MakeCurrentHrefAuto{section*}%
14064     \setlength{\Hy@SectionHShift}{#3}%
14065     \begingroup
14066       \toks@{\H@old@sect{#1}{#2}{#3}{#4}{#5}{#6}{#7}}%
14067       \toks\tw@\expandafter{%
14068         \expandafter\Hy@SectionAnchorHref\expandafter{\@currentHref}%
14069         #8%
14070       }%
14071       \edef\x{\endgroup
14072         \the\toks@{\the\toks\tw@}}%
14073       }\x
14074     }{%
14075       \H@old@sect{#1}{#2}{#3}{#4}{#5}{#6}{#7}{#8}%
14076     }%
14077 }

14078 </outlines | hypertex>
14079 <*outlines>

14080 \expandafter\def\csname Parent-4\endcsname{}
14081 \expandafter\def\csname Parent-3\endcsname{}
14082 \expandafter\def\csname Parent-2\endcsname{}
14083 \expandafter\def\csname Parent-1\endcsname{}
14084 \expandafter\def\csname Parent0\endcsname{}
14085 \expandafter\def\csname Parent1\endcsname{}
14086 \expandafter\def\csname Parent2\endcsname{}
14087 \expandafter\def\csname Parent3\endcsname{}
14088 \expandafter\def\csname Parent4\endcsname{}

14089 </outlines>

```

## 49 Compatibility with koma-script classes

14090 <\*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.

```

14091 \def\Hy@tempa{%
14092   \def\@addchap{##1}##2{%
14093     \typeout{##2}%
14094     \if@twoside
14095       \@mkboth{##1}{}%
14096     \else
14097       \@mkboth{}{##1}%
14098     \fi
14099     \addtocontents{lof}{\protect\addvspace{10\p@}}%
14100     \addtocontents{lot}{\protect\addvspace{10\p@}}%
14101     \Hy@MakeCurrentHrefAuto{\Hy@chapapp*}%
14102     \Hy@raisedlink{%
14103       \hyper@anchorstart{\@currentHref}\hyper@anchorend
14104     }%
14105     \if@twocolumn
14106       \@topnewpage[\@makeschapterhead{##2}]%
14107     \else
14108       \@makeschapterhead{##2}%
14109       \@afterheading
14110     \fi
14111     \addcontentsline{toc}{chapter}{##1}%
14112   }%
14113 }
14114 \ifclassloaded{scrbook}{%
14115   \ifclasslater{scrbook}{2001/01/01}{%
14116     \let\Hy@tempa\@empty
14117   }{}%
14118 }{%
14119   \ifclassloaded{scrreprt}{%
14120     \ifclasslater{scrreprt}{2001/01/01}{%
14121       \let\Hy@tempa\@empty
14122     }{}%
14123   }{%
14124     \let\Hy@tempa\@empty
14125   }%
14126 }%
14127 \Hy@tempa
14128 </outlines | hypertex)

```

## 50 Encoding definition files for encodings of PDF strings

This was contributed by Heiko Oberdiek.

### 50.1 PD1 encoding

```

14129 <*pd1enc)
14130 \DeclareFontEncoding{PD1}{}{}

```

Accents

```

14131 \DeclareTextAccent{\'}{PD1}{\textasciigrave}
14132 \DeclareTextAccent{\'}{PD1}{\textacute}
14133 \DeclareTextAccent{\~}{PD1}{\textasciicircum}

```

```

14134 \DeclareTextAccent{\~}{PD1}{\texttilde}
14135 \DeclareTextAccent{\"}{PD1}{\textasciidieresis}
14136 \DeclareTextAccent{\r}{PD1}{\textring}
14137 \DeclareTextAccent{\v}{PD1}{\textasciicaron}
14138 \DeclareTextAccent{\.}{PD1}{\textdotaccent}
14139 \DeclareTextAccent{\c}{PD1}{\textcedilla}
14140 \DeclareTextAccent{\=}{PD1}{\textasciimacron}
14141 \DeclareTextAccent{\b}{PD1}{\textmacronbelow}
14142 \DeclareTextAccent{\d}{PD1}{\textdotbelow}
14143 \DeclareTextCompositeCommand{\'}{PD1}{\@empty}{\textasciigrave}
14144 \DeclareTextCompositeCommand{\'}{PD1}{\@empty}{\textacute}
14145 \DeclareTextCompositeCommand{\~}{PD1}{\@empty}{\textasciicircum}
14146 \DeclareTextCompositeCommand{\~}{PD1}{\@empty}{\texttilde}
14147 \DeclareTextCompositeCommand{\"}{PD1}{\@empty}{\textasciidieresis}
14148 \DeclareTextCompositeCommand{\r}{PD1}{\@empty}{\textring}
14149 \DeclareTextCompositeCommand{\v}{PD1}{\@empty}{\textasciicaron}
14150 \DeclareTextCompositeCommand{\.}{PD1}{\@empty}{\textdotaccent}
14151 \DeclareTextCompositeCommand{\c}{PD1}{\@empty}{\textcedilla}
14152 \DeclareTextCompositeCommand{\=}{PD1}{\@empty}{\textasciimacron}
14153 \DeclareTextCompositeCommand{\b}{PD1}{\@empty}{\textmacronbelow}
14154 \DeclareTextCompositeCommand{\d}{PD1}{\@empty}{\textdotbelow}
14155 \DeclareTextCompositeCommand{\'}{PD1}{\ }{\textasciigrave}
14156 \DeclareTextCompositeCommand{\'}{PD1}{\ }{\textacute}
14157 \DeclareTextCompositeCommand{\~}{PD1}{\ }{\textasciicircum}
14158 \DeclareTextCompositeCommand{\~}{PD1}{\ }{\texttilde}
14159 \DeclareTextCompositeCommand{\"}{PD1}{\ }{\textasciidieresis}
14160 \DeclareTextCompositeCommand{\r}{PD1}{\ }{\textring}
14161 \DeclareTextCompositeCommand{\v}{PD1}{\ }{\textasciicaron}
14162 \DeclareTextCompositeCommand{\.}{PD1}{\ }{\textdotaccent}
14163 \DeclareTextCompositeCommand{\c}{PD1}{\ }{\textcedilla}
14164 \DeclareTextCompositeCommand{\=}{PD1}{\ }{\textasciimacron}
14165 \DeclareTextCompositeCommand{\b}{PD1}{\ }{\textmacronbelow}
14166 \DeclareTextCompositeCommand{\d}{PD1}{\ }{\textdotbelow}
14167 \DeclareTextCommand{\k}{PD1}[1]{\TextSymbolUnavailable{\k{#1}}}{#1}
14168 \DeclareTextCommand{\t}{PD1}[1]{\TextSymbolUnavailable{\t{#1}}}{#1}
14169 \DeclareTextCommand{\newtie}{PD1}[1]{%
14170 \TextSymbolUnavailable{\newtie{#1}}}{#1}%
14171 }

```

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

```

14172 % U+0009 (CHARACTER TABULATION)
14173 \DeclareTextCommand{\textHT}{PD1}{\011}% U+0009
14174 % U+000A (LINE FEED)
14175 \DeclareTextCommand{\textLF}{PD1}{\012}% U+000A
14176 % U+000D (CARRIAGE RETURN)
14177 \DeclareTextCommand{\textCR}{PD1}{\015}% U+000D

```

Accent glyph names

```

14178 % U+02D8 BREVE; breve
14179 \DeclareTextCommand{\textasciibreve}{PD1}{\030}% U+02D8
14180 % U+02C7 CARON; caron
14181 \DeclareTextCommand{\textasciicaron}{PD1}{\031}% U+02C7
14182 % U+02C6 MODIFIER LETTER CIRCUMFLEX ACCENT; circumflex
14183 \DeclareTextCommand{\textcircumflex}{PD1}{\032}% U+02C6
14184 % U+02D9 DOT ABOVE; dotaccent
14185 \DeclareTextCommand{\textdotaccent}{PD1}{\033}% U+02D9
14186 % U+02DD DOUBLE ACUTE ACCENT; hungarumlaut
14187 \DeclareTextCommand{\texthungarumlaut}{PD1}{\034}% U+02DD
14188 % U+02DB OGONEK; ogonek

```

14189 \DeclareTextCommand{\textogonek}{PD1}{\035}% U+02DB  
 14190 % U+02DA RING ABOVE; ring  
 14191 \DeclareTextCommand{\textring}{PD1}{\036}% U+02DA  
 14192 % U+02DC SMALL TILDE; ilde, \*tilde  
 14193 \DeclareTextCommand{\texttilde}{PD1}{\037}% U+02DC  
 \040: U+0020 SPACE; \*space, spacehackarabic  
 \041: U+0021 EXCLAMATION MARK; exclam  
 14194 % U+0022 QUOTATION MARK; quotedbl  
 14195 \DeclareTextCommand{\textquotedbl}{PD1}{\string"}% \042 U+0022  
 14196 % U+0023 NUMBER SIGN; numbersign  
 14197 \DeclareTextCommand{\textnumbersign}{PD1}{\043}% U+0023  
 14198 % U+0024 DOLLAR SIGN; dollar  
 14199 \DeclareTextCommand{\textdollar}{PD1}{\044}% U+0024  
 14200 % U+0025 PERCENT SIGN; percent  
 14201 \DeclareTextCommand{\textpercent}{PD1}{\045}% U+0025  
 14202 % U+0026 AMPERSAND; ampersand  
 14203 \DeclareTextCommand{\textampersand}{PD1}{\046}% U+0026  
 \047: U+0027 APOSTROPHE; quotesingle  
  
 14204 % U+0028 LEFT PARENTHESIS; parenleft  
 14205 \DeclareTextCommand{\textparenleft}{PD1}{\string\(% \050 U+0028  
 14206 % U+0029 RIGHT PARENTHESIS; parenright  
 14207 \DeclareTextCommand{\textparenright}{PD1}{\string\)% \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  
 14208 % U+002E FULL STOP; period  
 14209 \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  
 14210 % U+003C LESS-THAN SIGN; less  
 14211 \DeclareTextCommand{\textless}{PD1}{<}% \074 U+003C  
 \075: U+003D EQUALS SIGN; equal  
 14212 % U+003E GREATER-THAN SIGN; greater  
 14213 \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  
 14214 % U+005C REVERSE SOLIDUS; backslash  
 14215 \DeclareTextCommand{\textbackslash}{PD1}{\134}% U+005C  
 \135: U+005D RIGHT SQUARE BRACKET; bracketright  
 14216 % U+005E CIRCUMFLEX ACCENT; asciicircum  
 14217 \DeclareTextCommand{\textasciicircum}{PD1}{\136}% U+005E  
 14218 % U+005F LOW LINE; underscore  
 14219 \DeclareTextCommand{\textunderscore}{PD1}{\137}% U+005F

14220 \DeclareTextCommand{\textmacronbelow}{PD1}{\137}% U+005F  
 14221 % U+0060 GRAVE ACCENT; grave  
 14222 \DeclareTextCommand{\textasciigrave}{PD1}{\140}% U+0060  
 \141: U+0061 LATIN SMALL LETTER A; a  
 ...  
 \150: U+0068 LATIN SMALL LETTER H; h  
 14223 % U+0069 LATIN SMALL LETTER I; i  
 14224 \DeclareTextCompositeCommand{\.}{PD1}{i}{i}% \151 U+0069  
 \152: U+006A LATIN SMALL LETTER J; j  
 ...  
 \172: U+007A LATIN SMALL LETTER Z; z  
 14225 % U+007B LEFT CURLY BRACKET; braceleft  
 14226 \DeclareTextCommand{\textbraceleft}{PD1}{\173}% U+007B  
 14227 % U+007C VERTICAL LINE; \*bar, verticalbar  
 14228 \DeclareTextCommand{\textbar}{PD1}{|}% U+007C  
 14229 % U+007D RIGHT CURLY BRACKET; braceright  
 14230 \DeclareTextCommand{\textbraceright}{PD1}{\175}% U+007D  
 14231 % U+007E TILDE; asciitilde  
 14232 \DeclareTextCommand{\textasciitilde}{PD1}{\176}% U+007E  
 Slot \177 (0x7F) is undefined in PDFDocEncoding.  
 14233 % U+2022 BULLET; bullet  
 14234 \DeclareTextCommand{\textbullet}{PD1}{\200}% U+2022  
 14235 % U+2020 DAGGER; dagger  
 14236 \DeclareTextCommand{\textdagger}{PD1}{\201}% U+2020  
 14237 % U+2021 DOUBLE DAGGER; daggerdbl  
 14238 \DeclareTextCommand{\textdaggerdbl}{PD1}{\202}% U+2021  
 14239 % U+2026 HORIZONTAL ELLIPSIS; ellipsis  
 14240 \DeclareTextCommand{\textellipsis}{PD1}{\203}% U+2026  
 14241 % U+2014 EM DASH; emdash  
 14242 \DeclareTextCommand{\textemdash}{PD1}{\204}% U+2014  
 14243 % U+2013 EN DASH; endash  
 14244 \DeclareTextCommand{\textendash}{PD1}{\205}% U+2013  
 14245 % U+0192 LATIN SMALL LETTER F WITH HOOK; florin  
 14246 \DeclareTextCommand{\textflorin}{PD1}{\206}% U+0192  
 14247 % U+2044 FRACTION SLASH; fraction  
 14248 \DeclareTextCommand{\textfractionsolidus}{PD1}{\207}% U+2044  
 14249 % U+2039 SINGLE LEFT-POINTING ANGLE QUOTATION MARK; guil-  
 lingleft  
 14250 \DeclareTextCommand{\guilsingleft}{PD1}{\210}% U+2039  
 14251 % U+203A SINGLE RIGHT-POINTING ANGLE QUOTATION MARK; guil-  
 lingright  
 14252 \DeclareTextCommand{\guilsingright}{PD1}{\211}% U+203A  
 14253 % U+2212 MINUS SIGN; minus  
 14254 \DeclareTextCommand{\textminus}{PD1}{\212}% U+2212  
 14255 % U+2030 PER MILLE SIGN; perthousand  
 14256 \DeclareTextCommand{\textperthousand}{PD1}{\213}% U+2030  
 14257 % U+201E DOUBLE LOW-9 QUOTATION MARK; quotedblbase  
 14258 \DeclareTextCommand{\quotedblbase}{PD1}{\214}% U+201E  
 14259 % U+201C LEFT DOUBLE QUOTATION MARK; quotedblleft  
 14260 \DeclareTextCommand{\textquotedblleft}{PD1}{\215}% U+201C  
 14261 % U+201D RIGHT DOUBLE QUOTATION MARK; quotedblright  
 14262 \DeclareTextCommand{\textquotedblright}{PD1}{\216}% U+201D  
 14263 % U+2018 LEFT SINGLE QUOTATION MARK; quoteleft  
 14264 \DeclareTextCommand{\textquoteleft}{PD1}{\217}% U+2018  
 14265 % U+2019 RIGHT SINGLE QUOTATION MARK; quoteright  
 14266 \DeclareTextCommand{\textquoteright}{PD1}{\220}% U+2019

14267 % U+201A SINGLE LOW-9 QUOTATION MARK; quotesinglbase  
 14268 \DeclareTextCommand{\quotesinglbase}{PD1}{\221}% U+201A  
 14269 % U+2122 TRADE MARK SIGN; trademark  
 14270 \DeclareTextCommand{\texttrademark}{PD1}{\222}% U+2122  
 14271 % U+FB01 LATIN SMALL LIGATURE FI; fi  
 14272 \DeclareTextCommand{\textfi}{PD1}{\223}% U+FB01  
 14273 % U+FB02 LATIN SMALL LIGATURE FL; fl  
 14274 \DeclareTextCommand{\textfl}{PD1}{\224}% U+FB02  
 14275 % U+0141 LATIN CAPITAL LETTER L WITH STROKE; Lslash  
 14276 \DeclareTextCommand{\L}{PD1}{\225}% U+0141  
 14277 % U+0152 LATIN CAPITAL LIGATURE OE; OE  
 14278 \DeclareTextCommand{\OE}{PD1}{\226}% U+0152  
 14279 % U+0160 LATIN CAPITAL LETTER S WITH CARON; Scaron  
 14280 \DeclareTextCompositeCommand{\v}{PD1}{S}{\227}% U+0160  
 14281 % U+0178 LATIN CAPITAL LETTER Y WITH DIAERESIS; Ydieresis  
 14282 \DeclareTextCompositeCommand{"}{PD1}{Y}{\230}% U+0178  
 14283 \DeclareTextCommand{\IJ}{PD1}{\230}  
 14284 % U+017D LATIN CAPITAL LETTER Z WITH CARON; Zcaron  
 14285 \DeclareTextCompositeCommand{\v}{PD1}{Z}{\231}% U+017D  
 14286 % U+0131 LATIN SMALL LETTER DOTLESS I; dotlessi  
 14287 \DeclareTextCommand{\i}{PD1}{\232}% U+0131  
 14288 % U+0142 LATIN SMALL LETTER L WITH STROKE; lslash  
 14289 \DeclareTextCommand{\l}{PD1}{\233}% U+0142  
 14290 % U+0153 LATIN SMALL LIGATURE OE; oe  
 14291 \DeclareTextCommand{\oe}{PD1}{\234}% U+0153  
 14292 % U+0161 LATIN SMALL LETTER S WITH CARON; scaron  
 14293 \DeclareTextCompositeCommand{\v}{PD1}{s}{\235}% U+0161  
 14294 % U+017E LATIN SMALL LETTER Z WITH CARON; zcaron  
 14295 \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.

14296 % U+20AC EURO SIGN; \*Euro, euro  
 14297 \DeclareTextCommand{\texteuro}{PD1}{\240}% U+20AC  
 14298 % U+00A1 INVERTED EXCLAMATION MARK; exclamdown  
 14299 \DeclareTextCommand{\textexclamdown}{PD1}{\241}% U+00A1  
 14300 % U+00A2 CENT SIGN; cent  
 14301 \DeclareTextCommand{\textcent}{PD1}{\242}% U+00A2  
 14302 % U+00A3 POUND SIGN; sterling  
 14303 \DeclareTextCommand{\textsterling}{PD1}{\243}% U+00A3  
 14304 % U+00A4 CURRENCY SIGN; currency  
 14305 \DeclareTextCommand{\textcurrency}{PD1}{\244}% U+00A4  
 14306 % U+00A5 YEN SIGN; yen  
 14307 \DeclareTextCommand{\textyen}{PD1}{\245}% U+00A5  
 14308 % U+00A6 BROKEN BAR; brokenbar  
 14309 \DeclareTextCommand{\textbrokenbar}{PD1}{\246}% U+00A6  
 14310 % U+00A7 SECTION SIGN; section  
 14311 \DeclareTextCommand{\textsection}{PD1}{\247}% U+00A7  
 14312 % U+00A8 DIAERESIS; dieresis  
 14313 \DeclareTextCommand{\textasciidieresis}{PD1}{\250}% U+00A8  
 14314 % U+00A9 COPYRIGHT SIGN; copyright  
 14315 \DeclareTextCommand{\textcopyright}{PD1}{\251}% U+00A9  
 14316 % U+00AA FEMININE ORDINAL INDICATOR; ordfeminine  
 14317 \DeclareTextCommand{\textordfeminine}{PD1}{\252}% U+00AA  
 14318 % U+00AB LEFT-POINTING DOUBLE ANGLE QUOTATION MARK; guille-  
 motleft  
 14319 \DeclareTextCommand{\guillemotleft}{PD1}{\253}% U+00AB  
 14320 % U+00AC NOT SIGN; logicalnot



14321 \DeclareTextCommand{\textlogicalnot}{PD1}{\254}% U+00AC  
14322 \DeclareTextCommand{\textlnot}{PD1}{\254}% logical not  
No glyph \255 in PDFDocEncoding.  
14323 % U+00AE REGISTERED SIGN; registered  
14324 \DeclareTextCommand{\textregistered}{PD1}{\256}% U+00AE  
14325 % U+00AF MACRON; \*macron, overscore  
14326 \DeclareTextCommand{\textasciimacron}{PD1}{\257}% U+00AF  
14327 % U+00B0 DEGREE SIGN; degree  
14328 \DeclareTextCommand{\textdegree}{PD1}{\260}% U+00B0  
14329 % U+00B1 PLUS-MINUS SIGN; plusminus  
14330 \DeclareTextCommand{\textplusminus}{PD1}{\261}% U+00B1  
14331 % U+00B2 SUPERSCRIPT TWO; twosuperior  
14332 \DeclareTextCommand{\texttwosuperior}{PD1}{\262}% U+00B2  
14333 % U+00B3 SUPERSCRIPT THREE; threesuperior  
14334 \DeclareTextCommand{\textthreesuperior}{PD1}{\263}% U+00B3  
14335 % U+00B4 ACUTE ACCENT; acute  
14336 \DeclareTextCommand{\textacute}{PD1}{\264}% U+00B4  
14337 % U+00B5 MICRO SIGN; mu, mu1  
14338 \DeclareTextCommand{\textmu}{PD1}{\265}% U+00B5  
14339 % U+00B6 PILCROW SIGN; paragraph  
14340 \DeclareTextCommand{\textparagraph}{PD1}{\266}% U+00B6  
14341 % U+00B7 MIDDLE DOT; middot, \*periodcentered  
14342 \DeclareTextCommand{\textperiodcentered}{PD1}{\267}% U+00B7  
14343 % U+00B8 CEDILLA; cedilla  
14344 \DeclareTextCommand{\textcedilla}{PD1}{\270}% U+00B8  
14345 % U+00B9 SUPERSCRIPT ONE; onesuperior  
14346 \DeclareTextCommand{\textonesuperior}{PD1}{\271}% U+00B9  
14347 % U+00BA MASCULINE ORDINAL INDICATOR; ordmasculine  
14348 \DeclareTextCommand{\textordmasculine}{PD1}{\272}% U+00BA  
14349 % U+00BB RIGHT-POINTING DOUBLE ANGLE QUOTATION MARK; guille-  
motright  
14350 \DeclareTextCommand{\guillemotright}{PD1}{\273}% U+00BB  
14351 % U+00BC VULGAR FRACTION ONE QUARTER; onequarter  
14352 \DeclareTextCommand{\textonequarter}{PD1}{\274}% U+00BC  
14353 % U+00BD VULGAR FRACTION ONE HALF; onehalf  
14354 \DeclareTextCommand{\textonehalf}{PD1}{\275}% U+00BD  
14355 % U+00BE VULGAR FRACTION THREE QUARTERS; threequarters  
14356 \DeclareTextCommand{\textthreequarters}{PD1}{\276}% U+00BE  
14357 % U+00BF INVERTED QUESTION MARK; questiondown  
14358 \DeclareTextCommand{\textquestiondown}{PD1}{\277}% U+00BF  
14359 % U+00C0 LATIN CAPITAL LETTER A WITH GRAVE; Agrave  
14360 \DeclareTextCompositeCommand{\`}{PD1}{A}{\300}% U+00C0  
14361 % U+00C1 LATIN CAPITAL LETTER A WITH ACUTE; Aacute  
14362 \DeclareTextCompositeCommand{\'}{PD1}{A}{\301}% U+00C1  
14363 % U+00C2 LATIN CAPITAL LETTER A WITH CIRCUMFLEX; Acircumflex  
14364 \DeclareTextCompositeCommand{\^}{PD1}{A}{\302}% U+00C2  
14365 % U+00C3 LATIN CAPITAL LETTER A WITH TILDE; Atilde  
14366 \DeclareTextCompositeCommand{\~}{PD1}{A}{\303}% U+00C3  
14367 % U+00C4 LATIN CAPITAL LETTER A WITH DIAERESIS; Adieresis  
14368 \DeclareTextCompositeCommand{\"}{PD1}{A}{\304}% U+00C4  
14369 % U+00C5 LATIN CAPITAL LETTER A WITH RING ABOVE; Aring  
14370 \DeclareTextCompositeCommand{\r}{PD1}{A}{\305}% U+00C5  
14371 % U+00C6 LATIN CAPITAL LETTER AE; AE  
14372 \DeclareTextCommand{\AE}{PD1}{\306}% U+00C6  
14373 % U+00C7 LATIN CAPITAL LETTER C WITH CEDILLA; Ccedilla  
14374 \DeclareTextCompositeCommand{\c}{PD1}{C}{\307}% U+00C7  
14375 % U+00C8 LATIN CAPITAL LETTER E WITH GRAVE; Egrave

14376 \DeclareTextCompositeCommand{\'}{PD1}{E}{\310}% U+00C8  
14377 % U+00C9 LATIN CAPITAL LETTER E WITH ACUTE; Eacute  
14378 \DeclareTextCompositeCommand{\'}{PD1}{E}{\311}% U+00C9  
14379 % U+00CA LATIN CAPITAL LETTER E WITH CIRCUMFLEX; Ecircumflex  
14380 \DeclareTextCompositeCommand{\^}{PD1}{E}{\312}% U+00CA  
14381 % U+00CB LATIN CAPITAL LETTER E WITH DIAERESIS; Edieresis  
14382 \DeclareTextCompositeCommand{\"}{PD1}{E}{\313}% U+00CB  
14383 % U+00CC LATIN CAPITAL LETTER I WITH GRAVE; Igrave  
14384 \DeclareTextCompositeCommand{\'}{PD1}{I}{\314}% U+00CC  
14385 % U+00CD LATIN CAPITAL LETTER I WITH ACUTE; Iacute  
14386 \DeclareTextCompositeCommand{\'}{PD1}{I}{\315}% U+00CD  
14387 % U+00CE LATIN CAPITAL LETTER I WITH CIRCUMFLEX; Icircumflex  
14388 \DeclareTextCompositeCommand{\^}{PD1}{I}{\316}% U+00CE  
14389 % U+00CF LATIN CAPITAL LETTER I WITH DIAERESIS; Idieresis  
14390 \DeclareTextCompositeCommand{\"}{PD1}{I}{\317}% U+00CF  
14391 % U+00D0 LATIN CAPITAL LETTER ETH; Eth  
14392 \DeclareTextCommand{\DH}{PD1}{\320}% U+00D0  
14393 \DeclareTextCommand{\DJ}{PD1}{\320}% U+00D0  
14394 % U+00D1 LATIN CAPITAL LETTER N WITH TILDE; Ntilde  
14395 \DeclareTextCompositeCommand{\~}{PD1}{N}{\321}% U+00D1  
14396 % U+00D2 LATIN CAPITAL LETTER O WITH GRAVE; Ograve  
14397 \DeclareTextCompositeCommand{\'}{PD1}{O}{\322}% U+00D2  
14398 % U+00D3 LATIN CAPITAL LETTER O WITH ACUTE; Oacute  
14399 \DeclareTextCompositeCommand{\'}{PD1}{O}{\323}% U+00D3  
14400 % U+00D4 LATIN CAPITAL LETTER O WITH CIRCUMFLEX; Ocircumflex  
14401 \DeclareTextCompositeCommand{\^}{PD1}{O}{\324}% U+00D4  
14402 % U+00D5 LATIN CAPITAL LETTER O WITH TILDE; Otilde  
14403 \DeclareTextCompositeCommand{\~}{PD1}{O}{\325}% U+00D5  
14404 % U+00D6 LATIN CAPITAL LETTER O WITH DIAERESIS; Odieresis  
14405 \DeclareTextCompositeCommand{\"}{PD1}{O}{\326}% U+00D6  
14406 % U+00D7 MULTIPLICATION SIGN; multiply  
14407 \DeclareTextCommand{\textmultiply}{PD1}{\327}% U+00D7  
14408 % U+00D8 LATIN CAPITAL LETTER O WITH STROKE; Oslash  
14409 \DeclareTextCommand{\O}{PD1}{\330}% U+00D8  
14410 % U+00D9 LATIN CAPITAL LETTER U WITH GRAVE; Ugrave  
14411 \DeclareTextCompositeCommand{\'}{PD1}{U}{\331}% U+00D9  
14412 % U+00DA LATIN CAPITAL LETTER U WITH ACUTE; Uacute  
14413 \DeclareTextCompositeCommand{\'}{PD1}{U}{\332}% U+00DA  
14414 % U+00DB LATIN CAPITAL LETTER U WITH CIRCUMFLEX; Ucircumflex  
14415 \DeclareTextCompositeCommand{\^}{PD1}{U}{\333}% U+00DB  
14416 % U+00DC LATIN CAPITAL LETTER U WITH DIAERESIS; Udieresis  
14417 \DeclareTextCompositeCommand{\"}{PD1}{U}{\334}% U+00DC  
14418 % U+00DD LATIN CAPITAL LETTER Y WITH ACUTE; Yacute  
14419 \DeclareTextCompositeCommand{\'}{PD1}{Y}{\335}% U+00DD  
14420 % U+00DE LATIN CAPITAL LETTER THORN; Thorn  
14421 \DeclareTextCommand{\TH}{PD1}{\336}% U+00DE  
14422 % U+00DF LATIN SMALL LETTER SHARP S; germandbls  
14423 \DeclareTextCommand{\ss}{PD1}{\337}% U+00DF  
14424 % U+00E0 LATIN SMALL LETTER A WITH GRAVE; agrave  
14425 \DeclareTextCompositeCommand{\'}{PD1}{a}{\340}% U+00E0  
14426 % U+00E1 LATIN SMALL LETTER A WITH ACUTE; aacute  
14427 \DeclareTextCompositeCommand{\'}{PD1}{a}{\341}% U+00E1  
14428 % U+00E2 LATIN SMALL LETTER A WITH CIRCUMFLEX; acircumflex  
14429 \DeclareTextCompositeCommand{\^}{PD1}{a}{\342}% U+00E2  
14430 % U+00E3 LATIN SMALL LETTER A WITH TILDE; atilde  
14431 \DeclareTextCompositeCommand{\~}{PD1}{a}{\343}% U+00E3  
14432 % U+00E4 LATIN SMALL LETTER A WITH DIAERESIS; adieresis

14433 \DeclareTextCompositeCommand{"}{PD1}{a}{\344}% U+00E4  
14434 % U+00E5 LATIN SMALL LETTER A WITH RING ABOVE; aring  
14435 \DeclareTextCompositeCommand{r}{PD1}{a}{\345}% U+00E5  
14436 % U+00E6 LATIN SMALL LETTER AE; ae  
14437 \DeclareTextCommand{ae}{PD1}{\346}% U+00E6  
14438 % U+00E7 LATIN SMALL LETTER C WITH CEDILLA; ccedilla  
14439 \DeclareTextCompositeCommand{c}{PD1}{c}{\347}% U+00E7  
14440 % U+00E8 LATIN SMALL LETTER E WITH GRAVE; egrave  
14441 \DeclareTextCompositeCommand{'}{PD1}{e}{\350}% U+00E8  
14442 % U+00E9 LATIN SMALL LETTER E WITH ACUTE; eacute  
14443 \DeclareTextCompositeCommand{'}{PD1}{e}{\351}% U+00E9  
14444 % U+00EA LATIN SMALL LETTER E WITH CIRCUMFLEX; ecircumflex  
14445 \DeclareTextCompositeCommand{^}{PD1}{e}{\352}% U+00EA  
14446 % U+00EB LATIN SMALL LETTER E WITH DIAERESIS; edieresis  
14447 \DeclareTextCompositeCommand{"}{PD1}{e}{\353}% U+00EB  
14448 % U+00EC LATIN SMALL LETTER I WITH GRAVE; igrave  
14449 \DeclareTextCompositeCommand{'}{PD1}{i}{\354}% U+00EC  
14450 \DeclareTextCompositeCommand{'}{PD1}{i}{\354}% U+00EC  
14451 % U+00ED LATIN SMALL LETTER I WITH ACUTE; iacute  
14452 \DeclareTextCompositeCommand{'}{PD1}{i}{\355}% U+00ED  
14453 \DeclareTextCompositeCommand{'}{PD1}{i}{\355}% U+00ED  
14454 % U+00EE LATIN SMALL LETTER I WITH CIRCUMFLEX; icircumflex  
14455 \DeclareTextCompositeCommand{^}{PD1}{i}{\356}% U+00EE  
14456 \DeclareTextCompositeCommand{^}{PD1}{i}{\356}% U+00EE  
14457 % U+00EF LATIN SMALL LETTER I WITH DIAERESIS; idieresis  
14458 \DeclareTextCompositeCommand{"}{PD1}{i}{\357}% U+00EF  
14459 \DeclareTextCompositeCommand{"}{PD1}{i}{\357}% U+00EF  
14460 % U+00F0 LATIN SMALL LETTER ETH; eth  
14461 \DeclareTextCommand{dh}{PD1}{\360}% U+00F0  
14462 % U+00F1 LATIN SMALL LETTER N WITH TILDE; ntilde  
14463 \DeclareTextCompositeCommand{~}{PD1}{n}{\361}% U+00F1  
14464 % U+00F2 LATIN SMALL LETTER O WITH GRAVE; ograve  
14465 \DeclareTextCompositeCommand{'}{PD1}{o}{\362}% U+00F2  
14466 % U+00F3 LATIN SMALL LETTER O WITH ACUTE; oacute  
14467 \DeclareTextCompositeCommand{'}{PD1}{o}{\363}% U+00F3  
14468 % U+00F4 LATIN SMALL LETTER O WITH CIRCUMFLEX; ocircumflex  
14469 \DeclareTextCompositeCommand{^}{PD1}{o}{\364}% U+00F4  
14470 % U+00F5 LATIN SMALL LETTER O WITH TILDE; otilde  
14471 \DeclareTextCompositeCommand{~}{PD1}{o}{\365}% U+00F5  
14472 % U+00F6 LATIN SMALL LETTER O WITH DIAERESIS; odieresis  
14473 \DeclareTextCompositeCommand{"}{PD1}{o}{\366}% U+00F6  
14474 % U+00F7 DIVISION SIGN; divide  
14475 \DeclareTextCommand{texdiv}{PD1}{\367}% U+00F7  
14476 % U+00F8 LATIN SMALL LETTER O WITH STROKE; oslash  
14477 \DeclareTextCommand{o}{PD1}{\370}% U+00F8  
14478 % U+00F9 LATIN SMALL LETTER U WITH GRAVE; ugrave  
14479 \DeclareTextCompositeCommand{'}{PD1}{u}{\371}% U+00F9  
14480 % U+00FA LATIN SMALL LETTER U WITH ACUTE; uacute  
14481 \DeclareTextCompositeCommand{'}{PD1}{u}{\372}% U+00FA  
14482 % U+00FB LATIN SMALL LETTER U WITH CIRCUMFLEX; ucircumflex  
14483 \DeclareTextCompositeCommand{^}{PD1}{u}{\373}% U+00FB  
14484 % U+00FC LATIN SMALL LETTER U WITH DIAERESIS; udieresis  
14485 \DeclareTextCompositeCommand{"}{PD1}{u}{\374}% U+00FC  
14486 % U+00FD LATIN SMALL LETTER Y WITH ACUTE; yacute  
14487 \DeclareTextCompositeCommand{'}{PD1}{y}{\375}% U+00FD  
14488 % U+00FE LATIN SMALL LETTER THORN; thorn  
14489 \DeclareTextCommand{th}{PD1}{\376}% U+00FE

```

14490 % U+00FF LATIN SMALL LETTER Y WITH DIAERESIS; ydieresis
14491 \DeclareTextCompositeCommand{"}{PD1}{y}{\377}% U+00FF
14492 \DeclareTextCommand{\ij}{PD1}{\377}% U+00FF

```

Glyphs that consist of several characters.

```

14493 \DeclareTextCommand{\SS}{PD1}{SS}
14494 \DeclareTextCommand{\textcelsius}{PD1}{\textdegree C}

```

Aliases (german.sty)

```

14495 \DeclareTextCommand{\textglqq}{PD1}{\quotedblbase}
14496 \DeclareTextCommand{\textgrqq}{PD1}{\textquotedblleft}
14497 \DeclareTextCommand{\textglq}{PD1}{\quotesinglbase}
14498 \DeclareTextCommand{\textgrq}{PD1}{\textquoteleft}
14499 \DeclareTextCommand{\textflqq}{PD1}{\guillemotleft}
14500 \DeclareTextCommand{\textfrqq}{PD1}{\guillemotright}
14501 \DeclareTextCommand{\textflq}{PD1}{\guilsinglleft}
14502 \DeclareTextCommand{\textfrq}{PD1}{\guilsinglright}

```

Aliases (math names)

```

14503 \DeclareTextCommand{\textneg}{PD1}{\textlogicalnot}
14504 \DeclareTextCommand{\texttimes}{PD1}{\textmultiply}
14505 \DeclareTextCommand{\textdiv}{PD1}{\textdivide}
14506 \DeclareTextCommand{\textpm}{PD1}{\textplusminus}
14507 \DeclareTextCommand{\textcdot}{PD1}{\textperiodcentered}
14508 \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).

```

14509 \DeclareTextCompositeCommand{\k}{PD1}{a}{a}% aogonek
14510 \DeclareTextCompositeCommand{\'}{PD1}{c}{c}% cacute
14511 \DeclareTextCompositeCommand{\k}{PD1}{e}{e}% eogonek
14512 \DeclareTextCompositeCommand{\'}{PD1}{n}{n}% nacute
14513 \DeclareTextCompositeCommand{\'}{PD1}{s}{s}% sacute
14514 \DeclareTextCompositeCommand{\'}{PD1}{z}{z}% zacute
14515 \DeclareTextCompositeCommand{\.}{PD1}{z}{z}% zdot

14516 \DeclareTextCompositeCommand{\k}{PD1}{A}{A}% Aogonek
14517 \DeclareTextCompositeCommand{\'}{PD1}{C}{C}% Cacute
14518 \DeclareTextCompositeCommand{\k}{PD1}{E}{E}% Eogonek
14519 \DeclareTextCompositeCommand{\'}{PD1}{N}{N}% Nacute
14520 \DeclareTextCompositeCommand{\'}{PD1}{S}{S}% Sacute
14521 \DeclareTextCompositeCommand{\'}{PD1}{Z}{Z}% Zacute
14522 \DeclareTextCompositeCommand{\.}{PD1}{Z}{Z}% Zdot

```

```

14523 </pd1enc>

```

## 50.2 PU encoding

```

14524 <*puenc>
14525 \DeclareFontEncoding{PU}{-}{-}

```

### 50.2.1 NFSS2 accents

```

14526 % U+0300 COMBINING GRAVE ACCENT; gravecmb, *gravecomb
14527 \DeclareTextCommand{\'}{PU}[1]{\#1\83\000}% U+0300
14528 % U+0301 COMBINING ACUTE ACCENT; acutecmb, *acutecomb
14529 \DeclareTextCommand{\'}{PU}[1]{\#1\83\001}% U+0301
14530 % U+0302 COMBINING CIRCUMFLEX ACCENT; circumflexcmb
14531 \DeclareTextCommand{\^}{PU}[1]{\#1\83\002}% U+0302
14532 % U+0303 COMBINING TILDE; tildecmb, *tildecmb
14533 \DeclareTextCommand{\~}{PU}[1]{\#1\83\003}% U+0303
14534 % U+0304 COMBINING MACRON; macroncmb

```

14535 \DeclareTextCommand{\=}{PU}[1]{#1\83\004}% U+0304  
 14536 % U+0306 COMBINING BREVE; brevecmb  
 14537 \DeclareTextCommand{\u}{PU}[1]{#1\83\006}% U+0306  
 14538 \DeclareTextCommand{\U}{PU}[1]{#1\83\006}% U+0306  
 14539 % U+0307 COMBINING DOT ABOVE; dotaccentcmb  
 14540 \DeclareTextCommand{\.}{PU}[1]{#1\83\007}% U+0307  
 14541 % U+0308 COMBINING DIAERESIS; dieresiscmb  
 14542 \DeclareTextCommand{\"}{PU}[1]{#1\83\010}% U+0308  
 14543 % U+030A COMBINING RING ABOVE; ringcmb  
 14544 \DeclareTextCommand{\r}{PU}[1]{#1\83\012}% U+030A  
 14545 % U+030B COMBINING DOUBLE ACUTE ACCENT; hungarumlautcmb  
 14546 \DeclareTextCommand{\H}{PU}[1]{#1\83\013}% U+030B  
 14547 % U+030C COMBINING CARON; caroncmb  
 14548 \DeclareTextCommand{\v}{PU}[1]{#1\83\014}% U+030C  
 14549 % U+030F COMBINING DOUBLE GRAVE ACCENT; dblgravecmb  
 14550 \DeclareTextCommand{\G}{PU}[1]{#1\83\017}% U+030F  
 14551 \DeclareTextCommand{\C}{PU}[1]{#1\83\017}% U+030F  
 14552 % U+0311 COMBINING INVERTED BREVE; breveinvertedcmb  
 14553 \DeclareTextCommand{\newtie}{PU}[1]{#1\83\021}% U+0311  
 14554 % U+0323 COMBINING DOT BELOW; dotbelowcmb, \*dotbelowcomb  
 14555 \DeclareTextCommand{\d}{PU}[1]{#1\83\043}% U+0323  
 14556 % U+0331 COMBINING MACRON BELOW; macronbelowcmb  
 14557 \DeclareTextCommand{\b}{PU}[1]{#1\83\061}% U+0331  
 14558 % U+0327 COMBINING CEDILLA; cedillacmb  
 14559 \DeclareTextCommand{\c}{PU}[1]{#1\83\047}% U+0327  
 14560 % U+0328 COMBINING OGONEK; ogonekcmb  
 14561 \DeclareTextCommand{\k}{PU}[1]{#1\83\050}% U+0328  
 14562 % U+0361 COMBINING DOUBLE INVERTED BREVE; breveinverteddoublecmb  
 14563 \DeclareTextCommand{\t}{PU}[1]{#1\83\141}% U+0361  
 14564 % U+20DD COMBINING ENCLOSING CIRCLE  
 14565 \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.

14566 \DeclareTextCompositeCommand{\'}{PU}{\@empty}{\textasciigrave}  
 14567 \DeclareTextCompositeCommand{\'}{PU}{\@empty}{\textacute}  
 14568 \DeclareTextCompositeCommand{\~}{PU}{\@empty}{\textasciicircum}  
 14569 \DeclareTextCompositeCommand{\-}{PU}{\@empty}{\texttilde}  
 14570 \DeclareTextCompositeCommand{\"}{PU}{\@empty}{\textasciidieresis}  
 14571 \DeclareTextCompositeCommand{\r}{PU}{\@empty}{\textring}  
 14572 \DeclareTextCompositeCommand{\v}{PU}{\@empty}{\textasciicaron}  
 14573 \DeclareTextCompositeCommand{\.}{PU}{\@empty}{\textdotaccent}  
 14574 \DeclareTextCompositeCommand{\c}{PU}{\@empty}{\textcedilla}  
 14575 \DeclareTextCompositeCommand{\u}{PU}{\@empty}{\textasciibreve}  
 14576 \DeclareTextCompositeCommand{\G}{PU}{\@empty}{\textdoublegrave}  
 14577 \DeclareTextCompositeCommand{\=}{PU}{\@empty}{\textasciimacron}  
 14578 \DeclareTextCompositeCommand{\H}{PU}{\@empty}{\texthungarumlaut}  
 14579 \DeclareTextCompositeCommand{\k}{PU}{\@empty}{\textogonek}  
 14580 \DeclareTextCompositeCommand{\b}{PU}{\@empty}{\textmacronbelow}  
 14581 \DeclareTextCompositeCommand{\d}{PU}{\@empty}{\textdotbelow}  
 14582 \DeclareTextCompositeCommand{\t}{PU}{\@empty}{\texttie}  
 14583 \DeclareTextCompositeCommand{\newtie}{PU}{\@empty}{\textnewtie}  
 14584 \DeclareTextCompositeCommand{\textcircled}{PU}{\@empty}{\textbigcircle}  
 14585 \DeclareTextCompositeCommand{\'}{PU}{\ }{\textasciigrave}  
 14586 \DeclareTextCompositeCommand{\'}{PU}{\ }{\textacute}  
 14587 \DeclareTextCompositeCommand{\~}{PU}{\ }{\textasciicircum}  
 14588 \DeclareTextCompositeCommand{\-}{PU}{\ }{\texttilde}  
 14589 \DeclareTextCompositeCommand{\"}{PU}{\ }{\textasciidieresis}

```

14590 \DeclareTextCompositeCommand{\r}{PU}{\ }{\textring}
14591 \DeclareTextCompositeCommand{\v}{PU}{\ }{\textasciicaron}
14592 \DeclareTextCompositeCommand{\.}{PU}{\ }{\textdotaccent}
14593 \DeclareTextCompositeCommand{\c}{PU}{\ }{\textcedilla}
14594 \DeclareTextCompositeCommand{\u}{PU}{\ }{\textasciibreve}
14595 \DeclareTextCompositeCommand{\G}{PU}{\ }{\textdoublegrave}
14596 \DeclareTextCompositeCommand{\=}{PU}{\ }{\textasciimacron}
14597 \DeclareTextCompositeCommand{\H}{PU}{\ }{\texthungarumlaut}
14598 \DeclareTextCompositeCommand{\k}{PU}{\ }{\textogonek}
14599 \DeclareTextCompositeCommand{\b}{PU}{\ }{\textmacronbelow}
14600 \DeclareTextCompositeCommand{\d}{PU}{\ }{\textdotbelow}
14601 \DeclareTextCompositeCommand{\t}{PU}{\ }{\texttie}
14602 \DeclareTextCompositeCommand{\newtie}{PU}{\ }{\textnewtie}
14603 \DeclareTextCompositeCommand{\textcircled}{PU}{\ }{\textbigcircle}

```

Accents for capitals (see encoding TS1)

```

14604 \DeclareTextCommand{\capitalcedilla}{PU}[1]{\c{#1}}
14605 \DeclareTextCommand{\capitalogonek}{PU}[1]{\k{#1}}
14606 \DeclareTextCommand{\capitalgrave}{PU}[1]{\`{#1}}
14607 \DeclareTextCommand{\capitalacute}{PU}[1]{\'{#1}}
14608 \DeclareTextCommand{\capitalcircumflex}{PU}[1]{\^{#1}}
14609 \DeclareTextCommand{\capitaltilde}{PU}[1]{\~{#1}}
14610 \DeclareTextCommand{\capitaldieresis}{PU}[1]{\\"{#1}}
14611 \DeclareTextCommand{\capitalhungarumlaut}{PU}[1]{\H{#1}}
14612 \DeclareTextCommand{\capitalring}{PU}[1]{\r{#1}}
14613 \DeclareTextCommand{\capitalcaron}{PU}[1]{\v{#1}}
14614 \DeclareTextCommand{\capitalbreve}{PU}[1]{\u{#1}}
14615 \DeclareTextCommand{\capitalmacron}{PU}[1]{\={#1}}
14616 \DeclareTextCommand{\capitaldotaccent}{PU}[1]{\.{#1}}
14617 \DeclareTextCommand{\capitaltie}{PU}[1]{\t{#1}}
14618 \DeclareTextCommand{\capitalnewtie}{PU}[1]{\newtie{#1}}

```

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

Special white space escape characters.

```

14619 % U+0009 (CHARACTER TABULATION)
14620 \DeclareTextCommand{\textHT}{PU}{\80\011}% U+0009
14621 % U+000A (LINE FEED)
14622 \DeclareTextCommand{\textLF}{PU}{\80\012}% U+000A
14623 % U+000D (CARRIAGE RETURN)
14624 \DeclareTextCommand{\textCR}{PU}{\80\015}% U+000D

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

14625 % U+0022 QUOTATION MARK; quotedbl
14626 \DeclareTextCommand{\textquotedbl}{PU}{\string"}% \80\042 U+0022
14627 % U+0023 NUMBER SIGN; numbersign
14628 \DeclareTextCommand{\textnumbersign}{PU}{\80\043}% U+0023
14629 % U+0024 DOLLAR SIGN; dollar
14630 \DeclareTextCommand{\textdollar}{PU}{\80\044}% U+0024
14631 % U+0025 PERCENT SIGN; percent
14632 \DeclareTextCommand{\textpercent}{PU}{\80\045}% U+0025
14633 % U+0026 AMPERSAND; ampersand
14634 \DeclareTextCommand{\textampersand}{PU}{\80\046}% U+0026
14635 % U+0027 APOSTROPHE; quotesingle
14636 \DeclareTextCommand{\textquotesingle}{PU}{\80\047}% U+0027
14637 % U+0028 LEFT PARENTHESIS; parenleft
14638 \DeclareTextCommand{\textparenleft}{PU}{\80\050}% U+0028
14639 % U+0029 RIGHT PARENTHESIS; parenright

```

14640 \DeclareTextCommand{\textparenright}{PU}{\80\051}% U+0029  
 14641 % U+002A ASTERISK; asterisk  
 14642 \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  
 14643 % U+003C LESS-THAN SIGN; less  
 14644 \DeclareTextCommand{\textless}{PU}{<}% \80\074 U+003C  
 \80\075: U+003D EQUALS SIGN; equal  
 14645 % U+003E GREATER-THAN SIGN; greater  
 14646 \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  
 14647 % U+005C REVERSE SOLIDUS; backslash  
 14648 \DeclareTextCommand{\textbackslash}{PU}{\80\134}% U+005C  
 \80\135: U+005D RIGHT SQUARE BRACKET; bracketright  
 14649 % U+005E CIRCUMFLEX ACCENT; asciicircum  
 14650 \DeclareTextCommand{\textasciicircum}{PU}{\80\136}% U+005E  
 14651 % U+005F LOW LINE; underscore  
 14652 \DeclareTextCommand{\textunderscore}{PU}{\80\137}% U+005F  
 14653 % U+0060 GRAVE ACCENT; grave  
 14654 \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  
 14655 % U+0069 LATIN SMALL LETTER I; i  
 14656 \DeclareTextCompositeCommand{\.}{PU}{i}% \80\151 U+0069  
 14657 \DeclareTextCompositeCommand{\.}{PU}{i}% \80\151 U+0069  
 \80\152: U+006A LATIN SMALL LETTER J; j  
 ...  
 \80\172: U+007A LATIN SMALL LETTER Z; z  
 14658 % U+007B LEFT CURLY BRACKET; braceleft  
 14659 \DeclareTextCommand{\textbraceleft}{PU}{\80\173}% U+007B  
 14660 % U+007C VERTICAL LINE; \*bar, verticalbar  
 14661 \DeclareTextCommand{\textbar}{PU}{|}% \80\174 U+007C  
 14662 % U+007D RIGHT CURLY BRACKET; braceright  
 14663 \DeclareTextCommand{\textbraceright}{PU}{\80\175}% U+007D  
 14664 % U+007E TILDE; asciitilde  
 14665 \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  
14666 % U+00A1 INVERTED EXCLAMATION MARK; exclamdown  
14667 \DeclareTextCommand{\textexclamdown}{PU}{\80\241}% U+00A1  
14668 % U+00A2 CENT SIGN; cent  
14669 \DeclareTextCommand{\textcent}{PU}{\80\242}% U+00A2  
14670 % U+00A3 POUND SIGN; sterling  
14671 \DeclareTextCommand{\textsterling}{PU}{\80\243}% U+00A3  
14672 % U+00A4 CURRENCY SIGN; currency  
14673 \DeclareTextCommand{\textcurrency}{PU}{\80\244}% U+00A4  
14674 % U+00A5 YEN SIGN; yen  
14675 \DeclareTextCommand{\textyen}{PU}{\80\245}% U+00A5  
14676 % U+00A6 BROKEN BAR; brokenbar  
14677 \DeclareTextCommand{\textbrokenbar}{PU}{\80\246}% U+00A6  
14678 % U+00A7 SECTION SIGN; section  
14679 \DeclareTextCommand{\textsection}{PU}{\80\247}% U+00A7  
14680 % U+00A8 DIAERESIS; dieresis  
14681 \DeclareTextCommand{\textasciidieresis}{PU}{\80\250}% U+00A8  
14682 % U+00A9 COPYRIGHT SIGN; copyright  
14683 \DeclareTextCommand{\textcopyright}{PU}{\80\251}% U+00A9  
14684 % U+00AA FEMININE ORDINAL INDICATOR; ordfeminine  
14685 \DeclareTextCommand{\textordfeminine}{PU}{\80\252}% U+00AA  
14686 % U+00AB LEFT-POINTING DOUBLE ANGLE QUOTATION MARK; guillemotleft  
14687 \DeclareTextCommand{\guillemotleft}{PU}{\80\253}% U+00AB  
14688 % U+00AC NOT SIGN; logicalnot  
14689 \DeclareTextCommand{\textlogicalnot}{PU}{\80\254}% U+00AC  
14690 \DeclareTextCommand{\textlnot}{PU}{\80\254}% U+00AC  
\\80\255: U+00AD SOFT HYPHEN; sfthyphen, softthyphen  
14691 % U+00AE REGISTERED SIGN; registered  
14692 \DeclareTextCommand{\textregistered}{PU}{\80\256}% U+00AE  
14693 % U+00AF MACRON; \*macron, overscore  
14694 \DeclareTextCommand{\textasciimacron}{PU}{\80\257}% U+00AF  
14695 % U+00B0 DEGREE SIGN; degree  
14696 \DeclareTextCommand{\textdegree}{PU}{\80\260}% U+00B0  
14697 % U+00B1 PLUS-MINUS SIGN; plusminus  
14698 \DeclareTextCommand{\textplusminus}{PU}{\80\261}% U+00B1  
14699 % U+00B2 SUPERScript TWO; twosuperior  
14700 \DeclareTextCommand{\texttwosuperior}{PU}{\80\262}% U+00B2  
14701 % U+00B3 SUPERScript THREE; threesuperior  
14702 \DeclareTextCommand{\textthreesuperior}{PU}{\80\263}% U+00B3  
14703 % U+00B4 ACUTE ACCENT; acute  
14704 \DeclareTextCommand{\textacute}{PU}{\80\264}% U+00B4  
14705 \DeclareTextCommand{\textasciiacute}{PU}{\80\264}% U+00B4  
14706 % U+00B5 MICRO SIGN; mu, mul  
14707 \DeclareTextCommand{\textmu}{PU}{\80\265}% U+00B5  
14708 % U+00B6 PILCROW SIGN; paragraph  
14709 \DeclareTextCommand{\textparagraph}{PU}{\80\266}% U+00B6  
14710 % U+00B7 MIDDLE DOT; middot, \*periodcentered  
14711 \DeclareTextCommand{\textperiodcentered}{PU}{\80\267}% U+00B7  
14712 % U+00B8 CEDILLA; cedilla  
14713 \DeclareTextCommand{\textcedilla}{PU}{\80\270}% U+00B8  
14714 % U+00B9 SUPERScript ONE; onesuperior  
14715 \DeclareTextCommand{\textonesuperior}{PU}{\80\271}% U+00B9  
14716 % U+00BA MASCULINE ORDINAL INDICATOR; ordmasculine  
14717 \DeclareTextCommand{\textordmasculine}{PU}{\80\272}% U+00BA



14718 % U+00BB RIGHT-POINTING DOUBLE ANGLE QUOTATION MARK; guillemotright  
 14719 \DeclareTextCommand{\guillemotright}{PU}{\80\273}% U+00BB  
 14720 % U+00BC VULGAR FRACTION ONE QUARTER; onequarter  
 14721 \DeclareTextCommand{\textonequarter}{PU}{\80\274}% U+00BC  
 14722 % U+00BD VULGAR FRACTION ONE HALF; onehalf  
 14723 \DeclareTextCommand{\textonehalf}{PU}{\80\275}% U+00BD  
 14724 % U+00BE VULGAR FRACTION THREE QUARTERS; threequarters  
 14725 \DeclareTextCommand{\textthreequarters}{PU}{\80\276}% U+00BE  
 14726 % U+00BF INVERTED QUESTION MARK; questiondown  
 14727 \DeclareTextCommand{\textquestiondown}{PU}{\80\277}% U+00BF  
 14728 % U+00C0 LATIN CAPITAL LETTER A WITH GRAVE; Agrave  
 14729 \DeclareTextCompositeCommand{\`}{PU}{A}{\80\300}% U+00C0  
 14730 % U+00C1 LATIN CAPITAL LETTER A WITH ACUTE; Aacute  
 14731 \DeclareTextCompositeCommand{\'}{PU}{A}{\80\301}% U+00C1  
 14732 % U+00C2 LATIN CAPITAL LETTER A WITH CIRCUMFLEX; Acircumflex  
 14733 \DeclareTextCompositeCommand{\^}{PU}{A}{\80\302}% U+00C2  
 14734 % U+00C3 LATIN CAPITAL LETTER A WITH TILDE; Atilde  
 14735 \DeclareTextCompositeCommand{\~}{PU}{A}{\80\303}% U+00C3  
 14736 % U+00C4 LATIN CAPITAL LETTER A WITH DIAERESIS; Adieresis  
 14737 \DeclareTextCompositeCommand{\"}{PU}{A}{\80\304}% U+00C4  
 14738 % U+00C5 LATIN CAPITAL LETTER A WITH RING ABOVE; Aring  
 14739 \DeclareTextCompositeCommand{\r}{PU}{A}{\80\305}% U+00C5  
 14740 % U+00C6 LATIN CAPITAL LETTER AE; AE  
 14741 \DeclareTextCommand{\AE}{PU}{\80\306}% U+00C6  
 14742 % U+00C7 LATIN CAPITAL LETTER C WITH CEDILLA; Ccedilla  
 14743 \DeclareTextCompositeCommand{\c}{PU}{C}{\80\307}% U+00C7  
 14744 % U+00C8 LATIN CAPITAL LETTER E WITH GRAVE; Egrave  
 14745 \DeclareTextCompositeCommand{\`}{PU}{E}{\80\310}% U+00C8  
 14746 % U+00C9 LATIN CAPITAL LETTER E WITH ACUTE; Eacute  
 14747 \DeclareTextCompositeCommand{\'}{PU}{E}{\80\311}% U+00C9  
 14748 % U+00CA LATIN CAPITAL LETTER E WITH CIRCUMFLEX; Ecircumflex  
 14749 \DeclareTextCompositeCommand{\^}{PU}{E}{\80\312}% U+00CA  
 14750 % U+00CB LATIN CAPITAL LETTER E WITH DIAERESIS; Edieresis  
 14751 \DeclareTextCompositeCommand{\"}{PU}{E}{\80\313}% U+00CB  
 14752 % U+00CC LATIN CAPITAL LETTER I WITH GRAVE; Igrave  
 14753 \DeclareTextCompositeCommand{\`}{PU}{I}{\80\314}% U+00CC  
 14754 % U+00CD LATIN CAPITAL LETTER I WITH ACUTE; Iacute  
 14755 \DeclareTextCompositeCommand{\'}{PU}{I}{\80\315}% U+00CD  
 14756 % U+00CE LATIN CAPITAL LETTER I WITH CIRCUMFLEX; Icircumflex  
 14757 \DeclareTextCompositeCommand{\^}{PU}{I}{\80\316}% U+00CE  
 14758 % U+00CF LATIN CAPITAL LETTER I WITH DIAERESIS; Idieresis  
 14759 \DeclareTextCompositeCommand{\"}{PU}{I}{\80\317}% U+00CF  
 14760 % U+00D0 LATIN CAPITAL LETTER ETH; Eth  
 14761 \DeclareTextCommand{\DH}{PU}{\80\320}% U+00D0  
 14762 % U+00D1 LATIN CAPITAL LETTER N WITH TILDE; Ntilde  
 14763 \DeclareTextCompositeCommand{\~}{PU}{N}{\80\321}% U+00D1  
 14764 % U+00D2 LATIN CAPITAL LETTER O WITH GRAVE; Ograve  
 14765 \DeclareTextCompositeCommand{\`}{PU}{O}{\80\322}% U+00D2  
 14766 % U+00D3 LATIN CAPITAL LETTER O WITH ACUTE; Oacute  
 14767 \DeclareTextCompositeCommand{\'}{PU}{O}{\80\323}% U+00D3  
 14768 % U+00D4 LATIN CAPITAL LETTER O WITH CIRCUMFLEX; Ocircumflex  
 14769 \DeclareTextCompositeCommand{\^}{PU}{O}{\80\324}% U+00D4  
 14770 % U+00D5 LATIN CAPITAL LETTER O WITH TILDE; Otilde  
 14771 \DeclareTextCompositeCommand{\~}{PU}{O}{\80\325}% U+00D5  
 14772 % U+00D6 LATIN CAPITAL LETTER O WITH DIAERESIS; Odieresis  
 14773 \DeclareTextCompositeCommand{\"}{PU}{O}{\80\326}% U+00D6

14774 % U+00D7 MULTIPLICATION SIGN; multiply  
14775 \DeclareTextCommand{\textmultiply}{PU}{\80\327}% U+00D7  
14776 % U+00D8 LATIN CAPITAL LETTER O WITH STROKE; Oslash  
14777 \DeclareTextCommand{\O}{PU}{\80\330}% U+00D8  
14778 % U+00D9 LATIN CAPITAL LETTER U WITH GRAVE; Ugrave  
14779 \DeclareTextCompositeCommand{\'}{PU}{U}{\80\331}% U+00D9  
14780 % U+00DA LATIN CAPITAL LETTER U WITH ACUTE; Uacute  
14781 \DeclareTextCompositeCommand{\'}{PU}{U}{\80\332}% U+00DA  
14782 % U+00DB LATIN CAPITAL LETTER U WITH CIRCUMFLEX; Ucircumflex  
14783 \DeclareTextCompositeCommand{\^}{PU}{U}{\80\333}% U+00DB  
14784 % U+00DC LATIN CAPITAL LETTER U WITH DIAERESIS; Udieresis  
14785 \DeclareTextCompositeCommand{\"}{PU}{U}{\80\334}% U+00DC  
14786 % U+00DD LATIN CAPITAL LETTER Y WITH ACUTE; Yacute  
14787 \DeclareTextCompositeCommand{\'}{PU}{Y}{\80\335}% U+00DD  
14788 % U+00DE LATIN CAPITAL LETTER THORN; Thorn  
14789 \DeclareTextCommand{\TH}{PU}{\80\336}% U+00DE  
14790 % U+00DF LATIN SMALL LETTER SHARP S; germandbls  
14791 \DeclareTextCommand{\ss}{PU}{\80\337}% U+00DF  
14792 % U+00E0 LATIN SMALL LETTER A WITH GRAVE; agrave  
14793 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\340}% U+00E0  
14794 % U+00E1 LATIN SMALL LETTER A WITH ACUTE; aacute  
14795 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\341}% U+00E1  
14796 % U+00E2 LATIN SMALL LETTER A WITH CIRCUMFLEX; acircumflex  
14797 \DeclareTextCompositeCommand{\^}{PU}{a}{\80\342}% U+00E2  
14798 % U+00E3 LATIN SMALL LETTER A WITH TILDE; atilde  
14799 \DeclareTextCompositeCommand{\~}{PU}{a}{\80\343}% U+00E3  
14800 % U+00E4 LATIN SMALL LETTER A WITH DIAERESIS; adieresis  
14801 \DeclareTextCompositeCommand{\"}{PU}{a}{\80\344}% U+00E4  
14802 % U+00E5 LATIN SMALL LETTER A WITH RING ABOVE; aring  
14803 \DeclareTextCompositeCommand{\r}{PU}{a}{\80\345}% U+00E5  
14804 % U+00E6 LATIN SMALL LETTER AE; ae  
14805 \DeclareTextCommand{\ae}{PU}{\80\346}% U+00E6  
14806 % U+00E7 LATIN SMALL LETTER C WITH CEDILLA; ccedilla  
14807 \DeclareTextCompositeCommand{\c}{PU}{c}{\80\347}% U+00E7  
14808 % U+00E8 LATIN SMALL LETTER E WITH GRAVE; egrave  
14809 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\350}% U+00E8  
14810 % U+00E9 LATIN SMALL LETTER E WITH ACUTE; eacute  
14811 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\351}% U+00E9  
14812 % U+00EA LATIN SMALL LETTER E WITH CIRCUMFLEX; ecircumflex  
14813 \DeclareTextCompositeCommand{\^}{PU}{e}{\80\352}% U+00EA  
14814 % U+00EB LATIN SMALL LETTER E WITH DIAERESIS; edieresis  
14815 \DeclareTextCompositeCommand{\"}{PU}{e}{\80\353}% U+00EB  
14816 % U+00EC LATIN SMALL LETTER I WITH GRAVE; igrave  
14817 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\354}% U+00EC  
14818 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\354}% U+00EC  
14819 % U+00ED LATIN SMALL LETTER I WITH ACUTE; iacute  
14820 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\355}% U+00ED  
14821 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\355}% U+00ED  
14822 % U+00EE LATIN SMALL LETTER I WITH CIRCUMFLEX; icircumflex  
14823 \DeclareTextCompositeCommand{\^}{PU}{i}{\80\356}% U+00EE  
14824 \DeclareTextCompositeCommand{\^}{PU}{i}{\80\356}% U+00EE  
14825 % U+00EF LATIN SMALL LETTER I WITH DIAERESIS; idieresis  
14826 \DeclareTextCompositeCommand{\"}{PU}{i}{\80\357}% U+00EF  
14827 \DeclareTextCompositeCommand{\"}{PU}{i}{\80\357}% U+00EF  
14828 % U+00F0 LATIN SMALL LETTER ETH; eth  
14829 \DeclareTextCommand{\dh}{PU}{\80\360}% U+00F0  
14830 % U+00F1 LATIN SMALL LETTER N WITH TILDE; ntilde

14831 \DeclareTextCompositeCommand{\~}{PU}{n}{\80\361}% U+00F1  
 14832 % U+00F2 LATIN SMALL LETTER O WITH GRAVE; ograve  
 14833 \DeclareTextCompositeCommand{\`}{PU}{o}{\80\362}% U+00F2  
 14834 % U+00F3 LATIN SMALL LETTER O WITH ACUTE; oacute  
 14835 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\363}% U+00F3  
 14836 % U+00F4 LATIN SMALL LETTER O WITH CIRCUMFLEX; ocircumflex  
 14837 \DeclareTextCompositeCommand{\^}{PU}{o}{\80\364}% U+00F4  
 14838 % U+00F5 LATIN SMALL LETTER O WITH TILDE; otilde  
 14839 \DeclareTextCompositeCommand{\~}{PU}{o}{\80\365}% U+00F5  
 14840 % U+00F6 LATIN SMALL LETTER O WITH DIAERESIS; odieresis  
 14841 \DeclareTextCompositeCommand{\"}{PU}{o}{\80\366}% U+00F6  
 14842 % U+00F7 DIVISION SIGN; divide  
 14843 \DeclareTextCommand{\textdivide}{PU}{\80\367}% U+00F7  
 14844 % U+00F8 LATIN SMALL LETTER O WITH STROKE; oslash  
 14845 \DeclareTextCommand{\o}{PU}{\80\370}% U+00F8  
 14846 % U+00F9 LATIN SMALL LETTER U WITH GRAVE; ugrave  
 14847 \DeclareTextCompositeCommand{\`}{PU}{u}{\80\371}% U+00F9  
 14848 % U+00FA LATIN SMALL LETTER U WITH ACUTE; uacute  
 14849 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\372}% U+00FA  
 14850 % U+00FB LATIN SMALL LETTER U WITH CIRCUMFLEX; ucircumflex  
 14851 \DeclareTextCompositeCommand{\^}{PU}{u}{\80\373}% U+00FB  
 14852 % U+00FC LATIN SMALL LETTER U WITH DIAERESIS; udieresis  
 14853 \DeclareTextCompositeCommand{\"}{PU}{u}{\80\374}% U+00FC  
 14854 % U+00FD LATIN SMALL LETTER Y WITH ACUTE; yacute  
 14855 \DeclareTextCompositeCommand{\'}{PU}{y}{\80\375}% U+00FD  
 14856 % U+00FE LATIN SMALL LETTER THORN; thorn  
 14857 \DeclareTextCommand{\th}{PU}{\80\376}% U+00FE  
 14858 % U+00FF LATIN SMALL LETTER Y WITH DIAERESIS; ydieresis  
 14859 \DeclareTextCompositeCommand{\"}{PU}{y}{\80\377}% U+00FF

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

14860 % U+0100 LATIN CAPITAL LETTER A WITH MACRON; Amacron  
 14861 \DeclareTextCompositeCommand{\=}{PU}{A}{\81\000}% U+0100  
 14862 % U+0101 LATIN SMALL LETTER A WITH MACRON; amacron  
 14863 \DeclareTextCompositeCommand{\=}{PU}{a}{\81\001}% U+0101  
 14864 % U+0102 LATIN CAPITAL LETTER A WITH BREVE; Abreve  
 14865 \DeclareTextCompositeCommand{\u}{PU}{A}{\81\002}% U+0102  
 14866 % U+0103 LATIN SMALL LETTER A WITH BREVE; abreve  
 14867 \DeclareTextCompositeCommand{\u}{PU}{a}{\81\003}% U+0103  
 14868 % U+0104 LATIN CAPITAL LETTER A WITH OGONEK; Aogonek  
 14869 \DeclareTextCompositeCommand{\k}{PU}{A}{\81\004}% U+0104  
 14870 % U+0105 LATIN SMALL LETTER A WITH OGONEK; aogonek  
 14871 \DeclareTextCompositeCommand{\k}{PU}{a}{\81\005}% U+0105  
 14872 % U+0106 LATIN CAPITAL LETTER C WITH ACUTE; Cacute  
 14873 \DeclareTextCompositeCommand{\'}{PU}{C}{\81\006}% U+0106  
 14874 % U+0107 LATIN SMALL LETTER C WITH ACUTE; cacute  
 14875 \DeclareTextCompositeCommand{\'}{PU}{c}{\81\007}% U+0107  
 14876 % U+0108 LATIN CAPITAL LETTER C WITH CIRCUMFLEX; Ccircumflex  
 14877 \DeclareTextCompositeCommand{\^}{PU}{C}{\81\010}% U+0108  
 14878 % U+0109 LATIN SMALL LETTER C WITH CIRCUMFLEX; ccircumflex  
 14879 \DeclareTextCompositeCommand{\^}{PU}{c}{\81\011}% U+0109  
 14880 % U+010A LATIN CAPITAL LETTER C WITH DOT ABOVE; Cdot, Cdotaccent  
 14881 \DeclareTextCompositeCommand{\.}{PU}{C}{\81\012}% U+010A  
 14882 % U+010B LATIN SMALL LETTER C WITH DOT ABOVE; cdot, cdotaccent  
 14883 \DeclareTextCompositeCommand{\.}{PU}{c}{\81\013}% U+010B  
 14884 % U+010C LATIN CAPITAL LETTER C WITH CARON; Ccaron

14885 \DeclareTextCompositeCommand{\v}{PU}{C}{\81\014}% U+010C  
14886 % U+010D LATIN SMALL LETTER C WITH CARON; ccaron  
14887 \DeclareTextCompositeCommand{\v}{PU}{c}{\81\015}% U+010D  
14888 % U+010E LATIN CAPITAL LETTER D WITH CARON; Dcaron  
14889 \DeclareTextCompositeCommand{\v}{PU}{D}{\81\016}% U+010E  
14890 % U+010F LATIN SMALL LETTER D WITH CARON; dcaron  
14891 \DeclareTextCompositeCommand{\v}{PU}{d}{\81\017}% U+010F  
14892 % U+0110 LATIN CAPITAL LETTER D WITH STROKE; Dcroat, Dslash  
14893 \DeclareTextCommand{\DJ}{PU}{\81\020}% U+0110  
14894 % U+0111 LATIN SMALL LETTER D WITH STROKE; dcroat, dmacron  
14895 \DeclareTextCommand{\dj}{PU}{\81\021}% U+0111  
14896 % U+0112 LATIN CAPITAL LETTER E WITH MACRON; Emacron  
14897 \DeclareTextCompositeCommand{\=}{PU}{E}{\81\022}% U+0112  
14898 % U+0113 LATIN SMALL LETTER E WITH MACRON; emacron  
14899 \DeclareTextCompositeCommand{\=}{PU}{e}{\81\023}% U+0113  
14900 % U+0114 LATIN CAPITAL LETTER E WITH BREVE; Ebreve  
14901 \DeclareTextCompositeCommand{\u}{PU}{E}{\81\024}% U+0114  
14902 % U+0115 LATIN SMALL LETTER E WITH BREVE; ebreve  
14903 \DeclareTextCompositeCommand{\u}{PU}{e}{\81\025}% U+0115  
14904 % U+0116 LATIN CAPITAL LETTER E WITH DOT ABOVE; Edot, Edotaccent  
14905 \DeclareTextCompositeCommand{\.}{PU}{E}{\81\026}% U+0116  
14906 % U+0117 LATIN SMALL LETTER E WITH DOT ABOVE; edot, edotaccent  
14907 \DeclareTextCompositeCommand{\.}{PU}{e}{\81\027}% U+0117  
14908 % U+0118 LATIN CAPITAL LETTER E WITH OGONEK; Eogonek  
14909 \DeclareTextCompositeCommand{\k}{PU}{E}{\81\030}% U+0118  
14910 % U+0119 LATIN SMALL LETTER E WITH OGONEK; eogonek  
14911 \DeclareTextCompositeCommand{\k}{PU}{e}{\81\031}% U+0119  
14912 % U+011A LATIN CAPITAL LETTER E WITH CARON; Ecaron  
14913 \DeclareTextCompositeCommand{\v}{PU}{E}{\81\032}% U+011A  
14914 % U+011B LATIN SMALL LETTER E WITH CARON; ecaron  
14915 \DeclareTextCompositeCommand{\v}{PU}{e}{\81\033}% U+011B  
14916 % U+011C LATIN CAPITAL LETTER G WITH CIRCUMFLEX; Gcircumflex  
14917 \DeclareTextCompositeCommand{\^}{PU}{G}{\81\034}% U+011C  
14918 % U+011D LATIN SMALL LETTER G WITH CIRCUMFLEX; gcircumflex  
14919 \DeclareTextCompositeCommand{\^}{PU}{g}{\81\035}% U+011D  
14920 % U+011E LATIN CAPITAL LETTER G WITH BREVE; Gbreve  
14921 \DeclareTextCompositeCommand{\u}{PU}{G}{\81\036}% U+011E  
14922 % U+011F LATIN SMALL LETTER G WITH BREVE; gbreve  
14923 \DeclareTextCompositeCommand{\u}{PU}{g}{\81\037}% U+011F  
14924 % U+0120 LATIN CAPITAL LETTER G WITH DOT ABOVE; Gdot, Gdotaccent  
14925 \DeclareTextCompositeCommand{\.}{PU}{G}{\81\040}% U+0120  
14926 % U+0121 LATIN SMALL LETTER G WITH DOT ABOVE; gdot, gdotaccent  
14927 \DeclareTextCompositeCommand{\.}{PU}{g}{\81\041}% U+0121  
14928 % U+0122 LATIN CAPITAL LETTER G WITH CEDILLA; Gcedilla, Gcommaaccent  
14929 \DeclareTextCompositeCommand{\c}{PU}{G}{\81\042}% U+0122  
14930 % U+0123 LATIN SMALL LETTER G WITH CEDILLA; gcedilla, gcommaaccent  
14931 \DeclareTextCompositeCommand{\c}{PU}{g}{\81\043}% U+0123  
14932 % U+0124 LATIN CAPITAL LETTER H WITH CIRCUMFLEX; Hcircumflex  
14933 \DeclareTextCompositeCommand{\^}{PU}{H}{\81\044}% U+0124  
14934 % U+0125 LATIN SMALL LETTER H WITH CIRCUMFLEX; hcircumflex  
14935 \DeclareTextCompositeCommand{\^}{PU}{h}{\81\045}% U+0125  
14936 % U+0126 LATIN CAPITAL LETTER H WITH STROKE; Hbar  
14937 \DeclareTextCommand{\textHslash}{PU}{\81\046}% U+0126  
14938 % U+0127 LATIN SMALL LETTER H WITH STROKE; hbar  
14939 \DeclareTextCommand{\texthslash}{PU}{\81\047}% U+0127  
14940 % U+0128 LATIN CAPITAL LETTER I WITH TILDE; Itilde

14941 \DeclareTextCompositeCommand{\~}{PU}{i}{\81\050}% U+0128  
 14942 % U+0129 LATIN SMALL LETTER I WITH TILDE; itilde  
 14943 \DeclareTextCompositeCommand{\-}{PU}{i}{\81\051}% U+0129  
 14944 \DeclareTextCompositeCommand{\-}{PU}{i}{\81\051}% U+0129  
 14945 % U+012A LATIN CAPITAL LETTER I WITH MACRON; Imacron  
 14946 \DeclareTextCompositeCommand{\=}{PU}{I}{\81\052}% U+012A  
 14947 % U+012B LATIN SMALL LETTER I WITH MACRON; imacron  
 14948 \DeclareTextCompositeCommand{\=}{PU}{i}{\81\053}% U+012B  
 14949 \DeclareTextCompositeCommand{\=}{PU}{i}{\81\053}% U+012B  
 14950 % U+012C LATIN CAPITAL LETTER I WITH BREVE; Ibreve  
 14951 \DeclareTextCompositeCommand{\u}{PU}{I}{\81\054}% U+012C  
 14952 % U+012D LATIN SMALL LETTER I WITH BREVE; ibreve  
 14953 \DeclareTextCompositeCommand{\u}{PU}{i}{\81\055}% U+012D  
 14954 \DeclareTextCompositeCommand{\u}{PU}{i}{\81\055}% U+012D  
 14955 % U+012E LATIN CAPITAL LETTER I WITH OGONEK; Iogonek  
 14956 \DeclareTextCompositeCommand{\k}{PU}{I}{\81\056}% U+012E  
 14957 % U+012F LATIN SMALL LETTER I WITH OGONEK; iogonek  
 14958 \DeclareTextCompositeCommand{\k}{PU}{i}{\81\057}% U+012F  
 14959 \DeclareTextCompositeCommand{\k}{PU}{i}{\81\057}% U+012F  
 14960 % U+0130 LATIN CAPITAL LETTER I WITH DOT ABOVE; Idot, Idotaccent  
 14961 \DeclareTextCompositeCommand{\.}{PU}{I}{\81\060}% U+0130  
 14962 % U+0131 LATIN SMALL LETTER DOTLESS I; dotlessi  
 14963 \DeclareTextCommand{\i}{PU}{\81\061}% U+0131  
 14964 % U+0132 LATIN CAPITAL LIGATURE IJ; IJ  
 14965 \DeclareTextCommand{\IJ}{PU}{\81\062}% U+0132  
 14966 % U+0133 LATIN SMALL LIGATURE IJ; ij  
 14967 \DeclareTextCommand{\ij}{PU}{\81\063}% U+0133  
 14968 % U+0134 LATIN CAPITAL LETTER J WITH CIRCUMFLEX; Jcircumflex  
 14969 \DeclareTextCompositeCommand{\^}{PU}{J}{\81\064}% U+0134  
 14970 % U+0135 LATIN SMALL LETTER J WITH CIRCUMFLEX; jcircumflex  
 14971 \DeclareTextCompositeCommand{\^}{PU}{j}{\81\065}% U+0135  
 14972 \DeclareTextCompositeCommand{\^}{PU}{j}{\81\065}% U+0135  
 14973 % U+0136 LATIN CAPITAL LETTER K WITH CEDILLA; Kcedilla, Kcommaac-  
 cent  
 14974 \DeclareTextCompositeCommand{\c}{PU}{K}{\81\066}% U+0136  
 14975 % U+0137 LATIN SMALL LETTER K WITH CEDILLA; kcedilla, kcommaaccent  
 14976 \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`.

14977 % U+0138 LATIN SMALL LETTER KRA; kgreenlandic  
 14978 \DeclareTextCommand{\textkra}{PU}{\81\070}% U+0138  
 14979 % U+0139 LATIN CAPITAL LETTER L WITH ACUTE; Lacute  
 14980 \DeclareTextCompositeCommand{\'}{PU}{L}{\81\071}% U+0139  
 14981 % U+013A LATIN SMALL LETTER L WITH ACUTE; lacute  
 14982 \DeclareTextCompositeCommand{\'}{PU}{l}{\81\072}% U+013A  
 14983 % U+013B LATIN CAPITAL LETTER L WITH CEDILLA; Lcedilla, Lcommaac-  
 cent  
 14984 \DeclareTextCompositeCommand{\c}{PU}{L}{\81\073}% U+013B  
 14985 % U+013C LATIN SMALL LETTER L WITH CEDILLA; lcedilla, lcommaaccent  
 14986 \DeclareTextCompositeCommand{\c}{PU}{l}{\81\074}% U+013C  
 14987 % U+013D LATIN CAPITAL LETTER L WITH CARON; Lcaron  
 14988 \DeclareTextCompositeCommand{\v}{PU}{L}{\81\075}% U+013D  
 14989 % U+013E LATIN SMALL LETTER L WITH CARON; lcaron  
 14990 \DeclareTextCompositeCommand{\v}{PU}{l}{\81\076}% U+013E

There seems to be no variants of letters ‘L’ and ‘I’ with a dot above (reasonable). Therefore the \. accent is reused instead of making a separate accent macro \textmiddledot.

14991 % U+013F LATIN CAPITAL LETTER L WITH MIDDLE DOT; Ldot, Ldotaccent  
14992 \DeclareTextCompositeCommand{\.}{PU}{L}{\81\077}% U+013F  
14993 % U+0140 LATIN SMALL LETTER L WITH MIDDLE DOT; ldot, ldotaccent  
14994 \DeclareTextCompositeCommand{\.}{PU}{l}{\81\100}% U+0140  
14995 % U+0141 LATIN CAPITAL LETTER L WITH STROKE; Lslash  
14996 \DeclareTextCommand{\L}{PU}{\81\101}% U+0141  
14997 % U+0142 LATIN SMALL LETTER L WITH STROKE; lslash  
14998 \DeclareTextCommand{\l}{PU}{\81\102}% U+0142  
14999 % U+0143 LATIN CAPITAL LETTER N WITH ACUTE; Nacute  
15000 \DeclareTextCompositeCommand{\' }{PU}{N}{\81\103}% U+0143  
15001 % U+0144 LATIN SMALL LETTER N WITH ACUTE; nacute  
15002 \DeclareTextCompositeCommand{\' }{PU}{n}{\81\104}% U+0144  
15003 % U+0145 LATIN CAPITAL LETTER N WITH CEDILLA; Ncedilla, Ncommaaccent  
15004 \DeclareTextCompositeCommand{\c}{PU}{N}{\81\105}% U+0145  
15005 % U+0146 LATIN SMALL LETTER N WITH CEDILLA; ncedilla, ncommaaccent  
15006 \DeclareTextCompositeCommand{\c}{PU}{n}{\81\106}% U+0146  
15007 % U+0147 LATIN CAPITAL LETTER N WITH CARON; Ncaron  
15008 \DeclareTextCompositeCommand{\v}{PU}{N}{\81\107}% U+0147  
15009 % U+0148 LATIN SMALL LETTER N WITH CARON; ncaron  
15010 \DeclareTextCompositeCommand{\v}{PU}{n}{\81\110}% U+0148  
15011 % U+0149 LATIN SMALL LETTER N PRECEDED BY APOSTROPHE; napostrophe, quoterightn  
15012 \DeclareTextCommand{\textnapostrophe}{PU}{\81\111}% U+0149  
15013 % U+014A LATIN CAPITAL LETTER ENG; Eng  
15014 \DeclareTextCommand{\NG}{PU}{\81\112}% U+014A  
15015 % U+014B LATIN SMALL LETTER ENG; eng  
15016 \DeclareTextCommand{\ng}{PU}{\81\113}% U+014B  
15017 % U+014C LATIN CAPITAL LETTER O WITH MACRON; Omacron  
15018 \DeclareTextCompositeCommand{\=}{PU}{O}{\81\114}% U+014C  
15019 % U+014D LATIN SMALL LETTER O WITH MACRON; omacron  
15020 \DeclareTextCompositeCommand{\=}{PU}{o}{\81\115}% U+014D  
15021 % U+014E LATIN CAPITAL LETTER O WITH BREVE; Obreve  
15022 \DeclareTextCompositeCommand{\u}{PU}{O}{\81\116}% U+014E  
15023 % U+014F LATIN SMALL LETTER O WITH BREVE; obreve  
15024 \DeclareTextCompositeCommand{\u}{PU}{o}{\81\117}% U+014F  
15025 % U+0150 LATIN CAPITAL LETTER O WITH DOUBLE ACUTE; Odblacut  
15026 \DeclareTextCompositeCommand{\H}{PU}{O}{\81\120}% U+0150  
15027 % U+0151 LATIN SMALL LETTER O WITH DOUBLE ACUTE; odblacut, ohungarumlaut  
15028 \DeclareTextCompositeCommand{\H}{PU}{o}{\81\121}% U+0151  
15029 % U+0152 LATIN CAPITAL LIGATURE OE; OE  
15030 \DeclareTextCommand{\OE}{PU}{\81\122}% U+0152  
15031 % U+0153 LATIN SMALL LIGATURE OE; oe  
15032 \DeclareTextCommand{\oe}{PU}{\81\123}% U+0153  
15033 % U+0154 LATIN CAPITAL LETTER R WITH ACUTE; Racute  
15034 \DeclareTextCompositeCommand{\' }{PU}{R}{\81\124}% U+0154  
15035 % U+0155 LATIN SMALL LETTER R WITH ACUTE; racute  
15036 \DeclareTextCompositeCommand{\' }{PU}{r}{\81\125}% U+0155  
15037 % U+0156 LATIN CAPITAL LETTER R WITH CEDILLA; Rcedilla, Rcommaaccent  
15038 \DeclareTextCompositeCommand{\c}{PU}{R}{\81\126}% U+0156  
15039 % U+0157 LATIN SMALL LETTER R WITH CEDILLA; rcedilla, rcommaaccent  
15040 \DeclareTextCompositeCommand{\c}{PU}{r}{\81\127}% U+0157

15041 % U+0158 LATIN CAPITAL LETTER R WITH CARON; Rcaron  
 15042 \DeclareTextCompositeCommand{\v}{PU}{R}{\81\130}% U+0158  
 15043 % U+0159 LATIN SMALL LETTER R WITH CARON; rcaron  
 15044 \DeclareTextCompositeCommand{\v}{PU}{r}{\81\131}% U+0159  
 15045 % U+015A LATIN CAPITAL LETTER S WITH ACUTE; Sacute  
 15046 \DeclareTextCompositeCommand{\'}{PU}{S}{\81\132}% U+015A  
 15047 % U+015B LATIN SMALL LETTER S WITH ACUTE; sacute  
 15048 \DeclareTextCompositeCommand{\'}{PU}{s}{\81\133}% U+015B  
 15049 % U+015C LATIN CAPITAL LETTER S WITH CIRCUMFLEX; Scircumflex  
 15050 \DeclareTextCompositeCommand{\^}{PU}{S}{\81\134}% U+015C  
 15051 % U+015D LATIN SMALL LETTER S WITH CIRCUMFLEX; scircumflex  
 15052 \DeclareTextCompositeCommand{\^}{PU}{s}{\81\135}% U+015D  
 15053 % U+015E LATIN CAPITAL LETTER S WITH CEDILLA; Scedilla  
 15054 \DeclareTextCompositeCommand{\c}{PU}{S}{\81\136}% U+015E  
 15055 % U+015F LATIN SMALL LETTER S WITH CEDILLA; scedilla  
 15056 \DeclareTextCompositeCommand{\c}{PU}{s}{\81\137}% U+015F  
 15057 % U+0160 LATIN CAPITAL LETTER S WITH CARON; Scaron  
 15058 \DeclareTextCompositeCommand{\v}{PU}{S}{\81\140}% U+0160  
 15059 % U+0161 LATIN SMALL LETTER S WITH CARON; scaron  
 15060 \DeclareTextCompositeCommand{\v}{PU}{s}{\81\141}% U+0161  
 15061 % U+0162 LATIN CAPITAL LETTER T WITH CEDILLA; Tcedilla, Tcommaac-  
 cent  
 15062 \DeclareTextCompositeCommand{\c}{PU}{T}{\81\142}% U+0162  
 15063 % U+0163 LATIN SMALL LETTER T WITH CEDILLA; tcedilla, tcommaaccent  
 15064 \DeclareTextCompositeCommand{\c}{PU}{t}{\81\143}% U+0163  
 15065 % U+0164 LATIN CAPITAL LETTER T WITH CARON; Tcaron  
 15066 \DeclareTextCompositeCommand{\v}{PU}{T}{\81\144}% U+0164  
 15067 % U+0165 LATIN SMALL LETTER T WITH CARON; tcaron  
 15068 \DeclareTextCompositeCommand{\v}{PU}{t}{\81\145}% U+0165  
 15069 % U+0166 LATIN CAPITAL LETTER T WITH STROKE; Tbar  
 15070 \DeclareTextCommand{\textTslash}{PU}{\81\146}% U+0166  
 15071 % U+0167 LATIN SMALL LETTER T WITH STROKE; tbar  
 15072 \DeclareTextCommand{\texttslash}{PU}{\81\147}% U+0167  
 15073 % U+0168 LATIN CAPITAL LETTER U WITH TILDE; Utilde  
 15074 \DeclareTextCompositeCommand{\~}{PU}{U}{\81\150}% U+0168  
 15075 % U+0169 LATIN SMALL LETTER U WITH TILDE; utilde  
 15076 \DeclareTextCompositeCommand{\~}{PU}{u}{\81\151}% U+0169  
 15077 % U+016A LATIN CAPITAL LETTER U WITH MACRON; Umacron  
 15078 \DeclareTextCompositeCommand{\=}{PU}{U}{\81\152}% U+016A  
 15079 % U+016B LATIN SMALL LETTER U WITH MACRON; umacron  
 15080 \DeclareTextCompositeCommand{\=}{PU}{u}{\81\153}% U+016B  
 15081 % U+016C LATIN CAPITAL LETTER U WITH BREVE; Ubreve  
 15082 \DeclareTextCompositeCommand{\u}{PU}{U}{\81\154}% U+016C  
 15083 % U+016D LATIN SMALL LETTER U WITH BREVE; ubreve  
 15084 \DeclareTextCompositeCommand{\u}{PU}{u}{\81\155}% U+016D  
 15085 % U+016E LATIN CAPITAL LETTER U WITH RING ABOVE; Uring  
 15086 \DeclareTextCompositeCommand{\r}{PU}{U}{\81\156}% U+016E  
 15087 % U+016F LATIN SMALL LETTER U WITH RING ABOVE; uring  
 15088 \DeclareTextCompositeCommand{\r}{PU}{u}{\81\157}% U+016F  
 15089 % U+0170 LATIN CAPITAL LETTER U WITH DOUBLE ACUTE; Udbla-  
 cute, Uhungarumlaut  
 15090 \DeclareTextCompositeCommand{\H}{PU}{U}{\81\160}% U+0170  
 15091 % U+0171 LATIN SMALL LETTER U WITH DOUBLE ACUTE; udblacute, uhun-  
 garumlaut  
 15092 \DeclareTextCompositeCommand{\H}{PU}{u}{\81\161}% U+0171  
 15093 % U+0172 LATIN CAPITAL LETTER U WITH OGONEK; Uogonek  
 15094 \DeclareTextCompositeCommand{\k}{PU}{U}{\81\162}% U+0172

15095 % U+0173 LATIN SMALL LETTER U WITH OGONEK; uogonek  
 15096 \DeclareTextCompositeCommand{\k}{PU}{u}{\81\163}% U+0173  
 15097 % U+0174 LATIN CAPITAL LETTER W WITH CIRCUMFLEX; Wcircumflex  
 15098 \DeclareTextCompositeCommand{\^}{PU}{W}{\81\164}% U+0174  
 15099 % U+0175 LATIN SMALL LETTER W WITH CIRCUMFLEX; wcircumflex  
 15100 \DeclareTextCompositeCommand{\^}{PU}{w}{\81\165}% U+0175  
 15101 % U+0176 LATIN CAPITAL LETTER Y WITH CIRCUMFLEX; Ycircumflex  
 15102 \DeclareTextCompositeCommand{\^}{PU}{Y}{\81\166}% U+0176  
 15103 % U+0177 LATIN SMALL LETTER Y WITH CIRCUMFLEX; ycircumflex  
 15104 \DeclareTextCompositeCommand{\^}{PU}{y}{\81\167}% U+0177  
 15105 % U+0178 LATIN CAPITAL LETTER Y WITH DIAERESIS; Ydieresis  
 15106 \DeclareTextCompositeCommand{"}{PU}{Y}{\81\170}% U+0178  
 15107 % U+0179 LATIN CAPITAL LETTER Z WITH ACUTE; Zacute  
 15108 \DeclareTextCompositeCommand{\'}{PU}{Z}{\81\171}% U+0179  
 15109 % U+017A LATIN SMALL LETTER Z WITH ACUTE; zacute  
 15110 \DeclareTextCompositeCommand{\'}{PU}{z}{\81\172}% U+017A  
 15111 % U+017B LATIN CAPITAL LETTER Z WITH DOT ABOVE; Zdot, Zdotaccent  
 15112 \DeclareTextCompositeCommand{.}{PU}{Z}{\81\173}% U+017B  
 15113 % U+017C LATIN SMALL LETTER Z WITH DOT ABOVE; zdot, zdotaccent  
 15114 \DeclareTextCompositeCommand{.}{PU}{z}{\81\174}% U+017C  
 15115 % U+017D LATIN CAPITAL LETTER Z WITH CARON; Zcaron  
 15116 \DeclareTextCompositeCommand{\v}{PU}{Z}{\81\175}% U+017D  
 15117 % U+017E LATIN SMALL LETTER Z WITH CARON; zcaron  
 15118 \DeclareTextCompositeCommand{\v}{PU}{z}{\81\176}% U+017E  
 15119 % U+017F LATIN SMALL LETTER LONG S; longs, slong  
 15120 \DeclareTextCommand{\textlongS}{PU}{\81\177}% U+017F

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

15121 % U+0192 LATIN SMALL LETTER F WITH HOOK; florin  
 15122 \DeclareTextCommand{\textflorin}{PU}{\81\222}% U+0192  
 15123 % U+01CD LATIN CAPITAL LETTER A WITH CARON; Acaron  
 15124 \DeclareTextCompositeCommand{\v}{PU}{A}{\81\315}% U+01CD  
 15125 % U+01CE LATIN SMALL LETTER A WITH CARON; acaron  
 15126 \DeclareTextCompositeCommand{\v}{PU}{a}{\81\316}% U+01CE  
 15127 % U+01CF LATIN CAPITAL LETTER I WITH CARON; Icaron  
 15128 \DeclareTextCompositeCommand{\v}{PU}{I}{\81\317}% U+01CF  
 15129 % U+01D0 LATIN SMALL LETTER I WITH CARON; icaron  
 15130 \DeclareTextCompositeCommand{\v}{PU}{i}{\81\320}% U+01D0  
 15131 \DeclareTextCompositeCommand{\v}{PU}{i}{\81\320}% U+01D0  
 15132 % U+01D1 LATIN CAPITAL LETTER O WITH CARON; Ocaron  
 15133 \DeclareTextCompositeCommand{\v}{PU}{O}{\81\321}% U+01D1  
 15134 % U+01D2 LATIN SMALL LETTER O WITH CARON; ocaron  
 15135 \DeclareTextCompositeCommand{\v}{PU}{o}{\81\322}% U+01D2  
 15136 % U+01D3 LATIN CAPITAL LETTER U WITH CARON; Ucaron  
 15137 \DeclareTextCompositeCommand{\v}{PU}{U}{\81\323}% U+01D3  
 15138 % U+01D4 LATIN SMALL LETTER U WITH CARON; ucaron  
 15139 \DeclareTextCompositeCommand{\v}{PU}{u}{\81\324}% U+01D4  
 15140 % U+01E4 LATIN CAPITAL LETTER G WITH STROKE; Gstroke  
 15141 \DeclareTextCommand{\textGslash}{PU}{\81\344}% U+01E4  
 15142 % U+01E5 LATIN SMALL LETTER G WITH STROKE; gstroke  
 15143 \DeclareTextCommand{\textgslash}{PU}{\81\345}% U+01E5  
 15144 % U+01E6 LATIN CAPITAL LETTER G WITH CARON; Gcaron  
 15145 \DeclareTextCompositeCommand{\v}{PU}{G}{\81\346}% U+01E6  
 15146 % U+01E7 LATIN SMALL LETTER G WITH CARON; gcaron  
 15147 \DeclareTextCompositeCommand{\v}{PU}{g}{\81\347}% U+01E7  
 15148 % U+01E8 LATIN CAPITAL LETTER K WITH CARON; Kcaron  
 15149 \DeclareTextCompositeCommand{\v}{PU}{K}{\81\350}% U+01E8



15150 % U+01E9 LATIN SMALL LETTER K WITH CARON; kcaron  
 15151 \DeclareTextCompositeCommand{\v}{PU}{k}{\81\351}% U+01E9  
 15152 % U+01EA LATIN CAPITAL LETTER O WITH OGONEK; Oogonek  
 15153 \DeclareTextCompositeCommand{\k}{PU}{O}{\81\352}% U+01EA  
 15154 % U+01EB LATIN SMALL LETTER O WITH OGONEK; oogonek  
 15155 \DeclareTextCompositeCommand{\k}{PU}{o}{\81\353}% U+01EB  
 15156 % U+01F0 LATIN SMALL LETTER J WITH CARON; jcaron  
 15157 \DeclareTextCompositeCommand{\v}{PU}{j}{\81\360}% U+01F0  
 15158 \DeclareTextCompositeCommand{\v}{PU}{j}{\81\360}% U+01F0  
 15159 % U+01F4 LATIN CAPITAL LETTER G WITH ACUTE; Gacute  
 15160 \DeclareTextCompositeCommand{\'}{PU}{G}{\81\364}% U+01F4  
 15161 % U+01F5 LATIN SMALL LETTER G WITH ACUTE; gacute  
 15162 \DeclareTextCompositeCommand{\'}{PU}{g}{\81\365}% U+01F5  
 15163 % U+01F8 LATIN CAPITAL LETTER N WITH GRAVE  
 15164 \DeclareTextCompositeCommand{\'}{PU}{N}{\81\370}% U+01F8  
 15165 % U+01F9 LATIN SMALL LETTER N WITH GRAVE  
 15166 \DeclareTextCompositeCommand{\'}{PU}{n}{\81\371}% U+01F9  
 15167 % U+01FC LATIN CAPITAL LETTER AE WITH ACUTE; AEacute  
 15168 \DeclareTextCompositeCommand{\'}{PU}{AE}{\81\374}% U+01FC  
 15169 % U+01FD LATIN SMALL LETTER AE WITH ACUTE; aeacute  
 15170 \DeclareTextCompositeCommand{\'}{PU}{ae}{\81\375}% U+01FD  
 15171 % U+01FE LATIN CAPITAL LETTER O WITH STROKE AND ACUTE; \*Oslasha-  
 cute, Ostrokeacut  
 15172 \DeclareTextCompositeCommand{\'}{PU}{O}{\81\376}% U+01FE  
 15173 % U+01FF LATIN SMALL LETTER O WITH STROKE AND ACUTE; \*oslasha-  
 cute, ostrokeacute  
 15174 \DeclareTextCompositeCommand{\'}{PU}{o}{\81\377}% U+01FF  
 15175 % U+0200 LATIN CAPITAL LETTER A WITH DOUBLE GRAVE; Adblgrave  
 15176 \DeclareTextCompositeCommand{\G}{PU}{A}{\82\000}% U+0200  
 15177 % U+0201 LATIN SMALL LETTER A WITH DOUBLE GRAVE; adblgrave  
 15178 \DeclareTextCompositeCommand{\G}{PU}{a}{\82\001}% U+0201  
 15179 % U+0204 LATIN CAPITAL LETTER E WITH DOUBLE GRAVE; Edblgrave  
 15180 \DeclareTextCompositeCommand{\G}{PU}{E}{\82\004}% U+0204  
 15181 % U+0205 LATIN SMALL LETTER E WITH DOUBLE GRAVE; edblgrave  
 15182 \DeclareTextCompositeCommand{\G}{PU}{e}{\82\005}% U+0205  
 15183 % U+0208 LATIN CAPITAL LETTER I WITH DOUBLE GRAVE; Idblgrave  
 15184 \DeclareTextCompositeCommand{\G}{PU}{I}{\82\010}% U+0208  
 15185 % U+0209 LATIN SMALL LETTER I WITH DOUBLE GRAVE; idblgrave  
 15186 \DeclareTextCompositeCommand{\G}{PU}{i}{\82\011}% U+0209  
 15187 \DeclareTextCompositeCommand{\G}{PU}{i}{\82\011}% U+0209  
 15188 % U+020C LATIN CAPITAL LETTER O WITH DOUBLE GRAVE; Odblgrave  
 15189 \DeclareTextCompositeCommand{\G}{PU}{O}{\82\014}% U+020C  
 15190 % U+020D LATIN SMALL LETTER O WITH DOUBLE GRAVE; odblgrave  
 15191 \DeclareTextCompositeCommand{\G}{PU}{o}{\82\015}% U+020D  
 15192 % U+0210 LATIN CAPITAL LETTER R WITH DOUBLE GRAVE; Rdblgrave  
 15193 \DeclareTextCompositeCommand{\G}{PU}{R}{\82\020}% U+0210  
 15194 % U+0211 LATIN SMALL LETTER R WITH DOUBLE GRAVE; rdblgrave  
 15195 \DeclareTextCompositeCommand{\G}{PU}{r}{\82\021}% U+0211  
 15196 % U+0214 LATIN CAPITAL LETTER U WITH DOUBLE GRAVE; Udblgrave  
 15197 \DeclareTextCompositeCommand{\G}{PU}{U}{\82\024}% U+0214  
 15198 % U+0215 LATIN SMALL LETTER U WITH DOUBLE GRAVE; udblgrave  
 15199 \DeclareTextCompositeCommand{\G}{PU}{u}{\82\025}% U+0215  
 15200 % U+021E LATIN CAPITAL LETTER H WITH CARON  
 15201 \DeclareTextCompositeCommand{\v}{PU}{H}{\82\036}% U+021E  
 15202 % U+021F LATIN SMALL LETTER H WITH CARON  
 15203 \DeclareTextCompositeCommand{\v}{PU}{h}{\82\037}% U+021F  
 15204 % U+0226 LATIN CAPITAL LETTER A WITH DOT ABOVE

15205 \DeclareTextCompositeCommand{\.}{PU}{A}{\82\046}% U+0226  
 15206 % U+0227 LATIN SMALL LETTER A WITH DOT ABOVE  
 15207 \DeclareTextCompositeCommand{\.}{PU}{a}{\82\047}% U+0227  
 15208 % U+0228 LATIN CAPITAL LETTER E WITH CEDILLA  
 15209 \DeclareTextCompositeCommand{\c}{PU}{E}{\82\050}% U+0228  
 15210 % U+0229 LATIN SMALL LETTER E WITH CEDILLA  
 15211 \DeclareTextCompositeCommand{\c}{PU}{e}{\82\051}% U+0229  
 15212 % U+022E LATIN CAPITAL LETTER O WITH DOT ABOVE  
 15213 \DeclareTextCompositeCommand{\.}{PU}{O}{\82\056}% U+022E  
 15214 % U+022F LATIN SMALL LETTER O WITH DOT ABOVE  
 15215 \DeclareTextCompositeCommand{\.}{PU}{o}{\82\057}% U+022F  
 15216 % U+0232 LATIN CAPITAL LETTER Y WITH MACRON  
 15217 \DeclareTextCompositeCommand{\=}{PU}{Y}{\82\062}% U+0232  
 15218 % U+0233 LATIN SMALL LETTER Y WITH MACRON  
 15219 \DeclareTextCompositeCommand{\=}{PU}{y}{\82\063}% U+0233  
 15220 % U+0237 LATIN SMALL LETTER DOTLESS J  
 15221 \DeclareTextCommand{\j}{PU}{\82\067}% U+0237

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

15222 % U+02C7 CARON; caron  
 15223 \DeclareTextCommand{\textasciicaron}{PU}{\82\307}% U+02C7  
 15224 % U+02D8 BREVE; breve  
 15225 \DeclareTextCommand{\textasciibreve}{PU}{\82\330}% U+02D8  
 15226 % U+02D9 DOT ABOVE; dotaccent  
 15227 \DeclareTextCommand{\textdotaccent}{PU}{\82\331}% U+02D9  
 15228 % U+02DA RING ABOVE; ring  
 15229 \DeclareTextCommand{\textring}{PU}{\82\332}% U+02DA  
 15230 % U+02DB OGONEK; ogonek  
 15231 \DeclareTextCommand{\textogonek}{PU}{\82\333}% U+02DB  
 15232 % U+02DC SMALL TILDE; ilde, \*tilde  
 15233 \DeclareTextCommand{\texttilde}{PU}{\82\334}% U+02DC  
 15234 % U+02DD DOUBLE ACUTE ACCENT; hungarumlaut  
 15235 \DeclareTextCommand{\texthungarumlaut}{PU}{\82\335}% U+02DD  
 15236 \DeclareTextCommand{\textacutedbl}{PU}{\texthungarumlaut}% U+02DD  
 15237 % U+02F5 MODIFIER LETTER MIDDLE DOUBLE GRAVE ACCENT  
 15238 \DeclareTextCommand{\textgravedbl}{PU}{\82\365}% U+02F5  
 15239 % U+02F7 MODIFIER LETTER LOW TILDE  
 15240 \DeclareTextCommand{\texttildelow}{PU}{\82\367}% U+02F7

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

15241 % U+030F COMBINING DOUBLE GRAVE ACCENT; dblgravecmb  
 15242 \DeclareTextCommand{\textdoublegrave}{PU}{\83\017}% U+030F  
 15243 % U+0311 COMBINING INVERTED BREVE; breveinvertedcmb  
 15244 \DeclareTextCommand{\textnewtie}{PU}{\83\021}% U+0311  
 15245 % U+0323 COMBINING DOT BELOW; dotbelowcmb, \*dotbelowcomb  
 15246 \DeclareTextCommand{\textdotbelow}{PU}{\83\043}% U+0323  
 15247 % U+0331 COMBINING MACRON BELOW; macronbelowcmb  
 15248 \DeclareTextCommand{\textmacronbelow}{PU}{\83\061}% U+0331  
 15249 % U+0361 COMBINING DOUBLE INVERTED BREVE; breveinverteddoublecmb  
 15250 \DeclareTextCommand{\texttie}{PU}{\83\141}% U+0361

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

15251 % U+0374 GREEK NUMERAL SIGN; numeralsigngreek  
 15252 \DeclareTextCommand{\textnumeralsigngreek}{PU}{\83\164}% U+0374  
 15253 % U+0375 GREEK LOWER NUMERAL SIGN; numeralsignlowergreek  
 15254 \DeclareTextCommand{\textnumeralsignlowergreek}{PU}{\83\165}% U+0375  
 15255 % U+0386 GREEK CAPITAL LETTER ALPHA WITH TONOS; Alphanos

15256 \DeclareTextCompositeCommand{'}{PU}{\textAlpha}{\83\206}% U+0386  
15257 % U+0388 GREEK CAPITAL LETTER EPSILON WITH TONOS; Epsilontonos  
15258 \DeclareTextCompositeCommand{'}{PU}{\textEpsilon}{\83\210}% U+0388  
15259 % U+0389 GREEK CAPITAL LETTER ETA WITH TONOS; Etatonos  
15260 \DeclareTextCompositeCommand{'}{PU}{\textEta}{\83\211}% U+0389  
15261 % U+038A GREEK CAPITAL LETTER IOTA WITH TONOS; Iotatonos  
15262 \DeclareTextCompositeCommand{'}{PU}{\textIota}{\83\212}% U+038A  
15263 % U+038C GREEK CAPITAL LETTER OMICRON WITH TONOS; Omi-  
crintonos  
15264 \DeclareTextCompositeCommand{'}{PU}{\textOmicron}{\83\214}% U+038C  
15265 % U+038E GREEK CAPITAL LETTER UPSILON WITH TONOS; Upsilonontonos  
15266 \DeclareTextCompositeCommand{'}{PU}{\textUpsilon}{\83\216}% U+038E  
15267 % U+038F GREEK CAPITAL LETTER OMEGA WITH TONOS; Omegatonos  
15268 \DeclareTextCompositeCommand{'}{PU}{\textOmega}{\83\217}% U+038F  
15269 % U+0390 GREEK SMALL LETTER IOTA WITH DIALYTIKA AND TONOS; io-  
tadiesisistonos  
15270 \DeclareTextCompositeCommand{'}{PU}{\textIotadiesis}{\83\220}% U+0390  
15271 % U+0391 GREEK CAPITAL LETTER ALPHA; Alpha  
15272 \DeclareTextCommand{\textAlpha}{PU}{\83\221}% U+0391  
15273 % U+0392 GREEK CAPITAL LETTER BETA; Beta  
15274 \DeclareTextCommand{\textBeta}{PU}{\83\222}% U+0392  
15275 % U+0393 GREEK CAPITAL LETTER GAMMA; Gamma  
15276 \DeclareTextCommand{\textGamma}{PU}{\83\223}% U+0393  
15277 % U+0394 GREEK CAPITAL LETTER DELTA; Deltagreek, \*Delta  
15278 \DeclareTextCommand{\textDelta}{PU}{\83\224}% U+0394  
15279 % U+0395 GREEK CAPITAL LETTER EPSILON; Epsilon  
15280 \DeclareTextCommand{\textEpsilon}{PU}{\83\225}% U+0395  
15281 % U+0396 GREEK CAPITAL LETTER ZETA; Zeta  
15282 \DeclareTextCommand{\textZeta}{PU}{\83\226}% U+0396  
15283 % U+0397 GREEK CAPITAL LETTER ETA; Eta  
15284 \DeclareTextCommand{\textEta}{PU}{\83\227}% U+0397  
15285 % U+0398 GREEK CAPITAL LETTER THETA; Theta  
15286 \DeclareTextCommand{\textTheta}{PU}{\83\230}% U+0398  
15287 % U+0399 GREEK CAPITAL LETTER IOTA; Iota  
15288 \DeclareTextCommand{\textIota}{PU}{\83\231}% U+0399  
15289 % U+039A GREEK CAPITAL LETTER KAPPA; Kappa  
15290 \DeclareTextCommand{\textKappa}{PU}{\83\232}% U+039A  
15291 % U+039B GREEK CAPITAL LETTER LAMDA; Lambda  
15292 \DeclareTextCommand{\textLambda}{PU}{\83\233}% U+039B  
15293 % U+039C GREEK CAPITAL LETTER MU; Mu  
15294 \DeclareTextCommand{\textMu}{PU}{\83\234}% U+039C  
15295 % U+039D GREEK CAPITAL LETTER NU; Nu  
15296 \DeclareTextCommand{\textNu}{PU}{\83\235}% U+039D  
15297 % U+039E GREEK CAPITAL LETTER XI; Xi  
15298 \DeclareTextCommand{\textXi}{PU}{\83\236}% U+039E  
15299 % U+039F GREEK CAPITAL LETTER OMICRON; Omicron  
15300 \DeclareTextCommand{\textOmicron}{PU}{\83\237}% U+039F  
15301 % U+03A0 GREEK CAPITAL LETTER PI; Pi  
15302 \DeclareTextCommand{\textPi}{PU}{\83\240}% U+03A0  
15303 % U+03A1 GREEK CAPITAL LETTER RHO; Rho  
15304 \DeclareTextCommand{\textRho}{PU}{\83\241}% U+03A1  
15305 % U+03A3 GREEK CAPITAL LETTER SIGMA; Sigma  
15306 \DeclareTextCommand{\textSigma}{PU}{\83\243}% U+03A3  
15307 % U+03A4 GREEK CAPITAL LETTER TAU; Tau  
15308 \DeclareTextCommand{\textTau}{PU}{\83\244}% U+03A4  
15309 % U+03A5 GREEK CAPITAL LETTER UPSILON; Upsilon  
15310 \DeclareTextCommand{\textUpsilon}{PU}{\83\245}% U+03A5

15311 % U+03A6 GREEK CAPITAL LETTER PHI; Phi  
 15312 \DeclareTextCommand{\textPhi}{PU}{\83\246}% U+03A6  
 15313 % U+03A7 GREEK CAPITAL LETTER CHI; Chi  
 15314 \DeclareTextCommand{\textChi}{PU}{\83\247}% U+03A7  
 15315 % U+03A8 GREEK CAPITAL LETTER PSI; Psi  
 15316 \DeclareTextCommand{\textPsi}{PU}{\83\250}% U+03A8  
 15317 % U+03A9 GREEK CAPITAL LETTER OMEGA; Omegagreek, \*Omega  
 15318 \DeclareTextCommand{\textOmega}{PU}{\83\251}% U+03A9  
 15319 % U+03AA GREEK CAPITAL LETTER IOTA WITH DIALYTIKA; Iotadieresis  
 15320 \DeclareTextCommand{\textIotadieresis}{PU}{\83\252}% U+03AA  
 15321 \DeclareTextCompositeCommand{"}{PU}{\textIota}{\83\252}% U+03AA  
 15322 % U+03AB GREEK CAPITAL LETTER UPSILON WITH DIALYTIKA; Up-  
 silondieresis  
 15323 \DeclareTextCompositeCommand{"}{PU}{\textUpsilon}{\83\253}% U+03AB  
 15324 % U+03AC GREEK SMALL LETTER ALPHA WITH TONOS; alphanos  
 15325 \DeclareTextCompositeCommand{'}{PU}{\textalpha}{\83\254}% U+03AC  
 15326 % U+03AD GREEK SMALL LETTER EPSILON WITH TONOS; epsilonos  
 15327 \DeclareTextCompositeCommand{'}{PU}{\textepsilon}{\83\255}% U+03AD  
 15328 % U+03AE GREEK SMALL LETTER ETA WITH TONOS; etanos  
 15329 \DeclareTextCompositeCommand{'}{PU}{\texteta}{\83\256}% U+03AE  
 15330 % U+03AF GREEK SMALL LETTER IOTA WITH TONOS; iotanos  
 15331 \DeclareTextCompositeCommand{'}{PU}{\textiota}{\83\257}% U+03AF  
 15332 % U+03B0 GREEK SMALL LETTER UPSILON WITH DIALYTIKA AND TONOS; up-  
 silondieresis  
 15333 \DeclareTextCompositeCommand{"}{PU}{\textupsilon}{\83\260}% U+03B0  
 15334 % U+03B1 GREEK SMALL LETTER ALPHA; alpha  
 15335 \DeclareTextCommand{\textalpha}{PU}{\83\261}% U+03B1  
 15336 % U+03B2 GREEK SMALL LETTER BETA; beta  
 15337 \DeclareTextCommand{\textbeta}{PU}{\83\262}% U+03B2  
 15338 % U+03B3 GREEK SMALL LETTER GAMMA; gamma  
 15339 \DeclareTextCommand{\textgamma}{PU}{\83\263}% U+03B3  
 15340 % U+03B4 GREEK SMALL LETTER DELTA; delta  
 15341 \DeclareTextCommand{\textdelta}{PU}{\83\264}% U+03B4  
 15342 % U+03B5 GREEK SMALL LETTER EPSILON; epsilon  
 15343 \DeclareTextCommand{\textepsilon}{PU}{\83\265}% U+03B5  
 15344 % U+03B6 GREEK SMALL LETTER ZETA; zeta  
 15345 \DeclareTextCommand{\textzeta}{PU}{\83\266}% U+03B6  
 15346 % U+03B7 GREEK SMALL LETTER ETA; eta  
 15347 \DeclareTextCommand{\texteta}{PU}{\83\267}% U+03B7  
 15348 % U+03B8 GREEK SMALL LETTER THETA; theta  
 15349 \DeclareTextCommand{\texttheta}{PU}{\83\270}% U+03B8  
 15350 % U+03B9 GREEK SMALL LETTER IOTA; iota  
 15351 \DeclareTextCommand{\textiota}{PU}{\83\271}% U+03B9  
 15352 % U+03BA GREEK SMALL LETTER KAPPA; kappa  
 15353 \DeclareTextCommand{\textkappa}{PU}{\83\272}% U+03BA  
 15354 % U+03BB GREEK SMALL LETTER LAMDA; lambda  
 15355 \DeclareTextCommand{\textlambda}{PU}{\83\273}% U+03BB  
 15356 % U+03BC GREEK SMALL LETTER MU; mugreek, \*mu  
 15357 \DeclareTextCommand{\textmugreek}{PU}{\83\274}% U+03BC  
 15358 % U+03BD GREEK SMALL LETTER NU; nu  
 15359 \DeclareTextCommand{\textnu}{PU}{\83\275}% U+03BD  
 15360 % U+03BE GREEK SMALL LETTER XI; xi  
 15361 \DeclareTextCommand{\textxi}{PU}{\83\276}% U+03BE  
 15362 % U+03BF GREEK SMALL LETTER OMICRON; omicron  
 15363 \DeclareTextCommand{\textomicron}{PU}{\83\277}% U+03BF  
 15364 % U+03C0 GREEK SMALL LETTER PI; pi  
 15365 \DeclareTextCommand{\textpi}{PU}{\83\300}% U+03C0

15366 % U+03C1 GREEK SMALL LETTER RHO; rho  
 15367 \DeclareTextCommand{\textrho}{PU}{\83\301}% U+03C1  
 15368 % U+03C2 GREEK SMALL LETTER FINAL SIGMA; \*sigma1, sigmafinal  
 15369 \DeclareTextCommand{\textvarsigma}{PU}{\83\302}% U+03C2  
 15370 % U+03C3 GREEK SMALL LETTER SIGMA; sigma  
 15371 \DeclareTextCommand{\textsigma}{PU}{\83\303}% U+03C3  
 15372 % U+03C4 GREEK SMALL LETTER TAU; tau  
 15373 \DeclareTextCommand{\texttau}{PU}{\83\304}% U+03C4  
 15374 % U+03C5 GREEK SMALL LETTER UPSILON; upsilon  
 15375 \DeclareTextCommand{\textupsilon}{PU}{\83\305}% U+03C5  
 15376 % U+03C6 GREEK SMALL LETTER PHI; phi  
 15377 \DeclareTextCommand{\textphi}{PU}{\83\306}% U+03C6  
 15378 % U+03C7 GREEK SMALL LETTER CHI; chi  
 15379 \DeclareTextCommand{\textchi}{PU}{\83\307}% U+03C7  
 15380 % U+03C8 GREEK SMALL LETTER PSI; psi  
 15381 \DeclareTextCommand{\textpsi}{PU}{\83\310}% U+03C8  
 15382 % U+03C9 GREEK SMALL LETTER OMEGA; omega  
 15383 \DeclareTextCommand{\textomega}{PU}{\83\311}% U+03C9  
 15384 % U+03CA GREEK SMALL LETTER IOTA WITH DIALYTIKA; iotadieresis  
 15385 \DeclareTextCompositeCommand{"}{PU}{\textiota}{\83\312}% U+03CA  
 15386 % U+03CB GREEK SMALL LETTER UPSILON WITH DIALYTIKA; up-  
 silondieresis  
 15387 \DeclareTextCompositeCommand{"}{PU}{\textupsilon}{\83\313}% U+03CB  
 15388 % U+03CC GREEK SMALL LETTER OMICRON WITH TONOS; omicrontonos  
 15389 \DeclareTextCompositeCommand{'}{PU}{\textomicron}{\83\314}% U+03CC  
 15390 % U+03CD GREEK SMALL LETTER UPSILON WITH TONOS; upsilontonos  
 15391 \DeclareTextCommand{\textupsilonacute}{PU}{\83\315}% U+03CD  
 15392 \DeclareTextCompositeCommand{'}{PU}{\textupsilon}{\83\315}% U+03CD  
 15393 % U+03CE GREEK SMALL LETTER OMEGA WITH TONOS; omegatonos  
 15394 \DeclareTextCompositeCommand{'}{PU}{\textomega}{\83\316}% U+03CE  
 15395 % U+03DA GREEK LETTER STIGMA; Stigmagreek  
 15396 \DeclareTextCommand{\textStigmagreek}{PU}{\83\332}% U+03DA  
 15397 % U+03DB GREEK SMALL LETTER STIGMA  
 15398 \DeclareTextCommand{\textstigmagreek}{PU}{\83\333}% U+03DB  
 15399 % U+03DC GREEK LETTER DIGAMMA; Digammagreek  
 15400 \DeclareTextCommand{\textDigammagreek}{PU}{\83\334}% U+03DC  
 15401 % U+03DD GREEK SMALL LETTER DIGAMMA  
 15402 \DeclareTextCommand{\textdigammagreek}{PU}{\83\335}% U+03DD  
 15403 % U+03DE GREEK LETTER KOPPA; Koppagreek  
 15404 \DeclareTextCommand{\textKoppagreek}{PU}{\83\336}% U+03DE  
 15405 % U+03DF GREEK SMALL LETTER KOPPA  
 15406 \DeclareTextCommand{\textkoppagreek}{PU}{\83\337}% U+03DF  
 15407 % U+03E0 GREEK LETTER SAMPI; Sampigreek  
 15408 \DeclareTextCommand{\textSampigreek}{PU}{\83\340}% U+03E0  
 15409 % U+03E1 GREEK SMALL LETTER SAMPI  
 15410 \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.

15411 % U+0400 CYRILLIC CAPITAL LETTER IE WITH GRAVE  
 15412 \DeclareTextCompositeCommand{'}{PU}{\CYRE}{\84\000}% U+0400  
 15413 % U+0401 CYRILLIC CAPITAL LETTER IO; Iocyrillic, \*afii10023  
 15414 \DeclareTextCommand{\CYRYO}{PU}{\84\001}% U+0401  
 15415 \DeclareTextCompositeCommand{"}{PU}{\CYRE}{\84\001}% ???  
 15416 % U+0402 CYRILLIC CAPITAL LETTER DJE; Djecyrillic, \*afii10051  
 15417 \DeclareTextCommand{\CYRDJE}{PU}{\84\002}% U+0402

15418 % U+0403 CYRILLIC CAPITAL LETTER GJE; Gjecyrillic, \*afii10052  
 15419 \DeclareTextCompositeCommand{\'}{PU}{\CYRG}{\84\003}% U+0403  
 15420 % U+0404 CYRILLIC CAPITAL LETTER UKRAINIAN IE; Ecyrillic, \*afii10053  
 15421 \DeclareTextCommand{\CYRIE}{PU}{\84\004}% U+0404  
 15422 % U+0405 CYRILLIC CAPITAL LETTER DZE; Dzecyrillic, \*afii10054  
 15423 \DeclareTextCommand{\CYRDZE}{PU}{\84\005}% U+0405  
 15424 % U+0406 CYRILLIC CAPITAL LETTER BYELORUSSIAN-UKRAINIAN I; Icyrillic, \*afii10055  
 15425 \DeclareTextCommand{\CYRII}{PU}{\84\006}% U+0406  
 15426 % U+0407 CYRILLIC CAPITAL LETTER YI; Yicyrillic, \*afii10056  
 15427 \DeclareTextCommand{\CYRYI}{PU}{\84\007}% U+0407  
 15428 \DeclareTextCompositeCommand{\"}{PU}{\CYRII}{\84\007}% U+0407  
 15429 % U+0408 CYRILLIC CAPITAL LETTER JE; Jecyrillic, \*afii10057  
 15430 \DeclareTextCommand{\CYRJE}{PU}{\84\010}% U+0408  
 15431 % U+0409 CYRILLIC CAPITAL LETTER LJE; Ljecyrillic, \*afii10058  
 15432 \DeclareTextCommand{\CYRLJE}{PU}{\84\011}% U+0409  
 15433 % U+040A CYRILLIC CAPITAL LETTER NJE; Njecyrillic, \*afii10059  
 15434 \DeclareTextCommand{\CYRNJE}{PU}{\84\012}% U+040A  
 15435 % U+040B CYRILLIC CAPITAL LETTER TSHE; Tshecyrillic, \*afii10060  
 15436 \DeclareTextCommand{\CYRTSHE}{PU}{\84\013}% U+040B  
 15437 % U+040C CYRILLIC CAPITAL LETTER KJE; Kjecyrillic, \*afii10061  
 15438 \DeclareTextCompositeCommand{\'}{PU}{\CYRK}{\84\014}% U+040C  
 15439 % U+040D CYRILLIC CAPITAL LETTER I WITH GRAVE  
 15440 \DeclareTextCompositeCommand{\`}{PU}{\CYRI}{\84\015}% U+040D  
 15441 % U+040E CYRILLIC CAPITAL LETTER SHORT U; Ushortcyrillic, \*afii10062  
 15442 \DeclareTextCommand{\CYRUSHRT}{PU}{\84\016}% U+040E  
 15443 \DeclareTextCompositeCommand{\U}{PU}{\CYRU}{\84\016}% U+040E  
 15444 % U+040F CYRILLIC CAPITAL LETTER DZHE; Dzhecyrillic, \*afii10145  
 15445 \DeclareTextCommand{\CYRDZHE}{PU}{\84\017}% U+040F  
 15446 % U+0410 CYRILLIC CAPITAL LETTER A; Acyrillic, \*afii10017  
 15447 \DeclareTextCommand{\CYRA}{PU}{\84\020}% U+0410  
 15448 % U+0411 CYRILLIC CAPITAL LETTER BE; Becyrillic, \*afii10018  
 15449 \DeclareTextCommand{\CYRB}{PU}{\84\021}% U+0411  
 15450 % U+0412 CYRILLIC CAPITAL LETTER VE; Vecyrillic, \*afii10019  
 15451 \DeclareTextCommand{\CYRV}{PU}{\84\022}% U+0412  
 15452 % U+0413 CYRILLIC CAPITAL LETTER GHE; Gecyrillic, \*afii10020  
 15453 \DeclareTextCommand{\CYRG}{PU}{\84\023}% U+0413  
 15454 % U+0414 CYRILLIC CAPITAL LETTER DE; Decyrillic, \*afii10021  
 15455 \DeclareTextCommand{\CYRD}{PU}{\84\024}% U+0414  
 15456 % U+0415 CYRILLIC CAPITAL LETTER IE; Iecyrillic, \*afii10022  
 15457 \DeclareTextCommand{\CYRE}{PU}{\84\025}% U+0415  
 15458 % U+0416 CYRILLIC CAPITAL LETTER ZHE; Zhecyrillic, \*afii10024  
 15459 \DeclareTextCommand{\CYRZH}{PU}{\84\026}% U+0416  
 15460 % U+0417 CYRILLIC CAPITAL LETTER ZE; Zecyrillic, \*afii10025  
 15461 \DeclareTextCommand{\CYRZ}{PU}{\84\027}% U+0417  
 15462 % U+0418 CYRILLIC CAPITAL LETTER I; Iicyrillic, \*afii10026  
 15463 \DeclareTextCommand{\CYRI}{PU}{\84\030}% U+0418  
 15464 % U+0419 CYRILLIC CAPITAL LETTER SHORT I; Iishortcyrillic, \*afii10027  
 15465 \DeclareTextCommand{\CYRISHRT}{PU}{\84\031}% U+0419  
 15466 \DeclareTextCompositeCommand{\U}{PU}{\CYRI}{\84\031}% U+0419  
 15467 % U+041A CYRILLIC CAPITAL LETTER KA; Kacyrillic, \*afii10028  
 15468 \DeclareTextCommand{\CYRK}{PU}{\84\032}% U+041A  
 15469 % U+041B CYRILLIC CAPITAL LETTER EL; Elcyrillic, \*afii10029  
 15470 \DeclareTextCommand{\CYRL}{PU}{\84\033}% U+041B  
 15471 % U+041C CYRILLIC CAPITAL LETTER EM; Emcyrillic, \*afii10030  
 15472 \DeclareTextCommand{\CYRM}{PU}{\84\034}% U+041C  
 15473 % U+041D CYRILLIC CAPITAL LETTER EN; Encyrillic, \*afii10031

15474 \DeclareTextCommand{\CYRN}{PU}{\84\035}% U+041D  
15475 % U+041E CYRILLIC CAPITAL LETTER O; Ocyrillic, \*afii10032  
15476 \DeclareTextCommand{\CYRO}{PU}{\84\036}% U+041E  
15477 % U+041F CYRILLIC CAPITAL LETTER PE; Pecyrillic, \*afii10033  
15478 \DeclareTextCommand{\CYRP}{PU}{\84\037}% U+041F  
15479 % U+0420 CYRILLIC CAPITAL LETTER ER; Ercyrillic, \*afii10034  
15480 \DeclareTextCommand{\CYRR}{PU}{\84\040}% U+0420  
15481 % U+0421 CYRILLIC CAPITAL LETTER ES; Escyrillic, \*afii10035  
15482 \DeclareTextCommand{\CYRS}{PU}{\84\041}% U+0421  
15483 % U+0422 CYRILLIC CAPITAL LETTER TE; Tecyrillic, \*afii10036  
15484 \DeclareTextCommand{\CYRT}{PU}{\84\042}% U+0422  
15485 % U+0423 CYRILLIC CAPITAL LETTER U; Ucyrillic, \*afii10037  
15486 \DeclareTextCommand{\CYRU}{PU}{\84\043}% U+0423  
15487 % U+0424 CYRILLIC CAPITAL LETTER EF; Efcyrillic, \*afii10038  
15488 \DeclareTextCommand{\CYRF}{PU}{\84\044}% U+0424  
15489 % U+0425 CYRILLIC CAPITAL LETTER HA; Khacyrillic, \*afii10039  
15490 \DeclareTextCommand{\CYRH}{PU}{\84\045}% U+0425  
15491 % U+0426 CYRILLIC CAPITAL LETTER TSE; Tsecyrillic, \*afii10040  
15492 \DeclareTextCommand{\CYRC}{PU}{\84\046}% U+0426  
15493 % U+0427 CYRILLIC CAPITAL LETTER CHE; Checyrillic, \*afii10041  
15494 \DeclareTextCommand{\CYRCH}{PU}{\84\047}% U+0427  
15495 % U+0428 CYRILLIC CAPITAL LETTER SHA; Shacyrillic, \*afii10042  
15496 \DeclareTextCommand{\CYRSH}{PU}{\84\050}% U+0428  
15497 % U+0429 CYRILLIC CAPITAL LETTER SHCHA; Shchacyrillic, \*afii10043  
15498 \DeclareTextCommand{\CYRSHCH}{PU}{\84\051}% U+0429  
15499 % U+042A CYRILLIC CAPITAL LETTER HARD SIGN; Hardsigncyrillic, \*afii10044  
15500 \DeclareTextCommand{\CYRHRDSN}{PU}{\84\052}% U+042A  
15501 % U+042B CYRILLIC CAPITAL LETTER YERU; Yericyrillic, \*afii10045  
15502 \DeclareTextCommand{\CYRERY}{PU}{\84\053}% U+042B  
15503 % U+042C CYRILLIC CAPITAL LETTER SOFT SIGN; Softsigncyrillic, \*afii10046  
15504 \DeclareTextCommand{\CYRSFTSN}{PU}{\84\054}% U+042C  
15505 % U+042D CYRILLIC CAPITAL LETTER E; Ereversedcyrillic, \*afii10047  
15506 \DeclareTextCommand{\CYREREV}{PU}{\84\055}% U+042D  
15507 % U+042E CYRILLIC CAPITAL LETTER YU; IUcyrillic, \*afii10048  
15508 \DeclareTextCommand{\CYRYU}{PU}{\84\056}% U+042E  
15509 % U+042F CYRILLIC CAPITAL LETTER YA; IAcyrillic, \*afii10049  
15510 \DeclareTextCommand{\CYRYA}{PU}{\84\057}% U+042F  
15511 % U+0430 CYRILLIC SMALL LETTER A; acyrillic, \*afii10065  
15512 \DeclareTextCommand{\cyra}{PU}{\84\060}% U+0430  
15513 % U+0431 CYRILLIC SMALL LETTER BE; \*afii10066, becyrillic  
15514 \DeclareTextCommand{\cyrb}{PU}{\84\061}% U+0431  
15515 % U+0432 CYRILLIC SMALL LETTER VE; \*afii10067, vecyrillic  
15516 \DeclareTextCommand{\cyrv}{PU}{\84\062}% U+0432  
15517 % U+0433 CYRILLIC SMALL LETTER GHE; \*afii10068, gecyrillic  
15518 \DeclareTextCommand{\cyrg}{PU}{\84\063}% U+0433  
15519 % U+0434 CYRILLIC SMALL LETTER DE; \*afii10069, decyrillic  
15520 \DeclareTextCommand{\cyrd}{PU}{\84\064}% U+0434  
15521 % U+0435 CYRILLIC SMALL LETTER IE; \*afii10070, iecyrillic  
15522 \DeclareTextCommand{\cyre}{PU}{\84\065}% U+0435  
15523 % U+0436 CYRILLIC SMALL LETTER ZHE; \*afii10072, zhacyrillic  
15524 \DeclareTextCommand{\cyrz}{PU}{\84\066}% U+0436  
15525 % U+0437 CYRILLIC SMALL LETTER ZE; \*afii10073, zecyrillic  
15526 \DeclareTextCommand{\cyrz}{PU}{\84\067}% U+0437  
15527 % U+0438 CYRILLIC SMALL LETTER I; \*afii10074, iicyrillic  
15528 \DeclareTextCommand{\cyri}{PU}{\84\070}% U+0438  
15529 % U+0439 CYRILLIC SMALL LETTER SHORT I; \*afii10075, iishortcyrillic  
15530 \DeclareTextCommand{\cyrishrt}{PU}{\84\071}% U+0439

15531 \DeclareTextCompositeCommand{\U}{PU}{\cyri}{\84\071}% U+0439  
15532 % U+043A CYRILLIC SMALL LETTER KA; \*afii10076, kacyrillic  
15533 \DeclareTextCommand{\cyrk}{PU}{\84\072}% U+043A  
15534 % U+043B CYRILLIC SMALL LETTER EL; \*afii10077, elcyrillic  
15535 \DeclareTextCommand{\cyrI}{PU}{\84\073}% U+043B  
15536 % U+043C CYRILLIC SMALL LETTER EM; \*afii10078, emcyrillic  
15537 \DeclareTextCommand{\cyrm}{PU}{\84\074}% U+043C  
15538 % U+043D CYRILLIC SMALL LETTER EN; \*afii10079, encyrillic  
15539 \DeclareTextCommand{\cyrn}{PU}{\84\075}% U+043D  
15540 % U+043E CYRILLIC SMALL LETTER O; \*afii10080, ocyrillic  
15541 \DeclareTextCommand{\cyro}{PU}{\84\076}% U+043E  
15542 % U+043F CYRILLIC SMALL LETTER PE; \*afii10081, pecyrillic  
15543 \DeclareTextCommand{\cyrp}{PU}{\84\077}% U+043F  
15544 % U+0440 CYRILLIC SMALL LETTER ER; \*afii10082, ercyrillic  
15545 \DeclareTextCommand{\cyrr}{PU}{\84\100}% U+0440  
15546 % U+0441 CYRILLIC SMALL LETTER ES; \*afii10083, escyrillic  
15547 \DeclareTextCommand{\cyrS}{PU}{\84\101}% U+0441  
15548 % U+0442 CYRILLIC SMALL LETTER TE; \*afii10084, tecyrillic  
15549 \DeclareTextCommand{\cyrt}{PU}{\84\102}% U+0442  
15550 % U+0443 CYRILLIC SMALL LETTER U; \*afii10085, ucyrillic  
15551 \DeclareTextCommand{\cyrU}{PU}{\84\103}% U+0443  
15552 % U+0444 CYRILLIC SMALL LETTER EF; \*afii10086, efcyrillic  
15553 \DeclareTextCommand{\cyrf}{PU}{\84\104}% U+0444  
15554 % U+0445 CYRILLIC SMALL LETTER HA; \*afii10087, khacyrillic  
15555 \DeclareTextCommand{\cyrh}{PU}{\84\105}% U+0445  
15556 % U+0446 CYRILLIC SMALL LETTER TSE; \*afii10088, tsecyrillic  
15557 \DeclareTextCommand{\cyrc}{PU}{\84\106}% U+0446  
15558 % U+0447 CYRILLIC SMALL LETTER CHE; \*afii10089, checyrillic  
15559 \DeclareTextCommand{\cyrch}{PU}{\84\107}% U+0447  
15560 % U+0448 CYRILLIC SMALL LETTER SHA; \*afii10090, shacyrillic  
15561 \DeclareTextCommand{\cyrsh}{PU}{\84\110}% U+0448  
15562 % U+0449 CYRILLIC SMALL LETTER SHCHA; \*afii10091, shchacyrillic  
15563 \DeclareTextCommand{\cyrshch}{PU}{\84\111}% U+0449  
15564 % U+044A CYRILLIC SMALL LETTER HARD SIGN; \*afii10092, hardsigncyrillic  
15565 \DeclareTextCommand{\cyhrhdsn}{PU}{\84\112}% U+044A  
15566 % U+044B CYRILLIC SMALL LETTER YERU; \*afii10093, yericyrillic  
15567 \DeclareTextCommand{\cyrery}{PU}{\84\113}% U+044B  
15568 % U+044C CYRILLIC SMALL LETTER SOFT SIGN; \*afii10094, softsigncyrillic  
15569 \DeclareTextCommand{\cyrSftsn}{PU}{\84\114}% U+044C  
15570 % U+044D CYRILLIC SMALL LETTER E; \*afii10095, ereversedcyrillic  
15571 \DeclareTextCommand{\cyrerev}{PU}{\84\115}% U+044D  
15572 % U+044E CYRILLIC SMALL LETTER YU; \*afii10096, iucyrillic  
15573 \DeclareTextCommand{\cyrYU}{PU}{\84\116}% U+044E  
15574 % U+044F CYRILLIC SMALL LETTER YA; \*afii10097, iacyrillic  
15575 \DeclareTextCommand{\cyrYA}{PU}{\84\117}% U+044F  
15576 % U+0450 CYRILLIC SMALL LETTER IE WITH GRAVE  
15577 \DeclareTextCompositeCommand{\'}{PU}{\cyre}{\84\120}% U+0450  
15578 % U+0451 CYRILLIC SMALL LETTER IO; \*afii10071, iocyrillic  
15579 \DeclareTextCommand{\cyrYO}{PU}{\84\121}% U+0451  
15580 \DeclareTextCompositeCommand{\"}{PU}{\cyre}{\84\121}% U+0451  
15581 % U+0452 CYRILLIC SMALL LETTER DJE; \*afii10099, djecyrillic  
15582 \DeclareTextCommand{\cyrdje}{PU}{\84\122}% U+0452  
15583 % U+0453 CYRILLIC SMALL LETTER GJE; \*afii10100, gjecyrillic  
15584 \DeclareTextCompositeCommand{\`}{PU}{\cyrG}{\84\123}% U+0453  
15585 % U+0454 CYRILLIC SMALL LETTER UKRAINIAN IE; \*afii10101, ecyrillic  
15586 \DeclareTextCommand{\cyrIE}{PU}{\84\124}% U+0454  
15587 % U+0455 CYRILLIC SMALL LETTER DZE; \*afii10102, dzecyrillic



15588 \DeclareTextCommand{\cyrdze}{PU}{\84\125}% U+0455  
 15589 % U+0456 CYRILLIC SMALL LETTER BYELORUSSIAN-UKRAINIAN I; \*afii10103, icyrillic  
 15590 \DeclareTextCommand{\cyrii}{PU}{\84\126}% U+0456  
 15591 % U+0457 CYRILLIC SMALL LETTER YI; \*afii10104, yicyrillic  
 15592 \DeclareTextCommand{\cyryi}{PU}{\84\127}% U+0457  
 15593 \DeclareTextCompositeCommand{"}{PU}{\cyrii}{\84\127}% U+0457  
 15594 % U+0458 CYRILLIC SMALL LETTER JE; \*afii10105, jecyrillic  
 15595 \DeclareTextCommand{\cyrje}{PU}{\84\130}% U+0458  
 15596 % U+0459 CYRILLIC SMALL LETTER LJE; \*afii10106, ljecyrillic  
 15597 \DeclareTextCommand{\cyrlje}{PU}{\84\131}% U+0459  
 15598 % U+045A CYRILLIC SMALL LETTER NJE; \*afii10107, njecyrillic  
 15599 \DeclareTextCommand{\cyrnje}{PU}{\84\132}% U+045A  
 15600 % U+045B CYRILLIC SMALL LETTER TSHE; \*afii10108, tshecyrillic  
 15601 \DeclareTextCommand{\cyrtshe}{PU}{\84\133}% U+045B  
 15602 % U+045C CYRILLIC SMALL LETTER KJE; \*afii10109, kjecyrillic  
 15603 \DeclareTextCompositeCommand{\'}{PU}{\cyrk}{\84\134}% U+045C  
 15604 % U+045D CYRILLIC SMALL LETTER I WITH GRAVE  
 15605 \DeclareTextCompositeCommand{\'}{PU}{\cyri}{\84\135}% U+045D  
 15606 % U+045E CYRILLIC SMALL LETTER SHORT U; \*afii10110, ushortcyrillic  
 15607 \DeclareTextCommand{\cyrushrt}{PU}{\84\136}% U+045E  
 15608 \DeclareTextCompositeCommand{\U}{PU}{\curu}{\84\136}% U+045E  
 15609 % U+045F CYRILLIC SMALL LETTER DZHE; \*afii10193, dzhecyrillic  
 15610 \DeclareTextCommand{\cyrdzhe}{PU}{\84\137}% U+045F  
 15611 % U+0460 CYRILLIC CAPITAL LETTER OMEGA; Omegacyrillic  
 15612 \DeclareTextCommand{\CYROMEGA}{PU}{\84\140}% U+0460  
 15613 % U+0461 CYRILLIC SMALL LETTER OMEGA; omegacyrillic  
 15614 \DeclareTextCommand{\cyromega}{PU}{\84\141}% U+0461  
 15615 % U+0462 CYRILLIC CAPITAL LETTER YAT; Yatcyrillic, \*afii10146  
 15616 \DeclareTextCommand{\CYRYAT}{PU}{\84\142}% U+0462  
 15617 % U+0463 CYRILLIC SMALL LETTER YAT; \*afii10194, yatcyrillic  
 15618 \DeclareTextCommand{\cyryat}{PU}{\84\143}% U+0463  
 15619 % U+0464 CYRILLIC CAPITAL LETTER IOTIFIED E; Eiotifiedcyrillic  
 15620 \DeclareTextCommand{\CYRIOTE}{PU}{\84\144}% U+0464  
 15621 % U+0465 CYRILLIC SMALL LETTER IOTIFIED E; eiotifiedcyrillic  
 15622 \DeclareTextCommand{\cyriote}{PU}{\84\145}% U+0465  
 15623 % U+0466 CYRILLIC CAPITAL LETTER LITTLE YUS; Yuslittlecyrillic  
 15624 \DeclareTextCommand{\CYRLYUS}{PU}{\84\146}% U+0466  
 15625 % U+0467 CYRILLIC SMALL LETTER LITTLE YUS; yuslittlecyrillic  
 15626 \DeclareTextCommand{\cyrlyus}{PU}{\84\147}% U+0467  
 15627 % U+0468 CYRILLIC CAPITAL LETTER IOTIFIED LITTLE YUS; Yuslittleiotifiedcyrillic  
 15628 \DeclareTextCommand{\CYRIOTLYUS}{PU}{\84\150}% U+0468  
 15629 % U+0469 CYRILLIC SMALL LETTER IOTIFIED LITTLE YUS; yuslittleiotifiedcyrillic  
 15630 \DeclareTextCommand{\cyriotlyus}{PU}{\84\151}% U+0469  
 15631 % U+046A CYRILLIC CAPITAL LETTER BIG YUS; Yusbigcyrillic  
 15632 \DeclareTextCommand{\CYRBYUS}{PU}{\84\152}% U+046A  
 15633 % U+046B CYRILLIC SMALL LETTER BIG YUS; yusbigcyrillic  
 15634 \DeclareTextCommand{\cyrbyus}{PU}{\84\153}% U+046B  
 15635 % U+046C CYRILLIC CAPITAL LETTER IOTIFIED BIG YUS; Yusbigiotifiedcyrillic  
 15636 \DeclareTextCommand{\CYRIOTBYUS}{PU}{\84\154}% U+046C  
 15637 % U+046D CYRILLIC SMALL LETTER IOTIFIED BIG YUS; yusbigiotifiedcyrillic  
 15638 \DeclareTextCommand{\cyriotbyus}{PU}{\84\155}% U+046D  
 15639 % U+046E CYRILLIC CAPITAL LETTER KSI; Ksicyrillic

15640 \DeclareTextCommand{\CYRKSI}{PU}{\84\156}% U+046E  
 15641 % U+046F CYRILLIC SMALL LETTER KSI; ksicyrillic  
 15642 \DeclareTextCommand{\cyrksi}{PU}{\84\157}% U+046F  
 15643 % U+0470 CYRILLIC CAPITAL LETTER PSI; Psicyrillic  
 15644 \DeclareTextCommand{\CYRPSI}{PU}{\84\160}% U+0470  
 15645 % U+0471 CYRILLIC SMALL LETTER PSI; psicyrillic  
 15646 \DeclareTextCommand{\cyrpsi}{PU}{\84\161}% U+0471  
 15647 % U+0472 CYRILLIC CAPITAL LETTER FITA; Fitacyrillic, \*afii10147  
 15648 \DeclareTextCommand{\CYRFITA}{PU}{\84\162}% U+0472  
 15649 % U+0473 CYRILLIC SMALL LETTER FITA; \*afii10195, fitacyrillic  
 15650 \DeclareTextCommand{\cyrfita}{PU}{\84\163}% U+0473  
 15651 % U+0474 CYRILLIC CAPITAL LETTER IZHITSA; Izhitsacyrillic, \*afii10148  
 15652 \DeclareTextCommand{\CYRIZH}{PU}{\84\164}% U+0474  
 15653 % U+0475 CYRILLIC SMALL LETTER IZHITSA; \*afii10196, izhitsacyrillic  
 15654 \DeclareTextCommand{\cyrizh}{PU}{\84\165}% U+0475  
 15655 % U+0476 CYRILLIC CAPITAL LETTER IZHITSA WITH DOUBLE GRAVE AC-  
 CENT; Izhitsadblgravecyrillic  
 15656 \DeclareTextCompositeCommand{\C}{PU}{\CYRIZH}{\84\166}% U+0476  
 15657 % U+0477 CYRILLIC SMALL LETTER IZHITSA WITH DOUBLE GRAVE AC-  
 CENT; izhitsadblgravecyrillic  
 15658 \DeclareTextCompositeCommand{\C}{PU}{\cyrizh}{\84\167}% U+0477  
 15659 % U+0478 CYRILLIC CAPITAL LETTER UK; Ukcyrillic  
 15660 \DeclareTextCommand{\CYRUK}{PU}{\84\170}% U+0478  
 15661 % U+0479 CYRILLIC SMALL LETTER UK; ukcyrillic  
 15662 \DeclareTextCommand{\cyruk}{PU}{\84\171}% U+0479  
 15663 % U+047A CYRILLIC CAPITAL LETTER ROUND OMEGA; Omegaroundcyril-  
 lic  
 15664 \DeclareTextCommand{\CYROMEGARND}{PU}{\84\172}% U+047A  
 15665 % U+047B CYRILLIC SMALL LETTER ROUND OMEGA; omegaroundcyrillic  
 15666 \DeclareTextCommand{\cyromegarnd}{PU}{\84\173}% U+047B  
 15667 % U+047C CYRILLIC CAPITAL LETTER OMEGA WITH TITLO; Omegatitlo-  
 cyrillic  
 15668 \DeclareTextCommand{\CYROMEGATITLO}{PU}{\84\174}% U+047C  
 15669 % U+047D CYRILLIC SMALL LETTER OMEGA WITH TITLO; omegatitlo-  
 cyrillic  
 15670 \DeclareTextCommand{\cyromegatitlo}{PU}{\84\175}% U+047D  
 15671 % U+047E CYRILLIC CAPITAL LETTER OT; Otcyrillic  
 15672 \DeclareTextCommand{\CYROT}{PU}{\84\176}% U+047E  
 15673 % U+047F CYRILLIC SMALL LETTER OT; otcyrillic  
 15674 \DeclareTextCommand{\cyrot}{PU}{\84\177}% U+047F  
 15675 % U+0480 CYRILLIC CAPITAL LETTER KOPPA; Koppacyrillic  
 15676 \DeclareTextCommand{\CYRKOPPA}{PU}{\84\200}% U+0480  
 15677 % U+0481 CYRILLIC SMALL LETTER KOPPA; koppacyrillic  
 15678 \DeclareTextCommand{\cyrkoppa}{PU}{\84\201}% U+0481  
 15679 % U+0482 CYRILLIC THOUSANDS SIGN; thousandcyrillic  
 15680 \DeclareTextCommand{\cyrthousands}{PU}{\84\202}% U+0482  
 \84\203: U+0483 COMBINING CYRILLIC TITLO; titlocyrillicmb  
 \84\204: U+0484 COMBINING CYRILLIC PALATALIZATION; palatalizationcyril-  
 licmb  
 \84\205: U+0485 COMBINING CYRILLIC DASIA PNEUMATA; dasiapneumata-  
 cyrillicmb  
 \84\206: U+0486 COMBINING CYRILLIC PSILI PNEUMATA; psilipneumatacyril-  
 licmb  
 \84\207: U+0487 COMBINING CYRILLIC POKRYTIE  
 \84\210: U+0488 COMBINING CYRILLIC HUNDRED THOUSANDS SIGN  
 \84\211: U+0489 COMBINING CYRILLIC MILLIONS SIGN

15681 % U+048A CYRILLIC CAPITAL LETTER SHORT I WITH TAIL  
 15682 \DeclareTextCommand{\CYRISHRTDSC}{PU}{\84\212}% U+048A  
 15683 % U+048B CYRILLIC SMALL LETTER SHORT I WITH TAIL  
 15684 \DeclareTextCommand{\cyrishrtdsc}{PU}{\84\213}% U+048B  
 15685 % U+048C CYRILLIC CAPITAL LETTER SEMISOFT SIGN  
 15686 \DeclareTextCommand{\CYRSEMISFTSN}{PU}{\84\214}% U+048C  
 15687 % U+048D CYRILLIC SMALL LETTER SEMISOFT SIGN  
 15688 \DeclareTextCommand{\cyrsemisftsn}{PU}{\84\215}% U+048D  
 15689 % U+048E CYRILLIC CAPITAL LETTER ER WITH TICK  
 15690 \DeclareTextCommand{\CYRRTICK}{PU}{\84\216}% U+048E  
 15691 % U+048F CYRILLIC SMALL LETTER ER WITH TICK  
 15692 \DeclareTextCommand{\cyrrtick}{PU}{\84\217}% U+048F  
 15693 % U+0490 CYRILLIC CAPITAL LETTER GHE WITH UPTURN; Gheupturn-  
 cyrillic, \*afii10050  
 15694 \DeclareTextCommand{\CYRGUP}{PU}{\84\220}% U+0490  
 15695 % U+0491 CYRILLIC SMALL LETTER GHE WITH UPTURN; \*afii10098, ghe-  
 upturncyrillic  
 15696 \DeclareTextCommand{\cyrgup}{PU}{\84\221}% U+0491  
 15697 % U+0492 CYRILLIC CAPITAL LETTER GHE WITH STROKE; Ghestroke-  
 cyrillic  
 15698 \DeclareTextCommand{\CYRGHCRS}{PU}{\84\222}% U+0492  
 15699 % U+0493 CYRILLIC SMALL LETTER GHE WITH STROKE; ghestrokecyrillic  
 15700 \DeclareTextCommand{\cyrghcrs}{PU}{\84\223}% U+0493  
 15701 % U+0494 CYRILLIC CAPITAL LETTER GHE WITH MIDDLE HOOK; Ghemid-  
 dlehookcyrillic  
 15702 \DeclareTextCommand{\CYRGHK}{PU}{\84\224}% U+0494  
 15703 % U+0495 CYRILLIC SMALL LETTER GHE WITH MIDDLE HOOK; ghemid-  
 dlehookcyrillic  
 15704 \DeclareTextCommand{\cyrghk}{PU}{\84\225}% U+0495  
 15705 % U+0496 CYRILLIC CAPITAL LETTER ZHE WITH DESCENDER; Zhedescen-  
 dercyrillic  
 15706 \DeclareTextCommand{\CYRZHDSC}{PU}{\84\226}% U+0496  
 15707 % U+0497 CYRILLIC SMALL LETTER ZHE WITH DESCENDER; zhedescen-  
 dercyrillic  
 15708 \DeclareTextCommand{\cyrzhdsc}{PU}{\84\227}% U+0497  
 15709 % U+0498 CYRILLIC CAPITAL LETTER ZE WITH DESCENDER; Zedescen-  
 dercyrillic  
 15710 \DeclareTextCommand{\CYRZDSC}{PU}{\84\230}% U+0498  
 15711 \DeclareTextCompositeCommand{\c}{PU}{\CYRZ}{\84\230}% U+0498  
 15712 % U+0499 CYRILLIC SMALL LETTER ZE WITH DESCENDER; zedescender-  
 cyrillic  
 15713 \DeclareTextCommand{\cyrzdesc}{PU}{\84\231}% U+0499  
 15714 \DeclareTextCompositeCommand{\c}{PU}{\cyrz}{\84\231}% U+0499  
 15715 % U+049A CYRILLIC CAPITAL LETTER KA WITH DESCENDER; Kadescen-  
 dercyrillic  
 15716 \DeclareTextCommand{\CYRKDSC}{PU}{\84\232}% U+049A  
 15717 % U+049B CYRILLIC SMALL LETTER KA WITH DESCENDER; kadescender-  
 cyrillic  
 15718 \DeclareTextCommand{\cyrkdsc}{PU}{\84\233}% U+049B  
 15719 % U+049C CYRILLIC CAPITAL LETTER KA WITH VERTICAL STROKE; Kaver-  
 ticalstrokecyrillic  
 15720 \DeclareTextCommand{\CYRKVCRS}{PU}{\84\234}% U+049C  
 15721 % U+049D CYRILLIC SMALL LETTER KA WITH VERTICAL STROKE; kaver-  
 ticalstrokecyrillic  
 15722 \DeclareTextCommand{\cyrkvcrs}{PU}{\84\235}% U+049D  
 15723 % U+049E CYRILLIC CAPITAL LETTER KA WITH STROKE; Kastrokecyrillic  
 15724 \DeclareTextCommand{\CYRKHCRS}{PU}{\84\236}% U+049E

15725 % U+049F CYRILLIC SMALL LETTER KA WITH STROKE; kastrokecyrillic  
 15726 \DeclareTextCommand{\cyrkhcrs}{PU}{\84\237}% U+049F  
 15727 % U+04A0 CYRILLIC CAPITAL LETTER BASHKIR KA; Kabashkircyrillic  
 15728 \DeclareTextCommand{\CYRKBEAK}{PU}{\84\240}% U+04A0  
 15729 % U+04A1 CYRILLIC SMALL LETTER BASHKIR KA; kabashkircyrillic  
 15730 \DeclareTextCommand{\cyrkbeak}{PU}{\84\241}% U+04A1  
 15731 % U+04A2 CYRILLIC CAPITAL LETTER EN WITH DESCENDER; Endescendercyrillic  
 15732 \DeclareTextCommand{\CYRNDSC}{PU}{\84\242}% U+04A2  
 15733 % U+04A3 CYRILLIC SMALL LETTER EN WITH DESCENDER; endescendercyrillic  
 15734 \DeclareTextCommand{\cyrndsc}{PU}{\84\243}% U+04A3  
 15735 % U+04A4 CYRILLIC CAPITAL LIGATURE EN GHE; Enghecyrillic  
 15736 \DeclareTextCommand{\CYRNG}{PU}{\84\244}% U+04A4  
 15737 % U+04A5 CYRILLIC SMALL LIGATURE EN GHE; enghecyrillic  
 15738 \DeclareTextCommand{\cyrng}{PU}{\84\245}% U+04A5  
 15739 % U+04A6 CYRILLIC CAPITAL LETTER PE WITH MIDDLE HOOK; Pemiddlehookcyrillic  
 15740 \DeclareTextCommand{\CYRPHK}{PU}{\84\246}% U+04A6  
 15741 % U+04A7 CYRILLIC SMALL LETTER PE WITH MIDDLE HOOK; pemiddlehookcyrillic  
 15742 \DeclareTextCommand{\cyrphk}{PU}{\84\247}% U+04A7  
 15743 % U+04A8 CYRILLIC CAPITAL LETTER ABKHASIAN HA; Haabkhasiancyrillic  
 15744 \DeclareTextCommand{\CYRABHHA}{PU}{\84\250}% U+04A8  
 15745 % U+04A9 CYRILLIC SMALL LETTER ABKHASIAN HA; haabkhasiancyrillic  
 15746 \DeclareTextCommand{\cyrabhha}{PU}{\84\251}% U+04A9  
 15747 % U+04AA CYRILLIC CAPITAL LETTER ES WITH DESCENDER; Esdescendercyrillic  
 15748 \DeclareTextCommand{\CYRSDSC}{PU}{\84\252}% U+04AA  
 15749 \DeclareTextCompositeCommand{\CYRSDSC}{PU}{\CYRS}{\84\252}% U+04AA  
 15750 % U+04AB CYRILLIC SMALL LETTER ES WITH DESCENDER; esdescendercyrillic  
 15751 \DeclareTextCommand{\cyrsdsc}{PU}{\84\253}% U+04AB  
 15752 \DeclareTextCompositeCommand{\k}{PU}{\cyr}{\84\253}% U+04AB  
 15753 % U+04AC CYRILLIC CAPITAL LETTER TE WITH DESCENDER; Tedescendercyrillic  
 15754 \DeclareTextCommand{\CYRTDSC}{PU}{\84\254}% U+04AC  
 15755 % U+04AD CYRILLIC SMALL LETTER TE WITH DESCENDER; tedescendercyrillic  
 15756 \DeclareTextCommand{\cyrtdsc}{PU}{\84\255}% U+04AD  
 15757 % U+04AE CYRILLIC CAPITAL LETTER STRAIGHT U; Ustraightcyrillic  
 15758 \DeclareTextCommand{\CYRY}{PU}{\84\256}% U+04AE  
 15759 % U+04AF CYRILLIC SMALL LETTER STRAIGHT U; ustraightcyrillic  
 15760 \DeclareTextCommand{\cyr}{PU}{\84\257}% U+04AF  
 15761 % U+04B0 CYRILLIC CAPITAL LETTER STRAIGHT U WITH STROKE; Ustraightstrokecyrillic  
 15762 \DeclareTextCommand{\CYRYHCRS}{PU}{\84\260}% U+04B0  
 15763 % U+04B1 CYRILLIC SMALL LETTER STRAIGHT U WITH STROKE; usstraightstrokecyrillic  
 15764 \DeclareTextCommand{\cyrhcrs}{PU}{\84\261}% U+04B1  
 15765 % U+04B2 CYRILLIC CAPITAL LETTER HA WITH DESCENDER; Hadescendercyrillic  
 15766 \DeclareTextCommand{\CYRHDSC}{PU}{\84\262}% U+04B2  
 15767 % U+04B3 CYRILLIC SMALL LETTER HA WITH DESCENDER; hadescendercyrillic  
 15768 \DeclareTextCommand{\cyrhdsc}{PU}{\84\263}% U+04B3

15769 % U+04B4 CYRILLIC CAPITAL LIGATURE TE TSE; Tetsecyrillic  
15770 \DeclareTextCommand{\CYRTETSE}{PU}{\84\264}% U+04B4  
15771 % U+04B5 CYRILLIC SMALL LIGATURE TE TSE; tetsecyrillic  
15772 \DeclareTextCommand{\cyrtetse}{PU}{\84\265}% U+04B5  
15773 % U+04B6 CYRILLIC CAPITAL LETTER CHE WITH DESCENDER; Chedescendercyrillic  
15774 \DeclareTextCommand{\CYRCHRDSC}{PU}{\84\266}% U+04B6  
15775 % U+04B7 CYRILLIC SMALL LETTER CHE WITH DESCENDER; chedescendercyrillic  
15776 \DeclareTextCommand{\cyrchrdsc}{PU}{\84\267}% U+04B7  
15777 % U+04B8 CYRILLIC CAPITAL LETTER CHE WITH VERTICAL STROKE; Chev-  
verticalstrokecyrillic  
15778 \DeclareTextCommand{\CYRCHVCRS}{PU}{\84\270}% U+04B8  
15779 % U+04B9 CYRILLIC SMALL LETTER CHE WITH VERTICAL STROKE; chev-  
verticalstrokecyrillic  
15780 \DeclareTextCommand{\cyrchvcrs}{PU}{\84\271}% U+04B9  
15781 % U+04BA CYRILLIC CAPITAL LETTER SHHA; Shhacyrillic  
15782 \DeclareTextCommand{\CYRSHHA}{PU}{\84\272}% U+04BA  
15783 % U+04BB CYRILLIC SMALL LETTER SHHA; shhacyrillic  
15784 \DeclareTextCommand{\cyrshha}{PU}{\84\273}% U+04BB  
15785 % U+04BC CYRILLIC CAPITAL LETTER ABKHASIAN CHE; Cheabkhasian-  
cyrillic  
15786 \DeclareTextCommand{\CYRABHCH}{PU}{\84\274}% U+04BC  
15787 % U+04BD CYRILLIC SMALL LETTER ABKHASIAN CHE; cheabkhasiancyril-  
lic  
15788 \DeclareTextCommand{\cyrabhch}{PU}{\84\275}% U+04BD  
15789 % U+04BE CYRILLIC CAPITAL LETTER ABKHASIAN CHE WITH DESCEN-  
DER; Chedescenderabkhasiancyrillic  
15790 \DeclareTextCommand{\CYRABHCHDSC}{PU}{\84\276}% U+04BE  
15791 \DeclareTextCompositeCommand{\k}{PU}{\CYRABHCH}{\84\276}% U+04BE  
15792 % U+04BF CYRILLIC SMALL LETTER ABKHASIAN CHE WITH DESCEN-  
DER; chedescenderabkhasiancyrillic  
15793 \DeclareTextCommand{\cyrabhchdsc}{PU}{\84\277}% U+04BF  
15794 \DeclareTextCompositeCommand{\k}{PU}{\cyrabhch}{\84\277}% U+04BF  
15795 % U+04C0 CYRILLIC LETTER PALOCHKA; palochkacyrillic  
15796 \DeclareTextCommand{\CYRpalochka}{PU}{\84\300}% U+04C0  
15797 % U+04C1 CYRILLIC CAPITAL LETTER ZHE WITH BREVE; Zhebrevecyrillic  
15798 \DeclareTextCompositeCommand{\U}{PU}{\CYRZH}{\84\301}% U+04C1  
15799 % U+04C2 CYRILLIC SMALL LETTER ZHE WITH BREVE; zhebrevecyrillic  
15800 \DeclareTextCompositeCommand{\U}{PU}{\cyrzh}{\84\302}% U+04C2  
15801 % U+04C3 CYRILLIC CAPITAL LETTER KA WITH HOOK; Kahookcyrillic  
15802 \DeclareTextCommand{\CYRKHK}{PU}{\84\303}% U+04C3  
15803 % U+04C4 CYRILLIC SMALL LETTER KA WITH HOOK; kahookcyrillic  
15804 \DeclareTextCommand{\cyrkhk}{PU}{\84\304}% U+04C4  
15805 % U+04C5 CYRILLIC CAPITAL LETTER EL WITH TAIL  
15806 \DeclareTextCommand{\CYRLDSC}{PU}{\84\305}% U+04C5  
15807 % U+04C6 CYRILLIC SMALL LETTER EL WITH TAIL  
15808 \DeclareTextCommand{\cyrldsc}{PU}{\84\306}% U+04C6  
15809 % U+04C7 CYRILLIC CAPITAL LETTER EN WITH HOOK; Enhookcyrillic  
15810 \DeclareTextCommand{\CYRNHK}{PU}{\84\307}% U+04C7  
15811 % U+04C8 CYRILLIC SMALL LETTER EN WITH HOOK; enhookcyrillic  
15812 \DeclareTextCommand{\cyrnhk}{PU}{\84\310}% U+04C8  
15813 % U+04CB CYRILLIC CAPITAL LETTER KHAKASSIAN CHE; Chekhakassian-  
cyrillic  
15814 \DeclareTextCommand{\CYRCHLDSC}{PU}{\84\313}% U+04CB  
15815 % U+04CC CYRILLIC SMALL LETTER KHAKASSIAN CHE; chekhakassian-  
cyrillic

15816 \DeclareTextCommand{\cyrchldsc}{PU}{\84\314}% U+04CC  
15817 % U+04CD CYRILLIC CAPITAL LETTER EM WITH TAIL  
15818 \DeclareTextCommand{\CYRMDSC}{PU}{\84\315}% U+04CD  
15819 % U+04CE CYRILLIC SMALL LETTER EM WITH TAIL  
15820 \DeclareTextCommand{\cyrmdsc}{PU}{\84\316}% U+04CE  
\84\317: U+04CF CYRILLIC SMALL LETTER PALOCHKA  
15821 % U+04D0 CYRILLIC CAPITAL LETTER A WITH BREVE; Abrevacyrillic  
15822 \DeclareTextCompositeCommand{\U}{PU}{\CYRA}{\84\320}% U+04D0  
15823 % U+04D1 CYRILLIC SMALL LETTER A WITH BREVE; abrevacyrillic  
15824 \DeclareTextCompositeCommand{\U}{PU}{\cyra}{\84\321}% U+04D1  
15825 % U+04D2 CYRILLIC CAPITAL LETTER A WITH DIAERESIS; Adieresiscyrillic  
15826 \DeclareTextCompositeCommand{\U}{PU}{\CYRA}{\84\322}% U+04D2  
15827 % U+04D3 CYRILLIC SMALL LETTER A WITH DIAERESIS; adieresiscyrillic  
15828 \DeclareTextCompositeCommand{\U}{PU}{\cyra}{\84\323}% U+04D3  
15829 % U+04D4 CYRILLIC CAPITAL LIGATURE A IE; Aiecyrillic  
15830 \DeclareTextCommand{\CYRAE}{PU}{\84\324}% U+04D4  
15831 % U+04D5 CYRILLIC SMALL LIGATURE A IE; aiecyrillic  
15832 \DeclareTextCommand{\cyrae}{PU}{\84\325}% U+04D5  
15833 % U+04D6 CYRILLIC CAPITAL LETTER IE WITH BREVE; Iebrevacyrillic  
15834 \DeclareTextCompositeCommand{\U}{PU}{\CYRE}{\84\326}% U+04D6  
15835 % U+04D7 CYRILLIC SMALL LETTER IE WITH BREVE; iebrevacyrillic  
15836 \DeclareTextCompositeCommand{\U}{PU}{\cyre}{\84\327}% U+04D7  
15837 % U+04D8 CYRILLIC CAPITAL LETTER SCHWA; Schwacyrillic  
15838 \DeclareTextCommand{\CYRSCHWA}{PU}{\84\330}% U+04D8  
15839 % U+04D9 CYRILLIC SMALL LETTER SCHWA; \*afii10846, schwacyrillic  
15840 \DeclareTextCommand{\cyrschwa}{PU}{\84\331}% U+04D9  
15841 % U+04DA CYRILLIC CAPITAL LETTER SCHWA WITH DIAERESIS; Schwadiere-  
15842 \DeclareTextCompositeCommand{\U}{PU}{\CYRSCHWA}{\84\332}% U+04DA  
15843 % U+04DB CYRILLIC SMALL LETTER SCHWA WITH DIAERESIS; schwadiere-  
15844 \DeclareTextCompositeCommand{\U}{PU}{\cyrschwa}{\84\333}% U+04DB  
15845 % U+04DC CYRILLIC CAPITAL LETTER ZHE WITH DIAERESIS; Zhediere-  
15846 \DeclareTextCompositeCommand{\U}{PU}{\CYRZH}{\84\334}% U+04DC  
15847 % U+04DD CYRILLIC SMALL LETTER ZHE WITH DIAERESIS; zhedieres-  
15848 \DeclareTextCompositeCommand{\U}{PU}{\cyrzh}{\84\335}% U+04DD  
15849 % U+04DE CYRILLIC CAPITAL LETTER ZE WITH DIAERESIS; Zedieres-  
15850 \DeclareTextCompositeCommand{\U}{PU}{\CYRZ}{\84\336}% U+04DE  
15851 % U+04DF CYRILLIC SMALL LETTER ZE WITH DIAERESIS; zedierescyrillic  
15852 \DeclareTextCompositeCommand{\U}{PU}{\cyrz}{\84\337}% U+04DF  
15853 % U+04E0 CYRILLIC CAPITAL LETTER ABKHASIAN DZE; Dzeabkhasian-  
15854 \DeclareTextCommand{\CYRABHDZE}{PU}{\84\340}% U+04E0  
15855 % U+04E1 CYRILLIC SMALL LETTER ABKHASIAN DZE; dzeabkhasiancyrillic  
15856 \DeclareTextCommand{\cyrabhdze}{PU}{\84\341}% U+04E1  
15857 % U+04E2 CYRILLIC CAPITAL LETTER I WITH MACRON; Imacroncyrillic  
15858 \DeclareTextCompositeCommand{\U}{PU}{\CYRI}{\84\342}% U+04E2  
15859 % U+04E3 CYRILLIC SMALL LETTER I WITH MACRON; imacroncyrillic  
15860 \DeclareTextCompositeCommand{\U}{PU}{\cyri}{\84\343}% U+04E3  
15861 % U+04E4 CYRILLIC CAPITAL LETTER I WITH DIAERESIS; Idieresiscyrillic  
15862 \DeclareTextCompositeCommand{\U}{PU}{\CYRI}{\84\344}% U+04E4  
15863 % U+04E5 CYRILLIC SMALL LETTER I WITH DIAERESIS; idieresiscyrillic  
15864 \DeclareTextCompositeCommand{\U}{PU}{\cyri}{\84\345}% U+04E5

15865 % U+04E6 CYRILLIC CAPITAL LETTER O WITH DIAERESIS; Odieresiscyrillic  
 15866 \DeclareTextCompositeCommand{"}{PU}{\CYRO}{\84\346}% U+04E6  
 15867 % U+04E7 CYRILLIC SMALL LETTER O WITH DIAERESIS; odieresiscyrillic  
 15868 \DeclareTextCompositeCommand{"}{PU}{\cyro}{\84\347}% U+04E7  
 15869 % U+04E8 CYRILLIC CAPITAL LETTER BARRED O; Obarredcyrillic  
 15870 \DeclareTextCommand{\CYROTLD}{PU}{\84\350}% U+04E8  
 15871 % U+04E9 CYRILLIC SMALL LETTER BARRED O; obarredcyrillic  
 15872 \DeclareTextCommand{\cyrotld}{PU}{\84\351}% U+04E9  
 15873 % U+04EA CYRILLIC CAPITAL LETTER BARRED O WITH DIAERESIS; Obarreddieresiscyrillic  
 15874 \DeclareTextCompositeCommand{"}{PU}{\CYROTLD}{\84\352}% U+04EA  
 15875 % U+04EB CYRILLIC SMALL LETTER BARRED O WITH DIAERESIS; obarreddieresiscyrillic  
 15876 \DeclareTextCompositeCommand{"}{PU}{\cyrotld}{\84\353}% U+04EB  
 15877 % U+04EC CYRILLIC CAPITAL LETTER E WITH DIAERESIS  
 15878 \DeclareTextCompositeCommand{"}{PU}{\CYREREV}{\84\354}% U+04EC  
 15879 % U+04ED CYRILLIC SMALL LETTER E WITH DIAERESIS  
 15880 \DeclareTextCompositeCommand{"}{PU}{\cyreref}{\84\355}% U+04ED  
 15881 % U+04EE CYRILLIC CAPITAL LETTER U WITH MACRON; Umacroncyrillic  
 15882 \DeclareTextCompositeCommand{=}{PU}{\CYRU}{\84\356}% U+04EE  
 15883 % U+04EF CYRILLIC SMALL LETTER U WITH MACRON; umacroncyrillic  
 15884 \DeclareTextCompositeCommand{=}{PU}{\cyru}{\84\357}% U+04EF  
 15885 % U+04F0 CYRILLIC CAPITAL LETTER U WITH DIAERESIS; Udieresiscyrillic  
 15886 \DeclareTextCompositeCommand{"}{PU}{\CYRU}{\84\360}% U+04F0  
 15887 % U+04F1 CYRILLIC SMALL LETTER U WITH DIAERESIS; udieresiscyrillic  
 15888 \DeclareTextCompositeCommand{"}{PU}{\cyru}{\84\361}% U+04F1  
 15889 % U+04F2 CYRILLIC CAPITAL LETTER U WITH DOUBLE ACUTE; Uhungarumlautcyrillic  
 15890 \DeclareTextCompositeCommand{H}{PU}{\CYRU}{\84\362}% U+04F2  
 15891 % U+04F3 CYRILLIC SMALL LETTER U WITH DOUBLE ACUTE; uhungarumlautcyrillic  
 15892 \DeclareTextCompositeCommand{H}{PU}{\cyru}{\84\363}% U+04F3  
 15893 % U+04F4 CYRILLIC CAPITAL LETTER CHE WITH DIAERESIS; Chedieresiscyrillic  
 15894 \DeclareTextCompositeCommand{"}{PU}{\CYRCH}{\84\364}% U+04F4  
 15895 % U+04F5 CYRILLIC SMALL LETTER CHE WITH DIAERESIS; chedieresiscyrillic  
 15896 \DeclareTextCompositeCommand{"}{PU}{\cyrch}{\84\365}% U+04F5  
 15897 % U+04F6 CYRILLIC CAPITAL LETTER GHE WITH DESCENDER  
 15898 \DeclareTextCommand{\CYRGDSC}{PU}{\84\366}% U+04F6  
 15899 % U+04F7 CYRILLIC SMALL LETTER GHE WITH DESCENDER  
 15900 \DeclareTextCommand{\cyrgdsc}{PU}{\84\367}% U+04F7  
 15901 % U+04F8 CYRILLIC CAPITAL LETTER YERU WITH DIAERESIS; Yerudieresiscyrillic  
 15902 \DeclareTextCompositeCommand{"}{PU}{\CYRERY}{\84\370}% U+04F8  
 15903 % U+04F9 CYRILLIC SMALL LETTER YERU WITH DIAERESIS; yerudieresiscyrillic  
 15904 \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  
 15905 % U+04FC CYRILLIC CAPITAL LETTER HA WITH HOOK  
 15906 \DeclareTextCommand{\CYRHHK}{PU}{\84\374}% U+04FC  
 15907 % U+04FD CYRILLIC SMALL LETTER HA WITH HOOK  
 15908 \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

15909 % U+0E3F THAI CURRENCY SYMBOL BAHT; bahtthai  
 15910 \DeclareTextCommand{\textbaht}{PU}{\9016\077}% U+0E3F

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

15911 % U+1E02 LATIN CAPITAL LETTER B WITH DOT ABOVE; Bdotaccent  
 15912 \DeclareTextCompositeCommand{\.}{PU}{B}{\9036\002}% U+1E02  
 15913 % U+1E03 LATIN SMALL LETTER B WITH DOT ABOVE; bdotaccent  
 15914 \DeclareTextCompositeCommand{\.}{PU}{b}{\9036\003}% U+1E03  
 15915 % U+1E06 LATIN CAPITAL LETTER B WITH LINE BELOW; Blinebelow  
 15916 \DeclareTextCompositeCommand{\b}{PU}{B}{\9036\006}% U+1E06  
 15917 % U+1E07 LATIN SMALL LETTER B WITH LINE BELOW; blinebelow  
 15918 \DeclareTextCompositeCommand{\b}{PU}{b}{\9036\007}% U+1E07  
 15919 % U+1E0A LATIN CAPITAL LETTER D WITH DOT ABOVE; Ddotaccent  
 15920 \DeclareTextCompositeCommand{\.}{PU}{D}{\9036\012}% U+1E0A  
 15921 % U+1E0B LATIN SMALL LETTER D WITH DOT ABOVE; ddotaccent  
 15922 \DeclareTextCompositeCommand{\.}{PU}{d}{\9036\013}% U+1E0B  
 15923 % U+1E0E LATIN CAPITAL LETTER D WITH LINE BELOW; Dlinebelow  
 15924 \DeclareTextCompositeCommand{\b}{PU}{D}{\9036\016}% U+1E0E  
 15925 % U+1E0F LATIN SMALL LETTER D WITH LINE BELOW; dlinebelow  
 15926 \DeclareTextCompositeCommand{\b}{PU}{d}{\9036\017}% U+1E0F  
 15927 % U+1E10 LATIN CAPITAL LETTER D WITH CEDILLA; Dcedilla  
 15928 \DeclareTextCompositeCommand{\c}{PU}{D}{\9036\020}% U+1E10  
 15929 % U+1E11 LATIN SMALL LETTER D WITH CEDILLA; dcedilla  
 15930 \DeclareTextCompositeCommand{\c}{PU}{d}{\9036\021}% U+1E11  
 15931 % U+1E1E LATIN CAPITAL LETTER F WITH DOT ABOVE; Fdotaccent  
 15932 \DeclareTextCompositeCommand{\.}{PU}{F}{\9036\036}% U+1E1E  
 15933 % U+1E1F LATIN SMALL LETTER F WITH DOT ABOVE; fdotaccent  
 15934 \DeclareTextCompositeCommand{\.}{PU}{f}{\9036\037}% U+1E1F  
 15935 % U+1E20 LATIN CAPITAL LETTER G WITH MACRON; Gmacron  
 15936 \DeclareTextCompositeCommand{\=}{PU}{G}{\9036\040}% U+1E20  
 15937 % U+1E21 LATIN SMALL LETTER G WITH MACRON; gmacron  
 15938 \DeclareTextCompositeCommand{\=}{PU}{g}{\9036\041}% U+1E21  
 15939 % U+1E22 LATIN CAPITAL LETTER H WITH DOT ABOVE; Hdotaccent  
 15940 \DeclareTextCompositeCommand{\.}{PU}{H}{\9036\042}% U+1E22  
 15941 % U+1E23 LATIN SMALL LETTER H WITH DOT ABOVE; hdotaccent  
 15942 \DeclareTextCompositeCommand{\.}{PU}{h}{\9036\043}% U+1E23  
 15943 % U+1E26 LATIN CAPITAL LETTER H WITH DIAERESIS; Hdieresis  
 15944 \DeclareTextCompositeCommand{\"}{PU}{H}{\9036\046}% U+1E26  
 15945 % U+1E27 LATIN SMALL LETTER H WITH DIAERESIS; hdieresis  
 15946 \DeclareTextCompositeCommand{\"}{PU}{h}{\9036\047}% U+1E27  
 15947 % U+1E28 LATIN CAPITAL LETTER H WITH CEDILLA; Hcedilla  
 15948 \DeclareTextCompositeCommand{\c}{PU}{H}{\9036\050}% U+1E28  
 15949 % U+1E29 LATIN SMALL LETTER H WITH CEDILLA; hcedilla  
 15950 \DeclareTextCompositeCommand{\c}{PU}{h}{\9036\051}% U+1E29  
 15951 % U+1E30 LATIN CAPITAL LETTER K WITH ACUTE; Kacute  
 15952 \DeclareTextCompositeCommand{\'}{PU}{K}{\9036\060}% U+1E30  
 15953 % U+1E31 LATIN SMALL LETTER K WITH ACUTE; kacute  
 15954 \DeclareTextCompositeCommand{\'}{PU}{k}{\9036\061}% U+1E31  
 15955 % U+1E34 LATIN CAPITAL LETTER K WITH LINE BELOW; Klinebelow  
 15956 \DeclareTextCompositeCommand{\b}{PU}{K}{\9036\064}% U+1E34  
 15957 % U+1E35 LATIN SMALL LETTER K WITH LINE BELOW; klinebelow  
 15958 \DeclareTextCompositeCommand{\b}{PU}{k}{\9036\065}% U+1E35



15959 % U+1E3A LATIN CAPITAL LETTER L WITH LINE BELOW; Llinebelow  
 15960 \DeclareTextCompositeCommand{\b}{PU}{L}{\9036\072}% U+1E3A  
 15961 % U+1E3B LATIN SMALL LETTER L WITH LINE BELOW; llinebelow  
 15962 \DeclareTextCompositeCommand{\b}{PU}{l}{\9036\073}% U+1E3B  
 15963 % U+1E3E LATIN CAPITAL LETTER M WITH ACUTE; Macute  
 15964 \DeclareTextCompositeCommand{\'}{PU}{M}{\9036\076}% U+1E3E  
 15965 % U+1E3F LATIN SMALL LETTER M WITH ACUTE; macute  
 15966 \DeclareTextCompositeCommand{\'}{PU}{m}{\9036\077}% U+1E3F  
 15967 % U+1E40 LATIN CAPITAL LETTER M WITH DOT ABOVE; Mdotaccent  
 15968 \DeclareTextCompositeCommand{\.}{PU}{M}{\9036\100}% U+1E40  
 15969 % U+1E41 LATIN SMALL LETTER M WITH DOT ABOVE; mdotaccent  
 15970 \DeclareTextCompositeCommand{\.}{PU}{m}{\9036\101}% U+1E41  
 15971 % U+1E44 LATIN CAPITAL LETTER N WITH DOT ABOVE; Ndotaccent  
 15972 \DeclareTextCompositeCommand{\.}{PU}{N}{\9036\104}% U+1E44  
 15973 % U+1E45 LATIN SMALL LETTER N WITH DOT ABOVE; ndotaccent  
 15974 \DeclareTextCompositeCommand{\.}{PU}{n}{\9036\105}% U+1E45  
 15975 % U+1E48 LATIN CAPITAL LETTER N WITH LINE BELOW; Nlinebelow  
 15976 \DeclareTextCompositeCommand{\b}{PU}{N}{\9036\110}% U+1E48  
 15977 % U+1E49 LATIN SMALL LETTER N WITH LINE BELOW; nlinebelow  
 15978 \DeclareTextCompositeCommand{\b}{PU}{n}{\9036\111}% U+1E49  
 15979 % U+1E54 LATIN CAPITAL LETTER P WITH ACUTE; Pacute  
 15980 \DeclareTextCompositeCommand{\'}{PU}{P}{\9036\124}% U+1E54  
 15981 % U+1E55 LATIN SMALL LETTER P WITH ACUTE; pacute  
 15982 \DeclareTextCompositeCommand{\'}{PU}{p}{\9036\125}% U+1E55  
 15983 % U+1E56 LATIN CAPITAL LETTER P WITH DOT ABOVE; Pdotaccent  
 15984 \DeclareTextCompositeCommand{\.}{PU}{P}{\9036\126}% U+1E56  
 15985 % U+1E57 LATIN SMALL LETTER P WITH DOT ABOVE; pdotaccent  
 15986 \DeclareTextCompositeCommand{\.}{PU}{p}{\9036\127}% U+1E57  
 15987 % U+1E58 LATIN CAPITAL LETTER R WITH DOT ABOVE; Rdotaccent  
 15988 \DeclareTextCompositeCommand{\.}{PU}{R}{\9036\130}% U+1E58  
 15989 % U+1E59 LATIN SMALL LETTER R WITH DOT ABOVE; rdotaccent  
 15990 \DeclareTextCompositeCommand{\.}{PU}{r}{\9036\131}% U+1E59  
 15991 % U+1E5E LATIN CAPITAL LETTER R WITH LINE BELOW; Rlinebelow  
 15992 \DeclareTextCompositeCommand{\b}{PU}{R}{\9036\136}% U+1E5E  
 15993 % U+1E5F LATIN SMALL LETTER R WITH LINE BELOW; rlinebelow  
 15994 \DeclareTextCompositeCommand{\b}{PU}{r}{\9036\137}% U+1E5F  
 15995 % U+1E60 LATIN CAPITAL LETTER S WITH DOT ABOVE; Sdotaccent  
 15996 \DeclareTextCompositeCommand{\.}{PU}{S}{\9036\140}% U+1E60  
 15997 % U+1E61 LATIN SMALL LETTER S WITH DOT ABOVE; sdotaccent  
 15998 \DeclareTextCompositeCommand{\.}{PU}{s}{\9036\141}% U+1E61  
 15999 % U+1E6E LATIN CAPITAL LETTER T WITH LINE BELOW; Tlinebelow  
 16000 \DeclareTextCompositeCommand{\b}{PU}{T}{\9036\156}% U+1E6E  
 16001 % U+1E6F LATIN SMALL LETTER T WITH LINE BELOW; tlinebelow  
 16002 \DeclareTextCompositeCommand{\b}{PU}{t}{\9036\157}% U+1E6F  
 16003 % U+1E7C LATIN CAPITAL LETTER V WITH TILDE; Vtilde  
 16004 \DeclareTextCompositeCommand{\-}{PU}{V}{\9036\174}% U+1E7C  
 16005 % U+1E7D LATIN SMALL LETTER V WITH TILDE; vtilde  
 16006 \DeclareTextCompositeCommand{\-}{PU}{v}{\9036\175}% U+1E7D  
 16007 % U+1E80 LATIN CAPITAL LETTER W WITH GRAVE; Wgrave  
 16008 \DeclareTextCompositeCommand{\'}{PU}{W}{\9036\200}% U+1E80  
 16009 % U+1E81 LATIN SMALL LETTER W WITH GRAVE; wgrave  
 16010 \DeclareTextCompositeCommand{\'}{PU}{w}{\9036\201}% U+1E81  
 16011 % U+1E82 LATIN CAPITAL LETTER W WITH ACUTE; Wacute  
 16012 \DeclareTextCompositeCommand{\'}{PU}{W}{\9036\202}% U+1E82  
 16013 % U+1E83 LATIN SMALL LETTER W WITH ACUTE; wacute  
 16014 \DeclareTextCompositeCommand{\'}{PU}{w}{\9036\203}% U+1E83  
 16015 % U+1E84 LATIN CAPITAL LETTER W WITH DIAERESIS; Wdieresis

16016 \DeclareTextCompositeCommand{"}{PU}{W}{\9036\204}% U+1E84  
16017 % U+1E85 LATIN SMALL LETTER W WITH DIAERESIS; wdieresis  
16018 \DeclareTextCompositeCommand{"}{PU}{w}{\9036\205}% U+1E85  
16019 % U+1E86 LATIN CAPITAL LETTER W WITH DOT ABOVE; Wdotaccent  
16020 \DeclareTextCompositeCommand{.}{PU}{W}{\9036\206}% U+1E86  
16021 % U+1E87 LATIN SMALL LETTER W WITH DOT ABOVE; wdotaccent  
16022 \DeclareTextCompositeCommand{.}{PU}{w}{\9036\207}% U+1E87  
16023 % U+1E8A LATIN CAPITAL LETTER X WITH DOT ABOVE; Xdotaccent  
16024 \DeclareTextCompositeCommand{.}{PU}{X}{\9036\212}% U+1E8A  
16025 % U+1E8B LATIN SMALL LETTER X WITH DOT ABOVE; xdotaccent  
16026 \DeclareTextCompositeCommand{.}{PU}{x}{\9036\213}% U+1E8B  
16027 % U+1E8C LATIN CAPITAL LETTER X WITH DIAERESIS; Xdieresis  
16028 \DeclareTextCompositeCommand{"}{PU}{X}{\9036\214}% U+1E8C  
16029 % U+1E8D LATIN SMALL LETTER X WITH DIAERESIS; xdieresis  
16030 \DeclareTextCompositeCommand{"}{PU}{x}{\9036\215}% U+1E8D  
16031 % U+1E8E LATIN CAPITAL LETTER Y WITH DOT ABOVE; Ydotaccent  
16032 \DeclareTextCompositeCommand{.}{PU}{Y}{\9036\216}% U+1E8E  
16033 % U+1E8F LATIN SMALL LETTER Y WITH DOT ABOVE; ydotaccent  
16034 \DeclareTextCompositeCommand{.}{PU}{y}{\9036\217}% U+1E8F  
16035 % U+1E90 LATIN CAPITAL LETTER Z WITH CIRCUMFLEX; Zcircumflex  
16036 \DeclareTextCompositeCommand{^}{PU}{Z}{\9036\220}% U+1E90  
16037 % U+1E91 LATIN SMALL LETTER Z WITH CIRCUMFLEX; zcircumflex  
16038 \DeclareTextCompositeCommand{^}{PU}{z}{\9036\221}% U+1E91  
16039 % U+1E94 LATIN CAPITAL LETTER Z WITH LINE BELOW; Zlinebelow  
16040 \DeclareTextCompositeCommand{\b}{PU}{Z}{\9036\224}% U+1E94  
16041 % U+1E95 LATIN SMALL LETTER Z WITH LINE BELOW; zlinebelow  
16042 \DeclareTextCompositeCommand{\b}{PU}{z}{\9036\225}% U+1E95  
16043 % U+1E96 LATIN SMALL LETTER H WITH LINE BELOW; hlinebelow  
16044 \DeclareTextCompositeCommand{\b}{PU}{h}{\9036\226}% U+1E96  
16045 % U+1E97 LATIN SMALL LETTER T WITH DIAERESIS; tdieresis  
16046 \DeclareTextCompositeCommand{"}{PU}{t}{\9036\227}% U+1E97  
16047 % U+1E98 LATIN SMALL LETTER W WITH RING ABOVE; wring  
16048 \DeclareTextCompositeCommand{\r}{PU}{w}{\9036\230}% U+1E98  
16049 % U+1E99 LATIN SMALL LETTER Y WITH RING ABOVE; yring  
16050 \DeclareTextCompositeCommand{\r}{PU}{y}{\9036\231}% U+1E99  
16051 % U+1E9B LATIN SMALL LETTER LONG S WITH DOT ABOVE; slongdotac-  
cent  
16052 \DeclareTextCompositeCommand{.}{PU}{\textlongs}{\9036\233}% U+1E9B  
16053 % U+1EBC LATIN CAPITAL LETTER E WITH TILDE; Etilde  
16054 \DeclareTextCompositeCommand{\~}{PU}{E}{\9036\274}% U+1EBC  
16055 % U+1EBD LATIN SMALL LETTER E WITH TILDE; etilde  
16056 \DeclareTextCompositeCommand{\~}{PU}{e}{\9036\275}% U+1EBD  
16057 % U+1EF2 LATIN CAPITAL LETTER Y WITH GRAVE; Ygrave  
16058 \DeclareTextCompositeCommand{`}{PU}{Y}{\9036\362}% U+1EF2  
16059 % U+1EF3 LATIN SMALL LETTER Y WITH GRAVE; ygrave  
16060 \DeclareTextCompositeCommand{`}{PU}{y}{\9036\363}% U+1EF3  
16061 % U+1EF8 LATIN CAPITAL LETTER Y WITH TILDE; Ytilde  
16062 \DeclareTextCompositeCommand{\~}{PU}{Y}{\9036\370}% U+1EF8  
16063 % U+1EF9 LATIN SMALL LETTER Y WITH TILDE; ytilde  
16064 \DeclareTextCompositeCommand{\~}{PU}{y}{\9036\371}% U+1EF9

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

16065 % U+200C ZERO WIDTH NON-JOINER; \*afii61664, zerowidthnonjoiner  
16066 \DeclareTextCommand{\textcompwordmark}{PU}{\9040\014}% U+200C  
16067 % U+2013 EN DASH; endash  
16068 \DeclareTextCommand{\textendash}{PU}{\9040\023}% U+2013  
16069 % U+2014 EM DASH; emdash

16070 \DeclareTextCommand{\textemdash}{PU}{\9040\024}% U+2014  
 16071 % U+2016 DOUBLE VERTICAL LINE; dblverticalbar  
 16072 \DeclareTextCommand{\textbardbl}{PU}{\9040\026}% U+2016  
 16073 % U+2018 LEFT SINGLE QUOTATION MARK; quoteleft  
 16074 \DeclareTextCommand{\textquoteleft}{PU}{\9040\030}% U+2018  
 16075 % U+2019 RIGHT SINGLE QUOTATION MARK; quoteright  
 16076 \DeclareTextCommand{\textquoteright}{PU}{\9040\031}% U+2019  
 16077 % U+201A SINGLE LOW-9 QUOTATION MARK; quotesinglbase  
 16078 \DeclareTextCommand{\quotesinglbase}{PU}{\9040\032}% U+201A  
 16079 % U+201C LEFT DOUBLE QUOTATION MARK; quotedblleft  
 16080 \DeclareTextCommand{\textquotedblleft}{PU}{\9040\034}% U+201C  
 16081 % U+201D RIGHT DOUBLE QUOTATION MARK; quotedblright  
 16082 \DeclareTextCommand{\textquotedblright}{PU}{\9040\035}% U+201D  
 16083 % U+201E DOUBLE LOW-9 QUOTATION MARK; quotedblbase  
 16084 \DeclareTextCommand{\quotedblbase}{PU}{\9040\036}% U+201E  
 16085 % U+2020 DAGGER; dagger  
 16086 \DeclareTextCommand{\textdagger}{PU}{\9040\040}% U+2020  
 16087 % U+2021 DOUBLE DAGGER; daggerdbl  
 16088 \DeclareTextCommand{\textdaggerdbl}{PU}{\9040\041}% U+2021  
 16089 % U+2022 BULLET; bullet  
 16090 \DeclareTextCommand{\textbullet}{PU}{\9040\042}% U+2022  
 16091 % U+2026 HORIZONTAL ELLIPSIS; ellipsis  
 16092 \DeclareTextCommand{\textellipsis}{PU}{\9040\046}% U+2026  
 16093 % U+2030 PER MILLE SIGN; perthousand  
 16094 \DeclareTextCommand{\textperthousand}{PU}{\9040\060}% U+2030  
 16095 % U+2031 PER TEN THOUSAND SIGN  
 16096 \DeclareTextCommand{\textpertenthousand}{PU}{\9040\061}% U+2031  
 16097 % U+2039 SINGLE LEFT-POINTING ANGLE QUOTATION MARK; guil-  
 singlleft  
 16098 \DeclareTextCommand{\guilsinglleft}{PU}{\9040\071}% U+2039  
 16099 % U+203A SINGLE RIGHT-POINTING ANGLE QUOTATION MARK; guil-  
 singlright  
 16100 \DeclareTextCommand{\guilsinglright}{PU}{\9040\072}% U+203A  
 16101 % U+203B REFERENCE MARK; referencemark  
 16102 \DeclareTextCommand{\textreferencemark}{PU}{\9040\073}% U+203B  
 16103 % U+203D INTERROBANG  
 16104 \DeclareTextCommand{\textinterrobang}{PU}{\9040\075}% U+203D  
 16105 % U+2044 FRACTION SLASH; fraction  
 16106 \DeclareTextCommand{\textfractionsolidus}{PU}{\9040\104}% U+2044  
 16107 % U+2045 LEFT SQUARE BRACKET WITH QUILL  
 16108 \DeclareTextCommand{\textlquill}{PU}{\9040\105}% U+2045  
 16109 % U+2046 RIGHT SQUARE BRACKET WITH QUILL  
 16110 \DeclareTextCommand{\textrquill}{PU}{\9040\106}% U+2046  
 16111 % U+2052 COMMERCIAL MINUS SIGN  
 16112 \DeclareTextCommand{\textdiscount}{PU}{\9040\122}% U+2052

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

16113 % U+2070 SUPERSCRIPT ZERO; zerosuperior  
 16114 \DeclareTextCommand{\textzerosuperior}{PU}{\9040\160}% U+2070  
 16115 % U+2074 SUPERSCRIPT FOUR; foursuperior  
 16116 \DeclareTextCommand{\textfoursuperior}{PU}{\9040\164}% U+2074  
 16117 % U+2075 SUPERSCRIPT FIVE; fivesuperior  
 16118 \DeclareTextCommand{\textfivesuperior}{PU}{\9040\165}% U+2075  
 16119 % U+2076 SUPERSCRIPT SIX; sixsuperior  
 16120 \DeclareTextCommand{\textsixsuperior}{PU}{\9040\166}% U+2076  
 16121 % U+2077 SUPERSCRIPT SEVEN; sevensuperior  
 16122 \DeclareTextCommand{\textsevensuperior}{PU}{\9040\167}% U+2077

16123 % U+2078 SUPERSCRIPT EIGHT; eightsuperior  
 16124 \DeclareTextCommand{\texteightsuperior}{PU}{\9040\170}% U+2078  
 16125 % U+2079 SUPERSCRIPT NINE; ninesuperior  
 16126 \DeclareTextCommand{\textninesuperior}{PU}{\9040\171}% U+2079  
 16127 % U+207A SUPERSCRIPT PLUS SIGN; plussuperior  
 16128 \DeclareTextCommand{\textplussuperior}{PU}{\9040\172}% U+207A  
 16129 % U+207B SUPERSCRIPT MINUS  
 16130 \DeclareTextCommand{\textminussuperior}{PU}{\9040\173}  
 16131 % U+207C SUPERSCRIPT EQUALS SIGN; equalsuperior  
 16132 \DeclareTextCommand{\textequalsuperior}{PU}{\9040\174}  
 16133 % U+207D SUPERSCRIPT LEFT PARENTHESIS; parenleftsuperior  
 16134 \DeclareTextCommand{\textparenleftsuperior}{PU}{\9040\175}  
 16135 % U+207E SUPERSCRIPT RIGHT PARENTHESIS; parenrightsuperior  
 16136 \DeclareTextCommand{\textparenrightsuperior}{PU}{\9040\176}  
 16137 % U+207F SUPERSCRIPT LATIN SMALL LETTER N; nsuperior  
 16138 \DeclareTextCommand{\textnsuperior}{PU}{\9040\177}  
 16139 % U+2080 SUBSCRIPT ZERO; zeroinferior  
 16140 \DeclareTextCommand{\textzeroinferior}{PU}{\9040\200}% U+2080  
 16141 % U+2081 SUBSCRIPT ONE; oneinferior  
 16142 \DeclareTextCommand{\textoneinferior}{PU}{\9040\201}% U+2081  
 16143 % U+2082 SUBSCRIPT TWO; twoinferior  
 16144 \DeclareTextCommand{\texttwoinferior}{PU}{\9040\202}% U+2082  
 16145 % U+2083 SUBSCRIPT THREE; threeinferior  
 16146 \DeclareTextCommand{\textthreeinferior}{PU}{\9040\203}% U+2083  
 16147 % U+2084 SUBSCRIPT FOUR; fourinferior  
 16148 \DeclareTextCommand{\textfourinferior}{PU}{\9040\204}% U+2084  
 16149 % U+2085 SUBSCRIPT FIVE; fiveinferior  
 16150 \DeclareTextCommand{\textfiveinferior}{PU}{\9040\205}% U+2085  
 16151 % U+2086 SUBSCRIPT SIX; sixinferior  
 16152 \DeclareTextCommand{\textsixinferior}{PU}{\9040\206}% U+2086  
 16153 % U+2087 SUBSCRIPT SEVEN; seveninferior  
 16154 \DeclareTextCommand{\textseveninferior}{PU}{\9040\207}% U+2087  
 16155 % U+2088 SUBSCRIPT EIGHT; eightinferior  
 16156 \DeclareTextCommand{\texteightinferior}{PU}{\9040\210}% U+2088  
 16157 % U+2089 SUBSCRIPT NINE; nineinferior  
 16158 \DeclareTextCommand{\textnineinferior}{PU}{\9040\211}% U+2089  
 16159 % U+208D SUBSCRIPT LEFT PARENTHESIS; parenleftinferior  
 16160 \DeclareTextCommand{\textparenleftinferior}{PU}{\9040\215}% U+208D  
 16161 % U+208E SUBSCRIPT RIGHT PARENTHESIS; parenrightinferior  
 16162 \DeclareTextCommand{\textparenrightinferior}{PU}{\9040\216}% U+208E

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

16163 % U+20A1 COLON SIGN; \*colonmonetary, colonsign  
 16164 \DeclareTextCommand{\textcolonmonetary}{PU}{\9040\241}% U+20A1  
 16165 % U+20A4 LIRA SIGN; afii08941, \*lira  
 16166 \DeclareTextCommand{\textlira}{PU}{\9040\244}% U+20A4  
 16167 % U+20A6 NAIRA SIGN  
 16168 \DeclareTextCommand{\textnaira}{PU}{\9040\246}% U+20A6  
 16169 % U+20A7 PESETA SIGN; peseta  
 16170 \DeclareTextCommand{\textpeseta}{PU}{\9040\247}% U+20A7  
 16171 % U+20A9 WON SIGN; won  
 16172 \DeclareTextCommand{\textwon}{PU}{\9040\251}% U+20A9  
 16173 % U+20AB DONG SIGN; dong  
 16174 \DeclareTextCommand{\textdong}{PU}{\9040\253}% U+20AB  
 16175 % U+20AC EURO SIGN; \*Euro, euro  
 16176 \DeclareTextCommand{\texteuro}{PU}{\9040\254}% U+20AC  
 16177 % U+20B1 PESO SIGN

16178 \DeclareTextCommand{\textpeso}{PU}{\9040\261}% U+20B1  
 16179 % U+20B2 GUARANI SIGN  
 16180 \DeclareTextCommand{\textguarani}{PU}{\9040\262}% U+20B2

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

16181 % U+2103 DEGREE CELSIUS; centigrade  
 16182 \DeclareTextCommand{\textcelsius}{PU}{\9041\003}% U+2103  
 16183 % U+2116 NUMERO SIGN; \*afi61352, numero  
 16184 \DeclareTextCommand{\textnumero}{PU}{\9041\026}% U+2116  
 16185 % U+2117 SOUND RECORDING COPYRIGHT  
 16186 \DeclareTextCommand{\textcircledP}{PU}{\9041\027}% U+2117  
 16187 % U+211E PRESCRIPTION TAKE; prescription  
 16188 \DeclareTextCommand{\textrecipe}{PU}{\9041\036}% U+211E  
 16189 % U+2120 SERVICE MARK  
 16190 \DeclareTextCommand{\textservicemark}{PU}{\9041\040}% U+2120  
 16191 % U+2122 TRADE MARK SIGN; trademark  
 16192 \DeclareTextCommand{\texttrademark}{PU}{\9041\042}% U+2122  
 16193 % U+2126 OHM SIGN; Ohm, Omega  
 16194 \DeclareTextCommand{\textohm}{PU}{\9041\046}% U+2126  
 16195 % U+2127 INVERTED OHM SIGN  
 16196 \DeclareTextCommand{\textmho}{PU}{\9041\047}% U+2127  
 16197 % U+212B ANGSTROM SIGN; angstrom  
 16198 \DeclareTextCommand{\textangstrom}{PU}{\9041\053}% U+212B  
 16199 % U+212E ESTIMATED SYMBOL; estimated  
 16200 \DeclareTextCommand{\textestimated}{PU}{\9041\056}% U+212E  
 16201 % U+2135 ALEF SYMBOL; aleph  
 16202 \DeclareTextCommand{\textaleph}{PU}{\9041\065}% U+2135

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

16203 % U+2190 LEFTWARDS ARROW; arrowleft  
 16204 \DeclareTextCommand{\textleftarrow}{PU}{\9041\220}% U+2190  
 16205 % U+2191 UPWARDS ARROW; arrowup  
 16206 \DeclareTextCommand{\textuparrow}{PU}{\9041\221}% U+2191  
 16207 % U+2192 RIGHTWARDS ARROW; arrowright  
 16208 \DeclareTextCommand{\textrightarrow}{PU}{\9041\222}% U+2192  
 16209 % U+2193 DOWNWARDS ARROW; arrowdown  
 16210 \DeclareTextCommand{\textdownarrow}{PU}{\9041\223}% U+2193

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

16211 % U+2212 MINUS SIGN; minus  
 16212 \DeclareTextCommand{\textminus}{PU}{\9042\022}% U+2212  
 16213 % U+221A SQUARE ROOT; radical  
 16214 \DeclareTextCommand{\textsurd}{PU}{\9042\032}% U+221A

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

16215 % U+2329 LEFT-POINTING ANGLE BRACKET; angleleft  
 16216 \DeclareTextCommand{\textlangle}{PU}{\9043\051}% U+2329  
 16217 % U+232A RIGHT-POINTING ANGLE BRACKET; angleright  
 16218 \DeclareTextCommand{\textrangle}{PU}{\9043\052}% U+232A

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

16219 % U+2422 BLANK SYMBOL  
 16220 \DeclareTextCommand{\textblank}{PU}{\9044\042}% U+2422  
 16221 % U+2423 OPEN BOX; blank  
 16222 \DeclareTextCommand{\textvisiblespace}{PU}{\9044\043}% U+2423

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

16223 % U+2460 CIRCLED DIGIT ONE; onecircle  
 16224 \DeclareTextCompositeCommand{\textcircled}{PU}{1}{\9044\140}% U+2460  
 16225 % U+2461 CIRCLED DIGIT TWO; twocircle  
 16226 \DeclareTextCompositeCommand{\textcircled}{PU}{2}{\9044\141}% U+2461  
 16227 % U+2462 CIRCLED DIGIT THREE; threecircle  
 16228 \DeclareTextCompositeCommand{\textcircled}{PU}{3}{\9044\142}% U+2462  
 16229 % U+2463 CIRCLED DIGIT FOUR; fourcircle  
 16230 \DeclareTextCompositeCommand{\textcircled}{PU}{4}{\9044\143}% U+2463  
 16231 % U+2464 CIRCLED DIGIT FIVE; fivecircle  
 16232 \DeclareTextCompositeCommand{\textcircled}{PU}{5}{\9044\144}% U+2464  
 16233 % U+2465 CIRCLED DIGIT SIX; sixcircle  
 16234 \DeclareTextCompositeCommand{\textcircled}{PU}{6}{\9044\145}% U+2465  
 16235 % U+2466 CIRCLED DIGIT SEVEN; sevenscircle  
 16236 \DeclareTextCompositeCommand{\textcircled}{PU}{7}{\9044\146}% U+2466  
 16237 % U+2467 CIRCLED DIGIT EIGHT; eightcircle  
 16238 \DeclareTextCompositeCommand{\textcircled}{PU}{8}{\9044\147}% U+2467  
 16239 % U+2468 CIRCLED DIGIT NINE; ninecircle  
 16240 \DeclareTextCompositeCommand{\textcircled}{PU}{9}{\9044\150}% U+2468  
 16241 % U+2469 CIRCLED NUMBER TEN; tencircle  
 16242 \DeclareTextCompositeCommand{\textcircled}{PU}{10}{\9044\151}% U+2469  
 16243 % U+246A CIRCLED NUMBER ELEVEN; elevencircle  
 16244 \DeclareTextCompositeCommand{\textcircled}{PU}{11}{\9044\152}% U+246A  
 16245 % U+246B CIRCLED NUMBER TWELVE; twelvecircle  
 16246 \DeclareTextCompositeCommand{\textcircled}{PU}{12}{\9044\153}% U+246B  
 16247 % U+246C CIRCLED NUMBER THIRTEEN; thirteencircle  
 16248 \DeclareTextCompositeCommand{\textcircled}{PU}{13}{\9044\154}% U+246C  
 16249 % U+246D CIRCLED NUMBER FOURTEEN; fourteencircle  
 16250 \DeclareTextCompositeCommand{\textcircled}{PU}{14}{\9044\155}% U+246D  
 16251 % U+246E CIRCLED NUMBER FIFTEEN; fifteencircle  
 16252 \DeclareTextCompositeCommand{\textcircled}{PU}{15}{\9044\156}% U+246E  
 16253 % U+246F CIRCLED NUMBER SIXTEEN; sixteencircle  
 16254 \DeclareTextCompositeCommand{\textcircled}{PU}{16}{\9044\157}% U+246F  
 16255 % U+2470 CIRCLED NUMBER SEVENTEEN; seventeencircle  
 16256 \DeclareTextCompositeCommand{\textcircled}{PU}{17}{\9044\160}% U+2470  
 16257 % U+2471 CIRCLED NUMBER EIGHTEEN; eighteencircle  
 16258 \DeclareTextCompositeCommand{\textcircled}{PU}{18}{\9044\161}% U+2471  
 16259 % U+2472 CIRCLED NUMBER NINETEEN; nineteencircle  
 16260 \DeclareTextCompositeCommand{\textcircled}{PU}{19}{\9044\162}% U+2472  
 16261 % U+2473 CIRCLED NUMBER TWENTY; twentycircle  
 16262 \DeclareTextCompositeCommand{\textcircled}{PU}{20}{\9044\163}% U+2473  
 16263 % U+24B6 CIRCLED LATIN CAPITAL LETTER A; Acircle  
 16264 \DeclareTextCompositeCommand{\textcircled}{PU}{A}{\9044\266}% U+24B6  
 16265 % U+24B7 CIRCLED LATIN CAPITAL LETTER B; Bcircle  
 16266 \DeclareTextCompositeCommand{\textcircled}{PU}{B}{\9044\267}% U+24B7  
 16267 % U+24B8 CIRCLED LATIN CAPITAL LETTER C; Ccircle  
 16268 \DeclareTextCompositeCommand{\textcircled}{PU}{C}{\9044\270}% U+24B8  
 16269 % U+24B9 CIRCLED LATIN CAPITAL LETTER D; Dcircle  
 16270 \DeclareTextCompositeCommand{\textcircled}{PU}{D}{\9044\271}% U+24B9  
 16271 % U+24BA CIRCLED LATIN CAPITAL LETTER E; Ecircle  
 16272 \DeclareTextCompositeCommand{\textcircled}{PU}{E}{\9044\272}% U+24BA  
 16273 % U+24BB CIRCLED LATIN CAPITAL LETTER F; Fcircle  
 16274 \DeclareTextCompositeCommand{\textcircled}{PU}{F}{\9044\273}% U+24BB  
 16275 % U+24BC CIRCLED LATIN CAPITAL LETTER G; Gcircle  
 16276 \DeclareTextCompositeCommand{\textcircled}{PU}{G}{\9044\274}% U+24BC  
 16277 % U+24BD CIRCLED LATIN CAPITAL LETTER H; Hcircle  
 16278 \DeclareTextCompositeCommand{\textcircled}{PU}{H}{\9044\275}% U+24BD  
 16279 % U+24BE CIRCLED LATIN CAPITAL LETTER I; Icircle

16280 \DeclareTextCompositeCommand{\textcircled}{PU}{I}{\9044\276}% U+24BE  
16281 % U+24BF CIRCLED LATIN CAPITAL LETTER J; Jcircle  
16282 \DeclareTextCompositeCommand{\textcircled}{PU}{J}{\9044\277}% U+24BF  
16283 % U+24C0 CIRCLED LATIN CAPITAL LETTER K; Kcircle  
16284 \DeclareTextCompositeCommand{\textcircled}{PU}{K}{\9044\300}% U+24C0  
16285 % U+24C1 CIRCLED LATIN CAPITAL LETTER L; Lcircle  
16286 \DeclareTextCompositeCommand{\textcircled}{PU}{L}{\9044\301}% U+24C1  
16287 % U+24C2 CIRCLED LATIN CAPITAL LETTER M; Mcircle  
16288 \DeclareTextCompositeCommand{\textcircled}{PU}{M}{\9044\302}% U+24C2  
16289 % U+24C3 CIRCLED LATIN CAPITAL LETTER N; Ncircle  
16290 \DeclareTextCompositeCommand{\textcircled}{PU}{N}{\9044\303}% U+24C3  
16291 % U+24C4 CIRCLED LATIN CAPITAL LETTER O; Ocircle  
16292 \DeclareTextCompositeCommand{\textcircled}{PU}{O}{\9044\304}% U+24C4  
16293 % U+24C5 CIRCLED LATIN CAPITAL LETTER P; Pcircle  
16294 \DeclareTextCompositeCommand{\textcircled}{PU}{P}{\9044\305}% U+24C5  
16295 % U+24C6 CIRCLED LATIN CAPITAL LETTER Q; Qcircle  
16296 \DeclareTextCompositeCommand{\textcircled}{PU}{Q}{\9044\306}% U+24C6  
16297 % U+24C7 CIRCLED LATIN CAPITAL LETTER R; Rcircle  
16298 \DeclareTextCompositeCommand{\textcircled}{PU}{R}{\9044\307}% U+24C7  
16299 % U+24C8 CIRCLED LATIN CAPITAL LETTER S; Scircle  
16300 \DeclareTextCompositeCommand{\textcircled}{PU}{S}{\9044\310}% U+24C8  
16301 % U+24C9 CIRCLED LATIN CAPITAL LETTER T; Tcircle  
16302 \DeclareTextCompositeCommand{\textcircled}{PU}{T}{\9044\311}% U+24C9  
16303 % U+24CA CIRCLED LATIN CAPITAL LETTER U; Ucircle  
16304 \DeclareTextCompositeCommand{\textcircled}{PU}{U}{\9044\312}% U+24CA  
16305 % U+24CB CIRCLED LATIN CAPITAL LETTER V; Vcircle  
16306 \DeclareTextCompositeCommand{\textcircled}{PU}{V}{\9044\313}% U+24CB  
16307 % U+24CC CIRCLED LATIN CAPITAL LETTER W; Wcircle  
16308 \DeclareTextCompositeCommand{\textcircled}{PU}{W}{\9044\314}% U+24CC  
16309 % U+24CD CIRCLED LATIN CAPITAL LETTER X; Xcircle  
16310 \DeclareTextCompositeCommand{\textcircled}{PU}{X}{\9044\315}% U+24CD  
16311 % U+24CE CIRCLED LATIN CAPITAL LETTER Y; Ycircle  
16312 \DeclareTextCompositeCommand{\textcircled}{PU}{Y}{\9044\316}% U+24CE  
16313 % U+24CF CIRCLED LATIN CAPITAL LETTER Z; Zcircle  
16314 \DeclareTextCompositeCommand{\textcircled}{PU}{Z}{\9044\317}% U+24CF  
16315 % U+24D0 CIRCLED LATIN SMALL LETTER A; acircle  
16316 \DeclareTextCompositeCommand{\textcircled}{PU}{a}{\9044\320}% U+24D0  
16317 % U+24D1 CIRCLED LATIN SMALL LETTER B; bcircle  
16318 \DeclareTextCompositeCommand{\textcircled}{PU}{b}{\9044\321}% U+24D1  
16319 % U+24D2 CIRCLED LATIN SMALL LETTER C; ccircle  
16320 \DeclareTextCompositeCommand{\textcircled}{PU}{c}{\9044\322}% U+24D2  
16321 % U+24D3 CIRCLED LATIN SMALL LETTER D; dcircle  
16322 \DeclareTextCompositeCommand{\textcircled}{PU}{d}{\9044\323}% U+24D3  
16323 % U+24D4 CIRCLED LATIN SMALL LETTER E; ecircle  
16324 \DeclareTextCompositeCommand{\textcircled}{PU}{e}{\9044\324}% U+24D4  
16325 % U+24D5 CIRCLED LATIN SMALL LETTER F; fcircle  
16326 \DeclareTextCompositeCommand{\textcircled}{PU}{f}{\9044\325}% U+24D5  
16327 % U+24D6 CIRCLED LATIN SMALL LETTER G; gcircle  
16328 \DeclareTextCompositeCommand{\textcircled}{PU}{g}{\9044\326}% U+24D6  
16329 % U+24D7 CIRCLED LATIN SMALL LETTER H; hcircle  
16330 \DeclareTextCompositeCommand{\textcircled}{PU}{h}{\9044\327}% U+24D7  
16331 % U+24D8 CIRCLED LATIN SMALL LETTER I; icircle  
16332 \DeclareTextCompositeCommand{\textcircled}{PU}{i}{\9044\330}% U+24D8  
16333 % U+24D9 CIRCLED LATIN SMALL LETTER J; jcircle  
16334 \DeclareTextCompositeCommand{\textcircled}{PU}{j}{\9044\331}% U+24D9  
16335 % U+24DA CIRCLED LATIN SMALL LETTER K; kcircle  
16336 \DeclareTextCompositeCommand{\textcircled}{PU}{k}{\9044\332}% U+24DA

16337 % U+24DB CIRCLED LATIN SMALL LETTER L; lcircle  
16338 \DeclareTextCompositeCommand{\textcircled}{PU}{l}{\9044\333}% U+24DB  
16339 % U+24DC CIRCLED LATIN SMALL LETTER M; mcircle  
16340 \DeclareTextCompositeCommand{\textcircled}{PU}{m}{\9044\334}% U+24DC  
16341 % U+24DD CIRCLED LATIN SMALL LETTER N; ncircle  
16342 \DeclareTextCompositeCommand{\textcircled}{PU}{n}{\9044\335}% U+24DD  
16343 % U+24DE CIRCLED LATIN SMALL LETTER O; ocircle  
16344 \DeclareTextCompositeCommand{\textcircled}{PU}{o}{\9044\336}% U+24DE  
16345 % U+24DF CIRCLED LATIN SMALL LETTER P; pcircle  
16346 \DeclareTextCompositeCommand{\textcircled}{PU}{p}{\9044\337}% U+24DF  
16347 % U+24E0 CIRCLED LATIN SMALL LETTER Q; qcircle  
16348 \DeclareTextCompositeCommand{\textcircled}{PU}{q}{\9044\340}% U+24E0  
16349 % U+24E1 CIRCLED LATIN SMALL LETTER R; rcircle  
16350 \DeclareTextCompositeCommand{\textcircled}{PU}{r}{\9044\341}% U+24E1  
16351 % U+24E2 CIRCLED LATIN SMALL LETTER S; scircle  
16352 \DeclareTextCompositeCommand{\textcircled}{PU}{s}{\9044\342}% U+24E2  
16353 % U+24E3 CIRCLED LATIN SMALL LETTER T; tcircle  
16354 \DeclareTextCompositeCommand{\textcircled}{PU}{t}{\9044\343}% U+24E3  
16355 % U+24E4 CIRCLED LATIN SMALL LETTER U; ucircle  
16356 \DeclareTextCompositeCommand{\textcircled}{PU}{u}{\9044\344}% U+24E4  
16357 % U+24E5 CIRCLED LATIN SMALL LETTER V; vcircle  
16358 \DeclareTextCompositeCommand{\textcircled}{PU}{v}{\9044\345}% U+24E5  
16359 % U+24E6 CIRCLED LATIN SMALL LETTER W; wcircle  
16360 \DeclareTextCompositeCommand{\textcircled}{PU}{w}{\9044\346}% U+24E6  
16361 % U+24E7 CIRCLED LATIN SMALL LETTER X; xcircle  
16362 \DeclareTextCompositeCommand{\textcircled}{PU}{x}{\9044\347}% U+24E7  
16363 % U+24E8 CIRCLED LATIN SMALL LETTER Y; ycircle  
16364 \DeclareTextCompositeCommand{\textcircled}{PU}{y}{\9044\350}% U+24E8  
16365 % U+24E9 CIRCLED LATIN SMALL LETTER Z; zcircle  
16366 \DeclareTextCompositeCommand{\textcircled}{PU}{z}{\9044\351}% U+24E9  
16367 % U+24EA CIRCLED DIGIT ZERO  
16368 \DeclareTextCompositeCommand{\textcircled}{PU}{0}{\9044\352}% U+24EA

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

16369 % U+25E6 WHITE BULLET; \*openbullet, whitebullet  
16370 \DeclareTextCommand{\textopenbullet}{PU}{\9045\346}% U+25E6  
16371 % U+25EF LARGE CIRCLE; largecircle  
16372 \DeclareTextCommand{\textbigcircle}{PU}{\9045\357}% U+25EF

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

16373 % U+266A EIGHTH NOTE; musicalnote  
16374 \DeclareTextCommand{\textmusicalnote}{PU}{\9046\152}% U+266A  
16375 % U+26AD MARRIAGE SYMBOL  
16376 \DeclareTextCommand{\textmarried}{PU}{\9046\255}% U+26AD  
16377 % U+26AE DIVORCE SYMBOL  
16378 \DeclareTextCommand{\textdivorced}{PU}{\9046\256}% U+26AE

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

16379 % U+27E6 MATHEMATICAL LEFT WHITE SQUARE BRACKET  
16380 \DeclareTextCommand{\textlbrackdbl}{PU}{\9047\346}% U+27E6  
16381 % U+27E7 MATHEMATICAL RIGHT WHITE SQUARE BRACKET  
16382 \DeclareTextCommand{\textrbrackdbl}{PU}{\9047\347}% U+27E7

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

16383 % U+FB01 LATIN SMALL LIGATURE FI; fi  
16384 \DeclareTextCommand{\textfi}{PU}{\9373\001}% U+FB01  
16385 % U+FB02 LATIN SMALL LIGATURE FL; fl



```
16386 \DeclareTextCommand{\textfl}{PU}{\9373\002}% U+FB02
```

### 50.2.25 Miscellaneous

```
16387 \DeclareTextCommand{\SS}{PU}{SS}
```

### 50.2.26 Aliases

Aliases (german.sty)

```
16388 \DeclareTextCommand{\textglqq}{PU}{\quotedblbase}
16389 \DeclareTextCommand{\textgrqq}{PU}{\textquotedblleft}
16390 \DeclareTextCommand{\textglq}{PU}{\quotesinglbase}
16391 \DeclareTextCommand{\textgrq}{PU}{\textquoteleft}
16392 \DeclareTextCommand{\textflqq}{PU}{\guillemotleft}
16393 \DeclareTextCommand{\textfrqq}{PU}{\guillemotright}
16394 \DeclareTextCommand{\textflq}{PU}{\guilsinglleft}
16395 \DeclareTextCommand{\textfrq}{PU}{\guilsinglright}
```

Aliases (math names)

```
16396 \DeclareTextCommand{\textneg}{PU}{\textlogicalnot}
16397 \DeclareTextCommand{\texttimes}{PU}{\textmultiply}
16398 \DeclareTextCommand{\textdiv}{PU}{\textdivide}
16399 \DeclareTextCommand{\textpm}{PU}{\textplusminus}
16400 \DeclareTextCommand{\textcdot}{PU}{\textperiodcentered}
16401 </puenc>
```

## 50.3 PU encoding, additions for VnTeX

This file is provided by Han The Thanh.

```
16402 <*puvnenc>

16403 \DeclareTextCommand{\abreve}{PU}{\81\003}
16404 \DeclareTextCommand{\acircumflex}{PU}{\80\342}
16405 \DeclareTextCommand{\dj}{PU}{\81\021}
16406 \DeclareTextCommand{\ecircumflex}{PU}{\80\352}
16407 \DeclareTextCommand{\ocircumflex}{PU}{\80\364}
16408 \DeclareTextCommand{\ohorn}{PU}{\81\241}
16409 \DeclareTextCommand{\uhorn}{PU}{\81\260}
16410 \DeclareTextCommand{\ABREVE}{PU}{\81\002}
16411 \DeclareTextCommand{\ACIRCUMFLEX}{PU}{\80\302}
16412 \DeclareTextCommand{\DJ}{PU}{\81\020}
16413 \DeclareTextCommand{\ECIRCUMFLEX}{PU}{\80\312}
16414 \DeclareTextCommand{\OCIRCUMFLEX}{PU}{\80\324}
16415 \DeclareTextCommand{\OHORN}{PU}{\81\240}
16416 \DeclareTextCommand{\UHORN}{PU}{\81\257}

16417 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\341}
16418 \DeclareTextCompositeCommand{\d}{PU}{a}{\9036\241}
16419 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\340}
16420 \DeclareTextCompositeCommand{\h}{PU}{a}{\9036\243}
16421 \DeclareTextCompositeCommand{\~}{PU}{a}{\80\343}
16422 \DeclareTextCompositeCommand{\'}{PU}{\abreve}{\9036\257}
16423 \DeclareTextCompositeCommand{\d}{PU}{\abreve}{\9036\267}
16424 \DeclareTextCompositeCommand{\'}{PU}{\abreve}{\9036\261}
16425 \DeclareTextCompositeCommand{\h}{PU}{\abreve}{\9036\263}
16426 \DeclareTextCompositeCommand{\~}{PU}{\abreve}{\9036\265}
16427 \DeclareTextCompositeCommand{\'}{PU}{\acircumflex}{\9036\245}
16428 \DeclareTextCompositeCommand{\d}{PU}{\acircumflex}{\9036\255}
16429 \DeclareTextCompositeCommand{\'}{PU}{\acircumflex}{\9036\247}
```

16430 \DeclareTextCompositeCommand{\h}{PU}{\acircumflex}{\9036\251}  
16431 \DeclareTextCompositeCommand{\~}{PU}{\acircumflex}{\9036\253}  
16432 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\351}  
16433 \DeclareTextCompositeCommand{\d}{PU}{e}{\9036\271}  
16434 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\350}  
16435 \DeclareTextCompositeCommand{\h}{PU}{e}{\9036\273}  
16436 \DeclareTextCompositeCommand{\~}{PU}{e}{\9036\275}  
16437 \DeclareTextCompositeCommand{\'}{PU}{\ecircumflex}{\9036\277}  
16438 \DeclareTextCompositeCommand{\d}{PU}{\ecircumflex}{\9036\307}  
16439 \DeclareTextCompositeCommand{\'}{PU}{\ecircumflex}{\9036\301}  
16440 \DeclareTextCompositeCommand{\h}{PU}{\ecircumflex}{\9036\303}  
16441 \DeclareTextCompositeCommand{\~}{PU}{\ecircumflex}{\9036\305}  
16442 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\355}  
16443 \DeclareTextCompositeCommand{\d}{PU}{i}{\9036\313}  
16444 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\354}  
16445 \DeclareTextCompositeCommand{\h}{PU}{i}{\9036\311}  
16446 \DeclareTextCompositeCommand{\~}{PU}{i}{\81\051}  
16447 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\363}  
16448 \DeclareTextCompositeCommand{\d}{PU}{o}{\9036\315}  
16449 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\362}  
16450 \DeclareTextCompositeCommand{\h}{PU}{o}{\9036\317}  
16451 \DeclareTextCompositeCommand{\~}{PU}{o}{\80\365}  
16452 \DeclareTextCompositeCommand{\'}{PU}{\ocircumflex}{\9036\321}  
16453 \DeclareTextCompositeCommand{\d}{PU}{\ocircumflex}{\9036\331}  
16454 \DeclareTextCompositeCommand{\'}{PU}{\ocircumflex}{\9036\323}  
16455 \DeclareTextCompositeCommand{\h}{PU}{\ocircumflex}{\9036\325}  
16456 \DeclareTextCompositeCommand{\~}{PU}{\ocircumflex}{\9036\327}  
16457 \DeclareTextCompositeCommand{\'}{PU}{\ohorn}{\9036\333}  
16458 \DeclareTextCompositeCommand{\d}{PU}{\ohorn}{\9036\343}  
16459 \DeclareTextCompositeCommand{\'}{PU}{\ohorn}{\9036\335}  
16460 \DeclareTextCompositeCommand{\h}{PU}{\ohorn}{\9036\337}  
16461 \DeclareTextCompositeCommand{\~}{PU}{\ohorn}{\9036\341}  
16462 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\372}  
16463 \DeclareTextCompositeCommand{\d}{PU}{u}{\9036\345}  
16464 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\371}  
16465 \DeclareTextCompositeCommand{\h}{PU}{u}{\9036\347}  
16466 \DeclareTextCompositeCommand{\~}{PU}{u}{\81\151}  
16467 \DeclareTextCompositeCommand{\'}{PU}{\uhorn}{\9036\351}  
16468 \DeclareTextCompositeCommand{\d}{PU}{\uhorn}{\9036\361}  
16469 \DeclareTextCompositeCommand{\'}{PU}{\uhorn}{\9036\353}  
16470 \DeclareTextCompositeCommand{\h}{PU}{\uhorn}{\9036\355}  
16471 \DeclareTextCompositeCommand{\~}{PU}{\uhorn}{\9036\357}  
16472 \DeclareTextCompositeCommand{\'}{PU}{y}{\80\375}  
16473 \DeclareTextCompositeCommand{\d}{PU}{y}{\9036\365}  
16474 \DeclareTextCompositeCommand{\'}{PU}{y}{\9036\363}  
16475 \DeclareTextCompositeCommand{\h}{PU}{y}{\9036\367}  
16476 \DeclareTextCompositeCommand{\~}{PU}{y}{\9036\371}  
16477 \DeclareTextCompositeCommand{\'}{PU}{A}{\80\301}  
16478 \DeclareTextCompositeCommand{\d}{PU}{A}{\9036\240}  
16479 \DeclareTextCompositeCommand{\'}{PU}{A}{\80\300}  
16480 \DeclareTextCompositeCommand{\h}{PU}{A}{\9036\242}  
16481 \DeclareTextCompositeCommand{\~}{PU}{A}{\80\303}  
16482 \DeclareTextCompositeCommand{\'}{PU}{\ABREVE}{\9036\256}  
16483 \DeclareTextCompositeCommand{\d}{PU}{\ABREVE}{\9036\266}  
16484 \DeclareTextCompositeCommand{\'}{PU}{\ABREVE}{\9036\260}  
16485 \DeclareTextCompositeCommand{\h}{PU}{\ABREVE}{\9036\262}  
16486 \DeclareTextCompositeCommand{\~}{PU}{\ABREVE}{\9036\264}

```

16487 \DeclareTextCompositeCommand{'}{PU}{\ACIRCUMFLEX}{\9036\244}
16488 \DeclareTextCompositeCommand{\d}{PU}{\ACIRCUMFLEX}{\9036\254}
16489 \DeclareTextCompositeCommand{\'}{PU}{\ACIRCUMFLEX}{\9036\246}
16490 \DeclareTextCompositeCommand{\h}{PU}{\ACIRCUMFLEX}{\9036\250}
16491 \DeclareTextCompositeCommand{\~}{PU}{\ACIRCUMFLEX}{\9036\252}
16492 \DeclareTextCompositeCommand{'}{PU}{E}{\80\311}
16493 \DeclareTextCompositeCommand{\d}{PU}{E}{\9036\270}
16494 \DeclareTextCompositeCommand{'}{PU}{E}{\80\310}
16495 \DeclareTextCompositeCommand{\h}{PU}{E}{\9036\272}
16496 \DeclareTextCompositeCommand{\~}{PU}{E}{\9036\274}
16497 \DeclareTextCompositeCommand{'}{PU}{\ECIRCUMFLEX}{\9036\276}
16498 \DeclareTextCompositeCommand{\d}{PU}{\ECIRCUMFLEX}{\9036\306}
16499 \DeclareTextCompositeCommand{'}{PU}{\ECIRCUMFLEX}{\9036\300}
16500 \DeclareTextCompositeCommand{\h}{PU}{\ECIRCUMFLEX}{\9036\302}
16501 \DeclareTextCompositeCommand{\~}{PU}{\ECIRCUMFLEX}{\9036\304}
16502 \DeclareTextCompositeCommand{'}{PU}{I}{\80\315}
16503 \DeclareTextCompositeCommand{\d}{PU}{I}{\9036\312}
16504 \DeclareTextCompositeCommand{'}{PU}{I}{\80\314}
16505 \DeclareTextCompositeCommand{\h}{PU}{I}{\9036\310}
16506 \DeclareTextCompositeCommand{\~}{PU}{I}{\81\050}
16507 \DeclareTextCompositeCommand{'}{PU}{O}{\80\323}
16508 \DeclareTextCompositeCommand{\d}{PU}{O}{\9036\314}
16509 \DeclareTextCompositeCommand{'}{PU}{O}{\80\322}
16510 \DeclareTextCompositeCommand{\h}{PU}{O}{\9036\316}
16511 \DeclareTextCompositeCommand{\~}{PU}{O}{\80\325}
16512 \DeclareTextCompositeCommand{'}{PU}{\OCIRCUMFLEX}{\9036\320}
16513 \DeclareTextCompositeCommand{\d}{PU}{\OCIRCUMFLEX}{\9036\330}
16514 \DeclareTextCompositeCommand{'}{PU}{\OCIRCUMFLEX}{\9036\322}
16515 \DeclareTextCompositeCommand{\h}{PU}{\OCIRCUMFLEX}{\9036\324}
16516 \DeclareTextCompositeCommand{\~}{PU}{\OCIRCUMFLEX}{\9036\326}
16517 \DeclareTextCompositeCommand{'}{PU}{\OHORN}{\9036\332}
16518 \DeclareTextCompositeCommand{\d}{PU}{\OHORN}{\9036\342}
16519 \DeclareTextCompositeCommand{'}{PU}{\OHORN}{\9036\334}
16520 \DeclareTextCompositeCommand{\h}{PU}{\OHORN}{\9036\336}
16521 \DeclareTextCompositeCommand{\~}{PU}{\OHORN}{\9036\340}
16522 \DeclareTextCompositeCommand{'}{PU}{U}{\80\332}
16523 \DeclareTextCompositeCommand{\d}{PU}{U}{\9036\344}
16524 \DeclareTextCompositeCommand{'}{PU}{U}{\80\331}
16525 \DeclareTextCompositeCommand{\h}{PU}{U}{\9036\346}
16526 \DeclareTextCompositeCommand{\~}{PU}{U}{\81\150}
16527 \DeclareTextCompositeCommand{'}{PU}{\UHORN}{\9036\350}
16528 \DeclareTextCompositeCommand{\d}{PU}{\UHORN}{\9036\360}
16529 \DeclareTextCompositeCommand{'}{PU}{\UHORN}{\9036\352}
16530 \DeclareTextCompositeCommand{\h}{PU}{\UHORN}{\9036\354}
16531 \DeclareTextCompositeCommand{\~}{PU}{\UHORN}{\9036\356}
16532 \DeclareTextCompositeCommand{'}{PU}{Y}{\80\335}
16533 \DeclareTextCompositeCommand{\d}{PU}{Y}{\9036\364}
16534 \DeclareTextCompositeCommand{'}{PU}{Y}{\9036\362}
16535 \DeclareTextCompositeCommand{\h}{PU}{Y}{\9036\366}
16536 \DeclareTextCompositeCommand{\~}{PU}{Y}{\9036\370}
16537 </puvnenc>

```

## 50.4 PU encoding, additions for Arabi

This file is provided and maintained by Youssef Jabri.

```
16538 <*puarenc>
```

16539 \DeclareTextCommand{\hamza}{PU}{\86\041}% 0621;afi57409;ARABIC LETTER HAMZA

16540 \DeclareTextCommand{\alefmadda}{PU}{\86\042}% 0622;afi57410;ARABIC LETTER ALEF WITH MADDA ABOVE

16541 \DeclareTextCommand{\alefhamza}{PU}{\86\043}% 0623;afi57411;ARABIC LETTER ALEF WITH HAMZA ABOVE

16542 \DeclareTextCommand{\wawhamza}{PU}{\86\044}% 0624;afi57412;ARABIC LETTER WAW WITH HAMZA ABOVE

16543 \DeclareTextCommand{\aleflowerhamza}{PU}{\86\045}% 0625;afi57413;ARABIC LETTER ALEF WITH HAMZA BELOW

16544 \DeclareTextCommand{\yahamza}{PU}{\86\046}% 0626;afi57414;ARABIC LETTER YEH WITH HAMZA ABOVE

16545 \DeclareTextCommand{\alef}{PU}{\86\047}% 0627;afi57415;ARABIC LETTER ALEF

16546 \DeclareTextCommand{\baa}{PU}{\86\050}% 0628;afi57416;ARABIC LETTER BEH

16547 \DeclareTextCommand{\T}{PU}{\86\051}% 0629;afi57417;ARABIC LETTER TEH MARBUTA

16548 \DeclareTextCommand{\taa}{PU}{\86\052}% 062A;afi57418;ARABIC LETTER TEH

16549 \DeclareTextCommand{\thaa}{PU}{\86\053}% 062B;afi57419;ARABIC LETTER THEH

16550 \DeclareTextCommand{\jeem}{PU}{\86\054}% 062C;afi57420;ARABIC LETTER JEEM

16551 \DeclareTextCommand{\Haa}{PU}{\86\055}% 062D;afi57421;ARABIC LETTER HAH

16552 \DeclareTextCommand{\kha}{PU}{\86\056}% 062E;afi57422;ARABIC LETTER KHAH

16553 \DeclareTextCommand{\dal}{PU}{\86\057}% 062F;afi57423;ARABIC LETTER DAL

16554 \DeclareTextCommand{\dhal}{PU}{\86\060}% 0630;afi57424;ARABIC LETTER THAL

16555 \DeclareTextCommand{\ra}{PU}{\86\061}% 0631;afi57425;ARABIC LETTER REH

16556 \DeclareTextCommand{\zay}{PU}{\86\062}% 0632;afi57426;ARABIC LETTER ZAIN

16557 \DeclareTextCommand{\seen}{PU}{\86\063}% 0633;afi57427;ARABIC LETTER SEEN

16558 \DeclareTextCommand{\sheen}{PU}{\86\064}% 0634;afi57428;ARABIC LETTER SHEEN

16559 \DeclareTextCommand{\sad}{PU}{\86\065}% 0635;afi57429;ARABIC LETTER SAD

16560 \DeclareTextCommand{\dad}{PU}{\86\066}% 0636;afi57430;ARABIC LETTER DAD

16561 \DeclareTextCommand{\Ta}{PU}{\86\067}% 0637;afi57431;ARABIC LETTER TAH

16562 \DeclareTextCommand{\za}{PU}{\86\070}% 0638;afi57432;ARABIC LETTER ZAH

16563 \DeclareTextCommand{\ayn}{PU}{\86\071}% 0639;afi57433;ARABIC LETTER AIN

16564 \DeclareTextCommand{\ghayn}{PU}{\86\072}% 063A;afi57434;ARABIC LETTER GHAIN

16565 \DeclareTextCommand{\tatweel}{PU}{\86\100}% 0640;afi57440;ARABIC TATWEEL

16566 \DeclareTextCommand{\fa}{PU}{\86\101}% 0641;afi57441;ARABIC LETTER FEH

16567 \DeclareTextCommand{\qaf}{PU}{\86\102}% 0642;afi57442;ARABIC LETTER QAF

16568 \DeclareTextCommand{\kaf}{PU}{\86\103}% 0643;afi57443;ARABIC LETTER KAF

16569 \DeclareTextCommand{\lam}{PU}{\86\104}% 0644;afi57444;ARABIC LETTER LAM

16570 \DeclareTextCommand{\meem}{PU}{\86\105}% 0645;afi57445;ARABIC LETTER MEEM

16571 \DeclareTextCommand{\nun}{PU}{\86\106}% 0646;afi57446;ARABIC LETTER NOON

16572 \DeclareTextCommand{\ha}{PU}{\86\107}% 0647;afi57470;ARABIC LETTER HEH

16573 \DeclareTextCommand{\waw}{PU}{\86\110}% 0648;afi57448;ARABIC LETTER WAW

16574 \DeclareTextCommand{\alefmaqsura}{PU}{\86\111}% 0649;afi57449;ARABIC LETTER ALEF MAKSURA

16575 \DeclareTextCommand{\ya}{PU}{\86\112}% 064A;afi57450;ARABIC LETTER YEH

16576 \DeclareTextCommand{\nasb}{PU}{\86\113}% 064B;afi57451;ARABIC FATHATAN

16577 \DeclareTextCommand{\raff}{PU}{\86\114}% 064C;afi57452;ARABIC DAMMATAN

16578 \DeclareTextCommand{\jarr}{PU}{\86\115}% 064D;afi57453;ARABIC KASRATAN

16579 \DeclareTextCommand{\fatha}{PU}{\86\116}% 064E;afi57454;ARABIC FATHA

16580 \DeclareTextCommand{\damma}{PU}{\86\117}% 064F;afi57455;ARABIC DAMMA

16581 \DeclareTextCommand{\kasra}{PU}{\86\120}% 0650;afi57456;ARABIC KASRA

16582 \DeclareTextCommand{\shadda}{PU}{\86\121}% 0651;afi57457;ARABIC SHADDA

16583 \DeclareTextCommand{\sukun}{PU}{\86\122}% 0652;afi57458;ARABIC SUKUN

Farsi

```
16584 \DeclareTextCommand{\peh}{PU}{\86\176}% 067E;afi57506;ARABIC LETTER PEH
16585 \DeclareTextCommand{\tcheh}{PU}{\86\206}% 0686;afi57507;ARABIC LET-
    TER TCHEH
16586 \DeclareTextCommand{\jeh}{PU}{\86\230}% 0698;afi57508;ARABIC LETTER JEH
16587 \DeclareTextCommand{\farsikaf}{PU}{\86\251}% 06A9???;afi????;FARSI LET-
    TER KAF
16588 \DeclareTextCommand{\gaf}{PU}{\86\257}% 06AF;afi57509;ARABIC LETTER GAF
16589 \DeclareTextCommand{\farsiya}{PU}{\86\314}% 06CC;afi????;FARSI LET-
    TER YEH

16590 \DeclareTextCommand{\ZWNJ}{PU}{\9040\014}% 200C;ZWNJ%
16591 \DeclareTextCommand{\noboundary}{PU}{\86\325}% 200D;ZWJ
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## 51 End of file hyccheck.tex

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16593 <*check>
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```

## 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, 2073	15256, 15258, 15260, 15262, 15264, 15266, 15268, 15270, 15325, 15327, 15329, 15331, 15389, 15392, 15394, 15419, 15438, 15584, 15603, 15952, 15954, 15964, 15966, 15980, 15982, 16012, 16014, 16417, 16422, 16427, 16432, 16437, 16442, 16447, 16452, 16457, 16462, 16467, 16472, 16477, 16482, 16487, 16492, 16497, 16502, 16507, 16512, 16517, 16522, 16527, 16532	\@@ListBox . 12203, 12227, 12684, 12717, 13023, <u>13066</u>
\" . . . . .	202, 227, 3171, 13775, 14135, 14147, 14159, 14282, 14368, 14382, 14390, 14405, 14417, 14433, 14447, 14458, 14459, 14473, 14485, 14491, 14542, 14570, 14589, 14610, 14737, 14751, 14759, 14773, 14785, 14801, 14815, 14826, 14827, 14841, 14853, 14859, 15106, 15321, 15323, 15333, 15385, 15387, 15415, 15428, 15580, 15593, 15826, 15828, 15842, 15844, 15846, 15848, 15850, 15852, 15862, 15864, 15866, 15868, 15874, 15876, 15878, 15880, 15886, 15888, 15894, 15896, 15902, 15904, 15944, 15946, 16016, 16018, 16028, 16030, 16046	\( 190, 215, 336, 766, 769, 771, 2075, 13841, 14205 \) 191, 216, 337, 738, 744, 747, 2076, 13842, 14207	\@@Menu . . . . . 12411, 12419 \@@PasswordField . 12360, 12366 \@@Radio . . 12188, 12209, 12409, 12433, 12669, 12690, 13008, <u>13029</u>
\# . . . . .	560, 2158, 2159, 4546, 4557, 4559, 4575, 4607, 4667, 8390, 8392, 9171, 9180, 9215, 9982, 11558, 11569, 11605, 11836, 11845, 11883, 13695	\* . . . . . 339 \+ . . . . . 200, 225, 340 \- . . . . . 201, 226 \. . . . . 198, 223, 333, 1234, 3495, 3895, 14138, 14150, 14162, 14224, 14515, 14522, 14540, 14573, 14592, 14616, 14656, 14657, 14881, 14883, 14905, 14907, 14925, 14927, 14961, 14992, 14994, 15112, 15114, 15205, 15207, 15213, 15215, 15912, 15914, 15920, 15922, 15932, 15934, 15940, 15942, 15968, 15970, 15972, 15974, 15984, 15986, 15988, 15990, 15996, 15998, 16020, 16022, 16024, 16026, 16032, 16034, 16052	\@@TextField . . . . . 12362, 12377 \@@commahyperpage . 7897, 7898 \@@hyper@@creadexternallink . . . . . 4856, 4858 \@@hyperref . . . . . 4769, 4770 \@@latextohtmlX . . . . . 2990, 5004 \@@wrindex . . . . . 7825, 7826 \@@writetorep . . . . . 13616, 13622 \@Alph . . . . . 6576, 6578 \@BIBLABEL . . 7320, 7326, 7332 \@BOOKMARK . . 13756, 13758 \@CITE . . . . . 7397, 7405 \@CITEX . . . . . 7399 \@CheckBox . 5767, 10047, 12301, 12330, 12464, 12801, <u>13168</u>
\\$ . . . . .	184, 209, 335, 561, 4548, 4666	\ / 194, 219, 680, 681, 682, 749, 1858, 7790	\@ChoiceMenu 5764, 10050, 12141, 12333, 12399, 12621, <u>12960</u>
\% . . . . .	562, 2073, 2133, 2134, 4545, 4554, 4556, 4608, 8392	\: . . . . . 189, 214 \; . . . . . 199, 224, 8085 \< . . . . . 196, 221 \= 167, 173, 180, 183, 14140, 14152, 14164, 14535, 14577, 14596, 14615, 14861, 14863, 14897, 14899, 14946, 14948, 14949, 15018, 15020, 15078, 15080, 15217, 15219, 15858, 15860, 15882, 15884, 15936, 15938	\@Form 5462, 10037, 11927, 12322, 12343, 12542, <u>12883</u> \@Gauge . . . . . 5773, 10041, 12111, 12324, 12348, 12485, <u>12880</u>
\& . . . . .	185, 210, 563, 4549, 4560, 4562, 11615	\> . . . . . 197, 222 \? . . . . . 341 \@ . . . . . 3162 \@@@ . . . . . 2389 \@@@BOOKMARK . 13756, 13759, 13817, 13885, 13892	\@CITEX . . . . . 7399 \@CheckBox . 5767, 10047, 12301, 12330, 12464, 12801, <u>13168</u> \@ChoiceMenu 5764, 10050, 12141, 12333, 12399, 12621, <u>12960</u> \@Form 5462, 10037, 11927, 12322, 12343, 12542, <u>12883</u> \@Gauge . . . . . 5773, 10041, 12111, 12324, 12348, 12485, <u>12880</u> \@Localurifalse . . . . . 9990 \@Localuritrue . . . . . 9987 \@M . . . . . 1140, 2446, 4653, 6958 \@MM . . . . . 7083 \@PackageError . . . . . 277 \@PackageInfo . . . . . 280 \@PackageInfoNoLine . . . . . 281 \@PackageWarning . . . . . 278 \@PackageWarningNoLine . . 279 \@PushButton 5770, 10053, 12234, 12336, 12445, 12726, <u>13082</u> \@Refstar . . . . . 8200, 8207 \@Reset 5779, 10056, 12278, 12339, 12461, 12777, <u>13139</u> \@Roman . . . . . 642 \@SCTR . . . . . 7944, 7996 \@SetMaxRnhefLabel . . . . . 7394 \@Submit . . . . . 5776, 10059, 12261, 12340, 12458, 12755, <u>13116</u> \@TextField . . 5761, 10044, 12114, 12327, 12351, 12593, <u>12924</u> \@addchap . . . . . 14092 \@addtoreset . . 7719, 7720, 7734, 7941
\' . . . . .	203, 228, 3111, 3125, 3166, 3168, 3169, 3170, 3171, 3176, 3177, 3179, 3184, 3190, 3194, 3195, 3198, 3241, 3242, 3247, 3248, 3249, 3250, 3251, 3252, 3253, 3254, 3256, 3260, 3273, 13773, 14132, 14144, 14156, 14362, 14378, 14386, 14399, 14413, 14419, 14427, 14443, 14452, 14453, 14467, 14481, 14487, 14510, 14512, 14513, 14514, 14517, 14519, 14520, 14521, 14529, 14567, 14586, 14607, 14731, 14747, 14755, 14767, 14781, 14787, 14795, 14811, 14820, 14821, 14835, 14849, 14855, 14873, 14875, 14980, 14982, 15000, 15002, 15034, 15036, 15046, 15048, 15108, 15110, 15160, 15162, 15168, 15170, 15172, 15174,		

<code>\@afterheading</code> . . . . .	14109	<code>\@currValue</code> . . . . .	5552, 5554, 12214, 12221, 12428, 12439, 12695, 12704, 13037, 13054, 13493	1220, 1224, 1228, 1566, 3873, 4372, 5428, 5434, 5666, 6436, 6569, 6581, 6648, 7187, 7268, 7409, 7432, 7558, 7780, 9033, 12515, 13252, 13269, 13287	
<code>\@alph</code> . . . . .	6572, 6574	<code>\@currentHlabel</code> . . . . .	6622	<code>\@firstoftwo</code> . . . . .	651, 932, 1102, 1774, 5959, 14058
<code>\@anchorcolor</code> . . . . .	9140, 9235, 10104, 11526, 11806	<code>\@currentHref</code> . . . . .	2391, 5869, 6521, 6602, 6604, 6613, 6615, 6622, 6703, 6705, 6715, 6766, 6777, 6779, 6817, 6828, 6832, 6839, 6863, 6927, 6951, 7015, 7025, 7027, 7028, 7068, 7096, 7194, 7220, 7224, 7239, 7241, 7469, 7595, 7618, 7631, 7638, 7689, 7713, 7715, 13606, 13997, 14010, 14021, 14051, 14068, 14103	<code>\@fnsymbol</code> . . . . .	6570
<code>\@arabic</code> . . . . .	1110, 1115, 1119, 6571	<code>\@currentlabel</code> . . . . .	6745, 7086, 7462, 7469, 7694, 7701, 7950, 8002	<code>\@footnotemark</code> . . . . .	6968, 7021, 7105, 7117, 7119, 7131, 7132, 7162, 7164
<code>\@auxout</code> . . . . .	2383, 4814, 5989, 5991, 6661, 6689, 7340, 7355, 7371, 7381, 7411, 7434, 7460, 7466, 7490	<code>\@currentlabelname</code> . . . . .	2381, 7016, 7069, 7097, 7199	<code>\@footnotetext</code> . . . . .	6967, 6974, 7003, 7118, 7120, 7134, 7135, 7155
<code>\@backslashchar</code> . . . . .	862, 865, 868, 1364, 2035, 2039, 2042, 2180, 2197, 2203, 2207, 2215, 4570, 8405, 8415	<code>\@currentlabstr</code> . . . . .	2380, 2388	<code>\@for</code> . . . . .	3514, 5070, 7406, 7429, 12150, 12212, 12417, 12424, 12434, 12630, 12693, 12969, 13035
<code>\@baseurl</code> . . . . .	3481, 3483, 4914, 8857, 8860, 9125, 9127, 9409, 9411, 9895, 9905, 9955, 9957, 10482, 10484, 10862, 10876, 11511, 11513, 11712, 11726, 11792, 11794	<code>\@dblarg</code> . . . . .	2508, 7189, 7270	<code>\@fourthoffive</code> . . . . .	4484, 4802, 8264, 8271
<code>\@begintheorem</code> . . . . .	6922, 6929	<code>\@definecounter</code> . . . . .	7674, 7675	<code>\@gobble</code> . . . . .	49, 56, 117, 584, 585, 586, 587, 624, 625, 626, 627, 654, 655, 656, 665, 667, 826, 939, 974, 985, 1126, 1130, 1133, 1503, 1564, 1583, 1596, 1600, 1663, 1726, 1727, 1734, 1739, 1753, 1758, 2361, 2418, 2677, 2689, 3861, 4046, 4048, 4100, 4536, 5413, 5656, 5923, 5927, 5945, 5947, 5963, 5964, 5967, 5968, 5970, 6415, 6430, 6434, 6911, 7176, 7265, 7594, 8329, 9035, 10362, 10365, 12543, 12884, 13663, 13664, 13665, 13666
<code>\@bibitem</code> . . . . .	7347, 7378	<code>\@ehc</code> . . . . .	2737, 2848, 2873, 2906, 2944, 2951, 2962, 2968, 4098, 4715, 4878, 5174, 5298, 5494, 5527, 5703, 5752, 12243, 12289, 12736, 12788, 13092, 13150	<code>\@gobblefour</code> . . . . .	590, 690, 1260, 1261, 1262, 3680, 8065
<code>\@biblabel</code> . . . . .	7320, 7367	<code>\@ehd</code> . . . . .	63, 296, 302, 317, 7175, 7264	<code>\@gobbleopt</code> . . . . .	5970, 5972
<code>\@bookmarkopenstatus</code> . . . . .	4370, 4387, 13677	<code>\@endForm</code> . . . . .	5463, 10040, 12110, 12323, 12347, 12592, 12910	<code>\@gobbletwo</code> . . . . .	588, 658, 683, 691, 692, 839, 1259, 1681, 1758, 1762, 2562, 3678, 3679, 4050, 5359, 5949, 5958, 5966, 5970, 8252, 14007
<code>\@bookmarksopenlevel</code> . . . . .	3444, 3446, 4373	<code>\@endparentv</code> . . . . .	6918	<code>\@harvarditem</code> . . . . .	7479, 7481
<code>\@bsphack</code> . . . . .	2376, 4807, 7464	<code>\@eqncr</code> . . . . .	6847	<code>\@hyper@anchor</code> . . . . .	4964, 4965
<code>\@capstartfalse</code> . . . . .	7214	<code>\@eqnstarfalse</code> . . . . .	6823, 6850	<code>\@hyper@itemfalse</code> . . . . .	6466, 6482, 6496
<code>\@caption</code> . . . . .	7179, 7191, 7234, 7270, 7272	<code>\@eqnstartrue</code> . . . . .	6847	<code>\@hyper@itemtrue</code> . . . . .	6467
<code>\@capytype</code> . . . . .	2385, 7174, 7178, 7182, 7189, 7196, 7238, 7263, 7267, 7270	<code>\@eqnswtrue</code> . . . . .	6793, 6802	<code>\@hyper@launch</code> . . . . .	4884, 4893, 8749, 10259, 11246
<code>\@car</code> . . . . .	1646, 1662, 1680, 1700, 3423, 5080, 8809, 8820	<code>\@esphack</code> . . . . .	2397, 4818, 7474, 7837	<code>\@hyper@linkfile</code> . . . . .	4865, 4868, 4872, 4904
<code>\@cdr</code> . . . . .	8810, 8821	<code>\@extra@b@citeb</code> . . . . .	7305, 7308, 7325, 7330, 7350, 7398, 7420, 7436, 7443	<code>\@hyper@readexternallink</code> . . . . .	4859, 4863
<code>\@chapter</code> . . . . .	14016, 14017	<code>\@extra@b@info</code> . . . . .	7304, 7307, 7311	<code>\@hyperdef</code> . . . . .	4777, 4778
<code>\@cite</code> . . . . .	7397, 7428, 7525, 7531	<code>\@fifthoffive</code> . . . . .	4058, 4485, 4801, 8151, 8269	<code>\@hyperpage</code> . . . . .	7889, 7890
<code>\@cite@opt</code> . . . . .	7526, 7532, 7536, 7546	<code>\@filebordercolor</code> . . . . .	3984, 8724, 8726, 9740, 9742, 10190, 10192, 11228	<code>\@hyperref</code> . . . . .	4758, 4769
<code>\@citea</code> . . . . .	7400, 7407, 7408, 7427, 7430, 7431	<code>\@filecolor</code> . . . . .	3473, 8745, 9352, 9369, 9758, 10196	<code>\@ifclasslater</code> . . . . .	14115, 14120
<code>\@citeb</code> . . . . .	7406, 7409, 7411, 7413, 7417, 7420, 7429, 7432, 7434, 7436, 7440, 7443	<code>\@firstoffive</code> . . . . .	4481, 4490, 8190, 8274		
<code>\@citebordercolor</code> . . . . .	3986	<code>\@firstofone</code> . . . . .	591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 631, 822, 976, 987,		
<code>\@citedata@opt</code> . . . . .	7527, 7533, 7535				
<code>\@citedatax</code> . . . . .	7542, 7547				
<code>\@citedatax@opt</code> . . . . .	7539, 7545				
<code>\@citeseppen</code> . . . . .	7524, 7530				
<code>\@citex</code> . . . . .	7426				
<code>\@clubpenalty</code> . . . . .	6960				
<code>\@commahyperpage</code> . . . . .	7892, 7897				
<code>\@ctrerr</code> . . . . .	6550, 6559				
<code>\@currDisplay</code> . . . . .	5550, 12153, 12216, 12428, 12442, 12633, 12697, 12972, 13039				

<code>\@ifclassloaded</code> . 2368, 4512, 6633, 6670, 7389, 7925, 7929, 9038, 14114, 14119	<code>\@listctr</code> . . . . . 7356, 7382	<code>\@nocnterr</code> . . . . . 7733, 7747
<code>\@ifnextchar</code> . . . . 12, 88, 103, 123, 684, 4660, 4758, 4777, 4826, 5462, 5761, 5764, 5767, 5770, 5773, 5776, 5779, 5970, 6042, 6051, 7121, 7139, 7479, 7537, 10887, 11157, 11171, 13756, 13759	<code>\@cm</code> . . . . . 1123, 7408, 7431, 10409	<code>\@nocounterr</code> . . . . . 7732, 7746
<code>\@ifpackagelater</code> . . . 233, 252, 996, 2399, 6624, 7744	<code>\@mainaux</code> 5987, 5988, 6398, 6406, 12511, 12535	<code>\@noparitemfalse</code> . . . . . 6937
<code>\@ifpackageloaded</code> . 513, 892, 995, 2371, 2789, 3400, 3404, 4037, 4203, 6505, 6623, 6636, 6698, 6731, 6735, 6755, 6789, 6903, 6964, 7035, 7075, 7235, 7449, 7522, 7686, 7743, 7785, 7786, 7787, 7934, 8199, 8342, 8346, 11784	<code>\@makecaption</code> . 7215, 7217, 7283	<code>\@number</code> . . . . . 6569, 6648, 7558
<code>\@ifpackagewith</code> . 3291, 4038, 7709	<code>\@makefnmark</code> . . . . . 7030, 7167	<code>\@cnx</code> . . . . . 7736, 7750, 7753, 7755
<code>\@ifstar</code> 66, 4507, 4510, 4519, 4523, 5904, 5908, 5976, 5980, 8207, 8233, 8252	<code>\@makefnmark</code> . . . . . 7087	<code>\@onelevel@sanitize</code> . . 2555, 2559, 2771, 3422, 4075, 4105, 4126, 4626, 4926, 4929, 4942, 4956, 5170, 5406, 5490, 6259, 6261, 6609, 7624, 8176, 9530, 13702
<code>\@ifundefined</code> . . 34, 375, 911, 919, 935, 938, 2539, 2651, 2719, 2803, 3309, 3345, 3353, 3360, 3373, 3421, 4010, 5169, 5489, 6368, 6509, 6514, 6737, 6758, 6759, 6812, 6834, 6858, 6895, 7180, 7198, 7314, 7397, 7413, 7436, 7683, 7724, 7732, 7733, 7746, 7747, 7754, 8448, 9931, 10550, 10551, 11341, 12543, 12884, 13261, 13673	<code>\@makeoother</code> . . . . . 166, 167, 179, 180, 182, 183, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 4560, 8377, 13845, 13848, 13875, 13878	<code>\@oparg</code> . . . . . 6922, 6929
<code>\@indexfile</code> 7829, 7844, 7852, 7856, 7861	<code>\@makeschapterhead</code> 14106, 14108	<code>\@outlinefile</code> . 13675, 13764, 13859, 13861, 13863, 13941, 13943, 13945
<code>\@inlabelfalse</code> . . . . . 6939	<code>\@mem@titleref</code> . . . . . 4519	<code>\@pagerefstar</code> . . . 4510, 8192, 8223
<code>\@inmathwarn</code> . . . . . 554, 555	<code>\@mem@titleref@nolink</code> . . . . 4519	<code>\@pagesetref</code> . . . . . 8142
<code>\@inpen@undefined@</code> . . . . 2235	<code>\@menubordercolor</code> . . . . . 3983, 9093, 9095, 9806, 9808, 10294, 10296	<code>\@parboxrestore</code> . 7085, 7207, 7278
<code>\@labels</code> . . . . . 6955	<code>\@menucolor</code> . . 9108, 9812, 10300	<code>\@parcount</code> . . . . . 13823, 13831
<code>\@latex@</code> . . . . . 6073, 6074	<code>\@minipagefalse</code> . . . . . 6935	<code>\@part</code> . . . . . 14034, 14041
<code>\@latex@error</code> . . . . . 7175, 7264	<code>\@mkboth</code> 658, 8047, 14007, 14095, 14097	<code>\@pdfauthor</code> 3696, 3989, 8917, 9391, 9842, 10523, 10788, 11643
<code>\@latex@warning</code> 4796, 7416, 7439, 8126, 8146, 8163, 8280	<code>\@mpfn</code> . . . . . 6971, 7140, 7152	<code>\@pdfborder</code> . . . . . 3541, 3542, 3543, 3550, 3554, 3577, 3579, 4453, 8603, 9548, 10092, 10654, 10749, 11149, 11161, 11176, 11197, 11225, 11256, 11285, 11372, 11460, 11620
<code>\@libibitem</code> . . . . . 7321, 7366	<code>\@mpfootnotetext</code> 6974, 6987, 6988	<code>\@pdfborderstyle</code> . . . . . 3558, 3559, 3560, 3569, 3573, 3581, 3583, 4454, 5618, 8604, 9549, 10093, 10655, 10750, 11150, 11162, 11177, 11198, 11226, 11257, 11286, 11373, 11461, 11621
<code>\@linkbordercolor</code> . . . 3981, 8673, 10094	<code>\@mycount</code> . . . . . 13821, 13831	<code>\@pdfcreationdate</code> . . . . . 3713, 3992, 8921, 8923, 9383, 9385, 9834, 9836, 10763, 10765, 11635, 11637
<code>\@linkcolor</code> . . . . . 10909	<code>\@namedef</code> 1240, 2813, 2814, 2815, 2816, 2817, 2818, 2819, 2820, 3300, 3312, 5180, 5181, 5182, 5183, 5505, 5506, 6634, 6846, 6849, 7454, 7455, 7456, 7457	<code>\@pdfcreator</code> . . . . . 3708, 3991, 8920, 9382, 9833, 10526, 10787, 11634
<code>\@linkdim</code> . . . . . 480, 9189, 9190, 9198, 9199, 9200, 9269, 9270, 9282, 9283, 9284, 9306, 9307, 9320, 9321, 9322, 9344, 9345, 9358, 9359, 9360, 11579, 11580, 11588, 11589, 11590, 11854, 11855, 11868, 11869, 11870	<code>\@namerefstar</code> . . . . . 4523, 8195	<code>\@pdfdirection</code> . 8880, 9447, 9875, 10494, 10842, 11692
	<code>\@nameuse</code> . 2385, 2810, 5186, 5497	<code>\@pdfduplex</code> . . 8886, 9453, 9881, 10500, 10848, 11698
	<code>\@ne</code> . . . . . 1109, 2756, 2894, 4358, 4685, 9673, 9678, 10461, 11366, 12919	<code>\@pdfhighlight</code> . . . . . 3533, 3987, 8623, 8625, 8684, 8720, 8722, 8757, 8759, 9089, 9091, 10653, 10748, 11148, 11196, 11224, 11255
	<code>\@newctr</code> . . . . . 7679, 7680	<code>\@pdfhightlight</code> . . . . . 8682
	<code>\@newl@bel</code> . . . . . 6036, 7307	<code>\@pdfkeywords</code> . . . . . 3732, 3995, 8933, 9380, 9847, 10531, 10789, 11632
	<code>\@newlistfalse</code> . . . . . 6936	<code>\@pdflang</code> . . . . 3973, 4002, 8906, 8908, 9475, 9477, 9915, 9917,
	<code>\@nil</code> . . . . . 307, 324, 499, 503, 508, 512, 527, 1558, 1561, 1569, 1646, 1664, 1682, 1698, 1700, 1703, 1706, 1709, 2244, 2246, 2262, 2264, 3423, 4592, 4596, 4601, 4931, 4939, 4945, 4947, 5080, 5647, 5650, 5669, 6061, 6064, 6071, 6073, 6074, 6159, 6206, 6207, 6209, 6232, 6249, 6303, 6305, 6761, 6770, 6772, 6784, 7876, 7878, 7885, 7908, 7911, 7921, 8130, 8133, 8288, 8319, 8401, 8407, 8411, 8417, 8809, 8810, 8820, 8821, 10327, 10329, 13259, 13272, 13278, 13705, 13708, 13711, 13720, 13723, 13732	
	<code>\@nbreakfalse</code> . . . . . 6033, 6958	



10872, 10874, 11722, 11724  
 \@pdfm@dest . . . 9492, 9551, 9555  
 \@pdfm@mark . . . . . 6386, 9491,  
 9543, 9563, 9577, 9579, 9593,  
 9595, 9600, 9601, 9631, 9655,  
 9657, 9662, 9680, 9702, 9734,  
 9767, 9795, 9829, 9896, 9923,  
 12887, 12888, 12889, 12908,  
 12950, 12956, 13045, 13059,  
 13074, 13080, 13105, 13112,  
 13130, 13136, 13158, 13164,  
 13186, 13192, 13197, 13229,  
 13237, 13912  
 \@pdfmoddate . 3719, 3993, 8925,  
 8927, 9387, 9389, 9838, 9840,  
 10767, 10771, 11639, 11641  
 \@pdfnonfullscreenpagemode . . .  
 . . . 8879, 9446, 9874, 10493,  
 10841, 11691  
 \@pdfnumcopies . . . . . 8895,  
 8897, 9462, 9464, 9890, 9892,  
 10509, 10511, 10857, 10859,  
 11707, 11709  
 \@pdfpageduration . . . . .  
 . . . 3491, 8977, 8981, 8986,  
 10418, 10420, 10423, 10693,  
 10695, 10703  
 \@pdfpagelayout 8905, 9474, 9914,  
 10514, 10516, 10871, 11721  
 \@pdfpagemode 4191, 4192, 4383,  
 4384, 4393, 4394, 8859, 9430,  
 9909, 10481, 10825, 11675  
 \@pdfpagescrop . . . . .  
 3927, 3997, 8844, 8848, 9413,  
 9414, 9435, 9437, 9921, 9923,  
 10470, 10472, 10830, 10832,  
 11680, 11682  
 \@pdfpagetransition . . . . .  
 . . . 3487, 8953, 8957, 8962,  
 10307, 10309, 10311, 10676,  
 10678, 10686  
 \@pdfpicktraybypdfsize . . . 8887,  
 8889, 9454, 9456, 9882, 9884,  
 10501, 10503, 10849, 10851,  
 11699, 11701  
 \@pdfprintarea . 8883, 9450, 9878,  
 10497, 10845, 11695  
 \@pdfprintclip . 8884, 9451, 9879,  
 10498, 10846, 11696  
 \@pdfprintpagerange . . . . .  
 . . . . . 3648, 4001, 8891,  
 8893, 9458, 9460, 9886, 9888,  
 10505, 10507, 10853, 10855,  
 11703, 11705  
 \@pdfprintscaling 8885, 9452, 9880,  
 10499, 10847, 11697  
 \@pdfproducer . . . . .  
 . . . . . 3702, 3990, 8785, 8929,  
 8931, 9373, 9374, 9392, 9394,  
 9818, 9819, 9823, 9843, 9845,  
 10438, 10439, 10443, 10446,  
 10447, 10527, 10529, 10774,  
 10778, 11282, 11283, 11365,  
 11367, 11369, 11457, 11458,  
 11625, 11626, 11644, 11646  
 \@pdfremotestartview 3899, 3901,  
 3902, 3903, 3914, 3918, 3920,  
 3921, 3923, 3999, 8737, 9749,  
 11236  
 \@pdfstartpage . . . . .  
 . . . . 3882, 3884, 4000, 8865,  
 8869, 9417, 9422, 9898, 9902,  
 10474, 10478, 10812, 10817,  
 11662, 11667  
 \@pdfstartview . . . . .  
 . . . . 3889, 3891, 3998, 8867,  
 8869, 9419, 9423, 9900, 9902,  
 10476, 10814, 10818, 11664,  
 11668  
 \@pdfsubject . . . . .  
 3726, 3994, 8919, 9396, 9832,  
 10525, 10786, 11648  
 \@pdftempa . . . . 4870, 4871, 4874  
 \@pdftempwordfile . . . 4861, 4871  
 \@pdftempwordrun . . 4862, 4874  
 \@pdftitle 3690, 3988, 8918, 9381,  
 9831, 10524, 10785, 11633  
 \@pdftrapped . . 3737, 3740, 3743,  
 3752, 3761, 3996, 8934, 8936,  
 9848, 9850, 10790  
 \@pdfview . . . . . 3863,  
 8585, 8593, 9498, 9502, 9506,  
 9510, 9514, 9518, 9519, 9522,  
 9523, 9526, 9530, 9532, 9547,  
 10091, 10101, 10113, 10591,  
 10611, 11287, 11374, 11462,  
 11734  
 \@pdfviewarea . 8881, 9448, 9876,  
 10495, 10843, 11693  
 \@pdfviewclip . 8882, 9449, 9877,  
 10496, 10844, 11694  
 \@pdfviewparams . . . . 3865, 3867,  
 10591, 10611, 11288, 11375,  
 11463, 11735  
 \@percentchar . 4555, 4556, 4608,  
 13679  
 \@processme . . 5538, 5539, 8959,  
 8965, 8983, 8989, 9005, 9011,  
 10890, 10891, 10999, 11000,  
 11003, 11004  
 \@protected@testopt . . . . . 687  
 \@protected@testopt@xargs . 688  
 \@refstar . . . . . 4507, 8189  
 \@runbordercolor 3985, 8761, 8763,  
 10278, 10280, 11259  
 \@runcolor . . . . . 8781, 10284  
 \@safe@activesfalse . . . . 640, 4487  
 \@safe@activetrue . . . . 639, 4486  
 \@savsf . . . . . 8588, 8596  
 \@schapter . . . . . 14004, 14005  
 \@secondoffive . 4059, 4482, 4495,  
 8152, 8153, 8193  
 \@secondoftwo . . . 628, 930, 1105,  
 1632, 1772, 4058, 4059, 14060  
 \@sect . . . . . 14055, 14056  
 \@seqncr . . . . . 6847  
 \@serial@counter . . 13771, 13819,  
 13821, 13822  
 \@seteqlabel . . . . . 7710, 7711  
 \@setminipage . . . . . 7209, 7280  
 \@setref . . 4490, 4495, 8121, 8122,  
 8159  
 \@sharp . . . . . 6761, 6767  
 \@skiphyperreffalse . . 6483, 7336,  
 7348  
 \@skiphyperreftrue . . . 7322, 7348  
 \@spaces . . . . . 284  
 \@spart . . . . . 14047, 14048  
 \@ssect . . . . . 13990, 13991  
 \@startlos . . . . . 8059, 8066, 8115  
 \@starttoc . . . . . 6021  
 \@tempa . 6921, 6928, 6932, 7037,  
 7041, 7044, 7056  
 \@tempb . . . . . 6875, 6879  
 \@tempboxa 9187, 9189, 9198, 9267,  
 9269, 9272, 9273, 9282, 9288,  
 9289, 9304, 9306, 9309, 9310,  
 9320, 9326, 9327, 9342, 9344,  
 9347, 9348, 9358, 9364, 9365,  
 11577, 11579, 11588, 11852,  
 11854, 11868  
 \@tempcnta . 13628, 13629, 13630,  
 13631, 13632, 13634, 13637,  
 13638, 13639, 13645, 13647,  
 13649, 13740, 13741, 13742,  
 13745, 13746, 13747, 13748,  
 13749, 13963, 13964, 13965  
 \@tempdima . . . . .  
 2449, 5801, 5802, 5803, 5804,  
 5805, 5806, 5807, 5808, 8578,  
 12149, 12154, 12156, 12192,  
 12193, 12194, 12198, 12199,  
 12200, 12201, 12629, 12634,  
 12636, 12673, 12674, 12675,  
 12679, 12680, 12681, 12682,  
 12968, 12973, 12975, 13012,  
 13013, 13014, 13018, 13019,  
 13020, 13021  
 \@tempdimb 12153, 12154, 12633,  
 12634, 12972, 12973

<code>\@tempswafalse</code> . . . . .	7541	14919, 14933, 14935, 14969,	14445, 14447, 14449, 14450,
<code>\@tempswatru</code> 7511, 7514, 7517,	7538	14971, 14972, 15050, 15052,	14452, 14453, 14455, 14456,
<code>\@temptokena</code> . 3278, 3283, 3286,	3288	15098, 15100, 15102, 15104,	14458, 14459, 14461, 14463,
<code>\@tfor</code> . . . . .	6876	16036, 16038	14465, 14467, 14469, 14471,
<code>\@the@H@page</code> . . . . .	7560, 7562	<code>\_</code> . 187, 212, 565, 4547, 4564, 4565	14473, 14475, 14477, 14479,
<code>\@thefnmark</code> . . 6972, 6983, 7048,	7086, 7103, 7110, 7141, 7153,	<code>\'</code> . . . . . 166, 172, 179, 182,	14481, 14483, 14485, 14487,
7160		3125, 3259, 3262, 3264, 3272,	14489, 14491, 14492, 14565,
<code>\@thirdoffve</code> . . . . .	4483, 8196	13696, 14131, 14143, 14155,	14729, 14731, 14733, 14735,
<code>\@thm</code> . . . . .	6904	14360, 14376, 14384, 14397,	14737, 14739, 14741, 14743,
<code>\@topnewpage</code> . . . . .	14106	14411, 14425, 14441, 14449,	14745, 14747, 14749, 14751,
<code>\@topsep</code> . . . . .	6917	14450, 14465, 14479, 14527,	14753, 14755, 14757, 14759,
<code>\@topsepadd</code> . . . . .	6918	14566, 14585, 14606, 14729,	14761, 14763, 14765, 14767,
<code>\@typeset@protect</code> . . . . .	13976	14745, 14753, 14765, 14779,	14769, 14771, 14773, 14775,
<code>\@undefined</code> . . 388, 391, 693, 3282,	5960, 5995, 6008, 6020, 6221,	14793, 14809, 14817, 14818,	14777, 14779, 14781, 14783,
6239, 6284, 7174, 7237, 7249,	7254, 7263, 8184, 8576, 8789,	14833, 14847, 15164, 15166,	14785, 14787, 14789, 14791,
8798, 10064, 10449, 10463		15412, 15440, 15577, 15605,	14793, 14795, 14797, 14799,
<code>\@undottedtocline</code> . . . . .	8111	16008, 16010, 16058, 16060,	14801, 14803, 14805, 14807,
<code>\@unprocessedoptions</code> . . . . .	4333	16419, 16424, 16429, 16434,	14809, 14811, 14813, 14815,
<code>\@urlbordercolor</code> . . . . .	3982, 8686, 8688, 9773, 9775,	16439, 16444, 16449, 16454,	14817, 14818, 14820, 14821,
10214, 10216, 11199		16459, 16464, 16469, 16474,	14823, 14824, 14826, 14827,
<code>\@urlcolor</code> . . . . .	8705,	16479, 16484, 16489, 16494,	14829, 14831, 14833, 14835,
9194, 9207, 9314, 9331, 9787,	10220, 11584, 11597, 11863,	16499, 16504, 16509, 16514,	14837, 14839, 14841, 14843,
11876		16519, 16524, 16529, 16534	14845, 14847, 14849, 14851,
<code>\@urltype</code> . 9160, 9165, 9960, 9986,	10121, 10135, 11546, 11551,	<code>\ </code> 188, 213, 338, 1981, 2074, 2115,	14853, 14855, 14857, 14859,
11825, 11830		3071, 4025, 7789, 8376, 8386	15124, 15126, 15128, 15130,
<code>\@vpageref</code> . . . . .	8217	<code>\~</code> . . . . . 564, 1278, 2223, 3183,	15131, 15133, 15135, 15137,
<code>\@whilenum</code> . . . . .	1276	3191, 3192, 3193, 4119, 4568,	15139, 15141, 15143, 15145,
<code>\@wrindex</code> . . . . .	7793, 7794, 7825	14134, 14146, 14158, 14366,	15147, 15149, 15151, 15153,
<code>\@writefile</code> . . . . .	7467	14395, 14403, 14431, 14463,	15155, 15157, 15158, 15160,
<code>\@x@sf</code> . . . . .	7023, 7032, 7166, 7168	14471, 14533, 14569, 14588,	15162, 15164, 15166, 15168,
<code>\@xfootnote</code> . . . . .	7139	14609, 14735, 14763, 14771,	15170, 15172, 15174, 15223,
<code>\@xfootnotemark</code> . . . . .	6980, 7157	14799, 14831, 14839, 14941,	15225, 15227, 15229, 15231,
<code>\@xfootnotenext</code> . . . . .	6969, 7150	14943, 14944, 15074, 15076,	15233, 15235, 15238, 15240,
<code>\@xp</code> 7700, 7735, 7736, 7749, 7750,	7752, 7753	16004, 16006, 16054, 16056,	15365, 15367, 15369, 15371,
<code>\[</code> . . 192, 217, 334, 3547, 3565, 4727		16062, 16064, 16421, 16426,	15373, 15375, 15377, 15379,
<code>\{</code> 342, 364, 557, 2075, 10582, 13697		16431, 16436, 16441, 16446,	15381, 15383, 15385, 15387,
<code>\}</code> 343, 369, 558, 2076, 10582, 13698		16451, 16456, 16461, 16466,	15389, 15391, 15392, 15394,
<code>\]</code> . . . . .	193, 218	16471, 16476, 16481, 16486,	15396, 15398, 15400, 15402,
<code>\^</code> . . . . .	186, 211, 332, 2173,	16491, 16496, 16501, 16506,	15404, 15406, 15408, 15410,
2174, 3189, 4543, 4544, 4552,	14133, 14145, 14157, 14364,	16511, 16516, 16521, 16526,	15796, 15798, 15800, 15802,
14380, 14388, 14401, 14415,	14429, 14445, 14455, 14456,	16531, 16536	15804, 15806, 15808, 15810,
14469, 14483, 14531, 14568,	14587, 14608, 14733, 14749,		15812, 15814, 15816, 15818,
14757, 14769, 14783, 14797,	14813, 14823, 14824, 14837,		15820, 15822, 15824, 15826,
14851, 14877, 14879, 14917,			15828, 15830, 15832, 15834,
			15836, 15838, 15840, 15842,
			15844, 15846, 15848, 15850,
			15852, 15854, 15856, 15858,
			15860, 15862, 15864, 15866,
			15868, 15870, 15872, 15874,
			15876, 15878, 15880, 15882,
			15884, 15886, 15888, 15890,
			15892, 15894, 15896, 15898,
			15900, 15902, 15904, 15906,
			15908, 16058, 16060, 16062,
			16064, 16284, 16286, 16288,
			16290, 16292, 16294, 16296,
			16298, 16300, 16302, 16304,

# Numbers

<code>\3</code> . . . . .	541, 1322, 1323,
1324, 1325, 1326, 1327, 1328,	
1329, 1438, 1439, 1440, 1441,	
1442, 1443, 1444, 1445, 2337,	
13840, 14360, 14362, 14364,	
14366, 14368, 14370, 14372,	
14374, 14376, 14378, 14380,	
14382, 14384, 14386, 14388,	
14390, 14392, 14393, 14395,	
14397, 14399, 14401, 14403,	
14405, 14407, 14409, 14411,	
14413, 14415, 14417, 14419,	
14421, 14423, 14425, 14427,	
14429, 14431, 14433, 14435,	
14437, 14439, 14441, 14443,	

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, 16380, 16382, 16404, 16406, 16407, 16411, 16413, 16414, 16417, 16419, 16421, 16432, 16434, 16438, 16439, 16440, 16441, 16442, 16443, 16444, 16445, 16447, 16448, 16449, 16450, 16451, 16452, 16453, 16454, 16455, 16456, 16457, 16458, 16459, 16460, 16461, 16462, 16463, 16464, 16465, 16467, 16468, 16469, 16470, 16471, 16472, 16473, 16474, 16475, 16476, 16477, 16479, 16481, 16492, 16494, 16498, 16499, 16500, 16501, 16502, 16503, 16504, 16505, 16507, 16508, 16509, 16510, 16511, 16512, 16513, 16514, 16515, 16516, 16517, 16518, 16519, 16520, 16521, 16522, 16523, 16524, 16525, 16527, 16528, 16529, 16530, 16531, 16532, 16533, 16534, 16535, 16536, 16589, 16591	16092, 16094, 16096, 16098, 16100, 16102, 16104, 16106, 16108, 16110, 16112, 16114, 16116, 16118, 16120, 16122, 16124, 16126, 16128, 16130, 16132, 16134, 16136, 16138, 16140, 16142, 16144, 16146, 16148, 16150, 16152, 16154, 16156, 16158, 16160, 16162, 16164, 16166, 16168, 16170, 16172, 16174, 16176, 16178, 16180, 16182, 16184, 16186, 16188, 16190, 16192, 16194, 16196, 16198, 16200, 16202, 16204, 16206, 16208, 16210, 16212, 16214, 16216, 16218, 16220, 16222, 16224, 16226, 16228, 16230, 16232, 16234, 16236, 16238, 16240, 16242, 16244, 16246, 16248, 16250, 16252, 16254, 16256, 16258, 16260, 16262, 16264, 16266, 16268, 16270, 16272, 16274, 16276, 16278, 16280, 16282, 16284, 16286, 16288, 16290, 16292, 16294, 16296, 16298, 16300, 16302, 16304, 16306, 16308, 16310, 16312, 16314, 16316, 16318, 16320, 16322, 16324, 16326, 16328, 16330, 16332, 16334, 16336, 16338, 16340, 16342, 16344, 16346, 16348, 16350, 16352, 16354, 16356, 16358, 16360, 16362, 16364, 16366, 16368, 16370, 16372, 16374, 16376, 16378, 16380, 16382, 16384, 16386, 16418, 16420, 16422, 16423, 16424, 16425, 16426, 16427, 16428, 16429, 16430, 16431, 16433, 16435, 16436, 16437, 16438, 16439, 16440, 16441, 16443, 16445, 16448, 16450, 16452, 16453, 16454, 16455, 16456, 16457, 16458, 16459, 16460, 16461, 16463, 16465, 16467, 16468, 16469, 16470, 16471, 16473, 16474, 16475, 16476, 16478, 16480, 16482, 16483, 16484, 16485, 16486, 16487, 16488, 16489, 16490, 16491, 16493, 16495, 16496, 16497, 16498, 16499, 16500, 16501, 16503, 16505, 16508, 16510, 16512, 16513, 16514, 16515, 16516, 16517, 16518, 16519, 16520, 16521, 16523,	16525, 16527, 16528, 16529, 16530, 16531, 16533, 16534, 16535, 16536, 16590
\9 . . . . . 544, 1342, 1345, 1376, 2265, 2280, 2289, 2317, 2337, 14565, 15910, 15912, 15914, 15916, 15918, 15920, 15922, 15924, 15926, 15928, 15930, 15932, 15934, 15936, 15938, 15940, 15942, 15944, 15946, 15948, 15950, 15952, 15954, 15956, 15958, 15960, 15962, 15964, 15966, 15968, 15970, 15972, 15974, 15976, 15978, 15980, 15982, 15984, 15986, 15988, 15990, 15992, 15994, 15996, 15998, 16000, 16002, 16004, 16006, 16008, 16010, 16012, 16014, 16016, 16018, 16020, 16022, 16024, 16026, 16028, 16030, 16032, 16034, 16036, 16038, 16040, 16042, 16044, 16046, 16048, 16050, 16052, 16054, 16056, 16058, 16060, 16062, 16064, 16066, 16068, 16070, 16072, 16074, 16076, 16078, 16080, 16082, 16084, 16086, 16088, 16090,		
		\_ . . . . . 345, 672, 3206, 3209, 3895, 7408, 7431, 14155, 14156, 14157, 14158, 14159, 14160, 14161, 14162, 14163, 14164, 14165, 14166, 14585, 14586, 14587, 14588, 14589, 14590, 14591, 14592, 14593, 14594, 14595, 14596, 14597, 14598, 14599, 14600, 14601, 14602, 14603
		A
	\ABREVE . . 16410, 16482, 16483, 16484, 16485, 16486	
	\abreve 16403, 16422, 16423, 16424, 16425, 16426	
	\AccFancyVerbLineautorefname . . . . . . 3233	
	\Accfootnoteautorefname . . 3213	
	\Acctheoremautorefname . . 3237	
	\ACIRCUMFLEX . 16411, 16487, 16488, 16489, 16490, 16491	
	\acircumflex . . 3264, 16404, 16427, 16428, 16429, 16430, 16431	
	\Acrobatmenu . 2420, 4055, 5957, 9084, 9792, 10287, 11143	
	\active . . . . . 1256, 1263, 4544, 4545, 4546, 4547, 4548, 4549, 4552, 4554, 4557, 4565, 13844, 13874	
	\add@accent . . . . . 556	
	\addcontentsline 7203, 7274, 7592, 7597, 7668, 14111	
	\addtocontents 7637, 7669, 7942, 7994, 14099, 14100	
	\addtocounter . 6645, 6668, 6677, 6688, 6692, 6897, 9682	
	\addvspace . . . . . 14099, 14100	
	\adl@LT@array . . . . . 6759	
	\advance . . . . . 478, 479, 1277, 4693, 5030, 5358, 5404, 5802, 5803, 5806, 5807, 6176, 8834, 9199, 9283, 9321, 9359, 10445, 11589, 11869, 12156, 12199, 12200, 12636, 12680, 12681, 12919, 12975, 13019, 13020, 13629, 13631, 13632, 13638, 13647, 13748, 13964	
	\AE . . . . . 14372, 14741, 15168	
	\ae . . . . . 14437, 14805, 15170	
	\afterassignment 1870, 1876, 1882	
	\AfterBeginDocument . . 375, 389	
	\aftergroup . . . . . 7090	

<code>\alef</code> . . . . .	16545	<code>\BeforeTeXIVht</code> . . . . .	2855	<code>\capitaldotaccent</code> . . . . .	14616	
<code>\alefhamza</code> . . . . .	16541	<code>\begin</code> . . . . .	11916, 16595	<code>\capitalgrave</code> . . . . .	14606	
<code>\aleflowerhamza</code> . . . . .	16543	<code>\belowpdfbookmark</code> . . . . .	13744	<code>\capitalhungarumlaut</code> . . . . .	14611	
<code>\alefmadda</code> . . . . .	16540	<code>\bfseries</code> . . . . .	606, 7414, 7437, 8125, 8145, 8162, 8279	<code>\capitalmacron</code> . . . . .	14615	
<code>\alefmaqsura</code> . . . . .	16574	<code>\bgroup</code> . . . . .	681, 4660, 7077, 7089, 8550, 9646, 10032, 10628, 12355, 12447, 12468	<code>\capitalnewtie</code> . . . . .	14618	
<code>\Alph</code> . . . . .	6225, 6538, 6539	<code>\bibcite</code> . . . . .	7306, 7312, 7316, 7341, 7356, 7372, 7382	<code>\capitalogonek</code> . . . . .	14605	
<code>\alph</code> . . . . .	6226, 6868, 6899	<code>\bitsetGetDec</code> . . . . .	5082, 5215, 5233, 5247, 5260, 5276, 5308, 5333	<code>\capitalring</code> . . . . .	14612	
<code>\AMSautorefname</code> . . . . .	8351	<code>\bitsetGetHex</code> . . . . .	5083	<code>\capitaltie</code> . . . . .	14617	
<code>\anchor@spot</code> . . . . .	4969, 4982, 4989, 4995, 4997, 8643, 9140, 9235, 10032, 10104, 10588, 10934, 10937, 11526, 11806	<code>\bitsetGetSetBitList</code> . . . . .	5071	<code>\capitaltilde</code> . . . . .	14609	
<code>\appendix</code> . . . . .	6535, 6536	<code>\bitsetIsEmpty</code> . . . . .	5212, 5230, 5244, 5257, 5273, 5305, 5330	<code>\caption</code> . . . . .	7173, 7175, 7262, 7264	
<code>\appendixautorefname</code> . . . . .	3081, 3099, 3117, 3135, 3153, 3171, 3189, 3221, 3222, 3247, 3265, 8361	<code>\bitsetReset</code> . . . . .	5185, 5219, 5238, 5252, 5265, 5281, 5313	<code>\catcode</code> . . . . .	172, 173, 184, 185, 186, 187, 206, 819, 820, 956, 1256, 1263, 1981, 1982, 2115, 2116, 2172, 2173, 2174, 4403, 4405, 4543, 4544, 4545, 4546, 4547, 4548, 4549, 4552, 4554, 4557, 4565, 4575, 4666, 4667, 8376, 10669, 10670, 13773, 13775, 13844, 13847, 13874, 13877	
<code>\arabic</code> . . . . .	6222, 6441, 6444, 6447, 6448, 6449, 6451, 6452, 6453, 6454, 6456, 6457, 6458, 6459, 6460, 6461, 6464, 6474, 6475, 6515, 6652, 7677, 7683, 7731, 7745, 7930, 7935, 7937	<code>\bitsetSetValue</code> . . . . .	5051, 5061	<code>\cf@encoding</code> . . . . .	1581	
<code>\AtBeginDocument</code> . . . . .	376, 5993, 6749, 11896	<code>\BOOKMARK</code> . . . . .	13676, 13755	<code>\chapterautorefname</code> . . . . .	3082, 3100, 3118, 3136, 3154, 3172, 3190, 3219, 3248, 3266, 8362	
<code>\AtBeginShipout</code> . . . . .	6105, 9119, 9628	<code>\booknumberline</code> . . . . .	13659, 13664	<code>\chapternumberline</code> . . . . .	13661, 13666	
<code>\AtBeginShipoutBox</code> . . . . .	6109, 6112, 9114, 9115, 9629, 9630	<code>\box</code> . . . . .	5809, 6112, 8564, 9660, 10980	<code>\char</code> . . . . .	12582, 13777, 13814	
<code>\AtBeginShipoutFirst</code> . . . . .	6116, 9928, 11338, 11453	<code>\bullet</code> . . . . .	8077, 8085, 8095, 8103	<code>\chardef</code> . . . . .	289, 322, 2641, 2642, 2643, 2644, 2894, 2896, 4328, 4358, 10929, 10932, 10938	
<code>\AtEndDocument</code> . . . . .	6007	<b>C</b>			<code>\check@bm@number</code> . . . . .	13897, 13905, 13955, 13963
<code>\AtEndOfPackage</code> . . . . .	386	<code>\C</code> . . . . .	14551, 15656, 15658	<code>\CheckBox</code> . . . . .	5766	
<code>\AtVeryEndDocument</code> . . . . .	6324, 12552	<code>\c</code> . . . . .	894, 898, 904, 3183, 3191, 3192, 3193, 6064, 6071, 14139, 14151, 14163, 14374, 14439, 14559, 14574, 14593, 14604, 14743, 14807, 14929, 14931, 14974, 14976, 14984, 14986, 15004, 15006, 15038, 15040, 15054, 15056, 15062, 15064, 15209, 15211, 15711, 15714, 15928, 15930, 15948, 15950	<code>\checkcommand</code> . . . . .	7036	
<code>\author</code> . . . . .	6041, 6051	<code>\c@footnote</code> . . . . .	6982, 7039, 7047, 7159	<code>\checkcommand</code> . . . . .	42, 6687, 7150, 7157, 7164, 7262, 7272, 7366, 7378, 7668, 7671, 7731, 8159	
<code>\autopageref</code> . . . . .	4190, 8232	<code>\c@Hy@tempcnt</code> . . . . .	4678, 4679, 4685, 4693	<code>\checklatex</code> . . . . .	4, 7149, 7261, 7365, 7667, 8158	
<code>\autoref</code> . . . . .	662, 4189, 8251, 11891	<code>\c@page</code> . . . . .	6158, 6176, 6177, 6181, 6193, 6195, 6200, 6207, 6209, 6211, 6240, 7555	<code>\checkpackage</code> . . . . .	9, 6686, 7730	
<code>\ayn</code> . . . . .	16563	<code>\c@secnumdepth</code> . . . . .	14024, 14042, 14057	<code>\ChoiceBox</code> . . . . .	5408	
<b>B</b>		<code>\c@slidesection</code> . . . . .	7943, 8071, 8072	<code>\ChoiceMenu</code> . . . . .	5763	
<code>\b</code> . . . . .	893, 897, 903, 14141, 14153, 14165, 14557, 14580, 14599, 15916, 15918, 15924, 15926, 15956, 15958, 15960, 15962, 15976, 15978, 15992, 15994, 16000, 16002, 16040, 16042, 16044	<code>\c@slidesubsection</code> . . . . .	7995	<code>\citation</code> . . . . .	7411, 7434, 7460	
<code>\baa</code> . . . . .	16546	<code>\c@tocdepth</code> . . . . .	3414, 3419	<code>\citeauthoryear</code> . . . . .	7526, 7532	
<code>\back@none</code> . . . . .	3016, 3026, 3039	<code>\calc@bm@number</code> . . . . .	13886, 13962	<code>\citeN</code> . . . . .	7523	
<code>\back@page</code> . . . . .	3018, 3031	<code>\calculate@pdfview</code> . . . . .	3859, 3862	<code>\CJK@char</code> . . . . .	1259	
<code>\back@section</code> . . . . .	3017, 3023, 3029, 3035	<code>\capitalacute</code> . . . . .	14607	<code>\CJK@charx</code> . . . . .	1260	
<code>\back@slide</code> . . . . .	3019, 3028	<code>\capitalbreve</code> . . . . .	14614	<code>\CJK@CJK</code> . . . . .	1248	
<code>\backcite</code> . . . . .	7468	<code>\capitalcaron</code> . . . . .	14613	<code>\CJK@eight</code> . . . . .	1459, 1462, 1576	
<code>\backref</code> . . . . .	7499, 11895	<code>\capitalcedilla</code> . . . . .	14604	<code>\CJK@five</code> . . . . .	1459, 1461, 1576	
<code>\baselineskip</code> . . . . .	2423, 5815, 5816, 5817, 5818, 5819, 5820, 9254, 10607, 10639, 11321	<code>\capitalcircumflex</code> . . . . .	14608	<code>\CJK@four</code> . . . . .	1458, 1461, 1575	
<code>\bbl@cite@choice</code> . . . . .	7315	<code>\capitaldieresis</code> . . . . .	14610	<code>\CJK@hundred</code> . . . . .	1525	

\CJK@punctchar	1261	\cyrabhchdsc	15793	\cyrhdsc	15768
\CJK@punctcharx	1262	\CYRABHDZE	15854	\CYRHHK	15906
\CJK@seven	1459, 1462, 1576	\cyrabhdze	15856	\cyrhkh	15908
\CJK@six	1459, 1462, 1576	\CYRABHHA	15744	\CYRHRDSN	15500
\CJK@ten	1460, 1461, 1462, 1463, 1540	\cyrabhha	15746	\cyrhrdsn	15565
\CJK@tenthousand	1473, 1494	\CYRAE	15830	\CYRI	15440, 15463, 15466, 15858, 15862
\CJK@thousand	1510	\cyrae	15832	\cyri	3203, 3206, 3210, 3216, 3221, 3223, 15528, 15531, 15605, 15860, 15864
\CJK@three	1458, 1461, 1575	\CYRB	15449	\CYRIE	15421
\CJK@two	1458, 1460, 1575	\cyrb	3217, 15514	\cyrie	15586
\CJK@zero	1458, 1476, 1493, 1497, 1513, 1528, 1550	\CYRBYUS	15632	\CYRII	15425, 15428
\CJKdigits	1335	\cyrbyus	15634	\cyrii	15590, 15593
\CJKkern	1247	\CYRC	15492	\CYRIOTBYUS	15636
\CJKnumber	1334	\cyrbc	15557	\cyriotbyus	15638
\close@pdfink	8637, 8662, 8671, 8706, 8746, 8782, 9109	\CYRCH	15494, 15894	\CYRIOTE	15620
\closeout	5987, 13764	\cyrch	3209, 3210, 3218, 15559, 15896	\cyriote	15622
\clubpenalty	6958, 6960	\CYRCHLDSC	15814	\CYRIOTLYUS	15628
\codeof	7490	\cyrchldsc	15816	\cyriotlyus	15630
\color@begingroup	8550, 9646	\CYRCHRDSC	15774	\CYRISHRT	15465
\color@endgroup	8557, 9653	\cyrchrdsc	15776	\cyrishrt	15530
\columnwidth	7084	\CYRCHVCRS	15778	\CYRISHRTDSC	15682
\comma@entry	5399, 5406, 5408	\cyrchvcrs	15780	\cyrishrtdsc	15684
\comma@parse	5398	\CYRD	15455	\CYRIZH	15652, 15656
\contentsline	5996, 5997, 6009, 7638, 7642, 7669, 7671	\cyrd	3206, 3209, 3220, 3225, 3226, 15520	\cyrizh	15654, 15658
\copy	8560, 9115, 9630, 9656	\CYRDJE	15417	\CYRJE	15430
\count@	858, 860, 861, 864, 867, 870, 873, 1275, 1276, 1277, 1278, 1871, 3430, 3431, 3436, 3437, 5029, 5030, 5045, 5341, 5356, 5358, 5382, 5404, 5420, 8829, 8830, 8831, 8832, 8833, 8834, 8837, 10441, 10442, 10443, 10444, 10445, 10448	\cyrdje	15582	\cyrje	15595
\CurrentBorderColor	8627, 8629, 8656, 8658, 8666, 8668, 8673, 10094, 10128, 10130, 10146, 10148, 10167, 10169, 10227, 10229, 10246, 10248	\CYRDZE	15423	\CYRK	15438, 15468
\currentpdfbookmark	13736	\cyrdze	15588	\cyrk	3212, 3213, 3215, 3229, 3230, 3232, 3233, 3234, 15533, 15603
\curu	15608	\CYRDZHE	15445	\CYRKBEAK	15728
\cyr	641, 3201, 3203, 3206, 3209, 3212, 3213, 3214, 3215, 3216, 3217, 3218, 3219, 3220, 3221, 3223, 3225, 3226, 3227, 3228, 3229, 3230, 3231, 3232, 3233, 3234, 3235, 3236, 3237, 3238	\cyrdzhe	15610	\cyrkbeak	15730
\CYRA	15447, 15822, 15826	\CYRE	15412, 15415, 15457, 15834	\CYRKDSC	15716
\cyra	3203, 3210, 3212, 3217, 3220, 3225, 3226, 3232, 3236, 15512, 15824, 15828	\cyre	3203, 3209, 3210, 3223, 3235, 3236, 3237, 15522, 15577, 15580, 15836	\cyrkdisc	15718
\CYRABHCH	15786, 15791	\cyreref	15880	\CYRKHCERS	15724
\cyrabhch	15788, 15794	\CYREREV	15506, 15878	\cyrkhrs	15726
\CYRABHCHDSC	15790	\cyrerev	15571	\CYRKHK	15802
		\CYRERY	15502, 15902	\cyrkhk	15804
		\cyrery	3201, 3203, 15567, 15904	\CYRKOPPA	15676
		\CYRF	15488	\cyrkoppa	15678
		\cyrf	15553	\CYRKSI	15640
		\CYRFITA	15648	\cyrksi	15642
		\cyrfit	15650	\CYRKVCERS	15720
		\CYRG	15419, 15453	\cyrkvcrs	15722
		\cyrg	3219, 15518, 15584	\CYRL	15470
		\CYRGDSC	15898	\cyrl	3217, 3219, 3221, 3223, 15535
		\cyrgdsc	15900	\CYRLDSC	15806
		\CYRGHCERS	15698	\cyrlldsc	15808
		\cyrghcrs	15700	\CYRLJE	15432
		\CYRGHK	15702	\cyrlje	15597
		\cyrghk	15704	\CYRLYUS	15624
		\CYRGUP	15694	\cyrllys	15626
		\cyrgup	15696	\CYRM	15472
		\CYRH	15490	\cyrm	3206, 3210, 3236, 3237, 15537
		\cyrh	15555		
		\CYRHDSC	15766		



\CYRMDSC	15818	\CYRSHCH	15498	16448, 16453, 16458, 16463,	
\cyrmdsc	15820	\cyrshch	15563	16468, 16473, 16478, 16483,	
\CYRN	15474	\CYRSHHA	15782	16488, 16493, 16498, 16503,	
\cyrn	3203, 3209, 3210, 3212, 3213, 3215, 3223, 3229, 3230, 15539	\cyrshha	15784	16508, 16513, 16518, 16523, 16528, 16533	
\CYRNDSC	15732	\CYRT	15484	\dad	16560
\cyrndsc	15734	\cyrt	3206, 3209, 3215, 3217, 3229, 3230, 3231, 3232, 3233, 3234, 3235, 3236, 3237, 15549	\dal	16553
\CYRNG	15736	\CYRTDSC	15754	\damma	16580
\cyrng	15738	\cyrt	15756	\declare@shorthand	1010, 1011, 1016, 1017, 1022, 1032, 1033, 1034, 1039, 1040, 1045, 1046, 1051, 1056, 1057, 1062, 1067, 1068, 1069, 1070, 1071, 1072, 1077, 1078, 1083, 1084, 1089, 1090
\CYRNHK	15810	\CYRTETSE	15770	\DeclareFontEncoding	14130, 14525
\cyrnhk	15812	\cyrtetse	15772	\DeclareFontFamily	915, 923, 2723
\CYRNJE	15434	\cyrthousands	15680	\DeclareFontShape	916, 924, 2724
\cyrnje	15599	\CYRTSHE	15436	\DeclareFontSubstitution	917, 925, 2725
\CYRO	15476, 15866	\cyrtshe	15601	\DeclareLocalOptions	4034
\cyro	3206, 3209, 3212, 3213, 3223, 3232, 3233, 3235, 3236, 3237, 15541, 15868	\CYRU	15443, 15486, 15882, 15886, 15890	\DeclareRobustCommand	4506, 4509, 4518, 4522, 4657, 4744, 4746, 4748, 4757, 5760, 5763, 5766, 5769, 5772, 5775, 5778, 5903, 5907, 5975, 5979, 8206, 8232, 8251, 13980
\CYROMEGA	15612	\cyru	3213, 3215, 3229, 3230, 3233, 3237, 15551, 15884, 15888, 15892	\DeclareTextAccent	14131, 14132, 14133, 14134, 14135, 14136, 14137, 14138, 14139, 14140, 14141, 14142
\cyromega	15614	\CYRUK	15660	\DeclareVoidOption	2852, 2866, 2876, 2881, 2886, 2899, 2909, 2914, 2919, 2925, 2954, 2971, 2978, 2983, 2988, 2993, 3342, 3350, 3358
\CYROMEGARND	15664	\cyruk	15662	\DefaultHeightofCheckBox	5815, 12306, 12806, 13173
\cyromegarnd	15666	\CYRUSHRT	15442	\DefaultHeightofChoiceMenu	5817, 12146, 12626, 12965
\CYROMEGATITLO	15668	\cyrushrt	15607	\DefaultHeightofReset	5813, 12280, 12779, 13141
\cyromegatitlo	15670	\CYRV	15451	\DefaultHeightofSubmit	5811, 12263, 12757, 13118
\CYROT	15672	\cyrv	3201, 3203, 15516	\DefaultHeightofText	5819, 12123, 12602, 12933
\cyrot	15674	\CYRY	15758	\DefaultHeightofTextMultiline	5820, 12121, 12600, 12931
\CYROTLT	15870, 15874	\cyry	15760	\DefaultOptionsofCheckBox	5825, 12308, 12808, 13175
\cyrotld	15872, 15876	\CYRYA	15510	\DefaultOptionsofComboBox	5828
\CYRP	15478	\cyrya	15575	\DefaultOptionsofListBox	5827
\cyrp	3206, 3209, 3210, 3214, 3215, 3221, 3223, 3227, 3228, 3229, 3230, 15543	\CYRYAT	15616	\DefaultOptionsofPopdownBox	5829
\CYRpalochka	15796	\cyryat	15618	\DefaultOptionsofPushButton	5824, 12238, 12730, 13086
\CYRPHK	15740	\CYRYHCERS	15762		
\cyrphk	15742	\cyryhcrs	15764		
\CYRPSI	15644	\CYRYI	15427		
\cyrpsi	15646	\cyryi	15592		
\CYRR	15480	\CYRYO	15414		
\cyrr	3201, 3203, 3206, 3209, 3210, 3216, 3220, 3221, 3223, 3225, 3226, 3231, 3232, 3233, 3234, 3235, 3236, 3237, 15545	\cyryo	15579		
\CYRRTICK	15690	\CYRYU	15508		
\cyrrtick	15692	\cyryu	15573		
\CYRS	15482, 15749	\CYRZ	15461, 15711, 15850		
\cyr	3206, 3209, 3212, 3213, 3216, 3231, 3232, 3233, 3234, 3238, 15547, 15752	\cyrz	3220, 3225, 3226, 15526, 15714, 15852		
\CYRSCHWA	15838, 15842	\CYRZDSC	15710		
\cyrschwa	15840, 15844	\cyrzdsc	15713		
\CYRSDSC	15748, 15749	\CYRZH	15459, 15798, 15846		
\cyrsdsc	15751	\cyrzh	3203, 3223, 15524, 15800, 15848		
\CYRSEMISFTSN	15686	\CYRZHDSC	15706		
\cyrsemisftsn	15688	\cyrzhdsc	15708		
\CYRSFTSN	15504				
\cyr	15569				
\CYRSH	15496				
\cyrsh	15561				



3196, 3231, 3234, 3254, 3272,  
 8368  
 \farsikaf ..... 16587  
 \farsiya ..... 16589  
 \fatha ..... 16579  
 \fbox ..... 12586, 12589  
 \Field@addtoks 5537, 5568, 5571,  
 5722, 5745  
 \Field@boolkey 5024, 5112, 5531,  
 5561, 5564  
 \Field@toks ... 5535, 5536, 5538,  
 12356, 12373, 12384, 12395,  
 12405, 12422, 12440, 12448,  
 12453, 12469, 12478  
 \Field@Width ..... 5448, 5594  
 \figureautorefname ... 3078, 3096,  
 3114, 3132, 3150, 3168, 3186,  
 3216, 3244, 3262, 8358  
 \filename@area ..... 4910  
 \filename@base ..... 4910  
 \filename@ext . 4907, 4908, 4910,  
 4911  
 \filename@parse ..... 4906  
 \find@pdfink ... 8606, 8660, 8670  
 \Fld@@additionalactions . 13315,  
 13358, 13362  
 \Fld@@@DingDef . 5647, 5650, 5669  
 \Fld@additionalactions ... 13315,  
 13404, 13432, 13466, 13500,  
 13534, 13568, 13599  
 \Fld@align .... 5452, 5634, 13383,  
 13441, 13508  
 \Fld@altname . 5584, 5586, 13294,  
 13296, 13368, 13370  
 \Fld@annotflags 5231, 5233, 13379,  
 13410, 13437, 13470, 13504,  
 13539, 13574  
 \Fld@annotnames . 13366, 13380,  
 13411, 13438, 13471, 13505,  
 13540, 13575  
 \Fld@bcolor ... 5454, 5676, 13394,  
 13396, 13457, 13459, 13485,  
 13487, 13512, 13524, 13526  
 \fld@bcolor ..... 13445  
 \Fld@bordercolor .... 5455, 5679,  
 13390, 13392, 13417, 13425,  
 13427, 13444, 13453, 13455,  
 13481, 13483, 13511, 13520,  
 13522, 13546, 13554, 13556,  
 13581, 13589, 13591  
 \Fld@bordersep ..... 5456, 5628  
 \Fld@borderstyle .....  
 5458, 5612, 5613, 5614, 5624,  
 13384, 13415, 13442, 13475,  
 13509, 13544, 13597  
 \Fld@borderwidth ... 5457, 5609,  
 5799, 5802, 5803, 5806, 5807,  
 12199, 12200, 12680, 12681,  
 13019, 13020, 13384, 13415,  
 13442, 13475, 13509, 13544,  
 13597  
 \Fld@calculate@code 5687, 13328,  
 13330  
 \Fld@cbsymbol 5459, 5640, 13398  
 \Fld@charsize . . 5449, 5450, 5606,  
 12198, 12679, 13018, 13400,  
 13463, 13491, 13530, 13579  
 \Fld@checkedfalse ..... 5445  
 \Fld@checkequals ... 5549, 12151,  
 12213, 12425, 12435, 12631,  
 12694, 12970, 13036  
 \Fld@choices . . 5338, 5346, 5348,  
 5352, 5361, 5369, 5374, 5422,  
 5424, 5432, 5433, 13465  
 \Fld@color .... 5453, 5682, 13401,  
 13464, 13492, 13531  
 \Fld@default .....  
 .... 5363, 5366, 5368, 5631,  
 12116, 12132, 12143, 12183,  
 12211, 12303, 12354, 12372,  
 12386, 12394, 12401, 12427,  
 12437, 12467, 12477, 12595,  
 12612, 12623, 12664, 12692,  
 12803, 12926, 12943, 12962,  
 13003, 13031, 13170, 13493,  
 13494, 13495, 13532  
 \Fld@DingDef . . 5640, 5643, 5645  
 \Fld@disabledfalse ..... 5446  
 \Fld@export 5176, 5179, 5186, 5478  
 \Fld@findlength ... 12404, 12415  
 \Fld@flags .....  
 5245, 5247, 5258, 5260, 5274,  
 5276, 5306, 5308, 5331, 5333,  
 13382, 13413, 13440, 13473,  
 13507, 13542, 13577  
 \Fld@format@code . . 5685, 13320,  
 13322  
 \Fld@getmethodfalse ..... 5498  
 \Fld@getmethodtrue ..... 5500  
 \Fld@height . . 5603, 12119, 12135,  
 12146, 12201, 12218, 12230,  
 12263, 12280, 12306, 12314,  
 12598, 12616, 12626, 12682,  
 12709, 12722, 12757, 12779,  
 12806, 12816, 12929, 12945,  
 12965, 13021, 13033, 13069,  
 13118, 13141, 13173, 13181  
 \Fld@hiddenfalse ..... 5134  
 \Fld@hiddentrue ..... 5135  
 \Fld@invisiblefalse ..... 5130  
 \Fld@invisibletrue ..... 5131  
 \Fld@keystroke@code 5688, 13316,  
 13318  
 \Fld@listcount .... 12210, 12215,  
 12226, 12691, 12696, 12710,  
 12716, 13030, 13038, 13042,  
 13047, 13058, 13065  
 \Fld@loc ..... 5558  
 \Fld@mappingname . . 5588, 5590,  
 13298, 13300, 13372, 13374  
 \Fld@maxlen . . 5451, 5597, 13535  
 \Fld@menulength .... 5447, 5600,  
 12148, 12152, 12198, 12416,  
 12417, 12420, 12628, 12632,  
 12679, 12967, 12971, 13018  
 \Fld@name . . 5582, 12115, 12142,  
 12235, 12302, 12353, 12358,  
 12369, 12370, 12381, 12382,  
 12391, 12392, 12400, 12421,  
 12438, 12446, 12451, 12466,  
 12475, 12594, 12622, 12727,  
 12802, 12925, 12961, 13083,  
 13169, 13293, 13367  
 \Fld@norotatefalse ..... 5147  
 \Fld@norotatetrue ..... 5146  
 \Fld@noviewfalse ..... 5150  
 \Fld@noviewtrue ..... 5151  
 \Fld@nozoomfalse ..... 5143  
 \Fld@nozoomtrue ..... 5142  
 \Fld@onblur@code . . 5690, 13336,  
 13338  
 \Fld@onclick@code ... 5684, 5756,  
 13431  
 \Fld@onenter@code . 5693, 13348,  
 13350  
 \Fld@onexit@code . . 5694, 13352,  
 13354  
 \Fld@onfocus@code . 5689, 13332,  
 13334  
 \Fld@onmousedown@code . 5691,  
 13340, 13342  
 \Fld@onmouseup@code ... 5692,  
 13344, 13346  
 \Fld@printfalse ..... 5139  
 \Fld@printtrue ..... 5138  
 \Fld@radiosymbol ... 5460, 5643,  
 13489  
 \Fld@rotation . 5461, 5673, 13386,  
 13388, 13416, 13421, 13423,  
 13443, 13449, 13451, 13477,  
 13479, 13510, 13516, 13518,  
 13545, 13550, 13552, 13580,  
 13585, 13587  
 \Fld@submitflags .... 5213, 5215,  
 13566  
 \Fld@temp 5646, 5648, 5651, 5652,  
 5661, 5662  
 \Fld@validate@code . 5686, 13324,  
 13326



<code>\Fld@value</code> 5364, 5371, 5373, 5637, 12117, 12132, 12144, 12182, 12183, 12596, 12612, 12624, 12663, 12664, 12927, 12943, 12963, 13002, 13003, 13533	<code>\g@addto@macro</code> ..... 6119, 6270, 7315, 7589, 9023, 10432, 10720, 11290, 11376, 11438, 11740, 11928	<code>\H@old@part</code> ..... 14034, 14045 <code>\H@old@schapter</code> .. 14004, 14013 <code>\H@old@ssect</code> 14055, 14066, 14075 <code>\H@old@spart</code> .... 14047, 14053 <code>\H@old@ssect</code> ..... 13990, 13995 <code>\H@refstepcounter</code> ... 6477, 6487, 6627, 6751, 6764, 6810, 6925, 7178, 7940, 7993
<code>\Fld@width</code> .. 5593, 12118, 12131, 12135, 12145, 12181, 12192, 12194, 12218, 12230, 12250, 12262, 12270, 12279, 12293, 12305, 12311, 12314, 12597, 12611, 12616, 12625, 12662, 12673, 12675, 12709, 12722, 12743, 12756, 12764, 12778, 12792, 12805, 12812, 12816, 12928, 12942, 12945, 12964, 13001, 13012, 13014, 13033, 13069, 13100, 13117, 13125, 13140, 13154, 13172, 13179, 13181	<code>\G@refundefinedtrue</code> . 4795, 7415, 7438, 8124, 8144, 8161, 8278 <code>\gaf</code> ..... 16588 <code>\Gauge</code> ..... 5772 <code>\GenericError</code> ..... 690, 3680 <code>\GenericInfo</code> ..... 692, 3678 <code>\GenericWarning</code> . 283, 691, 3679 <code>\getpagerefnumber</code> ..... 6740 <code>\getrefbykeydefault</code> .. 6696, 6697 <code>\gexmode</code> ... 10463, 10464, 10552 <code>\ghayn</code> ..... 16564 <code>\Gin@setfile</code> ..... 7769, 7770 <code>\glossary</code> ..... 656 <code>\glq</code> ..... 645 <code>\glqq</code> ..... 643 <code>\Greeknumeral</code> ..... 1098 <code>\greeknumeral</code> ..... 1097 <code>\grq</code> ..... 646 <code>\grqq</code> ..... 644 <code>\guill@spacing</code> ..... 1027 <code>\guillemotleft</code> . 1067, 14319, 14499, 14687, 16392 <code>\guillemotright</code> 1068, 14350, 14500, 14719, 16393 <code>\guilsinglleft</code> 14250, 14501, 16098, 16394 <code>\guilsinglright</code> 14252, 14502, 16100, 16395	<code>\H@seteqlabel</code> ..... 7710, 7712 <code>\H@subeqnarray</code> .... 6853, 6857 <code>\ha</code> ..... 16572 <code>\Haa</code> ..... 16551 <code>\halign</code> ..... 665 <code>\hamza</code> ..... 16539 <code>\HAR@checkcitations</code> ..... 7503 <code>\HAR@citetoaux</code> ..... 7459 <code>\HAR@tempa</code> .. 7504, 7505, 7506, 7507, 7508, 7509 <code>\harvardcite</code> ..... 7453, 7490 <code>\harvarditem</code> ..... 7478 <code>\hbox</code> ..... 1869, 1875, 1881, 2453, 3429, 3435, 4945, 4947, 5594, 5793, 5794, 5795, 5796, 7443, 7574, 8550, 9114, 9190, 9200, 9270, 9284, 9307, 9322, 9345, 9360, 9629, 9646, 10628, 10975, 10986, 11580, 11590, 11855, 11870, 12493, 12944, 13032, 13068, 13098, 13126, 13155, 13180, 13982 <code>\hc@currentHref</code> ..... 7194 <code>\HCode</code> 12345, 12347, 12358, 12367, 12379, 12387, 12389, 12420, 12426, 12431, 12436, 12450, 12455, 12459, 12462, 12471 <code>\headerps@out</code> 6371, 11280, 11291, 11363, 11377, 11430, 11439, 11452, 11466, 11505, 11623, 11741, 11929 <code>\hfill</code> 5793, 5794, 5795, 5796, 7334, 7367 <code>\Hfootnoteautorefname</code> ... 8352 <code>\hhyperref</code> ..... 5005 <code>\hoffset</code> ..... 7575 <code>\hphantom</code> ..... 627 <code>\href</code> . 657, 4657, 4999, 5000, 5965 <code>\href@</code> ..... 4660, 4663, 4668 <code>\href@split</code> ..... 4668, 4669 <code>\hsize</code> ..... 7084 <code>\hskip</code> 1880, 1958, 2494, 2495, 4654, 5799, 12493 <code>\hspace</code> ..... 653, 7493, 7494 <code>\hss</code> ..... 7583, 13987 <code>\ht</code> ..... 5801, 5804, 9198, 9273, 9282, 9289, 9310, 9320, 9327, 9348, 9358, 9365, 10971, 11588, 11868, 12912
<code>\float@caption</code> ..... 7183, 7243 <code>\float@makebox</code> ..... 7245, 7246 <code>\floatingpenalty</code> ..... 7083 <code>\flq</code> ..... 649 <code>\flqq</code> ..... 647 <code>\fmtname</code> ..... 7 <code>\fmtversion</code> ..... 7 <code>\fontencoding</code> 545, 549, 584, 12578 <code>\fontfamily</code> ..... 585, 12577 <code>\fontseries</code> ..... 586, 6912, 12579 <code>\fontshape</code> ..... 587, 4469, 12580 <code>\fontsize</code> ..... 588 <code>\footins</code> ..... 7077 <code>\footnote</code> ..... 5000 <code>\footnoteautorefname</code> 3076, 3094, 3112, 3130, 3148, 3166, 3184, 3205, 3208, 3242, 3260, 8352, 8356 <code>\footnotesep</code> ..... 7081, 7088 <code>\footnotesize</code> ..... 617, 7079 <code>\footnotetext</code> ..... 7039 <code>\footref</code> ..... 7107, 7108 <code>\Form</code> ..... 5462 <code>\Form@action</code> 5472, 12345, 13564 <code>\Form@boolkey</code> ..... 5466 <code>\Form@htmlfalse</code> .... 5465, 5484 <code>\Form@htmltrue</code> ..... 5477 <code>\Form@method</code> 5496, 5504, 12345 <code>\frq</code> ..... 650 <code>\frqq</code> ..... 648 <code>\futurelet</code> ..... 702, 1600 <code>\FV@SetLineNo</code> ..... 6626 <code>\FV@StepLineNo</code> 6625, 6627, 6628	<b>H</b> <code>\H</code> ... 14546, 14578, 14597, 14611, 15026, 15028, 15090, 15092, 15890, 15892 <code>\h</code> 3263, 16420, 16425, 16430, 16435, 16440, 16445, 16450, 16455, 16460, 16465, 16470, 16475, 16480, 16485, 16490, 16495, 16500, 16505, 16510, 16515, 16520, 16525, 16530, 16535 <code>\H@@footnotemark</code> .. 6968, 6985, 7112, 7119, 7131, 7142 <code>\H@@footnotetext</code> ... 6967, 6977, 7004, 7061, 7120, 7134, 7142 <code>\H@@mpfootnotetext</code> . 6975, 6987, 6989 <code>\H@definecounter</code> .... 7674, 7676 <code>\H@endeqnarray</code> .... 6825, 6844 <code>\H@endequation</code> ..... 6788, 6820 <code>\H@endsubeqnarray</code> .. 6854, 6866 <code>\H@eqnarray</code> ..... 6824, 6829 <code>\H@equation</code> ..... 6787, 6811 <code>\H@item</code> .. 6462, 6468, 7323, 7348 <code>\H@newctr</code> ..... 7679, 7681	
<b>G</b> <code>\G</code> ... 14550, 14576, 14595, 15176, 15178, 15180, 15182, 15184, 15186, 15187, 15189, 15191, 15193, 15195, 15197, 15199		

\htmladdimg . . . . .	4998	\Hy@@escapeform . 13259, 13272,	\Hy@bookmarkstrue . . . . .	444
\htmladdnormallink . . . . .	4999	13278	\Hy@bookmarkstype . 3449, 3451,	
\htmladdnormallinkfoot . . .	5000	\Hy@@SectionAnchor 13977, 13980	7605, 13625	
\htmlref . . . . .	5001	\Hy@@Temp 3459, 3461, 5696, 5698	\Hy@boolkey . . . 2508, 2601, 2604,	
\Huge . . . . .	614	\Hy@@VersionCheck . . . 305, 324	2607, 2628, 2631, 2634, 2665,	
\huge . . . . .	618	\Hy@abspage . . 6139, 6204, 6320,	2668, 2671, 2688, 2692, 2695,	
\Hurl . . . . .	4743, 4745, 4747	6397	2698, 2701, 2704, 2707, 2710,	
\hv@pdf@char 13772, 13837, 13838,		\Hy@Acrobatmenu . . . 4071, 4112,	3011, 3014, 3069, 3366, 3369,	
13839, 13840		9085, 9793, 10288, 11144	3384, 3409, 3412, 3453, 3456,	
\hvtex@buffer 10327, 10331, 10339,		\Hy@activeanchorfalse 4540, 8651,	3508, 3657, 3929, 3932, 3935,	
10342, 10351, 10355, 10371		9142, 9157, 9236, 9246, 9558,	3938, 3941, 3944, 3947, 3955,	
\hvtex@gettoken . . 10326, 10340,		10017, 10034, 10105, 10118,	3976, 3979, 6338	
10344, 10353, 10357		10614, 11528, 11543, 11808,	\Hy@BorderArrayPatch . . 11023,	
\hvtex@gettoken@ . 10327, 10329		11822	11026, 11289, 11739	
\hvtex@par@dimension . . 10322,		\Hy@activeanchortrue . . . . 8647,	\Hy@breaklinks@unsupported . .	
10363		9139, 9153, 9234, 9243, 9554,	. . . . . 2676, 10580	
\hvtex@par@direction . . . 10323,		10013, 10031, 10103, 10115,	\Hy@breaklinksfalse . . . . . 445	
10366		10604, 11525, 11539, 11805,	\Hy@breaklinksunhbox . . 10925,	
\hvtex@par@duration 10324, 10358		11818	10978	
\hvtex@par@motion 10325, 10360		\Hy@ActiveCarriageReturn 4576,	\Hy@CatcodeWrapper 4398, 4457,	
\hvtex@param@dimension 10335,		4579	4501, 4530	
10364, 10382, 10385		\Hy@AllowHyphens . 4650, 10602,	\Hy@centerwindowfalse . . . . 446	
\hvtex@par@direction . 10336,		10634, 10958	\Hy@chapapp . . 6532, 6540, 6566,	
10367, 10393, 10401		\Hy@AnchorName . . . 4780, 4782,	14008, 14019, 14101	
\hvtex@param@duration . 10337,		4785, 4787, 4809, 4811, 4815,	\Hy@chapterstring . . . 6527, 6529,	
10359, 10406, 10408		4820, 4822	6532, 6565	
\hvtex@param@motion . . 10338,		\Hy@appendixstring . 6531, 6540	\Hy@CheckOptionValue . . . 2552,	
10361, 10382, 10389		\Hy@AtBeginDocument . . . . .	2589	
\hvtex@parse@trans 10311, 10333		378, 1006, 2728, 2788, 2859,	\Hy@CJKbookmarksfalse . . . 447	
\hvtex@produce@trans . . . 10372,		2934, 2990, 3371, 4008, 4044,	\Hy@cjkpu . . . . . 1269, 1271, 1292	
10378		4182, 4188, 4284, 4437, 4527,	\Hy@CleanupFile 4943, 8712, 9730,	
\hvtex@token 10330, 10341, 10347,		5871, 5984, 6404, 6632, 7450,	10182, 11215	
10354, 10359, 10362, 10365,		8198, 8345, 8545, 9031, 9641,	\Hy@colorlink . . . . . 4461,	
10367		10086, 11465, 11503, 12508,	4469, 4473, 8546, 8632, 8705,	
\hvtex@trans@code 10315, 10316,		12509	8745, 8781, 9108, 9140, 9163,	
10317, 10318, 10319, 10320,		\Hy@AtBeginDocumentHook 379,	9194, 9207, 9235, 9251, 9276,	
10321, 10334, 10380, 10381,		384, 390, 391	9292, 9314, 9331, 9352, 9369,	
10383, 10385, 10387, 10389,		\Hy@AtEndOfPackage . 381, 901,	9642, 9719, 9758, 9787, 9812,	
10391, 10393, 10395, 10396,		2369, 3344, 3352, 3359, 4170,	10104, 10126, 10196, 10220,	
10397, 10398, 10399, 10401		4196, 4202, 4389	10253, 10284, 10300, 10632,	
\hvtex@trans@effect@Blinds 10315		\Hy@AtEndOfPackageHook . 382,	10909, 10911, 11526, 11549,	
\hvtex@trans@effect@Box . 10316		385, 387, 388	11584, 11597, 11806, 11828,	
\hvtex@trans@effect@Dissolve . .		\Hy@author . . . . . 6053, 6057	11863, 11876	
. . . . . 10317		\Hy@babelnormalise . 4758, 4760	\Hy@ColorList . . . . . 3513, 3514	
\hvtex@trans@effect@Glitter . . .		\Hy@backout . . 4536, 5923, 5927,	\Hy@CounterExists . . 6427, 6440,	
. . . . . 10318		7289	6443	
\hvtex@trans@effect@R . . 10321		\Hy@backreffalse 441, 3040, 3062,	\Hy@currentbookmarklevel 13620,	
\hvtex@trans@effect@Split 10319		4194	13630, 13631, 13637, 13644,	
\hvtex@trans@effect@Wipe 10320		\Hy@backreftrue 3033, 3037, 3059	13737, 13740, 13745, 13749	
\hvtex@trans@par . 10354, 10358,		\Hy@BeginAnnot 9671, 9687, 9728,	\Hy@defaultdriver . . . 4273, 4298,	
10360, 10363, 10366		9765, 9794	4308, 4319	
\hvtex@trans@params . . . 10348,		\Hy@bibcite . . . . . 7312, 7316	\Hy@DefFormAction . 5470, 5472	
10350, 10374		\Hy@bookmarksdepth 3414, 3419,	\Hy@DefNameKey . . . 2581, 3534,	
\Hy@boolkey . . . . . 2508, 2509		3431, 3437, 13614	3586, 3594, 3602, 3606, 3613,	
\Hy@@CleanupFile . . . 4945, 4947		\Hy@bookmarksnumberedfalse . .	3620, 3627, 3634, 3638, 3643,	
\Hy@@@DefNameKey . . 2582, 2584		. . . . . 442	3650, 3964	
		\Hy@bookmarksopenfalse . . . 443	\Hy@DEST . . . . . 10926, 10990	

\Hy@DestName . . . . .	8593, 8600	9331, 9356, 9369, 9651, 9679,	\Hy@FormObjects .	12546, 12822,
\Hy@DisableOption . . . . .	2538,	10104, 10177, 10196, 10220,		12876, 12886, 13196, 13246
	4064, 4065, 4066, 4068, 4175,	10253, 10284, 10300, 10659,	\Hy@Gin@setfile . . . . .	7769, 7771
	4201, 4335, 4336, 4337, 4338,	10918, 11526, 11565, 11591,	\Hy@GlobalStepCount	479, 6204,
	4339, 4340, 4341, 4342, 4343,	11599, 11806, 11842, 11867,		6596, 6619, 7565, 7982, 8033
	4344, 4345, 4346, 4347, 4348,	11876	\Hy@gttemp . . . . .	816, 817, 4134,
	4349, 4350, 4351, 4352, 4397,	\Hy@EndWrap .		4140, 4142, 5368, 5369, 5373,
	4450, 4478, 4479, 4538, 4539,	4399, 4401, 4402,		5374, 5385, 5399, 8425, 8427,
	5875, 5876, 5877, 5878, 5879,	4435		13311, 13313
	5880, 5881, 5882, 5883, 5884,	\Hy@Error 277, 293, 299, 313, 2732,	\Hy@href . . . . .	4660, 4662
	5885, 5886, 5887, 5888, 5889,	2845, 2870, 2903, 2941, 2948,	\Hy@href@nextactionraw . .	4697,
	5890, 5891, 5892, 5893, 5894,	2959, 2965, 4096, 4711, 4876,		4720, 4722, 4723, 4725, 4730,
	5895, 5896, 5897, 5898, 6077,	5171, 5295, 5491, 5523, 5701,		4734, 4736, 8701, 8741, 8777,
	6272, 7146, 7774, 7872, 7873,	5750, 12241, 12287, 12734,		9104, 9715, 9754, 9783, 9803,
	8470, 8573, 8941, 8942, 8943,	12786, 13090, 13148		10141, 10209, 10273, 11240,
	8944, 8945, 8946, 8947, 8948,	\Hy@escapeform . .		11269
	8949, 8950, 9080, 9397, 9398,	12134, 12217,	\Hy@href@page	4675, 4677, 4681,
	9399, 9400, 9401, 9402, 9403,	12229, 12253, 12271, 12294,		4682, 4684, 4691, 4694, 8737,
	9404, 9405, 9406, 9669, 9855,	12313, 12614, 12699, 12720,		9749, 11236
	9856, 9857, 9858, 9859, 9860,	12746, 12766, 12793, 12814,	\Hy@hyperfootnotesfalse . .	6964
	9861, 9862, 9863, 9864, 9946,	12949, 13041, 13072, 13104,	\Hy@hyperfootnotestru . . .	451
	10088, 10532, 10533, 10534,	13128, 13156, 13185, 13253,	\Hy@hyperindextrue . . . . .	452
	10535, 10536, 10537, 10538,	13283, 13290	\Hy@hypertexnamesfalse . .	2373
	10539, 10540, 10541, 10799,	\Hy@escapeformfalse . . . . .	\Hy@hypertexnamestrue . . .	453
	10800, 10801, 10802, 10803,	448	\Hy@IfStringEndsWith	4911, 4923
	10804, 10805, 10806, 10807,	\Hy@escapestring . .	\Hy@imPLICITtrue . . . . .	454
	10808, 11356, 11649, 11650,	13250, 13318,	\Hy@Info . .	280, 2527, 4145, 4147,
	11651, 11652, 11653, 11654,	13322, 13326, 13330, 13334,		4150, 4152, 4155, 4157, 4160,
	11655, 11656, 11657, 11658	13338, 13342, 13346, 13350,		4162, 4165, 4167, 4382, 4388,
\Hy@displaydoctitlefalse . . .	476	13354, 13398, 13431, 13532,		4466, 4471, 4475, 4619, 4646,
\Hy@DistillerDestFix	7551, 10545,	13533, 13564		5078, 5832, 5834, 5837, 5839,
	10547	\Hy@EveryPageAnchor		5842, 5844, 5847, 5849, 5852,
\Hy@draftfalse . . . . .	406	7550, 7590		5854, 5857, 5859, 5862, 5864,
\Hy@drafttrue . . . . .	407	\Hy@EveryPageBoxHook . . . . .		7390, 7451, 7610, 7627
\Hy@driver	481, 2681, 2856, 2868,		\Hy@InfoNoLine	281, 4177, 4179,
	2878, 2883, 2888, 2901, 2911,			11785
	2916, 2921, 2928, 2931, 2957,		\Hy@LastPage . . . . .	4085
	2973, 2980, 2985, 2995, 4204,		\Hy@level . .	13626, 13628, 13639,
	4207, 4211, 4214, 4218, 4221,			13644, 13645, 13646, 13677
	4223, 4227, 4231, 4235, 4238,	\Hy@EveryPageHook .	\Hy@levelcheck . . .	13627, 13642
	4242, 4246, 4250, 4253, 4257,	6102, 6106,	\Hy@linkcounter .	483, 485, 6596,
	4260, 4262, 4266, 4271, 4275,	6270, 9023		6597, 6619, 6620, 7713, 7982,
	4278, 4281, 4292, 4295, 4298,	\Hy@ExchangeLeftParenthesis . .		7983, 7987, 8033, 8034, 8038
	4307, 4308, 4319, 4321, 4327,		\Hy@linkfileprefix . . .	3484, 4895,
	4329, 4331			9180, 9982, 11569, 11845
\Hy@odth@currentHref	6927, 6951	\Hy@ExchangeRightParenthesis .	\Hy@LinkMath . . .	10623, 10625,
\Hy@DviErrMsg	2823, 2825, 2828,			10630, 10662, 10950, 10952,
	2834, 2847			10957, 10959, 10965, 10967
\Hy@DviModetrue . . .	2832, 2837	\Hy@false .	\Hy@linktoc . . .	2636, 2638, 2646,
\Hy@DvipdfmxOutlineOpentru .		2417, 2519, 3025, 3061,		2648, 2658, 7646
	4359, 4366	5520	\Hy@linktoc@all . . . . .	2644
\Hy@EndAnnot	9677, 9722, 9761,	\Hy@figuresfalse . . . . .	\Hy@linktoc@none . . . . .	2641
	9790, 9815	449	\Hy@linktoc@page . . .	2636, 2643,
\Hy@endcolorlink . . . . .		\Hy@finalfalse . . . . .		2646
	4465, 4470, 4474, 8555,	407	\Hy@linktoc@section .	2638, 2642,
	8638, 9140, 9177, 9201, 9209,	\Hy@finaltrue . . . . .		2648
	9235, 9259, 9280, 9294, 9318,	406	\Hy@linktocpagefalse . . . . .	455
		\Hy@FirstPage . . . . .		
		4082		
		\Hy@FirstPageHook . . . . .		
		6104, 6117, 6119, 6369, 6370,		
		11290, 11376, 11438, 11740,		
		11928		
		\Hy@fitwindowfalse . . . . .		
		450		
		\Hy@FixNotFirstPage		
		9112, 9113,		
		9119		
		\Hy@float@caption . . .		
		7184, 7234,		
		7236		
		\Hy@float@currentHref		
		7237, 7239,		
		7241, 7249, 7252, 7254		
		\Hy@footnote@currentHref .		
		5870,		
		6992, 6997, 7007, 7012, 7015,		
		7027, 7029, 7052, 7093, 7096		

\Hy@localanchornamefalse . . . 456	\Hy@pagecounter . 484, 486, 6658, 7565, 7567	\Hy@pstringURI . . . . . 8676, 8697, 9766, 9779, 10125, 10137, 10201, 10205, 11190, 11202
\Hy@LT@currentHref . 6766, 6777	\Hy@pageheight . . . . 4022, 11378, 11467	\Hy@PutCatalog 6266, 6274, 6386
\Hy@LT@footnotetext 7051, 7060	\Hy@pagelabelsfalse . . . . . 6126	\Hy@raisedlink . . . . . 2441, 6520, 6702, 6723, 6724, 6725, 6728, 6778, 6817, 6820, 6948, 6995, 7010, 7065, 7091, 7222, 7300, 7324, 7329, 7349, 7689, 7714, 11278, 11361, 11619, 11783, 13606, 13984, 14009, 14020, 14050, 14102
\Hy@make@anchor . . . 7687, 7693, 7699	\Hy@pagelabelstrue . . . . . 463	\Hy@raiselinksfalse . . . 467, 7452
\Hy@make@df@tag@@ 7691, 7706	\Hy@param 6564, 6565, 6566, 6593, 6597	\Hy@RemoveDurPageAttr . 8980, 8993
\Hy@make@df@tag@@@ 7697, 7707	\Hy@pdfafalse . . . . . 477	\Hy@RemoveHidPageAttr . 9003, 9015
\Hy@MakeCurrentHref 6607, 6620	\Hy@pdfencoding@pdfdoc . 2783	\Hy@RemovePercentCr . . . 4592, 4596, 4601
\Hy@MakeCurrentHrefAuto . . . . . 6618, 6700, 7688, 13605, 13992, 14008, 14019, 14049, 14063, 14101	\Hy@pdfmarkerrorfalse . . 10889	\Hy@RemoveTransPageAttr 8955, 8969
\Hy@MakeRemoteAction . . 4680, 8715, 9733, 11218	\Hy@pdfmarkerrortrue . . . 11056, 11065	\Hy@reserved@a 4825, 6827, 6856, 12352, 12402, 12465
\Hy@maketitle@end . . 7123, 7128, 7130	\Hy@pdfminorversion 8437, 8443, 8446, 8454, 8459, 8461, 8464, 8468	\Hy@RestoreCatcodes 205, 4028, 4334
\Hy@maketitle@optarg 7121, 7126	\Hy@pdfpagehiddenfalse . . . 464	\Hy@RestoreLastskip . 2462, 8594, 9143, 9158, 9237, 9247, 9545, 10018, 10035, 10106, 10119, 10595, 10615, 11529, 11544, 11809, 11823
\Hy@Match . 328, 330, 3002, 3494, 3543, 3560, 3903, 4725, 5614	\Hy@pdfstringdef . 815, 5343, 5351	\Hy@RestoreSavedSpaceFactor . . 2437, 9188, 9268, 9305, 9343, 11578, 11853
\Hy@MaybeStopNow . 2924, 4032	\Hy@pdfstringfalse . . . . 465, 5900	\Hy@RestoreSpaceFactor . . . . . 2428, 2454, 2459, 9187, 9195, 9202, 9267, 9277, 9285, 9304, 9315, 9323, 9342, 9353, 9361, 10629, 10665, 10956, 10964, 10988, 11577, 11585, 11592, 11852, 11864, 11871, 11905, 11909
\Hy@menubartrue . . . . . 457	\Hy@pdfstringtrue . . . . 669, 5872	\Hy@ReturnAfterElseFi 487, 4580
\Hy@Message . . . . . 282, 2858, 2933, 4181, 4283, 4327, 10038, 10042, 10045, 10048, 10051, 10054, 10057, 10060, 12112, 12322, 12325, 12328, 12331, 12334, 12337, 12339, 12340, 12349, 12486, 12881	\Hy@pdfversion 2810, 2821, 5345, 8459, 8461, 8465, 8468, 13305	\Hy@ReturnAfterElseFiFiEnd . . . . . 491, 1843
\Hy@naturalnamesfalse . . . . 458	\Hy@plainpagesfalse . . . . . 466	\Hy@ReturnAfterFi 487, 507, 2021, 4584, 4600, 7884, 7920, 8406, 8416, 13277
\Hy@nestingfalse . . . . . 459	\Hy@PrevPage . . . . . 4079	\Hy@ReturnAfterFiFiEnd . . 490, 1835, 1849, 1927, 1934
\Hy@newline@author . . . . . 6096	\Hy@ps@CR 11420, 11427, 11432, 11433, 11450, 11471, 11472, 11473, 11479, 11486, 11493, 11500	\Hy@ReturnEnd . . 489, 490, 491, 1855, 1939
\Hy@newline@title . . . . . 6095	\Hy@pstringB . . . . . 8857, 8862, 9895, 9907, 10862, 10878, 11712, 11728	\Hy@ReturnEnd . . 489, 490, 491, 1855, 1939
\Hy@newwindowfalse . . . . . 461	\Hy@pstringD . 8714, 8739, 9732, 9751, 11217, 11238	\Hy@safe@activesfalse 492, 4491, 4496, 4839, 8267
\Hy@newwindowsetfalse 460, 3952	\Hy@pstringID . 8714, 8739, 9732, 9751, 11217, 11238	\Hy@safe@activetrue . 492, 4123, 4489, 4494, 4572, 4609, 4617
\Hy@newwindowsettrue . . . 3954, 4699	\Hy@pstringdef . . . . . 8372, 8592, 8616, 8676, 8713, 8714, 8751, 8752, 8857, 9496, 9696, 9731, 9732, 9766, 9895, 10125, 10201, 10260, 10261, 10862, 11054, 11063, 11190, 11216, 11217, 11248, 11249, 11712, 13276, 13895, 13911	
\Hy@newwindowtrue . . . . . 4700	\Hy@pstringDest . . . . . 8592, 8593, 9496, 9543, 11054, 11055, 11059, 11063, 11064, 11068	
\Hy@next 6220, 6230, 6235, 14018, 14027, 14030	\Hy@pstringF . . . . . 8711, 8712, 8713, 8733, 8751, 8770, 8775, 9729, 9730, 9731, 9746, 10181, 10182, 10186, 10260, 10267, 10271, 11214, 11215, 11216, 11233, 11248, 11264, 11267	
\Hy@nextfalse . . . . . 4114, 7784	\Hy@pstringName . 13895, 13896, 13911, 13925	
\Hy@NextPage . . . . . 4076	\Hy@pstringP . 8752, 8775, 10261, 10271, 11249, 11267	
\Hy@nexttrue . 4115, 4116, 4117, 7785, 7786, 7787		
\Hy@number . . . 3872, 3876, 3884		
\Hy@numberline . . 13621, 13658, 13659, 13660, 13661		
\Hy@ObsoletePaperOption 2610, 2618		
\Hy@ocgcolor . . 8549, 8563, 9645, 9659		
\Hy@ocgcolorlinksfalse . . . . 4445		
\Hy@org@chapter . . 14016, 14031		
\Hy@OrgMakeLabel 11897, 11904		
\Hy@OutlineName . 13896, 13951		
\Hy@OutlineRerunCheck . 13761, 13860, 13942		
\Hy@pageanchortrue . . . . . 462		

4645, 4762, 4831, 8174, 8256, 13853, 13883	\Hy@StartlinkName . . 8620, 8634	4594, 4763, 4767, 4830, 4833, 4842, 4844, 5475, 5476, 5516, 5517, 5520, 5524, 6210, 6212, 6250, 6252, 6397, 6399, 6874, 6876, 6877, 6880, 6881, 6882, 7179, 7184, 7189, 7604, 7605, 7623, 7624, 7630, 7946, 7947, 7998, 7999, 9164, 9165, 9986, 10134, 10135, 11550, 11551, 11829, 11830, 13624, 13625, 13648, 13650, 13669, 13670, 13678, 13702, 13704, 13705, 13707, 13708, 14091, 14116, 14121, 14124, 14127
\Hy@saved@currentHref . . . 7025, 7028	\Hy@StepCount 478, 6181, 12152, 12215, 12417, 12632, 12696, 12971, 13038, 13741, 13746, 13822	\Hy@tempb 6211, 6212, 6251, 6252, 13649, 13650, 13678
\Hy@saved@footnotemark . . 7117, 7132	\Hy@StringLocalhost . 4941, 4942, 4957	\Hy@tempcolor . . . 10641, 10643, 10656, 10732, 10734, 10746
\Hy@saved@footnotetext . . 7118, 7135	\Hy@temp . . . . . 697, 704, 819, 891, 994, 997, 1005, 1006, 2616, 2621, 2622, 2623, 2624, 2625, 2626, 3458, 3467, 3468, 3469, 3470, 3471, 3472, 3473, 3514, 3515, 3516, 3519, 3521, 3524, 3541, 3554, 3558, 3573, 3735, 3736, 3739, 3742, 3745, 3770, 3778, 3779, 3780, 3781, 3782, 3783, 3784, 3785, 3786, 3950, 3951, 4103, 4107, 4108, 4109, 4110, 4209, 4211, 4216, 4218, 4221, 4233, 4235, 4240, 4242, 4248, 4250, 4255, 4257, 4260, 4320, 4321, 5068, 5072, 5073, 5084, 5168, 5169, 5170, 5172, 5176, 5488, 5489, 5490, 5492, 5496, 5497, 5612, 5624, 5695, 5711, 5712, 5713, 5714, 5715, 5716, 5717, 5718, 5720, 5726, 5732, 5733, 5734, 5735, 5736, 5737, 5738, 5739, 5740, 5741, 5742, 6161, 6164, 6173, 6175, 6179, 6183, 6227, 6229, 6652, 6655, 6658, 6664, 6790, 6796, 7101, 7107, 7881, 7882, 8872, 8901, 8903, 9416, 9421, 9427, 9431, 9434, 9439, 9470, 9472, 9867, 9910, 9912, 10762, 10765, 10769, 10770, 10776, 10777, 10783, 10811, 10816, 10822, 10826, 10829, 10834, 10867, 10869, 10930, 10931, 10935, 11020, 11021, 11029, 11030, 11134, 11135, 11661, 11666, 11672, 11676, 11679, 11684, 11717, 11719, 13258, 13259, 13893, 13899, 13907, 13922	\Hy@TempPageAnchor . . . 7555, 7562, 7566, 7582
\Hy@saved@hook . . . . 6081, 6091	\Hy@tempa 2510, 2512, 2514, 2515, 2517, 2519, 2521, 2524, 2527, 2528, 3021, 3022, 3023, 3025, 3026, 3028, 3029, 3031, 3035, 3039, 3050, 3052, 3054, 3055, 3057, 3061, 4578, 4579, 4590,	\Hy@Test@Alph . . . . . 6553, 6576
\Hy@saved@refstepcounter . 6504, 6752		\Hy@Test@alph . . . . . 6544, 6572
\Hy@SavedSpaceFactor . . . 2424, 2426, 2431, 2432, 2438, 11902		\Hy@testname . . . . . 8608, 8609, 8614, 8616, 8617, 8631, 9688, 9689, 9694, 9696, 9698, 9714, 10153, 10154, 10159, 10163, 10232, 10233, 10238, 10242, 10737, 10738, 10743, 10754
\Hy@SaveLastskip . . . 2462, 8590, 9131, 9146, 9228, 9240, 9493, 10005, 10021, 10096, 10109, 10585, 10599, 11518, 11532, 11798, 11812		\Hy@texhtfalse . . . . . 469
\Hy@SaveSavedSpaceFactor . . . . 2436, 9186, 9266, 9303, 9341, 11576, 11851		\Hy@texhttrue . . . . . 2853, 4205
\Hy@SaveSpaceFactor . . . . 2425, 2445, 2456, 9185, 9197, 9265, 9279, 9302, 9317, 9340, 9355, 10627, 10663, 10948, 10960, 10968, 11575, 11587, 11850, 11866, 11900, 11907		\Hy@title . . . . . 6044, 6048
\Hy@scanauthor . . . . . 6051, 6056		\Hy@toclevel . . . 7615, 7619, 7632
\Hy@scanoptauthor . . . 6051, 6052		\Hy@toolbartrue . . . . . 470
\Hy@scanopttitle . . . . 6042, 6043		\Hy@true . 2416, 2515, 2517, 3055, 3057, 5517
\Hy@scantitle . . . . . 6042, 6047		\Hy@typexmlfalse . . . . . 471
\Hy@secnum@part . 14037, 14039, 14042		\Hy@undefinedname . . . . . 8605, 8612, 8614, 9684, 9692, 9694, 10122, 10157, 10159, 10236, 10238, 10728, 10741, 10743
\Hy@SectionAnchorHref . . . . 667, 13975, 13997, 14068		\Hy@unicodefalse . . 472, 795, 805, 2739, 2740, 2748, 3712, 3718, 6654, 7559, 13307
\Hy@SectionHShift 13974, 13983, 13993, 14064		\Hy@unicodetrue 2740, 6331, 6345
\Hy@seminarslidesfalse . . . 7932		\Hy@useHidKeyfalse . . . . . 3506
\Hy@seminarslidetrue . . . . 7930		\Hy@useHidKeytrue . . . . . 3510
\Hy@setbreaklinks . . . 2673, 2677, 2689, 8433, 9486	\Hy@temp@A 728, 729, 1827, 1829, 1840, 1842, 1847, 1848, 1851, 3771, 3773, 7803, 7804, 7805, 7812, 7840, 7841, 7842, 7851	\Hy@UseMaketitleInfos . . . . . . . . . 6097, 8914, 9378, 9827, 10521, 10760, 11630
\Hy@SetCatcodes 181, 231, 4030	\Hy@temp@B . . . . . 1828, 1829	\Hy@UseMaketitleString . . 6078, 6098, 6099
\Hy@SetNewWindow . . . . . . . . . 3958, 8735, 8772, 9753, 10268, 11232, 11263		\Hy@UseNameKey . . . . . . . . . . 2594, 8879, 8880, 8881, 8882, 8883, 8884, 8885, 8886, 8905, 9446, 9447, 9448, 9449, 9450, 9451, 9452, 9453, 9474, 9874, 9875, 9876, 9877,
\Hy@setouterhbox . 10924, 10955		
\Hy@setpagesizetrue . . . . . 468		
\Hy@setpdfborder . . . . . 3576, 8622, 8681, 8719, 8756, 9088, 9707, 9739, 9772, 9805, 10145, 10166, 10189, 10213, 10245, 10277, 10293		
\Hy@setpdfversiontrue . . . . 2809		
\Hy@setref@link . . . . . 8130, 8133		
\Hy@slidetitle . 7959, 7961, 7968, 7976, 7986, 8010, 8012, 8019, 8027, 8037		



9878, 9879, 9880, 9881, 9914,  
 10493, 10494, 10495, 10496,  
 10497, 10498, 10499, 10500,  
 10841, 10842, 10843, 10844,  
 10845, 10846, 10847, 10848,  
 10871, 11691, 11692, 11693,  
 11694, 11695, 11696, 11697,  
 11698, 11721  
 \Hy@usetitlefalse . . . . . 473  
 \Hy@varioref@refstepcounter 6743,  
 6750  
 \Hy@varioref@undefined . . . 6734,  
 6738, 8262  
 \Hy@VerboseAnchor . 4642, 8591,  
 9132, 9147, 9229, 9241, 9494,  
 10006, 10022, 10097, 10110,  
 10586, 10600, 11519, 11533,  
 11799, 11813  
 \Hy@verbosefalse . . . . . 474  
 \Hy@VerboseGlobalTemp . . 4618,  
 4619, 4620, 4621, 4625  
 \Hy@VerboseLinkInfo 4625, 4626,  
 4629, 4636  
 \Hy@VerboseLinkStart . . . . .  
 4614, 8654, 8664, 9162, 9214,  
 9250, 9262, 9686, 9962, 9985,  
 10124, 10225, 10618, 10730,  
 11548, 11604, 11827, 11882  
 \Hy@VerboseLinkStop 4630, 8639  
 \Hy@VersionCheck . . . . 290, 4331  
 \Hy@VersionChecked . . 289, 322,  
 4328, 4330  
 \Hy@vt@PutCatalog . 6303, 6305  
 \Hy@VTeXversion . . . 6283, 6295,  
 10185, 10304, 10440, 13774  
 \Hy@WarnHTMLFieldOption . .  
 . . 5542, 5575, 5578, 5728  
 \Hy@Warning . . . . . 278, 353,  
 514, 1767, 2532, 2547, 2572,  
 2652, 2767, 2772, 3375, 3427,  
 3497, 3549, 3568, 3747, 3794,  
 3802, 3913, 4441, 4686, 4729,  
 4845, 4967, 5125, 5480, 5543,  
 5617, 6341, 6356, 7596, 8243,  
 8292, 8610, 9527, 9531, 9690,  
 10155, 10234, 10739, 11057,  
 11066, 13633, 13651  
 \Hy@WarningNoLine . 279, 2611,  
 2679, 2793, 3478, 3530, 3663,  
 3763, 4015, 4062, 4213, 4222,  
 4237, 4252, 4261, 6025, 6127,  
 6297, 6411, 6639, 7606, 7761,  
 10897  
 \Hy@WarningPageBorderColor .  
 . . . . 3527, 3529, 3531  
 \Hy@WarningPageColor . . . 3475,  
 3477, 3479  
 \Hy@WarnOptionDisabled . 2544,  
 2546  
 \Hy@WarnOptionValue . . . 2525,  
 2531, 3042, 3064  
 \Hy@windowuitrue . . . . . 475  
 \Hy@wrapper@babel . 4121, 4139  
 \Hy@WrapperDef . . . . 4131, 8586,  
 9130, 9145, 9227, 9239, 9492,  
 10004, 10020, 10095, 10108,  
 10584, 10598, 11517, 11531,  
 11797, 11811  
 \Hy@writebookmark . 2421, 7616,  
 7966, 7974, 7984, 8017, 8025,  
 8035, 13610, 13752  
 \HyC@cmd . . . . . 87, 109, 122  
 \HyC@check . . . . . 68, 71, 74  
 \HyC@checkcommand . 50, 57, 59  
 \HyC@checkFailed . . . . 146, 157  
 \HyC@checkItem . . 132, 133, 134,  
 135, 138  
 \HyC@checklong . . . . . 45, 53  
 \HyC@checkOk . . . . . 144, 154  
 \HyC@checkPackage . . 12, 16, 18  
 \HyC@cmd 62, 75, 87, 95, 118, 131  
 \HyC@date . . . . 11, 15, 23, 29, 31  
 \HyC@DeclareRobustCommand .  
 . . . . . 114  
 \HyC@def . . . . . 125  
 \HyC@defcmd . . . . . 47, 54, 93  
 \HyC@doCheck . . . . . 99, 130  
 \HyC@edef . . . . . 125  
 \HyC@getDate . . . . . 12, 14  
 \HyC@meaning . . . . . 152, 160  
 \HyC@nc@default . . . . 103, 105  
 \HyC@nc@noopt 88, 91, 103, 112,  
 123, 127  
 \HyC@nc@opt . . . . . 88, 101, 123  
 \HyC@newcommand . . . . . 86  
 \HyC@next . . . . . 48, 55, 60, 83  
 \HyC@noValue . 80, 81, 82, 85, 139  
 \HyC@optcmd . . . . . 107, 111  
 \HyC@org@cmd . . . . . 76  
 \HyC@org@optcmd . . . . 80, 111  
 \HyC@org@robustcmd . . 81, 120  
 \HyC@org@robustoptcmd . . 82  
 \HyC@package 10, 22, 28, 34, 37, 38  
 \HyC@param . . . . . 78, 96, 102  
 \HyC@robustcmd . . 115, 120, 121,  
 122  
 \HyC@star . . . . . 67, 70, 94  
 \HyC@string . . 131, 152, 155, 158  
 \HyC@Toks . . 79, 90, 96, 106, 126  
 \HyCal@do . . . . . 508, 512  
 \HyCal@scan . . . . . 499, 503, 527  
 \HyColor@FieldBColor 5676, 5679  
 \HyColor@FieldColor . . . . 5682  
 \HyColor@HyperrefBorderColor .  
 . . . . . 3517  
 \HyColor@HyperrefColor . . 3463  
 \HyColor@UseColor . . 4463, 8552,  
 8563, 9648, 9659  
 \HyField@@AddToFields . 12528,  
 12532  
 \HyField@@PDFChoices . . 5363,  
 5364, 5379  
 \HyField@@SetFlag . . 5058, 5060  
 \HyField@@UseFlag . . 5048, 5050  
 \HyField@AddToFields . . 12498,  
 12527, 12617, 12711, 12724,  
 12750, 12774, 12797, 12818  
 \HyField@AdvanceAnnotCount .  
 12918, 12947, 13043, 13073,  
 13101, 13129, 13157, 13183  
 \HyField@afields . . 12495, 12517,  
 12518, 12520, 12555  
 \HyField@AfterAuxOpen . 12508,  
 12515, 12533  
 \HyField@AnnotCount . . . 12916,  
 12919, 12922  
 \HyField@AuxAddToFields 12507,  
 12512, 12516, 12536  
 \HyField@FlagsAnnot 5218, 5237,  
 5251, 5264, 5280, 5312  
 \HyField@FlagsCheckBox . 5250,  
 12310, 12811, 13178  
 \HyField@FlagsChoice . . . 5311,  
 12191, 12672, 13011  
 \HyField@FlagsPushButton 5236,  
 12249, 12268, 12292, 12742,  
 12762, 12791, 13099, 13123,  
 13153  
 \HyField@FlagsRadioButton 5263,  
 12187, 12668, 13007  
 \HyField@FlagsSubmit . . . 5184,  
 12269, 12763, 13124  
 \HyField@FlagsText 5279, 12130,  
 12610, 12941  
 \HyField@NeedAppearancesfalse  
 . . . . . 5508, 5521  
 \HyField@NeedAppearancestrue  
 . . . . 5511, 5514, 5518  
 \HyField@NewBitsetFlag . . 5016,  
 5019, 5027  
 \HyField@NewFlag . . 5014, 5090,  
 5091, 5092, 5093, 5094, 5095,  
 5096, 5097, 5098, 5099, 5100,  
 5101, 5102, 5103, 5104, 5105,  
 5106, 5107, 5108, 5109, 5114,  
 5115, 5116, 5117, 5118, 5119,  
 5120, 5121, 5122, 5155, 5157,  
 5158, 5160, 5161, 5163, 5164,  
 5165, 5166

\HyField@NewFlagOnly . . . <a href="#">5018</a> , <a href="#">5156</a> , <a href="#">5159</a> , <a href="#">5162</a>	\HyInfo@AddonList . . . <a href="#">3816</a> , <a href="#">3817</a> , <a href="#">3851</a> , <a href="#">3858</a>	\HyOrg@float@makebox . . . <a href="#">7245</a> , <a href="#">7247</a>
\HyField@NewOption <a href="#">5015</a> , <a href="#">5021</a>	\HyInfo@Addons <a href="#">3837</a> , <a href="#">3853</a> , <a href="#">8938</a> , <a href="#">9852</a> , <a href="#">10792</a> , <a href="#">10796</a>	\HyOrg@hyperpage . . . <a href="#">7779</a> , <a href="#">7781</a> , <a href="#">7782</a>
\HyField@PDFAFlagWarning . . . <a href="#">5124</a> , <a href="#">5132</a> , <a href="#">5136</a> , <a href="#">5140</a> , <a href="#">5144</a> , <a href="#">5148</a> , <a href="#">5152</a>	\HyInfo@AddonUnsupportedtrue . . . . . <a href="#">9376</a> , <a href="#">10519</a> , <a href="#">11628</a>	\HyOrg@languageshorthands <a href="#">965</a> , <a href="#">979</a> , <a href="#">990</a> , <a href="#">1000</a>
\HyField@PDFChoices . . . . . <a href="#">5336</a> , <a href="#">12228</a> , <a href="#">12718</a> , <a href="#">13067</a>	\HyInfo@do . . . . . <a href="#">3791</a> , <a href="#">3818</a> , <a href="#">3841</a>	\HyOrg@make@df@tag@@ . . . <a href="#">7704</a>
\HyField@PrintFlags . . <a href="#">5065</a> , <a href="#">5211</a> , <a href="#">5229</a> , <a href="#">5243</a> , <a href="#">5256</a> , <a href="#">5272</a> , <a href="#">5304</a> , <a href="#">5329</a>	\HyInfo@GenerateAddons . . <a href="#">3835</a> , <a href="#">8915</a> , <a href="#">9828</a> , <a href="#">10761</a>	\HyOrg@make@df@tag@@@ <a href="#">7705</a>
\HyField@SetFlag . . . . <a href="#">5057</a> , <a href="#">5197</a> , <a href="#">5203</a> , <a href="#">5208</a> , <a href="#">5242</a> , <a href="#">5270</a>	\HyInfo@Key . . . <a href="#">3799</a> , <a href="#">3800</a> , <a href="#">3808</a> , <a href="#">3813</a> , <a href="#">3818</a> , <a href="#">3821</a> , <a href="#">3828</a> , <a href="#">3842</a> , <a href="#">3846</a>	\HyOrg@maketitle . . . <a href="#">7115</a> , <a href="#">7122</a> , <a href="#">7127</a>
\HyField@SetKeys . . . <a href="#">5440</a> , <a href="#">12127</a> , <a href="#">12158</a> , <a href="#">12161</a> , <a href="#">12180</a> , <a href="#">12237</a> , <a href="#">12265</a> , <a href="#">12282</a> , <a href="#">12307</a> , <a href="#">12606</a> , <a href="#">12638</a> , <a href="#">12641</a> , <a href="#">12660</a> , <a href="#">12729</a> , <a href="#">12759</a> , <a href="#">12781</a> , <a href="#">12807</a> , <a href="#">12937</a> , <a href="#">12977</a> , <a href="#">12980</a> , <a href="#">12999</a> , <a href="#">13085</a> , <a href="#">13120</a> , <a href="#">13143</a> , <a href="#">13174</a>	\HyInfo@KeyEscaped . . <a href="#">3798</a> , <a href="#">3799</a>	\HyOrg@subequations <a href="#">6891</a> , <a href="#">6898</a>
\HyField@TheAnnotCount <a href="#">12921</a> , <a href="#">12951</a> , <a href="#">12956</a> , <a href="#">13048</a> , <a href="#">13060</a> , <a href="#">13075</a> , <a href="#">13080</a> , <a href="#">13106</a> , <a href="#">13112</a> , <a href="#">13131</a> , <a href="#">13136</a> , <a href="#">13159</a> , <a href="#">13164</a> , <a href="#">13187</a> , <a href="#">13192</a>	\HyInfo@trapped@false <a href="#">3739</a> , <a href="#">3758</a>	\HyOrg@title . . . . . <a href="#">6040</a> , <a href="#">6045</a> , <a href="#">6049</a>
\HyField@UseFlag . . . . <a href="#">5047</a> , <a href="#">5188</a> , <a href="#">5189</a> , <a href="#">5190</a> , <a href="#">5191</a> , <a href="#">5192</a> , <a href="#">5193</a> , <a href="#">5194</a> , <a href="#">5195</a> , <a href="#">5198</a> , <a href="#">5199</a> , <a href="#">5200</a> , <a href="#">5201</a> , <a href="#">5204</a> , <a href="#">5205</a> , <a href="#">5206</a> , <a href="#">5209</a> , <a href="#">5220</a> , <a href="#">5221</a> , <a href="#">5222</a> , <a href="#">5223</a> , <a href="#">5224</a> , <a href="#">5225</a> , <a href="#">5226</a> , <a href="#">5227</a> , <a href="#">5228</a> , <a href="#">5239</a> , <a href="#">5240</a> , <a href="#">5241</a> , <a href="#">5253</a> , <a href="#">5254</a> , <a href="#">5255</a> , <a href="#">5266</a> , <a href="#">5267</a> , <a href="#">5268</a> , <a href="#">5269</a> , <a href="#">5271</a> , <a href="#">5282</a> , <a href="#">5283</a> , <a href="#">5284</a> , <a href="#">5285</a> , <a href="#">5286</a> , <a href="#">5287</a> , <a href="#">5288</a> , <a href="#">5289</a> , <a href="#">5300</a> , <a href="#">5303</a> , <a href="#">5314</a> , <a href="#">5315</a> , <a href="#">5316</a> , <a href="#">5317</a> , <a href="#">5319</a> , <a href="#">5321</a> , <a href="#">5322</a> , <a href="#">5325</a> , <a href="#">5328</a>	\HyInfo@trapped@true <a href="#">3736</a> , <a href="#">3757</a>	\HyOrg@url . . . . . <a href="#">4742</a>
\HyInd@@@wrindex . . . <a href="#">7799</a> , <a href="#">7802</a> , <a href="#">7833</a> , <a href="#">7839</a>	\HyInfo@trapped@unknown <a href="#">3742</a> , <a href="#">3759</a>	\HyPat@NonNegativeReal . . <a href="#">3544</a> , <a href="#">3545</a> , <a href="#">3546</a> , <a href="#">3547</a> , <a href="#">3563</a> , <a href="#">3565</a> , <a href="#">3894</a> , <a href="#">3904</a> , <a href="#">3905</a> , <a href="#">3906</a> , <a href="#">3908</a> , <a href="#">3909</a> , <a href="#">3910</a>
\HyInd@@hyperpage . . . <a href="#">7879</a> , <a href="#">7889</a>	\HyInfo@TrappedUnsupported . . . . . . . <a href="#">3760</a> , <a href="#">3764</a> , <a href="#">9379</a> , <a href="#">10522</a> , <a href="#">11631</a>	\HyPat@ObjRef <a href="#">4726</a> , <a href="#">4727</a> , <a href="#">4740</a> , <a href="#">8434</a> , <a href="#">9487</a> , <a href="#">10581</a>
\HyInd@@wrindex . . . . <a href="#">7794</a> , <a href="#">7795</a>	\HyInfo@Value . . . . . <a href="#">3812</a> , <a href="#">3814</a>	\hyper@@anchor <a href="#">4046</a> , <a href="#">4752</a> , <a href="#">4754</a> , <a href="#">4785</a> , <a href="#">4787</a> , <a href="#">4820</a> , <a href="#">4822</a> , <a href="#">4964</a> , <a href="#">5912</a> , <a href="#">5928</a> , <a href="#">5945</a> , <a href="#">6991</a> , <a href="#">6996</a> , <a href="#">7006</a> , <a href="#">7011</a> , <a href="#">7063</a> , <a href="#">7066</a> , <a href="#">7092</a> , <a href="#">7220</a> , <a href="#">7223</a> , <a href="#">7251</a> , <a href="#">7555</a> , <a href="#">7562</a> , <a href="#">7567</a> , <a href="#">7965</a> , <a href="#">7973</a> , <a href="#">7983</a> , <a href="#">8016</a> , <a href="#">8024</a> , <a href="#">8034</a>
\HyInd@EncapChar . . . <a href="#">3072</a> , <a href="#">4025</a> , <a href="#">7789</a>	\HyLang@addto <a href="#">3276</a> , <a href="#">3292</a> , <a href="#">3310</a> , <a href="#">3343</a> , <a href="#">3351</a>	\hyper@@link . . . . . <a href="#">4612</a> , <a href="#">4670</a> , <a href="#">4775</a> , <a href="#">4799</a> , <a href="#">4801</a> , <a href="#">4825</a> , <a href="#">7308</a> , <a href="#">7454</a> , <a href="#">7455</a> , <a href="#">7456</a> , <a href="#">7504</a> , <a href="#">7506</a> , <a href="#">7508</a> , <a href="#">8135</a> , <a href="#">8150</a> , <a href="#">8252</a>
\HyInd@hyperpage . . . . <a href="#">7876</a> , <a href="#">7878</a> , <a href="#">7885</a>	\HyLang@afrikaans . . . . . <a href="#">3074</a>	\hyper@@normalise . . . <a href="#">4581</a> , <a href="#">4585</a> , <a href="#">4589</a>
\HyInd@org@wrindex . . <a href="#">7793</a> , <a href="#">7797</a> , <a href="#">7807</a> , <a href="#">7813</a> , <a href="#">7815</a> , <a href="#">7818</a>	\HyLang@DeclareLang <a href="#">3290</a> , <a href="#">3319</a> , <a href="#">3320</a> , <a href="#">3321</a> , <a href="#">3322</a> , <a href="#">3323</a> , <a href="#">3324</a> , <a href="#">3325</a> , <a href="#">3326</a> , <a href="#">3327</a> , <a href="#">3328</a> , <a href="#">3329</a> , <a href="#">3330</a> , <a href="#">3331</a> , <a href="#">3332</a> , <a href="#">3333</a> , <a href="#">3334</a> , <a href="#">3335</a> , <a href="#">3336</a> , <a href="#">3337</a> , <a href="#">3338</a> , <a href="#">3339</a> , <a href="#">3340</a> , <a href="#">3341</a>	\hyper@anchor . . . . . . . . . . <a href="#">4991</a> , <a href="#">5915</a> , <a href="#">5930</a> , <a href="#">5995</a> , <a href="#">6008</a> , <a href="#">8642</a> , <a href="#">9130</a> , <a href="#">9227</a> , <a href="#">9550</a> , <a href="#">10020</a> , <a href="#">10095</a> , <a href="#">10584</a> , <a href="#">11517</a> , <a href="#">11797</a>
\HyInd@pagelink <a href="#">7894</a> , <a href="#">7900</a> , <a href="#">7902</a> , <a href="#">7905</a>	\HyLang@english . . . . . <a href="#">3092</a>	\hyper@anchorend . . . . . . . . . . <a href="#">4049</a> , <a href="#">5899</a> , <a href="#">5917</a> , <a href="#">5932</a> , <a href="#">5948</a> , <a href="#">6521</a> , <a href="#">6704</a> , <a href="#">6779</a> , <a href="#">6820</a> , <a href="#">6839</a> , <a href="#">6863</a> , <a href="#">6952</a> , <a href="#">7302</a> , <a href="#">7327</a> , <a href="#">7330</a> , <a href="#">7350</a> , <a href="#">7483</a> , <a href="#">7689</a> , <a href="#">7715</a> , <a href="#">8649</a> , <a href="#">9155</a> , <a href="#">9245</a> , <a href="#">9557</a> , <a href="#">10015</a> , <a href="#">10117</a> , <a href="#">10606</a> , <a href="#">11541</a> , <a href="#">11820</a> , <a href="#">13606</a> , <a href="#">13753</a> , <a href="#">13985</a> , <a href="#">14010</a> , <a href="#">14021</a> , <a href="#">14051</a> , <a href="#">14103</a>
\HyInd@ParenLeft . . . . <a href="#">7776</a> , <a href="#">7804</a> , <a href="#">7841</a>	\HyLang@french . . . . . <a href="#">3110</a>	\hyper@anchorstart . . . . . . . . . . <a href="#">4048</a> , <a href="#">5899</a> , <a href="#">5916</a> , <a href="#">5931</a> , <a href="#">5947</a> , <a href="#">6521</a> , <a href="#">6703</a> , <a href="#">6779</a> , <a href="#">6817</a> , <a href="#">6839</a> , <a href="#">6863</a> , <a href="#">6949</a> , <a href="#">7300</a> , <a href="#">7325</a> , <a href="#">7330</a> , <a href="#">7350</a> , <a href="#">7483</a> , <a href="#">7689</a> , <a href="#">7715</a> , <a href="#">8645</a> , <a href="#">9145</a> , <a href="#">9239</a> , <a href="#">9553</a> , <a href="#">10004</a> , <a href="#">10108</a> , <a href="#">10598</a> , <a href="#">11531</a> , <a href="#">11811</a> , <a href="#">13606</a> , <a href="#">13753</a> , <a href="#">13985</a> , <a href="#">14010</a> , <a href="#">14021</a> , <a href="#">14051</a> , <a href="#">14103</a>
\HyInd@ParenRight . . . <a href="#">7777</a> , <a href="#">7805</a> , <a href="#">7812</a> , <a href="#">7842</a> , <a href="#">7851</a>	\HyLang@german . . . . . <a href="#">3128</a>	\hyper@chars . . . . . <a href="#">4606</a> , <a href="#">8677</a> , <a href="#">9135</a> , <a href="#">9149</a> , <a href="#">9169</a> , <a href="#">9191</a> , <a href="#">9205</a> ,
\HyInd@removespaces <a href="#">7908</a> , <a href="#">7911</a> , <a href="#">7921</a>	\HyLang@italian . . . . . <a href="#">3146</a>	
\HyInfo@AddonHandler . . . . <a href="#">3789</a> , <a href="#">3792</a>	\HyLang@magyar . . . . . <a href="#">3164</a>	
	\HyLang@portuges . . . . . <a href="#">3182</a>	
	\HyLang@russian . . . . . <a href="#">3200</a>	
	\HyLang@spanish . . . . . <a href="#">3240</a>	
	\HyLang@vietnamese . . <a href="#">3258</a> , <a href="#">3343</a> , <a href="#">3351</a>	
	\HyLinguex@OrgB . . . . . <a href="#">893</a> , <a href="#">897</a>	
	\HyLinguex@OrgC . . . . . <a href="#">894</a> , <a href="#">898</a>	
	\HyLinguex@OrgD . . . . . <a href="#">895</a> , <a href="#">899</a>	
	\HyLinguex@Restore . . . <a href="#">896</a> , <a href="#">909</a> , <a href="#">913</a> , <a href="#">921</a> , <a href="#">2721</a>	
	\HyOpt@CheckDvi . . . <a href="#">2841</a> , <a href="#">2877</a> , <a href="#">2882</a> , <a href="#">2887</a> , <a href="#">2910</a> , <a href="#">2915</a> , <a href="#">2920</a> , <a href="#">2972</a> , <a href="#">2979</a> , <a href="#">2984</a> , <a href="#">2989</a> , <a href="#">2994</a>	
	\HyOpt@DriverFallback . . . <a href="#">2998</a> , <a href="#">3001</a> , <a href="#">3002</a> , <a href="#">3006</a> , <a href="#">4297</a> , <a href="#">4302</a>	
	\HyOpt@DriverType . . <a href="#">4270</a> , <a href="#">4272</a> , <a href="#">4299</a> , <a href="#">4309</a> , <a href="#">4311</a> , <a href="#">4327</a>	
	\HyOrg@addtoreset . . . <a href="#">7719</a> , <a href="#">7721</a> , <a href="#">7748</a>	
	\HyOrg@appendix . . . . <a href="#">6535</a> , <a href="#">6541</a>	
	\HyOrg@author . . . . . <a href="#">6041</a> , <a href="#">6054</a> , <a href="#">6058</a>	

9219, 9299, 9337, 9971, 9992,  
 10008, 10025, 10100, 10112,  
 10202, 11191, 11535, 11555,  
 11581, 11595, 11609, 11815,  
 11834, 11857, 11874, 11887  
 \hyper@currentanchor . . . 10603,  
 10612, 10635, 10652  
 \hyper@currentlinktype . . 10636,  
 10640, 10644  
 \hyper@hash . . 4558, 4559, 4607,  
 4887, 4899, 4916, 4919, 5866,  
 9965  
 \hyper@image . 4748, 4749, 9217,  
 10256, 10725, 11607, 11885  
 \hyper@last . . . . . 6015, 6020  
 \hyper@link . . . . . 4047, 4834,  
 5913, 5914, 5929, 5940, 5946,  
 8663, 9213, 9261, 9723, 9961,  
 10224, 10729, 11603, 11881  
 \hyper@link@ . . 4054, 4826, 4828,  
 5911, 5922, 5926, 5937, 5953  
 \hyper@linkend . . . . 4051, 5919,  
 5934, 5950, 7031, 7294, 7297,  
 7650, 7654, 7658, 7660, 8662,  
 9175, 9258, 9722, 9724, 9997,  
 10175, 10638, 11563, 11840  
 \hyper@linkfile . . . . .  
 4053, 4912, 5921, 5936, 5952,  
 8709, 9179, 9335, 9726, 9981,  
 10179, 11212, 11567, 11844  
 \hyper@linkstart . . . . 4050, 5918,  
 5933, 5949, 7029, 7290, 7297,  
 7650, 7654, 7658, 7660, 8653,  
 9161, 9249, 9685, 9724, 9984,  
 10123, 10617, 11547, 11826  
 \hyper@linkurl . . . . . 4052, 4747,  
 4887, 4894, 4915, 4919, 5920,  
 5935, 5951, 8674, 9180, 9182,  
 9215, 9297, 9763, 9969, 9982,  
 10199, 10257, 10726, 11188,  
 11568, 11572, 11605, 11845,  
 11847, 11883  
 \hyper@livelink . . . . . 5913, 5940  
 \hyper@makecurrent . 6517, 6562,  
 6765, 6816, 6838, 6862, 6926,  
 7026, 7196, 7238  
 \hyper@n@rmalise . . . 4573, 4577  
 \hyper@nat@current . . . . . 7291  
 \hyper@nat@anchorend . . . . 7302  
 \hyper@nat@anchorstart . . . . 7299  
 \hyper@nat@linkbreak . . . . . 7296  
 \hyper@nat@linkend . . . . . 7293  
 \hyper@nat@linkstart . . . . . 7288  
 \hyper@normalise . . . 4026, 4031,  
 4550, 4660, 4663, 4744, 4746,  
 4748, 4769, 5470  
 \hyper@pageduration . 8976, 9025,  
 10417, 10434, 10692, 10722  
 \hyper@pagehidden . . 9000, 9026,  
 10427, 10435, 10709, 10723  
 \hyper@pagetransition 8952, 9024,  
 10306, 10433, 10675, 10721  
 \hyper@quote . . . . . 5868,  
 9137, 9151, 9166, 9171, 9192,  
 9206, 9220, 9965, 9975, 9988,  
 10011, 10029, 11523, 11537,  
 11552, 11558, 11582, 11596,  
 11610, 11803, 11816, 11831,  
 11836, 11859, 11875, 11888  
 \hyper@readexternallink . . 4836,  
 4852  
 \hyper@refstepcounter 6495, 6498,  
 6506  
 \hyper@tilde 4567, 4568, 4569, 5867  
 \hyperbaseurl . . 3481, 3482, 5964  
 \hypercalcbp . . . . . 494, 494  
 \hypercalcbpdf . . 496, 533, 3891,  
 3901  
 \hyperdef . . . . . 4777, 5966  
 \HyperDestNameFilter . . . . .  
 . . . . . 4007, 4646, 8592,  
 8617, 9137, 9151, 9171, 9215,  
 9496, 9697, 9965, 9975, 9993,  
 10011, 10029, 10101, 10113,  
 10162, 10241, 11054, 11063,  
 11523, 11537, 11558, 11605,  
 11803, 11816, 11836, 11883,  
 13831, 13895, 13911  
 \HyperFirstAtBeginDocument . .  
 . . 5992, 5994, 6016, 6019  
 \hypergetpageref . . . . . 6697  
 \hypergetref . . . . . 6696  
 \HyperGlobalCurrentHref . 6582,  
 6584, 6592, 6593, 6597, 6600,  
 6604, 6610, 6611, 6615  
 \hyperimage . . . 4748, 4998, 7771  
 \hyperindexformat . . . . . 7778  
 \hyperlink 4611, 5967, 7917, 8055,  
 8063, 8078, 8086, 8096, 8104,  
 8111  
 \hyperlinkfileprefix . . 3484, 3485,  
 3486, 11789  
 \HyperLocalCurrentHref . . 6600,  
 6602, 6608, 6609, 6610, 6611,  
 6613  
 \hyperpage 5973, 7779, 7780, 7782,  
 7875  
 \HyperRaiseLinkDefault . . 2423,  
 2450  
 \HyperRaiseLinkHook 2422, 2451  
 \HyperRaiseLinkLength . . 2449,  
 2450, 2453  
 \hyperref . 4757, 5005, 5006, 5969,  
 8210, 8214, 8224, 8238  
 \hypersetup 2760, 2800, 3328, 3775,  
 4027, 5963  
 \hypertarget . . . . . 4750, 5968  
 \HyPL@@@CheckThePage . 6231,  
 6249  
 \HyPL@@@CheckThePage . . 6207,  
 6209  
 \HyPL@Alph . . . . . 6147  
 \HyPL@alph . . . . . 6148  
 \HyPL@arabic . . . . . 6144  
 \HyPL@CheckThePage 6159, 6206  
 \HyPL@Entry . 6399, 6407, 6415,  
 6417  
 \HyPL@EveryPage . . . 6149, 6270  
 \HyPL@Format 6222, 6223, 6224,  
 6225, 6226, 6238  
 \HyPL@found . 6221, 6228, 6232,  
 6239, 6249, 6251  
 \HyPL@Labels . 6138, 6261, 6262,  
 6264, 6266, 6317, 6318, 6410,  
 6418, 6419  
 \HyPL@LastNumber . 6142, 6177,  
 6200  
 \HyPL@LastPrefix . . . 6143, 6171,  
 6202  
 \HyPL@LastType 6141, 6162, 6201  
 \HyPL@page . . 6152, 6154, 6159,  
 6167  
 \HyPL@Prefix . 6167, 6169, 6171,  
 6185, 6188, 6190, 6202, 6216,  
 6254  
 \HyPL@Roman . . . . . 6145  
 \HyPL@roman . . . . . 6146  
 \HyPL@SetPageLabels 6260, 6325,  
 6413  
 \HyPL@StorePageLabel . . . 6185,  
 6187, 6257, 6315, 6394  
 \HyPL@thisLabel 6135, 6137, 6151,  
 6154, 6155  
 \HyPL@Type . . 6157, 6162, 6166,  
 6184, 6192, 6201, 6215, 6253  
 \HyPL@Useless . . . . . 6258, 6264  
 \HyPsd@@@autoref . . 1688, 1690,  
 1693  
 \HyPsd@@@CJKdigits 1558, 1561,  
 1569  
 \HyPsd@@@nameref . . 1670, 1672,  
 1675  
 \HyPsd@@@pageref . . 1652, 1654,  
 1657  
 \HyPsd@@@ref . . 1636, 1638, 1641  
 \HyPsd@@@UTFviii@four . . 2290,  
 2293  
 \HyPsd@@@AppendItalcorr . 1857  
 \HyPsd@@@autoref . . . 1685, 1686



\HyPsd@@autorefname [1706](#), [1709](#)  
\HyPsd@@CJKdigits . [1550](#), [1552](#), [1555](#)  
\HyPsd@@CJKnumber [1451](#), [1453](#), [1456](#), [1509](#), [1524](#), [1537](#), [1539](#), [1543](#)  
\HyPsd@@ConvertToUnicode . . . . . [2169](#)  
\HyPsd@@GetNextTwoTokens . . . . . [2167](#)  
\HyPsd@@GlyphProcessWarning . . . . . [2027](#), [2030](#)  
\HyPsd@@GreekNum . [1113](#), [1122](#), [1221](#), [1225](#), [1229](#)  
\HyPsd@@hspace . . . . . [1606](#), [1607](#)  
\HyPsd@@LetCommand . . [1730](#), [1751](#)  
\HyPsd@@nameref . . . . . [1667](#), [1668](#)  
\HyPsd@@pageref . . . . . [1649](#), [1650](#)  
\HyPsd@@ProtectSpacesFi . [1779](#), [1783](#), [1801](#), [1807](#), [1812](#)  
\HyPsd@@ref . . . . . [1633](#), [1634](#)  
\HyPsd@@RemoveBraces . . [1825](#)  
\HyPsd@@RemoveBracesFi [1822](#), [1825](#)  
\HyPsd@@RemoveCmdPrefix . . . . . [1984](#), [1987](#)  
\HyPsd@@ReplaceFi . [2054](#), [2060](#), [2065](#)  
\HyPsd@@UTFviii@four . . . [2274](#), [2279](#)  
\HyPsd@add@accent . . [556](#), [1595](#)  
\HyPsd@AfterCountRemove [1870](#), [1941](#)  
\HyPsd@AfterDimenRemove . . . . . [1876](#), [1944](#)  
\HyPsd@AfterSkipRemove . [1882](#), [1956](#)  
\HyPsd@AMScsfix . [652](#), [1616](#), [1618](#)  
\HyPsd@AppendItalcrr . . [1841](#), [1848](#), [1857](#)  
\HyPsd@autoref . . . . . [662](#), [1685](#)  
\HyPsd@autorefname . [1697](#), [1703](#)  
\HyPsd@babel@danish . . . . [1009](#)  
\HyPsd@babel@dutch . . . . [1015](#)  
\HyPsd@babel@finnish . . . . [1021](#)  
\HyPsd@babel@frenchb . . . [1026](#)  
\HyPsd@babel@german . . . [1031](#)  
\HyPsd@babel@macedonian [1038](#)  
\HyPsd@babel@ngerman . . [1044](#)  
\HyPsd@babel@portuges . . [1050](#)  
\HyPsd@babel@russian . . . [1055](#)  
\HyPsd@babel@slovene . . . [1061](#)  
\HyPsd@babel@spanish . . . [1066](#)  
\HyPsd@babel@swedish . . . [1076](#)  
\HyPsd@babel@ukrainian . . [1082](#)  
\HyPsd@babel@usorian . . [1088](#)  
\HyPsd@BabelPatch [638](#), [964](#), [999](#)  
\HyPsd@CatcodeWarning . [1886](#), [1903](#), [1906](#), [1909](#), [1912](#), [1968](#)  
\HyPsd@Char . . . . . [2171](#)  
\HyPsd@CharOctByte [2191](#), [2193](#), [2196](#), [2205](#), [2210](#)  
\HyPsd@CharSurrogate . . . [2185](#), [2202](#)  
\HyPsd@CharTwoByte [2183](#), [2190](#)  
\HyPsd@CheckCatcodes [715](#), [1863](#)  
\HyPsd@CJK@Unicode [1333](#), [1337](#)  
\HyPsd@CJKActiveChars . [1273](#), [1288](#)  
\HyPsd@CJKdigit . . . . [1562](#), [1572](#)  
\HyPsd@CJKdigits . . . [1335](#), [1548](#)  
\HyPsd@CJKhook [668](#), [1244](#), [1255](#)  
\HyPsd@CJKhook@bookmarks . . . . . [1250](#), [1284](#)  
\HyPsd@CJKhook@unicode [1252](#), [1332](#)  
\HyPsd@CJKnumber . [1334](#), [1448](#)  
\HyPsd@CJKnumberFour . [1466](#), [1470](#), [1474](#), [1487](#), [1491](#), [1495](#), [1501](#)  
\HyPsd@CJKnumberLarge . [1479](#), [1486](#)  
\HyPsd@CJKnumberThree [1507](#), [1511](#), [1517](#)  
\HyPsd@CJKnumberTwo . . [1522](#), [1526](#), [1532](#)  
\HyPsd@ConvertToUnicode . [783](#), [2117](#)  
\HyPsd@DecimalToOctal . . [1265](#), [1296](#)  
\HyPsd@DecimalToOctalFirst . . . . . [1339](#), [1375](#)  
\HyPsd@DecimalToOctalSecond . . . . . [1340](#), [1349](#), [1412](#)  
\HyPsd@DefCommand . [698](#), [699](#), [700](#), [701](#), [1719](#)  
\HyPsd@DisableCommands . [944](#), [946](#)  
\HyPsd@DoConvert . . [2119](#), [2129](#)  
\HyPsd@DoEscape . . . . . [2143](#)  
\HyPsd@doxspace . . . . [755](#), [2090](#)  
\HyPsd@empty [740](#), [742](#), [746](#), [747](#), [749](#), [757](#), [764](#)  
\HyPsd@End [715](#), [719](#), [1780](#), [1783](#), [1786](#), [1789](#), [1792](#), [1805](#), [1815](#), [1822](#), [1825](#), [1863](#), [1871](#), [1877](#), [1883](#), [1928](#), [1935](#), [1941](#), [1944](#), [1956](#)  
\HyPsd@EndWithElse [1585](#), [1594](#)  
\HyPsd@EscapeTeX [794](#), [804](#), [2072](#)  
\HyPsd@fi . [1797](#), [1803](#), [1807](#), [1813](#)  
\HyPsd@GetNextTwoTokens [2167](#)  
\HyPsd@GetOneBye . . . . . [2162](#)  
\HyPsd@GetTwoBytes . . . . [2158](#)  
\HyPsd@GLYPHERR [720](#), [1582](#), [1596](#), [1603](#)  
\HyPsd@GlyphProcess [722](#), [2015](#), [2028](#)  
\HyPsd@GlyphProcessWarning . . . . . [2022](#), [2026](#)  
\HyPsd@GobbleFiFi . [1587](#), [1593](#)  
\HyPsd@GreekNum . . [1102](#), [1105](#), [1107](#)  
\HyPsd@Greeknumeral [1098](#), [1104](#)  
\HyPsd@greeknumeral [1097](#), [1101](#)  
\HyPsd@GreekNumI . [1125](#), [1151](#), [1194](#), [1220](#)  
\HyPsd@GreekNumII . [1129](#), [1173](#), [1217](#), [1224](#)  
\HyPsd@GreekNumIII [1132](#), [1196](#), [1228](#)  
\HyPsd@GreekNumIV [1141](#), [1219](#)  
\HyPsd@GreekNumV . [1144](#), [1223](#)  
\HyPsd@GreekNumVI [1146](#), [1227](#)  
\HyPsd@GreekPatch . [635](#), [1094](#), [1096](#)  
\HyPsd@HighA . . . . . [1343](#), [1352](#)  
\HyPsd@HighB . . . . . [1353](#), [1358](#)  
\HyPsd@HighC . . . . . [1359](#), [1362](#)  
\HyPsd@HighD . . . . . [1355](#), [1367](#)  
\HyPsd@href . . . . . [657](#), [1632](#)  
\HyPsd@hspace . . . . . [653](#), [1606](#)  
\HyPsd@hspacetest . . [1609](#), [1611](#), [1614](#)  
\HyPsd@ifnextchar [684](#), [685](#), [686](#), [1756](#)  
\HyPsd@ignorespaces . . . [666](#), [955](#)  
\HyPsd@InitUnicode . . . . . [918](#)  
\HyPsd@inmathwarn . . [555](#), [1579](#)  
\HyPsd@ITALCORR . . [676](#), [680](#), [1603](#)  
\HyPsd@langshort@system . . [970](#), [973](#)  
\HyPsd@LanguageShorthands . . . . . [966](#), [971](#), [983](#)  
\HyPsd@LetCommand . [702](#), [703](#), [1719](#)  
\HyPsd@LetUnexpandableSpace . . . . [671](#), [672](#), [673](#), [674](#), [1599](#), [1602](#)  
\HyPsd@LoadStringEnc . . . [2764](#), [2784](#), [2786](#), [2790](#), [2792](#), [6336](#)  
\HyPsd@LoadUnicode [2713](#), [2718](#), [2726](#), [2729](#), [2731](#), [2738](#), [6330](#)  
\HyPsd@nameref . . . . . [661](#), [1667](#)  
\HyPsd@pageref . . . . . [660](#), [1649](#)  
\HyPsd@pdfencoding . [784](#), [2712](#), [2715](#), [2747](#), [2759](#), [2762](#), [2763](#),

2768, 2783, 6332, 6334, 6351, 6354	2771, 2775, 6349, 6350, 6351, 6353, 6354, 6359	\HyRef@Ref . . . . . 8207, 8209
\HyPsd@pdfencoding@auto . 784, 2753, 2763, 2780, 6334, 6353	\HyPsd@ToBigChar 844, 845, 854	\HyRef@ShowKeysInit 8330, 8343, 8347
\HyPsd@pdfencoding@pdfdoc . . . . . 2746, 2768, 2781	\HyPsd@ToBigChars . . . 797, 836	\HyRef@ShowKeysRef 8261, 8329
\HyPsd@pdfencoding@unicode . . . . . 2750, 2782, 6332, 6350	\HyPsd@tocsection . . 1619, 1620, 1621, 1622, 1623, 1624, 1625, 1627	\HyRef@StarSetRef . . 8172, 8190, 8193, 8196, 8201
\HyPsd@PrerenderUnicode 3673, 3689, 3695, 3701, 3707, 3725, 3731, 3811	\HyPsd@UnescapedString . . 789, 838, 839, 845	\HyRef@StripStar . . . 8288, 8319
\HyPsd@protected@testopt . 687, 688, 1760	\HyPsd@UnexpandableSpace . . . 1602, 1788, 1812, 1947, 1959	\HyRef@testreftype . . 8266, 8285
\HyPsd@ProtectSpaces 708, 1777, 1798, 1847	\HyPsd@unichar 2232, 2299, 2305, 2310	\HyRef@thisref . . . . . 8263, 8266
\HyPsd@ref . . . . . 659, 1633	\HyPsd@unichar@first@byte 2318, 2338	\HyTmp@found . 5390, 5400, 5403
\HyPsd@RemoveBraces 710, 1819, 1836, 1844, 1850	\HyPsd@unichar@octtwo . . 2340, 2348, 2354	\HyTmp@key . . . . . 5384, 5385
\HyPsd@RemoveCmdPrefix 1977, 1983	\HyPsd@unichar@second@byte . . . . . 2326, 2346	\HyTmp@optitem . . . 5340, 5356, 5383, 5388, 5394, 5415, 5426
\HyPsd@RemoveMask 718, 1786, 1792, 1805, 1815	\HyPsd@UnicodeReplacementCharacter . . . . . 2302, 2337	\HyTmp@optlist 5339, 5354, 5355, 5386, 5387, 5392, 5393, 5401, 5402, 5422, 5424, 5431, 5434
\HyPsd@RemoveSpaceWarning . . . . . 1951, 1963, 1989	\HyPsd@utf@viii@undeferr . . 552, 2360	\HyXeTeX@CheckUnicode . 3659, 3670, 3687, 3693, 3699, 3705, 3723, 3729, 3809, 6364
\HyPsd@ReplaceSpaceWarning . . . . . 1946, 1958, 2002	\HyPsd@UTFviii . 546, 2220, 2225	
\HyPsd@Rest . . 1864, 1924, 1932, 1935, 1942, 1947, 1953, 1959, 1965	\HyPsd@UTFviii@@three . . 2255, 2264	I
\HyPsd@RussianPatch . 637, 1237	\HyPsd@UTFviii@@two 2240, 2246	\i 14287, 14450, 14453, 14456, 14459, 14656, 14818, 14821, 14824, 14827, 14944, 14949, 14954, 14959, 14963, 15130, 15186
\HyPsd@SanitizeForOutFile . . . . . 13670, 13701	\HyPsd@UTFviii@ccc@liv@def 2230, 2236	\if . . . . . 1628, 2410, 6175, 6183, 6880, 6881, 10380, 10383, 10387, 10391, 10395, 10397, 10399, 13358
\HyPsd@SanitizeOut@BraceLeft . . . 13705, 13711, 13720	\HyPsd@UTFviii@ccc@liv@undef . . . . . 2229, 2235	\if@eqnstar . . . . . 6822, 6830
\HyPsd@SanitizeOut@BraceRight . . . 13708, 13723, 13732	\HyPsd@UTFviii@four 2228, 2273	\if@filesw . . . . . 2378, 4813, 5985, 6029, 6395, 6405, 6646, 7337, 7352, 7368, 7380, 7410, 7433, 7460, 7465, 7484, 7827, 12510, 12534, 13671, 13858, 13940
\HyPsd@SPACEOPTI . 712, 727, 728, 730, 732, 734, 735, 774, 776, 1899, 2101	\HyPsd@UTFviii@three 2227, 2254	\if@hyper@item . . . . . 6480, 6493
\HyPsd@spaceopti . . . . . 776, 2046	\HyPsd@UTFviii@two 2226, 2239	\if@inlabel . . . . . 6938
\HyPsd@SpanishPatch . 636, 1231	\HyPsd@Warning 1764, 1969, 1990, 2003, 2032, 2038	\if@Localurl . . . . . 9952, 9998
\HyPsd@String . . . . . 709, 711, 714, 716, 721, 723, 1830, 1831, 1841, 1893, 1894, 1898, 1899, 1914, 1915, 1945, 1957, 2016, 2017	\HyPsd@XeTeXBigCharsfalse 811, 825, 830	\if@mid@expandable . . . . . 651
\HyPsd@StringSubst . . 724, 726, 732, 738, 741, 744, 747, 766, 769, 771, 2069	\HyPsd@XeTeXBigCharstrue . . . . . 824, 833, 3688, 3694, 3700, 3706, 3724, 3730, 3810, 13310, 13668	\if@minipage . . . . . 7208, 7279
\HyPsd@Subst . 720, 729, 733, 739, 745, 749, 753, 758, 759, 760, 761, 762, 763, 767, 770, 2053, 2070, 2085, 2086, 2087	\HyPsd@XSPACE 678, 754, 1603	\if@nmbrlist . . . . . 6467
\HyPsd@temp . . . . . 787, 789, 790, 792, 793, 800, 802, 803, 2745, 2746, 2747, 2750, 2753, 2759,	\HyPsd@xspace . . . 752, 754, 755	\if@nobreak . . . . . 6957
	\HyRef@@StarSetRef . 8178, 8183	\if@skiphyperref . . . . . 6481, 6491
	\HyRef@autopageref . 8235, 8237	\if@twocolumn . . . . . 14105
	\HyRef@autopagerefname . 8234, 8238, 8240	\if@twoside . . . . . 14094
	\HyRef@autoref . . . . . 8252, 8254	\ifcase . . . . . 346, 1158, 1180, 1203, 1297, 1346, 1368, 1371, 1377, 1413, 1457, 1573, 2268, 2750, 3424, 4330, 5186, 5291, 5420, 5497, 6545, 6554, 7646, 7804, 7841, 8070, 8262, 10453, 10943, 13416, 13443, 13510, 13545, 13580, 13778
	\HyRef@autosetref . . . 8257, 8260	\ifcat 1865, 1892, 1897, 1902, 1905, 1908, 1911, 4975, 4977
	\HyRef@CaseStar . . . . 8321, 8327	\ifdim . . . . . 1614, 1945, 1949, 1957, 1961, 2465,
	\HyRef@currentHtag . 8273, 8291, 8294, 8300, 8307, 8313, 8328	
	\HyRef@MakeUppercaseFirstOfFive . . . . . 8201, 8203	
	\HyRef@name . 8289, 8290, 8295, 8302, 8320, 8321, 8322, 8324	

2484, 4012, 4356, 9044, 9048,  
 9053, 9057, 9064, 9067, 9071,  
 9074, 9932, 9933, 9938, 9939,  
 10071, 10074, 10078, 10081,  
 10972, 10983, 11342, 11343,  
 11348, 11349, 12154, 12192,  
 12193, 12634, 12673, 12674,  
 12973, 13012, 13013  
 \ifetex@unexpanded . . . . . 1771  
 \iffalse . . . . . 831, 5509  
 \ifFileExists . . . . . 6024, 11914  
 \ifFld@checked 5443, 12472, 13403  
 \ifFld@comb . . . . . 5290  
 \ifFld@combo . 5318, 5323, 12167,  
 12196, 12647, 12677, 12986,  
 13016  
 \ifFld@disabled . . . . 5444, 12473  
 \ifFld@edit . . . . . 5324  
 \ifFld@fileselect . . . . . 5293  
 \ifFld@hidden 12131, 12181, 12250,  
 12270, 12293, 12311, 12371,  
 12383, 12393, 12476, 12611,  
 12662, 12743, 12764, 12792,  
 12812, 12942, 13001, 13100,  
 13125, 13154, 13179  
 \ifFld@multiline . . . . 5291, 12120,  
 12378, 12599, 12930  
 \ifFld@multiselect . . . . . 5362  
 \ifFld@password . . . 5292, 12359  
 \ifFld@popdown . . . 5110, 12168,  
 12648, 12987  
 \ifFld@radio . 12164, 12186, 12408,  
 12644, 12667, 12983, 13006  
 \ifFld@readonly . . . 12380, 12390,  
 12474  
 \ifForm@html . . . . . 5464  
 \ifhmode . 2426, 2430, 2483, 2492,  
 4652, 6905, 7023, 7032, 7166,  
 7168, 8587, 8595, 11899  
 \ifHy@activeanchor . . . 396, 4988  
 \ifHy@backref . . 397, 4164, 4533,  
 5846, 7461, 7497  
 \ifHy@bookmarks . . . . 398, 4381  
 \ifHy@bookmarksnumbered . 399,  
 7958, 8009, 13657  
 \ifHy@bookmarksopen . 400, 4371  
 \ifHy@breaklinks 401, 2678, 10619,  
 10660, 10954, 10977  
 \ifHy@centerwindow . . . . .  
 402, 8877, 9444, 9872, 10491,  
 10839, 11689  
 \ifHy@CJKbookmarks . 403, 1249  
 \ifHy@colorlinks . 404, 4452, 5851,  
 11504  
 \ifHy@displaydoctitle . . . . .  
 439, 8878, 9445, 9873, 10492,  
 10840, 11690  
 \ifHy@draft . . . . . 405, 4045  
 \ifHy@DviMode . 2822, 2842, 3000  
 \ifHy@DvipdfmxOutlineOpen . .  
 . . . . . 4354, 13913  
 \ifHy@escapeform . . . 408, 13254,  
 13284  
 \ifHy@figures 409, 4144, 5831, 7768  
 \ifHy@fitwindow 410, 8876, 9443,  
 9871, 10490, 10838, 11688  
 \ifHy@frenchlinks . . . . 411, 4468  
 \ifHy@href@ismap . . . 4708, 8698,  
 9780, 10138, 10206, 11203  
 \ifHy@hyperfootnotes . 412, 6965  
 \ifHy@hyperindex 413, 4154, 5841,  
 7775  
 \ifHy@hypertextnames 414, 6568,  
 6650, 7553, 7963, 8014  
 \ifHy@implicit . . 415, 4176, 13968  
 \ifHy@linktocpage 416, 2635, 2645  
 \ifHy@localanchorname 417, 6601,  
 6612  
 \ifHy@menubar . 418, 8874, 9441,  
 9869, 10488, 10836, 11686  
 \ifHy@naturalnames . . 419, 6580,  
 7964, 8015  
 \ifHy@nesting . . 420, 4149, 4751,  
 4784, 4819, 4973, 5836, 6990,  
 7005, 7062, 7219  
 \ifHy@newwindow . . . 422, 3961,  
 10185  
 \ifHy@newwindowset . . 421, 3959  
 \ifHy@next . . . . 1007, 4118, 7792  
 \ifHy@ocgcolorlinks . . 423, 3374,  
 4438, 4448, 5856, 8453, 8471,  
 8548, 8556, 9561, 9644, 9652  
 \ifHy@pageanchor 424, 6637, 6649,  
 6664, 7552  
 \ifHy@pagelabels 425, 6123, 6315,  
 6393  
 \ifHy@pdfa . . . . . 440, 4069,  
 4440, 4875, 5123, 5699, 5748,  
 5861, 8621, 8693, 8731, 8768,  
 9100, 9706, 9738, 9771, 9799,  
 10144, 10165, 10188, 10212,  
 10244, 10276, 10292, 11078,  
 12089, 12240, 12286, 12563,  
 12733, 12785, 12900, 13089,  
 13147, 13360, 13406, 13570  
 \ifHy@pdfmarkerror 10886, 10894  
 \ifHy@pdfpagehidden . 426, 3509,  
 9004, 10429, 10715  
 \ifHy@pdfstring . . 427, 929, 6485  
 \ifHy@plainpages 428, 4159, 6651,  
 7554  
 \ifHy@psize . . . . . 429  
 \ifHy@raiselinks . 430, 9184, 9264,  
 9301, 9339, 11574, 11849  
 \ifHy@seminarslides . . . . . 431  
 \ifHy@setpagesize 432, 9032, 9929,  
 10068, 11339  
 \ifHy@setpdfversion . . 2801, 8458  
 \ifHy@texht 433, 4480, 4528, 5534,  
 5566, 5719, 5743, 5899, 8118  
 \ifHy@toolbar . . 434, 8873, 9440,  
 9868, 10487, 10835, 11685  
 \ifHy@typexml . . 395, 4169, 4455,  
 4499, 5986, 13862, 13944  
 \ifHy@unicode . 435, 542, 575, 578,  
 725, 737, 765, 773, 782, 1108,  
 1268, 1971, 1992, 2005, 2034,  
 2040, 2300, 2711, 2761, 3661,  
 6339, 13306  
 \ifHy@useHidKey . . . . 3505, 9001,  
 10428, 10710  
 \ifHy@usetitle . . . . . 436, 6039  
 \ifHy@verbose . . 437, 4615, 4631,  
 4643, 5066, 7621  
 \ifHy@windowui . 438, 8875, 9442,  
 9870, 10489, 10837, 11687  
 \ifHyField@NeedAppearances . . .  
 . . . 5507, 5509, 5512, 12091,  
 12565, 12902  
 \ifHyInfo@AddonUnsupported . .  
 . . . . 3787, 3801, 3836  
 \ifHyPsd@XeTeXBigChars . . 829,  
 831, 834, 837  
 \ifmeasuring@ . . . . . 6505, 6518  
 \ifmmode . . . . . 10622, 10949  
 \ifnum . . . . . 258,  
 861, 864, 867, 870, 873, 984,  
 1109, 1112, 1123, 1124, 1128,  
 1136, 1140, 1143, 1153, 1175,  
 1198, 1338, 1449, 1465, 1469,  
 1489, 1502, 1505, 1518, 1520,  
 1533, 1535, 1541, 2179, 2182,  
 2258, 2301, 2304, 2316, 2431,  
 2927, 2930, 2956, 3425, 3426,  
 4365, 4372, 4685, 5345, 5416,  
 5427, 6158, 6177, 6193, 6295,  
 8072, 8110, 8454, 8459, 8793,  
 8800, 8806, 8814, 9673, 9678,  
 10185, 10304, 10440, 10448,  
 10450, 10451, 10461, 10464,  
 10550, 10552, 10672, 11366,  
 12547, 12710, 13042, 13047,  
 13058, 13305, 13386, 13416,  
 13421, 13443, 13449, 13477,  
 13510, 13516, 13535, 13545,  
 13550, 13580, 13585, 13614,  
 13630, 13774, 13844, 13847,  
 13874, 13877, 13915, 14024,  
 14042, 14057  
 \ifodd . . . . . 2282, 2287, 7576  
 \ifpdf . 256, 2824, 2867, 4210, 4274

<code>\ifpdfstringunicode</code> . . . .	547, 550		
<code>\ifportrait</code> . . . . .	9043		
<code>\ifthenelse</code> . . . . .	7487		
<code>\iftrue</code> 834, 1778, 1800, 2064, 5512, 14026			
<code>\ifvmode</code> . . . . .	2442, 2464, 2473		
<code>\ifvoid</code> . . . . .	6772, 6776, 6942		
<code>\ifvtex</code> . . . . .	2830, 2926, 2955		
<code>\ifvtexdvi</code> . . . . .	2831		
<code>\ifvtexhtml</code> . . . . .	4249, 4280		
<code>\ifvtexpdf</code> . . . . .	4291		
<code>\ifvtexps</code> . . . . .	4294		
<code>\ifxetex</code> 788, 821, 2827, 2900, 3660, 4234, 4277, 4355			
<code>\ignorespaces</code> . . . .	666, 6732, 6900, 7098, 7204, 7215, 7218, 7275, 7283, 7345, 7360, 7376, 7385, 7495, 7943, 7995		
<code>\IJ</code> . . . . .	14283, 14965		
<code>\ij</code> . . . . .	14492, 14967		
<code>\immediate</code> . . . . .	5987, 5988, 5989, 5991, 6031, 6308, 6398, 6406, 6661, 6689, 7340, 7355, 7371, 7381, 7411, 7434, 7460, 7490, 8473, 8488, 8503, 10555, 11363, 12489, 12511, 12553, 13764, 13830, 13861, 13863, 13943, 13945		
<code>\incr@eqnum</code> . . . . .	6791, 6804		
<code>\index</code> . . . . .	655		
<code>\indexentry</code> 7830, 7845, 7853, 7857, 7862			
<code>\input</code> . . . . .	912, 920, 2720, 3346, 3354, 3361, 4329, 11281, 11364, 11455, 11624		
<code>\InputIfFileExists</code> . .	4029, 13854, 13888, 13933, 13935		
<code>\inputlineno</code> . . . . .	4622, 4980		
<code>\insert</code> . . . . .	7077		
<code>\IntCalcAdd</code> . . . . .	2208		
<code>\IntCalcDec</code> . . . . .	1360		
<code>\IntCalcDiv</code> 1354, 1363, 1368, 1471, 1480, 1492, 1509, 1524, 1539, 2192, 2198, 2204			
<code>\intcalcDiv</code> .	1344, 2199, 2206, 2209		
<code>\IntCalcMod</code> . .	1356, 1365, 1371, 1475, 1481, 1496, 1512, 1527, 1541, 1543, 2194, 2199, 2200, 2206, 2209, 2211		
<code>\intcalcMod</code> . . . . .	1346		
<code>\intcalcSub</code> . . . . .	2186		
<code>\interfootnotelinepenalty</code> . .	7080		
<code>\interlinepenalty</code> . . . . .	7080		
<code>\item</code> 6462, 6465, 7367, 7379, 7482			
<code>\Itemautorefname</code> . . . . .	8353		
<code>\itemautorefname</code> . . .	3077, 3095, 3113, 3131, 3149, 3167, 3185, 3214, 3215, 3243, 3261, 8353, 8354, 8357		
<code>\itemindent</code> . . . . .	6943		
<code>\itshape</code> . . . . .	608		
<b>J</b>			
<code>\j</code> . . . . .	14972, 15157, 15221		
<code>\jarr</code> . . . . .	16578		
<code>\jeem</code> . . . . .	16550		
<code>\jeh</code> . . . . .	16586		
<code>\jobname</code> 5988, 6024, 6031, 11914, 13763, 13854, 13861, 13888, 13933, 13935, 13943			
<b>K</b>			
<code>\k</code> . . . .	14167, 14509, 14511, 14516, 14518, 14561, 14579, 14598, 14605, 14869, 14871, 14909, 14911, 14956, 14958, 14959, 15094, 15096, 15153, 15155, 15752, 15791, 15794		
<code>\kaf</code> . . . . .	16568		
<code>\kasra</code> . . . . .	16581		
<code>\keepPDF@SetupDoc</code> 11508, 11515			
<code>\kern</code> 1874, 1946, 1951, 1963, 6943, 7571, 7572, 7573, 7575, 7576, 7581, 13983			
<code>\kernel@ifnextchar</code> . . . . .	685		
<code>\kha</code> . . . . .	16552		
<code>\KV@href@pdfnewwindow</code> .	4706		
<code>\KV@href@pdfnewwindow@default</code> . . . . .	4707		
<code>\KV@Hyp@draft</code> . . . . .	2609		
<code>\KV@Hyp@nolinks</code> . . . . .	2609		
<code>\KV@Hyp@pdfnewwindow</code> .	4706		
<code>\KV@Hyp@pdfnewwindow@default</code> . . . . .	4707		
<code>\kv@key</code> . .	3795, 3798, 3805, 5343, 5346, 5348, 5352, 5356		
<code>\kv@parse</code> . . . . .	5342		
<code>\kv@parse@normalized</code> 3820, 3827			
<code>\kv@processor@default</code> 3823, 3830			
<code>\kv@set@family@handler</code> . .	3788		
<code>\kv@value</code> .	3793, 5344, 5351, 5352		
<code>\kvsetkeys</code> . . . . .	2800, 2854, 2974, 3667, 3768, 4070, 4304, 4322, 4439, 5441, 8455, 10893, 12108, 12344, 12357, 12406, 12449, 12470, 12544, 12885		
<b>L</b>			
<code>\L</code> . . . . .	14276, 14996		
<code>\l</code> . . . . .	14289, 14998		
<code>\l@slide</code> . .	7943, 8053, 8058, 8062, 8069		
<code>\l@subslide</code> .	7995, 8058, 8065, 8109		
<code>\label</code> . . . . .	654, 7594		
<code>\label@@hyperref</code> . . . .	4791, 4793		
<code>\label@hyperdef</code> . . . .	4777, 4805		
<code>\label@hyperref</code> .	4758, 4790, 5002		
<code>\labelsep</code> . . . . .	7494		
<code>\labelwidth</code> . . . . .	7493		
<code>\lam</code> . . . . .	16569		
<code>\language@group</code> . . . . .	633		
<code>\languageshorthands</code> . .	965, 966, 1000		
<code>\LARGE</code> . . . . .	615		
<code>\Large</code> . . . . .	616		
<code>\large</code> .	619, 8075, 8083, 8093, 8101		
<code>\lastbox</code> . . . . .	6941		
<code>\lastpage@putlabel</code> . . . . .	6632		
<code>\lastskip</code> .	2465, 2469, 2476, 2484, 2488, 2495		
<code>\LaTeX</code> . . .	572, 574, 11920, 11921		
<code>\LaTeXe</code> . . . . .	573, 11921		
<code>\LayoutCheckField</code> .	5787, 12312, 12813, 13184		
<code>\LayoutChoiceField</code> .	5784, 12185, 12666, 13005		
<code>\LayoutPushButtonField</code> . .	5790, 12244, 12251, 12737, 12744, 13093, 13102		
<code>\LayoutTextField</code> . . .	5781, 12133, 12613, 12948		
<code>\lccode</code> . . . . .	364, 369, 860, 1278, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2223, 5659, 7789, 7790, 13688, 13689, 13690, 13691, 13692, 13693, 13694, 13695, 13696, 13697, 13698		
<code>\ldots</code> . . . . .	567		
<code>\leavevmode</code> 663, 2420, 4055, 4072, 4112, 4880, 5957, 7022, 7165, 7401, 8213, 8221, 8607, 8678, 8716, 8753, 9183, 9263, 9300, 9338, 9727, 9764, 9963, 9972, 10026, 10180, 10203, 10231, 10262, 10621, 10947, 11192, 11219, 11250, 11573, 11848, 12245, 12252, 12285, 12698, 12719, 12738, 12745, 12765, 12784, 13040, 13071, 13094, 13103, 13127, 13146, 13981			
<code>\letLTXcmds@gttemp</code> . . . . .	240		
<code>\LetLtxMacro</code> .	5902, 5906, 5974, 5978		
<code>\limits</code> . . . . .	4598		
<code>\listofslides</code> . . . . .	8044		
<code>\listslidenam</code> .	8043, 8046, 8048, 8050		
<code>\literalps@out</code> 2418, 10544, 10549, 10601, 10607, 10633, 10639, 10904, 10915, 10944, 10945,			

10973, 10975, 10984, 10986,  
11279, 11362, 11425, 11622  
\lower . . . 9190, 9270, 9307, 9345,  
10975, 11580, 11855  
\lowercase . . . 365, 370, 880, 1279,  
2083, 2224, 2511, 3021, 3051,  
3735, 3771, 5015, 5016, 5019,  
5024, 5048, 5058, 5112, 5168,  
5488, 5561, 5564, 5660, 7791,  
10671, 13699  
\lslide@flag 8070, 8073, 8091, 8110,  
8114  
\LT@array . . . . . 6757  
\LT@foot . . . . . 6772, 6776  
\LT@p@ftn . 7038, 7041, 7045, 7055  
\LT@p@ftntext . . . . . 7036, 7043  
\LT@start . . . . . 6774, 6784  
\ltx@backslashchar . 332, 333, 334,  
335, 336, 337, 338, 339, 340,  
341, 342, 344  
\ltx@empty . 237, 240, 2823, 2998,  
3006, 3502, 4297, 4307, 10931  
\ltx@firstofone 2843, 13716, 13728  
\ltx@firstoftwo 259, 351, 359, 4514,  
4936  
\ltx@gobble 286, 2849, 6276, 13714,  
13726  
\ltx@ifpackagelater . . . . . 362  
\ltx@ifpackageloaded . . . . . 1245  
\ltx@ifundefined . . 253, 292, 298,  
327, 632, 675, 750, 785, 903,  
904, 905, 1008, 1014, 1020,  
1025, 1030, 1037, 1043, 1049,  
1054, 1060, 1065, 1075, 1081,  
1087, 1093, 1232, 1238, 1615,  
1710, 1711, 2372, 2405, 4115,  
4116, 4117, 4513, 4514, 4710,  
6079, 6446, 6533, 6537, 6852,  
7303, 8241, 8242, 8286, 8287,  
8289, 8290, 8655, 8665, 9063,  
10070, 10127, 10226, 10597,  
10640, 10731, 10908, 14015,  
14025  
\ltx@ifundefined . . . . . 6950  
\ltx@leftbracechar . . . . . 342, 366  
\ltx@LocalAppendToMacro . 234,  
379, 382  
\ltx@one . . . . . 258  
\ltx@rightbracechar . . . . 343, 371  
\ltx@secondoftwo . . 254, 261, 265,  
348, 4513, 4514, 4516, 4934  
\ltx@space . . . . . 345  
\ltx@undefined . . . . . 236  
\ltx@zero . 2077, 2078, 2079, 2080,  
2081, 2082  
\LTXcmds@gttemp . 235, 236, 237,  
239, 244, 245, 247  
\luatexrevision . . . . . 8837  
\luatexversion . . . . . 8829, 8834

## M

\m@ne . . . . . 4133, 4634,  
4693, 5030, 6677, 6872, 9682,  
13935, 14024, 14039  
\make@df@tag@@ . . . . 7704, 7706  
\make@df@tag@@@ . . . . 7705, 7707  
\make@stripped@name 6510, 6813,  
6835, 6859, 6870  
\makeatletter . . . . . 3, 943, 6023  
\MakeButtonField . . 5797, 12246,  
12254, 12272, 12290, 12295,  
12739, 12748, 12772, 12789,  
12795, 13095, 13098, 13126,  
13151, 13155  
\MakeCheckField . . . 5794, 12314,  
12816, 13181  
\MakeChoiceField . . 5796, 12230,  
12722, 13069  
\MakeFieldObject . 12488, 12575,  
12585, 12588  
\MakeLowercase . . . . . 630  
\MakeLowercaseUnsupportedInPdfStrings  
. . . . . 630  
\MakeRadioField . . . 5793, 12218,  
12709, 13033  
\makeslideheading . . . . . 7953  
\makeslidesubheading . . . . 8005  
\maketag@@@ . . . . . 7693  
\MakeTextField . . . . 5795, 12135,  
12616, 12945  
\maketitle . . . . . 7115, 7116  
\MakeUppercase 629, 8048, 8050,  
8204  
\MakeUppercaseUnsupportedInPdfStrings  
. . . . . 629  
\MathBSuppress . . . . 9973, 9977  
\mathdisplay . . . . . 6794, 6803  
\mathdisplay@push . . 6792, 6801  
\mathversion . . . . . 624  
\maxdimen . . . . . 3446, 12493  
\MaybeStopEarly 482, 2857, 2932,  
4180, 4282, 6426  
\mbox 664, 7414, 7437, 8558, 9654  
\mddefault . . . . . 6912  
\mdseries . . . . . 607  
\meaning . . . . . 62, 153,  
159, 2381, 6063, 6593, 6877,  
13899, 13907, 13922  
\measuring@false . . . . . 6505  
\mediaheight 10064, 10066, 10072,  
10079  
\mediawidth . . . . . 10075, 10082  
\meem . . . . . 16570  
\message . . . . . 8071  
\MessageBreak . . . . . 294, 300,  
314, 315, 354, 355, 515, 1977,  
1998, 2011, 2034, 2039, 2041,  
2533, 2534, 2548, 2570, 2573,  
2575, 2653, 2654, 2680, 2681,  
2733, 2734, 2735, 2773, 2774,  
2794, 2805, 2846, 2871, 2904,  
2942, 2949, 2960, 2966, 3043,  
3376, 3498, 3499, 3550, 3551,  
3569, 3570, 3664, 3748, 3803,  
3804, 3914, 3915, 4017, 4214,  
4215, 4223, 4224, 4238, 4239,  
4253, 4254, 4262, 4263, 4442,  
4687, 4688, 4712, 4713, 4729,  
4730, 5069, 5074, 5083, 5126,  
5172, 5296, 5409, 5481, 5492,  
5524, 5525, 5544, 5618, 5619,  
5620, 5621, 6128, 6342, 6357,  
6358, 6640, 7598, 7628, 7629,  
7630, 7631, 7632, 7763, 8611,  
9691, 10156, 10235, 10740,  
12501, 12503, 13635, 13653,  
13766  
\MF . . . . . 582, 11923  
\MP . . . . . 583, 11924  
\multiply . . . . . 8833, 10409, 10444

## N

\n . . . . . 871  
\name@of@eq . . . . . 6478, 6508  
\name@of@slide . . . . . 6479, 6489  
\nameref . . . . . 661, 4518, 4522  
\nasb . . . . . 16576  
\netscape . . . . . 9226  
\new@ifnextchar . . . . . 686  
\new@pdfink . . . . . 8586, 8643, 8646  
\new@refstepcounter . 6786, 6818  
\newblock . . . . . 7498  
\newcommand . . . . . 4,  
9, 42, 2419, 5961, 5965, 6441,  
6444, 6447, 6448, 6449, 6451,  
6452, 6453, 6454, 6456, 6457,  
6458, 6459, 6460, 6461, 6470,  
6471, 6472, 6473, 6474, 6475,  
6868, 7731, 7930, 7935, 7936,  
13736, 13739, 13744  
\newcount . . . . . 483,  
484, 2424, 4678, 5447, 6139,  
12226, 12716, 12916, 13065,  
13771  
\newcounter . . . . . 6463, 6966, 9560,  
13686  
\newdimen . . . . . 480, 5448, 5449  
\newif . . . . . 395, 396, 397, 398,  
399, 400, 401, 402, 403, 404,  
405, 408, 409, 410, 411, 412,  
413, 414, 415, 416, 417, 418,  
419, 420, 421, 422, 423, 424,



425, 426, 427, 428, 429, 430,  
431, 432, 433, 434, 435, 436,  
437, 438, 439, 440, 829, 1007,  
2801, 2822, 3505, 3787, 4354,  
4708, 5022, 5110, 5443, 5444,  
5464, 5507, 6480, 6481, 6505,  
6822, 9952, 10886

\newlabel . 2384, 4815, 6001, 6002,  
6010, 6036, 6662, 6690

\newlabelxx . . . . . 6003, 6004

\newlength . . . . . 13974

\newline . . . . . 570, 6084

\newname 6511, 6814, 6836, 6860,  
6873, 6882

\newsavebox . . . . . 9490, 10923

\newtie 14169, 14170, 14553, 14583,  
14602, 14618

\newtoks . 90, 5535, 10758, 10995,  
10996

\newwrite . . . 6030, 13859, 13941

\next . . . 7488, 7489, 7490, 10372,  
10374, 10376

\nfss@text . 8125, 8145, 8162, 8279

\NG . . . . . 15014

\ng . . . . . 15016

\noboundary . . . . . 16591

\nobreak . 2466, 2474, 2485, 2493,  
7023, 7166

\nobreakspace . . 674, 8216, 8245,  
8248

\noexpand . . . . . 22,  
93, 95, 108, 116, 169, 171, 172,  
173, 176, 206, 849, 953, 1292,  
1725, 1742, 1865, 2237, 2472,  
2473, 2474, 2477, 2491, 2492,  
2493, 2496, 3304, 3306, 3308,  
3309, 3310, 3312, 3328, 3516,  
3517, 3519, 3853, 4135, 4139,  
4140, 4304, 4592, 4765, 4845,  
4975, 4977, 5078, 6231, 6232,  
6241, 6243, 6246, 6371, 6674,  
6675, 6677, 6702, 6703, 6704,  
6705, 6706, 6714, 6715, 6716,  
6876, 7039, 7047, 7048, 7049,  
7051, 7175, 7264, 7339, 7354,  
7370, 7723, 7725, 8178, 8179,  
8295, 8296, 8301, 8303, 8308,  
8309, 8314, 8315, 8836, 9428,  
10823, 10890, 11422, 11673,  
12160, 12161, 12162, 12163,  
12640, 12641, 12642, 12643,  
12979, 12980, 12981, 12982,  
13256

\nofrenchguillemets . . . . 693, 695

\NoHy@OrgPageRef . . 5906, 5908,  
5978, 5980

\NoHy@OrgRef 5902, 5904, 5974,  
5976

\NoHyper . . . . . 5910

\nohyperpage . . 5956, 7874, 7876,  
7878

\nolinkurl . . . . . 4744

\nolinkurl@ . . . . . 4744, 4745

\NomFancyVerbLineautorefname  
. . . . . 3232

\Nomfootnoteautorefname . 3212

\Nomtheoremautorefname . 3236

\nonumber . . . . . 6847, 6850

\normalfont . . . . . 602, 6908

\normalsize . . . . . 620, 7211, 7282

\NR@getttitle . . . . . 7201

\null . . . . . 7479, 7487, 8167, 8275

\number . 1126, 1130, 1133, 1141,  
1144, 1146, 1451, 1453, 1480,  
1481, 2183, 2241, 2242, 2243,  
2244, 2248, 2249, 2250, 2251,  
2252, 2256, 2257, 2258, 2259,  
2260, 2261, 2262, 2266, 2267,  
2268, 2269, 2270, 2271, 2274,  
2276, 2280, 2281, 2283, 2285,  
2287, 2290, 2294, 2295, 2296,  
2297, 2306, 2307, 2311, 2312,  
2319, 2320, 2324, 2327, 2328,  
2329, 2339, 2341, 2342, 2347,  
2349, 2350, 2355, 2356, 3873,  
4356, 4373, 5036, 6570, 6571,  
6574, 6578, 8465, 8468, 9254,  
9272, 9273, 9288, 9289, 9309,  
9310, 9326, 9327, 9347, 9348,  
9364, 9365

\numberline . . . 7204, 7275, 13658,  
13663

\numberwithin . . . . . 7728

\numexpr . 2248, 2249, 2250, 2252,  
2258, 2266, 2267, 2268, 2269,  
2270, 2271, 2275, 2277, 2281,  
2283, 2285, 2287, 2291, 2294,  
2295, 2297, 2306, 2311, 2328,  
2342, 2350, 2356, 3877

\nun . . . . . 16571

**O**

\O . . . . . 14409, 14777, 15172

\o . . . . . 14477, 14845, 15174

\obeylines . . . . . 11421

\OBJ@acroform . . . 12571, 12572

\OBJ@Helv . 12550, 12559, 12875

\OBJ@OCG@print . . . 8502, 8505,  
8513, 8539, 9578, 9580, 9593,  
9597, 9606, 9635

\OBJ@OCG@view . . . 8487, 8505,  
8538, 9562, 9564, 9577, 9597,  
9634

\OBJ@OCGs . . . 8508, 8511, 8517,  
8522, 8527, 9594, 9596, 9600,  
9604, 9610, 9615, 9620

\OBJ@pdfdocencoding . . . 12548,  
12856, 12872

\OBJ@ZaDb 12549, 12558, 12865

\OCIRCUMFLEX . 16414, 16512,  
16513, 16514, 16515, 16516

\ocircumflex 16407, 16452, 16453,  
16454, 16455, 16456

\oddsidemargin . . . . . 7577

\OE . . . . . 14278, 15030

\oe . . . . . 14291, 15032

\offinterlineskip . . . . . 6110

\OHORN . . . 16415, 16517, 16518,  
16519, 16520, 16521

\ohorn . . 3259, 3266, 16408, 16457,  
16458, 16459, 16460, 16461

\oldb . . . . . 903

\oldc . . . . . 904

\oldcontentsline . 5996, 5999, 6009

\oldd . . . . . 905

\oldnewlabel . . . 6001, 6006, 6010

\OMEGA . . . . . 11919

\on@line . . . . . 7625, 7626

\openout 5988, 6031, 13861, 13943

\OpMode . 2927, 2930, 2943, 2956,  
2961, 10461, 10552, 11366

\or . . . . . 349,  
1160, 1161, 1162, 1163, 1164,  
1165, 1166, 1167, 1168, 1182,  
1183, 1184, 1185, 1186, 1187,  
1188, 1189, 1190, 1205, 1206,  
1207, 1208, 1209, 1210, 1211,  
1212, 1213, 1298, 1299, 1300,  
1301, 1302, 1303, 1304, 1305,  
1306, 1307, 1308, 1309, 1310,  
1311, 1312, 1313, 1314, 1315,  
1316, 1317, 1318, 1319, 1320,  
1321, 1322, 1323, 1324, 1325,  
1326, 1327, 1328, 1329, 1347,  
1369, 1372, 1378, 1379, 1380,  
1381, 1382, 1383, 1384, 1385,  
1386, 1387, 1388, 1389, 1390,  
1391, 1392, 1393, 1394, 1395,  
1396, 1397, 1398, 1399, 1400,  
1401, 1402, 1403, 1404, 1405,  
1406, 1407, 1408, 1409, 1414,  
1415, 1416, 1417, 1418, 1419,  
1420, 1421, 1422, 1423, 1424,  
1425, 1426, 1427, 1428, 1429,  
1430, 1431, 1432, 1433, 1434,  
1435, 1436, 1437, 1438, 1439,  
1440, 1441, 1442, 1443, 1444,  
1445, 1458, 1459, 1460, 1461,  
1462, 1574, 1575, 1576, 5196,  
5202, 5207, 5421, 6545, 6546,

6547, 6548, 6554, 6555, 6556, 6557, 7648, 7652, 8090, 8099, 10454, 13779, 13780, 13781, 13782, 13783, 13784, 13785, 13786, 13787, 13788, 13789, 13790, 13791, 13792, 13793, 13794, 13795, 13796, 13797, 13798, 13799, 13800, 13801, 13802, 13803, 13804, 13805, 13806, 13807, 13808, 13809, 13810	11125, 11126, 11127, 11128, 11129, 11130, 11131, 11132, 11137	\PDFForm@Push . . 12253, 12255, 12746, 12747, 13104, 13108, 13406
<b>P</b>		\PDFForm@Radio . 12217, 12221, 12699, 12701, 13041, 13053, 13468
\P . . . . . 566	\pdf@addtoksx 10992, 11002, 11015	\PDFForm@Reset . 12294, 12296, 12793, 12794, 13156, 13161, 13570
\p@ . . . . . 2307, 2312, 5450, 5456, 6914, 9199, 9283, 9321, 9359, 10408, 11589, 11869, 12156, 12636, 12975, 14099, 14100	\pdf@box . . . 10923, 10955, 10963, 10971, 10972, 10975, 10982	\PDFForm@Submit 12271, 12274, 12766, 12768, 13128, 13133, 13537
\p@equation . . . . . 7700	\pdf@defaulttoks . . 10890, 10996, 10997, 11007	\PDFForm@Text . . 12134, 12136, 12614, 12615, 12949, 12952, 13502
\PackageError . . . . . 61	\pdf@docset . . . . . 10758	\pdfhorigin . . . . . 9040
\PackageInfo . . 8449, 8463, 12499	\pdf@endanchor . 8599, 8643, 8650	\pdfinfo . . . . . 8916
\PackageWarning . . . . 2804, 5407	\pdf@escapestring . . . . . 8425	\pdflastform . . . . . 8580
\pageautorefname . . . 3090, 3108, 3126, 3144, 3162, 3180, 3198, 3238, 3256, 3274, 8248, 8370	\PDF@FinishDoc 2860, 2861, 2935, 2936, 4004, 4057, 4183, 4184, 4285, 4286, 5955, 6120, 6121, 8912, 9123, 9377, 9826, 9953, 10520, 10759, 11629, 11790	\pdflastlink . . . . . 12529
\pagename . . . . . 8245	\pdf@ifdraftmode . . . . 254, 257, 265, 6275, 8472, 8913, 9022, 12545, 13871	\pdflastobj 8487, 8502, 8508, 12571, 12856, 12865, 12875
\pageref . . . 660, 4190, 4509, 5906, 5907, 5978, 5979, 6640, 8234, 8238	\pdf@linktype 10908, 10912, 11012, 11013	\pdflastxform . 8580, 12491, 12493
\paperheight . . . . . . . . . 4010, 9048, 9050, 9053, 9055, 9067, 9068, 9933, 9934, 10071, 10072, 10074, 11343, 11344	\pdf@rect . . . 10900, 10914, 10927	\pdflinkmargin . . 8575, 8578, 8583
\paperwidth . . . 9044, 9046, 9057, 9059, 9064, 9065, 9932, 9934, 10075, 11342, 11344	\PDF@SetupDoc . . . . . 4003, 4056, 5873, 5874, 5954, 8843, 9124, 9408, 9866, 9954, 10469, 10810, 11510, 11660, 11791	\pdfliteral . . . . . 8559, 8561, 8566
\par . 6906, 7203, 7231, 7273, 7283, 7481, 7501	\PDF@SetupDox . . . . . 8843	\pdfm@box . . 9490, 12912, 12913, 12914, 12944, 12955, 13032, 13057, 13068, 13079, 13098, 13111, 13126, 13135, 13155, 13163, 13180, 13191
\paragraphautorefname . . . 3086, 3104, 3122, 3140, 3158, 3176, 3194, 3227, 3229, 3252, 3270, 8366	\pdf@strcmp . . . . . 984	\pdfmark . 6389, 9428, 9437, 9467, 10588, 10608, 10647, 10682, 10699, 10711, 10745, 10782, 10794, 10823, 10832, 10863, 10887, 11145, 11159, 11174, 11186, 11193, 11220, 11251, 11673, 11682, 11713, 12135, 12218, 12230, 12254, 12272, 12295, 12314, 13903
\partautorefname 3080, 3098, 3116, 3134, 3152, 3170, 3188, 3218, 3246, 3264, 8360	\pdf@toks . . 10890, 10905, 10916, 10995, 10999, 11003	\pdfmark@ . . . . . 10887, 10888
\partnumberline . . . 13660, 13665	\pdf@type . . 10892, 10896, 10905, 10916, 10990, 11010	\pdfmatch . . . . . 346
\PassOptionsToPackage . . . 2975, 3032, 3036, 3058, 4039, 4323	\pdfannotlink . . . . . 8577	\pdfminorversion . . . . . 8446
\pdf@addtoks 10998, 11017, 11023, 11032, 11039, 11043, 11045, 11047, 11049, 11051, 11059, 11068, 11072, 11074, 11076, 11079, 11088, 11092, 11094, 11096, 11098, 11100, 11102, 11104, 11106, 11108, 11110, 11112, 11114, 11116, 11118, 11120, 11122, 11123, 11124,	\pdfbookmark . 2419, 5960, 5961, 13737, 13742, 13747, 13751	\PDFNextPage . . 11157, 11158
	\pdfcatalog 6278, 8509, 8858, 8900, 12572	\pdfobj . 8473, 8488, 8503, 12553, 12823, 12857, 12866
	\PDFdefaults . . . . . 11006	\PDFOpen . . . . . 11185
	\pdfdest . . . . . 8601	\pdfoptionpdfminorversion 8443
	\pdfdraftmode . . . . . 258	\pdfoutline . . . . . 13952
	\pdfendlink . . 8640, 12616, 12709, 12723, 12749, 12773, 12796, 12817	\pdfpageattr . . 8956, 8960, 8961, 8971, 8980, 8984, 8985, 8995, 9003, 9006, 9007, 9017
	\pdfescapestring . . . . . 13285	\pdfpageheight 9050, 9059, 9068, 9075
	\pdfform . . . . . 8579	\pdfpagemresources . . . . . 8536
	\PDFForm@@Name 13293, 13296, 13300, 13303	\pdfpagesattr . . . 8847, 8849, 8851
	\PDFForm@Check . 12313, 12315, 12814, 12815, 13185, 13189, 13377	\pdfpagewidth . 9046, 9055, 9065, 9072
	\PDFForm@List . . . 12229, 12231, 12720, 12721, 13072, 13077, 13435	
	\PDFForm@Name . 12609, 12661, 12732, 12810, 12940, 13000, 13088, 13177, 13292	

<code>\PDFPreviousPage</code> . . . . .	11170				
<code>\PDFPreviousPage@</code> 11171, 11173					
<code>\pdfrefform</code> . . . . .	8581				
<code>\pdfrefobj</code> . . . . .	12548, 12549, 12550				
<code>\pdfrefxform</code> . . . . .	8581, 12493				
<code>\pdfstartlink</code> . . . . .	8576, 8577, 8635, 8679, 8717, 8754, 9086, 12615, 12700, 12721, 12747, 12767, 12794, 12815				
<code>\pdfstringdef</code> 535, 816, 3690, 3696, 3702, 3708, 3713, 3719, 3726, 3732, 3812, 5368, 5373, 5399, 6087, 6167, 6169, 6655, 7560, 13311, 13669					
<code>\pdfstringdefDisableCommands</code> . . . . .	902, 941, 5958, 6082				
<code>\pdfstringdefPostHook</code> . . . . .	812, 935				
<code>\pdfstringdefPreHook</code> . . . . .	670, 935, 947, 949, 6081, 6091				
<code>\pdfstringdefWarn</code> . . . . .	569, 570, 665, 952, 1733, 1738, 1757, 1761				
<code>\pdftexrevision</code> . . . . .	8803, 8811, 8822				
<code>\pdftexversion</code> . . . . .	8798, 8800, 8803, 8806, 8809, 8810, 8814, 8820, 8821, 12547				
<code>\pdfvorigin</code> . . . . .	9041				
<code>\pdfxform</code> . . . . .	8579, 12489				
<code>\peh</code> . . . . .	16584				
<code>\penalty</code> . . . . .	1868, 2446, 4653, 7408, 7431				
<code>\phantom</code> . . . . .	625				
<code>\phantomsection</code> 4005, 5962, 7600, 13604, 13655, 14043					
<code>\Preamble</code> . . . . .	11915				
<code>\PrerenderUnicode</code> . . . . .	3681				
<code>\process@me</code> . . . . .	6061, 6073, 6074, 8846, 8855				
<code>\ProcessKeyvalOptions</code> . . . . .	4043				
<code>\protect</code> . . . . .	1866, 4795, 7204, 7275, 7339, 7354, 7370, 7486, 7493, 7494, 7638, 7669, 7943, 7995, 8124, 8144, 8150, 8161, 8278, 9134, 9231, 10024, 10099, 11521, 11801, 13676, 13976, 14099, 14100				
<code>\protected@edef</code> . . . . .	4830, 6227, 6745, 6874, 6894, 8608, 9688, 10153, 10232, 10737				
<code>\protected@write</code> 2383, 4814, 7466, 7829, 7844, 7852, 7856, 7861, 13675					
<code>\protected@xdef</code> . . . . .	7048, 7141				
<code>\providecommand</code> . . . . .	2400, 2401, 3401, 3402, 3405, 3406, 4273, 4486, 4487, 4606, 4749, 5992, 6257, 6282, 6407, 7304, 7305, 7320, 7398, 7926, 7927, 8043, 8351, 8352, 8353, 8354, 8355, 8356, 8357, 8358, 8359, 8360, 8361, 8362, 8363, 8364, 8365, 8366, 8367, 8368, 8369, 8370, 8432, 8585, 8603, 8604, 9122, 9225, 9226, 9485, 9547, 9548, 9549, 9950, 10069, 10091, 10092, 10093, 10545, 10924, 10925, 11277, 11285, 11286, 11287, 11288, 11360, 11372, 11373, 11374, 11375, 11419, 11460, 11461, 11462, 11463, 11618, 11620, 11621, 11734, 11735, 11782, 12512				
<code>\PushButton</code> . . . . .	5769				
<code>\put@me@back</code> . . . . .	4970, 4983, 4993				
<b>Q</b>					
<code>\qaf</code> . . . . .	16567				
<code>\quotedblbase</code> 14258, 14495, 16084, 16388					
<code>\quotesinglbase</code> . . . . .	14268, 14497, 16078, 16390				
<b>R</b>					
<code>\r</code> . . . . .	874, 14136, 14148, 14160, 14370, 14435, 14544, 14571, 14590, 14612, 14739, 14803, 15086, 15088, 16048, 16050				
<code>\ra</code> . . . . .	16555				
<code>\raff</code> . . . . .	16577				
<code>\raise</code> 2453, 9200, 9284, 9322, 9360, 10986, 11590, 11870					
<code>\ReadBookmarks</code> 4042, 4060, 4197, 4390, 4530, 13835, 13870					
<code>\real@setref</code> . . . . .	8121, 8187				
<code>\realfootnote</code> . . . . .	7138				
<code>\Ref</code> . . . . .	8206, 8210, 8215				
<code>\ref</code> . . . . .	659, 4189, 4506, 5010, 5902, 5903, 5974, 5975, 7103, 7110, 8225, 11891				
<code>\ref@one</code> . . . . .	4771, 4772				
<code>\rEfLiNK</code> . . . . .	11892, 11893				
<code>\refstepcounter</code> 6477, 6484, 6504, 6727, 6750, 6751, 6752, 6761, 6786, 6810, 6818, 7267					
<code>\rem@ptetc</code> . . . . .	10672, 10674				
<code>\renewcommand</code> 2375, 7246, 7745, 13751					
<code>\RequirePackage</code> . . . . .	22, 232, 250, 251, 269, 270, 271, 272, 273, 274, 275, 276, 394, 1243, 1770, 2369, 2785, 2855, 4171, 4172, 4458, 4502, 4534, 4741, 5013, 5944, 6101, 6323, 9951, 11787, 13761				
<code>\RerunFileCheck</code> . . . . .	13763				
<code>\Reset</code> . . . . .	5778				
<code>\reset@font</code> 7414, 7437, 8125, 8145, 8162, 8279					
<code>\revtex@checking</code> . . . . .	7391				
<code>\Rightarrow</code> . . . . .	8077				
<code>\rlap</code> . . . . .	8560, 9656				
<code>\rm</code> . . . . .	613				
<code>\rmfamily</code> . . . . .	603				
<code>\Roman</code> . . . . .	6223				
<code>\roman</code> . . . . .	6224				
<code>\romannumeral</code> . . . . .	959, 960				
<code>\rule</code> . . . . .	7088				
<b>S</b>					
<code>\sad</code> . . . . .	16559				
<code>\sbox</code> . . . . .	3677, 5798, 9187, 9267, 9304, 9342, 10924, 10963, 11577, 11852, 12488				
<code>\scr@LT@array</code> . . . . .	6760				
<code>\scriptsize</code> . . . . .	621				
<code>\scriptstyle</code> . . . . .	7404				
<code>\scrollmode</code> 1785, 1810, 1820, 1833, 1925, 2057					
<code>\scshape</code> . . . . .	609				
<code>\section</code> . . . . .	8045				
<code>\sectionautorefname</code> . . . . .	3083, 3101, 3119, 3137, 3155, 3173, 3191, 3220, 3249, 3267, 8363				
<code>\seen</code> . . . . .	16557				
<code>\selectfont</code> . . . . .	589, 4469, 12581				
<code>\set@display@protect</code> . . . . .	4124				
<code>\setbox</code> . . . . .	1869, 1875, 1881, 3429, 3435, 5594, 6109, 6941, 8550, 9114, 9629, 9646, 12944, 13032, 13068, 13098, 13126, 13155, 13180				
<code>\setcounter</code> . . . . .	4684				
<code>\setkeys</code> . . . . .	4659, 4704				
<code>\setlength</code> . . . . .	519, 520, 2450, 9040, 9041, 9046, 9050, 9055, 9059, 9065, 9068, 9072, 9075, 10072, 10075, 10079, 10082, 10408, 13993, 14064				
<code>\setpdfinkmargin</code> 3860, 3861, 8575					
<code>\settowidth</code> . . . . .	12153, 12633, 12972				
<code>\SetupKeyvalOptions</code> . . . . .	2504, 4033				
<code>\sffamily</code> . . . . .	604				
<code>\shadda</code> . . . . .	16582				
<code>\sheen</code> . . . . .	16558				
<code>\shortciteN</code> . . . . .	7529				
<code>\SK@</code> . . . . .	8337				
<code>\SK@@ref</code> . . . . .	8337				
<code>\SK@ref</code> . . . . .	8334				
<code>\skip@</code> 1883, 1957, 1958, 1961, 1963, 2469, 2475, 2488, 2494					
<code>\slide@cline</code> 8063, 8076, 8084, 8094, 8102					





<code>\textdiv</code> . . . . .	14505, 16398	<code>\textinterrobang</code> . . . . .	16104	<code>\textomega</code> . .	1212, 15383, 15394
<code>\textdivide</code> . .	14475, 14505, 14843, 16398	<code>\textIota</code> 1182, 15262, 15288, 15321		<code>\textOmicron</code> .	1188, 15264, 15300
<code>\textdivorced</code> . . . . .	16378	<code>\textIota</code> 1182, 15331, 15351, 15385		<code>\textomicro</code> .	1188, 15363, 15389
<code>\textdollar</code> . . . .	561, 14199, 14630	<code>\textlotadieresis</code> . . . . .	15270, 15320	<code>\textonehalf</code> . . . . .	14354, 14723
<code>\textdong</code> . . . . .	16174	<code>\texttit</code> . . . . .	598	<code>\textoneinferior</code> . . . . .	16142
<code>\textdotaccent</code> 14138, 14150, 14162, 14185, 14573, 14592, 15227		<code>\textKappa</code> . . . . .	1183, 15290	<code>\textonequarter</code> . . . . .	14352, 14721
<code>\textdotbelow</code> 14142, 14154, 14166, 14209, 14581, 14600, 15246		<code>\textkappa</code> . . . . .	1183, 15353	<code>\textonesuperior</code> . . . . .	14346, 14715
<code>\textdoublegrave</code> . .	14576, 14595, 15242	<code>\textKoppagreek</code> . . . . .	1190, 15404	<code>\textopenbullet</code> . . . . .	16370
<code>\textdownarrow</code> . . . . .	16210	<code>\textkoppagreek</code> . . . . .	1190, 15406	<code>\textordfeminine</code> . .	14317, 14685
<code>\texteightinferior</code> . . . . .	16156	<code>\textkra</code> . . . . .	14978	<code>\textordmasculine</code> .	14348, 14717
<code>\teightsuperior</code> . . . . .	16124	<code>\textLambda</code> . . . . .	1184, 15292	<code>\textparagraph</code> 566, 14340, 14709	
<code>\textellipsis</code> 567, 568, 14240, 16092		<code>\textlambda</code> . . . . .	1184, 15355	<code>\textparenleft</code> . .	766, 767, 14205, 14638
<code>\textemdash</code> . .	758, 14242, 16070	<code>\textlangle</code> . . . . .	16216	<code>\textparenleftinferior</code> . . . . .	16160
<code>\textendash</code> . .	759, 14244, 16068	<code>\textlatin</code> . . . . .	631, 6581	<code>\textparenleftsuperior</code> . . . . .	16134
<code>\textEpsilon</code> .	1164, 15258, 15280	<code>\textlbrackdbl</code> . . . . .	16380	<code>\textparenright</code> . . . . .	14207, 14640
<code>\textepsilon</code> 575, 578, 1164, 15327, 15343		<code>\textleftarrow</code> . . . . .	16204	<code>\textparenrightinferior</code> . . . . .	16162
<code>\textequalsuperior</code> . . . . .	16132	<code>\textless</code> . . . . .	14211, 14644	<code>\textparenrightsuperior</code> . . . . .	16136
<code>\textestimated</code> . . . . .	16200	<code>\textLF</code> . . . . .	14175, 14622	<code>\textpercent</code> . . . . .	562, 14201, 14632
<code>\textEta</code> . . . .	1167, 15260, 15284	<code>\textlira</code> . . . . .	16166	<code>\textperiodcentered</code> 14342, 14507, 14711, 16400	
<code>\texteta</code> . . . .	1167, 15329, 15347	<code>\textlnot</code> . . . . .	14322, 14690	<code>\textpertenthousand</code> . . . . .	16096
<code>\texteuro</code> . . . . .	14297, 16176	<code>\textlogicalnot</code> . . . . .	14321, 14503, 14689, 16396	<code>\textperthousand</code> . .	14256, 16094
<code>\textexclamdown</code> 762, 1071, 14299, 14667		<code>\textlongs</code> . . . . .	15120, 16052	<code>\textpeseta</code> . . . . .	16170
<code>\textfi</code> . . . . .	760, 14272, 16384	<code>\textlquill</code> . . . . .	16108	<code>\textpeso</code> . . . . .	16178
<code>\TextField</code> . . . . .	5760	<code>\textmacronbelow</code> .	14141, 14153, 14165, 14220, 14580, 14599, 15248	<code>\textPhi</code> . . . . .	1209, 15312
<code>\textfiveinferior</code> . . . . .	16150	<code>\textmarried</code> . . . . .	16376	<code>\textphi</code> . . . . .	1209, 15377
<code>\textfivesuperior</code> . . . . .	16118	<code>\textmd</code> . . . . .	597	<code>\textPi</code> . . . . .	1189, 15302
<code>\textfl</code> . . . . .	761, 14274, 16386	<code>\textmho</code> . . . . .	16196	<code>\textpi</code> . . . . .	1189, 15365
<code>\textflorin</code> . . . . .	14246, 15122	<code>\textminus</code> . . . . .	14254, 16212	<code>\textplusminus</code> . . .	14330, 14506, 14698, 16399
<code>\textflq</code> . . . . .	649, 14501, 16394	<code>\textminussuperior</code> . . . . .	16130	<code>\textplussuperior</code> . . . . .	16128
<code>\textflqq</code> . . . .	647, 14499, 16392	<code>\textMu</code> . . . . .	1185, 15294	<code>\textpm</code> . . . . .	14506, 16399
<code>\textfourinferior</code> . . . . .	16148	<code>\textmu</code> . . . . .	1185, 14338, 14707	<code>\textPsi</code> . . . . .	1211, 15316
<code>\textfoursuperior</code> . . . . .	16116	<code>\textmugreek</code> . . . . .	15357	<code>\textpsi</code> . . . . .	1211, 15381
<code>\textfractionsolidus</code> 14248, 16106		<code>\textmultiply</code> 14407, 14504, 14775, 16397		<code>\textquestiondown</code> . . . . .	763, 1072, 14358, 14727
<code>\textfrq</code> . . . . .	650, 14502, 16395	<code>\textmusicalnote</code> . . . . .	16374	<code>\textquotedbl</code> . . . .	14195, 14626
<code>\textfrqq</code> . . . .	648, 14500, 16393	<code>\textnaira</code> . . . . .	16168	<code>\textquotedblleft</code> . .	14260, 14496, 16080, 16389
<code>\textGamma</code> . . . .	1162, 15276	<code>\textnapostrophe</code> . . . . .	15012	<code>\textquotedblright</code> .	14262, 16082
<code>\textgamma</code> . . . .	1162, 15339	<code>\textneg</code> . . . . .	14503, 16396	<code>\textquoteleft</code> 14264, 14498, 16074, 16391	
<code>\textglq</code> . . . . .	645, 14497, 16390	<code>\textnewtie</code> . . . . .	14583, 14602, 15244	<code>\textquoteright</code> . . .	14266, 16076
<code>\textglqq</code> . . . .	643, 14495, 16388	<code>\textnineinferior</code> . . . . .	16158	<code>\textquotesingle</code> . . . . .	14636
<code>\textgravedbl</code> . . . . .	15238	<code>\textninesuperior</code> . . . . .	16126	<code>\texttriangle</code> . . . . .	16218
<code>\textgreater</code> . . . .	14213, 14646	<code>\textnormal</code> . . . . .	592	<code>\texttrbrackdbl</code> . . . . .	16382
<code>\textgrq</code> . . . . .	646, 14498, 16391	<code>\textnsuperior</code> . . . . .	16138	<code>\textrecipe</code> . . . . .	16188
<code>\textgrqq</code> . . . .	644, 14496, 16389	<code>\textNu</code> . . . . .	1186, 15296	<code>\textreferencemark</code> . . . . .	16102
<code>\textGslash</code> . . . . .	15141	<code>\textnu</code> . . . . .	1186, 15359	<code>\textregistered</code> . . . .	14324, 14692
<code>\textgslash</code> . . . . .	15143	<code>\textnumbersign</code> 560, 14197, 14628		<code>\textRho</code> . . . . .	1205, 15304
<code>\textguarani</code> . . . . .	16180	<code>\textnumeralsigngreek</code> 1137, 15252		<code>\textrho</code> . . . . .	1205, 15367
<code>\textHslash</code> . . . . .	14937	<code>\textnumeralsignlowergreek</code> 1154, 1176, 1199, 15254		<code>\textrightarrow</code> . . . . .	16208
<code>\texthslash</code> . . . . .	14939	<code>\textnumero</code> . . . . .	16184	<code>\textring</code> . . . . .	14136, 14148, 14160, 14191, 14571, 14590, 15229
<code>\textHT</code> . . . . .	14173, 14620	<code>\textogonek</code> .	14189, 14579, 14598, 15231	<code>\textrm</code> . . . . .	593
<code>\texthungarumlaut</code> 14187, 14578, 14597, 15235, 15236		<code>\textohm</code> . . . . .	16194	<code>\texttrquill</code> . . . . .	16110
		<code>\textOmega</code> . .	1212, 15268, 15318		

<code>\textSampigreek</code> . . .	1213, 15408	<code>\TH</code> . . . . .	14421, 14789	<code>\theslidesubsection</code> . .	7996, 8003, 8010, 8016, 8018, 8020, 8026, 8036
<code>\textsampigreek</code> . . . .	1213, 15410	<code>\th</code> . . . . .	14489, 14857	<code>\This@name</code> 6488, 6489, 6507, 6508	
<code>\textsc</code> . . . . .	599	<code>\thaa</code> . . . . .	16549	<code>\thispdfpagelabel</code> . . . . .	6134
<code>\textsection</code> . . . . .	14311, 14679	<code>\thebookmark@seq@number</code>	13679	<code>\ThisShouldNotHappen</code> . .	13263
<code>\textservicemark</code> . . . . .	16190	<code>\theequation</code> . . . . .	6510, 6813, 6835, 6859, 6895	<code>\thm@headpunct</code> . . . . .	6913
<code>\textseveninferior</code> . . . . .	16154	<code>\thefootnote</code> . . . . .	6983, 7160	<code>\thm@headsep</code> . . . . .	6914
<code>\textsevensuperior</code> . . . . .	16122	<code>\theHchapter</code> . . . . .	6451, 6452, 6453, 6454, 6539	<code>\thm@notefont</code> . . . . .	6912
<code>\textsf</code> . . . . .	594, 12586, 12589	<code>\theHenumi</code> . . . . .	6470	<code>\thm@postskip</code> . . . . .	6918
<code>\textSigma</code> . . . . .	1206, 15306	<code>\theHenumii</code> . . . . .	6471	<code>\thm@preskip</code> . . . . .	6917
<code>\textsigma</code> . . . . .	1206, 15371	<code>\theHenumiii</code> . . . . .	6472	<code>\thm@space@setup</code> . . . . .	6915
<code>\textsixinferior</code> . . . . .	16152	<code>\theHenumiv</code> . . . . .	6473	<code>\thm@swap</code> . . . . .	6911
<code>\textsixsuperior</code> . . . . .	16120	<code>\theHequation</code> . . . . .	6441, 6511, 6814, 6836, 6860, 6868, 6895, 6899	<code>\thmheadnl</code> . . . . .	6910
<code>\textsl</code> . . . . .	600	<code>\theHfigure</code> . . . . .	6448, 6452	<code>\tiny</code> . . . . .	623
<code>\textsterling</code> . . . . .	14303, 14671	<code>\theHHfootnote</code> . . . . .	6474, 6476	<code>\title</code> . . . . .	6040, 6042
<code>\textStigmagreek</code> . . . .	1165, 15396	<code>\theHHmpfootnote</code> . . . . .	6476	<code>\TMP@EnsureCode</code> . . . . .	4400, 4407, 4408, 4409, 4410, 4411, 4412, 4413, 4414, 4415, 4416, 4417, 4418, 4419, 4420, 4421, 4422, 4423, 4424, 4425, 4426, 4427, 4428, 4429, 4430, 4431, 4432, 4433
<code>\textstigmagreek</code> . . . .	1165, 15398	<code>\theHItem</code> 6464, 6470, 6471, 6472, 6473		<code>\tocappendix</code> . . . . .	1621
<code>\textsurd</code> . . . . .	16214	<code>\theHlisting</code> . . . . .	3405	<code>\tocchapter</code> . . . . .	1620
<code>\TextSymbolUnavailable</code> .	14167, 14168, 14170	<code>\theHlstlisting</code> . . . . .	3401	<code>\toclevel@chapter</code> . . . . .	3392
<code>\textTau</code> . . . . .	1207, 15308	<code>\theHmpfootnote</code> . . . . .	6475	<code>\toclevel@figure</code> . . . . .	3398
<code>\texttau</code> . . . . .	1207, 15373	<code>\theHparagraph</code> . . . . .	6458, 6459	<code>\toclevel@listing</code> . . . . .	3406
<code>\textTheta</code> . . . . .	1168, 15286	<code>\theHparentequation</code> . . . . .	6894, 6899	<code>\toclevel@lstlisting</code> . . . . .	3402
<code>\texttheta</code> . . . . .	1168, 15349	<code>\theHpart</code> . . . . .	6444	<code>\toclevel@paragraph</code> . . . . .	3396
<code>\textthreeinferior</code> . . . . .	16146	<code>\theHsection</code> . . . . .	6441, 6447, 6454, 6456, 6460, 6461, 6538	<code>\toclevel@part</code> . . . . .	3388, 3390
<code>\textthreequarters</code> . . . .	14356, 14725	<code>\theHslide</code> . . . . .	7930	<code>\toclevel@section</code> . . . . .	3393
<code>\textthreesuperior</code> . . . .	14334, 14702	<code>\theHslidesection</code> 7935, 7937, 7973, 7977		<code>\toclevel@subfigure</code> . . . . .	2400
<code>\texttie</code> . . . . .	14582, 14601, 15250	<code>\theHslidesubsection</code> . . . . .	7936, 8024, 8028	<code>\toclevel@subparagraph</code> . . . .	3397
<code>\texttilde</code> . . . . .	4119, 14134, 14146, 14158, 14193, 14569, 14588, 15233	<code>\theHsubequation</code> . . . . .	6868	<code>\toclevel@subparagraph</code> . . . .	3397
<code>\texttildelow</code> . . . . .	15240	<code>\theHsubparagraph</code> . . . . .	6459	<code>\toclevel@subsection</code> . . . . .	3394
<code>\texttimes</code> . . . . .	14504, 16397	<code>\theHsubsection</code> . . . . .	6456, 6457	<code>\toclevel@subsubsection</code> . . . .	3395
<code>\texttrademark</code> . . . . .	14270, 16192	<code>\theHsubsubsection</code> . . . . .	6457, 6458	<code>\toclevel@subtable</code> . . . . .	2401
<code>\textTslash</code> . . . . .	15070	<code>\theHtable</code> . . . . .	6449, 6453	<code>\toclevel@table</code> . . . . .	3399
<code>\texttslash</code> . . . . .	15072	<code>\theHtheorem</code> . . . . .	6460	<code>\tocparagraph</code> . . . . .	1625
<code>\texttt</code> . . . . .	595	<code>\theHthm</code> . . . . .	6461	<code>\tocpart</code> . . . . .	1619
<code>\texttwoinferior</code> . . . . .	16144	<code>\theHy@tempcnt</code> 4679, 4687, 4694		<code>\tocsection</code> . . . . .	1622
<code>\texttwosuperior</code> . . . .	14332, 14700	<code>\thelisting</code> . . . . .	3405	<code>\tocsubsection</code> . . . . .	1623
<code>\textunderscore</code> . . . . .	565, 4563, 4564, 4566, 14219, 14652	<code>\thelstlisting</code> . . . . .	3401	<code>\tocsubsubsection</code> . . . . .	1624
<code>\textup</code> . . . . .	601	<code>\thempfn</code> . . . . .	6972, 7049, 7141, 7153	<code>\toks</code> . . . . .	244, 245, 947, 948, 949, 4834, 4836, 4838, 4842, 4847, 8135, 8136, 8138, 13996, 14001, 14067, 14072
<code>\textuparrow</code> . . . . .	16206	<code>\theoremautorefname</code> . . . . .	3089, 3107, 3125, 3143, 3161, 3179, 3197, 3235, 3255, 3273, 8369	<code>\toks@</code> 171, 208, 498, 501, 504, 522, 523, 842, 849, 881, 882, 1257, 1280, 1283, 1285, 1793, 1794, 3285, 3286, 3288, 3840, 3844, 3845, 3853, 4127, 4128, 4302, 4304, 4949, 4954, 4958, 4962, 6229, 6231, 6317, 6319, 6369, 6381, 6672, 6676, 6712, 6717, 7700, 7701, 7907, 7912, 7914,	
<code>\textUpsilon</code> . . . . .	1208, 15266, 15310, 15323	<code>\thepage</code> . . . . .	2386, 4797, 6129, 6152, 6655, 6663, 6690, 7417, 7440, 7469, 7560, 7638, 7669, 7830, 7847, 7853, 7857, 7864, 8127, 8147, 8164, 8281		
<code>\textupsilon</code> . . . . .	1208, 15375, 15387, 15392	<code>\theslideheading</code> . . . . .	7956		
<code>\textupsilonacute</code> . . . .	15333, 15391	<code>\theslidesection</code> 7944, 7951, 7959, 7965, 7967, 7969, 7975, 7985			
<code>\textvarsigma</code> . . . . .	15369	<code>\theslidesubheading</code> . . . . .	7957, 8008		
<code>\textvisiblespace</code> . . . . .	16222				
<code>\textwon</code> . . . . .	16172				
<code>\textXi</code> . . . . .	1187, 15298				
<code>\textxi</code> . . . . .	1187, 15361				
<code>\textyen</code> . . . . .	14307, 14675				
<code>\textzeroinferior</code> . . . . .	16140				
<code>\textzerosuperior</code> . . . . .	16114				
<code>\textZeta</code> . . . . .	1166, 15282				
<code>\textzeta</code> . . . . .	1166, 15345				

7917, 13995, 14001, 14066,  
14072  
\topmargin ..... 7572  
\trivlist ..... 6909  
\tryhyper@link ..... 4772, 4774  
\ttfamily ..... 605  
\ttl@b ..... 6723, 6728  
\ttl@gobblecontents ..... 6732  
\ttl@Hy@PatchSaveWrite .. 6706,  
6710  
\ttl@Hy@refstepcounter ... 6722  
\ttl@Hy@saveanchor .. 6701, 6725  
\ttl@Hy@SavedCurrentHref 6705,  
6716  
\ttl@Hy@steplink ..... 6699  
\ttl@savewrite ..... 6712, 6714  
\tw@ . 13996, 14001, 14067, 14072  
\typeout ... 5, 6, 7, 19, 26, 27, 36,  
131, 155, 158, 159, 160, 4979,  
14093, 16594

## U

\U ... 14538, 15443, 15466, 15531,  
15608, 15798, 15800, 15822,  
15824, 15834, 15836  
\u ... 14537, 14575, 14594, 14614,  
14865, 14867, 14901, 14903,  
14921, 14923, 14951, 14953,  
14954, 15022, 15024, 15082,  
15084  
\UHORN ... 16416, 16527, 16528,  
16529, 16530, 16531  
\uhorn .. 3259, 3266, 16409, 16467,  
16468, 16469, 16470, 16471  
\UnDef ..... 11892  
\unhbox 6955, 10925, 12955, 13079,  
13111, 13135, 13163, 13191  
\unhcopy ..... 13057  
\unichar ..... 2232  
\Unicode ..... 1333  
\unrestored@protected@xdef 6972,  
6983, 7103, 7110, 7153, 7160  
\unskip .. 6906, 7402, 8213, 8217,  
8221, 8226  
\upshape ..... 611, 6912  
\Url ..... 4743  
\url ..... 4742, 4746  
\url@ ..... 4746, 4747  
\use@file ..... 4910, 4912, 4919  
\usefont ..... 590  
\utf@viii@undeferr ..... 552  
\UTFviii@four@octets 2228, 2237  
\UTFviii@three@octets .... 2227  
\UTFviii@two@octets ..... 2226

## V

\v ... 14137, 14149, 14161, 14280,  
14285, 14293, 14295, 14548,

14572, 14591, 14613, 14885,  
14887, 14889, 14891, 14913,  
14915, 14988, 14990, 15008,  
15010, 15042, 15044, 15058,  
15060, 15066, 15068, 15116,  
15118, 15124, 15126, 15128,  
15130, 15131, 15133, 15135,  
15137, 15139, 15145, 15147,  
15149, 15151, 15157, 15158,  
15201, 15203

\V@@@footnotetext ..... 7090  
\V@@footnotetext ..... 7076  
\value 7356, 7382, 7576, 7725, 9673,  
9678  
\ vbox 5793, 5794, 5795, 5796, 6109,  
7570  
\vfll ..... 5793, 5794, 5795, 5796  
\voffset ..... 7571  
\vpageref ..... 8226  
\vphantom ..... 626  
\Vr@f ..... 8212  
\vr@f ..... 8220  
\href@pagenum ..... 6736  
\href@space .... 8213, 8216, 8221  
\vskip ..... 2475, 2476  
\vss ..... 7585  
\vtex@trans@special 10379, 10381,  
10384, 10388, 10392, 10396,  
10398, 10400, 10404, 10410,  
10411, 10414

\VTeXInitMediaSize 10069, 10086  
\VTeXOS ... 10449, 10450, 10451,  
10453  
\VTeXversion . 6284, 6287, 6290,  
10441, 10445

## W

\waw ..... 16573  
\wawhamza ..... 16542  
\wd . 9272, 9288, 9309, 9326, 9347,  
9364, 12913  
\write 4634, 5989, 5991, 6398, 6406,  
6661, 6689, 7340, 7355, 7371,  
7381, 7411, 7434, 7460, 7490,  
12511, 12535, 13863, 13945  
\WriteBookmarks .....  
... 4061, 4198, 4369, 4391,  
13612, 13856, 13889, 13890,  
13932, 13938  
\wwwbrowser ... 9226, 9311, 9328

## 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, 304, 309, 310, 521, 526,

844, 847, 851, 856, 888, 957,  
963, 1720, 1748, 2175, 2177,  
2470, 2480, 2489, 2499, 2554,  
2555, 2560, 2576, 3296, 3299,  
3303, 3316, 3417, 3418, 3421,  
3422, 3423, 3427, 3430, 3436,  
3843, 3849, 3852, 3855, 4010,  
4011, 4016, 4017, 4074, 4075,  
4076, 4079, 4082, 4085, 4125,  
4126, 4128, 4129, 4303, 4306,  
4633, 4639, 4832, 4843, 4847,  
4850, 4925, 4926, 4927, 4939,  
4950, 4951, 4952, 4953, 4956,  
4957, 5031, 5045, 5070, 5074,  
5077, 5087, 6062, 6063, 6068,  
6673, 6680, 6713, 6720, 6761,  
6770, 6772, 6784, 7914, 7915,  
8137, 8140, 8175, 8176, 8177,  
8179, 8181, 8535, 8543, 8831,  
8832, 8835, 8837, 8840, 9497,  
9498, 9499, 9501, 9502, 9503,  
9505, 9506, 9507, 9509, 9510,  
9511, 9513, 9514, 9515, 9517,  
9518, 9519, 9521, 9522, 9523,  
9525, 9526, 9528, 9534, 9543,  
10549, 10554, 10558, 10929,  
10932, 10938, 10943, 11085,  
11086, 12159, 12179, 12639,  
12659, 12978, 12998, 14000,  
14002, 14071, 14073

\XeTeXrevision ..... 4356, 9823  
\XeTeXversion ..... 4356, 9823  
\XR@@dURL ..... 2407, 2408  
\XR@addURL ..... 2407  
\XR@ext .....  
2662, 2663, 4908, 4911, 6282,  
8432, 9122, 9225, 9485, 9950,  
11277, 11360, 11419, 11618,  
11782

\XR@URL ..... 2412  
\xspace ..... 676, 678

## Y

\y ..... 309, 311, 315, 859,  
862, 865, 868, 871, 874, 883,  
2556, 2561, 2566, 3423, 3424,  
3425, 3426, 4077, 4080, 4083,  
4086, 4088, 4094, 4928, 4929,  
4930, 4931, 4939, 6063, 6071,  
6757, 6759, 6760, 6763, 6770,  
10934, 10935, 10936, 10937

\ya ..... 16575  
\yahamza ..... 16544

## Z

\z 310, 311, 316, 2558, 2559, 2560,  
4931, 4939

\z@ . . . . .	820, 860, 984, 1136, 1153, 1175, 1198, 1449, 1489, 1502, 1518, 1533, 1541, 1614, 1869, 1875, 1881, 1945, 1949, 1957, 1961, 2426, 2431, 2465, 2484, 2751, 2754, 2896, 3429, 3435, 4012, 4365, 6285, 6288, 6941, 6942, 7088, 9044, 9048,	9053, 9057, 9064, 9067, 9071, 9074, 9932, 9933, 9938, 9939, 10440, 10464, 10672, 10972, 10983, 11342, 11343, 11348, 11349, 12149, 12629, 12917, 12968, 13386, 13416, 13421, 13443, 13449, 13477, 13510, 13516, 13535, 13545, 13550,	13580, 13585, 13690, 13692, 13693, 13694, 13696, 13697, 13698, 14037
			\z@skip . . . . .
			\za . . . . .
			\zay . . . . .
			\ZWNJ . . . . .