

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

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2010/12/16 v6.81z

## 1 Documentation overview for hyperref

The documentation for package hyperref consists of several files:

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

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


**ChangeLog** This file records the version history (also available as text file).

**Options** This file provides a short option summary.

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

**Bookmark talk, paper** The paper version of the talk.

Source code documentation:

 **hyperref.dtx** This is the source code documentation for hyperref (this file).

**backref.dtx** “Back referencing from bibliographical citations”

**nameref.dtx** “Section name references in L<sup>A</sup>T<sub>E</sub>X”

## 2 Contents

<b>1</b>	<b>Documentation overview for hyperref</b>	<b>1</b>
<b>2</b>	<b>Contents</b>	<b>2</b>
<b>3</b>	<b>File 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>161</b>
<b>36 Float captions</b>	<b>166</b>
<b>37 Bibliographic references</b>	<b>168</b>
37.1 Package harvard . . . . .	171
37.2 Package chicago . . . . .	173
<b>38 Page numbers</b>	<b>173</b>
<b>39 Table of contents</b>	<b>174</b>
<b>40 New counters</b>	<b>176</b>
<b>41 AMSL<sup>A</sup>T<sub>E</sub>X compatibility</b>	<b>176</b>
41.1 \@addtoreset and \numberwithin patches . . . . .	177
<b>42 Included figures</b>	<b>178</b>
<b>43 hyperindex entries</b>	<b>178</b>
<b>44 Compatibility with foiltex</b>	<b>181</b>
<b>45 Compatibility with seminar slide package</b>	<b>182</b>

<b>46</b>	<b>Configuration files</b>	<b>190</b>
46.1	PS/PDF strings	190
46.2	pdftex	191
46.2.1	Fix for problem with different nesting levels	204
46.3	hypertex	205
46.4	dviwindo	207
46.5	dvipdfm/xetex dvi to PDF converter	212
46.6	VTeX typesetting system	220
46.7	Fix for Adobe bug number 466320	232
46.8	Direct pdfmark support	233
46.9	Rokicki's dvips	246
46.10	VTeX's vtexpdfmark driver	248
46.11	Textures	250
46.12	dvipsone	254
46.13	TeX4ht	257
<b>47</b>	<b>Driver-specific form support</b>	<b>260</b>
47.1	pdfmarks	260
47.2	HyperTeX	267
47.3	TeX4ht	267
47.4	pdfTeX	270
47.5	dvipdfm, xetex	277
47.6	Common forms part	284
<b>48</b>	<b>Bookmarks in the PDF file</b>	<b>291</b>
48.1	Bookmarks	291
48.1.1	Rerun warning	294
48.1.2	Driver stuff	295
<b>49</b>	<b>Compatibility with koma-script classes</b>	<b>301</b>
<b>50</b>	<b>Encoding definition files for encodings of PDF strings</b>	<b>301</b>
50.1	PD1 encoding	301
50.2	PU encoding	309
50.2.1	NFSS2 accents	309
50.2.2	Basic Latin: U+0000 to U+007F	311
50.2.3	Latin-1 Supplement: U+0080 to U+00FF	313
50.2.4	Latin Extended-A: U+0080 to U+017F	316
50.2.5	Latin Extended-B: U+0180 to U+024F	321
50.2.6	Spacing Modifier Letters: U+02B0 to U+02FF	323
50.2.7	Combining Diacritical Marks: U+0300 to U+036F	323
50.2.8	Greek and Coptic: U+0370 to U+03FF	323
50.2.9	Cyrillic: U+0400 to U+04FF	326
50.2.10	Thai: U+0E00 to U+0E7F	337
50.2.11	Latin Extended Additional: U+1E00 to U+1EFF	337
50.2.12	General Punctuation: U+2000 to U+206F	339
50.2.13	Superscripts and Subscripts: U+2070 to U+209F	340
50.2.14	Currency Symbols: U+20A0 to U+20CF	341
50.2.15	Letterlike Symbols: U+2100 to U+214F	342
50.2.16	Arrows: U+2190 to U+21FF	342
50.2.17	Mathematical Operators: U+2200 to U+22FF	342
50.2.18	Miscellaneous Technical: U+2300 to U+23FF	342
50.2.19	Control Pictures: U+2400 to U+243F	342

50.2.20 Enclosed Alphanumerics: U+2460 to U+24FF . . . . .	342
50.2.21 Box Drawing: U+2500 to U+257F . . . . .	345
50.2.22 Miscellaneous Symbols: U+2600 to U+26FF . . . . .	345
50.2.23 Miscellaneous Mathematical Symbols-A: U+27C0 to U+27EF . . . . .	345
50.2.24 Alphabetic Presentation Forms: U+FB00 to U+FB4F . . . . .	345
50.2.25 Miscellaneous . . . . .	346
50.2.26 Aliases . . . . .	346
50.3 PU encoding, additions for VnT <sub>E</sub> X . . . . .	346
50.4 PU encoding, additions for Arabi . . . . .	348
<b>51 End of file hycheck.tex</b>	<b>350</b>
<b>52 Index</b>	<b>351</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 \langle *check\rangle
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 }\typeout{\%
36 \space\space Loaded: '\HyC@package' \%
37 \csname ver@\HyC@package.sty\endcsname
38 }\%
39 }\%
40 }\%
41 }

```

`\checkcommand` The macro `\checkcommand` parses the next tokens as a  $\text{\LaTeX}$  definition and compares this definition with the current meaning of that command.

```

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

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

```

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

`\HyC@checkcommand` The optional star of  $\text{\LaTeX}$ 's definitions is parsed.

```

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

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

```

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

`\HyC@noValue`

```

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

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



```

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

```

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

```

90 \newtoks\HyC@Toks

```

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

```

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

```

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

```

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

```

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

```

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

```

`\HyC@DeclareRobustCommand` `\DeclareRobustCommand{\cmd}` makes the command `\cmd` robust, that then calls `\cmdl` 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#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  
 \Hy@ReturnAfterFi    \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 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).

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

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

- It cannot be used inside `\usepackage`, because LaTeX expands the options before package `hyperref` is loaded and `\hypercalscbp` is defined.
- With e-TeX extensions an expandable implementation is very easy; `\hypercalscbp` can be used everywhere and is expanded at use.
- Without e-TeX's features `\hypercalscbp` cannot be implemented expandable (practically) and have to be supported by `\hypercalscbpdef`. Limitations:
  - Works only in options that use `\hypercalscbpdef` (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 \hypercalscbp{\paperheight-\topmargin-1in
    -\headheight-\headsep}
}
```

`\hypercalscbp`

```
494 \begingroup\expandafter\expandafter\expandafter\endgroup
495 \expandafter\ifx\csname dimexpr\endcsname\relax
496   \def\hypercalscbpdef#1#2{%
497     \begingroup
498       \toks@{}%
499       \HyCal@scan#2\hypercalscbp\@nil
500     \expandafter\endgroup
501     \expandafter\def\expandafter#1\expandafter{\the\toks@}%
502   }%
503 \def\HyCal@scan#1\hypercalscbp#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\hypercalscbp\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}{\{}{\%
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 `TEX`'s argument parsing. With this method we must take the following into account, that makes things a little more complicate:

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

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

```

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 be 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
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 \tx@ifundefined{oldb}{\let\b\oldb}%
904 \tx@ifundefined{oldc}{\let\c\oldc}%
905 \tx@ifundefined{oldd}{\let\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\Greeknatural\HyPsd@Greeknatural
1099 }%
1100 }
1101 \def\HyPsd@greeknumeral#1{%
1102   \HyPsd@GreekNum\@firstoftwo{#1}%
1103 }
1104 \def\HyPsd@Greeknatural#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 \HyPsd@@@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\dimexpr
2275   \dimexpr-1+('#1-240)*4+\dimexpr.0625\dimexpr'#2sp-128sp%
2276   \expandafter|\number
2277   \dimexpr'#2-16*\dimexpr.0625\dimexpr'#2sp| %
2278 }%
2279 \def\HyPsd@@@UTFviii@four#1|#2|#3{%
2280   \933\dimexpr.25\dimexpr#1sp\relax\relax
2281   \csname\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\dimexpr
2291   \dimexpr'#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\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\cyrrery\cyrr.}%
```

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

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

```
3203 %   \cyr\cyrv\cyrrery\cyrr\cyra\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\cyrr.\ \cyrp\cyrr\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\cyrr\cyro\cyrch\cyrn\cyro\cyre\ %
```

```
3210 %   \cyrp\cyrr\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\cyrr\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\cyrg\cyrl.}%
```

```
3220 \def\sectionautorefname{\cyr\cyrr\cyra\cyrz\cyrd.}%
```

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

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

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

```
3223 %   \cyr\cyrp\cyrr\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       \fi
4093     \expandafter\endgroup
4094     \ifx\y Y%
4095     \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 \ifHy@texht
4232 \else
4233   \ifx\Hy@driver\@empty
4234   \else
4235     \def\Hy@temp{hxeTeX}%
4236     \ifxeTeX
4237       \ifx\Hy@driver\Hy@temp
4238       \else
4239         \Hy@WarningNoLine{%
4240           Wrong driver ‘\Hy@driver.def’;\MessageBreak
4241           XeTeX is running.\MessageBreak
4242           Forcing driver ‘\Hy@temp.def’ for XeTeX%
4243         }%
4244         \let\Hy@driver\Hy@temp
4245       \fi
4246     \fi
4247   \fi
4248 \fi
4249 \ifx\Hy@driver\@empty
4250 \else
4251   \def\Hy@temp{hvtexhtml}%
4252   \ifvtexhtml
4253     \ifx\Hy@driver\Hy@temp
4254     \else
4255       \Hy@WarningNoLine{%
4256         Wrong driver ‘\Hy@driver.def’;\MessageBreak

```

```

4257     VTeX is running in HTML mode.\MessageBreak
4258     Forcing driver ‘\Hy@temp.def’%
4259   }%
4260   \let\Hy@driver\Hy@temp
4261 \fi
4262 \else
4263   \ifx\Hy@driver\Hy@temp
4264     \Hy@WarningNoLine{%
4265       Wrong driver ‘\Hy@driver.def’;\MessageBreak
4266       VTeX is not running in HTML mode.\MessageBreak
4267       Using default driver%
4268     }%
4269     \let\Hy@driver\@empty
4270   \fi
4271 \fi
4272 \fi

```

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

```

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

```



```

4313         \else
4314         \def\HyOpt@DriverType{ (fallback)}%
4315         \fi
4316     \fi
4317 \fi
4318 \fi
4319 \fi
4320 \fi
4321 \fi
4322 \ifx\Hy@driver\Hy@defaultdriver
4323 \def\Hy@temp{hdvwind}%
4324 \ifx\Hy@temp\Hy@driver
4325 \kvsetkeys{Hyp}{colorlinks}%
4326 \PassOptionsToPackage{dviwindo}{color}%
4327 \fi
4328 \fi
4329 \fi
4330 \Hy@Message{Driver\HyOpt@DriverType: \Hy@driver}%
4331 \chardef\Hy@VersionChecked=0 %
4332 \input{\Hy@driver.def}%
4333 \ifcase\Hy@VersionChecked
4334 \Hy@VersionCheck{\Hy@driver.def}%
4335 \fi
4336 \let\@unprocessedoptions\relax
4337 \Hy@RestoreCatcodes
4338 \Hy@DisableOption{tex4ht}%
4339 \Hy@DisableOption{pdftex}%
4340 \Hy@DisableOption{nativepdf}%
4341 \Hy@DisableOption{dviPDFM}%
4342 \Hy@DisableOption{dviPDFMX}%
4343 \Hy@DisableOption{dviPDFMX-outline-open}%
4344 \Hy@DisableOption{pdfmark}%
4345 \Hy@DisableOption{dvips}%
4346 \Hy@DisableOption{hypertex}%
4347 \Hy@DisableOption{vtex}%
4348 \Hy@DisableOption{vtexpdfmark}%
4349 \Hy@DisableOption{dviwindo}%
4350 \Hy@DisableOption{dvipsone}%
4351 \Hy@DisableOption{textures}%
4352 \Hy@DisableOption{latex2html}%
4353 \Hy@DisableOption{ps2pdf}%
4354 \Hy@DisableOption{xetex}%
4355 \Hy@DisableOption{pdfversion}%
4356 }

```

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.

```

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

```

```

4367 \else
4368   \ifnum\SpecialDvipdfmxOutlineOpen>\z@
4369     \Hy@DvipdfmxOutlineOpentruetrue
4370   \fi
4371 \fi

```

## 15.2.2 Bookmarks

```

4372 \def\WriteBookmarks{0}
4373 \def\@bookmarkopenstatus#1{%
4374   \ifHy@bookmarksopen

```

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

```

4375   \ifnum#1<\expandafter\@firstofone\expandafter
4376     {\number\@bookmarksopenlevel} % explicit space
4377   \else
4378     -%
4379   \fi
4380 \else
4381   -%
4382 \fi
4383 }
4384 \ifHy@bookmarks
4385   \Hy@Info{Bookmarks ON}%
4386   \ifx\@pdfpagemode\@empty
4387     \def\@pdfpagemode{UseOutlines}%
4388   \fi
4389 \else
4390   \def\@bookmarkopenstatus#1{%
4391     \Hy@Info{Bookmarks OFF}%
4392     \Hy@AtEndOfPackage{%
4393       \global\let\ReadBookmarks\relax
4394       \global\let\WriteBookmarks\relax
4395     }%
4396     \ifx\@pdfpagemode\@empty
4397       \def\@pdfpagemode{UseNone}%
4398     \fi
4399 \fi
4400 \Hy@DisableOption{bookmarks}

```

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

```

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

```

```

4419 \TMP@EnsureCode{43}{12}% +
4420 \TMP@EnsureCode{44}{12}% ,
4421 \TMP@EnsureCode{45}{12}% -
4422 \TMP@EnsureCode{46}{12}% .
4423 \TMP@EnsureCode{47}{12}% /
4424 \TMP@EnsureCode{58}{12}% :
4425 \TMP@EnsureCode{59}{12}% ;
4426 \TMP@EnsureCode{60}{12}% <
4427 \TMP@EnsureCode{61}{12}% =
4428 \TMP@EnsureCode{62}{12}% >
4429 \TMP@EnsureCode{63}{12}% ?
4430 \TMP@EnsureCode{91}{12}% [
4431 \TMP@EnsureCode{93}{12}% ]
4432 \TMP@EnsureCode{94}{7}% ^ (superscript)
4433 \TMP@EnsureCode{95}{8}% _ (subscript)
4434 \TMP@EnsureCode{96}{12}% '
4435 \TMP@EnsureCode{124}{12}% |
4436 \TMP@EnsureCode{126}{13}% ~ (active)
4437 #1\relax
4438 \Hy@EndWrap
4439 }

```

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

```

4440 \Hy@AtBeginDocument{%
4441   \ifHy@ocgcolorlinks
4442     \kvsetkeys{Hyp}{colorlinks}%
4443     \ifHy@pdfa
4444       \Hy@Warning{%
4445         PDF/A: Optional Content Groups are prohibited,\MessageBreak
4446         using 'colorlinks' instead of 'ocgcolorlinks'%
4447       }%
4448       \Hy@ocgcolorlinksfalse
4449     \fi
4450   \fi
4451   \ifHy@ocgcolorlinks
4452     \else
4453       \Hy@DisableOption{ocgcolorlinks}%
4454     \fi
4455   \ifHy@colorlinks
4456     \def\@pdfborder{0 0 0}%
4457     \let\@pdfborderstyle\@empty
4458     \ifHy@typexml
4459     \else
4460       \Hy@CatcodeWrapper{%
4461         \RequirePackage{color}%
4462       }%
4463     \fi
4464     \def\Hy@colorlink#1{%
4465       \begingroup
4466       \HyColor@UseColor#1%
4467     }%
4468     \def\Hy@endcolorlink{\endgroup}%
4469     \Hy@Info{Link coloring ON}%
4470   \else
4471     \ifHy@frenchlinks
4472     \def\Hy@colorlink#1{\begingroup\fontshape{sc}\selectfont}%
4473     \def\Hy@endcolorlink{\endgroup}%

```

```

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

```

```

4530 \Hy@AtBeginDocument{%
4531   \ifHy@texht
4532   \else
4533     \Hy@CatcodeWrapper\ReadBookmarks
4534   \fi
4535 }

4536 \ifHy@backref
4537   \RequirePackage{backref}%
4538 \else
4539   \let\Hy@backout\@gobble
4540 \fi
4541 \Hy@DisableOption{backref}
4542 \Hy@DisableOption{pagebackref}
4543 \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.

```

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

```

```

4577 }^^A
4578 \catcode'\#=6 ^^A
4579 \gdef\Hy@ActiveCarriageReturn{^^M}^^A
4580 \gdef\hyper@n@rmalise#1#2{^^A
4581 \def\Hy@tempa{#2}^^A
4582 \ifx\Hy@tempa\Hy@ActiveCarriageReturn
4583 \Hy@ReturnAfterElseFi{^^A
4584 \hyper@@normalise{#1}^^A
4585 }^^A
4586 \else
4587 \Hy@ReturnAfterFi{^^A
4588 \hyper@@normalise{#1}{#2}^^A
4589 }^^A
4590 \fi
4591 }^^A
4592 \gdef\hyper@@normalise#1#2{^^A
4593 \edef\Hy@tempa{^^A
4594 \endgroup
4595 \noexpand#1{\Hy@RemovePercentCr#2%^^M\@nil}^^A
4596 }^^A
4597 \Hy@tempa
4598 }^^A
4599 \gdef\Hy@RemovePercentCr#1%^^M#2\@nil{^^A
4600 #1^^A
4601 \ifx\limits#2\limits
4602 \else
4603 \Hy@ReturnAfterFi{^^A
4604 \Hy@RemovePercentCr #2\@nil
4605 }^^A
4606 \fi
4607 }^^A
4608 \endgroup
4609 \providecommand*\hyper@chars{%
4610 \let\#\hyper@hash
4611 \let\%\@percentchar
4612 \Hy@safe@activetrue
4613 }

4614 \def\hyperlink#1#2{%
4615 \hyper@@link{#1}{#2}%
4616 }

4617 \def\Hy@VerboseLinkStart#1#2{%
4618 \ifHy@verbose
4619 \begingroup
4620 \Hy@safe@activetrue
4621 \xdef\Hy@VerboseGlobalTemp{(#1 '#2')%
4622 \Hy@Info{Reference \Hy@VerboseGlobalTemp}%
4623 \xdef\Hy@VerboseGlobalTemp{%
4624 \Hy@VerboseGlobalTemp, %
4625 line \the\inputlineno
4626 }%
4627 \endgroup
4628 \let\Hy@VerboseLinkInfo\Hy@VerboseGlobalTemp
4629 \@onelevel@sanitize\Hy@VerboseLinkInfo
4630 \fi
4631 }

4632 \def\Hy@VerboseLinkInfo{<VerboseLinkInfo>}

```

```

4633 \def\Hy@VerboseLinkStop{%
4634   \ifHy@verbose
4635     \begingroup
4636     \edef\x{\endgroup
4637       \write\m@ne{%
4638         Package 'hyperref' Info: %
4639         End of reference \Hy@VerboseLinkInfo.%
4640       }%
4641     }%
4642   \x
4643 \fi
4644 }

4645 \def\Hy@VerboseAnchor#1{%
4646   \ifHy@verbose
4647     \begingroup
4648     \Hy@safe@activetrue
4649     \Hy@Info{Anchor '\Hy@DestNameFilter{#1}'}%
4650   \endgroup
4651 \fi
4652 }

4653 \def\Hy@AllowHyphens{%
4654   \relax
4655   \ifhmode
4656     \penalty\@M
4657     \hskip\z@skip
4658   \fi
4659 }

4660 \DeclareRobustCommand*\href}[1][]{%
4661   \begingroup
4662   \setkeys{href}{#1}%
4663   \@ifnextchar\bgroup\Hy@href{\hyper@normalise\href@}%
4664 }

4665 \def\Hy@href#1{%
4666   \hyper@normalise\href@
4667 }

4668 \begingroup
4669   \catcode'\$=6 %
4670   \catcode'\#=12 %
4671   \gdef\href@#1{\expandafter\href@split$1##\}%
4672   \gdef\href@split$1#$2#$3\#$4{%
4673     \hyper@@link{$1}{$2}{$4}%
4674   \endgroup
4675 }%
4676 \endgroup

```

Option 'page'.

```

4677 \define@key{href}{page}{%
4678   \def\Hy@href@page{#1}%
4679 }
4680 \let\Hy@href@page\@empty
4681 \newcount\c@Hy@tempcnt
4682 \def\theHy@tempcnt{\the\c@Hy@tempcnt}
4683 \def\Hy@MakeRemoteAction{%
4684   \ifx\Hy@href@page\@empty
4685     \def\Hy@href@page{0}%
4686   \else
4687     \setcounter{Hy@tempcnt}{\Hy@href@page}%

```

```

4688 \ifnum\c@Hy@tempcnt<\@ne
4689 \Hy@Warning{%
4690   Invalid page number (\theHy@tempcnt)\MessageBreak
4691   for remote PDF file.\MessageBreak
4692   Using page 1%
4693 }%
4694 \def\Hy@href@page{0}%
4695 \else
4696 \global\advance\c@Hy@tempcnt\m@ne
4697 \edef\Hy@href@page{\theHy@tempcnt}%
4698 \fi
4699 \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.

```

4700 \ifx\Hy@href@nextactionraw\@empty
4701 \else
4702 \Hy@newwindowsettrue
4703 \Hy@newwindowtrue
4704 \fi
4705 }

```

Option ‘pdfremotestartview’.

```

4706 \define@key{href}{pdfremotestartview}{%
4707 \setkeys{Hyp}{pdfremotestartview={#1}}%
4708 }

```

Option ‘pdfnewwindow’.

```

4709 \let\KV@href@pdfnewwindow\KV@Hyp@pdfnewwindow
4710 \let\KV@href@pdfnewwindow@default\KV@Hyp@pdfnewwindow@default

```

Option ‘ismap’.

```

4711 \newif\ifHy@href@ismap
4712 \define@key{href}{ismap}[true]{%
4713 \ltx@ifundefined{Hy@href@ismap#1}{%
4714 \Hy@Error{%
4715   Invalid value (#1) for key ‘ismap’.\MessageBreak
4716   Permitted values are ‘true’ or ‘false’.\MessageBreak
4717   Ignoring ‘ismap’%
4718 }\@ehc
4719 }{%
4720 \csname Hy@href@ismap#1\endcsname
4721 }%
4722 }

```

Option ‘nextactionraw’.

```

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

```



```

4736 }%
4737 \ifx\Hy@href@nextactionraw\@empty
4738 \else
4739 \edef\Hy@href@nextactionraw{/Next \Hy@href@nextactionraw}%
4740 \fi
4741 \fi
4742 }
4743 \def\HyPat@ObjRef/{.+}

```

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

```

4744 \RequirePackage{url}
4745 \let\HyOrg@url\url
4746 \def\Hurl{\begingroup \Url}
4747 \DeclareRobustCommand*\nolinkurl{\hyper@normalise\nolinkurl@}
4748 \def\nolinkurl@#1{\Hurl{#1}}
4749 \DeclareRobustCommand*\url{\hyper@normalise\url@}
4750 \def\url@#1{\hyper@linkurl{\Hurl{#1}}{#1}}

4751 \DeclareRobustCommand*\hyperimage{\hyper@normalise\hyper@image}
4752 \providecommand\hyper@image[2]{#2}

4753 \def\hypertarget#1#2{%
4754 \ifHy@nesting
4755 \hyper@@anchor{#1}{#2}%
4756 \else
4757 \hyper@@anchor{#1}{\relax}#2%
4758 \fi
4759 }

```

\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.

```

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

4780 \def\hyperdef{\@ifnextchar[\label@hyperdef]\@hyperdef}
4781 \def\@hyperdef#1#2#3{% category, name, text
4782 \ifx\\#1\\%

```

```

4783 \def\Hy@AnchorName{#2}%
4784 \else
4785 \def\Hy@AnchorName{#1.#2}%
4786 \fi
4787 \ifHy@nesting
4788 \expandafter\hyper@@anchor\expandafter{\Hy@AnchorName}{#3}%
4789 \else
4790 \expandafter\hyper@@anchor\expandafter{\Hy@AnchorName}{\relax}#3%
4791 \fi
4792 }

```

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.

```

4793 \def\label@hyperref[#1]{%
4794 \expandafter\label@@hyperref\csname r@#1\endcsname{#1}%
4795 }%
4796 \def\label@@hyperref#1#2#3{%
4797 \ifx#1\relax
4798 \protect\G@refundefinedtrue
4799 \@latex@warning{%
4800 Hyper reference ‘#2’ on page \thepage \space undefined%
4801 }%
4802 \hyper@@link{}{??}{#3}%
4803 \else
4804 \hyper@@link{\expandafter\@fifthoffive#1}%
4805 {\expandafter\@fourthoffive#1\@empty\@empty}{#3}%
4806 \fi
4807 }
4808 \def\label@hyperdef[#1]#2#3#4{% label name, category, name,
4809 % anchor text
4810 \@bsphack
4811 \ifx\#2\%
4812 \def\Hy@AnchorName{#3}%
4813 \else
4814 \def\Hy@AnchorName{#2.#3}%
4815 \fi
4816 \if@filesw
4817 \protected@write\@auxout{}{%
4818 \string\newlabel{#1}{\{}{\}\}\{\Hy@AnchorName\}\}%
4819 }%
4820 \fi
4821 \@esphack
4822 \ifHy@nesting
4823 \expandafter\hyper@@anchor\expandafter{\Hy@AnchorName}{#4}%
4824 \else
4825 \expandafter\hyper@@anchor\expandafter{\Hy@AnchorName}{\relax}#4%
4826 \fi
4827 }

```

## 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.

```

4828 \def\hyper@@link{\let\Hy@reserved@a\relax

```

```

4829 \@ifnextchar[{\hyper@link@}{\hyper@link@[link]}}%
4830 }
4831 \def\hyper@link@{#1}#2#3#4{%
4832   \begingroup
4833   \protected@edef\Hy@tempa{#2}%
4834   \Hy@safe@activetrue
4835   \edef\x{#3}%
4836   \ifx\Hy@tempa\@empty
4837     \toks0{\hyper@link{#1}}%
4838   \else
4839     \toks0{\expandafter\hyper@readexternallink#2\{#1}}%
4840   \fi
4841   \toks2{%
4842     \Hy@safe@activesfalse
4843     #4%
4844   }%
4845   \edef\Hy@tempa{\the\toks2}%
4846   \edef\x{\endgroup
4847     \ifx\Hy@tempa\@empty
4848       \noexpand\Hy@Warning{Suppressing empty link}%
4849     \else
4850       \the\toks0 {\x}{\the\toks2}}%
4851   \fi
4852   }%
4853   \x
4854 }

```

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.

```

4855 \def\hyper@readexternallink#1\{#2#3#4{%
4856   \begingroup
4857   \let\\\relax
4858   \expandafter\endgroup
4859   \expandafter\@hyper@@readexternallink#1\{#2}{#3}{#4}%
4860 }
4861 \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.

```

4862 \@hyper@readexternallink{#2}{#3}{#4}#1::\{#1}%
4863 }

```

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

```

4864 \def\@pdftempwordfile{file}%
4865 \def\@pdftempwordrun{run}%
4866 \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:

```

4867 \ifx\#6\%
4868 \@hyper@linkfile file:#7\#{#3}{#2}{#7}%
4869 \else
4870 \ifx\#4\%
4871 \@hyper@linkfile file:#7\#{#3}{#2}{#7}%
4872 \else

```

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

```

4873 \def\@pdftempa{#4}%
4874 \ifx\@pdftempa\@pdftempwordfile
4875 \@hyper@linkfile#7\#{#3}{#2}{#7}%
4876 \else

```

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

```

4877 \ifx\@pdftempa\@pdftempwordrun
4878 \ifHy@pdfa
4879 \Hy@Error{%
4880 PDF/A: Launch action is prohibited%
4881 }\@ehc
4882 \begingroup
4883 \leavevmode
4884 #2%
4885 \endgroup
4886 \else
4887 \@hyper@launch#7\#{#3}{#2}%
4888 \fi
4889 \else

```

otherwise its a URL

```

4890 \hyper@linkurl{#3}{#7\ifx\#2\else\hyper@hash#2\fi}%
4891 \fi
4892 \fi
4893 \fi
4894 \fi
4895 }

```

By default, turn run: into file:

```

4896 \def\@hyper@launch run:#1\#2#3{% filename, anchor text, linkname
4897 \hyper@linkurl{#2}{%
4898 \Hy@linkfileprefix
4899 #1%
4900 \ifx\#3\%
4901 \else
4902 \hyper@hash
4903 #3%
4904 \fi
4905 }%
4906 }

```

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

```

4907 \def\@hyper@linkfile file:#1\#2#3#4{%
4908 %file url,link string, name, original uri
4909 \filename@parse{#1}%
4910 \ifx\filename@ext\relax

```

```

4911 \edef\filename@ext{\XR@ext}%
4912 \fi
4913 \def\use@file{\filename@area\filename@base.\filename@ext}%
4914 \Hy@ifStringEndsWith\filename@ext\XR@ext{%
4915 \hyper@linkfile{#2}{\use@file}{#3}%
4916 }{%
4917 \ifx\@baseurl\@empty
4918 \hyper@linkurl{#2}{%
4919 #4\ifx\\#3\\else\hyper@hash#3\fi
4920 }%
4921 \else
4922 \hyper@linkurl{#2}{\use@file\ifx\\#3\\else\hyper@hash#3\fi}%
4923 \fi
4924 }%
4925 }

4926 \def\Hy@ifStringEndsWith#1#2{%
4927 \begingroup
4928 \edef\x{#1}%
4929 \@onelevel@sanitize\x
4930 \edef\x{.\x}%
4931 \edef\y{#2}%
4932 \@onelevel@sanitize\y
4933 \edef\y{.\y}%
4934 \expandafter\def\expandafter\z\expandafter##\expandafter1\y##2\@nil{%
4935 \endgroup
4936 \ifx\relax##2\relax
4937 \expandafter\ltx@secondoftwo
4938 \else
4939 \expandafter\ltx@firstoftwo
4940 \fi
4941 }%
4942 \expandafter\expandafter\expandafter\z\expandafter\x\y\@nil
4943 }

4944 \def\Hy@StringLocalhost{localhost}
4945 \@onelevel@sanitize\Hy@StringLocalhost
4946 \def\Hy@CleanupFile#1{%
4947 \edef#1{#1}%
4948 \expandafter\Hy@@CleanupFile#1\hbox{//\hbox\@nil{#1}%
4949 }
4950 \def\Hy@@CleanupFile#1//#2/#3\hbox#4\@nil#5{%
4951 \begingroup
4952 \toks@{\endgroup}%
4953 \def\x{#1}%
4954 \ifx\x\@empty
4955 \def\x{#2}%
4956 \ifx\x\@empty
4957 \toks@{\endgroup\def#5{/#3}}%
4958 \else
4959 \@onelevel@sanitize\x
4960 \ifx\x\Hy@StringLocalhost
4961 \toks@{\endgroup\def#5{/#3}}%
4962 \fi
4963 \fi
4964 \fi
4965 \the\toks@
4966 }

```

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.

```

4967 \long\def\hyper@@anchor#1#2{\@hyper@@anchor#1\relax#2\relax}
4968 \long\def\@hyper@@anchor#1\relax#2#3\relax{%
4969   \ifx\#1\%
4970     #2\Hy@Warning{Ignoring empty anchor}%
4971   \else
4972     \def\anchor@spot{#2#3}%
4973     \let\put@me@back\@empty
4974     \ifx\relax#2\relax
4975     \else
4976       \ifHy@nesting
4977       \else
4978         \ifcat a\noexpand#2\relax
4979         \else
4980           \ifcat 0\noexpand#2 \relax
4981           \else
4982             \typeout{Anchor start is not alphanumeric %
4983               on input line\the\inputlineno%
4984             }%
4985             \let\anchor@spot\@empty
4986             \def\put@me@back{#2#3}%
4987           \fi
4988         \fi
4989       \fi
4990     \fi
4991     \ifHy@activeanchor
4992       \anchor@spot
4993     \else
4994       \hyper@anchor{#1}%
4995     \fi
4996     \expandafter\put@me@back
4997   \fi
4998   \let\anchor@spot\@empty
4999 }
5000 \def\anchor@spot{}
```

## 18 Compatibility with the *LaTeX2html* 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.

```

5001 \let\htmladdimg\hyperimage
5002 \def\htmladdnormallink#1#2{\href{#2}{#1}}
5003 \def\htmladdnormallinkfoot#1#2{\href{#2}{#1}\footnote{#2}}
5004 \def\htmlref#1#2{% anchor text, label
```

```

5005 \label@hyperref[#{#2}]{#1}%
5006 }

```

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.

```

5007 \def\@@latex2htmlX{%
5008   \let\hhyperref\hyperref
5009   \def\hyperref##1##2##3##4{% anchor text for HTML
5010     % text to print before label in print
5011     % label
5012     % post-label text in print
5013     ##2\ref{##4}##3%
5014   }%
5015 }

```

## 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.

```

5016 \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
5017 \def\HyField@NewFlag#1#2{%
5018   \lowercase{\HyField@NewOption{#2}}%
5019   \lowercase{\HyField@NewBitsetFlag{#2}}{#2}{#1}%
5020 }

```

```

\HyField@NewFlagOnly
5021 \def\HyField@NewFlagOnly#1#2{%
5022   \lowercase{\HyField@NewBitsetFlag{#2}}{#2}{#1}%
5023 }

```

```

\HyField@NewOption #1: option name
5024 \def\HyField@NewOption#1{%
5025   \expandafter\newif\csname ifFld@#1\endcsname
5026   \define@key{Field}{#1}[true]{%
5027     \lowercase{\Field@boolkey{##1}}{#1}%
5028   }%
5029 }

```

\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

```
5030 \def\HyField@NewBitsetFlag#1#2#3#4{%  
5031   \begingroup  
5032   \count@=#4\relax  
5033   \advance\count@\m@ne  
5034   \def\x##1{%  
5035     \endgroup  
5036     \expandafter\def\csname HyField@#3@#1\endcsname{##1}%  
5037     \expandafter\ifx\csname HyField@#3@##1\endcsname\relax  
5038       \expandafter\edef\csname HyField@#3@##1\endcsname{%  
5039         (\number#4) #2%  
5040       }%  
5041     \else  
5042       \expandafter\edef\csname HyField@#3@##1\endcsname{%  
5043         \csname HyField@#3@##1\endcsname  
5044         /#2%  
5045       }%  
5046     \fi  
5047   }%  
5048   \expandafter\x\expandafter{\the\count@}%  
5049 }
```

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

```
5050 \def\HyField@UseFlag#1#2{%  
5051   \lowercase{\HyField@@UseFlag{#2}}{#1}%  
5052 }
```

\HyField@@UseFlag

```
5053 \def\HyField@@UseFlag#1#2{%  
5054   \bitsetSetValue{HyField@#2}{%  
5055     \csname HyField@#2@#1\endcsname  
5056   }{%  
5057     \csname ifFld@#1\endcsname 1\else 0\fi  
5058   }%  
5059 }
```

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

```
5060 \def\HyField@SetFlag#1#2{%  
5061   \lowercase{\HyField@@SetFlag{#2}}{#1}%  
5062 }
```

\HyField@@SetFlag

```
5063 \def\HyField@@SetFlag#1#2{%  
5064   \bitsetSetValue{HyField@#2}{%  
5065     \csname HyField@#2@#1\endcsname  
5066   }{1}%  
5067 }
```

\HyField@PrintFlags

```
5068 \def\HyField@PrintFlags#1#2{%  
5069   \ifHy@verbose  
5070     \begingroup
```



```

5071 \let\Hy@temp\@empty
5072 \let\MessageBreak\relax
5073 \expandafter\@for\expandafter\x\expandafter:\expandafter=%
5074 \bitsetGetSetBitList{HyField@#1}\do{%
5075 \edef\Hy@temp{%
5076 \Hy@temp
5077 \csname HyField@#1@\x\endcsname\MessageBreak
5078 }%
5079 }%
5080 \edef\x{\endgroup
5081 \noexpand\Hy@Info{%
5082 Field flags: %
5083 \expandafter\ifx\@car#1\@nil S\else/\fi
5084 #1 %
5085 \bitsetGetDec{HyField@#1} %
5086 (0x\bitsetGetHex{HyField@#1}{32})\MessageBreak
5087 \Hy@temp
5088 for #2%
5089 }%
5090 }\x
5091 \fi
5092 }

```

### 19.1.1 Declarations of field flags

“Table 8.70 Field flags common to all field types”

```

5093 \HyField@NewFlag{Ff}{ReadOnly}{1}
5094 \HyField@NewFlag{Ff}{Required}{2}
5095 \HyField@NewFlag{Ff}{NoExport}{3}

```

“Table 8.75 Field flags specific to button fields”

```

5096 \HyField@NewFlag{Ff}{NoToggleToOff}{15}
5097 \HyField@NewFlag{Ff}{Radio}{16}
5098 \HyField@NewFlag{Ff}{Pushbutton}{17}
5099 \HyField@NewFlag{Ff}{RadiosInUnison}{26}

```

“Table 8.77 Field flags specific to text fields”

```

5100 \HyField@NewFlag{Ff}{Multiline}{13}
5101 \HyField@NewFlag{Ff}{Password}{14}
5102 \HyField@NewFlag{Ff}{FileSelect}{21}% PDF 1.4
5103 \HyField@NewFlag{Ff}{DoNotSpellCheck}{23}% PDF 1.4
5104 \HyField@NewFlag{Ff}{DoNotScroll}{24}% PDF 1.4
5105 \HyField@NewFlag{Ff}{Comb}{25}% PDF 1.4
5106 \HyField@NewFlag{Ff}{RichText}{26}% PDF 1.5

```

“Table 8.79 field flags specific to choice fields”

```

5107 \HyField@NewFlag{Ff}{Combo}{18}
5108 \HyField@NewFlag{Ff}{Edit}{19}
5109 \HyField@NewFlag{Ff}{Sort}{20}
5110 \HyField@NewFlag{Ff}{MultiSelect}{22}% PDF 1.4
5111 % \HyField@NewFlag{Ff}{DoNotSpellCheck}{23}% PDF 1.4
5112 \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.

```

5113 \newif\iffld@popdown
5114 \define@key{Field}{popdown}[true]{%

```

```

5115 \lowercase{\Field@boolkey{#1}}{popdown}%
5116 }

```

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.

```

5117 \HyField@NewFlag{F}{Invisible}{1}
5118 \HyField@NewFlag{F}{Hidden}{2}% PDF 1.2
5119 \HyField@NewFlag{F}{Print}{3}% PDF 1.2
5120 \HyField@NewFlag{F}{NoZoom}{4}% PDF 1.2
5121 \HyField@NewFlag{F}{NoRotate}{5}% PDF 1.3
5122 \HyField@NewFlag{F}{NoView}{6}% PDF 1.3
5123 \HyField@NewFlag{F}{Locked}{8}% PDF 1.4
5124 \HyField@NewFlag{F}{ToggleNoView}{9}% PDF 1.5
5125 \HyField@NewFlag{F}{LockedContents}{10}% PDF 1.7

5126 \ifHy@pdfa
5127 \def\HyField@PDFAFldWarning#1#2{%
5128   \Hy@Warning{%
5129     PDF/A: Annotation flag '#1' must\MessageBreak
5130     be set to '#2'%
5131   }%
5132 }%
5133 \Fld@invisiblefalse
5134 \def\Fld@invisibletrue{%
5135   \HyField@PDFAFldWarning{invisible}{false}%
5136 }%
5137 \Fld@hiddenfalse
5138 \def\Fld@hiddentrue{%
5139   \HyField@PDFAFldWarning{hidden}{false}%
5140 }%
5141 \Fld@printtrue
5142 \def\Fld@printfalse{%
5143   \HyField@PDFAFldWarning{print}{true}%
5144 }%
5145 \Fld@nozoomtrue
5146 \def\Fld@nozoomfalse{%
5147   \HyField@PDFAFldWarning{nozoom}{true}%
5148 }%
5149 \Fld@norotatefalse
5150 \def\Fld@norotatefalse{%
5151   \HyField@PDFAFldWarning{norotate}{true}%
5152 }%
5153 \Fld@noviewfalse
5154 \def\Fld@noviewtrue{%
5155   \HyField@PDFAFldWarning{noview}{false}%
5156 }%
5157 \fi

```

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

```

5158 \HyField@NewFlag{Submit}{IncludeNoValueFields}{2}
5159 \HyField@NewFlagOnly{Submit}{ExportFormat}{3}
5160 \HyField@NewFlag{Submit}{GetMethod}{4}
5161 \HyField@NewFlag{Submit}{SubmitCoordinates}{5}
5162 \HyField@NewFlagOnly{Submit}{XFDF}{6}
5163 \HyField@NewFlag{Submit}{IncludeAppendSaves}{7}

```

```

5164 \HyField@NewFlag{Submit}{IncludeAnnotations}{8}
5165 \HyField@NewFlagOnly{Submit}{SubmitPDF}{9}
5166 \HyField@NewFlag{Submit}{CanonicalFormat}{10}
5167 \HyField@NewFlag{Submit}{ExclNonUserAnnots}{11}
5168 \HyField@NewFlag{Submit}{ExclFKey}{12}
5169 \HyField@NewFlag{Submit}{EmbedForm}{14}

5170 \define@key{Field}{export}{%
5171   \lowercase{\def\Hy@temp{#1}}%
5172   \@ifundefined{Fld@export@\Hy@temp}{%
5173     \@onelevel@sanitize\Hy@temp
5174     \Hy@Error{%
5175       Unknown export format '\Hy@temp'.\MessageBreak
5176       Known formats are 'FDF', 'HTML', 'XFDF', and 'PDF'%
5177     }\@ehc
5178   }{%
5179     \let\Fld@export\Hy@temp
5180   }%
5181 }
5182 \def\Fld@export{fdf}
5183 \@namedef{Fld@export@fdf}{0}%
5184 \@namedef{Fld@export@html}{1}%
5185 \@namedef{Fld@export@xfdf}{2}%
5186 \@namedef{Fld@export@pdf}{3}%

```

### 19.1.2 Set submit flags

\HyField@FlagsSubmit

```

5187 \def\HyField@FlagsSubmit{%
5188   \bitsetReset{HyField@Submit}%
5189   \ifcase\@nameuse{Fld@export@\Fld@export} %
5190     % FDF
5191     \HyField@UseFlag{Submit}{IncludeNoValueFields}%
5192     \HyField@UseFlag{Submit}{SubmitCoordinates}%
5193     \HyField@UseFlag{Submit}{IncludeAppendSaves}%
5194     \HyField@UseFlag{Submit}{IncludeAnnotations}%
5195     \HyField@UseFlag{Submit}{CanonicalFormat}%
5196     \HyField@UseFlag{Submit}{ExclNonUserAnnots}%
5197     \HyField@UseFlag{Submit}{ExclFKey}%
5198     \HyField@UseFlag{Submit}{EmbedForm}%
5199   \or % HTML
5200     \HyField@SetFlag{Submit}{ExportFormat}%
5201     \HyField@UseFlag{Submit}{IncludeNoValueFields}%
5202     \HyField@UseFlag{Submit}{GetMethod}%
5203     \HyField@UseFlag{Submit}{SubmitCoordinates}%
5204     \HyField@UseFlag{Submit}{CanonicalFormat}%
5205   \or % XFDF
5206     \HyField@SetFlag{Submit}{XFDF}%
5207     \HyField@UseFlag{Submit}{IncludeNoValueFields}%
5208     \HyField@UseFlag{Submit}{SubmitCoordinates}%
5209     \HyField@UseFlag{Submit}{CanonicalFormat}%
5210   \or % PDF
5211     \HyField@SetFlag{Submit}{SubmitPDF}%
5212     \HyField@UseFlag{Submit}{GetMethod}%
5213   \fi
5214   \HyField@PrintFlags{Submit}{submit button field}%
5215   \bitsetIsEmpty{HyField@Submit}{%
5216     \def\Fld@submitflags{%

```

```

5217 }{%
5218     \edef\Fld@submitflags{/Flags \bitsetGetDec{HyField@Submit}}}%
5219 }%
5220 }

```

### 19.1.3 Set annot flags in fields

\HyField@FlagsAnnot

```

5221 \def\HyField@FlagsAnnot#1{%
5222     \bitsetReset{HyField@F}%
5223     \HyField@UseFlag{F}{Invisible}%
5224     \HyField@UseFlag{F}{Hidden}%
5225     \HyField@UseFlag{F}{Print}%
5226     \HyField@UseFlag{F}{NoZoom}%
5227     \HyField@UseFlag{F}{NoRotate}%
5228     \HyField@UseFlag{F}{NoView}%
5229     \HyField@UseFlag{F}{Locked}%
5230     \HyField@UseFlag{F}{ToggleNoView}%
5231     \HyField@UseFlag{F}{LockedContents}%
5232     \HyField@PrintFlags{F}{#1}%
5233     \bitsetIsEmpty{HyField@F}{%
5234         \def\Fld@annotflags{%
5235             }{%
5236                 \edef\Fld@annotflags{/F \bitsetGetDec{HyField@F}}}%
5237             }%
5238     }

```

### 19.1.4 Pushbutton field

\HyField@FlagsPushButton

```

5239 \def\HyField@FlagsPushButton{%
5240     \HyField@FlagsAnnot{push button field}%
5241     \bitsetReset{HyField@Ff}%
5242     \HyField@UseFlag{Ff}{ReadOnly}%
5243     \HyField@UseFlag{Ff}{Required}%
5244     \HyField@UseFlag{Ff}{NoExport}%
5245     \HyField@SetFlag{Ff}{Pushbutton}%
5246     \HyField@PrintFlags{Ff}{push button field}%
5247     \bitsetIsEmpty{HyField@Ff}{%
5248         \def\Fld@flags{%
5249             }{%
5250                 \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}}%
5251             }%
5252     }

```

### 19.1.5 Check box field

\HyField@FlagsCheckBox

```

5253 \def\HyField@FlagsCheckBox{%
5254     \HyField@FlagsAnnot{check box field}%
5255     \bitsetReset{HyField@Ff}%
5256     \HyField@UseFlag{Ff}{ReadOnly}%
5257     \HyField@UseFlag{Ff}{Required}%
5258     \HyField@UseFlag{Ff}{NoExport}%
5259     \HyField@PrintFlags{Ff}{check box field}%
5260     \bitsetIsEmpty{HyField@Ff}{%

```

```

5261     \def\Fld@flags{%
5262     }{%
5263     \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
5264     }%
5265 }

```

### 19.1.6 Radio button field

\HyField@FlagsRadioButton

```

5266 \def\HyField@FlagsRadioButton{%
5267 \HyField@FlagsAnnot{radio button field}%
5268 \bitsetReset{HyField@Ff}%
5269 \HyField@UseFlag{Ff}{ReadOnly}%
5270 \HyField@UseFlag{Ff}{Required}%
5271 \HyField@UseFlag{Ff}{NoExport}%
5272 \HyField@UseFlag{Ff}{NoToggleToOff}%
5273 \HyField@SetFlag{Ff}{Radio}%
5274 \HyField@UseFlag{Ff}{RadiosInUnison}%
5275 \HyField@PrintFlags{Ff}{radio button field}%
5276 \bitsetIsEmpty{HyField@Ff}{%
5277     \def\Fld@flags{%
5278     }{%
5279     \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
5280     }%
5281 }

```

### 19.1.7 Text fields

\HyField@FlagsText

```

5282 \def\HyField@FlagsText{%
5283 \HyField@FlagsAnnot{text field}%
5284 \bitsetReset{HyField@Ff}%
5285 \HyField@UseFlag{Ff}{ReadOnly}%
5286 \HyField@UseFlag{Ff}{Required}%
5287 \HyField@UseFlag{Ff}{NoExport}%
5288 \HyField@UseFlag{Ff}{Multiline}%
5289 \HyField@UseFlag{Ff}{Password}%
5290 \HyField@UseFlag{Ff}{FileSelect}%
5291 \HyField@UseFlag{Ff}{DoNotSpellCheck}%
5292 \HyField@UseFlag{Ff}{DoNotScroll}%
5293 \ifFld@comb
5294     \ifcase0\ifFld@multiline
5295         \else\ifFld@password
5296         \else\ifFld@fileselect
5297         \else 1\fi\fi\fi\relax
5298     \Hy@Error{%
5299         Field option ‘comb’ cannot used together with\MessageBreak
5300         ‘multiline’, ‘password’, or ‘fileselect’%
5301     }\@ehc
5302     \else
5303         \HyField@UseFlag{Ff}{Comb}%
5304     \fi
5305 \fi
5306 \HyField@UseFlag{Ff}{RichText}%
5307 \HyField@PrintFlags{Ff}{text field}%
5308 \bitsetIsEmpty{HyField@Ff}{%

```

```

5309 \def\Fld@flags{%
5310 }{%
5311 \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
5312 }%
5313 }

```

### 19.1.8 Choice fields

\HyField@FlagsChoice

```

5314 \def\HyField@FlagsChoice{%
5315 \HyField@FlagsAnnot{choice field}%
5316 \bitsetReset{HyField@Ff}%
5317 \HyField@UseFlag{Ff}{ReadOnly}%
5318 \HyField@UseFlag{Ff}{Required}%
5319 \HyField@UseFlag{Ff}{NoExport}%
5320 \HyField@UseFlag{Ff}{Combo}%
5321 \ifFld@combo
5322 \HyField@UseFlag{Ff}{Edit}%
5323 \fi
5324 \HyField@UseFlag{Ff}{Sort}%
5325 \HyField@UseFlag{Ff}{MultiSelect}%
5326 \ifFld@combo
5327 \ifFld@edit
5328 \HyField@UseFlag{Ff}{DoNotSpellCheck}%
5329 \fi
5330 \fi
5331 \HyField@UseFlag{Ff}{CommitOnSelChange}%
5332 \HyField@PrintFlags{Ff}{choice field}%
5333 \bitsetIsEmpty{HyField@Ff}{%
5334 \def\Fld@flags{%
5335 }{%
5336 \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
5337 }%
5338 }

```

## 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.

```

5339 \def\HyField@PDFChoices#1{%
5340 \begingroup
5341 \gdef\Fld@choices{%
5342 \def\HyTmp@Optlist{%
5343 \let\HyTmp@Optitem\relax
5344 \count@=0 %
5345 \kv@parse{#1}{%
5346 \Hy@pdfstringdef\kv@key\kv@key
5347 \ifx\kv@value\relax
5348 \ifnum\Hy@pdfversion<3 % implementation note 122, PDF spec 1.7
5349 \xdef\Fld@choices{\Fld@choices[(\kv@key)(\kv@key)]}%
5350 \else
5351 \xdef\Fld@choices{\Fld@choices(\kv@key)}%
5352 \fi
5353 \else
5354 \Hy@pdfstringdef\kv@value\kv@value

```

```

5355 \xdef\Fld@choices{\Fld@choices[(\kv@value)(\kv@key)]}%
5356 \fi
5357 \edef\HyTmp@optlist{%
5358 \HyTmp@optlist
5359 \HyTmp@optitem{\the\count@}{\kv@key}0%
5360 }%
5361 \advance\count@ by 1 %
5362 \@gobbletwo
5363 }%
5364 \xdef\Fld@choices{/Opt[\Fld@choices]}%
5365 \ifFld@multiselect
5366 \HyField@@PDFChoices{DV}\Fld@default
5367 \HyField@@PDFChoices{V}\Fld@value
5368 \else
5369 \ifx\Fld@default\relax
5370 \else
5371 \pdfstringdef\Hy@gtemp\Fld@default
5372 \xdef\Fld@choices{\Fld@choices/DV(\Hy@gtemp)}%
5373 \fi
5374 \ifx\Fld@value\relax
5375 \else
5376 \pdfstringdef\Hy@gtemp\Fld@value
5377 \xdef\Fld@choices{\Fld@choices/V(\Hy@gtemp)}%
5378 \fi
5379 \fi
5380 \endgroup
5381 }

```

\HyField@@PDFChoices

```

5382 \def\HyField@@PDFChoices#1#2{%
5383 \ifx#2\relax
5384 \else
5385 \count@=0 %
5386 \def\HyTmp@optitem##1##2##3{%
5387 \def\HyTmp@key{##2}%
5388 \ifx\HyTmp@key\Hy@gtemp
5389 \expandafter\def\expandafter\HyTmp@optlist\expandafter{%
5390 \HyTmp@optlist
5391 \HyTmp@optitem{##1}{##2}1%
5392 }%
5393 \let\HyTmp@found=Y%
5394 \else
5395 \expandafter\def\expandafter\HyTmp@optlist\expandafter{%
5396 \HyTmp@optlist
5397 \HyTmp@optitem{##1}{##2}##3%
5398 }%
5399 \fi
5400 }%
5401 \expandafter\comma@parse\expandafter{#2}{%
5402 \pdfstringdef\Hy@gtemp\comma@entry
5403 \let\HyTmp@found=N %
5404 \expandafter\let\expandafter\HyTmp@optlist\expandafter\@empty
5405 \HyTmp@optlist
5406 \ifx\HyTmp@found Y%
5407 \advance\count@ by 1 %
5408 \else
5409 \@onelevel@sanitize\comma@entry

```

```

5410 \PackageWarning{hyperref}{%
5411 \string\ChoiceBox: Ignoring value '\comma@entry',%
5412 \MessageBreak
5413 it cannot be found in the choices%
5414 }%
5415 \fi
5416 \@gobble
5417 }%
5418 \def\HyTmp@optitem##1##2##3{%
5419 \ifnum##3=1 %
5420 (##2)%
5421 \fi
5422 }%
5423 \ifcase\count@
5424 \or
5425 \xdef\Fld@choices{\Fld@choices/#1\HyTmp@optlist}%
5426 \else
5427 \xdef\Fld@choices{\Fld@choices/#1[\HyTmp@optlist]}%
5428 \ifx#1V%
5429 \def\HyTmp@optitem##1##2##3{%
5430 \ifnum##3=1 %
5431 \@firstofone{ ##1}%
5432 \fi
5433 }%
5434 \edef\HyTmp@optlist{\HyTmp@optlist}%
5435 \xdef\Fld@choices{%
5436 \Fld@choices
5437 /I[\expandafter\@firstofone\HyTmp@optlist]%
5438 }%
5439 \fi
5440 \fi
5441 \fi
5442 }

```

## 19.3 Forms

\HyField@SetKeys

```

5443 \def\HyField@SetKeys{%
5444 \kvsetkeys{Field}%
5445 }

5446 \newif\ifFld@checked
5447 \newif\ifFld@disabled
5448 \Fld@checkedfalse
5449 \Fld@disabledfalse
5450 \newcount\Fld@menulength
5451 \newdimen\Fld@Width
5452 \newdimen\Fld@charsize
5453 \Fld@charsize=10\p@
5454 \def\Fld@maxlen{0}
5455 \def\Fld@align{0}
5456 \def\Fld@color{0 0 0 rg}
5457 \def\Fld@bcolor{1 1 1}
5458 \def\Fld@bordercolor{1 0 0}
5459 \def\Fld@bordersep{1\p@}
5460 \def\Fld@borderwidth{1}
5461 \def\Fld@borderstyle{S}

```



```

5462 \def\Fld@cbsymbol{4}
5463 \def\Fld@radiosymbol{H}
5464 \def\Fld@rotation{0}
5465 \def\Form{\@ifnextchar[{\@Form}{\@Form[]}}
5466 \def\endForm{\@endForm}
5467 \newif\ifForm@html
5468 \Form@htmlfalse
5469 \def\Form@boolkey#1#2{%
5470   \csname Form@#2\ifx\relax#1\relax true\else#1\fi\endcsname
5471 }
5472 \define@key{Form}{action}{%
5473   \hyper@normalise\Hy@DefFormAction{#1}%
5474 }
5475 \def\Hy@DefFormAction{\def\Form@action}
5476 \def\enc@html{html}
5477 \define@key{Form}{encoding}{%
5478   \def\Hy@tempa{#1}%
5479   \ifx\Hy@tempa\enc@html
5480     \Form@htmltrue
5481     \def\Fld@export{html}%
5482   \else
5483     \Hy@Warning{%
5484       Form 'encoding' key with \MessageBreak
5485       unknown value '#1'%
5486     }%
5487     \Form@htmlfalse
5488   \fi
5489 }
5490 \define@key{Form}{method}{%
5491   \lowercase{\def\Hy@temp{#1}}%
5492   \@ifundefined{Form@method@\Hy@temp}{%
5493     \@onelevel@sanitize\Hy@temp
5494     \Hy@Error{%
5495       Unknown method '\Hy@temp'\MessageBreak
5496       Known values are 'post' and 'get'%
5497     }\@ehc
5498   }{%
5499     \let\Form@method\Hy@temp
5500     \ifcase\@nameuse{Form@method@\Hy@temp} %
5501       \Fld@getmethodfalse
5502     \else
5503       \Fld@getmethodtrue
5504     \fi
5505   }%
5506 }
5507 \def\Form@method{}
5508 \@namedef{Form@method@post}{0}
5509 \@namedef{Form@method@get}{1}
5510 \newif\ifHyField@NeedAppearances
5511 \def\HyField@NeedAppearancesfalse{%
5512   \global\let\ifHyField@NeedAppearances\iffalse
5513 }
5514 \def\HyField@NeedAppearancetrue{%
5515   \global\let\ifHyField@NeedAppearances\iftrue
5516 }
5517 \HyField@NeedAppearancetrue
5518 \define@key{Form}{NeedAppearances}[true]{%

```

```

5519 \edef\Hy@tempa{#1}%
5520 \ifx\Hy@tempa\Hy>true
5521   \HyField@NeedAppearancetrue
5522 \else
5523   \ifx\Hy@tempa\Hy>false
5524     \HyField@NeedAppearancesfalse
5525   \else
5526     \Hy@Error{%
5527       Unexpected value '\Hy@tempa'\MessageBreak
5528       of option 'NeedAppearances' instead of\MessageBreak
5529       'true' or 'false'%
5530     }\@ehc
5531   \fi
5532 \fi
5533 }
5534 \def\Field@boolkey#1#2{%
5535   \csname Fld@#2\ifx\relax#1\relax true\else#1\fi\endcsname
5536 }
5537 \ifHy@texht
5538   \newtoks\Field@toks
5539   \Field@toks={ }%
5540   \def\Field@addtoks#1#2{%
5541     \edef\@processme{\Field@toks\the\Field@toks\space #1="#2"}%
5542     \@processme
5543   }%
5544 \else
5545   \def\Hy@WarnHTMLFieldOption#1{%
5546     \Hy@Warning{%
5547       HTML field option '#1'\MessageBreak
5548       is ignored%
5549     }%
5550   }%
5551 \fi
5552 \def\Fld@checkequals#1=#2=#3\\{%
5553   \def\@currDisplay{#1}%
5554   \ifx\\#2\\%
5555     \def\@currValue{#1}%
5556   \else
5557     \def\@currValue{#2}%
5558   \fi
5559 }
5560 \define@key{Field}{loc}{%
5561   \def\Fld@loc{#1}%
5562 }
5563 \define@key{Field}{checked}[true]{%
5564   \lowercase{\Field@boolkey{#1}}{checked}%
5565 }
5566 \define@key{Field}{disabled}[true]{%
5567   \lowercase{\Field@boolkey{#1}}{disabled}%
5568 }
5569 \ifHy@texht
5570   \define@key{Field}{accesskey}{%
5571     \Field@addtoks{accesskey}{#1}%
5572   }%
5573   \define@key{Field}{tabkey}{%
5574     \Field@addtoks{tabkey}{#1}%
5575   }%

```

```

5576 \else
5577   \define@key{Field}{accesskey}{%
5578     \Hy@WarnHTMLFieldOption{accesskey}%
5579   }%
5580   \define@key{Field}{tabkey}{%
5581     \Hy@WarnHTMLFieldOption{tabkey}%
5582   }%
5583 \fi
5584 \define@key{Field}{name}{%
5585   \def\Fld@name{#1}%
5586 }
5587 \let\Fld@altname\relax
5588 \define@key{Field}{altname}{%
5589   \def\Fld@altname{#1}%
5590 }
5591 \let\Fld@mappingname\relax
5592 \define@key{Field}{mappingname}{%
5593   \def\Fld@mappingname{#1}%
5594 }
5595 \define@key{Field}{width}{%
5596   \def\Fld@width{#1}%
5597   \Field@Width#1\setbox0=\hbox{m}%
5598 }
5599 \define@key{Field}{maxlen}{%
5600   \def\Fld@maxlen{#1}%
5601 }
5602 \define@key{Field}{menulength}{%
5603   \Fld@menulength=#1\relax
5604 }
5605 \define@key{Field}{height}{%
5606   \def\Fld@height{#1}%
5607 }
5608 \define@key{Field}{charsize}{%
5609   \Fld@charsize#1%
5610 }
5611 \define@key{Field}{borderwidth}{%
5612   \def\Fld@borderwidth{#1}%
5613 }
5614 \define@key{Field}{borderstyle}{%
5615   \let\Hy@temp\Fld@borderstyle
5616   \def\Fld@borderstyle{#1}%
5617   \Hy@Match\Fld@borderstyle{%
5618     ~[SDBIU]$%
5619   }{}{%
5620     \Hy@Warning{%
5621       Invalid value '~\@pdfborderstyle'\MessageBreak
5622       for option 'pdfborderstyle'. Valid values:\MessageBreak
5623       \space\space S (Solid), D (Dashed), B (Beveled),\MessageBreak
5624       \space\space I (Inset), U (Underline)\MessageBreak
5625       Option setting is ignored%
5626     }%
5627     \let\Fld@borderstyle\Hy@temp
5628   }%
5629 }
5630 \define@key{Field}{bordersep}{%
5631   \def\Fld@bordersep{#1}%
5632 }

```

```

5633 \define@key{Field}{default}{%
5634   \def\Fld@default{#1}%
5635 }
5636 \define@key{Field}{align}{%
5637   \def\Fld@align{#1}%
5638 }
5639 \define@key{Field}{value}{%
5640   \def\Fld@value{#1}%
5641 }
5642 \define@key{Field}{checkboxsymbol}{%
5643   \Fld@DingDef\Fld@cbsymbol{#1}%
5644 }
5645 \define@key{Field}{radiosymbol}{%
5646   \Fld@DingDef\Fld@radiosymbol{#1}%
5647 }
5648 \def\Fld@DingDef#1#2{%
5649   \def\Fld@temp{}%
5650   \Fld@@DingDef#2\ding{}\@nil
5651   \let#1\Fld@temp
5652 }
5653 \def\Fld@@DingDef#1\ding#2#3\@nil{%
5654   \expandafter\def\expandafter\Fld@temp\expandafter{%
5655     \Fld@temp
5656     #1%
5657   }%
5658   \ifx\\#3\\%
5659     \expandafter\@gobble
5660   \else
5661     \begingroup
5662     \lccode'0=#2\relax
5663     \lowercase{\endgroup
5664       \expandafter\def\expandafter\Fld@temp\expandafter{%
5665         \Fld@temp
5666         0%
5667       }%
5668     }%
5669     \expandafter\@firstofone
5670   \fi
5671   {%
5672     \Fld@@DingDef#3\@nil
5673   }%
5674 }
5675 \define@key{Field}{rotation}{%
5676   \def\Fld@rotation{#1}%
5677 }
5678 \define@key{Field}{backgroundcolor}{%
5679   \HyColor@FieldBColor{#1}\Fld@bcolor{hyperref}{backgroundcolor}%
5680 }
5681 \define@key{Field}{bordercolor}{%
5682   \HyColor@FieldBColor{#1}\Fld@bordercolor{hyperref}{bordercolor}%
5683 }
5684 \define@key{Field}{color}{%
5685   \HyColor@FieldColor{#1}\Fld@color{hyperref}{color}%
5686 }
5687 \def\Fld@onclick@code{}
5688 \def\Fld@format@code{}

```

```

5689 \def\Fld@validate@code{}
5690 \def\Fld@calculate@code{}
5691 \def\Fld@keystroke@code{}
5692 \def\Fld@onfocus@code{}
5693 \def\Fld@onblur@code{}
5694 \def\Fld@onmousedown@code{}
5695 \def\Fld@onmouseup@code{}
5696 \def\Fld@onenter@code{}
5697 \def\Fld@onexit@code{}
5698 \def\Hy@temp#1{%
5699   \expandafter\Hy@@temp\csname Fld@#1@code\endcsname{#1}%
5700 }
5701 \def\Hy@@temp#1#2{%
5702   \ifHy@pdfa
5703     \define@key{Field}{#2}{%
5704       \Hy@Error{%
5705         PDF/A: Additional action ‘#2’ is prohibited%
5706       }\@ehc
5707     }%
5708   \else
5709     \define@key{Field}{#2}{%
5710       \def#1{##1}%
5711     }%
5712   \fi
5713 }
5714 \Hy@temp{keystroke}
5715 \Hy@temp{format}
5716 \Hy@temp{validate}
5717 \Hy@temp{calculate}
5718 \Hy@temp{onfocus}
5719 \Hy@temp{onblur}
5720 \Hy@temp{onenter}
5721 \Hy@temp{onexit}
5722 \ifHy@texht
5723   \def\Hy@temp#1{%
5724     \define@key{Field}{#1}{%
5725       \Field@addtoks{#1}{##1}%
5726     }%
5727   }%
5728 \else
5729   \def\Hy@temp#1{%
5730     \define@key{Field}{#1}{%
5731       \Hy@WarnHTMLFieldOption{#1}%
5732     }%
5733   }%
5734 \fi
5735 \Hy@temp{ondblclick}
5736 \Hy@temp{onmousedown}
5737 \Hy@temp{onmouseup}
5738 \Hy@temp{onmouseover}
5739 \Hy@temp{onmousemove}
5740 \Hy@temp{onmouseout}
5741 \Hy@temp{onkeydown}
5742 \Hy@temp{onkeyup}
5743 \Hy@temp{onselect}
5744 \Hy@temp{onchange}
5745 \Hy@temp{onkeypress}

```

```

5746 \ifHy@texht
5747   \define@key{Field}{onclick}{%
5748     \Field@addtoks{onclick}{#1}%
5749   }%
5750 \else
5751   \ifHy@pdfa
5752     \define@key{Field}{onclick}{%
5753       \Hy@Error{%
5754         PDF/A: Action 'onclick' is prohibited%
5755       }\@ehc
5756     }%
5757   \else
5758     \define@key{Field}{onclick}{%
5759       \def\Fld@onclick@code{#1}%
5760     }%
5761   \fi
5762 \fi

5763 \DeclareRobustCommand\TextField{%
5764   \@ifnextchar[{\@TextField}{\@TextField[]}%
5765 }
5766 \DeclareRobustCommand\ChoiceMenu{%
5767   \@ifnextchar[{\@ChoiceMenu}{\@ChoiceMenu[]}%
5768 }
5769 \DeclareRobustCommand\CheckBox{%
5770   \@ifnextchar[{\@CheckBox}{\@CheckBox[]}%
5771 }
5772 \DeclareRobustCommand\PushButton{%
5773   \@ifnextchar[{\@PushButton}{\@PushButton[]}%
5774 }
5775 \DeclareRobustCommand\Gauge{%
5776   \@ifnextchar[{\@Gauge}{\@Gauge[]}%
5777 }
5778 \DeclareRobustCommand\Submit{%
5779   \@ifnextchar[{\@Submit}{\@Submit[]}%
5780 }
5781 \DeclareRobustCommand\Reset{%
5782   \@ifnextchar[{\@Reset}{\@Reset[]}%
5783 }
5784 \def\LayoutTextField#1#2{% label, field
5785   #1 #2%
5786 }
5787 \def\LayoutChoiceField#1#2{% label, field
5788   #1 #2%
5789 }
5790 \def\LayoutCheckField#1#2{% label, field
5791   #1 #2%
5792 }
5793 \def\LayoutPushButtonField#1{% button
5794   #1%
5795 }
5796 \def\MakeRadioField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
5797 \def\MakeCheckField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
5798 \def\MakeTextField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
5799 \def\MakeChoiceField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
5800 \def\MakeButtonField#1{%
5801   \sbox0{%
5802     \hskip\Fld@borderwidth bp#1\hskip\Fld@borderwidth bp%

```

```

5803 }%
5804 \@tempdima\ht0 %
5805 \advance\@tempdima by \Fld@borderwidth bp %
5806 \advance\@tempdima by \Fld@borderwidth bp %
5807 \ht0\@tempdima
5808 \@tempdima\dp0 %
5809 \advance\@tempdima by \Fld@borderwidth bp %
5810 \advance\@tempdima by \Fld@borderwidth bp %
5811 \dp0\@tempdima
5812 \box0\relax
5813 }
5814 \def\DefaultHeightofSubmit{14pt}
5815 \def\DefaultWidthofSubmit{2cm}
5816 \def\DefaultHeightofReset{14pt}
5817 \def\DefaultWidthofReset{2cm}
5818 \def\DefaultHeightofCheckBox{\baselineskip}
5819 \def\DefaultWidthofCheckBox{\baselineskip}
5820 \def\DefaultHeightofChoiceMenu{\baselineskip}
5821 \def\DefaultWidthofChoiceMenu{\baselineskip}
5822 \def\DefaultHeightofText{\baselineskip}
5823 \def\DefaultHeightofTextMultiline{4\baselineskip}
5824 \def\DefaultWidthofText{3cm}
5825 \def\DefaultOptionsofSubmit{print,name=Submit,noexport}
5826 \def\DefaultOptionsofReset{print,name=Reset,noexport}
5827 \def\DefaultOptionsofPushButton{print}
5828 \def\DefaultOptionsofCheckBox{print}
5829 \def\DefaultOptionsofText{print}

```

Default options for the types of \ChoiceMenu.

```

5830 \def\DefaultOptionsofListBox{print}
5831 \def\DefaultOptionsofComboBox{print,edit,sort}
5832 \def\DefaultOptionsofPopdownBox{print}
5833 \def\DefaultOptionsofRadio{print,notoggletooff}

```

## 20 Setup

```

5834 \ifHy@figures
5835 \Hy@Info{Hyper figures ON}%
5836 \else
5837 \Hy@Info{Hyper figures OFF}%
5838 \fi
5839 \ifHy@nesting
5840 \Hy@Info{Link nesting ON}%
5841 \else
5842 \Hy@Info{Link nesting OFF}%
5843 \fi
5844 \ifHy@hyperindex
5845 \Hy@Info{Hyper index ON}%
5846 \else
5847 \Hy@Info{Hyper index OFF}%
5848 \fi
5849 \ifHy@backref
5850 \Hy@Info{backreferencing ON}%
5851 \else
5852 \Hy@Info{backreferencing OFF}%
5853 \fi
5854 \ifHy@colorlinks

```

```

5855 \Hy@Info{Link coloring ON}%
5856 \else
5857 \Hy@Info{Link coloring OFF}%
5858 \fi
5859 \ifHy@ocgcolorlinks
5860 \Hy@Info{Link coloring with OCG ON}%
5861 \else
5862 \Hy@Info{Link coloring with OCG OFF}%
5863 \fi
5864 \ifHy@pdfa
5865 \Hy@Info{PDF/A mode ON}%
5866 \else
5867 \Hy@Info{PDF/A mode OFF}%
5868 \fi

```

## 21 Low-level utility macros

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

```

5869 \edef\hyper@hash{\string#}
5870 \edef\hyper@tilde{\string~}
5871 \edef\hyper@quote{\string"}

```

Support \label before \begin{document}.

```

5872 \def\@currentHref{Doc-Start}
5873 \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.

```

5874 \Hy@AtBeginDocument{%
5875 \Hy@pdfstringtrue
5876 \PDF@SetupDoc
5877 \let\PDF@SetupDoc\@empty
5878 \Hy@DisableOption{pdfpagescrop}%
5879 \Hy@DisableOption{pdfpagemode}%
5880 \Hy@DisableOption{pdfnonfullscreenpagemode}%
5881 \Hy@DisableOption{pdfdirection}%
5882 \Hy@DisableOption{pdfviewarea}%
5883 \Hy@DisableOption{pdfviewclip}%
5884 \Hy@DisableOption{pdfprintarea}%
5885 \Hy@DisableOption{pdfprintclip}%
5886 \Hy@DisableOption{pdfprintscaling}%
5887 \Hy@DisableOption{pdfduplex}%
5888 \Hy@DisableOption{pdfpicktraybypdfsize}%
5889 \Hy@DisableOption{pdfprintpagerange}%
5890 \Hy@DisableOption{pdfnumcopies}%
5891 \Hy@DisableOption{pdfstartview}%
5892 \Hy@DisableOption{pdfstartpage}%
5893 \Hy@DisableOption{pdftoolbar}%
5894 \Hy@DisableOption{pdfmenubar}%
5895 \Hy@DisableOption{pdfwindowui}%
5896 \Hy@DisableOption{pdfitwindow}%
5897 \Hy@DisableOption{pdfcenterwindow}%
5898 \Hy@DisableOption{pdfdisplaydoctitle}%
5899 \Hy@DisableOption{pdfpagelayout}%
5900 \Hy@DisableOption{pdflang}%
5901 \Hy@DisableOption{baseurl}%
5902 \ifHy@texht\else\hyper@anchorstart{Doc-Start}\hyper@anchorend\fi
5903 \Hy@pdfstringfalse

```



5904 }

Ignore star from referencing macros:

```
5905 \LetLtxMacro\NoHy@OrgRef\ref
5906 \DeclareRobustCommand*\ref{%
5907   \@ifstar\NoHy@OrgRef\NoHy@OrgRef
5908 }
5909 \LetLtxMacro\NoHy@OrgPageRef\pageref
5910 \DeclareRobustCommand*\pageref{%
5911   \@ifstar\NoHy@OrgPageRef\NoHy@OrgPageRef
5912 }
```

## 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.

```
5913 \def\NoHyper{%
5914   \def\hyper@link@{##1}##2##3##4{##4}%
5915   \def\hyper@@anchor##1{%
5916     \global\let\hyper@livelink\hyper@link
5917     \gdef\hyper@link##1##2##3{##3}%
5918     \def\hyper@anchor##1{%
5919       \def\hyper@anchorstart##1{%
5920         \let\hyper@anchorend\@empty
5921         \def\hyper@linkstart##1##2{%
5922           \let\hyper@linkend\@empty
5923           \def\hyper@linkurl##1##2{##1}%
5924           \def\hyper@linkfile##1##2##3{##1}%
5925           \def\hyper@link@{##1}##2##3{%
5926             \let\Hy@backout\@gobble
5927           }
5928           \def\stop@hyper{%
5929             \def\hyper@link@{##1}##2##3##4{##4}%
5930             \let\Hy@backout\@gobble
5931             \def\hyper@@anchor##1{%
5932               \def\hyper@link##1##2##3{##3}%
5933               \def\hyper@anchor##1{%
5934                 \def\hyper@anchorstart##1{%
5935                   \let\hyper@anchorend\@empty
5936                   \def\hyper@linkstart##1##2{%
5937                     \let\hyper@linkend\@empty
5938                     \def\hyper@linkurl##1##2{##1}%
5939                     \def\hyper@linkfile##1##2##3{##1}%
5940                     \def\hyper@link@{##1}##2##3{%
5941                       }
5942                   }
5943                   \global\let\hyper@link\hyper@livelink
5944                 }
5945               }
5946             }
5947           }
5948           \def\endNoHyper{%
5949             \global\let\hyper@link\hyper@livelink
5950           }
5951           }
5952           }
5953         }
5954       }
5955     }
5956   }
5957 }
```

## 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:

```
5946 <*nohyperref>
5947 \RequirePackage{letltxmacro}[2008/06/13]
5948 \let\hyper@@anchor\@gobble
5949 \def\hyper@link#1#2#3{#3}%
5950 \let\hyper@anchorstart\@gobble
5951 \let\hyper@anchorend\@empty
5952 \let\hyper@linkstart\@gobbletwo
5953 \let\hyper@linkend\@empty
5954 \def\hyper@linkurl#1#2{#1}%
5955 \def\hyper@linkfile#1#2#3{#1}%
5956 \def\hyper@link@{#1}#2#3{#3}%
5957 \let\PDF@SetupDoc\@empty
5958 \let\PDF@FinishDoc\@empty
5959 \def\nohyperpage#1{#1}
```

Some top-level commands:

```
5960 \def\Acrobatmenu#1#2{\leavevmode#2}
5961 \let\pdfstringdefDisableCommands\@gobbletwo
5962 \let\texorpdfstring\@firstoftwo
5963 \let\pdfbookmark\@undefined
5964 \newcommand\pdfbookmark[3]{}
5965 \let\phantomsection\@empty
5966 \let\hypersetup\@gobble
5967 \let\hyperbaseurl\@gobble
5968 \newcommand*{\href}[3]{}
5969 \let\hyperdef\@gobbletwo
5970 \let\hyperlink\@gobble
5971 \let\hypertarget\@gobble
5972 \def\hyperref{%
5973   \@ifnextchar[\@gobbleopt{\expandafter\@gobbletwo\@gobble}%
5974 }
5975 \long\def\@gobbleopt[#1]{}
5976 \let\hyperpage\@empty
```

Ignore star from referencing macros:

```
5977 \LetLtxMacro\NoHy@OrgRef\ref
5978 \DeclareRobustCommand*\ref{%
5979   \@ifstar\NoHy@OrgRef\NoHy@OrgRef
5980 }
5981 \LetLtxMacro\NoHy@OrgPageRef\pageref
5982 \DeclareRobustCommand*\pageref{%
5983   \@ifstar\NoHy@OrgPageRef\NoHy@OrgPageRef
5984 }
5985 </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}

```
5986 <*package>
```

5987 \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.

```

5988 \if@filesw
5989 \ifHy@typexml
5990 \immediate\closeout\@mainaux
5991 \immediate\openout\@mainaux\jobname.aux\relax
5992 \immediate\write\@auxout{<relaxxml>\relax}%
5993 \fi
5994 \immediate\write\@auxout{%
5995 \string\providecommand\string\HyperFirstAtBeginDocument{%
5996 \string\AtBeginDocument}^^J%
5997 \string\HyperFirstAtBeginDocument{%
5998 \string\ifx\string\hyper@anchor\string\@undefined^^J%
5999 \string\global\string\let\string\oldcontentsline\string\contentsline^^J%
6000 \string\gdef\string\contentsline%
6001 \string#1\string#2\string#3\string#4{%
6002 \string\oldcontentsline%
6003 {\string#1}{\string#2}{\string#3}}^^J%
6004 \string\global\string\let\string\oldnewlabel\string\newlabel^^J%
6005 \string\gdef\string\newlabel\string#1\string#2{%
6006 \string\newlabelxx{\string#1}\string#2}^^J%
6007 \string\gdef\string\newlabelxx%
6008 \string#1\string#2\string#3\string#4\string#5\string#6{%
6009 \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.

```

6010 \string\AtEndDocument{%
6011 \string\ifx\string\hyper@anchor\string\@undefined^^J%
6012 \string\let\string\contentsline\string\oldcontentsline^^J%
6013 \string\let\string\newlabel\string\oldnewlabel^^J%
6014 \string\fi%
6015 }^^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.

```

6016 \string\fi%
6017 }^^J%
6018 \string\global\string\let\string\hyper@last\relax^^J%
6019 \string\gdef\string\HyperFirstAtBeginDocument\string#1{\string#1}%
6020 }%
6021 \fi
6022 \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.

```

6023 \ifx\hyper@last\@undefined
6024 \def\@starttoc#1{%
6025 \begingroup
6026 \makeatletter
6027 \IfFileExists{\jobname.#1}{%
6028 \Hy@WarningNoLine{%

```

```

6029      old #1 file detected, not used; run LaTeX again%
6030    }%
6031  }{}%
6032  \if@filesw
6033    \expandafter\newwrite\csname tf@#1\endcsname
6034    \immediate\openout\csname tf@#1\endcsname \jobname.#1\relax
6035  \fi
6036  \@nobreakfalse
6037  \endgroup
6038 }%
6039 \def\newlabel#1#2{\@newl@bel r{#1}{#2}{-}{-}{-}}%
6040 \fi
6041 }

```

## 25 Title strings

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

```

6042 \ifHy@usetitle
6043 \let\HyOrg@title\title
6044 \let\HyOrg@author\author
6045 \def\title{\@ifnextchar{\Hy@scanopttitle}{\Hy@scantitle}}%
6046 \def\Hy@scanopttitle[#1]{%
6047 \gdef\Hy@title{#1}%
6048 \HyOrg@title{#1}%
6049 }%
6050 \def\Hy@scantitle#1{%
6051 \gdef\Hy@title{#1}%
6052 \HyOrg@title{#1}%
6053 }%
6054 \def\author{\@ifnextchar{\Hy@scanoptauthor}{\Hy@scanauthor}}%
6055 \def\Hy@scanoptauthor[#1]{%
6056 \gdef\Hy@author{#1}%
6057 \HyOrg@author{#1}%
6058 }%
6059 \def\Hy@scanauthor#1{%
6060 \gdef\Hy@author{#1}%
6061 \HyOrg@author{#1}%
6062 }%

```

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

```

6063 \begingroup
6064 \def\process@me#1\@nil#2{%
6065 \expandafter\let\expandafter\x\csname @#2\endcsname
6066 \edef\y{\expandafter\strip@prefix\meaning\x}%
6067 \def\c##1##2\@nil{%
6068 \ifx\\##1\\%
6069 \else
6070 \expandafter\gdef\csname Hy@#2\expandafter\endcsname
6071 \expandafter{\x}%
6072 \fi
6073 }%
6074 \expandafter\c\y\relax#1\@nil
6075 }%
6076 \expandafter\process@me\string\@latex@\@nil{title}%

```

```

6077 \expandafter\process@me\string\@latex@\@nil{author}%
6078 \endgroup
6079 \fi
6080 \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.

```

6081 \def\Hy@UseMaketitleString#1{%
6082 \ltx@ifundefined{Hy@#1}{-}{%
6083 \begingroup
6084 \let\Hy@saved@hook\pdfstringdefPreHook
6085 \pdfstringdefDisableCommands{%
6086 \expandafter\let\expandafter\\ \csname Hy@newline@#1\endcsname
6087 \let\newline\\%
6088 }%
6089 \expandafter\ifx\csname @pdf#1\endcsname \@empty
6090 \expandafter\pdfstringdef\csname @pdf#1\endcsname{%
6091 \csname Hy@#1\endcsname \@empty
6092 }%
6093 \fi
6094 \global\let\pdfstringdefPreHook\Hy@saved@hook
6095 \endgroup
6096 }%
6097 }
6098 \def\Hy@newline@title#1{ #1}
6099 \def\Hy@newline@author#1{, #1}
6100 \def\Hy@UseMaketitleInfos{%
6101 \Hy@UseMaketitleString{title}%
6102 \Hy@UseMaketitleString{author}%
6103 }

```

## 26 Page numbers

This stuff is done by Heiko Oberdiek.

## 27 Every page

```

6104 \RequirePackage{atbegshi}[2007/09/09]
6105 \def\Hy@EveryPageHook{}
6106 \def\Hy@EveryPageBoxHook{}
6107 \def\Hy@FirstPageHook{}
6108 \AtBeginShipout{%
6109 \Hy@EveryPageHook
6110 \ifx\Hy@EveryPageBoxHook\@empty
6111 \else
6112 \setbox\AtBeginShipoutBox=\vbox{%
6113 \offinterlineskip
6114 \Hy@EveryPageBoxHook

```

```

6115 \box\AtBeginShipoutBox
6116 }%
6117 \fi
6118 }
6119 \AtBeginShipoutFirst{%
6120 \Hy@FirstPageHook
6121 }
6122 \g@addto@macro\Hy@FirstPageHook{%
6123 \PDF@FinishDoc
6124 \gdef\PDF@FinishDoc{}}%
6125 }

```

## 27.1 PDF /PageLabels

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

```

6126 \ifHy@pagelabels
6127 \begingroup\expandafter\expandafter\expandafter\endgroup
6128 \expandafter\ifx\csname thepage\endcsname\relax
6129 \Hy@pagelabelsfalse
6130 \Hy@WarningNoLine{%
6131 Option 'pdflabels' is turned off\MessageBreak
6132 because \string\thepage\space is undefined%
6133 }%
6134 \csname fi\endcsname
6135 \csname iffalse\expandafter\endcsname
6136 \fi

```

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

```

6137 \def\thispdfpagelabel#1{%
6138 \gdef\HyPL@thisLabel{#1}%
6139 }%
6140 \global\let\HyPL@thisLabel\relax

```

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

```

6141 \def\HyPL@Labels{}%

```

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

```

6142 \newcount\Hy@abspage
6143 \Hy@abspage=0 %

```

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

```

6144 \def\HyPL@LastType{init}%
6145 \def\HyPL@LastNumber{0}%
6146 \def\HyPL@LastPrefix{}%

```

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

```

6147 \def\HyPL@arabic{D}%
6148 \def\HyPL@Roman{R}%
6149 \def\HyPL@roman{r}%
6150 \def\HyPL@Alph{A}%
6151 \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.

```

6152 \def\HyPL@EveryPage{%
6153 \begingroup

```

```

6154 \ifx\HyPL@thisLabel\relax
6155 \let\HyPL@page\thepage
6156 \else
6157 \let\HyPL@page\HyPL@thisLabel
6158 \global\let\HyPL@thisLabel\relax
6159 \fi
6160 \let\HyPL@Type\relax
6161 \ifnum\the\c@page>0 %
6162 \expandafter\HyPL@CheckThePage\HyPL@page\@nil
6163 \fi
6164 \let\Hy@temp Y%
6165 \ifx\HyPL@Type\HyPL@LastType
6166 \else
6167 \let\Hy@temp N%
6168 \fi
6169 \ifx\HyPL@Type\relax
6170 \pdfstringdef\HyPL@Prefix{\HyPL@page}%
6171 \else
6172 \pdfstringdef\HyPL@Prefix\HyPL@Prefix
6173 \fi
6174 \ifx\HyPL@Prefix\HyPL@LastPrefix
6175 \else
6176 \let\Hy@temp N%
6177 \fi
6178 \if Y\Hy@temp
6179 \advance\c@page by -1 %
6180 \ifnum\HyPL@LastNumber=\the\c@page\relax
6181 \else
6182 \let\Hy@temp N%
6183 \fi
6184 \Hy@StepCount\c@page
6185 \fi
6186 \if N\Hy@temp
6187 \ifx\HyPL@Type\relax
6188 \HyPL@storePageLabel{/P(\HyPL@Prefix)}%
6189 \else
6190 \HyPL@storePageLabel{%
6191 \ifx\HyPL@Prefix\@empty
6192 \else
6193 /P(\HyPL@Prefix)%
6194 \fi
6195 /S/\csname HyPL\HyPL@Type\endcsname
6196 \ifnum\the\c@page=1 %
6197 \else
6198 \space/St \the\c@page
6199 \fi
6200 }%
6201 \fi
6202 \fi
6203 \xdef\HyPL@LastNumber{\the\c@page}%
6204 \global\let\HyPL@LastType\HyPL@Type
6205 \global\let\HyPL@LastPrefix\HyPL@Prefix
6206 \endgroup
6207 \Hy@GlobalStepCount\Hy@abspage
6208 }%

```

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

```

6209 \def\HyPL@CheckThePage#1\@nil{%
6210 \HyPL@@CheckThePage{#1}#1\csname\endcsname\c@page\@nil
6211 }%

```

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

```

6212 \def\HyPL@@CheckThePage#1#2\csname#3\endcsname\c@page#4\@nil{%
6213 \def\Hy@tempa{#4}%
6214 \def\Hy@tempb{\csname\endcsname\c@page}%
6215 \ifx\Hy@tempa\Hy@tempb
6216 \expandafter\ifx\csname HyPL#3\endcsname\relax
6217 \else
6218 \def\HyPL@Type{#3}%
6219 \def\HyPL@Prefix{#2}%
6220 \fi
6221 \else
6222 \begingroup
6223 \let\Hy@next\endgroup
6224 \let\HyPL@found\@undefined
6225 \def\arabic{\HyPL@Format{arabic}}%
6226 \def\Roman{\HyPL@Format{Roman}}%
6227 \def\roman{\HyPL@Format{roman}}%
6228 \def\Alph{\HyPL@Format{Alph}}%
6229 \def\alph{\HyPL@Format{alph}}%
6230 \protected@edef\Hy@temp{#1}%
6231 \ifx\HyPL@found\relax
6232 \toks@{\expandafter{\Hy@temp}}%
6233 \edef\Hy@next{\endgroup
6234 \noexpand\HyPL@@@CheckThePage\the\toks@
6235 \noexpand\HyPL@found\relax\noexpand\@nil
6236 }%
6237 \fi
6238 \Hy@next
6239 \fi
6240 }%

```

`\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`.

```

6241 \def\HyPL@Format#1#2{%
6242 \ifx\HyPL@found\@undefined
6243 \expandafter\ifx\csname c@#2\endcsname\c@page
6244 \expandafter\noexpand\csname HyPL@found\endcsname{#1}%
6245 \else
6246 \expandafter\noexpand\csname#1\endcsname{#2}%
6247 \fi
6248 \else
6249 \expandafter\noexpand\csname#1\endcsname{#2}%
6250 \fi
6251 }%

```

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



```

6252 \def\HyPL@@@CheckThePage#1\HyPL@found#2#3\@nil{%
6253   \def\Hy@tempa{#3}%
6254   \def\Hy@tempb{\HyPL@found\relax}%
6255   \ifx\Hy@tempa\Hy@tempb
6256     \def\HyPL@Type{#2}%
6257     \def\HyPL@Prefix{#1}%
6258   \fi
6259 }%

```

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

```

6260 \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`.

```

6261 \def\HyPL@Useless{0<</S/D>>}%
6262 \@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.

```

6263 \def\HyPL@SetPageLabels{%
6264   \@onelevel@sanitize\HyPL@Labels
6265   \ifx\HyPL@Labels\empty
6266   \else
6267     \ifx\HyPL@Labels\HyPL@Useless
6268     \else
6269       \Hy@PutCatalog{/PageLabels<</Nums[\HyPL@Labels]>>}%
6270     \fi
6271   \fi
6272 }%

```

```

6273 \g@addto@macro\Hy@EveryPageHook{\HyPL@EveryPage}%
6274 \fi

```

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

```

6275 \Hy@DisableOption{pdfpagelabels}
6276 \</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`

```

6277 <*pdfTeX>
6278 \pdf@ifdraftmode{%
6279   \let\Hy@PutCatalog\ltx@gobble
6280 }{%
6281   \let\Hy@PutCatalog\pdfcatalog
6282 }
6283 </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.

```

6284 <*vTeX>

```

```

6285 \providecommand*{\XR@ext}{pdf}
6286 \edef\Hy@VTeXversion{%
6287   \ifx\VTeXversion\@undefined
6288     \z@
6289   \else
6290     \ifx\VTeXversion\relax
6291       \z@
6292     \else
6293       \VTeXversion
6294     \fi
6295   \fi
6296 }
6297 \begingroup
6298   \ifnum\Hy@VTeXversion<660 %
6299     \gdef\Hy@PutCatalog#1{%
6300       \Hy@WarningNoLine{%
6301         VTeX 6.59g or above required for pdfpagelabels%
6302       }%
6303     }%
6304   \else
6305     \gdef\Hy@PutCatalog#1{%
6306       \Hy@vt@PutCatalog#1/PageLabels<<>>\@nil
6307     }%
6308     \gdef\Hy@vt@PutCatalog#1/PageLabels<<#2>>#3\@nil{%
6309       \ifx\#2\%
6310         \else
6311           \immediate\special{!pdfpagelabels #2}%
6312         \fi
6313       }%
6314     \fi
6315 \endgroup
6316 \</vtex>

6317 \<*pdftex | vtex>

```

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

```

6318 \ifHy@pagelabels
6319   \def\HyPL@StorePageLabel#1{%
6320     \toks@\expandafter{\HyPL@Labels}%
6321     \xdef\HyPL@Labels{%
6322       \the\toks@
6323       \the\Hy@abspage<<#1>>%
6324     }%
6325   }%

```

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.

```

6326 \RequirePackage{atveryend}[2009/12/07]%
6327 \AtVeryEndDocument{%
6328   \HyPL@SetPageLabels
6329 }%

6330 \fi
6331 \</pdftex | vtex>

```

## 27.1.2 xetex

```

6332 <*xetex>
6333 \HyPsd@LoadUnicode
6334 \Hy@unicodetrue
6335 \ifx\HyPsd@pdfencoding\HyPsd@pdfencoding@unicode
6336 \else
6337 \let\HyPsd@pdfencoding\HyPsd@pdfencoding@auto
6338 \fi
6339 \HyPsd@LoadStringEnc
6340 \define@key{Hyp}{unicode}[true]{%
6341 \Hy@boolkey{unicode}{#1}%
6342 \ifHy@unicode
6343 \else
6344 \Hy@Warning{%
6345 XeTeX driver only supports 'unicode=true'. Ignoring\MessageBreak
6346 option setting 'unicode=false'%
6347 }%
6348 \Hy@unicodetrue
6349 \fi
6350 }
6351 \define@key{Hyp}{pdfencoding}{%
6352 \edef\HyPsd@temp{#1}%
6353 \ifx\HyPsd@temp\HyPsd@pdfencoding@unicode
6354 \let\HyPsd@pdfencoding\HyPsd@temp
6355 \else
6356 \ifx\HyPsd@temp\HyPsd@pdfencoding@auto
6357 \let\HyPsd@pdfencoding\HyPsd@temp
6358 \else
6359 \Hy@Warning{%
6360 XeTeX driver only supports\MessageBreak
6361 'pdfencoding=unicode|auto'. Ignoring option\MessageBreak
6362 setting 'pdfencoding=\HyPsd@temp'%
6363 }%
6364 \fi
6365 \fi
6366 }
6367 \let\HyXeTeX@CheckUnicode\relax
6368 </xetex>

```

### 27.1.3 pdfmarkbase, dvipdfm, xetex

```

6369 <*pdfmarkbase>
6370 \begingroup
6371 \@ifundefined{headerps@out}{}{%
6372 \toks@{\expandafter\Hy@FirstPageHook}%
6373 \xdef\Hy@FirstPageHook{%
6374 \noexpand\headerps@out{%
6375 systemdict /pdfmark known%
6376 {%
6377 userdict /?pdfmark systemdict /exec get put%
6378 }{%
6379 userdict /?pdfmark systemdict /pop get put %
6380 userdict /pdfmark systemdict /cleartomark get put%
6381 }%
6382 ifelse%
6383 }%
6384 \the\toks@
6385 }%
6386 }%

```

```

6387 \endgroup
6388 \pdfmarkbase>

\Hy@PutCatalog

6389 <dvipdfm | xetex>\def\Hy@PutCatalog#1{\@pdfm@mark{docview << #1 >>}}
6390 <*pdfmarkbase>
6391 \def\Hy@PutCatalog#1{%
6392   \pdfmark{pdfmark=/PUT,Raw={\string{Catalog\string} << #1 >>}}%
6393 }
6394 \pdfmarkbase>

6395 <*pdfmarkbase | dvipdfm | xetex>
6396 \ifHy@pagelabels

```

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

```

6397 \def\HyPL@StorePageLabel#1{%
6398   \if@filesw
6399     \begingroup
6400     \edef\Hy@tempa{\the\Hy@abspage<<#1>>}%
6401     \immediate\write\@mainaux{%
6402       \string\HyPL@Entry{\Hy@tempa}%
6403     }%
6404   \endgroup
6405   \fi
6406 }%

```

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.

```

6407 \Hy@AtBeginDocument{%
6408   \if@filesw
6409     \immediate\write\@mainaux{%
6410       \string\providecommand\string*\string\HyPL@Entry[1]{}%
6411     }%
6412   \fi
6413   \ifx\HyPL@Labels\@empty
6414     \Hy@WarningNoLine{Rerun to get /PageLabels entry}%
6415   \else
6416     \HyPL@SetPageLabels
6417   \fi
6418   \let\HyPL@Entry\@gobble
6419 }%

```

\HyPL@Entry

```

6420 \def\HyPL@Entry#1{%
6421   \expandafter\gdef\expandafter\HyPL@Labels\expandafter{%
6422     \HyPL@Labels
6423     #1%
6424   }%
6425 }%

6426 \fi
6427 \pdfmarkbase | dvipdfm | xetex>
6428 <*package>
6429 \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

```

6430 \def\Hy@CounterExists#1{%
6431   \begingroup\expandafter\expandafter\expandafter\endgroup
6432   \expandafter\ifx\csname c@#1\endcsname\relax
6433     \expandafter\@gobble
6434   \else
6435     \begingroup\expandafter\expandafter\expandafter\endgroup
6436     \expandafter\ifx\csname the#1\endcsname\relax
6437       \expandafter\expandafter\expandafter\@gobble
6438     \else
6439       \expandafter\expandafter\expandafter\@firstofone
6440     \fi
6441   \fi
6442 }
6443 \Hy@CounterExists{section}{%
6444   \newcommand\theHequation{\theHsection.\arabic{equation}}}%
6445 }
6446 \Hy@CounterExists{part}{%
6447   \newcommand\theHpart{\arabic{part}}}%
6448 }
6449 \ltx@ifundefined{thechapter}{%
6450   \newcommand\theHsection   {\arabic{section}}}%
6451   \newcommand\theHfigure    {\arabic{figure}}}%
6452   \newcommand\theHtable     {\arabic{table}}}%
6453 }{%
6454   \newcommand\theHchapter   {\arabic{chapter}}}%
6455   \newcommand\theHfigure    {\theHchapter.\arabic{figure}}}%
6456   \newcommand\theHtable     {\theHchapter.\arabic{table}}}%
6457   \newcommand\theHsection   {\theHchapter.\arabic{section}}}%
6458 }
6459 \newcommand\theHsubsection  {\theHsection.\arabic{subsection}}
6460 \newcommand\theHsubsubsection{\theHsubsection.\arabic{subsubsection}}
6461 \newcommand\theHparagraph   {\theHsubsubsection.\arabic{paragraph}}
6462 \newcommand\theHsubparagraph{\theHparagraph.\arabic{subparagraph}}
6463 \newcommand\theHtheorem     {\theHsection.\arabic{theorem}}
6464 \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.

```

6465 \let\H@item\item
6466 \newcounter{Item}
6467 \def\theHItem{\arabic{Item}}
6468 \def\item{%
6469   \@hyper@itemfalse
6470   \ifnmbrlist\@hyper@itemtrue\fi
6471   \H@item
6472 }

6473 \newcommand\theHenumi   {\theHItem}
6474 \newcommand\theHenumii  {\theHItem}
6475 \newcommand\theHenumiii {\theHItem}
6476 \newcommand\theHenumiv  {\theHItem}
6477 \newcommand\theHHfootnote {\arabic{Hfootnote}}
6478 \newcommand\theHmpfootnote{\arabic{mpfootnote}}
6479 \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.

```

6480 \let\H@refstepcounter\refstepcounter
6481 \edef\name@of@eq{equation}%
6482 \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.

```

6483 \newif\if@hyper@item
6484 \newif\if@skiphyperref
6485 \@hyper@itemfalse
6486 \@skiphyperreffalse
6487 \def\refstepcounter#1{%
6488   \ifHy@pdfstring
6489   \else
6490     \H@refstepcounter{#1}%
6491     \edef\This@name{#1}%
6492     \ifx\This@name\name@of@slide
6493     \else
6494       \if@skiphyperref
6495       \else
6496         \if@hyper@item
6497           \stepcounter{Item}%
6498           \hyper@refstepcounter{Item}%
6499           \@hyper@itemfalse
6500         \else
6501           \hyper@refstepcounter{#1}%
6502         \fi
6503       \fi
6504     \fi
6505   \fi
6506 }
6507 \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.

```

6508 \@ifpackageloaded{amsmath}{-}{\newif\ifmeasuring@\measuring@false}

```

`\hyper@refstepcounter`

```

6509 \def\hyper@refstepcounter#1{%
6510   \edef\This@name{#1}%
6511   \ifx\This@name\name@of@eq
6512     \@ifundefined{theHequation}{%
6513       \make@stripped@name{\theequation}%
6514       \let\theHequation\newname
6515     }{}%
6516   \fi
6517   \@ifundefined{theH#1}{%
6518     \expandafter\def\csname theH#1\endcsname{\arabic{#1}}%
6519   }{}%
6520   \hyper@makecurrent{#1}%
6521   \ifmeasuring@
6522   \else
6523     \Hy@raisedlink{%
6524       \hyper@anchorstart{\@currentHref}\hyper@anchorend
6525     }%
6526   \fi
6527 }

```

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`.

```

6528 \begingroup\expandafter\expandafter\expandafter\endgroup
6529 \expandafter\ifx\csname chapter\endcsname\relax
6530   \def\Hy@chapterstring{section}%
6531 \else
6532   \def\Hy@chapterstring{chapter}%
6533 \fi
6534 \def\Hy@appendixstring{appendix}
6535 \def\Hy@chapapp{\Hy@chapterstring}
6536 \ltx@ifundefined{appendix}{%
6537 }{%
6538   \let\HyOrg@appendix\appendix
6539   \def\appendix{%
6540     \ltx@ifundefined{chapter}%
6541     {\gdef\theHsection{\Alph{section}}}%
6542     {\gdef\theHchapter{\Alph{chapter}}}%
6543     \xdef\Hy@chapapp{\Hy@appendixstring}%
6544     \HyOrg@appendix
6545   }%
6546 }

```

`\Hy@Test@alph`

```

6547 \def\Hy@Test@alph#1{%
6548   \ifcase#1\or
6549     a\or b\or c\or d\or e\or f\or g\or h\or i\or j\or
6550     k\or l\or m\or n\or o\or p\or q\or r\or s\or t\or
6551     u\or v\or w\or x\or y\or z%
6552   \else
6553     \@ctrerr
6554   \fi
6555 }

```

\Hy@Test@Alph

```
6556 \def\Hy@Test@Alph#1{%
6557   \ifcase#1\or
6558     A\or B\or C\or D\or E\or F\or G\or H\or I\or J\or
6559     K\or L\or M\or N\or O\or P\or Q\or R\or S\or T\or
6560     U\or V\or W\or X\or Y\or Z%
6561   \else
6562     \@ctrerr
6563   \fi
6564 }
```

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

```
6565 \def\hyper@makecurrent#1{%
6566   \begingroup
6567   \edef\Hy@param{#1}%
6568   \ifx\Hy@param\Hy@chapterstring
6569     \let\Hy@param\Hy@chapapp
6570   \fi
6571   \ifHy@hypertextnames
6572     \let\@number\@firstofone
6573     \def\@fnsymbol##1{fnsymbol\number##1}%
6574     \def\@arabic##1{\number##1}%
6575     \ifx\@alph\Hy@Test@alph
6576     \else
6577       \def\@alph{alph\number}%
6578     \fi
6579     \ifx\@Alph\Hy@Test@Alph
6580     \else
6581       \def\@Alph{Alph\number}%
6582     \fi
6583     \ifHy@naturalnames
6584       \let\textlatin\@firstofone
6585       \xdef\HyperGlobalCurrentHref{\csname the#1\endcsname}%
6586     \else
6587       \xdef\HyperGlobalCurrentHref{%
6588         \csname
6589           the%
6590           \expandafter\ifx\csname theH#1\endcsname\relax\else H\fi
6591           #1%
6592         \endcsname
6593       }%
6594     \fi
6595     \xdef\HyperGlobalCurrentHref{%
6596       \Hy@param.\expandafter\strip@prefix\meaning\HyperGlobalCurrentHref
6597     }%
6598   \else
6599     \Hy@GlobalStepCount\Hy@linkcounter
6600     \xdef\HyperGlobalCurrentHref{\Hy@param.\the\Hy@linkcounter}%
6601   \fi
6602 \endgroup
6603 \let\HyperLocalCurrentHref\HyperGlobalCurrentHref
6604 \ifHy@localanchorname
6605   \let\@currentHref\HyperLocalCurrentHref
6606 \else
6607   \global\let\@currentHref\HyperGlobalCurrentHref
6608 \fi
```



```
6609 }
```

```
\Hy@MakeCurrentHref
```

```
6610 \def\Hy@MakeCurrentHref#1{%
6611   \edef\HyperLocalCurrentHref{#1}%
6612   \@onelevel@sanitize\HyperLocalCurrentHref
6613   \global\let\HyperGlobalCurrentHref\HyperLocalCurrentHref
6614   \let\HyperLocalCurrentHref\HyperGlobalCurrentHref
6615   \ifHy@localanchorname
6616     \let\@currentHref\HyperLocalCurrentHref
6617   \else
6618     \global\let\@currentHref\HyperGlobalCurrentHref
6619   \fi
6620 }
```

```
\Hy@MakeCurrentHrefAuto
```

```
6621 \def\Hy@MakeCurrentHrefAuto#1{%
6622   \Hy@GlobalStepCount\Hy@linkcounter
6623   \Hy@MakeCurrentHref{#1.\the\Hy@linkcounter}%
6624 }
```

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

```
6625 \def\@currentHlabel{\@currentHref}

6626 \@ifpackageloaded{fancyvrb}{%
6627   \@ifpackagelater{fancyvrb}{1998/05/20}{-}{-}%
6628   \def\FV@StepLineNo{%
6629     \FV@SetLineNo
6630     \def\FV@StepLineNo{\H@refstepcounter{FancyVerbLine}}%
6631     \FV@SetLineNo
6632   }%
6633 }%
6634 }{-}
```

## 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
```

```
6635 \Hy@AtBeginDocument{%
6636   \@ifclassloaded{revtex4}{%
6637     \@namedef{ver@lastpage.sty}{1994/06/25}%
6638   }{-}%
6639   \@ifpackageloaded{lastpage}{%
6640     \ifHy@pageanchor
6641     \else
6642       \Hy@WarningNoLine{%
6643         The \string\pageref{LastPage} link doesn't work\MessageBreak
6644         with disabled option ‘pageanchor’%

```

```

6645 }%
6646 \fi
6647 \def\lastpage@putlabel{%
6648 \addtocounter{page}{-1}%
6649 \if@filesw
6650 \begingroup
6651 \let\@number\@firstofone
6652 \ifHy@pageanchor
6653 \ifHy@hypertexnames
6654 \ifHy@plainpages
6655 \def\Hy@temp{\arabic{page}}%
6656 \else
6657 \Hy@unicodefalse
6658 \pdfstringdef\Hy@temp{\thepage}%
6659 \fi
6660 \else
6661 \def\Hy@temp{\the\Hy@pagecounter}%
6662 \fi
6663 \fi
6664 \immediate\write\@auxout{%
6665 \string\newlabel
6666 {LastPage}{\thepage}{\thepage}%
6667 \ifHy@pageanchor page.\Hy@temp\fi}%
6668 }%
6669 \endgroup
6670 \fi
6671 \addtocounter{page}{1}%
6672 }%
6673 \@ifclassloaded{revtex4}{%
6674 \begingroup
6675 \toks@{\expandafter{\lastpage@putlabel}}%
6676 \edef\x{\endgroup
6677 \def\noexpand\lastpage@putlabel{%
6678 \noexpand\stepcounter{page}%
6679 \the\toks@
6680 \noexpand\addtocounter{page}\noexpand\m@ne
6681 }%
6682 }%
6683 \x
6684 }{}%
6685 }{}%
6686 }
6687 </package>
6688 <*check>
6689 \checkpackage{lastpage}[1994/06/25]
6690 \checkcommand\def\lastpage@putlabel{%
6691 \addtocounter{page}{-1}%
6692 \immediate\write\@auxout{%
6693 \string\newlabel{LastPage}{\thepage}{\thepage}%
6694 }%
6695 \addtocounter{page}{1}%
6696 }
6697 </check>
6698 <*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.

```
6699 \def\hypergetref#1{\getrefbykeydefault{#1}{}{??}}
6700 \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:

```
6701 \@ifpackageloaded{titlesec}{%
6702   \def\ttl@Hy@steplink#1{%
6703     \Hy@MakeCurrentHrefAuto{#1*}%
6704     \edef\ttl@Hy@saveanchor{%
6705       \noexpand\Hy@raisedlink{%
6706         \noexpand\hyper@anchorstart{\@currentHref}%
6707         \noexpand\hyper@anchorend
6708         \def\noexpand\ttl@Hy@SavedCurrentHref{\@currentHref}%
6709         \noexpand\ttl@Hy@PatchSaveWrite
6710       }%
6711     }%
6712   }%
6713   \def\ttl@Hy@PatchSaveWrite{%
6714     \begingroup
6715     \toks@\expandafter{\ttl@savewrite}%
6716     \edef\x{\endgroup
6717       \def\noexpand\ttl@savewrite{%
6718         \let\noexpand\@currentHref
6719         \noexpand\ttl@Hy@SavedCurrentHref
6720         \the\toks@
6721       }%
6722     }%
6723     \x
6724   }%
6725   \def\ttl@Hy@refstepcounter#1{%
6726     \let\ttl@b\Hy@raisedlink
6727     \def\Hy@raisedlink##1{%
6728       \def\ttl@Hy@saveanchor{\Hy@raisedlink{##1}}%
6729     }%
6730     \refstepcounter{#1}%
6731     \let\Hy@raisedlink\ttl@b
6732   }%
6733 }
```

Package titletoc support:

```
6734 \@ifpackageloaded{titletoc}{%
6735   \def\ttl@gobblecontents#1#2#3#4{\ignorespaces}%
6736 }
```

## 32 Package varioref support

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

```

6737 \def\Hy@varioref@undefined{{??}{??}}{}{}
6738 \@ifpackageloaded{varioref}{%
6739   \def\vref@pagenum#1#2{%
6740     \@ifundefined{r@#2}{%
6741       \expandafter\let\csname r@#2\endcsname\Hy@varioref@undefined
6742     }{}%
6743     \edef#1{\getpagerefnumber{#2}}%
6744   }%
6745 }{}

```

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

```

6746 \def\Hy@varioref@refstepcounter#1{%
6747   \stepcounter{#1}%
6748   \protected@edef\@currentlabel{%
6749     \csname p@#1\expandafter\endcsname\csname the#1\endcsname
6750   }%
6751 }
6752 \AtBeginDocument{%
6753   \ifx\refstepcounter\Hy@varioref@refstepcounter
6754     \let\H@refstepcounter\refstepcounter
6755     \let\refstepcounter\Hy@saved@refstepcounter
6756   \fi
6757 }

```

### 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

```

6758 \@ifpackageloaded{longtable}{%
6759   \begingroup
6760   \def\y{\LT@array}%
6761   \@ifundefined{scr@LT@array}{%
6762     \@ifundefined{adl@LT@array}{}{\def\y{\adl@LT@array}}%
6763   }{\def\y{\scr@LT@array}}%
6764   \long\def\x\refstepcounter#1#2\@sharp#3#4\@nil{%
6765     \expandafter\endgroup
6766     \expandafter\def\y[##1]##2{%
6767       \H@refstepcounter{#1}%
6768       \hyper@makecurrent{table}%
6769       \let\Hy@LT@currentHref\@currentHref
6770       #2\@sharp###3#4%
6771     }%
6772   }%
6773   \expandafter\expandafter\expandafter\x\y{#1}{#2}\@nil

```

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

```

6774   \begingroup
6775   \def\x#1\ifvoid\LT@foot#2\fi#3\@nil{%
6776     \endgroup
6777     \def\LT@start{%
6778       #1%
6779       \ifvoid\LT@foot#2\fi

```

```

6780 \let\@currentHref\Hy@LT@currentHref
6781 \Hy@raisedlink{%
6782 \hyper@anchorstart{\@currentHref}\hyper@anchorend
6783 }%
6784 #3%
6785 }%
6786 }%
6787 \expandafter\x\LT@start\@nil
6788 }{}

```

## 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.

```

6789 \let\new@refstepcounter\refstepcounter
6790 \let\H@equation\equation
6791 \let\H@endequation\endequation

6792 \ifpackageloaded{amsmath}{%
6793 \long\def\Hy@temp{%
6794 \incr@eqnum
6795 \mathdisplay@push
6796 \st@rredfalse \global\@eqnswtrue
6797 \mathdisplay{equation}%
6798 }%
6799 \ifx\Hy@temp\equation
6800 \expandafter\ifx\csname if@fleqn\expandafter\endcsname
6801 \csname iftrue\endcsname
6802 \else
6803 \long\def\equation{%
6804 \mathdisplay@push
6805 \st@rredfalse \global\@eqnswtrue
6806 \mathdisplay{equation}%
6807 \incr@eqnum
6808 }%
6809 \fi
6810 \fi
6811 }{%
6812 \def\equation{%
6813 \let\refstepcounter\H@refstepcounter
6814 \H@equation
6815 \@ifundefined{theHequation}{%
6816 \make@stripped@name{\theequation}%
6817 \let\theHequation\newname
6818 }{}%
6819 \hyper@makecurrent{equation}%
6820 \Hy@raisedlink{\hyper@anchorstart{\@currentHref}}%
6821 \let\refstepcounter\new@refstepcounter
6822 }%
6823 \def\endequation{\Hy@raisedlink{\hyper@anchorend}\H@endequation}%
6824 }

```

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.

```

6825 \newif\if@eqnstar
6826 \@eqnstarfalse
6827 \let\H@eqnarray\eqnarray
6828 \let\H@endeqnarray\endeqnarray
6829 \def\eqnarray{%
6830   \let\Hy@reserved@a\relax
6831   \def\@currentHref{}%
6832   \H@eqnarray
6833   \if@eqnstar
6834   \else
6835     \ifx\\ \@currentHref\\%
6836     \else
6837       \ifundefined{theHequation}{%
6838         \make@stripped@name{\theequation}%
6839         \let\theHequation\newname
6840       }{}%
6841       \hyper@makecurrent{equation}%
6842       \hyper@anchorstart{\@currentHref}{ }\hyper@anchorend
6843     \fi
6844   \fi
6845 }
6846 \def\endeqnarray{%
6847   \H@endeqnarray
6848 }

```

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.

```

6849 \@namedef{eqnarray*}{%
6850   \def\@eqncr{\nonumber\@seqncr}\@eqnstartrue\eqnarray
6851 }
6852 \@namedef{endeqnarray*}{%
6853   \nonumber\endeqnarray\@eqnstarfalse
6854 }

```

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

```

6855 \ltx@ifundefined{subeqnarray}{}{%
6856   \let\H@subeqnarray\subeqnarray
6857   \let\H@endsubeqnarray\endsubeqnarray
6858   \def\subeqnarray{%
6859     \let\Hy@reserved@a\relax
6860     \H@subeqnarray
6861     \ifundefined{theHequation}{%
6862       \make@stripped@name{\theequation}%
6863       \let\theHequation\newname
6864     }{}%
6865     \hyper@makecurrent{equation}%
6866     \hyper@anchorstart{\@currentHref}{ }\hyper@anchorend
6867   }%
6868   \def\endsubeqnarray{%
6869     \H@endsubeqnarray
6870   }%
6871   \newcommand\theHsubequation{\theHequation\alph{subequation}}%
6872 }

```

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

```

6873 \def\make@stripped@name#1{%
6874   \begingroup
6875   \escapechar\m@ne
6876   \global\let\newname\@empty
6877   \protected@edef\Hy@tempa{#1}%
6878   \edef\@tempb{%
6879     \noexpand\@tfor\noexpand\Hy@tempa:=%
6880     \expandafter\strip@prefix\meaning\Hy@tempa
6881   }%
6882   \@tempb\do{%
6883     \if{\Hy@tempa\else
6884     \if}\Hy@tempa\else
6885     \xdef\newname{\newname\Hy@tempa}%
6886     \fi
6887     \fi
6888   }%
6889   \endgroup
6890 }

```

Support for amsmath's subequations:

```

6891 \begingroup\expandafter\expandafter\expandafter\endgroup
6892 \expandafter\ifx\csname subequations\endcsname\relax
6893 \else
6894   \let\HyOrg@subequations\subequations
6895   \def\subequations{%
6896     \stepcounter{equation}%
6897     \protected@edef\theHparentequation{%
6898       \@ifundefined{theHequation}\theequation\theHequation
6899     }%
6900     \addtocounter{equation}{-1}%
6901     \HyOrg@subequations
6902     \def\theHequation{\theHparentequation\alph{equation}}%
6903     \ignorespaces
6904   }%
6905 \fi

```

Support for package amsthm (Daniel Müllner):

```

6906 \@ifpackageloaded{amsthm}{%

```

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

```

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

6907 \def\Hy@temp#1#2#3{%
6908   \ifhmode\unskip\unskip\par\fi
6909   \normalfont
6910   \trivlist
6911   \let\thmheadnl\relax
6912   \let\thm@swap\@gobble
6913   \let\thm@indent\indent % indent
6914   \thm@headfont{\scshape}% heading font small caps
6915   \thm@notefont{\fontseries\mddefault\upshape}%
6916   \thm@headpunct{.}% add period after heading
6917   \thm@headsep 5\p@ plus\p@ minus\p@\relax
6918   \thm@space@setup

```

```

6919 #1% style overrides
6920 \@topsep \thm@preskip % used by thm head
6921 \@topsepadd \thm@postskip % used by \@endparenv
6922 \def\@tempa{#2}\ifx\@empty\@tempa
6923 \def\@tempa{\@oparg{\@begintheorem{#3}{}}{}}%
6924 \else
6925 \refstepcounter{#2}%
6926 \def\@tempa{\@oparg{\@begintheorem{#3}{\csname the#2\endcsname}}{}}%
6927 \fi
6928 \@tempa
6929 }%
6930 \ifx\Hy@temp\@thm
6931 \def\@thm#1#2#3{%
6932 \ifhmode
6933 \unskip\unskip\par
6934 \fi
6935 \normalfont
6936 \trivlist
6937 \let\thmheadnl\relax
6938 \let\thm@swap\@gobble
6939 \let\thm@indent\indent % indent
6940 \thm@headfont{\scshape}% heading font small caps
6941 \thm@notefont{\fontseries\mddefault\upshape}%
6942 \thm@headpunct{.}% add period after heading
6943 \thm@headsep 5\p@ plus\p@ minus\p@\relax
6944 \thm@space@setup
6945 #1% style overrides
6946 \@topsep \thm@preskip % used by thm head
6947 \@topsepadd \thm@postskip % used by \@endparenv
6948 \def\dth@counter{#2}%
6949 \ifx\@empty\dth@counter
6950 \def\@tempa{%
6951 \@oparg{\@begintheorem{#3}{}}{}}%
6952 }%
6953 \else
6954 \H@refstepcounter{#2}%
6955 \hyper@makecurrent{#2}%
6956 \let\Hy@dth@currentHref\@currentHref
6957 \def\@tempa{%
6958 \@oparg{\@begintheorem{#3}{\csname the#2\endcsname}}{}}%
6959 }%
6960 \fi
6961 \@tempa
6962 }%
6963 \else
6964 \def\@thm#1#2#3{%
6965 \ifhmode
6966 \unskip\unskip\par
6967 \fi
6968 \normalfont
6969 \trivlist
6970 \let\thmheadnl\relax
6971 \let\thm@swap\@gobble
6972 \thm@notefont{\fontseries\mddefault\upshape}%
6973 \thm@headpunct{.}% add period after heading
6974 \thm@headsep 5\p@ plus\p@ minus\p@\relax
6975 \thm@space@setup

```



```

6976   #1% style overrides
6977   \@topsep \thm@preskip           % used by thm head
6978   \@topsepadd \thm@postskip      % used by \@endpary
6979   \def\dth@counter{#2}%
6980   \ifx\@empty\dth@counter
6981     \def\@tempa{%
6982       \@oparg{\@begintheorem{#3}{}}{}%
6983     }%
6984   \else
6985     \H@refstepcounter{#2}%
6986     \hyper@makecurrent{#2}%
6987     \let\Hy@dth@currentHref\@currentHref
6988     \def\@tempa{%
6989       \@oparg{\@begintheorem{#3}{\csname the#2\endcsname}}{}%
6990     }%
6991   \fi
6992   \@tempa
6993 }%
6994 \fi
6995 \dth@everypar={%
6996   \@minipagefalse
6997   \global\@newlistfalse
6998   \@noparitemfalse
6999   \if@inlabel
7000     \global\@inlabelfalse
7001     \begingroup
7002     \setbox\z@\lastbox
7003     \ifvoid\z@
7004       \kern-\itemindent
7005     \fi
7006   \endgroup
7007   \ifx\@empty\dth@counter
7008   \else
7009     \Hy@raisedlink{%
7010       \hyper@anchorstart{%
7011         \ltx@ifundefined{Hy@dth@currentHref}%
7012         \@currentHref\Hy@dth@currentHref
7013       }\hyper@anchorend
7014     }%
7015   \fi
7016   \unhbox\@labels
7017 \fi
7018 \if@nobreak
7019   \@nobreakfalse \clubpenalty\@M
7020 \else
7021   \clubpenalty\@clubpenalty \everypar{}%
7022 \fi
7023 }%
7024 }{}

```

## 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.

```

7025 \ifpackageloaded{tabularx}{\Hy@hyperfootnotesfalse}{%
7026 \ifHy@hyperfootnotes
7027   \newcounter{Hfootnote}%
7028   \let\H@@footnotetext\@footnotetext
7029   \let\H@@footnotemark\@footnotemark
7030   \def\@xfootnotenext[#1]{%
7031     \begingroup
7032       \csname c@\@mpfn\endcsname #1\relax
7033       \unrestored@protected@xdef\@thefnmark{\thempfn}%
7034     \endgroup
7035     \ifx\@footnotetext\@mpfootnotetext
7036       \expandafter\H@@mpfootnotetext
7037     \else
7038       \expandafter\H@@footnotetext
7039     \fi
7040   }%
7041   \def\@xfootnotemark[#1]{%
7042     \begingroup
7043       \c@footnote #1\relax
7044       \unrestored@protected@xdef\@thefnmark{\thefootnote}%
7045     \endgroup
7046     \H@@@footnotemark
7047   }%
7048   \let\H@@mpfootnotetext\@mpfootnotetext
7049   \long\def\@mpfootnotetext#1{%
7050     \H@@mpfootnotetext{%
7051       \ifHy@nesting
7052         \expandafter\hyper@@anchor\expandafter{%
7053           \Hy@footnote@currentHref
7054         }{#1}%
7055       \else
7056         \Hy@raisedlink{%
7057           \expandafter\hyper@@anchor\expandafter{%
7058             \Hy@footnote@currentHref
7059           }{\relax}%
7060         }#1%
7061       \fi
7062     }%
7063   }%
7064   \long\def\@footnotetext#1{%
7065     \H@@@footnotetext{%
7066       \ifHy@nesting
7067         \expandafter\hyper@@anchor\expandafter{%
7068           \Hy@footnote@currentHref
7069         }{#1}%
7070       \else
7071         \Hy@raisedlink{%
7072           \expandafter\hyper@@anchor\expandafter{%
7073             \Hy@footnote@currentHref
7074           }{\relax}%
7075         }%
7076         \let\@currentHref\Hy@footnote@currentHref
7077         \let\@currentlabelname\@empty
7078         #1%
7079       \fi
7080     }%

```

```
7081 }%
```

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.

```
7082 \def\@footnotemark{%
7083   \leavevmode
7084   \ifhmode\edef\x@sf{\the\spacefactor}\nobreak\fi
7085   \stepcounter{Hfootnote}%
7086   \global\let\Hy@saved@currentHref\@currentHref
7087   \hyper@makecurrent{Hfootnote}%
7088   \global\let\Hy@footnote@currentHref\@currentHref
7089   \global\let\@currentHref\Hy@saved@currentHref
7090   \hyper@linkstart{link}{\Hy@footnote@currentHref}%
7091   \@makefnmark
7092   \hyper@linkend
7093   \ifhmode\spacefactor\x@sf\fi
7094   \relax
7095 }%
```

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

```
7096 \@ifpackageloaded{longtable}{%
7097   \CheckCommand*\LT@p@ftntext}[1]{%
7098     \edef\@tempa{%
7099       \the\LT@p@ftn
7100       \noexpand\footnotetext[\the\c@footnote]%
7101     }%
7102     \global\LT@p@ftn\expandafter{\@tempa{#1}}%
7103   }%
7104   \long\def\LT@p@ftntext#1{%
7105     \edef\@tempa{%
7106       \the\LT@p@ftn
7107       \begingroup
7108         \noexpand\c@footnote=\the\c@footnote\relax
7109         \noexpand\protected@xdef\noexpand\@thefnmark{%
7110           \noexpand\thempfn
7111         }%
7112         \noexpand\Hy@LT@footnotetext{%
7113           \Hy@footnote@currentHref
7114         }%
7115       }%
7116       \global\LT@p@ftn\expandafter{%
7117         \@tempa{#1}%
7118       }\endgroup
7119     }%
7120   }%
7121   \long\def\Hy@LT@footnotetext#1#2{%
7122     \H@@footnotetext{%
7123       \ifHy@nesting
7124         \hyper@@anchor{#1}{#2}%
7125       \else
7126         \Hy@raisedlink{%
7127           \hyper@@anchor{#1}{\relax}%
7128         }%
7129     }%
7130   }%
7131 }
```

```

7129     \def\@currentHref{#1}%
7130     \let\@currentlabelname\@empty
7131     #2%
7132     \fi
7133   }%
7134 }%
7135 }{}%

```

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

```

7136 \ifpackageloaded{fancyvrb}{%
7137   \def\V@@footnotetext{%
7138     \insert\footins\bgroup
7139     \csname reset@font\endcsname
7140     \footnotesize
7141     \interlinepenalty\interfootnotelinepenalty
7142     \splittopskip\footnotesep
7143     \splitmaxdepth\dp\strutbox
7144     \floatingpenalty \@MM
7145     \hsize\columnwidth
7146     \@parboxrestore
7147     \edef\@currentlabel{\csname p@footnote\endcsname\@thefnmark}%
7148     \@makefnmark{}%
7149     \rule{\z@}{\footnotesep}%
7150     \bgroup
7151     \aftergroup\V@@@footnotetext
7152     \Hy@raisedlink{%
7153       \expandafter\hyper@@anchor\expandafter{%
7154         \Hy@footnote@currentHref
7155       }\relax}%
7156   }%
7157   \let\@currentHref\Hy@footnote@currentHref
7158   \let\@currentlabelname\@empty
7159   \ignorespaces
7160 }%
7161 }{}%

```

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

```

7162 \def\Hy@temp#1{%
7163   \begingroup
7164   \unrestored@protected@xdef\@thefnmark{\ref{#1}}%
7165   \endgroup
7166   \@footnotemark
7167 }%
7168 \ifx\Hy@temp\footref
7169   \def\footref#1{%
7170     \begingroup
7171     \unrestored@protected@xdef\@thefnmark{\ref{#1}}%
7172     \endgroup
7173     \H@@@footnotemark
7174   }%
7175 \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.

```

7176 \let\HyOrg@maketitle\maketitle
7177 \def\maketitle{%
7178   \let\Hy@saved@footnotemark\@footnotemark
7179   \let\Hy@saved@footnotetext\@footnotetext

```

```

7180 \let\@footnotemark\H@@footnotemark
7181 \let\@footnotetext\H@@footnotetext
7182 \@ifnextchar[\Hy@maketitle@optarg{% ]
7183   \HyOrg@maketitle
7184   \Hy@maketitle@end
7185 }%
7186 }%
7187 \def\Hy@maketitle@optarg[#1]{%
7188   \HyOrg@maketitle[{#1}]%
7189   \Hy@maketitle@end
7190 }%
7191 \def\Hy@maketitle@end{%
7192   \ifx\@footnotemark\H@@footnotemark
7193     \let\@footnotemark\Hy@saved@footnotemark
7194   \fi
7195   \ifx\@footnotetext\H@@footnotetext
7196     \let\@footnotetext\Hy@saved@footnotetext
7197   \fi
7198 }%

```

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

```

7199 \def\realfootnote{%
7200   \@ifnextchar[\@xfootnote{%
7201     \stepcounter{\@mpfn}%
7202     \protected@xdef\@thefnmark{\thempfn}%
7203     \H@@@footnotemark\H@@@footnotetext
7204   }%
7205 }%

7206 \fi
7207 \Hy@DisableOption{hyperfootnotes}

7208 </package>
7209 <*check>
7210 \checklatex
7211 \checkcommand\def\@xfootnotenext[#1]{%
7212   \begingroup
7213     \csname c@\@mpfn\endcsname #1\relax
7214     \unrestored@protected@xdef\@thefnmark{\thempfn}%
7215   \endgroup
7216   \@footnotetext
7217 }
7218 \checkcommand\def\@xfootnotemark[#1]{%
7219   \begingroup
7220     \c@footnote #1\relax
7221     \unrestored@protected@xdef\@thefnmark{\thefootnote}%
7222   \endgroup
7223   \@footnotemark
7224 }
7225 \checkcommand\def\@footnotemark{%
7226   \leavevmode
7227   \ifhmode\edef\@x@sf{\the\spacefactor}\nobreak\fi
7228   \@makefnmark
7229   \ifhmode\spacefactor\@x@sf\fi
7230   \relax
7231 }
7232 </check>
7233 <*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.

```

7234 \def\caption{%
7235   \ifx\@capttype\@undefined
7236     \@latex@error{\noexpand\caption outside float}\@ehd
7237     \expandafter\@gobble
7238   \else
7239     \H@refstepcounter\@capttype
7240     \let\Hy@tempa\@caption
7241     \ifundefined{float@caption}{%
7242       }{%
7243         \expandafter\ifx\csname @float@c@\@capttype\endcsname
7244           \float@caption
7245           \let\Hy@tempa\Hy@float@caption
7246         \fi
7247       }%
7248     \expandafter\@firstofone
7249   \fi
7250   {\@dblarg{\Hy@tempa\@capttype}}%
7251 }
7252 \long\def\@caption#1[#2]#3{%
7253   \expandafter\ifx\csname if@capstart\expandafter\endcsname
7254     \csname iftrue\endcsname
7255     \global\let\@currentHref\hc@currentHref
7256   \else
7257     \hyper@makecurrent{\@capttype}%
7258   \fi
7259   \@ifundefined{NR@gettitle}{%
7260     \def\@currentlabelname{#2}%
7261   }{%
7262     \NR@gettitle{#2}%
7263   }%
7264   \par\addcontentsline{\csname ext@#1\endcsname}{#1}{%
7265     \protect\numberline{\csname the#1\endcsname}{\ignorespaces #2}%
7266   }%
7267   \begingroup
7268     \@parboxrestore
7269     \if@minipage
7270       \@setminipage
7271     \fi
7272     \normalsize
7273     \expandafter\ifx\csname if@capstart\expandafter\endcsname
7274       \csname iftrue\endcsname
7275       \global\@capstartfalse
7276       \@makecaption{\csname fnum@#1\endcsname}{\ignorespaces#3}%
7277     \else
7278       \@makecaption{\csname fnum@#1\endcsname}{%
7279         \ignorespaces

```

If we cannot have nesting, the anchor is empty.

```

7280     \ifHy@nesting
7281       \expandafter\hyper@@anchor\expandafter{\@currentHref}{#3}%
7282     \else
7283       \Hy@raisedlink{%
7284         \expandafter\hyper@@anchor\expandafter{%
7285           \@currentHref

```

```

7286     }\relax}%
7287     }%
7288     #3%
7289     \fi
7290     }%
7291     \fi
7292     \par
7293 \endgroup
7294 }

```

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.

```

7295 \let\Hy@float@caption\@caption
7296 \ifpackageloaded{float}{%
7297   \def\Hy@float@caption{%
7298     \ifx\Hy@float@currentHref\@undefined
7299       \hyper@makecurrent{\@capttype}%
7300       \global\let\Hy@float@currentHref\@currentHref
7301     \else
7302       \let\@currentHref\Hy@float@currentHref
7303     \fi
7304     \float@caption
7305   }%
7306   \let\HyOrg@float@makebox\float@makebox
7307   \renewcommand{\float@makebox}[1]{%
7308     \HyOrg@float@makebox{%
7309       #1\relax
7310       \ifx\Hy@float@currentHref\@undefined
7311         \else
7312           \expandafter\hyper@@anchor\expandafter{%
7313             \Hy@float@currentHref
7314             }\relax}%
7315       \global\let\Hy@float@currentHref\@undefined
7316     \fi
7317   }%
7318 }%
7319 }{}

7320 \end{package}
7321 \ifcheck
7322 \checklatex[1999/06/01 - 2000/06/01]
7323 \checkcommand\def\caption{%
7324   \ifx\@capttype\@undefined
7325     \@latex@error{\noexpand\caption outside float}\@ehd
7326     \expandafter\@gobble
7327   \else
7328     \refstepcounter{\@capttype}
7329     \expandafter\@firstofone
7330   \fi
7331   {\@dblarg{\@caption\@capttype}}%
7332 }
7333 \checkcommand\long\def\@caption#1[#2]#3{%
7334   \par
7335   \addcontentsline{\csname ext@#1\endcsname}{#1}{%
7336     \protect\numberline{\csname the#1\endcsname}{\ignorespaces #2}%
7337   }%
7338   \begingroup
7339   \@parboxrestore

```

```

7340 \if@minipage
7341 \setminipage
7342 \fi
7343 \normalsize
7344 \@makecaption{\csname fnum@#1\endcsname}{\ignorespaces #3}\par
7345 \endgroup
7346 }
7347 </check>
7348 <*package>

```

## 37 Bibliographic references

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

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

```

7349 \def\hyper@natlinkstart#1{%
7350 \Hy@backout{#1}%
7351 \hyper@linkstart{cite}{cite.#1}%
7352 \def\hyper@nat@current{#1}%
7353 }
7354 \def\hyper@natlinkend{%
7355 \hyper@linkend
7356 }
7357 \def\hyper@natlinkbreak#1#2{%
7358 \hyper@linkend#1\hyper@linkstart{cite}{cite.#2}%
7359 }
7360 \def\hyper@natanchorstart#1{%
7361 \Hy@raisedlink{\hyper@anchorstart{cite.#1}}%
7362 }
7363 \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.

```

7364 \ltx@ifundefined{NAT@parse}{%
7365 \providecommand*\@extra@binfo{}%
7366 \providecommand*\@extra@b@citeb{}%
7367 \def\bibcite#1#2{%
7368 \@newlabel{b}{#1\@extra@binfo}{%
7369 \hyper@link{cite}{cite.#1\@extra@b@citeb}{#2}%
7370 }%
7371 }%
7372 \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.”.

```

7373 \let\Hy@bibcite\bibcite
7374 \begingroup
7375 \@ifundefined{bbl@cite@choice}{}{%
7376 \g@addto@macro\bbl@cite@choice{%

```



```

7377 \let\bibcite\Hy@bibcite
7378 }%
7379 }%
7380 \endgroup
\@BIBLABEL is working around a ‘feature’ of RevTeX.
7381 \providecommand*{\@BIBLABEL}{\@biblabel}%
7382 \def\@lbibitem[#1]#2{%
7383 \@skiphyperreftrue
7384 \H@item[%
7385 \ifx\Hy@raisedlink\@empty
7386 \hyper@anchorstart{cite.#2\@extra@b@citeb}%
7387 \@BIBLABEL{#1}%
7388 \hyper@anchorend
7389 \else
7390 \Hy@raisedlink{%
7391 \hyper@anchorstart{cite.#2\@extra@b@citeb}\hyper@anchorend
7392 }%
7393 \@BIBLABEL{#1}%
7394 \fi
7395 \hfill
7396 ]%
7397 \@skiphyperreffalse
7398 \if@filesw
7399 \begingroup
7400 \let\protect\noexpand
7401 \immediate\write\@auxout{%
7402 \string\bibcite{#2}{#1}%
7403 }%
7404 \endgroup
7405 \fi
7406 \ignorespaces
7407 }%

```

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

```

7408 \def\@bibitem#1{%
7409 \@skiphyperreftrue\H@item\@skiphyperreffalse
7410 \Hy@raisedlink{%
7411 \hyper@anchorstart{cite.#1\@extra@b@citeb}\relax\hyper@anchorend
7412 }%
7413 \if@filesw
7414 \begingroup
7415 \let\protect\noexpand
7416 \immediate\write\@auxout{%
7417 \string\bibcite{#1}{\the\value{\@listctr}}%
7418 }%
7419 \endgroup
7420 \fi
7421 \ignorespaces
7422 }%
7423 }{}
7424 \</package>
7425 \<*check>
7426 \checklatex
7427 \checkcommand\def\@lbibitem[#1]#2{%
7428 \item[\@biblabel{#1}\hfill}%
7429 \if@filesw

```

```

7430 {%
7431   \let\protect\noexpand
7432   \immediate\write\@auxout{%
7433     \string\bibcite{#2}{#1}%
7434   }%
7435 }%
7436 \fi
7437 \ignorespaces
7438 }
7439 \checkcommand\def\@bibitem#1{%
7440   \item
7441   \if@filesw
7442     \immediate\write\@auxout{%
7443       \string\bibcite{#1}{\the\value{\@listctr}}%
7444     }%
7445   \fi
7446   \ignorespaces
7447 }
7448 \</check>
7449 \<*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.

```

7450 \@ifclassloaded{revtex}{%
7451   \Hy@Info{*** compatibility with revtex **** }%
7452   \def\revtex@checking#1#2{%
7453     \expandafter\let\expandafter\T@temp\csname b@#1\endcsname
7454     \expandafter\def\csname b@#1\endcsname{#2}%
7455     \@SetMaxRnhefLabel{#1}%
7456     \expandafter\let\csname b@#1\endcsname\T@temp
7457   }%

```

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

```

7458   \@ifundefined{CITE}{\def\CITE{\@cite}}{}%
7459   \providecommand*\@extra@b@citeb{}%
7460   \def\CITEX[#1]#2{%
7461     \let\@citea\@empty
7462     \leavevmode
7463     $\sim$%
7464     \scriptstyle
7465     \@CITE{%
7466       \@for\@citeb:=#2\do{%
7467         \@citea
7468         \def\@citea{,\penalty\@m\ }%
7469         \edef\@citeb{\expandafter\@firstofone\@citeb}%
7470         \if@filesw
7471           \immediate\write\@auxout{\string\citation{\@citeb}}%
7472         \fi
7473         \@ifundefined{b@\@citeb\extra@b@citeb}{%
7474           \mbox{\reset@font\bfseries ?}%
7475           \G@refundefinedtrue
7476           \@latex@warning{%
7477             Citation ‘\@citeb’ on page \thepage \space undefined%
7478           }%
7479         }%
7480       }%

```

```

7481      {\csname b@\@citeb\@extra@b@citeb\endcsname}%
7482      }%
7483      }%
7484      }{#1}%
7485      }$%
7486      }%

```

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.

```

7487 \def\@citex[#1]#2{%
7488   \let\@citea\@empty
7489   \@cite{%
7490     \@for\@citeb:=#2\do{%
7491       \@citea
7492       \def\@citea{,\penalty\@m\ }%
7493       \edef\@citeb{\expandafter\@firstofone\@citeb}%
7494       \if@filesw
7495         \immediate\write\@auxout{\string\citation{\@citeb}}%
7496       \fi
7497       \ifundefined{b@\@citeb\@extra@b@citeb}{%
7498         \mbox{\reset@font\bfseries ?}%
7499         \G@refundefinedtrue
7500         \@latex@warning{%
7501           Citation '\@citeb' on page \thepage \space undefined%
7502         }%
7503       }{%
7504         \hbox{\csname b@\@citeb\@extra@b@citeb\endcsname}%
7505       }%
7506     }%
7507   }{#1}%
7508   }%
7509 }{}

```

## 37.1 Package harvard

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

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

```

7510 \ifpackageloaded{harvard}{%
7511   \Hy@AtBeginDocument{%
7512     \Hy@Info{*** compatibility with harvard **** }%
7513     \Hy@raiselinksfalse
7514     \def\harvardcite#1#2#3#4{%
7515       \global\@namedef{HAR@fn@#1}{\hyper@link[cite]{\cite.#1}{#2}}%
7516       \global\@namedef{HAR@an@#1}{\hyper@link[cite]{\cite.#1}{#3}}%
7517       \global\@namedef{HAR@yr@#1}{\hyper@link[cite]{\cite.#1}{#4}}%
7518       \global\@namedef{HAR@df@#1}{\csname HAR@fn@#1\endcsname}%
7519     }%
7520     \def\HAR@citetoaux#1{%
7521       \if@filesw\immediate\write\@auxout{\string\citation{#1}}\fi%
7522       \ifHy@backref
7523         \ifx\@empty\@currentlabel
7524         \else
7525           \@bspack

```

```

7526     \if@filesw
7527         \protected@write\@auxout{}\{
7528             \string\@writefile{brf}\{
7529                 \string\backcite{#1}\{
7530                     {\thepage}\{\@currentlabel}\{\@currentHref}\}
7531                 }\}
7532             }\}
7533         }\}
7534     \fi
7535     \@esphack
7536 \fi
7537 \fi
7538 }\}
7539 \def\harvarditem{%
7540     \ifnextchar[\{\@harvarditem}\{\@harvarditem[\null]}\}
7541 }\}
7542 \def\@harvarditem[#1]#2#3#4#5\par{%
7543     \item[]
7544     \hyper@anchorstart{cite.#4}\relax\hyper@anchorend
7545 \if@filesw
7546     \begingroup
7547     \def\protect##1{\string ##1\space}%
7548     \ifthenelse{\equal{#1}\{\null}\}
7549     {\def\next{{#4}{#2}{#2}{#3}}}%
7550     {\def\next{{#4}{#2}{#1}{#3}}}%
7551     \immediate\write\@auxout{\string\harvardcite\codeof\next}%
7552 \endgroup
7553 \fi
7554 \protect\hspace*{-\labelwidth}%
7555 \protect\hspace*{-\labelsep}%
7556 \ignorespaces
7557 #5%
7558 \ifHy@backref
7559     \newblock
7560     \backref{\csname br@#4\endcsname}%
7561 \fi
7562 \par
7563 }\}

```

\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:

```

7564 \long\def\HAR@checkcitations#1#2#3#4{%
7565     \def\HAR@tempa{\hyper@@link[cite]\{cite.#1\}{#2}}%
7566     \expandafter\ifx\csname HAR@fn@#1\endcsname\HAR@tempa
7567     \def\HAR@tempa{\hyper@@link[cite]\{cite.#1\}{#3}}%
7568     \expandafter\ifx\csname HAR@an@#1\endcsname\HAR@tempa
7569     \def\HAR@tempa{\hyper@@link[cite]\{cite.#1\}{#4}}%
7570     \expandafter\ifx\csname HAR@yr@#1\endcsname\HAR@tempa
7571     \else
7572         \@tempwattrue
7573     \fi
7574     \else
7575         \@tempwattrue
7576     \fi
7577     \else
7578         \@tempwattrue

```

```

7579   \fi
7580   }%
7581   }%

7582 }{}

```

## 37.2 Package chicago

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

```

7583 \@ifpackageloaded{chicago}{%

```

`\citeN`

```

7584 \def\citeN{%
7585   \def\@citesep{-1000}%
7586   \def\@cite##1##2{##1}%
7587   \def\citeauthoryear##1##2##3{##1 (##3\@cite@opt)}%
7588   \@citedata@opt
7589 }%

```

`\shortciteN`

```

7590 \def\shortciteN{%
7591   \def\@citesep{-1000}%
7592   \def\@cite##1##2{##1}%
7593   \def\citeauthoryear##1##2##3{##2 (##3\@cite@opt)}%
7594   \@citedata@opt
7595 }%

```

`\@citedata@opt`

```

7596 \def\@citedata@opt{%
7597   \let\@cite@opt\@empty
7598   \@ifnextchar [{%
7599     \@tempwattrue
7600     \@citedatax@opt
7601   }{%
7602     \@tempwafalse
7603     \@citedatax[]%
7604   }%
7605 }%

```

`\@citedatax@opt`

```

7606 \def\@citedatax@opt[#1]{%
7607   \def\@cite@opt{, #1}%
7608   \@citedatax[{#1}]%
7609 }%

7610 }{}

```

## 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.

```

7611 \def\Hy@EveryPageAnchor{%
7612   \Hy@DistillerDestFix
7613   \ifHy@pageanchor
7614     \ifHy@hypertextnames
7615       \ifHy@plainpages
7616         \def\Hy@TempPageAnchor{\hyper@@anchor{page.\the\c@page}}}%
7617       \else
7618         \begingroup
7619         \let\@number\@firstofone
7620         \Hy@unicodfalse
7621         \pdfstringdef\@the@H@page{\thepage}%
7622       \endgroup
7623       \def\Hy@TempPageAnchor{\hyper@@anchor{page.\@the@H@page}}}%
7624     \fi
7625   \else
7626     \Hy@GlobalStepCount\Hy@pagecounter
7627     \def\Hy@TempPageAnchor{%
7628       \hyper@@anchor{page.\the\Hy@pagecounter}%
7629     }%
7630   \fi
7631   \vbox to 0pt{%
7632     \kern\voffset
7633     \kern\topmargin
7634     \kern-1bp\relax
7635     \hbox to 0pt{%
7636       \kern\hoffset
7637       \kern\ifodd\value{page}%
7638         \oddsidemargin
7639       \else
7640         \evensidemargin
7641       \fi
7642       \kern-1bp\relax
7643       \Hy@TempPageAnchor\relax
7644       \hss
7645     }%
7646     \vss
7647   }%
7648 \fi
7649 }
7650 \g@addto@macro\Hy@EveryPageBoxHook{%
7651   \Hy@EveryPageAnchor
7652 }

```

## 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.

```

7653 \def\addcontentsline#1#2#3{% toc extension, type, tag
7654   \begingroup
7655   \let\label\@gobble
7656   \ifx\@currentHref\@empty
7657     \Hy@Warning{%
7658       No destination for bookmark of \string\addcontentsline,%
7659       \MessageBreak destination is added%

```

```

7660 }%
7661 \phantomsection
7662 \fi
7663 \expandafter\ifx\csname toplevel@#2\endcsname\relax
7664 \begingroup
7665 \def\Hy@tempa{#1}%
7666 \ifx\Hy@tempa\Hy@bookmarkstype
7667 \Hy@WarningNoLine{%
7668 bookmark level for unknown #2 defaults to 0%
7669 }%
7670 \else
7671 \Hy@Info{bookmark level for unknown #2 defaults to 0}%
7672 \fi
7673 \endgroup
7674 \expandafter\gdef\csname toplevel@#2\endcsname{0}%
7675 \fi
7676 \edef\Hy@toplevel{\csname toplevel@#2\endcsname}%
7677 \Hy@writebookmark{\csname the#2\endcsname}%
7678 {#3}%
7679 {\@currentHref}%
7680 {\Hy@toplevel}%
7681 {#1}%
7682 \ifHy@verbose
7683 \begingroup
7684 \def\Hy@tempa{#3}%
7685 \@onelevel@sanitize\Hy@tempa
7686 \let\temp@online\on@line
7687 \let\on@line\@empty
7688 \Hy@Info{%
7689 bookmark\temp@online:\MessageBreak
7690 thecounter {\csname the#2\endcsname}\MessageBreak
7691 text {\Hy@tempa}\MessageBreak
7692 reference {\@currentHref}\MessageBreak
7693 toplevel {\Hy@toplevel}\MessageBreak
7694 type {#1}%
7695 }%
7696 \endgroup
7697 \fi
7698 \addtocontents{#1}{%
7699 \protect\contentsline{#2}{#3}{\thepage}{\@currentHref}%
7700 }%
7701 \endgroup
7702 }
7703 \def\contentsline#1#2#3#4{%
7704 \ifx\#4\%
7705 \csname l@#1\endcsname{#2}{#3}%
7706 \else
7707 \ifcase\Hy@linktoc % none
7708 \csname l@#1\endcsname{#2}{#3}%
7709 \or % section
7710 \csname l@#1\endcsname{%
7711 \hyper@linkstart{link}{#4}{#2}\hyper@linkend
7712 }{#3}%
7713 \or % page
7714 \csname l@#1\endcsname{#2}{#3}%
7715 \hyper@linkstart{link}{#4}{#3}\hyper@linkend
7716 }%

```

```

7717 \else % all
7718 \csname l@#1\endcsname{%
7719 \hyper@linkstart{link}{#4}{#2}\hyper@linkend
7720 }{%
7721 \hyper@linkstart{link}{#4}{#3}\hyper@linkend
7722 }%
7723 \fi
7724 \fi
7725 }

7726 </package>
7727 <*check>
7728 \checklatex
7729 \checkcommand\def\addcontentsline#1#2#3{%
7730 \addtocontents{#1}{\protect\contentsline{#2}{#3}{\thepage}}%
7731 }
7732 \checkcommand\def\contentsline#1{\csname l@#1\endcsname}
7733 </check>
7734 <*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.

```

7735 \let\H@definecounter\@definecounter
7736 \def\@definecounter#1{%
7737 \H@definecounter{#1}%
7738 \expandafter\def\csname theH#1\endcsname{\arabic{#1}}%
7739 }

```

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.

```

7740 \let\H@newctr\@newctr
7741 \def\@newctr#1[#2]{%
7742 \H@newctr#1[{#2}]%
7743 \expandafter\def\csname theH#1\endcsname{%
7744 \csname the\@ifundefined{theH#2}{H}{#2}\endcsname.\arabic{#1}}%
7745 }%
7746 }

```

## 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.

```

7747 \ifpackageloaded{amsmath}{%
7748 \def\Hy@make@anchor{%
7749 \Hy@MakeCurrentHrefAuto{AMS}%
7750 \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
7751 }%
7752 \def\Hy@make@df@tag@@#1{%
7753 \gdef\df@tag{%

```



```

7754 \maketag@@@{\Hy@make@anchor#1}%
7755 \def\@currentlabel{#1}%
7756 }%
7757 }%
7758 \def\Hy@make@df@tag@@@#1{%
7759 \gdef\df@tag{%
7760 \tagform@{\Hy@make@anchor#1}%
7761 \toks@\xp{\p@equation{#1}}%
7762 \edef\@currentlabel{\the\toks@}%
7763 }%
7764 }%
7765 \let\HyOrg@make@df@tag@@\make@df@tag@@
7766 \let\HyOrg@make@df@tag@@@ \make@df@tag@@@
7767 \let\make@df@tag@@\Hy@make@df@tag@@
7768 \let\make@df@tag@@@ \Hy@make@df@tag@@@
7769 }{}

```

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

```

7770 \ifpackagewith{hyperref}{pdfTeX}{%
7771 \let\H@seteqlabel\@seteqlabel
7772 \def\@seteqlabel#1{%
7773 \H@seteqlabel{#1}%
7774 \xdef\@currentHref{AMS.\the\Hy@linkcounter}%
7775 \Hy@raisedlink{%
7776 \hyper@anchorstart{\@currentHref}\hyper@anchorend
7777 }%
7778 }%
7779 }{}

```

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.

```

7780 \let\HyOrg@addtoreset\@addtoreset
7781 \def\@addtoreset#1#2{%
7782 \HyOrg@addtoreset{#1}{#2}%
7783 \expandafter\xdef\csname theH#1\endcsname{%
7784 \expandafter\noexpand
7785 \csname the\@ifundefined{theH#2}{H#2\endcsname
7786 .\noexpand\the\noexpand\value{#1}%
7787 }%
7788 }

```

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

```

7789 \end{package}

```

```

7790 <*check>
7791 \checkpackage{amsmath}[1999/12/14 - 2000/06/06]
7792 \checkcommand\newcommand{\numberwithin}[3][\arabic]{%
7793   \ifundefined{c@#2}{\@nocounterr{#2}}{%
7794     \ifundefined{c@#3}{\@nocnterr{#3}}{%
7795       \addtoreset{#2}{#3}%
7796       \exp\xdef\csname the#2\endcsname{%
7797         \exp\@nx\csname the#3\endcsname .\@nx#1{#2}%
7798       }%
7799     }%
7800   }%
7801 }%
7802 </check>
7803 <*package>
7804 \ifpackageloaded{amsmath}{%
7805   \ifpackagelater{amsmath}{1999/12/14}{%
7806     \renewcommand*{\numberwithin}[3][\arabic]{%
7807       \ifundefined{c@#2}{\@nocounterr{#2}}{%
7808         \ifundefined{c@#3}{\@nocnterr{#3}}{%
7809           \HyOrg@addtoreset{#2}{#3}%
7810           \exp\xdef\csname the#2\endcsname{%
7811             \exp\@nx\csname the#3\endcsname .\@nx#1{#2}%
7812           }%
7813           \exp\xdef\csname theH#2\endcsname{%
7814             \exp\@nx
7815             \csname the\ifundefined{theH#3}{H#3\endcsname
7816             .\@nx#1{#2}%
7817           }%
7818         }%
7819       }%
7820     }%
7821   }%
7822   \Hy@WarningNoLine{%
7823     \string\numberwithin\space of package ‘amsmath’ %
7824     only fixed\MessageBreak
7825     for version 2000/06/06 v2.12 or newer%
7826   }%
7827 }%
7828 }{}

```

## 42 Included figures

Simply intercept the low level graphics package macro.

```

7829 \ifHy@figures
7830 \let\Hy@Gin@setfile\Gin@setfile
7831 \def\Gin@setfile#1#2#3{%
7832   \hyperimage{#3}{\Hy@Gin@setfile{#1}{#2}{#3}}%
7833 }%
7834 \fi
7835 \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 emboldening 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.

```

7836 \ifHy@hyperindex
7837   \def\HyInd@ParenLeft{()%
7838   \def\HyInd@ParenRight{)%
7839   \def\hyperindexformat#1#2{%
7840     \let\HyOrg@hyperpage\hyperpage
7841     \let\hyperpage\@firstofone
7842     #1{\HyOrg@hyperpage{#2}}%
7843     \let\hyperpage\HyOrg@hyperpage
7844   }%
7845   \Hy@nextfalse
7846   \@ifpackageloaded{multind}{\Hy@nexttrue}{}%
7847   \@ifpackageloaded{index}{\Hy@nexttrue}{}%
7848   \@ifpackageloaded{amsmidx}{\Hy@nexttrue}{}%
7849   \begingroup
7850     \lccode'\|=\expandafter'\HyInd@EncapChar\relax
7851     \lccode'\|/'\|'\relax
7852   \lowercase{\endgroup
7853   \ifHy@next
7854     \let\HyInd@org@wrindex\@wrindex
7855     \def\@wrindex#1#2{\HyInd@@wrindex{#1}#2||}%
7856     \def\HyInd@@wrindex#1#2|#3|#4\|{%
7857       \ifx\|#3\|
7858         \HyInd@org@wrindex{#1}{#2|hyperpage}%
7859       \else
7860         \HyInd@@@wrindex{#1}{#2}#3\|
7861       \fi
7862     }%
7863     \def\HyInd@@@wrindex#1#2#3#4\|{%
7864       \def\Hy@temp@A{#3}%
7865       \ifcase0\ifx\Hy@temp@A\HyInd@ParenLeft 1\fi
7866         \ifx\Hy@temp@A\HyInd@ParenRight 1\fi
7867       \relax
7868       \HyInd@org@wrindex{#1}{%
7869         #2|hyperindexformat{/#3#4}%
7870       }%
7871     \else
7872       \ifx\|#4\|
7873         \ifx\Hy@temp@A\HyInd@ParenRight
7874           \HyInd@org@wrindex{#1}{#2|#3}%
7875         \else
7876           \HyInd@org@wrindex{#1}{#2|#3hyperpage}%
7877         \fi
7878       \else
7879         \HyInd@org@wrindex{#1}{%
7880           #2|#3hyperindexformat{/#4}%
7881         }%
7882       \fi
7883     \fi
7884   }%

```

```

7885 \else
7886 \def\@wrindex#1{\@wrindex#1||\}%
7887 \def\@wrindex#1|#2|#3\{\%
7888 \if@filesw
7889 \ifx\|#2\%
7890 \protected@write\@indexfile{}\%
7891 \string\indexentry{#1|hyperpage}\thepage}%
7892 }%
7893 \else
7894 \HyInd@@@wrindex{#1}#2\%
7895 \fi
7896 \fi
7897 \endgroup
7898 \@esphack
7899 }%
7900 \def\HyInd@@@wrindex#1#2#3\{\%
7901 \def\Hy@temp@A{#2}%
7902 \ifcase0\ifx\Hy@temp@A\HyInd@ParenLeft 1\fi
7903 \ifx\Hy@temp@A\HyInd@ParenRight 1\fi
7904 \relax
7905 \protected@write\@indexfile{}\%
7906 \string\indexentry{%
7907 #1|hyperindexformat{/#2#3}%
7908 }\thepage}%
7909 }%
7910 \else
7911 \ifx\|#3\%
7912 \ifx\Hy@temp@A\HyInd@ParenRight
7913 \protected@write\@indexfile{}\%
7914 \string\indexentry{#1|#2}\thepage}%
7915 }%
7916 \else
7917 \protected@write\@indexfile{}\%
7918 \string\indexentry{#1|#2hyperpage}\thepage}%
7919 }%
7920 \fi
7921 \else
7922 \protected@write\@indexfile{}\%
7923 \string\indexentry{%
7924 #1|#2hyperindexformat{/#3}%
7925 }\thepage}%
7926 }%
7927 \fi
7928 \fi
7929 }%
7930 \fi
7931 }%
7932 \fi
7933 \Hy@DisableOption{hyperindex}
7934 \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.

```
7935 \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.

```

7936 \def\hyperpage#1{%
7937   \HyInd@hyperpage#1\nohyperpage{}\@nil
7938 }
7939 \def\HyInd@hyperpage#1\nohyperpage#2#3\@nil{%
7940   \HyInd@@hyperpage{#1}%
7941   #2%
7942   \def\Hy@temp{#3}%
7943   \ifx\Hy@temp\@empty
7944     \else
7945       \Hy@ReturnAfterFi{%
7946         \HyInd@hyperpage#3\@nil
7947       }%
7948     \fi
7949 }
7950 \def\HyInd@@hyperpage#1{\@hyperpage#1----\}
7951 \def\@hyperpage#1--#2--#3\{%
7952   \ifx\#2\%
7953     \@commahyperpage{#1}%
7954   \else
7955     \HyInd@pagelink{#1}--\HyInd@pagelink{#2}%
7956   \fi
7957 }
7958 \def\@commahyperpage#1{\@commahyperpage#1, ,\}
7959 \def\@commahyperpage#1, #2,#3\{%
7960   \ifx\#2\%
7961     \HyInd@pagelink{#1}%
7962   \else
7963     \HyInd@pagelink{#1}, \HyInd@pagelink{#2}%
7964   \fi
7965 }

```

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

```

7966 \def\HyInd@pagelink#1{%
7967   \begingroup
7968   \toks@={}%
7969   \HyInd@removespaces#1 \@nil
7970   \endgroup
7971 }
7972 \def\HyInd@removespaces#1 #2\@nil{%
7973   \toks@=\expandafter{\the\toks@#1}%
7974   \ifx\#2\%
7975     \edef\x{\the\toks@}%
7976     \ifx\x\@empty
7977       \else
7978         \hyperlink{page.\the\toks@}{\the\toks@}%
7979       \fi
7980     \else
7981       \Hy@ReturnAfterFi{%
7982         \HyInd@removespaces#2\@nil
7983       }%
7984     \fi
7985 }

```

## 44 Compatibility with foiltex

```

7986 \@ifclassloaded{foils}{%

```

```

7987 \providecommand*\ext@table{lot}%
7988 \providecommand*\ext@figure{lof}%
7989 }{}

```

## 45 Compatibility with seminar slide package

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

```

7990 \ifclassloaded{seminar}{%
7991   \Hy@seminarslidestrue\newcommand\theHslide{\arabic{slide}}}%
7992 }{%
7993   \Hy@seminarslidesfalse
7994 }
7995 \ifpackageloaded{slidesec}{%
7996   \newcommand\theHslidesection {\arabic{slidesection}}%
7997   \newcommand\theHslidesubsection{%
7998     \theHslidesection.\arabic{slidesubsection}%
7999   }%
8000   \def\slide@heading[#1]#2{%
8001     \H@refstepcounter{slidesection}%
8002     \@addtoreset{slidesubsection}{slidesection}%
8003     \addtocontents{los}{%
8004       \protect\l@slide{\the\c@slidesection}{\ignorespaces#1}%
8005       {\@SCTR}{slideheading.\theslidesection}%
8006     }%
8007     \def\Hy@tempa{#2}%
8008     \ifx\Hy@tempa\@empty
8009     \else
8010       {%
8011         \edef\@currentlabel{%
8012           \csname p@slidesection\endcsname\theslidesection
8013         }%
8014         \makeslideheading{#2}%
8015       }%
8016     \fi
8017     \gdef\theslideheading{#1}%
8018     \gdef\theslidesubheading{}%
8019     \ifHy@bookmarksnumbered
8020       \def\Hy@slidetitle{\theslidesection\space #1}%
8021     \else
8022       \def\Hy@slidetitle{#1}%
8023     \fi
8024     \ifHy@hypertextnames
8025       \ifHy@naturalnames
8026         \hyper@@anchor{slideheading.\theslidesection}{\relax}%
8027         \Hy@writebookmark
8028           {\theslidesection}%
8029           {\Hy@slidetitle}%
8030           {slideheading.\theslidesection}%
8031           {1}%
8032           {toc}%
8033       \else
8034         \hyper@@anchor{slideheading.\theHslidesection}{\relax}%
8035         \Hy@writebookmark
8036           {\theslidesection}%
8037           {\Hy@slidetitle}%
8038           {slideheading.\theHslidesection}%

```

```

8039         {1}%
8040         {toc}%
8041     \fi
8042 \else
8043     \Hy@GlobalStepCount\Hy@linkcounter
8044     \hyper@@anchor{slideheading.\the\Hy@linkcounter}{\relax}%
8045     \Hy@writebookmark
8046         {\theslidesubsection}%
8047         {\Hy@slidetitle}%
8048         {slideheading.\the\Hy@linkcounter}%
8049         {1}%
8050         {toc}%
8051 \fi
8052 }%
8053 \def\slide@subheading[#1]#2{%
8054     \H@refstepcounter{slidesubsection}%
8055     \addtocontents{los}{%
8056         \protect\l@subslide{\the\c@slidesubsection}{\ignorespaces#1}%
8057         {\@SCTR}{slideheading.\theslidesubsection}%
8058     }%
8059     \def\Hy@tempa{#2}%
8060     \ifx\Hy@tempa\@empty
8061     \else
8062         {%
8063             \edef\@currentlabel{%
8064                 \csname p@slidesubsection\endcsname\theslidesubsection
8065             }%
8066             \makeslidesubheading{#2}%
8067         }%
8068     \fi
8069     \gdef\theslidesubheading{#1}%
8070     \ifHy@bookmarksnumbered
8071         \def\Hy@slidetitle{\theslidesubsection\space #1}%
8072     \else
8073         \def\Hy@slidetitle{#1}%
8074     \fi
8075     \ifHy@hypertexnames
8076     \ifHy@naturalnames
8077         \hyper@@anchor{slideheading.\theslidesubsection}{\relax}%
8078         \Hy@writebookmark
8079             {\theslidesubsection}%
8080             {\Hy@slidetitle}%
8081             {slideheading.\theslidesubsection}%
8082             {2}%
8083             {toc}%
8084     \else
8085         \hyper@@anchor{slideheading.\theHslidesubsection}{\relax}%
8086         \Hy@writebookmark
8087             {\theslidesubsection}%
8088             {\Hy@slidetitle}%
8089             {slideheading.\theHslidesubsection}%
8090             {2}%
8091             {toc}%
8092     \fi
8093 \else
8094     \Hy@GlobalStepCount\Hy@linkcounter
8095     \hyper@@anchor{slideheading.\the\Hy@linkcounter}{\relax}%

```

```

8096 \Hy@writebookmark
8097 {\theslidesubsection}%
8098 {\Hy@slidetitle}%
8099 {slideheading.\the\Hy@linkcounter}%
8100 {1}%
8101 {toc}%
8102 \fi
8103 }%
8104 \providecommand*{\listslidenam}{List of Slides}%
8105 \def\listofslides{%
8106 \section*{%
8107 \listslidenam
8108 \@mkboth{%
8109 \expandafter\MakeUppercase\listslidenam
8110 }{%
8111 \expandafter\MakeUppercase\listslidenam
8112 }%
8113 }%
8114 \def\l@slide##1##2##3##4{%
8115 \slide@undottedcline{%
8116 \slidenumberline{##3}{\hyperlink{##4}{##2}}}%
8117 }{%
8118 }%
8119 \let\l@subslide\l@slide
8120 \@startlos
8121 }%
8122 \def\slide@contents{%
8123 \def\l@slide##1##2##3##4{%
8124 \slide@ccline{\slidenumberline{##3}{\hyperlink{##4}{##2}}}{##3}%
8125 }%
8126 \let\l@subslide\@gobblefour
8127 \@startlos
8128 }%
8129 \def\Slide@contents{%
8130 \def\l@slide##1##2##3##4{%
8131 \ifcase\lslide@flag
8132 \message{##1 ** \the\c@slidesection}%
8133 \ifnum##1>\c@slidesection
8134 \def\lslide@flag{1}%
8135 {%
8136 \large
8137 \slide@ccline{%
8138 \slidenumberline{$\Rightarrow\bullet$}%
8139 {\hyperlink{##4}{##2}}}%
8140 }{##3}%
8141 }%
8142 \else
8143 {%
8144 \large
8145 \slide@ccline{%
8146 \slidenumberline{$\surd\;\bullet$}%
8147 {\hyperlink{##4}{##2}}}%
8148 }{##3}%
8149 }%
8150 \fi
8151 \or
8152 \def\lslide@flag{2}%

```



```

8153      {%
8154      \large
8155      \slide@cline{%
8156      \slidenumberline{$\bullet$}%
8157      {\hyperlink{##4}{##2}}%
8158      }{##3}%
8159      }%
8160      \or
8161      {%
8162      \large
8163      \slide@cline{%
8164      \slidenumberline{$\bullet$}%
8165      {\hyperlink{##4}{##2}}%
8166      }{##3}%
8167      }%
8168      \fi
8169      }%
8170      \def\l@subslide##1##2##3##4{%
8171      \ifnum\lslide@flag=1 %
8172      \@undottedtocline{2}{3.8em}{3.2em}{\hyperlink{##4}{##2}}{}%
8173      \fi
8174      }%
8175      \def\lslide@flag{0}%
8176      \@startlos
8177      }%
8178      }{}

```

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.)

```

8179 \ifHy@texht
8180 \expandafter\endinput
8181 \fi
8182 \let\real@setref\@setref
8183 \def\@setref#1#2#3{% csname, extract group, refname
8184 \ifx#1\relax
8185 \protect\G@refundefinedtrue
8186 \nfss@text{\reset@font\bfseries ??}%
8187 \@latex@warning{%
8188 Reference ‘#3’ on page \thepage \space undefined%
8189 }%
8190 \else
8191 \expandafter\Hy@setref@link#1\@empty\@empty\@nil{#2}%
8192 \fi
8193 }

```

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

```

8194 \def\Hy@setref@link#1#2#3#4#5#6\@nil#7{%
8195 \begingroup
8196 \toks0={\hyper@@link{#5}{#4}}%
8197 \toks1=\expandafter{#7{#1}{#2}{#3}{#4}{#5}}%
8198 \edef\x{\endgroup
8199 \the\toks0 {\the\toks1 }%
8200 }%
8201 \x
8202 }
8203 \def\@pagesetref#1#2#3{% csname, extract macro, ref

```

```

8204 \ifx#1\relax
8205 \protect\G@refundefinedtrue
8206 \nfss@text{\reset@font\bfseries ??}%
8207 \@latex@warning{%
8208   Reference '#3' on page \thepage \space undefined%
8209 }%
8210 \else
8211 \protect\hyper@@link
8212 {\expandafter\@fifthoffive#1}%
8213 {page.\expandafter\@secondoffive#1}%
8214 {\expandafter\@secondoffive#1}%
8215 \fi
8216 }

8217 </package>
8218 <*check>
8219 \checklatex
8220 \checkcommand\def\@setref#1#2#3{%
8221 \ifx#1\relax
8222 \protect\G@refundefinedtrue
8223 \nfss@text{\reset@font\bfseries ??}%
8224 \@latex@warning{%
8225   Reference '#3' on page \thepage\space undefined%
8226 }%
8227 \else
8228 \expandafter#2#1\null
8229 \fi
8230 }
8231 </check>
8232 <*package>

```

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

```

8233 \def\HyRef@StarSetRef#1{%
8234 \begingroup
8235 \Hy@safe@activetrue
8236 \edef\x{#1}%
8237 \@onelevel@sanitize\x
8238 \edef\x{\endgroup
8239 \noexpand\HyRef@@StarSetRef
8240 \expandafter\noexpand\csname r@\x\endcsname{\x}%
8241 }%
8242 \x
8243 }
8244 \def\HyRef@@StarSetRef#1#2#3{%
8245 \ifx#1\@undefined
8246 \let#1\relax
8247 \fi
8248 \real@setref#1#3{#2}%
8249 }
8250 \def\@refstar#1{%
8251 \HyRef@StarSetRef{#1}\@firstoffive
8252 }
8253 \def\@pagerefstar#1{%
8254 \HyRef@StarSetRef{#1}\@secondoffive
8255 }
8256 \def\@namerefstar#1{%
8257 \HyRef@StarSetRef{#1}\@thirdoffive

```

```

8258 }
8259 \Hy@AtBeginDocument{%
8260   \ifpackageloaded{varioref}{%
8261     \def\@Refstar#1{%
8262       \HyRef@StarSetRef{#1}\HyRef@MakeUppercaseFirstOfFive
8263     }%
8264     \def\HyRef@MakeUppercaseFirstOfFive#1#2#3#4#5{%
8265       \MakeUppercase#1%
8266     }%
8267     \DeclareRobustCommand*\@Ref{%
8268       \ifstar\@Refstar\HyRef@Ref
8269     }%
8270     \def\HyRef@Ref#1{%
8271       \hyperref[{#1}]{\Ref*{#1}}%
8272     }%
8273     \def\Vr@f#1{%
8274       \leavevmode\unskip\vref@space
8275       \hyperref[{#1}]{%
8276         \Ref*{#1}%
8277         \let\vref@space\nobreakspace
8278         \@vpageref\unskip}{#1}%
8279       }%
8280     }%
8281     \def\vr@f#1{%
8282       \leavevmode\unskip\vref@space
8283       \begingroup
8284       \let\T@pageref\@pagerefstar
8285       \hyperref[{#1}]{%
8286         \ref*{#1}%
8287         \vpageref\unskip}{#1}%
8288       }%
8289     \endgroup
8290   }%
8291 }{}%
8292 }
8293 \DeclareRobustCommand*\@autopageref{%
8294   \ifstar{%
8295     \HyRef@autopagerefname\pageref*%
8296   }\HyRef@autopageref
8297 }
8298 \def\HyRef@autopageref#1{%
8299   \hyperref[{#1}]{\HyRef@autopagerefname\pageref*{#1}}%
8300 }
8301 \def\HyRef@autopagerefname{%
8302   \ltx@ifundefined{pageautorefname}{%
8303     \ltx@ifundefined{pagename}{%
8304       \Hy@Warning{No autoref name for 'page'}%
8305     }{%
8306       \pagename\nobreakspace
8307     }%
8308   }{%
8309     \pageautorefname\nobreakspace
8310   }%
8311 }
8312 \DeclareRobustCommand*\@autoref{%
8313   \ifstar{\HyRef@autoref@gobbletwo}{\HyRef@autoref\hyper@@link}%
8314 }

```

```

8315 \def\HyRef@autoref#1#2{%
8316   \begingroup
8317   \Hy@safe@activetrue
8318   \expandafter\HyRef@autosetref\csname r@#2\endcsname{#2}{#1}%
8319 \endgroup
8320 }
8321 \def\HyRef@autosetref#1#2#3{% link command, csname, refname
8322   \HyRef@ShowKeysRef{#2}%
8323   \ifcase 0\ifx#1\relax 1\fi\ifx#1\Hy@varioref@undefined 1\fi\relax
8324   \edef\HyRef@thisref{%
8325     \expandafter\@fourthoffive#1\@empty\@empty\@empty
8326   }%
8327   \expandafter\HyRef@testreftype\HyRef@thisref.\.%
8328   \Hy@safe@activesfalse
8329   #3{%
8330     \expandafter\@fifthoffive#1\@empty\@empty\@empty
8331   }{%
8332     \expandafter\@fourthoffive#1\@empty\@empty\@empty
8333   }{%
8334     \HyRef@currentHtag
8335     \expandafter\@firstoffive#1\@empty\@empty\@empty
8336     \null
8337   }%
8338 \else
8339   \protect\G@refundefinedtrue
8340   \nfss@text{\reset@font\bfseries ??}%
8341   \@latex@warning{%
8342     Reference ‘#2’ on page \thepage\space undefined%
8343   }%
8344 \fi
8345 }
8346 \def\HyRef@testreftype#1.#2\.{%
8347   \ltx@ifundefined{#1autorefname}{%
8348     \ltx@ifundefined{#1name}{%
8349       \HyRef@StripStar#1\*\@nil{#1}%
8350     \ltx@ifundefined{\HyRef@name autorefname}{%
8351       \ltx@ifundefined{\HyRef@name name}{%
8352         \def\HyRef@currentHtag{}%
8353         \Hy@Warning{No autoref name for ‘#1’}%
8354       }{%
8355         \edef\HyRef@currentHtag{%
8356           \expandafter\noexpand\csname\HyRef@name name\endcsname
8357           \noexpand~%
8358         }%
8359       }%
8360     }{%
8361       \edef\HyRef@currentHtag{%
8362         \expandafter\noexpand
8363         \csname\HyRef@name autorefname\endcsname
8364         \noexpand~%
8365       }%
8366     }%
8367   }{%
8368     \edef\HyRef@currentHtag{%
8369       \expandafter\noexpand\csname#1name\endcsname
8370       \noexpand~%
8371     }%

```

```

8372 }%
8373 }{%
8374 \edef\HyRef@currentHtag{%
8375   \expandafter\noexpand\csname#1autorefname\endcsname
8376   \noexpand~%
8377 }%
8378 }%
8379 }
8380 \def\HyRef@StripStar#1*\#2\@nil#3{%
8381   \def\HyRef@name{#2}%
8382   \ifx\HyRef@name\HyRef@CaseStar
8383     \def\HyRef@name{#1}%
8384   \else
8385     \def\HyRef@name{#3}%
8386   \fi
8387 }
8388 \def\HyRef@CaseStar{*\\}
8389 \def\HyRef@currentHtag{

```

Support for package showkeys.

\HyRef@ShowKeysRef

```

8390 \let\HyRef@ShowKeysRef\@gobble
8391 \def\HyRef@ShowKeysInit{%
8392   \begingroup\expandafter\expandafter\expandafter\endgroup
8393   \expandafter\ifx\csname SK@@label\endcsname\relax
8394   \else
8395     \ifx\SK@ref\@empty
8396     \else
8397       \def\HyRef@ShowKeysRef{%
8398         \SK@\SK@@ref
8399       }%
8400     \fi
8401   \fi
8402 }
8403 \@ifpackageloaded{showkeys}{%
8404   \HyRef@ShowKeysInit
8405 }{%
8406   \Hy@AtBeginDocument{%
8407     \@ifpackageloaded{showkeys}{%
8408       \HyRef@ShowKeysInit
8409     }{}%
8410   }%
8411 }

```

Defaults for the names that \autoref uses.

```

8412 \providecommand*\AMSautorefname{\equationautorefname}
8413 \providecommand*\Hfootnoteautorefname{\footnoteautorefname}
8414 \providecommand*\Itemautorefname{\itemautorefname}
8415 \providecommand*\itemautorefname{item}
8416 \providecommand*\equationautorefname{Equation}
8417 \providecommand*\footnoteautorefname{footnote}
8418 \providecommand*\itemautorefname{item}
8419 \providecommand*\figureautorefname{Figure}
8420 \providecommand*\tableautorefname{Table}
8421 \providecommand*\partautorefname{Part}
8422 \providecommand*\appendixautorefname{Appendix}
8423 \providecommand*\chapterautorefname{chapter}

```

```

8424 \providecommand*\sectionautorefname{section}
8425 \providecommand*\subsectionautorefname{subsection}
8426 \providecommand*\subsubsectionautorefname{subsubsection}
8427 \providecommand*\paragraphautorefname{paragraph}
8428 \providecommand*\subparagraphautorefname{subparagraph}
8429 \providecommand*\FancyVerbLineautorefname{line}
8430 \providecommand*\theoremautorefname{Theorem}
8431 \providecommand*\pageautorefname{page}
8432 </package>

```

## 46 Configuration files

### 46.1 PS/PDF strings

Some drivers write PS or PDF strings. These strings are delimited by parentheses, therefore a lonely unmatched parenthesis must be avoided to avoid PS or PDF syntax errors. Also the backslash character itself has to be protected.

`\Hy@pstringdef` Therefore such strings should be passed through `\Hy@pstringdef`. The first argument holds a macro for the result, the second argument is the string that needs protecting. Since version 1.30.0 pdf<sub>T</sub><sub>E</sub>X offers `\pdfescapestring`.

```

8433 <*pdfTEX | dvipdfm | xetex | vtex | pdfmarkbase | dviwindo>
8434 \begingroup\expandafter\expandafter\expandafter\endgroup
8435 \expandafter\ifx\csname pdf@escapestring\endcsname\relax
8436 \begingroup
8437 \catcode'\=0 %
8438 \@makeother\%
8439 \@firstofone{\endgroup
8440 |def|Hy@pstringdef#1#2{%
8441 |begingroup
8442 |edef~{|string~}%
8443 |xdef|Hy@gtemp{#2}%
8444 |endgroup
8445 |let#1|Hy@gtemp
8446 |@onelevel@sanitize#1%
8447 |edef#1{|expandafter|Hy@ExchangeBackslash#1|@nil}%
8448 |edef#1{|expandafter|Hy@ExchangeLeftParenthesis#1(|@nil}%
8449 |edef#1{|expandafter|Hy@ExchangeRightParenthesis#1)|@nil}%
8450 }%
8451 |def|Hy@ExchangeBackslash#1\#2|@nil{%
8452 #1%
8453 |ifx|\#2|\%%
8454 |else
8455 \\\%
8456 |Hy@ReturnAfterFi{%
8457 |Hy@ExchangeBackslash#2|@nil
8458 }%
8459 |fi
8460 }%
8461 }%
8462 \def\Hy@ExchangeLeftParenthesis#1(#2\@nil{%
8463 #1%
8464 \ifx\#2\%%
8465 \else
8466 \@backslashchar(%
8467 \Hy@ReturnAfterFi{%

```

```

8468     \Hy@ExchangeLeftParenthesis#2\@nil
8469   }%
8470   \fi
8471 }%
8472 \def\Hy@ExchangeRightParenthesis#1)#2\@nil{%
8473   #1%
8474   \ifx\#2\%
8475     \else
8476       \@backslashchar)%
8477       \Hy@ReturnAfterFi{%
8478         \Hy@ExchangeRightParenthesis#2\@nil
8479       }%
8480     \fi
8481   }%
8482 \else
8483 \def\Hy@pstringdef#1#2{%
8484   \begingroup
8485     \edef~{\string~}%
8486     \xdef\Hy@gtemp{\pdf@escapestring{#2}}%
8487   \endgroup
8488   \let#1\Hy@gtemp
8489 }%
8490 \fi
8491 </pdfTeX | dvipdfm | xetex | vtex | pdfmarkbase | dviwindo>

```

## 46.2 pdfTeX

```

8492 <*pdfTeX>
8493 \providecommand*{\XR@ext}{pdf}
8494 \Hy@setbreaklinks{true}
8495 \def\HyPat@ObjRef{%
8496   [0-9]*[1-9][0-9]* 0 R%
8497 }

```

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, 2005-08-08: `\pdfminorversion`

```

8498 \let\Hy@pdfminorversion\relax
8499 \begingroup\expandafter\expandafter\expandafter\endgroup
8500 \expandafter\ifx\csname pdfminorversion\endcsname\relax
8501   \begingroup\expandafter\expandafter\expandafter\endgroup
8502   \expandafter\ifx\csname pdfoptionpdfminorversion\endcsname\relax
8503     \else
8504       \def\Hy@pdfminorversion{\pdfoptionpdfminorversion}%
8505     \fi
8506   \else
8507     \def\Hy@pdfminorversion{\pdfminorversion}%
8508   \fi
8509 \@ifundefined{Hy@pdfminorversion}{%
8510   \PackageInfo{hyperref}{%
8511     PDF version is not set, because pdfTeX is too old (<1.10a)%
8512   }%
8513 }{%

```

```

8514 \ifHy@ocgcolorlinks
8515 \ifnum\Hy@pdfminorversion<5 %
8516 \kvsetkeys{Hyp}{pdfversion=1.5}%
8517 \fi
8518 \fi
8519 \ifHy@setpdfversion
8520 \ifnum\Hy@pdfminorversion=\Hy@pdfversion\relax
8521 \else
8522 \Hy@pdfminorversion=\Hy@pdfversion\relax
8523 \fi
8524 \PackageInfo{hyperref}{%
8525 \expandafter\string\Hy@pdfminorversion
8526 :=\number\Hy@pdfversion\space
8527 }%
8528 \fi
8529 \edef\Hy@pdfversion{\number\Hy@pdfminorversion}%
8530 }
8531 \Hy@DisableOption{pdfversion}%

8532 \ifHy@ocgcolorlinks
8533 \pdf@ifdraftmode{}{%
8534 \immediate\pdfobj{%
8535 <<%
8536 /Type/OCG%
8537 /Name(View)%
8538 /Usage<<%
8539 /Print<<%
8540 /PrintState/OFF%
8541 >>%
8542 /View<<%
8543 /ViewState/ON%
8544 >>%
8545 >>%
8546 >>%
8547 }%
8548 \edef\OBJ@OCG@view{\the\pdflastobj\space 0 R}%
8549 \immediate\pdfobj{%
8550 <<%
8551 /Type/OCG%
8552 /Name(Print)%
8553 /Usage<<%
8554 /Print<<%
8555 /PrintState/ON%
8556 >>%
8557 /View<<%
8558 /ViewState/OFF%
8559 >>%
8560 >>%
8561 >>%
8562 }%
8563 \edef\OBJ@OCG@print{\the\pdflastobj\space 0 R}%
8564 \immediate\pdfobj{%
8565 [%
8566 \OBJ@OCG@view\space\OBJ@OCG@print
8567 ]%
8568 }%
8569 \edef\OBJ@OCGs{\the\pdflastobj\space 0 R}%
8570 \pdfcatalog{%

```



```

8571 /OCProperties<<%
8572 /OCGs \OBJ@OCGs
8573 /D<<%
8574 /OFF[\OBJ@OCG@print]%
8575 /AS[%
8576 <<%
8577 /Event/View%
8578 /OCGs \OBJ@OCGs
8579 /Category[/View]%
8580 >>%
8581 <<%
8582 /Event/Print%
8583 /OCGs \OBJ@OCGs
8584 /Category[/Print]%
8585 >>%
8586 <<%
8587 /Event/Export%
8588 /OCGs \OBJ@OCGs
8589 /Category[/Print]%
8590 >>%
8591 ]%
8592 >>%
8593 >>%
8594 }%
8595 \beginngroup
8596 \edef\x{\endgroup
8597 \pdfpageresources{%
8598 /Properties<<%
8599 /OCView \OBJ@OCG@view
8600 /OCPrint \OBJ@OCG@print
8601 >>%
8602 }%
8603 }%
8604 \x
8605 }%
8606 \Hy@AtBeginDocument{%
8607 \def\Hy@colorlink#1{%
8608 \beginngroup
8609 \ifHy@ocgcolorlinks
8610 \def\Hy@ocgcolor{#1}%
8611 \setbox0=\hbox\bgroup\color@beginngroup
8612 \else
8613 \HyColor@UseColor#1%
8614 \fi
8615 }%
8616 \def\Hy@endcolorlink{%
8617 \ifHy@ocgcolorlinks
8618 \color@endgroup\egroup
8619 \mbox{%
8620 \pdfliteral page{/OC/OCPrint BDC}%
8621 \rlap{\copy0}%
8622 \pdfliteral page{EMC/OC/OCView BDC}%
8623 \beginngroup
8624 \expandafter\HyColor@UseColor\Hy@ocgcolor
8625 \box0 %
8626 \endgroup
8627 \pdfliteral page{EMC}%

```

```

8628     }%
8629     \fi
8630     \endgroup
8631   }%
8632 }%
8633 \else
8634   \Hy@DisableOption{ocgcolorlinks}%
8635 \fi

```

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

```

8636 \def\setpdfinkmargin#1{\pdfinkmargin#1}
8637 \ifx\pdfstartlink\@undefined% less than version 14
8638   \let\pdfstartlink\pdfannotlink
8639   \let\pdfinkmargin\@tempdima
8640   \let\pdfxform\pdfform
8641   \let\pdflastxform\pdfastform
8642   \let\pdfrefxform\pdfrefform
8643 \else
8644   \pdfinkmargin1pt %
8645 \fi

```

First set up the default linking

```

8646 \providecommand*\@pdfview{XYZ}

```

First define the anchors:

```

8647 \Hy@WrapperDef\new@pdfink#1{%
8648   \ifhmode
8649     \@savsf\spacefactor
8650   \fi
8651   \Hy@SaveLastskip
8652   \Hy@VerboseAnchor{#1}%
8653   \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
8654   \Hy@DestName\Hy@pstringDest\@pdfview
8655   \Hy@RestoreLastskip
8656   \ifhmode
8657     \spacefactor\@savsf
8658   \fi
8659 }
8660 \let\pdf@endanchor\@empty

```

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

```

8661 \def\Hy@DestName#1#2{%
8662   \pdfdest name{#1}#2\relax
8663 }

```

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.

```

8664 \providecommand*\@pdfborder{0 0 1}
8665 \providecommand*\@pdfborderstyle{}
8666 \def\Hy@undefinedname{UNDEFINED}
8667 \def\find@pdfink#1#2{%
8668   \leavevmode
8669   \protected@edef\Hy@testname{#2}%
8670   \ifx\Hy@testname\@empty
8671     \Hy@Warning{%

```

```

8672     Empty destination name,\MessageBreak
8673     using '\Hy@undefinedname'%
8674 }%
8675 \let\Hy@testname\Hy@undefinedname
8676 \else
8677 \Hy@pstringdef\Hy@testname{%
8678   \expandafter\HyperDestNameFilter\expandafter{\Hy@testname}%
8679 }%
8680 \fi
8681 \Hy@StartlinkName{%
8682   \ifHy@pdfa /F 4\fi
8683   \Hy@setpdfborder
8684   \ifx\@pdfhighlight\@empty
8685     \else
8686     /H\@pdfhighlight
8687   \fi
8688   \ifx\CurrentBorderColor\relax
8689     \else
8690     /C[\CurrentBorderColor]%
8691   \fi
8692 } \Hy@testname
8693 \expandafter\Hy@colorlink\csname @#1color\endcsname
8694 }
8695 \def\Hy@StartlinkName#1#2{%
8696   \pdfstartlink attr{#1}goto name{#2}\relax
8697 }
8698 \def\close@pdfink{%
8699   \Hy@endcolorlink
8700   \Hy@VerboseLinkStop
8701   \pdfendlink
8702 }
8703 \def\hyper@anchor#1{%
8704   \new@pdfink{#1}\anchor@spot\pdf@endanchor
8705 }
8706 \def\hyper@anchorstart#1{%
8707   \new@pdfink{#1}%
8708   \Hy@activeanchortrue
8709 }
8710 \def\hyper@anchorend{%
8711   \pdf@endanchor
8712   \Hy@activeanchorfalse
8713 }
8714 \def\hyper@linkstart#1#2{%
8715   \Hy@VerboseLinkStart{#1}{#2}%
8716   \ltx@ifundefined{@#1bordercolor}{%
8717     \let\CurrentBorderColor\relax
8718   }{%
8719     \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
8720   }%
8721   \find@pdfink{#1}{#2}%
8722 }
8723 \def\hyper@linkend{\close@pdfink}
8724 \def\hyper@link#1#2#3{%
8725   \Hy@VerboseLinkStart{#1}{#2}%
8726   \ltx@ifundefined{@#1bordercolor}{%
8727     \let\CurrentBorderColor\relax
8728   }{%

```

```

8729 \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
8730 }%
8731 \find@pdfink{#1}{#2}#3%
8732 \close@pdfink
8733 }
8734 \let\CurrentBorderColor\@linkbordercolor
8735 \def\hyper@linkurl#1#2{%
8736 \begingroup
8737 \Hy@pstringdef\Hy@pstringURI{#2}%
8738 \hyper@chars
8739 \leavevmode
8740 \pdfstartlink
8741 attr{%
8742 \Hy@setpdfborder
8743 \ifx\@pdfhighlight\@empty
8744 \else
8745 /H\@pdfhighlight
8746 \fi
8747 \ifx\@urlbordercolor\relax
8748 \else
8749 /C[\@urlbordercolor]%
8750 \fi
8751 }%
8752 user{%
8753 /Subtype/Link%
8754 \ifHy@pdfa /F 4\fi
8755 /A<<%
8756 /Type/Action%
8757 /S/URI%
8758 /URI(\Hy@pstringURI)%
8759 \ifHy@href@ismap
8760 /IsMap true%
8761 \fi
8762 \Hy@href@nextactionraw
8763 >>%
8764 }%
8765 \relax
8766 \Hy@colorlink\@urlcolor#1%
8767 \close@pdfink
8768 \endgroup
8769 }
8770 \def\hyper@linkfile#1#2#3{% anchor text, filename, linkname
8771 \begingroup
8772 \def\Hy@pstringF{#2}%
8773 \Hy@CleanupFile\Hy@pstringF
8774 \Hy@pstringdef\Hy@pstringF\Hy@pstringF
8775 \Hy@pstringdef\Hy@pstringD{#3}%
8776 \Hy@MakeRemoteAction
8777 \leavevmode
8778 \pdfstartlink
8779 attr{%
8780 \Hy@setpdfborder
8781 \ifx\@pdfhighlight\@empty
8782 \else
8783 /H\@pdfhighlight
8784 \fi
8785 \ifx\@filebordercolor\relax

```

```

8786      \else
8787        /C[\@filebordercolor]%
8788      \fi
8789    }%
8790    user {%
8791      /Subtype/Link%
8792      \ifHy@pdfa /F 4\fi
8793      /A<<%
8794      /F(\Hy@pstringF)%
8795      /S/GoToR%
8796      \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}

```

```

8797      \ifx\#3\%
8798        /D[\Hy@href@page\@pdfremotestartview]%
8799      \else
8800        /D(\Hy@pstringD)%
8801      \fi
8802      \Hy@href@nextactionraw
8803    >>%
8804  }%
8805  \relax
8806  \Hy@colorlink\@filecolor#1%
8807  \close@pdflink
8808  \endgroup
8809 }
8810 \def\@hyper@launch run:#1\#2#3{% filename, anchor text linkname
8811  \begingroup
8812  \Hy@pstringdef\Hy@pstringF{#1}%
8813  \Hy@pstringdef\Hy@pstringP{#3}%
8814  \leavevmode
8815  \pdfstartlink
8816  attr{%
8817    \Hy@setpdfborder
8818    \ifx\@pdfhighlight\@empty
8819    \else
8820      /H\@pdfhighlight
8821    \fi
8822    \ifx\@runbordercolor\relax
8823    \else
8824      /C[\@runbordercolor]%
8825    \fi
8826  }%
8827  user {%
8828    /Subtype/Link%
8829    \ifHy@pdfa /F 4\fi
8830    /A<<%
8831    /F(\Hy@pstringF)%

```

```

8832      /S/Launch%
8833      \Hy@SetNewWindow
8834      \ifx\|#3\|%
8835      \else
8836      /Win<</P(\Hy@pstringP)/F(\Hy@pstringF)>>%
8837      \fi
8838      \Hy@href@nextactionraw
8839      >>%
8840      }%
8841      \relax
8842      \Hy@colorlink\@runcolor#2%
8843      \close@pdfink
8844      \endgroup
8845      }

```

\@pdfproducer

```

8846 \ifx\@pdfproducer\relax
8847 \begingroup\expandafter\expandafter\expandafter\endgroup
8848 \expandafter\ifx\csname luatexversion\endcsname\relax
8849 \def\@pdfproducer{pdfTeX}%
8850 \ifx\eTeXversion\@undefined
8851 \else
8852 \ifx\eTeXversion\relax
8853 \else
8854 \ifnum\eTeXversion>0 %
8855 \def\@pdfproducer{pdfTeX}%
8856 \fi
8857 \fi
8858 \fi
8859 \ifx\pdfTeXversion\@undefined
8860 \else
8861 \ifnum\pdfTeXversion<100 %
8862 \edef\@pdfproducer{%
8863 \@pdfproducer
8864 \the\pdfTeXversion.\pdfTeXrevision
8865 }%
8866 \else
8867 \ifnum\pdfTeXversion<130 %
8868 \edef\@pdfproducer{%
8869 \@pdfproducer-%
8870 \expandafter\@car\the\pdfTeXversion\@empty\@nil.%
8871 \expandafter\@cdr\the\pdfTeXversion\@empty\@nil
8872 \pdfTeXrevision
8873 }%
8874 \else
8875 \ifnum\pdfTeXversion<140 %
8876 \else
8877 \def\@pdfproducer{pdfTeX}%
8878 \fi
8879 \edef\@pdfproducer{%
8880 \@pdfproducer-%
8881 \expandafter\@car\the\pdfTeXversion\@empty\@nil.%
8882 \expandafter\@cdr\the\pdfTeXversion\@empty\@nil.%
8883 \pdfTeXrevision
8884 }%
8885 \fi
8886 \fi

```

```

8887 \fi
8888 \else
8889 \begingroup
8890 \count@=\luatexversion
8891 \divide\count@ by 100 %
8892 \edef\x{\the\count@}%
8893 \count@=-\x\relax
8894 \multiply\count@ by 100 %
8895 \advance\count@ by \luatexversion
8896 \edef\x{\endgroup
8897 \def\noexpand\pdfproducer{%
8898 LuaTeX-\x.\the\count@.\luatexrevision
8899 }%
8900 }%
8901 \x
8902 \fi
8903 \fi

```

\PDF@SetupDox

```

8904 \def\PDF@SetupDoc{%
8905 \ifx\pdfpagescrop\empty
8906 \else
8907 \edef\process@me{%
8908 \pdfpagesattr=%
8909 /CropBox[\pdfpagescrop]
8910 \expandafter\ifx\expandafter\the\pdfpagesattr\%
8911 \else
8912 ^^J\the\pdfpagesattr
8913 \fi
8914 }%
8915 }%
8916 \process@me
8917 \fi
8918 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
8919 \pdfcatalog{%
8920 /PageMode/\pdfpagemode
8921 \ifx\@baseurl\empty
8922 \else
8923 /URI<</Base(\Hy@pstringB)>>%
8924 \fi
8925 }%
8926 \ifx\pdfstartpage\empty
8927 \else
8928 \ifx\pdfstartview\empty
8929 \else
8930 openaction goto page\pdfstartpage{\pdfstartview}%
8931 \fi
8932 \fi
8933 \edef\Hy@temp{%
8934 \ifHy@toolbar\else /HideToolbar true\fi
8935 \ifHy@menubar\else /HideMenubar true\fi
8936 \ifHy>windowui\else /HideWindowUI true\fi
8937 \ifHy@fitwindow /FitWindow true\fi
8938 \ifHy@centerwindow /CenterWindow true\fi
8939 \ifHy@displaydoctitle /DisplayDocTitle true\fi
8940 \Hy@UseNameKey{NonFullScreenPageMode}\pdfnonfullscreenpagemode
8941 \Hy@UseNameKey{Direction}\pdfdirection

```

```

8942 \Hy@UseNameKey{ViewArea}\@pdfviewarea
8943 \Hy@UseNameKey{ViewClip}\@pdfviewclip
8944 \Hy@UseNameKey{PrintArea}\@pdfprintarea
8945 \Hy@UseNameKey{PrintClip}\@pdfprintclip
8946 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
8947 \Hy@UseNameKey{Duplex}\@pdfduplex
8948 \ifx\@pdfpicktraybypdfsize\@empty
8949 \else
8950 /PickTrayByPDFSize \@pdfpicktraybypdfsize
8951 \fi
8952 \ifx\@pdfprintpagerange\@empty
8953 \else
8954 /PrintPageRange\@pdfprintpagerange)%
8955 \fi
8956 \ifx\@pdfnumcopies\@empty
8957 \else
8958 /NumCopies \@pdfnumcopies
8959 \fi
8960 }%
8961 \pdfcatalog{%
8962 \ifx\Hy@temp\@empty
8963 \else
8964 /ViewerPreferences<<\Hy@temp>>%
8965 \fi
8966 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
8967 \ifx\@pdflang\@empty
8968 \else
8969 /Lang(\@pdflang)%
8970 \fi
8971 }%
8972 }

```

\PDF@FinishDoc

```

8973 \def\PDF@FinishDoc{%
8974 \pdf@ifdraftmode{ }{%
8975 \Hy@UseMaketitleInfos
8976 \HyInfo@GenerateAddons
8977 \pdfinfo{%
8978 /Author(\@pdfauthor)%
8979 /Title(\@pdftitle)%
8980 /Subject(\@pdfsubject)%
8981 /Creator(\@pdfcreator)%
8982 \ifx\@pdfcreationdate\@empty
8983 \else
8984 /CreationDate(\@pdfcreationdate)%
8985 \fi
8986 \ifx\@pdfmoddate\@empty
8987 \else
8988 /ModDate(\@pdfmoddate)%
8989 \fi
8990 \ifx\@pdfproducer\relax
8991 \else
8992 /Producer(\@pdfproducer)%
8993 \fi
8994 /Keywords(\@pdfkeywords)%
8995 \ifx\@pdftrapped\@empty
8996 \else

```



```

8997      /Trapped/\@pdftrapped
8998      \fi
8999      \HyInfo@Addons
9000    }%
9001  }%
9002  \Hy@DisableOption{pdfauthor}%
9003  \Hy@DisableOption{pdftitle}%
9004  \Hy@DisableOption{pdfsubject}%
9005  \Hy@DisableOption{pdfcreator}%
9006  \Hy@DisableOption{pdfcreationdate}%
9007  \Hy@DisableOption{pdfmoddate}%
9008  \Hy@DisableOption{pdfproducer}%
9009  \Hy@DisableOption{pdfkeywords}%
9010  \Hy@DisableOption{pdftrapped}%
9011  \Hy@DisableOption{pdfinfo}%
9012 }

```

`\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`.

```

9013 \def\hyper@pagetransition{%
9014   \ifx\@pdfpagetransition\relax
9015   \else
9016     \expandafter\Hy@RemoveTransPageAttr
9017     \the\pdfpageattr^^J/Trans{>>\END
9018     \ifx\@pdfpagetransition\@empty
9019     \else
9020       \edef\@processme{%
9021         \global\pdfpageattr{%
9022           \the\pdfpageattr
9023           ^^J/Trans << /S /\@pdfpagetransition\space >>%
9024         }%
9025       }%
9026       \@processme
9027     \fi
9028   \fi
9029 }

```

`\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.

```

9030 \gdef\Hy@RemoveTransPageAttr#1^^J/Trans#2#3>>#4\END{%
9031   \ifx\#2\%
9032     \global\pdfpageattr{#1}%
9033   \else
9034     \Hy@RemoveTransPageAttr#1#4\END
9035   \fi
9036 }

```

`\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`.

```

9037 \def\hyper@pageduration{%
9038   \ifx\@pdfpageduration\relax
9039   \else
9040     \expandafter

```

```

9041 \Hy@RemoveDurPageAttr\the\pdfpageattr^^J/Dur{} \END
9042 \ifx\@pdfpageduration\@empty
9043 \else
9044 \edef\@processme{%
9045 \global\pdfpageattr{%
9046 \the\pdfpageattr
9047 ^^J/Dur \@pdfpageduration\space
9048 }%
9049 }%
9050 \@processme
9051 \fi
9052 \fi
9053 }

```

`\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.

```

9054 \gdef\Hy@RemoveDurPageAttr#1^^J/Dur#2#3 #4\END{%
9055 \ifx\#2\%
9056 \global\pdfpageattr{#1}%
9057 \else
9058 \Hy@RemoveDurPageAttr#1#4\END
9059 \fi
9060 }

```

`\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).

```

9061 \def\hyper@pagehidden{%
9062 \ifHy@useHidKey
9063 \expandafter
9064 \Hy@RemoveHidPageAttr\the\pdfpageattr^^J/Hid{} \END
9065 \ifHy@pdfpagehidden
9066 \edef\@processme{%
9067 \global\pdfpageattr{%
9068 \the\pdfpageattr
9069 ^^J/Hid true % SPACE
9070 }%
9071 }%
9072 \@processme
9073 \fi
9074 \fi
9075 }

```

`\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.

```

9076 \gdef\Hy@RemoveHidPageAttr#1^^J/Hid#2#3 #4\END{%
9077 \ifx\#2\%
9078 \global\pdfpageattr{#1}%
9079 \else
9080 \Hy@RemoveHidPageAttr#1#4\END
9081 \fi
9082 }

```

```

9083 \pdf@ifdraftmode{}\{%
9084 \g@addto@macro\Hy@EveryPageHook{%
9085   \hyper@pagetransition
9086   \hyper@pageduration
9087   \hyper@pagehidden
9088 }%
9089 }

```

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

```

9090 </pdfTeX>
9091 <*pdfTeX | xetex>
9092 \Hy@AtBeginDocument{%
9093   \ifHy@setpagesize
9094     \expandafter\@firstofone
9095   \else
9096     \expandafter\@gobble
9097   \fi
9098 }%
9099 \ifclassloaded{seminar}\{%
9100 <*pdfTeX>
9101   \setlength{\pdfhorigin}{1truein}%
9102   \setlength{\pdfvorigin}{1truein}%
9103 </pdfTeX>
9104   \ifportrait
9105     \ifdim\paperwidth=\z@
9106     \else
9107       \setlength{\pdfpagewidth}{\strip@pt\paperwidth truept}%
9108     \fi
9109     \ifdim\paperheight=\z@
9110     \else
9111       \setlength{\pdfpageheight}{\strip@pt\paperheight truept}%
9112     \fi
9113   \else
9114     \ifdim\paperheight=\z@
9115     \else
9116       \setlength{\pdfpagewidth}{\strip@pt\paperheight truept}%
9117     \fi
9118     \ifdim\paperwidth=\z@
9119     \else
9120       \setlength{\pdfpageheight}{\strip@pt\paperwidth truept}%
9121     \fi
9122   \fi
9123 }{%
9124   \ifdim\stockwidth>\z@
9125     \setlength{\pdfpagewidth}{\paperwidth}%
9126   \fi
9127   \ifdim\stockheight>\z@
9128     \setlength{\pdfpageheight}{\paperheight}%
9129   \fi
9130 }{%
9131   \ifdim\stockwidth>\z@
9132     \setlength{\pdfpagewidth}{\stockwidth}%
9133   \fi
9134   \ifdim\stockheight>\z@
9135     \setlength{\pdfpageheight}{\stockheight}%
9136   \fi
9137 }

```

```

9138   }%
9139   }%
9140 }%
9141 \Hy@DisableOption{setpagesize}%
9142 }
9143 </pdfTeX | xetex>
9144 <*pdfTeX>
9145 \def\Acrobatmenu#1#2{%
9146   \Hy@Acrobatmenu{#1}{#2}{%
9147     \pdfstartlink
9148     attr{%
9149       \Hy@setpdfborder
9150       \ifx\@pdfhighlight\@empty
9151       \else
9152         /H\@pdfhighlight
9153       \fi
9154       \ifx\@menubordercolor\relax
9155       \else
9156         /C[\@menubordercolor]%
9157       \fi
9158     }%
9159     user{%
9160       /Subtype/Link%
9161       \ifHy@pdfa /F 4\fi
9162       /A<<%
9163       /S/Named%
9164       /N/#1%
9165       \Hy@href@nextactionraw
9166     >>%
9167   }%
9168   \relax
9169   \Hy@colorlink\@menucolor#2%
9170   \close@pdflink
9171 }%
9172 }

```

#### 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.

```

9173 \def\Hy@FixNotFirstPage{%
9174   \gdef\Hy@FixNotFirstPage{%
9175     \setbox\AtBeginShipoutBox=\hbox{%
9176       \copy\AtBeginShipoutBox
9177     }%
9178   }%
9179 }
9180 \AtBeginShipout{\Hy@FixNotFirstPage}
9181 </pdfTeX>

```

### 46.3 hypertext

The HyperTeX specification (this is borrowed from an article by Arthur Smith) says that conformant viewers/translators must recognize the following set of \special commands:

**href:** html:<a href = "href\_string">

**name:** html:<a name = "name\_string">

**end:** html:</a>

**image:** html:<img src = "href\_string">

**base\_name:** html:<base href = "href\_string">

The *href*, *name* and *end* commands are used to do the basic hypertext operations of establishing links between sections of documents. The *image* command is intended (as with current html viewers) to place an image of arbitrary graphical format on the page in the current location. The *base\_name* command is be used to communicate to the *dvi* viewer the full (URL) location of the current document so that files specified by relative URL's may be retrieved correctly.

The *href* and *name* commands must be paired with an *end* command later in the TeX file — the TeX commands between the two ends of a pair form an *anchor* in the document. In the case of an *href* command, the *anchor* is to be highlighted in the *dvi* viewer, and when clicked on will cause the scene to shift to the destination specified by *href\_string*. The *anchor* associated with a name command represents a possible location to which other hypertext links may refer, either as local references (of the form href="#name\_string" with the *name\_string* identical to the one in the name command) or as part of a URL (of the form URL#name\_string). Here *href\_string* is a valid URL or local identifier, while *name\_string* could be any string at all: the only caveat is that “” characters should be escaped with a backslash (\), and if it looks like a URL name it may cause problems.

```
9182 \*hypertext)
9183 \providecommand*{\XR@ext}{dvi}
9184 \def\PDF@FinishDoc{}
9185 \def\PDF@SetupDoc{%
9186   \ifx\@baseurl\@empty
9187   \else
9188     \special{html:<base href="\@baseurl">}%
9189   \fi
9190 }
9191 \Hy@WrapperDef\hyper@anchor#1{%
9192   \Hy@SaveLastskip
9193   \Hy@VerboseAnchor{#1}%
9194   \begingroup
9195     \let\protect=\string
9196     \hyper@chars
9197     \special{html:<a name=%
9198       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
9199   \endgroup
9200   \Hy@activeanchortrue
9201   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
9202   \special{html:</a>}%
9203   \Hy@activeanchorfalse
9204   \Hy@RestoreLastskip
9205 }
9206 \Hy@WrapperDef\hyper@anchorstart#1{%
```

```

9207 \Hy@SaveLastskip
9208 \Hy@VerboseAnchor{#1}%
9209 \begingroup
9210 \hyper@chars
9211 \special{html:<a name=%
9212 \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
9213 \endgroup
9214 \Hy@activeanchortrue
9215 }
9216 \def\hyper@anchorend{%
9217 \special{html:</a>}%
9218 \Hy@activeanchorfalse
9219 \Hy@RestoreLastskip
9220 }
9221 \def\@urltype{url}
9222 \def\hyper@linkstart#1#2{%
9223 \Hy@VerboseLinkStart{#1}{#2}%
9224 \expandafter\Hy@colorlink\csname @#1color\endcsname
9225 \def\Hy@tempa{#1}%
9226 \ifx\Hy@tempa\@urltype
9227 \special{html:<a href=\hyper@quote#2\hyper@quote>}%
9228 \else
9229 \begingroup
9230 \hyper@chars
9231 \special{html:<a href=%
9232 \hyper@quote\#\HyperDestNameFilter{#2}\hyper@quote>}%
9233 \endgroup
9234 \fi
9235 }
9236 \def\hyper@linkend{%
9237 \special{html:</a>}%
9238 \Hy@endcolorlink
9239 }
9240 \def\hyper@linkfile#1#2#3{%
9241 \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\#3\\#3\\\else\#3\fi}%
9242 }
9243 \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.

```

9244 \leavevmode
9245 \ifHy@raiselinks
9246 \Hy@SaveSpaceFactor
9247 \Hy@SaveSavedSpaceFactor
9248 \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
9249 \Hy@RestoreSavedSpaceFactor
9250 \@linkdim\dp\@tempboxa
9251 \lower\@linkdim\hbox{%
9252 \hyper@chars
9253 \special{html:<a href=\hyper@quote#2\hyper@quote>}%
9254 }%
9255 \Hy@colorlink\@urlcolor
9256 \Hy@RestoreSpaceFactor
9257 #1%
9258 \Hy@SaveSpaceFactor
9259 \@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).

```

9260 \advance\@linkdim by -6.5\p@
9261 \raise\@linkdim\hbox{\special{html:</a>}}}%
9262 \Hy@endcolorlink
9263 \Hy@RestoreSpaceFactor
9264 \else
9265 \begingroup
9266 \hyper@chars
9267 \special{html:<a href=\hyper@quote#2\hyper@quote>}%
9268 \Hy@colorlink\@urlcolor#1%
9269 \special{html:</a>}}}%
9270 \Hy@endcolorlink
9271 \endgroup
9272 \fi
9273 }

```

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

```

9274 \def\hyper@link#1#2#3{%
9275 \Hy@VerboseLinkStart{#1}{#2}}%
9276 \hyper@linkurl{#3}{\# \Hy@DestNameFilter{#2}}}%
9277 }

9278 \def\hyper@image#1#2{%
9279 \begingroup
9280 \hyper@chars
9281 \special{html:<img src=\hyper@quote#1\hyper@quote>}%
9282 \endgroup
9283 }
9284 \end{hypertex}
9285 \end{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.

```

9286 \providecommand*\XR@ext{-dvi}
9287 \providecommand*\wwwbrowser{c:\string\netscape\string\netscape}
9288 \Hy@WrapperDef\hyper@anchor#1{%
9289 \Hy@SaveLastskip
9290 \Hy@VerboseAnchor{#1}}%
9291 \begingroup
9292 \let\protect=\string
9293 \special{mark: #1}}%
9294 \endgroup
9295 \Hy@activeanchortrue
9296 \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
9297 \Hy@activeanchorfalse

```

```

9298 \Hy@RestoreLastskip
9299 }
9300 \Hy@WrapperDef\hyper@anchorstart#1{%
9301 \Hy@SaveLastskip
9302 \Hy@VerboseAnchor{#1}%
9303 \special{mark: #1}%
9304 \Hy@activeanchortrue
9305 }
9306 \def\hyper@anchorend{%
9307 \Hy@activeanchorfalse
9308 \Hy@RestoreLastskip
9309 }
9310 \def\hyper@linkstart#1#2{%
9311 \Hy@VerboseLinkStart{#1}{#2}%
9312 \expandafter\Hy@colorlink\csname @#1color\endcsname
9313 \special{button: %
9314 10000000 %
9315 \number\baselineskip\space
9316 #2%
9317 }%
9318 }
9319 \def\hyper@linkend{%
9320 \Hy@endcolorlink
9321 }
9322 \def\hyper@link#1#2#3{%
9323 \Hy@VerboseLinkStart{#1}{#2}%
9324 \leavevmode
9325 \ifHy@raiselinks
9326 \Hy@SaveSpaceFactor
9327 \Hy@SaveSavedSpaceFactor
9328 \sbox\@tempboxa{\Hy@RestoreSpaceFactor#3}%
9329 \Hy@RestoreSavedSpaceFactor
9330 \@linkdim\dp\@tempboxa
9331 \lower\@linkdim\hbox{%
9332 \special{button: %
9333 \number\wd\@tempboxa\space
9334 \number\ht\@tempboxa\space
9335 #2%
9336 }%
9337 \expandafter\Hy@colorlink\csname @#1color\endcsname
9338 \Hy@RestoreSpaceFactor
9339 #3%
9340 \Hy@SaveSpaceFactor
9341 \Hy@endcolorlink
9342 }%
9343 \@linkdim\ht\@tempboxa
9344 \advance\@linkdim by -6.5\p@
9345 \raise\@linkdim\hbox{}%
9346 \Hy@RestoreSpaceFactor
9347 \else
9348 \special{button: %
9349 \number\wd\@tempboxa\space
9350 \number\ht\@tempboxa\space
9351 #2%
9352 }%
9353 \expandafter\Hy@colorlink\csname @#1color\endcsname
9354 #3%

```



```

9355 \Hy@endcolorlink
9356 \fi
9357 }
9358 \def\hyper@linkurl#1#2{%
9359 \begingroup
9360 \hyper@chars
9361 \leavevmode
9362 \ifHy@raiselinks
9363 \Hy@SaveSpaceFactor
9364 \Hy@SaveSavedSpaceFactor
9365 \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
9366 \Hy@RestoreSavedSpaceFactor
9367 \@linkdim\dp\@tempboxa
9368 \lower\@linkdim\hbox{%
9369 \special{button: %
9370 \number\wd\@tempboxa\space
9371 \number\ht\@tempboxa\space
9372 launch: \wwwbrowser\space
9373 #2%
9374 }%
9375 \Hy@colorlink\@urlcolor
9376 \Hy@RestoreSpaceFactor
9377 #1%
9378 \Hy@SaveSpaceFactor
9379 \Hy@endcolorlink
9380 }%
9381 \@linkdim\ht\@tempboxa
9382 \advance\@linkdim by -6.5\p@
9383 \raise\@linkdim\hbox{}%
9384 \Hy@RestoreSpaceFactor
9385 \else
9386 \special{button: %
9387 \number\wd\@tempboxa\space
9388 \number\ht\@tempboxa\space
9389 launch: \wwwbrowser\space
9390 #2%
9391 }%
9392 \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
9393 \fi
9394 \endgroup
9395 }
9396 \def\hyper@linkfile#1#2#3{%
9397 \begingroup
9398 \hyper@chars
9399 \leavevmode
9400 \ifHy@raiselinks
9401 \Hy@SaveSpaceFactor
9402 \Hy@SaveSavedSpaceFactor
9403 \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
9404 \Hy@RestoreSavedSpaceFactor
9405 \@linkdim\dp\@tempboxa
9406 \lower\@linkdim\hbox{%
9407 \special{button: %
9408 \number\wd\@tempboxa\space
9409 \number\ht\@tempboxa\space
9410 #3,%
9411 file: #2%

```

```

9412     }%
9413     \Hy@colorlink\@filecolor
9414     \Hy@RestoreSpaceFactor
9415     #1%
9416     \Hy@SaveSpaceFactor
9417     \Hy@endcolorlink
9418 }%
9419 \@linkdim\ht\@tempboxa
9420 \advance\@linkdim by -6.5\p@
9421 \raise\@linkdim\hbox{}%
9422 \Hy@RestoreSpaceFactor
9423 \else
9424 \special{button: %
9425 \number\wd\@tempboxa\space
9426 \number\ht\@tempboxa\space
9427 #3,%
9428 file: #2%
9429 }%
9430 \Hy@colorlink\@filecolor#1\Hy@endcolorlink
9431 \fi
9432 \endgroup
9433 }
9434 \ifx\@pdfproducer\relax
9435 \def\@pdfproducer{dviwindo + Distiller}%
9436 \fi
9437 \HyInfo@AddonUnsupportedtrue
9438 \def\PDF@FinishDoc{%
9439 \Hy@UseMaketitleInfos
9440 \HyInfo@TrappedUnsupported
9441 \special{PDF: Keywords \@pdfkeywords}%
9442 \special{PDF: Title \@pdftitle}%
9443 \special{PDF: Creator \@pdfcreator}%
9444 \ifx\@pdfcreationdate\@empty
9445 \else
9446 \special{PDF: CreationDate \@pdfcreationdate}%
9447 \fi
9448 \ifx\@pdfmoddate\@empty
9449 \else
9450 \special{PDF: ModDate \@pdfmoddate}%
9451 \fi
9452 \special{PDF: Author \@pdfauthor}%
9453 \ifx\@pdfproducer\relax
9454 \else
9455 \special{PDF: Producer \@pdfproducer}%
9456 \fi
9457 \special{PDF: Subject \@pdfsubject}%
9458 \Hy@DisableOption{pdfauthor}%
9459 \Hy@DisableOption{pdftitle}%
9460 \Hy@DisableOption{pdfsubject}%
9461 \Hy@DisableOption{pdfcreator}%
9462 \Hy@DisableOption{pdfcreationdate}%
9463 \Hy@DisableOption{pdfmoddate}%
9464 \Hy@DisableOption{pdfproducer}%
9465 \Hy@DisableOption{pdfkeywords}%
9466 \Hy@DisableOption{pdftrapped}%
9467 \Hy@DisableOption{pdfinfo}%
9468 }

```

```

9469 \def\PDF@SetupDoc{%
9470   \ifx\@baseurl\@empty
9471   \else
9472     \special{PDF: Base \@baseurl}%
9473   \fi
9474   \ifx\@pdfpagescrop\@empty\else
9475     \special{PDF: BBox \@pdfpagescrop}%
9476   \fi
9477   \def\Hy@temp{%
9478     \ifx\@pdfstartpage\@empty
9479     \else
9480       \ifx\@pdfstartview\@empty
9481       \else
9482         \edef\Hy@temp{%
9483           ,Page=\@pdfstartpage
9484           ,View=\@pdfstartview
9485         }%
9486       \fi
9487     \fi
9488     \edef\Hy@temp{%
9489       \noexpand\pdfmark{%
9490         pdfmark=/DOCVIEW,%
9491         PageMode=/\@pdfpagemode
9492       }\Hy@temp
9493     }%
9494   }%
9495   \Hy@temp
9496   \ifx\@pdfpagescrop\@empty
9497   \else
9498     \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
9499   \fi
9500   \edef\Hy@temp{%
9501     \ifHy@toolbar\else /HideToolbar true\fi
9502     \ifHy@menubar\else /HideMenubar true\fi
9503     \ifHy>windowui\else /HideWindowUI true\fi
9504     \ifHy@fitwindow /FitWindow true\fi
9505     \ifHy@centerwindow /CenterWindow true\fi
9506     \ifHy@displaydoctitle /DisplayDocTitle true\fi
9507     \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
9508     \Hy@UseNameKey{Direction}\@pdfdirection
9509     \Hy@UseNameKey{ViewArea}\@pdfviewarea
9510     \Hy@UseNameKey{ViewClip}\@pdfviewclip
9511     \Hy@UseNameKey{PrintArea}\@pdfprintarea
9512     \Hy@UseNameKey{PrintClip}\@pdfprintclip
9513     \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
9514     \Hy@UseNameKey{Duplex}\@pdfduplex
9515     \ifx\@pdfpicktraybypdfsize\@empty
9516     \else
9517       /PickTrayByPDFSize \@pdfpicktraybypdfsize
9518     \fi
9519     \ifx\@pdfprintpagerange\@empty
9520     \else
9521       /PrintPageRange[\@pdfprintpagerange]%
9522     \fi
9523     \ifx\@pdfnumcopies\@empty
9524     \else
9525       /NumCopies \@pdfnumcopies

```

```

9526   \fi
9527 }%
9528 \pdfmark{pdfmark=/PUT,%
9529   Raw={%
9530     \string{Catalog\string}<<%
9531     \ifx\Hy@temp\@empty
9532     \else
9533       /ViewerPreferences<<\Hy@temp>>%
9534     \fi
9535     \Hy@UseNameKey{PageLayout}\@pdfpagelayout
9536     \ifx\@pdflang\@empty
9537     \else
9538       /Lang(\@pdflang)%
9539     \fi
9540   >>%
9541 }%
9542 }%
9543 }
9544 \</dviwindo>
9545 \<*dvipdfm | xetex>

```

## 46.5 dvipdfm/xetex dvi to PDF converter

Provided by Mark Wicks (mwicks@kettering.edu)

```

9546 \providecommand*{\XR@ext}{pdf}
9547 \Hy@setbreaklinks{true}
9548 \def\HyPat@ObjRef{%
9549   @[\ ]+%
9550 }
9551 \newsavebox{\pdfm@box}
9552 \def\@pdfm@mark#1{\special{pdf:#1}}
9553 \Hy@WrapperDef\@pdfm@dest#1{%
9554   \Hy@SaveLastskip
9555   \Hy@VerboseAnchor{#1}%
9556   \begingroup
9557     \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
9558     \def\x{XYZ}%
9559     \ifx\x\@pdfview
9560       \def\x{XYZ @xpos @ypos null}%
9561     \else
9562       \def\x{FitH}%
9563       \ifx\x\@pdfview
9564         \def\x{FitH @ypos}%
9565       \else
9566         \def\x{FitBH}%
9567         \ifx\x\@pdfview
9568           \def\x{FitBH @ypos}%
9569         \else
9570           \def\x{FitV}%
9571           \ifx\x\@pdfview
9572             \def\x{FitV @xpos}%
9573           \else
9574             \def\x{FitBV}%
9575             \ifx\x\@pdfview
9576               \def\x{FitBV @xpos}%
9577             \else
9578               \def\x{Fit}%

```

```

9579         \ifx\x\@pdfview
9580         \let\x\@pdfview
9581     \else
9582         \def\x{FitB}%
9583         \ifx\x\@pdfview
9584         \let\x\@pdfview
9585     \else
9586         \def\x{FitR}%
9587         \ifx\x\@pdfview
9588         \Hy@Warning{'pdfview=FitR' is not supported}%
9589         \def\x{XYZ @xpos @ypos null}%
9590     \else
9591         \@onelevel@sanitize\@pdfview
9592         \Hy@Warning{%
9593             Unknown value '\@pdfview' for pdfview%
9594         }%
9595         \def\x{XYZ @xpos @ypos null}%
9596     \fi
9597 \fi
9598 \fi
9599 \fi
9600 \fi
9601 \fi
9602 \fi
9603 \fi
9604 \@pdfm@mark{dest (\Hy@pstringDest) [@thispage /\x]}%
9605 \endgroup
9606 \Hy@RestoreLastskip
9607 }
9608 \providecommand*\@pdfview{XYZ}
9609 \providecommand*\@pdfborder{0 0 1}
9610 \providecommand*\@pdfborderstyle{}
9611 \def\hyper@anchor#1{%
9612     \@pdfm@dest{#1}%
9613 }
9614 \def\hyper@anchorstart#1{%
9615     \Hy@activeanchortrue
9616     \@pdfm@dest{#1}%
9617 }
9618 \def\hyper@anchorend{%
9619     \Hy@activeanchorfalse
9620 }
9621 \newcounter{Hy@AnnotLevel}
9622 \ifHy@ocgcolorlinks
9623     \def\OBJ@OCG@view{@OCG@view}%
9624     \@pdfm@mark{%
9625         obj \OBJ@OCG@view <<%
9626         /Type/OCG%
9627         /Name(View)%
9628         /Usage<<%
9629         /Print<<%
9630         /PrintState/OFF%
9631         >>%
9632         /View<<%
9633         /ViewState/ON%
9634         >>%
9635     >>%

```

```

9636   >>%
9637 }%
9638 \@pdfm@mark{close \OBJ@OCG@view}%
9639 \def\OBJ@OCG@print{@OCG@print}%
9640 \@pdfm@mark{%
9641   obj \OBJ@OCG@print <<%
9642     /Type/OCG%
9643     /Name(Print)%
9644     /Usage<<%
9645     /Print<<%
9646     /PrintState/ON%
9647     >>%
9648     /View<<%
9649     /ViewState/OFF%
9650     >>%
9651   >>%
9652   >>%
9653 }%
9654 \@pdfm@mark{close \OBJ@OCG@print}%
9655 \def\OBJ@OCGs{@OCGs}%
9656 \@pdfm@mark{%
9657   obj \OBJ@OCGs [%
9658     \OBJ@OCG@view\space\OBJ@OCG@print
9659   ]%
9660 }%
9661 \@pdfm@mark{close \OBJ@OCGs}%
9662 \@pdfm@mark{%
9663   put @catalog <<%
9664     /OCProperties<<%
9665     /OCGs \OBJ@OCGs
9666     /D<<%
9667     /OFF[\OBJ@OCG@print]%
9668     /AS[%
9669       <<%
9670         /Event/View%
9671         /OCGs \OBJ@OCGs
9672         /Category[/View]%
9673       >>%
9674       <<%
9675         /Event/Print%
9676         /OCGs \OBJ@OCGs
9677         /Category[/Print]%
9678       >>%
9679       <<%
9680         /Event/Export%
9681         /OCGs \OBJ@OCGs
9682         /Category[/Print]%
9683       >>%
9684     ]%
9685     >>%
9686     >>%
9687     >>%
9688   }%
9689 \AtBeginShipout{%
9690   \setbox\AtBeginShipoutBox=\hbox{%
9691     \copy\AtBeginShipoutBox
9692     \@pdfm@mark{%

```

```

9693     put @resources <<%
9694         /Properties<<%
9695         /OCView \OBJ@OCG@view
9696         /OCPrint \OBJ@OCG@print
9697     >>%
9698 >>%
9699 }%
9700 }%
9701 }%
9702 \Hy@AtBeginDocument{%
9703     \def\Hy@colorlink#1{%
9704         \begingroup
9705         \ifHy@ocgcolorlinks
9706             \def\Hy@ocgcolor{#1}%
9707             \setbox0=\hbox\bgroup\color@begingroup
9708         \else
9709             \HyColor@UseColor#1%
9710         \fi
9711     }%
9712     \def\Hy@endcolorlink{%
9713         \ifHy@ocgcolorlinks
9714             \color@endgroup\egroup
9715             \mbox{%
9716                 \@pdfm@mark{content /OC/OCPrint BDC}%
9717                 \rlap{\copy0}%
9718                 \@pdfm@mark{content EMC/OC/OCView BDC}%
9719             \begingroup
9720                 \expandafter\HyColor@UseColor\Hy@ocgcolor
9721                 \box0 %
9722             \endgroup
9723             \@pdfm@mark{content EMC}%
9724         }%
9725         \fi
9726     \endgroup
9727 }%
9728 }%
9729 \else
9730     \Hy@DisableOption{ocgcolorlinks}%
9731 \fi
9732 \def\Hy@BeginAnnot#1{%
9733     \stepcounter{Hy@AnnotLevel}%
9734     \ifnum\value{Hy@AnnotLevel}=\@ne
9735         #1%
9736     \fi
9737 }
9738 \def\Hy@endAnnot{%
9739     \ifnum\value{Hy@AnnotLevel}=\@ne
9740         \Hy@endcolorlink
9741         \@pdfm@mark{eann}%
9742     \fi
9743     \addtocounter{Hy@AnnotLevel}\m@ne
9744 }
9745 \def\Hy@undefinedname{UNDEFINED}
9746 \def\hyper@linkstart#1#2{%
9747     \Hy@VerboseLinkStart{#1}{#2}%
9748     \Hy@BeginAnnot{%
9749         \protected@edef\Hy@testname{#2}%

```

```

9750 \ifx\Hy@testname\@empty
9751   \Hy@Warning{%
9752     Empty destination name,\MessageBreak
9753     using '\Hy@undefinedname'%
9754   }%
9755   \let\Hy@testname\Hy@undefinedname
9756 \else
9757   \Hy@pstringdef\Hy@testname{%
9758     \expandafter\HyperDestNameFilter\expandafter{%
9759       \Hy@testname
9760     }%
9761   }%
9762 \fi
9763 \@pdfm@mark{%
9764   bann<<%
9765     /Type/Annot%
9766     /Subtype/Link%
9767     \ifHy@pdfa /F 4\fi
9768     \Hy@setpdfborder
9769     \expandafter\ifx\csname @#1bordercolor\endcsname\relax
9770     \else
9771       /C[\csname @#1bordercolor\endcsname]%
9772     \fi
9773     /A<<%
9774     /S/GoTo%
9775     /D(\Hy@testname)%
9776     \Hy@href@nextactionraw
9777     >>%
9778     >>%
9779   }%
9780   \expandafter\Hy@colorlink\csname @#1color\endcsname
9781 }%
9782 }
9783 \def\hyper@linkend{\Hy@EndAnnot}%
9784 \def\hyper@link#1#2#3{%
9785   \hyper@linkstart{#1}{#2}#3\hyper@linkend
9786 }
9787 \def\hyper@linkfile#1#2#3{%
9788   \leavevmode
9789   \Hy@BeginAnnot{%
9790     \def\Hy@pstringF{#2}%
9791     \Hy@CleanupFile\Hy@pstringF
9792     \Hy@pstringdef\Hy@pstringF\Hy@pstringF
9793     \Hy@pstringdef\Hy@pstringD{#3}%
9794     \Hy@MakeRemoteAction
9795     \@pdfm@mark{%
9796       bann<<%
9797         /Type/Annot%
9798         /Subtype/Link%
9799         \ifHy@pdfa /F 4\fi
9800         \Hy@setpdfborder
9801         \ifx\@filebordercolor\relax
9802         \else
9803           /C[\@filebordercolor]%
9804         \fi
9805         /A<<%
9806         /S/GoToR%

```



```

9807      /F(\Hy@pstringF)%
9808      /D%
9809      \ifx\|#3\%
9810      [\Hy@href@page\@pdfremotestartview]%
9811      \else
9812      (\Hy@pstringD)%
9813      \fi
9814      \Hy@SetNewWindow
9815      \Hy@href@nextactionraw
9816      >>%
9817      >>%
9818      }%
9819      \Hy@colorlink\@filecolor
9820      }%
9821      #1%
9822      \Hy@EndAnnot
9823      }
9824      \def\hyper@linkurl#1#2{%
9825      \leavevmode
9826      \Hy@BeginAnnot{%
9827      \Hy@pstringdef\Hy@pstringURI{#2}%
9828      \@pdfm@mark{%
9829      bann<<%
9830      /Type/Annot%
9831      /Subtype/Link%
9832      \ifHy@pdfa /F 4\fi
9833      \Hy@setpdfborder
9834      \ifx\@urlbordercolor\relax
9835      \else
9836      /C[\@urlbordercolor]%
9837      \fi
9838      /A<<%
9839      /S/URI%
9840      /URI(\Hy@pstringURI)%
9841      \ifHy@href@ismap
9842      /IsMap true%
9843      \fi
9844      \Hy@href@nextactionraw
9845      >>%
9846      >>%
9847      }%
9848      \Hy@colorlink\@urlcolor
9849      }%
9850      #1%
9851      \Hy@EndAnnot
9852      }
9853      \def\Acrobatmenu#1#2{%
9854      \Hy@Acrobatmenu{#1}{#2}{%
9855      \Hy@BeginAnnot{%
9856      \@pdfm@mark{%
9857      bann<<%
9858      /Type/Annot%
9859      /Subtype/Link%
9860      \ifHy@pdfa /F 4\fi
9861      /A<<%
9862      /S/Named%
9863      /N/#1%

```

```

9864      \Hy@href@nextactionraw
9865      >>%
9866      \Hy@setpdfborder
9867      \ifx\@menubordercolor\relax
9868      \relax
9869      /C[\@menubordercolor]%
9870      \fi
9871      >>%
9872      }%
9873      \Hy@colorlink\@menucolor
9874      }%
9875      #2%
9876      \Hy@EndAnnot
9877      }%
9878  }
9879  \ifx\@pdfproducer\relax
9880  \def\@pdfproducer{dvipdfm}%

```

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

```

9881  \begingroup\expandafter\expandafter\expandafter\endgroup
9882  \expandafter\ifx\csname XeTeXversion\endcsname\relax
9883  \else
9884  \edef\@pdfproducer{XeTeX \the\XeTeXversion\XeTeXrevision}%
9885  \fi
9886  \fi
9887  \def\PDF@FinishDoc{%
9888  \Hy@UseMaketitleInfos
9889  \HyInfo@GenerateAddons
9890  \@pdfm@mark{%
9891  docinfo<<%
9892  /Title(\@pdftitle)%
9893  /Subject(\@pdfsubject)%
9894  /Creator(\@pdfcreator)%
9895  \ifx\@pdfcreationdate\@empty
9896  \else
9897  /CreationDate(\@pdfcreationdate)%
9898  \fi
9899  \ifx\@pdfmoddate\@empty
9900  \else
9901  /ModDate(\@pdfmoddate)%
9902  \fi
9903  /Author(\@pdfauthor)%
9904  \ifx\@pdfproducer\relax
9905  \else
9906  /Producer(\@pdfproducer)%
9907  \fi
9908  /Keywords(\@pdfkeywords)%
9909  \ifx\@pdftrapped\@empty
9910  \else
9911  /Trapped/\@pdftrapped
9912  \fi
9913  \HyInfo@Addons
9914  >>%
9915  }%
9916  \Hy@DisableOption{pdfauthor}%
9917  \Hy@DisableOption{pdftitle}%
9918  \Hy@DisableOption{pdfsubject}%
9919  \Hy@DisableOption{pdfcreator}%

```

```

9920 \Hy@DisableOption{pdfcreationdate}%
9921 \Hy@DisableOption{pdfmoddate}%
9922 \Hy@DisableOption{pdfproducer}%
9923 \Hy@DisableOption{pdfkeywords}%
9924 \Hy@DisableOption{pdftrapped}%
9925 \Hy@DisableOption{pdfinfo}%
9926 }

9927 \def\PDF@SetupDoc{%
9928 \edef\Hy@temp{%
9929 \ifHy@toolbar\else /HideToolbar true\fi
9930 \ifHy@menubar\else /HideMenubar true\fi
9931 \ifHy>windowui\else /HideWindowUI true\fi
9932 \ifHy@fitwindow /FitWindow true\fi
9933 \ifHy@centerwindow /CenterWindow true\fi
9934 \ifHy@displaydoctitle /DisplayDocTitle true\fi
9935 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
9936 \Hy@UseNameKey{Direction}\@pdfdirection
9937 \Hy@UseNameKey{ViewArea}\@pdfviewarea
9938 \Hy@UseNameKey{ViewClip}\@pdfviewclip
9939 \Hy@UseNameKey{PrintArea}\@pdfprintarea
9940 \Hy@UseNameKey{PrintClip}\@pdfprintclip
9941 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
9942 \Hy@UseNameKey{Duplex}\@pdfduplex
9943 \ifx\@pdfpicktraybypdfsize\@empty
9944 \else
9945 /PickTrayByPDFSize \@pdfpicktraybypdfsize
9946 \fi
9947 \ifx\@pdfprintpagerange\@empty
9948 \else
9949 /PrintPageRange[\@pdfprintpagerange]%
9950 \fi
9951 \ifx\@pdfnumcopies\@empty
9952 \else
9953 /NumCopies \@pdfnumcopies
9954 \fi
9955 }%
9956 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
9957 \@pdfm@mark{%
9958 docview<<%
9959 \ifx\@pdfstartpage\@empty
9960 \else
9961 \ifx\@pdfstartview\@empty
9962 \else
9963 /OpenAction[@page\@pdfstartpage\@pdfstartview]%
9964 \fi
9965 \fi
9966 \ifx\@baseurl\@empty
9967 \else
9968 /URI<</Base(\Hy@pstringB)>>%
9969 \fi
9970 /PageMode/\@pdfpagemode
9971 \ifx\Hy@temp\@empty
9972 \else
9973 /ViewerPreferences<<\Hy@temp>>%
9974 \fi
9975 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
9976 \ifx\@pdflang\@empty

```

```

9977     \else
9978         /Lang(\@pdflang)%
9979     \fi
9980     >>%
9981 }%
9982 \ifx\@pdfpagescrop\@empty
9983 \else
9984     \@pdfm@mark{put @pages <</CropBox[\@pdfpagescrop]>>}%
9985 \fi
9986 }
9987 </dvipdfm | xetex>

```

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

```

9988 <*dvipdfm>
9989 \AtBeginShipoutFirst{%
9990     \ifHy@setpagesize
9991         \begingroup
9992             \@ifundefined{stockwidth}{%
9993                 \ifdim\paperwidth>\z@
9994                     \ifdim\paperheight>\z@
9995                         \special{papersize=\the\paperwidth,\the\paperheight}%
9996                     \fi
9997                 \fi
9998             }{%
9999                 \ifdim\stockwidth>\z@
10000                 \ifdim\stockheight>\z@
10001                     \special{papersize=\the\stockwidth,\the\stockheight}%
10002                 \fi
10003             \fi
10004         }%
10005     \endgroup
10006 \fi
10007 \Hy@DisableOption{setpagesize}%
10008 }
10009 </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.

```

10010 <*vtexhtml>
10011 \providecommand*{\XR@ext}{htm}
10012 \RequirePackage{vtexhtml}
10013 \newif\if@Localurl
10014 \def\PDF@FinishDoc{}
10015 \def\PDF@SetupDoc{%
10016     \ifx\@baseurl\@empty
10017     \else
10018         \special{!direct <base href="\@baseurl">}%
10019     \fi
10020 }
10021 \def\@urltype{url}
10022 \def\hyper@link#1#2#3{%
10023     \Hy@VerboseLinkStart{#1}{#2}%
10024     \leavevmode
10025     \special{!direct <a href=%

```

```

10026 \hyper@quote\hyper@hash\HyperDestNameFilter{#2}\hyper@quote>}%
10027 #3%
10028 \special{!direct </a>}%
10029 }
10030 \def\hyper@linkurl#1#2{%
10031 \begingroup
10032 \hyper@chars
10033 \leavevmode
10034 \MathBSuppress=1\relax
10035 \special{!direct <a href=%
10036 \hyper@quote\HyperDestNameFilter{#2}\hyper@quote>}%
10037 #1%
10038 \MathBSuppress=0\relax
10039 \special{!direct </a>}}%
10040 \endgroup
10041 }
10042 \def\hyper@linkfile#1#2#3{%
10043 \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\else\\##3\fi}%
10044 }
10045 \def\hyper@linkstart#1#2{%
10046 \Hy@VerboseLinkStart{#1}{#2}%
10047 \def\Hy@tempa{#1}\ifx\Hy@tempa\@urltype
10048 \@Localurltrue
10049 \special{!direct <a href=\hyper@quote#2\hyper@quote>}%
10050 \else
10051 \@Localurlfalse
10052 \begingroup
10053 \hyper@chars
10054 \special{!aref \HyperDestNameFilter{#2}}%
10055 \endgroup
10056 \fi
10057 }
10058 \def\hyper@linkend{%
10059 \if@Localurl
10060 \special{!endaref}%
10061 \else
10062 \special{!direct </a>}%
10063 \fi
10064 }
10065 \Hy@WrapperDef\hyper@anchorstart#1{%
10066 \Hy@SaveLastskip
10067 \Hy@VerboseAnchor{#1}%
10068 \begingroup
10069 \hyper@chars
10070 \special{!aname #1}%
10071 \special{!direct <a name=%
10072 \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
10073 \endgroup
10074 \Hy@activeanchortrue
10075 }
10076 \def\hyper@anchorend{%
10077 \special{!direct </a>}}%
10078 \Hy@activeanchorfalse
10079 \Hy@RestoreLastskip
10080 }
10081 \Hy@WrapperDef\hyper@anchor#1{%
10082 \Hy@SaveLastskip

```

```

10083 \Hy@VerboseAnchor{#1}%
10084 \begingroup
10085 \let\protect=\string
10086 \hyper@chars
10087 \leavevmode
10088 \special{!aname #1}%
10089 \special{!direct <a name=%
10090 \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
10091 \endgroup
10092 \Hy@activeanchortrue
10093 \bgroup\anchor@spot\egroup
10094 \special{!direct </a>}%
10095 \Hy@activeanchorfalse
10096 \Hy@RestoreLastskip
10097 }
10098 \def\@Form[#1]{%
10099 \Hy@Message{Sorry, TeXpider does not yet support FORMs}%
10100 }
10101 \def\@endForm{}
10102 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
10103 \Hy@Message{Sorry, TeXpider does not yet support FORM gauges}%
10104 }
10105 \def\@TextField[#1]#2{% parameters, label
10106 \Hy@Message{Sorry, TeXpider does not yet support FORM text fields}%
10107 }
10108 \def\@CheckBox[#1]#2{% parameters, label
10109 \Hy@Message{Sorry, TeXpider does not yet support FORM checkboxes}%
10110 }
10111 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
10112 \Hy@Message{Sorry, TeXpider does not yet support FORM choice menus}%
10113 }
10114 \def\@PushButton[#1]#2{% parameters, label
10115 \Hy@Message{Sorry, TeXpider does not yet support FORM pushbuttons}%
10116 }
10117 \def\@Reset[#1]#2{%
10118 \Hy@Message{Sorry, TeXpider does not yet support FORMs}%
10119 }
10120 \def\@Submit[#1]#2{%
10121 \Hy@Message{Sorry, TeXpider does not yet support FORMs}%
10122 }
10123 </vtexhtml>
10124 <*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.

```

10125 \ifx\mediaheight\@undefined
10126 \else
10127 \ifx\mediaheight\relax
10128 \else
10129 \ifHy@setpagesize
10130 \providecommand*{\VTeXInitMediaSize}{%
10131 \ltx@ifUndefined{stockwidth}{%
10132 \ifdim\paperheight>0pt %
10133 \setlength\mediaheight\paperheight
10134 \fi
10135 \ifdim\paperheight>0pt %

```

```

10136         \setlength\mediawidth\paperwidth
10137     \fi
10138 }{%
10139     \ifdim\stockheight>0pt %
10140         \setlength\mediaheight\stockheight
10141     \fi
10142     \ifdim\stockwidth>0pt %
10143         \setlength\mediawidth\stockwidth
10144     \fi
10145 }%
10146 }%
10147 \Hy@AtBeginDocument{\VTeXInitMediaSize}%
10148 \fi
10149 \Hy@DisableOption{setpagesize}%
10150 \fi
10151 \fi

```

Older versions of VTeX require xyz in lower case.

```

10152 \providecommand*\@pdfview{xyz}
10153 \providecommand*\@pdfborder{0 0 1}
10154 \providecommand*\@pdfborderstyle{}
10155 \let\CurrentBorderColor\@linkbordercolor
10156 \Hy@WrapperDef\hyper@anchor#1{%
10157     \Hy@SaveLastskip
10158     \Hy@VerboseAnchor{#1}%
10159     \begingroup
10160         \let\protect=\string
10161         \hyper@chars
10162         \special{!aname \HyperDestNameFilter{#1};\@pdfview}%
10163     \endgroup
10164     \Hy@activeanchortrue
10165     \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
10166     \Hy@activeanchorfalse
10167     \Hy@RestoreLastskip
10168 }
10169 \Hy@WrapperDef\hyper@anchorstart#1{%
10170     \Hy@SaveLastskip
10171     \Hy@VerboseAnchor{#1}%
10172     \begingroup
10173         \hyper@chars
10174         \special{!aname \HyperDestNameFilter{#1};\@pdfview}%
10175     \endgroup
10176     \Hy@activeanchortrue
10177 }
10178 \def\hyper@anchorend{%
10179     \Hy@activeanchorfalse
10180     \Hy@RestoreLastskip
10181 }
10182 \def\@urltype{url}
10183 \def\Hy@undefinedname{UNDEFINED}
10184 \def\hyper@linkstart#1#2{%
10185     \Hy@VerboseLinkStart{#1}{#2}%
10186     \Hy@pstringdef\Hy@pstringURI{#2}%
10187     \expandafter\Hy@colorlink\csname @#1color\endcsname
10188     \ltx@ifundefined{@#1bordercolor}{%
10189         \let\CurrentBorderColor\relax
10190     }{%
10191         \edef\CurrentBorderColor{%

```

```

10192 \csname @#1bordercolor\endcsname
10193 }%
10194 }%
10195 \def\Hy@tempa{#1}%
10196 \ifx\Hy@tempa\@uratype
10197 \special{!%
10198   aref <u=/Type/Action/S/URI/URI(\Hy@pstringURI)%
10199   \ifHy@href@ismap
10200     /IsMap true%
10201   \fi
10202   \Hy@href@nextactionraw
10203   >,%
10204   a=<%
10205   \ifHy@pdfa /F 4\fi
10206   \Hy@setpdfborder
10207   \ifx\CurrentBorderColor\relax
10208   \else
10209     /C [\CurrentBorderColor]%
10210   \fi
10211   >%
10212   }%
10213 \else
10214 \protected@edef\Hy@testname{#2}%
10215 \ifx\Hy@testname\@empty
10216 \Hy@Warning{%
10217   Empty destination name,\MessageBreak
10218   using '\Hy@undefinedname'%
10219   }%
10220 \let\Hy@testname\Hy@undefinedname
10221 \fi
10222 \special{!%
10223   aref \expandafter\HyperDestNameFilter
10224   \expandafter{\Hy@testname};%
10225   a=<%
10226   \ifHy@pdfa /F 4\fi
10227   \Hy@setpdfborder
10228   \ifx\CurrentBorderColor\relax
10229   \else
10230     /C [\CurrentBorderColor]%
10231   \fi
10232   >%
10233   }%
10234 \fi
10235 }
10236 \def\hyper@linkend{%
10237 \special{!endaref}%
10238 \Hy@endcolorlink
10239 }
10240 \def\hyper@linkfile#1#2#3{%
10241 \leavevmode
10242 \def\Hy@pstringF{#2}%
10243 \Hy@CleanupFile\Hy@pstringF
10244 \special{!%
10245   aref <%
10246   \ifnum\Hy@VTeXversion>753 \ifHy@newwindow n\fi\fi
10247   f=\Hy@pstringF>#3;%
10248   a=<%

```



```

10249 \ifHy@pdfa /F 4\fi
10250 \Hy@setpdfborder
10251 \ifx\@filebordercolor\relax
10252 \else
10253 /C [\@filebordercolor]%
10254 \fi
10255 >%
10256 }%
10257 \Hy@colorlink\@filecolor#1\Hy@endcolorlink
10258 \special{!endaref}%
10259 }
10260 \def\hyper@linkurl#1#2{%
10261 \begingroup
10262 \Hy@pstringdef\Hy@pstringURI{#2}%
10263 \hyper@chars
10264 \leavevmode
10265 \special{!%
10266 aref <u=/Type/Action/S/URI/URI(\Hy@pstringURI)%
10267 \ifHy@href@ismap
10268 /IsMap true%
10269 \fi
10270 \Hy@href@nextactionraw
10271 >,%
10272 a=<%
10273 \ifHy@pdfa /F 4\fi
10274 \Hy@setpdfborder
10275 \ifx\@urlbordercolor\relax
10276 \else
10277 /C [\@urlbordercolor]%
10278 \fi
10279 >%
10280 }%
10281 \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
10282 \special{!endaref}%
10283 \endgroup
10284 }
10285 \def\hyper@link#1#2#3{%
10286 \Hy@VerboseLinkStart{#1}{#2}%
10287 \ltx@ifundefined{@#1bordercolor}{%
10288 \let\CurrentBorderColor\relax
10289 }{%
10290 \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
10291 }%
10292 \leavevmode
10293 \protected@edef\Hy@testname{#2}%
10294 \ifx\Hy@testname\@empty
10295 \Hy@Warning{%
10296 Empty destination name,\MessageBreak
10297 using '\Hy@undefinedname'%
10298 }%
10299 \let\Hy@testname\Hy@undefinedname
10300 \fi
10301 \special{!%
10302 aref \expandafter\HyperDestNameFilter
10303 \expandafter{\Hy@testname};%
10304 a=<%
10305 \ifHy@pdfa /F 4\fi

```

```

10306 \Hy@setpdfborder
10307 \ifx\CurrentBorderColor\relax
10308 \else
10309 /C [\CurrentBorderColor]%
10310 \fi
10311 >%
10312 }%
10313 \expandafter
10314 \Hy@colorlink\csname @#1color\endcsname#3\Hy@endcolorlink
10315 \special{!endaref}%
10316 }
10317 \def\hyper@image#1#2{%
10318 \hyper@linkurl{#2}{#1}%
10319 }
10320 \def\@hyper@launch run:#1\#2#3{%
10321 \Hy@pstringdef\Hy@pstringF{#1}%
10322 \Hy@pstringdef\Hy@pstringP{#3}%
10323 \leavevmode
10324 \special{!aref %
10325 <u=%
10326 /Type/Action%
10327 /S/Launch%
10328 /F(\Hy@pstringF)%
10329 \Hy@SetNewWindow
10330 \ifx\#3\%
10331 \else
10332 /Win<</F(\Hy@pstringF)/P(\Hy@pstringP)>>%
10333 \fi
10334 \Hy@href@nextactionraw
10335 >,%
10336 a=<%
10337 \ifHy@pdfa /F 4\fi
10338 \Hy@setpdfborder
10339 \ifx\@runbordercolor\relax
10340 \else
10341 /C[\@runbordercolor]%
10342 \fi
10343 >%
10344 }%
10345 \Hy@colorlink\@runcolor#2\Hy@endcolorlink
10346 \special{!endaref}%
10347 }
10348 \def\Acrobatmenu#1#2{%
10349 \Hy@Acrobatmenu{#1}{#2}{%
10350 \special{!%
10351 aref <u=/S /Named /N /#1>,%
10352 a=<%
10353 \ifHy@pdfa /F 4\fi
10354 \Hy@setpdfborder
10355 \ifx\@menubordercolor\relax
10356 \else
10357 /C[\@menubordercolor]%
10358 \fi
10359 >%
10360 }%
10361 \Hy@colorlink\@menucolor#2\Hy@endcolorlink
10362 \special{!endaref}%

```

```
10363 }%
10364 }
```

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

The code below makes sense for  $\text{\TeX}$  7.02 or later.

Please never use  $\text{\@ifundefined{\TeXversion}\{..\}\{..\}}$  globally.

```
10365 \ifnum\Hy@VT\TeXversion<702 %
10366 \else
10367 \def\hyper@pagetransition{%
10368 \ifx\@pdfpagetransition\relax
10369 \else
10370 \ifx\@pdfpagetransition\@empty
```

Standard incantation.

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

```
10371 \else
10372 \hvtex@parse@trans\@pdfpagetransition
10373 \fi
10374 \fi
10375 }%
```

I have to write an “honest” parser to convert raw PDF code into  $\text{\TeX}$   $\text{\special}$ .  
(AVK)

Syntax of  $\text{\TeX}$   $\text{\special}\{!trans <transition\_effect>\}$ :

```
<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:

```
10376 \def\hvtex@trans@effect@Blinds{\def\hvtex@trans@code{B}}%
10377 \def\hvtex@trans@effect@Box{\def\hvtex@trans@code{X}}%
10378 \def\hvtex@trans@effect@Dissolve{\def\hvtex@trans@code{D}}%
10379 \def\hvtex@trans@effect@Glitter{\def\hvtex@trans@code{G}}%
10380 \def\hvtex@trans@effect@Split{\def\hvtex@trans@code{S}}%
10381 \def\hvtex@trans@effect@Wipe{\def\hvtex@trans@code{W}}%
10382 \def\hvtex@trans@effect@R{\def\hvtex@trans@code{R}}%
```

Optional parameters:

```
10383 \def\hvtex@par@dimension{/Dm}%
10384 \def\hvtex@par@direction{/Di}%
10385 \def\hvtex@par@duration{/D}%
10386 \def\hvtex@par@motion{/M}%
```

Tokenizer:

```
10387 \def\hvtex@gettoken{%
10388 \expandafter\hvtex@gettoken@\hvtex@buffer\@nil
10389 }%
```

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

```
10390 \def\hvtex@gettoken@#1 #2\@nil{%
10391 \edef\hvtex@token{#1}%
10392 \edef\hvtex@buffer{#2}%
10393 }%
10394 \def\hvtex@parse@trans#1{%
```

Initializing code:

```
10395 \let\hvtex@trans@code\@empty
10396 \let\hvtex@param@dimension\@empty
10397 \let\hvtex@param@direction\@empty
10398 \let\hvtex@param@duration\@empty
10399 \let\hvtex@param@motion\@empty
10400 \edef\hvtex@buffer{#1\space}%
```

First token is the PDF transition name without escape.

```
10401 \hvtex@gettoken
10402 \ifx\hvtex@token\@empty
```

Leading space(s)?

```
10403 \ifx\hvtex@buffer\@empty
```

The buffer is empty, nothing to do.

```
10404 \else
10405 \hvtex@gettoken
10406 \fi
10407 \fi
10408 \csname hvtex@trans@effect@\hvtex@token\endcsname
```

Now is time to parse optional parameters.

```
10409 \hvtex@trans@params
10410 }%
```

Reentrant macro to parse optional parameters.

```
10411 \def\hvtex@trans@params{%
10412 \ifx\hvtex@buffer\@empty
10413 \else
10414 \hvtex@gettoken
10415 \let\hvtex@trans@par\hvtex@token
10416 \ifx\hvtex@buffer\@empty
10417 \else
10418 \hvtex@gettoken
10419 \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.

```
10420 \let\hvtex@param@duration\hvtex@token
10421 \else \ifx\hvtex@trans@par\hvtex@par@motion
```

/M can be either /I or /O

```
10422 \expandafter\edef\expandafter\hvtex@param@motion
10423 \expandafter{\expandafter\@gobble\hvtex@token}%
10424 \else \ifx\hvtex@trans@par\hvtex@par@dimension
```

/Dm can be either /H or /V

```
10425 \expandafter\edef\expandafter\hvtex@param@dimension
10426 \expandafter{\expandafter\@gobble\hvtex@token}%
10427 \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).

```
10428 \let\hvtex@param@direction\hvtex@token
```

```

10429     \fi\fi\fi\fi
10430     \fi
10431     \fi
10432     \ifx\hvtex@buffer\@empty
10433         \let\next\hvtex@produce@trans
10434     \else
10435         \let\next\hvtex@trans@params
10436     \fi
10437     \next
10438 }%

```

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

```

10439 \def\hvtex@produce@trans{%
10440     \let\vtex@trans@special\@empty
10441     \if S\hvtex@trans@code
10442         \edef\vtex@trans@special{\hvtex@trans@code
10443             \hvtex@param@dimension\hvtex@param@motion}%
10444     \else\if B\hvtex@trans@code
10445         \edef\vtex@trans@special{%
10446             \hvtex@trans@code\hvtex@param@dimension
10447         }%
10448     \else\if X\hvtex@trans@code
10449         \edef\vtex@trans@special{%
10450             \hvtex@trans@code\hvtex@param@motion
10451         }%
10452     \else\if W\hvtex@trans@code
10453         \edef\vtex@trans@special{%
10454             \hvtex@trans@code\hvtex@param@direction
10455         }%
10456     \else\if D\hvtex@trans@code
10457         \let\vtex@trans@special\hvtex@trans@code
10458     \else\if R\hvtex@trans@code
10459         \let\vtex@trans@special\hvtex@trans@code
10460     \else\if G\hvtex@trans@code
10461         \edef\vtex@trans@special{%
10462             \hvtex@trans@code\hvtex@param@direction
10463         }%
10464     \fi\fi\fi\fi\fi\fi
10465     \ifx\vtex@trans@special\@empty
10466     \else
10467         \ifx\hvtex@param@duration\@empty
10468         \else
10469             \setlength{\dimen@}{\hvtex@param@duration\p@}%

```

I'm not guilty of possible overflow.

```

10470     \multiply\dimen@\@m
10471     \edef\vtex@trans@special{%
10472         \vtex@trans@special,\strip@pt\dimen@
10473     }%
10474     \fi

```

And all the mess is just for this.

```

10475     \special{!trans \vtex@trans@special}%
10476     \fi
10477 }%

10478 \def\hyper@pageduration{%
10479     \ifx\@pdfpageduration\relax

```

```

10480 \else
10481 \ifx\@pdfpageduration\@empty
10482 \special{!duration-}%
10483 \else
10484 \special{!duration \@pdfpageduration}%
10485 \fi
10486 \fi
10487 }%
10488 \def\hyper@pagehidden{%
10489 \ifHy@useHidKey
10490 \special{!hidden\ifHy@pdfpagehidden +\else -\fi}%
10491 \fi
10492 }%
10493 \g@addto@macro\Hy@EveryPageBoxHook{%
10494 \hyper@pagetransition
10495 \hyper@pageduration
10496 \hyper@pagehidden
10497 }%
10498 \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

```

10499 \ifx\@pdfproducer\relax
10500 \def\@pdfproducer{VTeX}%
10501 \ifnum\Hy@VTeXversion>\z@
10502 \count@\VTeXversion
10503 \divide\count@ 100 %
10504 \edef\@pdfproducer{\@pdfproducer\space v\the\count@}%
10505 \multiply\count@ -100 %
10506 \advance\count@\VTeXversion
10507 \edef\@pdfproducer{%
10508 \@pdfproducer
10509 .\ifnum\count@<10 0\fi\the\count@
10510 \ifx\VTeXOS\@undefined\else
10511 \ifnum\VTeXOS>0 %
10512 \ifnum\VTeXOS<6 %
10513 \space(
10514 \ifcase\VTeXOS
10515 \or Windows\or Linux\or OS/2\or MacOS\or MacOS/X%
10516 \fi
10517 )%
10518 \fi
10519 \fi
10520 \fi
10521 ,\space
10522 \ifnum\OpMode=\@ne PDF\else PS\fi
10523 \space backend%
10524 \ifx\gexmode\@undefined\else
10525 \ifnum\gexmode>\z@\space with GeX\fi
10526 \fi

```

```

10527 }%
10528 \fi
10529 \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).

```

10530 \def\PDF@SetupDoc{%
10531   \ifx\@pdfpagescrop\@empty
10532   \else
10533     \special{!pdfinfo b=<\@pdfpagescrop>}%
10534   \fi
10535   \ifx\@pdfstartpage\@empty
10536   \else
10537     \ifx\@pdfstartview\@empty
10538     \else
10539       \special{!onopen Page\@pdfstartpage}%
10540     \fi
10541   \fi
10542   \special{!pdfinfo p=</\@pdfpagemode>}%
10543   \ifx\@baseurl\@empty
10544   \else
10545     \special{!pdfinfo u=<<</Base (\@baseurl)>>>}%
10546   \fi
10547   \special{!pdfinfo v=<<<%
10548     \ifHy@toolbar\else /HideToolbar true\fi
10549     \ifHy@menubar\else /HideMenubar true\fi
10550     \ifHy>windowui\else /HideWindowUI true\fi
10551     \ifHy@fitwindow /FitWindow true\fi
10552     \ifHy@centerwindow /CenterWindow true\fi
10553     \ifHy@displaydoctitle /DisplayDocTitle true\fi
10554     \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
10555     \Hy@UseNameKey{Direction}\@pdfdirection
10556     \Hy@UseNameKey{ViewArea}\@pdfviewarea
10557     \Hy@UseNameKey{ViewClip}\@pdfviewclip
10558     \Hy@UseNameKey{PrintArea}\@pdfprintarea
10559     \Hy@UseNameKey{PrintClip}\@pdfprintclip
10560     \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
10561     \Hy@UseNameKey{Duplex}\@pdfduplex
10562     \ifx\@pdfpicktraybypdfsize\@empty
10563     \else
10564       /PickTrayByPDFSize \@pdfpicktraybypdfsize
10565     \fi
10566     \ifx\@pdfprintpagerange\@empty
10567     \else
10568       /PrintPageRange[\@pdfprintpagerange]%

```

```

10569 \fi
10570 \ifx\@pdfnumcopies\@empty
10571 \else
10572 /NumCopies \@pdfnumcopies
10573 \fi
10574 >>>}%
10575 \ifx\@pdfpagelayout\@empty
10576 \else
10577 \special{!pdfinfo l=</\@pdfpagelayout\space>}%
10578 \fi
10579 }%
10580 \HyInfo@AddonUnsupportedtrue
10581 \def\PDF@FinishDoc{%
10582 \Hy@UseMaketitleInfos
10583 \HyInfo@TrappedUnsupported
10584 \special{!pdfinfo a=<\@pdfauthor>}%
10585 \special{!pdfinfo t=<\@pdftitle>}%
10586 \special{!pdfinfo s=<\@pdfsubject>}%
10587 \special{!pdfinfo c=<\@pdfcreator>}%
10588 \ifx\@pdfproducer\relax
10589 \else
10590 \special{!pdfinfo r=<\@pdfproducer>}%
10591 \fi
10592 \special{!pdfinfo k=<\@pdfkeywords>}%
10593 \Hy@DisableOption{pdfauthor}%
10594 \Hy@DisableOption{pdftitle}%
10595 \Hy@DisableOption{pdfsubject}%
10596 \Hy@DisableOption{pdfcreator}%
10597 \Hy@DisableOption{pdfcreationdate}%
10598 \Hy@DisableOption{pdfmoddate}%
10599 \Hy@DisableOption{pdfproducer}%
10600 \Hy@DisableOption{pdfkeywords}%
10601 \Hy@DisableOption{pdftrapped}%
10602 \Hy@DisableOption{pdfinfo}%
10603 }
10604 </vtx>

```

## 46.7 Fix for Adobe bug number 466320

If a destination occurs at the very begin of a page, the destination is moved to the previous page by Adobe Distiller 5. As workaround Adobe suggests:

```

/showpage {
  //showpage
  clippath stroke erasepage
} bind def

```

But unfortunately this fix generates an empty page at the end of the document. Therefore another fix is used by writing some clipped text.

```

10605 <dviwindo>\def\literalps@out#1{\special{ps:#1}}%
10606 <package>\providecommand*\Hy@DistillerDestFix{-}
10607 <*pdfmark | dviwindo>
10608 \def\Hy@DistillerDestFix{%
10609 \begingroup
10610 \let\x\literalps@out

```

The fix has to be passed unchanged through GeX, if VTeX in PostScript mode with GeX is used.



```

10611 \ifnum \@ifundefined{OpMode}{0}{%
10612     \@ifundefined{gexmode}{0}{%
10613         \ifnum\gexmode>0 \OpMode\else 0\fi
10614     }>1 %
10615     \def\x###1{%
10616         \immediate\special{!=###1}%
10617     }%
10618 \fi
10619 \x{%
10620     /product where{%
10621         pop %
10622         product(Distiller)search{%
10623             pop pop pop %
10624             version(.)search{%
10625                 exch pop exch pop%
10626                 (3011)eq{%
10627                     gsave %
10628                     newpath 0 0 moveto closepath clip%
10629                     /Courier findfont 10 scalefont setfont %
10630                     72 72 moveto(.)show %
10631                     grestore%
10632                 }if%
10633             }{pop}ifelse%
10634         }{pop}ifelse%
10635     }if%
10636 }%
10637 \endgroup
10638 }
10639 </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

```

10640 <*pdfmark>
10641 \Hy@breaklinks@unsupported
10642 \def\HyPat@ObjRef{%
10643     \{[~{]}+\}%
10644 }
10645 \Hy@WrapperDef\hyper@anchor#1{%
10646     \Hy@SaveLastskip
10647     \Hy@VerboseAnchor{#1}%
10648     \begingroup
10649     \pdfmark[\anchor@spot]{%
10650         pdfmark=/DEST,%
10651         linktype=anchor,%

```

```

10652 View=/\@pdfview \@pdfviewparams,%
10653 DestAnchor={#1}%
10654 }%
10655 \endgroup
10656 \Hy@RestoreLastskip
10657 }
10658 \ltx@ifundefined{hyper@anchorstart}{\endinput}
10659 \Hy@WrapperDef\hyper@anchorstart#1{%
10660 \Hy@SaveLastskip
10661 \Hy@VerboseAnchor{#1}%
10662 \literalps@out{H.S}%
10663 \Hy@AllowHyphens
10664 \xdef\hyper@currentanchor{#1}%
10665 \Hy@activeanchortrue
10666 }
10667 \def\hyper@anchorend{%
10668 \literalps@out{\strip@pt@and@otherjunk\baselineskip\space H.A}%
10669 \pdfmark{%
10670 pdfmark=/DEST,%
10671 linktype=anchor,%
10672 View=/\@pdfview \@pdfviewparams,%
10673 DestAnchor=\hyper@currentanchor,%
10674 }%
10675 \Hy@activeanchorfalse
10676 \Hy@RestoreLastskip
10677 }
10678 \def\hyper@linkstart#1#2{%
10679 \Hy@VerboseLinkStart{#1}{#2}%
10680 \ifHy@breaklinks
10681 \else
10682 \leavevmode
10683 \ifmmode
10684 \def\Hy@LinkMath{$}%
10685 \else
10686 \def\Hy@LinkMath{}%
10687 \fi
10688 \Hy@SaveSpaceFactor
10689 \hbox\bgroup
10690 \Hy@RestoreSpaceFactor
10691 \Hy@LinkMath
10692 \fi
10693 \expandafter\Hy@colorlink\csname @#1color\endcsname
10694 \literalps@out{H.S}%
10695 \Hy@AllowHyphens
10696 \xdef\hyper@currentanchor{#2}%
10697 \gdef\hyper@currentlinktype{#1}%
10698 }
10699 \def\hyper@linkend{%
10700 \literalps@out{\strip@pt@and@otherjunk\baselineskip\space H.L}%
10701 \ltx@ifundefined{@\hyper@currentlinktype bordercolor}{%
10702 \let\Hy@tempcolor\relax
10703 }{%
10704 \edef\Hy@tempcolor{%
10705 \csname @\hyper@currentlinktype bordercolor\endcsname
10706 }%
10707 }%
10708 \pdfmark{%

```

```

10709 pdfmark=/ANN,%
10710 linktype=link,%
10711 Subtype=/Link,%
10712 PDFAMFlags=4,%
10713 Dest=\hyper@currentanchor,%
10714 AcroHighlight=\@pdfhighlight,%
10715 Border=\@pdfborder,%
10716 BorderStyle=\@pdfborderstyle,%
10717 Color=\Hy@tempcolor,%
10718 Raw=H.B%
10719 }%
10720 \Hy@endcolorlink
10721 \ifHy@breaklinks
10722 \else
10723 \Hy@LinkMath
10724 \Hy@SaveSpaceFactor
10725 \egroup
10726 \Hy@RestoreSpaceFactor
10727 \fi
10728 }

```

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.

```

10729 \begingroup
10730 \catcode'P=12 %
10731 \catcode'T=12 %
10732 \lowercase{\endgroup
10733 \gdef\rem@ptetc#1.#2PT#3!{#1\ifnum#2>\z@.#2\fi}%
10734 }
10735 \def\strip@pt@and@otherjunk#1{\expandafter\rem@ptetc\the#1!}

```

`\hyper@pagetransition`

```

10736 \def\hyper@pagetransition{%
10737 \ifx\@pdfpagetransition\relax
10738 \else
10739 \ifx\@pdfpagetransition\@empty
10740 % 1. Does an old entry have to be deleted?
10741 % 2. If 1=yes, how to delete?
10742 \else
10743 \pdfmark{%
10744 pdfmark=/PUT,%
10745 Raw={%
10746 \string{ThisPage\string}%
10747 <</Trans << /S /\@pdfpagetransition\space >> >>%
10748 }%
10749 }%
10750 \fi
10751 \fi
10752 }

```

`\hyper@pageduration`

```

10753 \def\hyper@pageduration{%
10754 \ifx\@pdfpageduration\relax
10755 \else
10756 \ifx\@pdfpageduration\@empty
10757 % 1. Does an old entry have to be deleted?

```

```

10758 % 2. If 1=yes, how to delete?
10759 \else
10760 \pdfmark{%
10761 pdfmark=/PUT,%
10762 Raw={%
10763 \string{ThisPage\string}%
10764 <</Dur \@pdfpageduration>>%
10765 }%
10766 }%
10767 \fi
10768 \fi
10769 }

```

\hyper@pagehidden

```

10770 \def\hyper@pagehidden{%
10771 \ifHy@useHidKey
10772 \pdfmark{%
10773 pdfmark=/PUT,%
10774 Raw={%
10775 \string{ThisPage\string}%
10776 <</Hid \ifHy@pdfpagehidden true\else false\fi>>%
10777 }%
10778 }%
10779 \fi
10780 }

10781 \g@addto@macro\Hy@EveryPageBoxHook{%
10782 \hyper@pagetransition
10783 \hyper@pageduration
10784 \hyper@pagehidden
10785 }

10786 \def\hyper@image#1#2{%
10787 \hyper@linkurl{#2}{#1}%
10788 }
10789 \def\Hy@undefinedname{UNDEFINED}
10790 \def\hyper@link#1#2#3{%
10791 \Hy@VerboseLinkStart{#1}{#2}%
10792 \ltx@ifundefined{@#1bordercolor}{%
10793 \let\Hy@tempcolor\relax
10794 }{%
10795 \edef\Hy@tempcolor{\csname @#1bordercolor\endcsname}%
10796 }%
10797 \begingroup
10798 \protected@edef\Hy@testname{#2}%
10799 \ifx\Hy@testname\@empty
10800 \Hy@Warning{%
10801 Empty destination name,\MessageBreak
10802 using '\Hy@undefinedname'%
10803 }%
10804 \let\Hy@testname\Hy@undefinedname
10805 \fi
10806 \pdfmark[{#3}]{%
10807 Color=\Hy@tempcolor,%
10808 linktype={#1},%
10809 AcroHighlight=\@pdfhighlight,%
10810 Border=\@pdfborder,%
10811 BorderStyle=\@pdfborderstyle,%

```

```

10812     pdfmark=/ANN,%
10813     Subtype=/Link,%
10814     PDFAFlags=4,%
10815     Dest=\Hy@testname
10816 }%
10817 \endgroup
10818 }
10819 \newtoks\pdf@docset
10820 \def\PDF@FinishDoc{%
10821   \Hy@UseMaketitleInfos
10822   \HyInfo@GenerateAddons
10823   \let\Hy@temp\@empty
10824   \ifx\@pdfcreationdate\@empty
10825   \else
10826     \def\Hy@temp{CreationDate=\@pdfcreationdate,}%
10827   \fi
10828   \ifx\@pdfmoddate\@empty
10829   \else
10830     \expandafter\def\expandafter\Hy@temp\expandafter{%
10831       \Hy@temp
10832       ModDate=\@pdfmoddate,%
10833     }%
10834   \fi
10835   \ifx\@pdfproducer\relax
10836   \else
10837     \expandafter\def\expandafter\Hy@temp\expandafter{%
10838       \Hy@temp
10839       Producer=\@pdfproducer,%
10840     }%
10841   \fi
10842   \expandafter
10843   \pdfmark\expandafter{%
10844     \Hy@temp
10845     pdfmark=/DOCINFO,%
10846     Title=\@pdftitle,%
10847     Subject=\@pdfsubject,%
10848     Creator=\@pdfcreator,%
10849     Author=\@pdfauthor,%
10850     Keywords=\@pdfkeywords,%
10851     Trapped=\@pdftrapped
10852   }%
10853   \ifx\HyInfo@Addons\@empty
10854   \else
10855     \pdfmark{%
10856       pdfmark=/DOCINFO,%
10857       Raw={\HyInfo@Addons}%
10858     }%
10859   \fi
10860   \Hy@DisableOption{pdfauthor}%
10861   \Hy@DisableOption{pdftitle}%
10862   \Hy@DisableOption{pdfsubject}%
10863   \Hy@DisableOption{pdfcreator}%
10864   \Hy@DisableOption{pdfcreationdate}%
10865   \Hy@DisableOption{pdfmoddate}%
10866   \Hy@DisableOption{pdfproducer}%
10867   \Hy@DisableOption{pdfkeywords}%
10868   \Hy@DisableOption{pdftrapped}%

```

```

10869 \Hy@DisableOption{pdfinfo}%
10870 }
10871 \def\PDF@SetupDoc{%
10872 \def\Hy@temp{%
10873 \ifx\@pdfstartpage\@empty
10874 \else
10875 \ifx\@pdfstartview\@empty
10876 \else
10877 \edef\Hy@temp{%
10878 ,Page=\@pdfstartpage
10879 ,View=\@pdfstartview
10880 }%
10881 \fi
10882 \fi
10883 \edef\Hy@temp{%
10884 \noexpand\pdfmark{%
10885 pdfmark=/DOCVIEW,%
10886 PageMode=/\@pdfpagemode
10887 \Hy@temp
10888 }%
10889 }%
10890 \Hy@temp
10891 \ifx\@pdfpagescrop\@empty
10892 \else
10893 \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
10894 \fi
10895 \edef\Hy@temp{%
10896 \ifHy@toolbar\else /HideToolbar true\fi
10897 \ifHy@menubar\else /HideMenubar true\fi
10898 \ifHy>windowui\else /HideWindowUI true\fi
10899 \ifHy@fitwindow /FitWindow true\fi
10900 \ifHy@centerwindow /CenterWindow true\fi
10901 \ifHy@displaydoctitle /DisplayDocTitle true\fi
10902 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
10903 \Hy@UseNameKey{Direction}\@pdfdirection
10904 \Hy@UseNameKey{ViewArea}\@pdfviewarea
10905 \Hy@UseNameKey{ViewClip}\@pdfviewclip
10906 \Hy@UseNameKey{PrintArea}\@pdfprintarea
10907 \Hy@UseNameKey{PrintClip}\@pdfprintclip
10908 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
10909 \Hy@UseNameKey{Duplex}\@pdfduplex
10910 \ifx\@pdfpicktraybypdfsize\@empty
10911 \else
10912 /PickTrayByPDFSize \@pdfpicktraybypdfsize
10913 \fi
10914 \ifx\@pdfprintpagerange\@empty
10915 \else
10916 /PrintPageRange[\@pdfprintpagerange]%
10917 \fi
10918 \ifx\@pdfnumcopies\@empty
10919 \else
10920 /NumCopies \@pdfnumcopies
10921 \fi
10922 }%
10923 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
10924 \pdfmark{%
10925 pdfmark=/PUT,%

```

```

10926 Raw={%
10927   \string{Catalog\string}<<%
10928   \ifx\Hy@temp\@empty
10929     \else
10930       /ViewerPreferences<<\Hy@temp>>%
10931     \fi
10932     \Hy@UseNameKey{PageLayout}\@pdfpagelayout
10933     \ifx\@pdflang\@empty
10934       \else
10935         /Lang(\@pdflang)%
10936       \fi
10937       \ifx\@baseurl\@empty
10938         \else
10939           /URI<</Base(\Hy@pstringB)>>%
10940         \fi
10941       >>%
10942     }%
10943   }%
10944 }
10945 </pdfmark>
10946 <*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.

```

10947 \newif\ifHy@pdfmarkerror
10948 \def\pdfmark{\@ifnextchar{\pdfmark@}{\pdfmark@[]}}
10949 \def\pdfmark@[#1]#2{%
10950   \Hy@pdfmarkerrorfalse
10951   \edef\@processme{\noexpand\pdf@toks={\the\pdf@defaulttoks}}%
10952   \@processme
10953   \let\pdf@type\relax
10954   \kvsetkeys{PDF}{#2}%
10955   \ifHy@pdfmarkerror
10956     \else
10957       \ifx\pdf@type\relax
10958         \Hy@WarningNoLine{no pdfmark type specified in #2!!}%
10959         \ifx\#1\%
10960           \else
10961             \pdf@rect{#1}%
10962           \fi
10963         \else
10964           \ifx\#1\%
10965             \literalps@out{%
10966               [\the\pdf@toks\space\pdf@type\space pdfmark%
10967             ]}%
10968           \else
10969             \ltx@ifundefined{@pdf@linktype color}{%
10970               \Hy@colorlink\@linkcolor
10971             }{%
10972               \expandafter\Hy@colorlink
10973               \csname @\pdf@linktype color\endcsname
10974             }%
10975             \pdf@rect{#1}%
10976             \literalps@out{%

```

```

10977      [\the\pdf@toks\space\pdf@type\space pdfmark%
10978      }%
10979      \Hy@endcolorlink
10980      \fi
10981      \fi
10982      \fi
10983  }

```

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

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

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

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

```

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

```

```

10984 \newsavebox{\pdf@box}
10985 \providecommand*{\Hy@setouterhbox}{\sbox}
10986 \providecommand*{\Hy@breaklinksunhbox}{\unhbox}
10987 \def\Hy@DEST{/DEST}
10988 \def\pdf@rect#1{%
10989   \begingroup
10990   \chardef\x=1 %
10991   \def\Hy@temp{#1}%
10992   \ifx\Hy@temp\ltx@empty
10993     \chardef\x=0 %
10994   \else
10995     \def\y{\anchor@spot}%
10996     \ifx\Hy@temp\y
10997       \def\y{\relax}%
10998       \ifx\anchor@spot\y
10999         \chardef\x=0 %
11000       \fi
11001     \fi
11002   \fi
11003   \expandafter\endgroup
11004   \ifcase\x
11005     \literalps@out{H.S}%
11006     \literalps@out{H.R}%
11007   \else
11008     \leavevmode
11009     \Hy@SaveSpaceFactor
11010     \ifmmode
11011       \def\Hy@LinkMath{$}%
11012     \else
11013       \def\Hy@LinkMath{}%
11014     \fi
11015     \ifHy@breaklinks
11016       \Hy@setouterhbox\pdf@box{%
11017         \Hy@RestoreSpaceFactor
11018         \Hy@LinkMath
11019         \Hy@AllowHyphens#1%
11020         \Hy@LinkMath
11021         \Hy@SaveSpaceFactor
11022       }%

```



```

11023 \else
11024 \sbox\pdf@box{%
11025 \Hy@RestoreSpaceFactor
11026 \Hy@LinkMath
11027 #1%
11028 \Hy@LinkMath
11029 \Hy@SaveSpaceFactor
11030 }%
11031 \fi
11032 \dimen@ \ht\pdf@box
11033 \ifdim\dp\pdf@box=\z@
11034 \literalps@out{H.S}%
11035 \else
11036 \lower\dp\pdf@box\hbox{\literalps@out{H.S}}%
11037 \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...).

```

11038 \ifHy@breaklinks
11039 \expandafter\Hy@breaklinksunhbox
11040 \else
11041 \expandafter\box
11042 \fi
11043 \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

11044 \ifdim\dimen@=\z@
11045 \literalps@out{H.R}%
11046 \else
11047 \raise\dimen@\hbox{\literalps@out{H.R}}%
11048 \fi
11049 \Hy@RestoreSpaceFactor
11050 \fi
11051 \ifx\pdf@type\Hy@DEST
11052 \else
11053 \pdf@addtoksx{H.B}%
11054 \fi
11055 }

```

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.

```

11056 \newtoks\pdf@toks
11057 \newtoks\pdf@defaulttoks
11058 \pdf@defaulttoks={}%
11059 \def\pdf@addtoks#1#2{%
11060 \edef\@processme{\pdf@toks{\the\pdf@toks/#2 #1}}%
11061 \@processme
11062 }
11063 \def\pdf@addtoksx#1{%
11064 \edef\@processme{\pdf@toks{\the\pdf@toks\space #1}}%
11065 \@processme
11066 }
11067 \def\PDFdefaults#1{%
11068 \pdf@defaulttoks={#1}%
11069 }

```

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

```

11070 % what is the type of pdfmark?
11071 \define@key{PDF}{pdfmark}{\def\pdf@type{#1}}
11072 % what is the link type?
11073 \define@key{PDF}{linktype}{\def\pdf@linktype{#1}}
11074 \def\pdf@linktype{link}
11075 % parameter is a stream of PDF
11076 \define@key{PDF}{Raw}{\pdf@addtoks{#1}}
11077 % parameter is a name
11078 \define@key{PDF}{Action}{\pdf@addtoks{#1}{Action}}
11079 % parameter is a array
11080 \define@key{PDF}{Border}{%
11081   \edef\Hy@temp{#1}%
11082   \ifx\Hy@temp\@empty
11083     \else
11084       \pdf@addtoks{[#1]\Hy@BorderArrayPatch}{Border}% hash-ok
11085     \fi
11086 }
11087 \let\Hy@BorderArrayPatch\@empty
11088 % parameter is a dictionary
11089 \define@key{PDF}{BorderStyle}{%
11090   \edef\Hy@temp{#1}%
11091   \ifx\Hy@temp\@empty
11092     \else
11093       \pdf@addtoks{<<#1>>}{BS}%
11094     \fi
11095 }
11096 % parameter is a array
11097 \define@key{PDF}{Color}{%
11098   \ifx\relax#1\relax
11099     \else
11100       \pdf@addtoks{[#1]}{Color}% hash-ok
11101     \fi
11102 }
11103 % parameter is a string
11104 \define@key{PDF}{Contents}{\pdf@addtoks{(#1)}{Contents}}
11105 % parameter is a integer
11106 \define@key{PDF}{Count}{\pdf@addtoks{#1}{Count}}
11107 % parameter is a array
11108 \define@key{PDF}{CropBox}{\pdf@addtoks{[#1]}{CropBox}}% hash-ok
11109 % parameter is a string
11110 \define@key{PDF}{DOSFile}{\pdf@addtoks{(#1)}{DOSFile}}
11111 % parameter is a string or file
11112 \define@key{PDF}{DataSource}{\pdf@addtoks{(#1)}{DataSource}}
11113 % parameter is a destination
11114 \define@key{PDF}{Dest}{%
11115   \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
11116   \ifx\Hy@pstringDest\@empty
11117     \Hy@pdfmarkerrortrue
11118     \Hy@Warning{Destination with empty name ignored}%
11119   \else
11120     \pdf@addtoks{(\Hy@pstringDest) cvn}{Dest}%
11121   \fi
11122 }
11123 \define@key{PDF}{DestAnchor}{%
11124   \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
11125   \ifx\Hy@pstringDest\@empty

```

```

11126 \Hy@pdfmarkerrortrue
11127 \Hy@Warning{Destination with empty name ignored}%
11128 \else
11129 \pdf@addtoks{(\Hy@pstringDest) cvn}{Dest}%
11130 \fi
11131 }
11132 % parameter is a string
11133 \define@key{PDF}{Dir}{\pdf@addtoks{(#1)}{Dir}}
11134 % parameter is a string
11135 \define@key{PDF}{File}{\pdf@addtoks{(#1)}{File}}
11136 % parameter is a int
11137 \define@key{PDF}{Flags}{\pdf@addtoks{#1}{Flags}}
11138 \define@key{PDF}{PDFAFlags}{%
11139 \ifHy@pdfa
11140 \pdf@addtoks{#1}{F}%
11141 \fi
11142 }
11143 % parameter is a name
11144 \define@key{PDF}{AcroHighlight}{%
11145 \begingroup
11146 \edef\x{#1}%
11147 \expandafter\endgroup\ifx\x@empty
11148 \else
11149 \pdf@addtoks{#1}{H}%
11150 \fi
11151 }
11152 % parameter is a string
11153 \define@key{PDF}{ID}{\pdf@addtoks{[#1]}{ID}}% hash-ok
11154 % parameter is a string
11155 \define@key{PDF}{MacFile}{\pdf@addtoks{(#1)}{MacFile}}
11156 % parameter is a string
11157 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
11158 % parameter is a string
11159 \define@key{PDF}{Op}{\pdf@addtoks{(#1)}{Op}}
11160 % parameter is a Boolean
11161 \define@key{PDF}{Open}{\pdf@addtoks{#1}{Open}}
11162 % parameter is a integer or name
11163 \define@key{PDF}{Page}{\pdf@addtoks{#1}{Page}}
11164 % parameter is a name
11165 \define@key{PDF}{PageMode}{\pdf@addtoks{#1}{PageMode}}
11166 % parameter is a string
11167 \define@key{PDF}{Params}{\pdf@addtoks{(#1)}{Params}}
11168 % parameter is a array
11169 \define@key{PDF}{Rect}{\pdf@addtoks{[#1]}{Rect}}% hash-ok
11170 % parameter is a integer
11171 \define@key{PDF}{SrcPg}{\pdf@addtoks{#1}{SrcPg}}
11172 % parameter is a name
11173 \define@key{PDF}{Subtype}{\pdf@addtoks{#1}{Subtype}}
11174 % parameter is a string
11175 \define@key{PDF}{Title}{\pdf@addtoks{(#1)}{Title}}
11176 % parameter is a string
11177 \define@key{PDF}{Unix}{\pdf@addtoks{(#1)}{Unix}}
11178 % parameter is a string
11179 \define@key{PDF}{UnixFile}{\pdf@addtoks{(#1)}{UnixFile}}
11180 % parameter is an array
11181 \define@key{PDF}{View}{\pdf@addtoks{[#1]}{View}}% hash-ok
11182 % parameter is a string

```

```
11183 \define@key{PDF}{WinFile}{\pdf@addtoks{(#1)}{WinFile}}
```

These are the keys used in the DOCINFO section.

```
11184 \define@key{PDF}{Author}{\pdf@addtoks{(#1)}{Author}}
11185 \define@key{PDF}{Creator}{\pdf@addtoks{(#1)}{Creator}}
11186 \define@key{PDF}{CreationDate}{\pdf@addtoks{(#1)}{CreationDate}}
11187 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
11188 \define@key{PDF}{Producer}{\pdf@addtoks{(#1)}{Producer}}
11189 \define@key{PDF}{Subject}{\pdf@addtoks{(#1)}{Subject}}
11190 \define@key{PDF}{Keywords}{\pdf@addtoks{(#1)}{Keywords}}
11191 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
11192 \define@key{PDF}{Base}{\pdf@addtoks{(#1)}{Base}}
11193 \define@key{PDF}{URI}{\pdf@addtoks{#1}{URI}}
11194 \define@key{PDF}{Trapped}{%
11195   \edef\Hy@temp{#1}%
11196   \ifx\Hy@temp\@empty
11197     \else
11198       \pdf@addtoks{/#1}{Trapped}%
11199   \fi
11200 }
11201
11202 </pdfmarkbase>
11203 <*pdfmark>
11204 \def\Acrobatmenu#1#2{%
11205   \Hy@Acrobatmenu{#1}{#2}{%
11206     \pdfmark[{#2}]{%
11207       linktype=menu,%
11208       pdfmark=/ANN,%
11209       AcroHighlight=\@pdfhighlight,%
11210       Border=\@pdfborder,%
11211       BorderStyle=\@pdfborderstyle,%
11212       Action={<< /Subtype /Named /N /#1 >>},%
11213       Subtype=/Link,%
11214       PDFAFlags=4%
11215     }%
11216   }%
11217 }
```

And now for some useful examples:

```
11218 \def\PDFNextPage{\@ifnextchar{\PDFNextPage@}{\PDFNextPage@[]}}
11219 \def\PDFNextPage@[#1]#2{%
11220   \pdfmark[{#2}]{%
11221     #1,%
11222     Border=\@pdfborder,%
11223     BorderStyle=\@pdfborderstyle,%
11224     Color=.2 .1 .5,%
11225     pdfmark=/ANN,%
11226     Subtype=/Link,%
11227     PDFAFlags=4,%
11228     Page=/Next%
11229   }%
11230 }
11231 \def\PDFPreviousPage{%
11232   \@ifnextchar{\PDFPreviousPage@}{\PDFPreviousPage@[]}%
11233 }
11234 \def\PDFPreviousPage@[#1]#2{%
11235   \pdfmark[{#2}]{%
11236     #1,%
```

```

11237   Border=\@pdfborder,%
11238   BorderStyle=\@pdfborderstyle,%
11239   Color=.4 .4 .1,%
11240   pdfmark=/ANN,%
11241   Subtype=/Link,%
11242   PDFAFlags=4,%
11243   Page=/Prev%
11244 }%
11245 }
11246 \def\PDFOpen#1{%
11247   \pdfmark{#1,pdfmark=/DOCVIEW}%
11248 }

```

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

```

11249 \def\hyper@linkurl#1#2{%
11250   \begingroup
11251     \Hy@pstringdef\Hy@pstringURI{#2}%
11252     \hyper@chars
11253     \leavevmode
11254     \pdfmark[{#1}]{%
11255       pdfmark=/ANN,%
11256       linktype=url,%
11257       AcroHighlight=\@pdfhighlight,%
11258       Border=\@pdfborder,%
11259       BorderStyle=\@pdfborderstyle,%
11260       Color=\@urlbordercolor,%
11261       Action={<<%
11262         /Subtype/URI%
11263         /URI(\Hy@pstringURI)%
11264         \ifHy@href@ismap
11265           /IsMap true%
11266         \fi
11267       >>},%
11268       Subtype=/Link,%
11269       PDFAFlags=4%
11270     }%
11271   \endgroup
11272 }
11273 \def\hyper@linkfile#1#2#3{%
11274   \begingroup
11275     \def\Hy@pstringF{#2}%
11276     \Hy@CleanupFile\Hy@pstringF
11277     \Hy@pstringdef\Hy@pstringF\Hy@pstringF
11278     \Hy@pstringdef\Hy@pstringD{#3}%
11279     \Hy@MakeRemoteAction
11280     \leavevmode
11281     \pdfmark[{#1}]{%
11282       pdfmark=/ANN,%
11283       Subtype=/Link,%
11284       PDFAFlags=4,%
11285       AcroHighlight=\@pdfhighlight,%
11286       Border=\@pdfborder,%
11287       BorderStyle=\@pdfborderstyle,%
11288       linktype=file,%
11289       Color=\@filebordercolor,%
11290       Action={%
11291         <<%
11292         /S/GoToR%

```

```

11293      \Hy@SetNewWindow
11294      /F(\Hy@pstringF)%
11295      /D%
11296      \ifx\#3\%
11297      [\Hy@href@page\@pdfremotestartview]%
11298      \else
11299      (\Hy@pstringD)cvn%
11300      \fi
11301      \Hy@href@nextactionraw
11302      >>%
11303      }%
11304      }%
11305  \endgroup
11306 }
11307 \def\@hyper@launch run:#1\#2#3{%
11308  \begingroup
11309  \Hy@pstringdef\Hy@pstringF{#1}%
11310  \Hy@pstringdef\Hy@pstringP{#3}%
11311  \leavevmode
11312  \pdfmark[{#2}]{%
11313    pdfmark=/ANN,%
11314    Subtype=/Link,%
11315    PDFAFlags=4,%
11316    AcroHighlight=\@pdfhighlight,%
11317    Border=\@pdfborder,%
11318    BorderStyle=\@pdfborderstyle,%
11319    linktype=run,%
11320    Color=\@runbordercolor,%
11321    Action={%
11322      <<%
11323      /S/Launch%
11324      \Hy@SetNewWindow
11325      /F(\Hy@pstringF)%
11326      \ifx\#3\%
11327      \else
11328      /Win<</P(\Hy@pstringP)/F(\Hy@pstringF)>>%
11329      \fi
11330      \Hy@href@nextactionraw
11331      >>%
11332      }%
11333      }%
11334  \endgroup
11335 }
11336 \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.

```

11337 \*dvips)
11338 \providecommand*\XR@ext}{pdf}
11339 \def\Hy@raisedlink{}
11340 \def\literalps@out#1{\special{ps:SDict begin #1 end}}%

```

```

11341 \def\headerps@out#1{\special{! #1}}%
11342 \input{pdfmark.def}%
11343 \ifx\@pdfproducer\relax
11344   \def\@pdfproducer{dvips + Distiller}%
11345 \fi
11346 \providecommand*\@pdfborder{0 0 1}
11347 \providecommand*\@pdfborderstyle{}
11348 \providecommand*\@pdfview{XYZ}
11349 \providecommand*\@pdfviewparams{ H.V}
11350 \def\Hy@BorderArrayPatch{BorderArrayPatch}

11351 \g@addto@macro\Hy@FirstPageHook{%
11352   \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.

```

11353   /DvipsToPDF{72.27 mul Resolution div} def%
11354   /PDFToDvips{72.27 div Resolution mul} def%
11355   /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.

```

11356   /BorderArrayPatch{%
11357     [exch{%
11358       dup dup type/integertype eq exch type/realtype eq or%
11359       {BPToDvips}if%
11360     }forall]%
11361   }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.

```

11362   /HyperBorder {1 PDFToDvips} def%
11363   /H.V {pdf@hoff pdf@voff null} def%
11364   /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

```

11365   /H.S {%
11366     currentpoint %
11367     HyperBorder add /pdf@lly exch def %
11368     dup DvipsToPDF 72 add /pdf@hoff exch def %
11369     HyperBorder sub /pdf@llx exch def%
11370   } 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

```

11371 /H.L {%
11372 2 sub dup%
11373 /HyperBasePt exch def %
11374 PDFToDvips /HyperBaseDvips exch def %
11375 currentpoint %
11376 HyperBaseDvips sub /pdf@ury exch def%
11377 /pdf@urx exch def%
11378 } def%
11379 /H.A {%
11380 H.L %
11381 % | /pdf@voff| = the distance from the top of the page to a point
11382 % | \baselineskip| above the current point in PDF coordinates
11383 currentpoint exch pop %
11384 vsize 72 sub exch DvipsToPDF %
11385 HyperBasePt sub % baseline skip
11386 sub /pdf@voff exch def%
11387 } def%
11388 /H.R {%
11389 currentpoint %
11390 HyperBorder sub /pdf@ury exch def %
11391 HyperBorder add /pdf@urx exch def %
11392 % | /pdf@voff| = the distance from the top of the page to the current point, in
11393 % PDF coordinates
11394 currentpoint exch pop vsize 72 sub %
11395 exch DvipsToPDF sub /pdf@voff exch def%
11396 } def%
11397 }%
11398 }
11399 \AtBeginShipoutFirst{%
11400 \ifHy@setpagesize
11401 \begingroup
11402 \@ifundefined{stockwidth}{%
11403 \ifdim\paperwidth>\z@
11404 \ifdim\paperheight>\z@
11405 \special{papersize=\the\paperwidth,\the\paperheight}%
11406 \fi
11407 \fi
11408 }{%
11409 \ifdim\stockwidth>\z@
11410 \ifdim\stockheight>\z@
11411 \special{papersize=\the\stockwidth,\the\stockheight}%
11412 \fi
11413 \fi
11414 }%
11415 \endgroup
11416 \fi
11417 \Hy@DisableOption{setpagesize}%
11418 }
11419 </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.

```

11420 \<*vtexpdfmark>
11421 \providecommand*\XR@ext}{pdf}
11422 \def\Hy@raisedlink{}
11423 \def\literalps@out#1{\special{pS:#1}}%
11424 \def\headerps@out#1{\immediate\special{pS:#1}}%
11425 \input{pdfmark.def}%
11426 \ifx\@pdfproducer\relax
11427   \ifnum\OpMode=\@ne
11428     \def\@pdfproducer{VTeX}%
11429   \else
11430     \def\@pdfproducer{VTeX + Distiller}%
11431   \fi
11432 \fi
11433 \providecommand*\@pdfborder{0 0 1}
11434 \providecommand*\@pdfborderstyle{}
11435 \providecommand*\@pdfview{XYZ}
11436 \providecommand*\@pdfviewparams{ H.V}

11437 \g@addto@macro\Hy@FirstPageHook{%
11438   \headerps@out{%
11439     /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.

```

11440   /HyperBorder {1} def%
11441   /H.V {pdf@hoff pdf@voff null} def%
11442   /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:  $\text{pdf@lly} = Y_c - \text{HyperBorder}$ ,  $\text{pdf@hoff} = X_c + 72$ ,  $\text{pdf@llx} = X_c - \text{HyperBorder}$

```

11443   /H.S {%
11444     currentpoint %
11445     HyperBorder sub%
11446     /pdf@lly exch def %
11447     dup 72 add /pdf@hoff exch def %
11448     HyperBorder sub%
11449     /pdf@llx exch def%
11450   } def%

```

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

```

11451   /H.L {%
11452     2 sub%
11453     /HyperBasePt exch def %
11454     currentpoint %
11455     HyperBasePt add HyperBorder add%
11456     /pdf@ury exch def %
11457     HyperBorder add%
11458     /pdf@urx exch def%
11459   } def%
11460   /H.A {%
11461     H.L %
11462     currentpoint exch pop %
11463     vsize 72 sub exch %

```

```

11464   HyperBasePt add add%
11465   /pdf@voff exch def%
11466   } def%

pdf@ury =  $Y_c$  + HyperBorder, pdf@urx =  $X_c$  + HyperBorder
11467   /H.R {%
11468     currentpoint %
11469     HyperBorder add%
11470     /pdf@ury exch def %
11471     HyperBorder add%
11472     /pdf@urx exch def %
11473     currentpoint exch pop vsize 72 sub add%
11474     /pdf@voff exch def%
11475   } def%
11476   }%
11477 }
11478 </vtxpdfmark>

```

## 46.11 Textures

```

11479 <*textures>
11480 \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.

```

11481 \begingroup
11482 \obeylines %
11483 \gdef\Hy@ps@CR{\noexpand
11484   }%
11485 \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`.

```

11486 \def\literalps@out#1{%
11487   \special{postscript 0 0 transform}%
11488   \special{rawpostscript itransform moveto\Hy@ps@CR #1}%
11489 }%
11490 %

```

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.

```

11491 \def\headerps@out#1{%
11492   \special{%

```

```

11493   prepostscript TeXdict begin\Hy@ps@CR
11494     #1\Hy@ps@CR
11495   end%
11496 }%
11497 }%
11498 %

```

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.

```

11499 \g@addto@macro\Hy@FirstPageHook{%
11500   \headerps@out{%
11501     /betterpdfmark {%
11502       systemdict begin %
11503         dup /BP eq%
11504         {cleartomark gsave nulldevice []}%
11505         {dup /EP eq%
11506           {cleartomark cleartomark grestore}%
11507           {cleartomark}%
11508         }ifelse%
11509       }ifelse %
11510     end%
11511   }def\Hy@ps@CR
11512   ___pdfmark___ not{/pdfmark /betterpdfmark load def}if%
11513 }% end of \headerps@out
11514 }% end of \AtBeginShipoutFirst
11515 %
11516 \input{pdfmark.def}%
11517 %
11518 \ifx\@pdfproducer\relax
11519   \def\@pdfproducer{Textures + Distiller}%
11520 \fi
11521 \providecommand*\@pdfborder{0 0 1}
11522 \providecommand*\@pdfborderstyle{}
11523 \providecommand*\@pdfview{XYZ}
11524 \providecommand*\@pdfviewparams{ H.V}
11525 %

```

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  $\TeX$ .

```

11526 \Hy@AtBeginDocument{%
11527   \headerps@out{%

```

Textures lives in normal points, I think. So conversion from one coordinate system to another involves doing nothing.

```

11528   /vsize {\Hy@pageheight} def%
11529   /DvipsToPDF {} def%
11530   /PDFToDvips {} def%
11531   /BPToDvips {} def%
11532   /HyperBorder { 1 PDFToDvips } def\Hy@ps@CR
11533   /H.V {pdf@hoff pdf@voff null} def\Hy@ps@CR
11534   /H.B {/Rect[pdf@llx pdf@lly pdf@urx pdf@ury]} def\Hy@ps@CR
11535   /H.S {}%
11536   currentpoint %
11537   HyperBorder add /pdf@lly exch def %
11538   dup DvipsToPDF 72 add /pdf@hoff exch def %

```

```

11539   HyperBorder sub /pdf@llx exch def%
11540   } def\Hy@ps@CR
11541   /H.L {%
11542     2 sub %
11543     PDFToDvips /HyperBase exch def %
11544     currentpoint %
11545     HyperBase sub /pdf@ury exch def%
11546     /pdf@urx exch def%
11547   } def\Hy@ps@CR
11548   /H.A {%
11549     H.L %
11550     currentpoint exch pop %
11551     vsize 72 sub exch DvipsToPDF %
11552     HyperBase sub % baseline skip
11553     sub /pdf@voff exch def%
11554   } def\Hy@ps@CR
11555   /H.R {%
11556     currentpoint %
11557     HyperBorder sub /pdf@ury exch def %
11558     HyperBorder add /pdf@urx exch def %
11559     currentpoint exch pop vsize 72 sub %
11560     exch DvipsToPDF sub /pdf@voff exch def%
11561   } def\Hy@ps@CR
11562   }%
11563 }

11564 \Hy@AtBeginDocument{%
11565   \ifHy@colorlinks
11566     \headerps@out{/PDFBorder{/Border [0 0 0]}def}%
11567   \fi
11568 }

```

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.

```

11569 \expandafter\let\expandafter\keepPDF@SetupDoc
11570   \csname PDF@SetupDoc\endcsname
11571 \def\PDF@SetupDoc{%
11572   \ifx\@baseurl\@empty
11573     \else
11574       \special{html:<base href="\@baseurl">}%
11575     \fi
11576   \keepPDF@SetupDoc
11577 }

11578 \Hy@WrapperDef\hyper@anchor#1{%
11579   \Hy@SaveLastskip
11580   \Hy@VerboseAnchor{#1}%
11581   \begingroup
11582     \let\protect=\string
11583     \special{html:<a name=%
11584       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
11585   \endgroup
11586   \Hy@activeanchortrue
11587   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
11588   \special{html:</a>}%
11589   \Hy@activeanchorfalse
11590   \Hy@RestoreLastskip
11591 }

11592 \Hy@WrapperDef\hyper@anchorstart#1{%

```

```

11593 \Hy@SaveLastskip
11594 \Hy@VerboseAnchor{#1}%
11595 \begingroup
11596 \hyper@chars
11597 \special{html:<a name=%
11598 \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
11599 \endgroup
11600 \Hy@activeanchortrue
11601 }
11602 \def\hyper@anchorend{%
11603 \special{html:</a>}%
11604 \Hy@activeanchorfalse
11605 \Hy@RestoreLastskip
11606 }
11607 \def\@urltype{url}
11608 \def\hyper@linkstart#1#2{%
11609 \Hy@VerboseLinkStart{#1}{#2}%
11610 \expandafter\Hy@colorlink\csname @#1color\endcsname
11611 \def\Hy@tempa{#1}%
11612 \ifx\Hy@tempa\@urltype
11613 \special{html:<a href=\hyper@quote#2\hyper@quote>}%
11614 \else
11615 \begingroup
11616 \hyper@chars
11617 \special{%
11618 html:<a href=%
11619 \hyper@quote\#\HyperDestNameFilter{#2}\hyper@quote>%
11620 }%
11621 \endgroup
11622 \fi
11623 }
11624 \def\hyper@linkend{%
11625 \special{html:</a>}%
11626 \Hy@endcolorlink
11627 }
11628 \def\hyper@linkfile#1#2#3{%
11629 \hyper@linkurl{#1}{%
11630 \Hy@linkfileprefix#2\ifx\\#3\\\else\##3\fi
11631 }%
11632 }
11633 \def\hyper@linkurl#1#2{%
11634 \leavevmode
11635 \ifHy@raiselinks
11636 \Hy@SaveSpaceFactor
11637 \Hy@SaveSavedSpaceFactor
11638 \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
11639 \Hy@RestoreSavedSpaceFactor
11640 \@linkdim\dp\@tempboxa
11641 \lower\@linkdim\hbox{%
11642 \hyper@chars
11643 \special{html:<a href=\hyper@quote#2\hyper@quote>}%
11644 }%
11645 \Hy@colorlink\@urlcolor
11646 \Hy@RestoreSpaceFactor
11647 #1%
11648 \Hy@SaveSpaceFactor
11649 \@linkdim\ht\@tempboxa

```

```

11650 \advance\@linkdim by -6.5\p@
11651 \raise\@linkdim\hbox{\special{html:</a>}}%
11652 \Hy@endcolorlink
11653 \Hy@RestoreSpaceFactor
11654 \else
11655 \begingroup
11656 \hyper@chars
11657 \special{html:<a href=\hyper@quote#2\hyper@quote>}%
11658 \Hy@colorlink\@urlcolor#1%
11659 \special{html:</a>}%
11660 \Hy@endcolorlink
11661 \endgroup
11662 \fi
11663 }

```

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

```

11664 \def\hyper@link#1#2#3{%
11665 \Hy@VerboseLinkStart{#1}{#2}%
11666 \hyper@linkurl{#3}{\# \Hy@DestNameFilter{#2}}%
11667 }
11668 \def\hyper@image#1#2{%
11669 \begingroup
11670 \hyper@chars
11671 \special{html:<img src=\hyper@quote#1\hyper@quote>}%
11672 \endgroup
11673 }
11674 </textures>

```

## 46.12 dvipsone

```

11675 % \subsection{dvipsone driver}
11676 % Over-ride the default setup macro in pdfmark driver to use Y\&Y
11677 % |\special| commands.
11678 <*dvipsone>
11679 \providecommand*{\XR@ext}{pdf}
11680 \def\Hy@raisedlink{}
11681 \providecommand*\@pdfborder{0 0 1}
11682 \providecommand*\@pdfborderstyle{}
11683 \def\literalps@out#1{\special{ps:#1}}%
11684 \def\headerps@out#1{\special{headertext=#1}}%
11685 \input{pdfmark.def}%
11686 \ifx\@pdfproducer\relax
11687 \def\@pdfproducer{dvipsone + Distiller}%
11688 \fi
11689 \HyInfo@AddonUnsupportedtrue
11690 \def\PDF@FinishDoc{%
11691 \Hy@UseMaketitleInfos
11692 \HyInfo@TrappedUnsupported
11693 \special{PDF: Keywords \@pdfkeywords}%
11694 \special{PDF: Title \@pdftitle}%
11695 \special{PDF: Creator \@pdfcreator}%
11696 \ifx\@pdfcreationdate\empty
11697 \else
11698 \special{PDF: CreationDate \@pdfcreationdate}%
11699 \fi
11700 \ifx\@pdfmoddate\empty
11701 \else
11702 \special{PDF: ModDate \@pdfmoddate}%

```

```

11703 \fi
11704 \special{PDF: Author \@pdfauthor}%
11705 \ifx\@pdfproducer\relax
11706 \else
11707 \special{PDF: Producer \@pdfproducer}%
11708 \fi
11709 \special{PDF: Subject \@pdfsubject}%
11710 \Hy@DisableOption{pdfauthor}%
11711 \Hy@DisableOption{pdftitle}%
11712 \Hy@DisableOption{pdfsubject}%
11713 \Hy@DisableOption{pdfcreator}%
11714 \Hy@DisableOption{pdfcreationdate}%
11715 \Hy@DisableOption{pdfmoddate}%
11716 \Hy@DisableOption{pdfproducer}%
11717 \Hy@DisableOption{pdfkeywords}%
11718 \Hy@DisableOption{pdftrapped}%
11719 \Hy@DisableOption{pdfinfo}%
11720 }
11721 \def\PDF@SetupDoc{%
11722 \def\Hy@temp{%
11723 \ifx\@pdfstartpage\@empty
11724 \else
11725 \ifx\@pdfstartview\@empty
11726 \else
11727 \edef\Hy@temp{%
11728 ,Page=\@pdfstartpage
11729 ,View=\@pdfstartview
11730 }%
11731 \fi
11732 \fi
11733 \edef\Hy@temp{%
11734 \noexpand\pdfmark{%
11735 pdfmark=/DOCVIEW,%
11736 PageMode=/\@pdfpagemode
11737 \Hy@temp
11738 }%
11739 }%
11740 \Hy@temp
11741 \ifx\@pdfpagescrop\@empty
11742 \else
11743 \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
11744 \fi
11745 \edef\Hy@temp{%
11746 \ifHy@toolbar\else /HideToolbar true\fi
11747 \ifHy@menubar\else /HideMenubar true\fi
11748 \ifHy>windowui\else /HideWindowUI true\fi
11749 \ifHy@fitwindow /FitWindow true\fi
11750 \ifHy@centerwindow /CenterWindow true\fi
11751 \ifHy@displaydoctitle /DisplayDocTitle true\fi
11752 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
11753 \Hy@UseNameKey{Direction}\@pdfdirection
11754 \Hy@UseNameKey{ViewArea}\@pdfviewarea
11755 \Hy@UseNameKey{ViewClip}\@pdfviewclip
11756 \Hy@UseNameKey{PrintArea}\@pdfprintarea
11757 \Hy@UseNameKey{PrintClip}\@pdfprintclip
11758 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
11759 \Hy@UseNameKey{Duplex}\@pdfduplex

```

```

11760 \ifx\@pdfpicktraybypdfsize\@empty
11761 \else
11762   /PickTrayByPDFSize \@pdfpicktraybypdfsize
11763 \fi
11764 \ifx\@pdfprintpagerange\@empty
11765 \else
11766   /PrintPageRange[\@pdfprintpagerange]%
11767 \fi
11768 \ifx\@pdfnumcopies\@empty
11769 \else
11770   /NumCopies \@pdfnumcopies
11771 \fi
11772 }%
11773 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
11774 \pdfmark{%
11775   pdfmark=/PUT,%
11776   Raw={%
11777     \string{Catalog\string}<<%
11778     \ifx\Hy@temp\@empty
11779     \else
11780       /ViewerPreferences<<\Hy@temp>>%
11781     \fi
11782     \Hy@UseNameKey{PageLayout}\@pdfpagelayout
11783     \ifx\@pdflang\@empty
11784     \else
11785       /Lang(\@pdflang)%
11786     \fi
11787     \ifx\@baseurl\@empty
11788     \else
11789       /URI<</Base(\Hy@pstringB)>>%
11790     \fi
11791     >>%
11792   }%
11793 }%
11794 }
11795 \providecommand*\@pdfview{XYZ}
11796 \providecommand*\@pdfviewparams{ %
11797   gsave revscl currentpoint grestore %
11798   72 add exch pop null exch null%
11799 }
11800 \def\Hy@BorderArrayPatch{BorderArrayPatch}

```

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

```

11801 \g@addto@macro\Hy@FirstPageHook{%
11802   \headerps@out{%

```

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

```

11803   /DvipsToPDF { 65781 div } def%
11804   /PDFToDvips { 65781 mul } def%
11805   /BPTToDvips{65781 mul}def%
11806   /HyperBorder { 1 PDFToDvips } def%
11807   /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.

```

11808 /BorderArrayPatch{%
11809   [exch{%
11810     dup dup type/integertype eq exch type/realtype eq or%
11811     {BPToDvips}if%
11812   }forall]%
11813 }def%
11814 /H.S {%
11815   currentpoint %
11816   HyperBorder add /pdf@lly exch def %
11817   dup DvipsToPDF 72 add /pdf@hoff exch def %
11818   HyperBorder sub /pdf@llx exch def%
11819 } def%
11820 /H.L {%
11821   2 sub %
11822   PDFToDvips /HyperBase exch def %
11823   currentpoint %
11824   HyperBase sub /pdf@ury exch def%
11825   /pdf@urx exch def%
11826 } def%
11827 /H.A {%
11828   H.L %
11829   currentpoint exch pop %
11830   HyperBase sub % baseline skip
11831   DvipsToPDF /pdf@voff exch def%
11832 } def%
11833 /H.R {%
11834   currentpoint %
11835   HyperBorder sub /pdf@ury exch def %
11836   HyperBorder add /pdf@urx exch def %
11837   currentpoint exch pop DvipsToPDF /pdf@voff exch def%
11838 } def%
11839 }%
11840 }
11841 </dvipsone>

```

## 46.13 TeX4ht

```

11842 <*tex4ht>
11843 \providecommand*{\XR@ext}{html}
11844 \def\Hy@raisedlink{}
11845 \ifpackageloaded{tex4ht}{%
11846   \Hy@InfoNoLine{tex4ht is already loaded}%
11847 }{%
11848   \RequirePackage[hx4ht]{tex4ht}%
11849 }
11850 \hyperlinkfileprefix{}
11851 \def\PDF@FinishDoc{}
11852 \def\PDF@SetupDoc{%
11853   \ifx\@baseurl\@empty
11854     \else
11855     \special{t4ht=<base href="\@baseurl">}%
11856   \fi
11857 }
11858 \Hy@WrapperDef\hyper@anchor#1{%
11859   \Hy@SaveLastskip
11860   \Hy@VerboseAnchor{#1}%
11861   \begingroup

```

```

11862 \let\protect=\string
11863 \special{t4ht=<a name=%
11864 \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
11865 \endgroup
11866 \Hy@activeanchortrue
11867 \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
11868 \special{t4ht=</a>}%
11869 \Hy@activeanchorfalse
11870 \Hy@RestoreLastskip
11871 }
11872 \Hy@WrapperDef\hyper@anchorstart#1{%
11873 \Hy@SaveLastskip
11874 \Hy@VerboseAnchor{#1}%
11875 \begingroup
11876 \hyper@chars\special{t4ht=<a name=%
11877 \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
11878 \endgroup
11879 \Hy@activeanchortrue
11880 }
11881 \def\hyper@anchorend{%
11882 \special{t4ht=</a>}%
11883 \Hy@activeanchorfalse
11884 \Hy@RestoreLastskip
11885 }
11886 \def\@urlltype{url}
11887 \def\hyper@linkstart#1#2{%
11888 \Hy@VerboseLinkStart{#1}{#2}%
11889 \expandafter\Hy@colorlink\csname @#1color\endcsname
11890 \def\Hy@tempa{#1}%
11891 \ifx\Hy@tempa\@urlltype
11892 \special{t4ht=<a href=\hyper@quote#2\hyper@quote>}%
11893 \else
11894 \begingroup
11895 \hyper@chars
11896 \special{t4ht=<a href=%
11897 \hyper@quote\#\HyperDestNameFilter{#2}\hyper@quote>}%
11898 \endgroup
11899 \fi
11900 }
11901 \def\hyper@linkend{%
11902 \special{t4ht=</a>}%
11903 \Hy@endcolorlink
11904 }
11905 \def\hyper@linkfile#1#2#3{%
11906 \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\else\##3\fi}%
11907 }
11908 \def\hyper@linkurl#1#2{%
11909 \leavevmode
11910 \ifHy@raiselinks
11911 \Hy@SaveSpaceFactor
11912 \Hy@SaveSavedSpaceFactor
11913 \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
11914 \Hy@RestoreSavedSpaceFactor
11915 \@linkdim\dp\@tempboxa
11916 \lower\@linkdim\hbox{%
11917 \begingroup
11918 \hyper@chars

```

```

11919 \special{%
11920 t4ht=<a href=\hyper@quote#2\hyper@quote>%
11921 }%
11922 \endgroup
11923 }%
11924 \Hy@colorlink\@urlcolor
11925 \Hy@RestoreSpaceFactor
11926 #1%
11927 \Hy@SaveSpaceFactor
11928 \Hy@endcolorlink
11929 \@linkdim\ht\@tempboxa
11930 \advance\@linkdim by -6.5\p@
11931 \raise\@linkdim\hbox{\special{t4ht=</a>}}%
11932 \Hy@RestoreSpaceFactor
11933 \else
11934 \begingroup
11935 \hyper@chars
11936 \special{t4ht=<a href=\hyper@quote#2\hyper@quote>}%
11937 \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
11938 \special{t4ht=</a>}%
11939 \endgroup
11940 \fi
11941 }

```

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

```

11942 \def\hyper@link#1#2#3{%
11943 \Hy@VerboseLinkStart{#1}{#2}%
11944 \hyper@linkurl{#3}{\#\HyperDestNameFilter{#2}}%
11945 }
11946 \def\hyper@image#1#2{%
11947 \begingroup
11948 \hyper@chars
11949 \special{t4ht=<img src=\hyper@quote#1\hyper@quote>}%
11950 \endgroup
11951 }
11952 \let\autoref\ref
11953 \ifx \rEfLiNK \UnDef
11954 \def\rEfLiNK #1#2{#2}%
11955 \fi
11956 \def\backref#1{}

```

Fix for tex4ht.

```

11957 \AtBeginDocument{%
11958 \expandafter\let\expandafter\Hy@OrgMakeLabel\csname Make:Label\endcsname
11959 \expandafter\def\csname Make:Label\endcsname#1#2{%
11960 \ifhmode
11961 \Hy@SaveSpaceFactor
11962 \else
11963 \global\Hy@SavedSpaceFactor=1000 %
11964 \fi
11965 \Hy@OrgMakeLabel{#1}{#2}%
11966 \Hy@RestoreSpaceFactor
11967 #2%
11968 \Hy@SaveSpaceFactor
11969 }%
11970 \Hy@RestoreSpaceFactor
11971 }%
11972 }
11973 </tex4ht>

```

```

11974 <*tex4htcfg>
11975 \IfFileExists{\jobname.cfg}{\endinput}{}
11976 \Preamble{html}
11977 \begin{document}%
11978 \EndPreamble
11979 \def\TeX{\TeX}
11980 \def\OMEGA{\Omega}
11981 \def\LaTeX{\LaTeX}
11982 \def\LaTeXe{\LaTeX2e}
11983 \def\TeXe{\TeX}
11984 \def\MF{Metafont}
11985 \def\MP{MetaPost}
11986 </tex4htcfg>

```

## 47 Driver-specific form support

### 47.1 pdfmarks

```

11987 <*pdfmark>
11988 \long\def\@Form[#1]{%
11989 \g@addto@macro\Hy@FirstPageHook{%
11990 \headerps@out{%
11991 [%
11992 /_objdef{pdfDocEncoding}%
11993 /type/dict%
11994 /OBJ pdfmark%
11995 [%
11996 {pdfDocEncoding}%
11997 <<%
11998 /Type/Encoding%
11999 /Differences[%
12000 24/breve/caron/circumflex/dotaccent/hungarumlaut/ogonek/ring%
12001 /tilde %
12002 39/quotesingle %
12003 96/grave %
12004 128/bullet/dagger/daggerdbl/ellipsis/emdash/endash/florin%
12005 /fraction/guilsinglleft/guilsinglright/minus/perthousand%
12006 /quotedblbase/quotedblleft/quotedblright/quoteleft%
12007 /quoteright/quotesinglbase/trademark/fi/fl/Lslash/OE/Scaron%
12008 /Ydieresis/Zcaron/dotlessi/lslash/oe/scaron/zcaron %
12009 164/currency %
12010 166/brokenbar %
12011 168/dieresis/copyright/ordfeminine %
12012 172/logicalnot/.notdef/registered/macron/degree/plusminus%
12013 /twosuperior/threesuperior/acute/mu %
12014 183/periodcentered/cedilla/onesuperior/ordmasculine %
12015 188/onequarter/onehalf/threequarters %
12016 192/Agrave/Aacute/Acircumflex/Atilde/Adieresis/Aring/AE%
12017 /Ccedilla/Egrave/Eacute/Ecircumflex/Edieresis/Igrave%
12018 /Iacute/Icircumflex/Idieresis/Eth/Ntilde/Ograve/Oacute%
12019 /Ocircumflex/Otilde/Odieresis/multiply/Oslash/Ugrave%
12020 /Uacute/Ucircumflex/Udieresis/Yacute/Thorn/germandbls%
12021 /agrave/aacute/acircumflex/atilde/adieresis/aring/ae%
12022 /ccedilla/egrave/eacute/ecircumflex/edieresis/igrave%
12023 /iacute/icircumflex/idieresis/eth/ntilde/ograde/oacute%
12024 /ocircumflex/otilde/odieresis/divide/oslash/ugrave/uacute%
12025 /ucircumflex/udieresis/yacute/thorn/ydieresis%
12026 ]%

```

```

12027 >>%
12028 /PUT pdfmark%
12029 [%
12030   /__objdef{ZaDb}%
12031   /type/dict%
12032 /OBJ pdfmark%
12033 [%
12034   {ZaDb}%
12035   <<%
12036     /Type/Font%
12037     /Subtype/Type1%
12038     /Name/ZaDb%
12039     /BaseFont/ZapfDingbats%
12040   >>%
12041 /PUT pdfmark%
12042 [%
12043   /__objdef{Helv}%
12044   /type/dict%
12045 /OBJ pdfmark%
12046 [%
12047   {Helv}%
12048   <<%
12049     /Type/Font%
12050     /Subtype/Type1%
12051     /Name/Helv%
12052     /BaseFont/Helvetica%
12053     /Encoding{pdfDocEncoding}%
12054   >>%
12055 /PUT pdfmark%
12056 [%
12057   /__objdef{aform}%
12058   /type/dict%
12059 /OBJ pdfmark%
12060 [%
12061   /__objdef{afields}%
12062   /type/array%
12063 /OBJ pdfmark%
12064 {%
12065   [%
12066     /BBox[0 0 100 100]%
12067     /__objdef{Check}%
12068 /BP pdfmark %
12069 1 0 0 setrgbcolor%
12070 /ZapfDingbats 80 selectfont %
12071 20 20 moveto%
12072 (4)show%
12073 [/EP pdfmark%
12074 [%
12075   /BBox[0 0 100 100]%
12076   /__objdef{Cross}%
12077 /BP pdfmark %
12078 1 0 0 setrgbcolor%
12079 /ZapfDingbats 80 selectfont %
12080 20 20 moveto%
12081 (8)show%
12082 [/EP pdfmark%
12083 [%

```

```

12084   /BBox[0 0 250 100]%
12085   /_objdef{Submit}%
12086 /BP pdfmark %
12087 0.6 setgray %
12088 0 0 250 100 rectfill %
12089 1 setgray %
12090 2 2 moveto %
12091 2 98 lineto %
12092 248 98 lineto %
12093 246 96 lineto %
12094 4 96 lineto %
12095 4 4 lineto %
12096 fill %
12097 0.34 setgray %
12098 248 98 moveto %
12099 248 2 lineto %
12100 2 2 lineto %
12101 4 4 lineto %
12102 246 4 lineto %
12103 246 96 lineto %
12104 fill%
12105 /Helvetica 76 selectfont %
12106 0 setgray %
12107 8 22.5 moveto%
12108 (Submit)show%
12109 [/EP pdfmark%
12110 [%
12111   /BBox[0 0 250 100]%
12112   /_objdef{SubmitP}%
12113 /BP pdfmark %
12114 0.6 setgray %
12115 0 0 250 100 rectfill %
12116 0.34 setgray %
12117 2 2 moveto %
12118 2 98 lineto %
12119 248 98 lineto %
12120 246 96 lineto %
12121 4 96 lineto %
12122 4 4 lineto %
12123 fill %
12124 1 setgray %
12125 248 98 moveto %
12126 248 2 lineto %
12127 2 2 lineto %
12128 4 4 lineto %
12129 246 4 lineto %
12130 246 96 lineto %
12131 fill%
12132 /Helvetica 76 selectfont %
12133 0 setgray %
12134 10 20.5 moveto%
12135 (Submit)show%
12136 [/EP pdfmark%
12137 } ?pdfmark%
12138 [%
12139 {aform}%
12140 <<%

```

```

12141 /Fields{afields}%
12142 /DR<<%
12143 /Font<<%
12144 /ZaDb{ZaDb}%
12145 /Helv{Helv}%
12146 >>%
12147 >>%
12148 /DA(/Helv 10 Tf 0 g)%
12149 /CO{corder}%
12150 \ifHy@pdfa
12151 \else
12152 \ifHyField@NeedAppearances
12153 /NeedAppearances true%
12154 \fi
12155 \fi
12156 >>%
12157 /PUT pdfmark%
12158 [%
12159 {Catalog}%
12160 <<%
12161 /AcroForm{aform}%
12162 >>%
12163 /PUT pdfmark%
12164 [%
12165 /__objdef{corder}%
12166 /type/array%
12167 /OBJ pdfmark% dps
12168 }]%
12169 \kvsetkeys{Form}{#1}%
12170 }
12171 \def\@endForm{}
12172 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
12173 \Hy\Message{Sorry, pdfmark drivers do not support FORM gauges}%
12174 }
12175 \def\@TextField[#1]#2{% parameters, label
12176 \def\Fld@name{#2}%
12177 \def\Fld@default{}%
12178 \let\Fld@value\@empty
12179 \def\Fld@width{\DefaultWidthofText}%
12180 \def\Fld@height{%
12181 \ifFld@multiline
12182 \DefaultHeightofTextMultiline
12183 \else
12184 \DefaultHeightofText
12185 \fi
12186 }%
12187 \begingroup
12188 \expandafter\HyField@SetKeys\expandafter{%
12189 \DefaultOptionsofText,#1%
12190 }%
12191 \HyField@FlagsText
12192 \ifFld@hidden\def\Fld@width{1sp}\fi
12193 \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
12194 \LayoutTextField{#2}{%
12195 \Hy@escapeform\PDFForm@Text
12196 \pdfmark[\MakeTextField{\Fld@width}{\Fld@height}]{%
12197 pdfmark=/ANN,Raw={\PDFForm@Text}%

```

```

12198 }%
12199 }%
12200 \endgroup
12201 }
12202 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
12203 \def\Fld@name{#2}%
12204 \let\Fld@default\relax
12205 \let\Fld@value\relax
12206 \def\Fld@width{\DefaultWidthofChoiceMenu}%
12207 \def\Fld@height{\DefaultHeightofChoiceMenu}%
12208 \begingroup
12209 \Fld@menulength=0 %
12210 \@tempdima\z@
12211 \@for\@curropt:=#3\do{%
12212 \expandafter\Fld@checkequals\@curropt==\\%
12213 \Hy@StepCount\Fld@menulength
12214 \settowidth{\@tempdimb}{\@currDisplay}%
12215 \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
12216 }%
12217 \advance\@tempdima by 15\p@
12218 \begingroup
12219 \HyField@SetKeys{#1}%
12220 \edef\x{\endgroup
12221 \noexpand\expandafter
12222 \noexpand\HyField@SetKeys
12223 \noexpand\expandafter{%
12224 \expandafter\noexpand\csname DefaultOptionsof%
12225 \ifFld@radio
12226 Radio%
12227 \else
12228 \ifFld@combo
12229 \ifFld@popdown
12230 PopdownBox%
12231 \else
12232 ComboBox%
12233 \fi
12234 \else
12235 ListBox%
12236 \fi
12237 \fi
12238 \endcsname
12239 }%
12240 }\x
12241 \HyField@SetKeys{#1}%
12242 \ifFld@hidden\def\Fld@width{1sp}\fi
12243 \ifx\Fld@value\relax
12244 \let\Fld@value\Fld@default
12245 \fi
12246 \LayoutChoiceField{#2}{%
12247 \ifFld@radio
12248 \HyField@FlagsRadioButton
12249 \@@Radio{#3}%
12250 \else
12251 \begingroup
12252 \HyField@FlagsChoice
12253 \ifdim\Fld@width<\@tempdima
12254 \ifdim\@tempdima<1cm\@tempdima1cm\fi

```



```

12255         \edef\Fld@width{\the\@tempdima}%
12256     \fi
12257     \ifFld@combo
12258     \else
12259         \@tempdima=\the\Fld@menulength\Fld@charsize
12260         \advance\@tempdima by \Fld@borderwidth bp %
12261         \advance\@tempdima by \Fld@borderwidth bp %
12262         \edef\Fld@height{\the\@tempdima}%
12263     \fi
12264     \@@ListBox{#3}%
12265 \endgroup
12266 \fi
12267 }%
12268 \endgroup
12269 }
12270 \def\@@Radio#1{%
12271     \Fld@listcount=0 %
12272     \EdefEscapeName\Fld@default{\Fld@default}%
12273     \@for\@curropt:=#1\do{%
12274         \expandafter\Fld@checkequals\@curropt==\%
12275         \EdefEscapeName\@currValue{\@currValue}%
12276         \Hy@StepCount\Fld@listcount
12277         \@currDisplay\space
12278         \Hy@escapeform\PDFForm@Radio
12279         \pdfmark[\MakeRadioField{\Fld@width}{\Fld@height}]{%
12280             pdfmark=/ANN,%
12281             Raw={%
12282                 \PDFForm@Radio /AP <</N <</\@currValue\space {Check}>> >>%
12283             }%
12284         } % deliberate space between radio buttons
12285     }%
12286 }
12287 \newcount\Fld@listcount
12288 \def\@@ListBox#1{%
12289     \HyField@PDFChoices{#1}%
12290     \Hy@escapeform\PDFForm@List
12291     \pdfmark[\MakeChoiceField{\Fld@width}{\Fld@height}]{%
12292         pdfmark=/ANN,Raw={\PDFForm@List}%
12293     }%
12294 }
12295 \def\@PushButton[#1]#2{% parameters, label
12296     \def\Fld@name{#2}%
12297     \begingroup
12298         \expandafter\HyField@SetKeys\expandafter{%
12299             \DefaultOptionsofPushButton,#1%
12300         }%
12301         \ifHy@pdfa
12302             \Hy@Error{%
12303                 PDF/A: Push button with JavaScript is prohibited%
12304             }\@ehc
12305             \LayoutPushButtonField{%
12306                 \leavevmode
12307                 \MakeButtonField{#2}%
12308             }%
12309         \else
12310             \HyField@FlagsPushButton
12311             \ifFld@hidden\def\Fld@width{1sp}\fi

```

```

12312 \LayoutPushButtonField{%
12313 \leavevmode
12314 \Hy@escapeform\PDFForm@Push
12315 \pdfmark[\MakeButtonField{#2}]{%
12316 pdfmark=/ANN,Raw={\PDFForm@Push}%
12317 }%
12318 }%
12319 \fi
12320 \endgroup
12321 }
12322 \def\@Submit[#1]#2{%
12323 \def\Fld@width{\DefaultWidthofSubmit}%
12324 \def\Fld@height{\DefaultHeightofSubmit}%
12325 \begingroup
12326 \expandafter\HyField@SetKeys\expandafter{%
12327 \DefaultOptionsofSubmit,#1%
12328 }%
12329 \HyField@FlagsPushButton
12330 \HyField@FlagsSubmit
12331 \ifFld@hidden\def\Fld@width{1sp}\fi
12332 \Hy@escapeform\PDFForm@Submit
12333 \pdfmark[\MakeButtonField{#2}]{%
12334 pdfmark=/ANN,%
12335 Raw={\PDFForm@Submit /AP << /N {Submit} /D {SubmitP} >>}%
12336 }%
12337 \endgroup
12338 }
12339 \def\@Reset[#1]#2{%
12340 \def\Fld@width{\DefaultWidthofReset}%
12341 \def\Fld@height{\DefaultHeightofReset}%
12342 \begingroup
12343 \expandafter\HyField@SetKeys\expandafter{%
12344 \DefaultOptionsofReset,#1%
12345 }%
12346 \leavevmode
12347 \ifHy@pdfa
12348 \Hy@Error{%
12349 PDF/A: Reset action is prohibited%
12350 }\@ehc
12351 \MakeButtonField{#2}%
12352 \else
12353 \HyField@FlagsPushButton
12354 \ifFld@hidden\def\Fld@width{1sp}\fi
12355 \Hy@escapeform\PDFForm@Reset
12356 \pdfmark[\MakeButtonField{#2}]{%
12357 pdfmark=/ANN,Raw={\PDFForm@Reset}%
12358 }%
12359 \fi
12360 \endgroup
12361 }%
12362 \def\@CheckBox[#1]#2{% parameters, label
12363 \def\Fld@name{#2}%
12364 \def\Fld@default{0}%
12365 \begingroup
12366 \def\Fld@width{\DefaultWidthofCheckBox}%
12367 \def\Fld@height{\DefaultHeightofCheckBox}%
12368 \expandafter\HyField@SetKeys\expandafter{%

```

```

12369 \DefaultOptionsofCheckBox,#1%
12370 }%
12371 \HyField@FlagsCheckBox
12372 \ifFld@hidden\def\Fld@width{1sp}\fi
12373 \LayoutCheckField{#2}{%
12374 \Hy@escapeform\PDFForm@Check
12375 \pdfmark[\MakeCheckField{\Fld@width}{\Fld@height}]{%
12376 pdfmark=/ANN,Raw={\PDFForm@Check}%
12377 }%
12378 }%
12379 \endgroup
12380 }
12381 \pdfmark

```

## 47.2 HyperTeX

```

12382 \hypertex
12383 \def\@Form[#1]{\Hy@Message{Sorry, HyperTeX does not support FORMs}}
12384 \def\@endForm{}
12385 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
12386 \Hy@Message{Sorry, HyperTeX does not support FORM gauges}%
12387 }
12388 \def\@TextField[#1]#2{% parameters, label
12389 \Hy@Message{Sorry, HyperTeX does not support FORM text fields}%
12390 }
12391 \def\@CheckBox[#1]#2{% parameters, label
12392 \Hy@Message{Sorry, HyperTeX does not support FORM checkboxes}%
12393 }
12394 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
12395 \Hy@Message{Sorry, HyperTeX does not support FORM choice menus}%
12396 }
12397 \def\@PushButton[#1]#2{% parameters, label
12398 \Hy@Message{Sorry, HyperTeX does not support FORM pushbuttons}%
12399 }
12400 \def\@Reset[#1]#2{\Hy@Message{Sorry, HyperTeX does not support FORMs}}
12401 \def\@Submit[#1]#2{\Hy@Message{Sorry, HyperTeX does not support FORMs}}
12402 \hypertex

```

## 47.3 TeX4ht

```

12403 \tex4ht
12404 \def\@Form[#1]{%
12405 \kvsetkeys{Form}{#1}%
12406 \HCode{<form action="\Form@action" method="\Form@method">}%
12407 }
12408 \def\@endForm{\HCode{</form>}}
12409 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
12410 \Hy@Message{Sorry, TeX4ht does not support gauges}%
12411 }
12412 \def\@TextField[#1]#2{% parameters, label
12413 \let\Hy@reserved@a\@empty
12414 \def\Fld@name{#2}%
12415 \def\Fld@default{}%
12416 \bgroup
12417 \Field@toks={}%
12418 \kvsetkeys{Field}{#1}%
12419 \HCode{<label for="\Fld@name">#2</label>}%
12420 \ifFld@password
12421 \@@PasswordField

```

```

12422 \else
12423 \@@TextField
12424 \fi
12425 \egroup
12426 }
12427 \def\@@PasswordField{%
12428 \HCode{%
12429 <input type="password" %
12430 id="\Fld@name" %
12431 name="\Fld@name" %
12432 \ifFld@hidden type="hidden" \fi
12433 value="\Fld@default" %
12434 \the\Field@toks
12435 >%
12436 }%
12437 }
12438 \def\@@TextField{%
12439 \ifFld@multiline
12440 \HCode{<textarea %
12441 \ifFld@readonly readonly \fi
12442 id="\Fld@name" %
12443 name="\Fld@name" %
12444 \ifFld@hidden type="hidden" \fi
12445 \the\Field@toks>%
12446 }%
12447 \Fld@default
12448 \HCode{</textarea>}%
12449 \else
12450 \HCode{<input type="text" %
12451 \ifFld@readonly readonly \fi
12452 id="\Fld@name" %
12453 name="\Fld@name" %
12454 \ifFld@hidden type="hidden" \fi
12455 value="\Fld@default" %
12456 \the\Field@toks>%
12457 }%
12458 \fi
12459 }
12460 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
12461 \def\Fld@name{#2}%
12462 \def\Fld@default{#3}%
12463 \let\Hy@reserved@a\relax
12464 \begingroup
12465 \expandafter\Fld@findlength#3\\%
12466 \Field@toks={ }%
12467 \kvsetkeys{Field}{#1}%
12468 #2%
12469 \ifFld@radio
12470 \expandafter\@@Radio#3\\%
12471 \else
12472 \expandafter\@@Menu#3\\%
12473 \fi
12474 \endgroup
12475 }
12476 \def\Fld@findlength#1\\{%
12477 \Fld@menulength=0 %
12478 \@for\@curropt:=#1\do{\Hy@StepCount\Fld@menulength}%

```

```

12479 }
12480 \def\@@Menu#1\{\%
12481 \HCode{<select size="\the\Fld@menulength" %
12482   name="\Fld@name" %
12483   \the\Field@toks>%
12484 }%
12485 \@for\@curropt:=#1\do{%
12486   \expandafter\Fld@checkequals\@curropt==\%
12487   \HCode{<option %
12488     \ifx\@curropt\Fld@default selected \fi
12489     value="\@currValue">\@currDisplay</option>%
12490   }%
12491 }%
12492 \HCode{</select>}%
12493 }
12494 \def\@@Radio#1\{\%
12495 \@for\@curropt:=#1\do{%
12496   \expandafter\Fld@checkequals\@curropt==\%
12497   \HCode{<input type="radio" %
12498     \ifx\@curropt\Fld@default checked \fi
12499     name="\Fld@name" %
12500     value="\@currValue" %
12501     \the\Field@toks>%
12502   }%
12503   \@currDisplay
12504 }%
12505 }
12506 \def\@PushButton[#1]#2{% parameters, label
12507 \def\Fld@name{#2}%
12508 \bgroup
12509 \Field@toks={ }%
12510 \kvsetkeys{Field}{#1}%
12511 \HCode{<input type="button" %
12512   name="\Fld@name" %
12513   value="#2" %
12514   \the\Field@toks>%
12515 }%
12516 \HCode{</button>}%
12517 \egroup
12518 }
12519 \def\@Submit[#1]#2{%
12520 \HCode{<button type="submit">#2</button>}%
12521 }
12522 \def\@Reset[#1]#2{%
12523 \HCode{<button type="reset">#2</button>}%
12524 }
12525 \def\@CheckBox[#1]#2{% parameters, label
12526 \let\Hy@reserved@a\@empty
12527 \def\Fld@name{#2}%
12528 \def\Fld@default{0}%
12529 \bgroup
12530 \Field@toks={ }%
12531 \kvsetkeys{Field}{#1}%
12532 \HCode{<input type="checkbox" %
12533   \ifFld@checked checked \fi
12534   \ifFld@disabled disabled \fi
12535   \ifFld@readonly readonly \fi

```

```

12536     name="\Fld@name" %
12537     \ifFld@hidden type="hidden" \fi
12538     value="\Fld@default" %
12539     \the\Fld@toks>%
12540     #2%
12541   }%
12542 \egroup
12543 }
12544 </tex4ht>

```

## 47.4 pdfTeX

```

12545 <*pdfTeX>
12546 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
12547   \Hy@Message{Sorry, pdfTeX does not support FORM gauges}%
12548 }
12549 \def\MakeFieldObject#1#2{\sbox0{#1}%
12550   \immediate\pdfxform0 %
12551   \expandafter\edef\csname #2Object\endcsname{%
12552     \the\pdfastxform\space 0 R%
12553   }%
12554 % \hbox to 0pt{\hskip-\maxdimen{\pdfrefxform \the\pdfastxform}}%
12555 }%
12556 \def\HyField@afields{}
12557 \begingroup\expandafter\expandafter\expandafter\endgroup
12558 \expandafter\ifx\csname pdfastlink\endcsname\relax
12559   \let\HyField@AddToFields\relax
12560   \PackageInfo{hyperref}{%
12561     You need pdfTeX 1.40.0 for setting the /Fields entry.%
12562     \MessageBreak
12563     Adobe Reader/Acrobat accepts an empty /Field array,%
12564     \MessageBreak
12565     but other PDF viewers might complain%
12566   }%
12567 \else
12568   \def\HyField@AuxAddToFields#1{%
12569     \def\HyField@AfterAuxOpen{\Hy@AtBeginDocument}%
12570     \Hy@AtBeginDocument{%
12571       \if@filesw
12572         \immediate\write\@mainaux{%
12573           \string\providecommand\string\HyField@AuxAddToFields[1]{}%
12574         }%
12575       \fi
12576       \let\HyField@AfterAuxOpen\@firstofone
12577       \def\HyField@AuxAddToFields#1{%
12578         \xdef\HyField@afields{%
12579           \ifx\HyField@afields\@empty
12580             \else
12581               \HyField@afields
12582             \space
12583           \fi
12584           #1 0 R%
12585         }%
12586       }%
12587     }%
12588     \def\HyField@AddToFields{%
12589       \expandafter\HyField@@AddToFields\expandafter{%
12590         \the\pdfastlink

```

```

12591 }%
12592 }%
12593 \def\HyField@@AddToFields#1{%
12594   \HyField@AfterAuxOpen{%
12595     \if@filesw
12596       \write\@mainaux{%
12597         \string\HyField@AuxAddToFields{#1}%
12598       }%
12599     \fi
12600   }%
12601 }%
12602 \fi
12603 \def\@Form[#1]{%
12604   \@ifundefined{textcolor}{\let\textcolor\@gobble}{}%
12605   \kvsetkeys{Form}{#1}%
12606   \pdf@ifdraftmode{}{%
12607     \Hy@FormObjects
12608     \ifnum\pdfTeXversion>13 %
12609       \pdfrefobj\OBJ@pdfdocencoding
12610       \pdfrefobj\OBJ@ZaDb
12611       \pdfrefobj\OBJ@Helv
12612     \fi
12613     \AtVeryEndDocument{%
12614       \immediate\pdfobj{%
12615         <<%
12616         /Fields[\HyField@afields]%
12617         /DR<<%
12618         /Font<<%
12619         /ZaDb \OBJ@ZaDb\space 0 R%
12620         /Helv \OBJ@Helv\space 0 R%
12621         >>%
12622         >>%
12623         /DA(/Helv 10 Tf 0 g)%
12624         \ifHy@pdfa
12625         \else
12626           \ifHyField@NeedAppearances
12627             /NeedAppearances true%
12628           \fi
12629         \fi
12630         >>%
12631       }%
12632       \edef\OBJ@acroform{\the\pdflastobj}%
12633       \pdfcatalog{/AcroForm \OBJ@acroform\space 0 R}%
12634     }%
12635   }%
12636   \MakeFieldObject{%
Same as \ding{123} of package pifont.
12637   \begingroup
12638     \fontfamily{pzd}%
12639     \fontencoding{U}%
12640     \fontseries{m}%
12641     \fontshape{n}%
12642     \selectfont
12643     \char123 %
12644   \endgroup
12645   }{Ding}%
12646   \MakeFieldObject{%

```

```

12647 \fbox{\textcolor{yellow}{\textsf{Submit}}}%
12648 }{Submit}%
12649 \MakeFieldObject{%
12650 \fbox{\textcolor{yellow}{\textsf{SubmitP}}}%
12651 }{SubmitP}%
12652 }
12653 \def\@endForm{}
12654 \def\@TextField[#1]#2{% parameters, label
12655 \def\Fld@name{#2}%
12656 \def\Fld@default{}%
12657 \let\Fld@value\@empty
12658 \def\Fld@width{\DefaultWidthofText}%
12659 \def\Fld@height{%
12660 \ifFld@multiline
12661 \DefaultHeightofTextMultiline
12662 \else
12663 \DefaultHeightofText
12664 \fi
12665 }%
12666 \begingroup
12667 \expandafter\HyField@SetKeys\expandafter{%
12668 \DefaultOptionsofText,#1%
12669 }%
12670 \PDFForm@Name
12671 \HyField@FlagsText
12672 \ifFld@hidden\def\Fld@width{1sp}\fi
12673 \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
12674 \LayoutTextField{#2}{%
12675 \Hy@escapeform\PDFForm@Text
12676 \pdfstartlink user {\PDFForm@Text}\relax
12677 \MakeTextField{\Fld@width}{\Fld@height}\pdfendlink
12678 \HyField@AddToFields
12679 }%
12680 \endgroup
12681 }
12682 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
12683 \def\Fld@name{#2}%
12684 \let\Fld@default\relax
12685 \let\Fld@value\relax
12686 \def\Fld@width{\DefaultWidthofChoiceMenu}%
12687 \def\Fld@height{\DefaultHeightofChoiceMenu}%
12688 \begingroup
12689 \Fld@menulength=0 %
12690 \@tempdima\z@
12691 \@for\@curropt:=#3\do{%
12692 \expandafter\Fld@checkequals\@curropt==\%
12693 \Hy@StepCount\Fld@menulength
12694 \settowidth{\@tempdimb}{\@currDisplay}%
12695 \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
12696 }%
12697 \advance\@tempdima by 15\p@
12698 \begingroup
12699 \HyField@SetKeys{#1}%
12700 \edef\x{\endgroup
12701 \noexpand\expandafter
12702 \noexpand\HyField@SetKeys
12703 \noexpand\expandafter{%

```



```

12704 \expandafter\noexpand\csname DefaultOptionsof%
12705 \ifFld@radio
12706 Radio%
12707 \else
12708 \ifFld@combo
12709 \ifFld@popdown
12710 PopdownBox%
12711 \else
12712 ComboBox%
12713 \fi
12714 \else
12715 ListBox%
12716 \fi
12717 \fi
12718 \endcsname
12719 }%
12720 }\x
12721 \HyField@SetKeys{#1}%
12722 \PDFForm@Name
12723 \ifFld@hidden\def\Fld@width{1sp}\fi
12724 \ifx\Fld@value\relax
12725 \let\Fld@value\Fld@default
12726 \fi
12727 \LayoutChoiceField{#2}{%
12728 \ifFld@radio
12729 \HyField@FlagsRadioButton
12730 \@@Radio{#3}%
12731 \else
12732 \begingroup
12733 \HyField@FlagsChoice
12734 \ifdim\Fld@width<\@tempdima
12735 \ifdim\@tempdima<1cm\@tempdima1cm\fi
12736 \edef\Fld@width{\the\@tempdima}%
12737 \fi
12738 \ifFld@combo
12739 \else
12740 \@tempdima=\the\Fld@menulength\Fld@charsize
12741 \advance\@tempdima by \Fld@borderwidth bp %
12742 \advance\@tempdima by \Fld@borderwidth bp %
12743 \edef\Fld@height{\the\@tempdima}%
12744 \fi
12745 \@@ListBox{#3}%
12746 \endgroup
12747 \fi
12748 }%
12749 \endgroup
12750 }
12751 \def\@@Radio#1{%
12752 \Fld@listcount=0 %
12753 \EdefEscapeName\Fld@default{\Fld@default}%
12754 \@for\@curropt:=#1\do{%
12755 \expandafter\Fld@checkequals\@curropt==\%
12756 \EdefEscapeName\@currValue{\@currValue}%
12757 \Hy@StepCount\Fld@listcount
12758 \@currDisplay\space
12759 \leavevmode
12760 \Hy@escapeform\PDFForm@Radio

```

```

12761 \pdfstartlink user {%
12762 \PDFForm@Radio
12763 /AP<<%
12764 /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.

```

12765 /\@currValue\space \DingObject
12766 >>%
12767 >>%
12768 }%
12769 \relax
12770 \MakeRadioField{\Fld@width}{\Fld@height}\pdfendlink
12771 \ifnum\Fld@listcount=1 %
12772 \HyField@AddToFields
12773 \fi
12774 \space % deliberate space between radio buttons
12775 }%
12776 }
12777 \newcount\Fld@listcount
12778 \def\@@ListBox#1{%
12779 \HyField@PDFChoices{#1}%
12780 \leavevmode
12781 \Hy@escapeform\PDFForm@List
12782 \pdfstartlink user {\PDFForm@List}\relax
12783 \MakeChoiceField{\Fld@width}{\Fld@height}%
12784 \pdfendlink
12785 \HyField@AddToFields
12786 }
12787 \def\@PushButton[#1]#2{% parameters, label
12788 \def\Fld@name{#2}%
12789 \begingroup
12790 \expandafter\HyField@SetKeys\expandafter{%
12791 \DefaultOptionsofPushButton,#1%
12792 }%
12793 \PDFForm@Name
12794 \ifHy@pdfa
12795 \Hy@Error{%
12796 PDF/A: Push button with JavaScript is prohibited%
12797 }\@ehc
12798 \LayoutPushButtonField{%
12799 \leavevmode
12800 \MakeButtonField{#2}%
12801 }%
12802 \else
12803 \HyField@FlagsPushButton
12804 \ifFld@hidden\def\Fld@width{1sp}\fi
12805 \LayoutPushButtonField{%
12806 \leavevmode
12807 \Hy@escapeform\PDFForm@Push
12808 \pdfstartlink user {\PDFForm@Push}\relax
12809 \MakeButtonField{#2}%
12810 \pdfendlink
12811 \HyField@AddToFields
12812 }%
12813 \fi
12814 \endgroup

```

```

12815 }
12816 \def\@Submit[#1]#2{%
12817   \def\Fld@width{\DefaultWidthofSubmit}%
12818   \def\Fld@height{\DefaultHeightofSubmit}%
12819   \begingroup
12820     \expandafter\HyField@SetKeys\expandafter{%
12821       \DefaultOptionsofSubmit,#1%
12822     }%
12823     \HyField@FlagsPushButton
12824     \HyField@FlagsSubmit
12825     \ifFld@hidden\def\Fld@width{1sp}\fi
12826     \leavevmode
12827     \Hy@escapeform\PDFForm@Submit
12828     \pdfstartlink user {%
12829       \PDFForm@Submit
12830       /AP<</N \SubmitObject/D \SubmitPObject>>%
12831     }%
12832     \relax
12833     \MakeButtonField{#2}%
12834     \pdfendlink
12835     \HyField@AddToFields
12836   \endgroup
12837 }
12838 \def\@Reset[#1]#2{%
12839   \def\Fld@width{\DefaultWidthofReset}%
12840   \def\Fld@height{\DefaultHeightofReset}%
12841   \begingroup
12842     \expandafter\HyField@SetKeys\expandafter{%
12843       \DefaultOptionsofReset,#1%
12844     }%
12845     \leavevmode
12846     \ifHy@pdfa
12847       \Hy@Error{%
12848         PDF/A: Reset action is prohibited%
12849       }\@ehc
12850       \MakeButtonField{#2}%
12851     \else
12852       \HyField@FlagsPushButton
12853       \ifFld@hidden\def\Fld@width{1sp}\fi
12854       \Hy@escapeform\PDFForm@Reset
12855       \pdfstartlink user {\PDFForm@Reset}\relax
12856       \MakeButtonField{#2}%
12857       \pdfendlink
12858       \HyField@AddToFields
12859     \fi
12860   \endgroup
12861 }
12862 \def\@CheckBox[#1]#2{% parameters, label
12863   \def\Fld@name{#2}%
12864   \def\Fld@default{0}%
12865   \begingroup
12866     \def\Fld@width{\DefaultWidthofCheckBox}%
12867     \def\Fld@height{\DefaultHeightofCheckBox}%
12868     \expandafter\HyField@SetKeys\expandafter{%
12869       \DefaultOptionsofCheckBox,#1%
12870     }%
12871     \PDFForm@Name

```

```

12872 \HyField@FlagsCheckBox
12873 \ifFld@hidden\def\Fld@width{1sp}\fi
12874 \LayoutCheckField{#2}{%
12875 \Hy@escapeform\PDFForm@Check
12876 \pdfstartlink user {\PDFForm@Check}\relax
12877 \MakeCheckField{\Fld@width}{\Fld@height}%
12878 \pdfendlink
12879 \HyField@AddToFields
12880 }%
12881 \endgroup
12882 }
12883 \def\Hy@FormObjects{%
12884 \pdfobj {%
12885 <<%
12886 /Type/Encoding%
12887 /Differences[%
12888 24/breve/caron/circumflex/dotaccent/hungarumlaut/ogonek%
12889 /ring/tilde %
12890 39/quotesingle %
12891 96/grave %
12892 128/bullet/dagger/daggerdbl/ellipsis/emdash/endash/florin%
12893 /fraction/guilsinglleft/guilsinglright/minus/perthousand%
12894 /quotedblbase/quotedblleft/quotedblright/quoteleft%
12895 /quoteright/quotesinglbase/trademark/fi/fl/Lslash/OE%
12896 /Scaron/Ydieresis/Zcaron/dotlessi/lslash/oe/scaron/zcaron %
12897 164/currency %
12898 166/brokenbar %
12899 168/dieresis/copyright/ordfeminine %
12900 172/logicalnot/.notdef/registered/macron/degree/plusminus%
12901 /twosuperior/threesuperior/acute/mu %
12902 183/periodcentered/cedilla/onesuperior/ordmasculine %
12903 188/onequarter/onehalf/threequarters %
12904 192/Agrave/Aacute/Acircumflex/Atilde/Adieresis/Aring/AE%
12905 /Ccedilla/Egrave/Eacute/Ecircumflex/Edieresis/Igrave%
12906 /Iacute/Icircumflex/Idieresis/Eth/Ntilde/Ograve/Oacute%
12907 /Ocircumflex/Otilde/Odieresis/multiply/Oslash/Ugrave%
12908 /Uacute/Ucircumflex/Udieresis/Yacute/Thorn/germandbls%
12909 /agrave/aacute/acircumflex/atilde/adieresis/aring/ae%
12910 /ccedilla/egrave/eacute/ecircumflex/edieresis/igrave%
12911 /iacute/icircumflex/idieresis/eth/ntilde/ograde/oacute%
12912 /ocircumflex/otilde/odieresis/divide/oslash/ugrave%
12913 /uacute/ucircumflex/udieresis/yacute/thorn/ydieresis%
12914 ]%
12915 >>%
12916 }%
12917 \xdef\OBJ@pdfdocencoding{\the\pdflastobj}%
12918 \pdfobj{%
12919 <<%
12920 /Type/Font%
12921 /Subtype/Type1%
12922 /Name/ZaDb%
12923 /BaseFont/ZapfDingbats%
12924 >>%
12925 }%
12926 \xdef\OBJ@ZaDb{\the\pdflastobj}%
12927 \pdfobj{%
12928 <<%

```

```

12929 /Type/Font%
12930 /Subtype/Type1%
12931 /Name/Helv%
12932 /BaseFont/Helvetica%
12933 /Encoding \OBJ@pdfdocencoding\space 0 R%
12934 >>%
12935 }%
12936 \xdef\OBJ@Helv{\the\pdfastobj}%
12937 \global\let\Hy@FormObjects\relax
12938 }
12939 </pdfTeX>

```

## 47.5 dvipdfm, xetex

D. P. Story adapted the pdf<sub>T</sub>E<sub>X</sub> forms part for dvipdfm, of which version 0.12.7b or higher is required because of a bug.

```
12940 < *dvipdfm | xetex>
```

\@Gauge

```

12941 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
12942 \Hy@Message{Sorry, dvipdfm/XeTeX does not support FORM gauges}%
12943 }

```

\@Form

```

12944 \def\@Form[#1]{%
12945 \@ifundefined{textcolor}{\let\textcolor\@gobble}{}%
12946 \kvsetkeys{Form}{#1}%
12947 \Hy@FormObjects
12948 \@pdfm@mark{obj @afields []}%
12949 \@pdfm@mark{obj @corder []}%
12950 \@pdfm@mark{%
12951 obj @aform <<%
12952 /Fields @afields%
12953 /DR<<%
12954 /Font<<%
12955 /ZaDb @OBJZaDb%
12956 /Helv @OBJHelv%
12957 >>%
12958 >>%
12959 /DA(/Helv 10 Tf 0 g)%
12960 /CO @corder%
12961 \ifHy@pdfa
12962 \else
12963 \ifHyField@NeedAppearances
12964 /NeedAppearances true%
12965 \fi
12966 \fi
12967 >>%
12968 }%
12969 \@pdfm@mark{put @catalog <</AcroForm @aform>>}%
12970 }

```

\@endForm

```
12971 \def\@endForm{}
```

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

```
12972 \def\dvipdfm@setdim{%
```

```

12973 height \the\ht\pdfm@box\space
12974 width \the\wd\pdfm@box\space
12975 depth \the\dp\pdfm@box\space
12976 }

```

\HyField@AnnotCount

```

12977 \newcount\HyField@AnnotCount
12978 \HyField@AnnotCount=\z@

```

\HyField@AdvanceAnnotCount

```

12979 \def\HyField@AdvanceAnnotCount{%
12980 \global\advance\HyField@AnnotCount\@ne
12981 }

```

\HyField@TheAnnotCount

```

12982 \def\HyField@TheAnnotCount{%
12983 \the\HyField@AnnotCount
12984 }

```

\@TextField

```

12985 \def\@TextField[#1]#2{% parameters, label
12986 \def\Fld@name{#2}%
12987 \def\Fld@default{}%
12988 \let\Fld@value\@empty
12989 \def\Fld@width{\DefaultWidthofText}%
12990 \def\Fld@height{%
12991 \ifFld@multiline
12992 \DefaultHeightofTextMultiline
12993 \else
12994 \DefaultHeightofText
12995 \fi
12996 }%
12997 \begingroup
12998 \expandafter\HyField@SetKeys\expandafter{%
12999 \DefaultOptionsofText,#1%
13000 }%
13001 \PDFForm@Name
13002 \HyField@FlagsText
13003 \ifFld@hidden\def\Fld@width{1sp}\fi
13004 \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
13005 \setbox\pdfm@box=\hbox{%
13006 \MakeTextField{\Fld@width}{\Fld@height}%
13007 }%
13008 \HyField@AdvanceAnnotCount
13009 \LayoutTextField{#2}{%
13010 \Hy@escapeform\PDFForm@Text
13011 \@pdfm@mark{%
13012 ann @text\HyField@TheAnnotCount\space
13013 \dvipdfm@setdim << \PDFForm@Text >>%
13014 }%
13015 }%
13016 \unhbox\pdfm@box
13017 \@pdfm@mark{put @afields @text\HyField@TheAnnotCount}%
13018 % record in @afields array
13019 \endgroup
13020 }

```

\@ChoiceMenu

```

13021 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
13022 \def\Fld@name{#2}%
13023 \let\Fld@default\relax
13024 \let\Fld@value\relax
13025 \def\Fld@width{\DefaultWidthofChoiceMenu}%
13026 \def\Fld@height{\DefaultHeightofChoiceMenu}%
13027 \begingroup
13028 \Fld@menulength=0 %
13029 \@tempdima\z@
13030 \@for\@curropt:=#3\do{%
13031 \expandafter\Fld@checkequals\@curropt==\%
13032 \Hy@StepCount\Fld@menulength
13033 \settowidth{\@tempdimb}{\@currDisplay}%
13034 \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
13035 }%
13036 \advance\@tempdima by 15\p@
13037 \begingroup
13038 \HyField@SetKeys{#1}%
13039 \edef\x{\endgroup
13040 \noexpand\expandafter
13041 \noexpand\HyField@SetKeys
13042 \noexpand\expandafter{%
13043 \expandafter\noexpand\csname DefaultOptionsof%
13044 \ifFld@radio
13045 Radio%
13046 \else
13047 \ifFld@combo
13048 \ifFld@popdown
13049 PopdownBox%
13050 \else
13051 ComboBox%
13052 \fi
13053 \else
13054 ListBox%
13055 \fi
13056 \fi
13057 \endcsname
13058 }%
13059 }\x
13060 \HyField@SetKeys{#1}%
13061 \PDFForm@Name
13062 \ifFld@hidden\def\Fld@width{1sp}\fi
13063 \ifx\Fld@value\relax
13064 \let\Fld@value\Fld@default
13065 \fi
13066 \LayoutChoiceField{#2}{%
13067 \ifFld@radio
13068 \HyField@FlagsRadioButton
13069 \@@Radio{#3}%
13070 \else
13071 \begingroup
13072 \HyField@FlagsChoice
13073 \ifdim\Fld@width<\@tempdima
13074 \ifdim\@tempdima<1cm\@tempdima1cm\fi
13075 \edef\Fld@width{the\@tempdima}%
13076 \fi

```

```

13077      \ifFld@combo
13078      \else
13079      \@tempdima=\the\Fld@menulength\Fld@charsize
13080      \advance\@tempdima by \Fld@borderwidth bp %
13081      \advance\@tempdima by \Fld@borderwidth bp %
13082      \edef\Fld@height{\the\@tempdima}%
13083      \fi
13084      \@@Listbox{#3}%
13085      \endgroup
13086      \fi
13087      }%
13088      \endgroup
13089      }

```

\@@Radio

```

13090 \def\@@Radio#1{%
13091   \Fld@listcount=0 %
13092   \EdefEscapeName\Fld@default{\Fld@default}%
13093   \setbox\pdfm@box=\hbox{%
13094     \MakeRadioField{\Fld@width}{\Fld@height}%
13095   }%
13096   \@for\@curropt:=#1\do{%
13097     \expandafter\Fld@checkequals\@curropt==\\%
13098     \EdefEscapeName\@currValue{\@currValue}%
13099     \Hy@StepCount\Fld@listcount
13100     \@currDisplay\space
13101     \leavevmode
13102     \Hy@escapeform\PDFForm@Radio
13103     \ifnum\Fld@listcount=1 %
13104       \HyField@AdvanceAnnotCount
13105     \fi
13106     \@pdfm@mark{%
13107       ann %
13108       \ifnum\Fld@listcount=1 %
13109         @radio\HyField@TheAnnotCount%
13110       \space
13111     \fi
13112     \dvi pdfm@setdim
13113     <<%
13114     \PDFForm@Radio
13115     /AP<</N<</\@currValue /null>>>>%
13116     >>%
13117   }%
13118   \unhcopy\pdfm@box\space% deliberate space between radio buttons
13119   \ifnum\Fld@listcount=1 %
13120     \@pdfm@mark{%
13121       put @afields @radio\HyField@TheAnnotCount
13122     }%
13123   \fi
13124   }%
13125 }

```

\Fld@listcount

```

13126 \newcount\Fld@listcount

```

\@@Listbox

```

13127 \def\@@Listbox#1{%

```



```

13128 \HyField@PDFChoices{#1}%
13129 \setbox\pdfm@box=\hbox{%
13130   \MakeChoiceField{\Fld@width}{\Fld@height}%
13131 }%
13132 \leavevmode
13133 \Hy@escapeform\PDFForm@List
13134 \HyField@AdvanceAnnotCount
13135 \@pdfm@mark{%
13136   ann @list\HyField@TheAnnotCount\space
13137   \dvipdfm@setdim
13138   <<\PDFForm@List>>%
13139 }%
13140 \unhbox\pdfm@box
13141 \@pdfm@mark{put @afields @list\HyField@TheAnnotCount}%
13142 }

```

\@PushButton

```

13143 \def\@PushButton[#1]#2{% parameters, label
13144   \def\Fld@name{#2}%
13145   \begingroup
13146     \expandafter\HyField@SetKeys\expandafter{%
13147       \DefaultOptionsofPushButton,#1%
13148     }%
13149     \PDFForm@Name
13150     \ifHy@pdfa
13151       \Hy@Error{%
13152         PDF/A: Push button with JavaScript is prohibited%
13153       }\@ehc
13154       \LayoutPushButtonField{%
13155         \leavevmode
13156         \MakeButtonField{#2}%
13157       }%
13158     \else
13159       \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
13160       \HyField@FlagsPushButton
13161       \ifFld@hidden\def\Fld@width{1sp}\fi
13162       \HyField@AdvanceAnnotCount
13163       \LayoutPushButtonField{%
13164         \leavevmode
13165         \Hy@escapeform\PDFForm@Push
13166         \@pdfm@mark{%
13167           ann @push\HyField@TheAnnotCount\space
13168           \dvipdfm@setdim
13169           <<\PDFForm@Push>>%
13170         }%
13171       }%
13172       \unhbox\pdfm@box
13173       \@pdfm@mark{put @afields @push\HyField@TheAnnotCount}%
13174     \fi
13175   \endgroup
13176 }

```

\@Submit

```

13177 \def\@Submit[#1]#2{%
13178   \def\Fld@width{\DefaultWidthofSubmit}%
13179   \def\Fld@height{\DefaultHeightofSubmit}%
13180   \begingroup

```

```

13181 \expandafter\HyField@SetKeys\expandafter{%
13182 \DefaultOptionsofSubmit,#1%
13183 }%
13184 \HyField@FlagsPushButton
13185 \HyField@FlagsSubmit
13186 \ifFld@hidden\def\Fld@width{1sp}\fi
13187 \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
13188 \leavevmode
13189 \Hy@escapeform\PDFForm@Submit
13190 \HyField@AdvanceAnnotCount
13191 \@pdfm@mark{%
13192 ann @submit\HyField@TheAnnotCount\space
13193 \dvipdfm@setdim
13194 <<\PDFForm@Submit>>%
13195 }%
13196 \unhbox\pdfm@box%
13197 \@pdfm@mark{put @afields @submit\HyField@TheAnnotCount}%
13198 \endgroup
13199 }

```

\@Reset

```

13200 \def\@Reset[#1]#2{%
13201 \def\Fld@width{\DefaultWidthofReset}%
13202 \def\Fld@height{\DefaultHeightofReset}%
13203 \begingroup
13204 \expandafter\HyField@SetKeys\expandafter{%
13205 \DefaultOptionsofReset,#1%
13206 }%
13207 \leavevmode
13208 \ifHy@pdfa
13209 \Hy@Error{%
13210 PDF/A: Reset action is prohibited%
13211 }\@ehc
13212 \MakeButtonField{#2}%
13213 \else
13214 \HyField@FlagsPushButton
13215 \ifFld@hidden\def\Fld@width{1sp}\fi
13216 \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
13217 \Hy@escapeform\PDFForm@Reset
13218 \HyField@AdvanceAnnotCount
13219 \@pdfm@mark{%
13220 ann @reset\HyField@TheAnnotCount\space
13221 \dvipdfm@setdim
13222 <<\PDFForm@Reset>>%
13223 }%
13224 \unhbox\pdfm@box
13225 \@pdfm@mark{put @afields @reset\HyField@TheAnnotCount}%
13226 \fi
13227 \endgroup
13228 }

```

\@CheckBox

```

13229 \def\@CheckBox[#1]#2{% parameters, label
13230 \def\Fld@name{#2}%
13231 \def\Fld@default{0}%
13232 \begingroup
13233 \def\Fld@width{\DefaultWidthofCheckBox}%

```

```

13234 \def\Fld@height{\DefaultHeightofCheckBox}%
13235 \expandafter\HyField@SetKeys\expandafter{%
13236 \DefaultOptionsofCheckBox,#1%
13237 }%
13238 \PDFForm@Name
13239 \HyField@FlagsCheckBox
13240 \ifFld@hidden\def\Fld@width{1sp}\fi
13241 \setbox\pdfm@box=\hbox{%
13242 \MakeCheckField{\Fld@width}{\Fld@height}%
13243 }%
13244 \HyField@AdvanceAnnotCount
13245 \LayoutCheckField{#2}{%
13246 \Hy@escapeform\PDFForm@Check
13247 \@pdfm@mark{%
13248 ann @check\HyField@TheAnnotCount\space
13249 \dvipdfm@setdim
13250 <<\PDFForm@Check>>%
13251 }%
13252 \unhbox\pdfm@box
13253 \@pdfm@mark{put @afields @check\HyField@TheAnnotCount}%
13254 }%
13255 \endgroup
13256 }

13257 \def\Hy@FormObjects{%
13258 \@pdfm@mark{obj @OBJpdfdocencoding%
13259 <<%
13260 /Type/Encoding%
13261 /Differences%
13262 24/breve/caron/circumflex/dotaccent/hungarumlaut/ogonek/ring/tilde %
13263 39/quotesingle %
13264 96/grave %
13265 128/bullet/dagger/daggerdbl/ellipsis/emdash/endash/florin%
13266 /fraction/guilsingleft/guilsingright/minus/perthousand%
13267 /quotedblbase/quotedblleft/quotedblright/quoteleft/quoteright%
13268 /quotesinglbase/trademark/fi/fl/Lslash/OE/Scaron/Ydieresis%
13269 /Zcaron/dotlessi/lslash/oe/scaron/zcaron %
13270 164/currency %
13271 166/brokenbar %
13272 168/dieresis/copyright/ordfeminine %
13273 172/logicalnot/.notdef/registered/macron/degree/plusminus%
13274 /twosuperior/threesuperior/acute/mu %
13275 183/periodcentered/cedilla/onesuperior/ordmasculine %
13276 188/onequarter/onehalf/threequarters %
13277 192/Agrave/Aacute/Acircumflex/Atilde/Adieresis/Aring/AE%
13278 /Ccedilla/Egrave/Eacute/Ecircumflex/Edieresis/Igrave/Iacute%
13279 /Icircumflex/Idieresis/Eth/Ntilde/Ograve/Oacute/Ocircumflex%
13280 /Otilde/Odieresis/multiply/Oslash/Ugrave/Uacute/Ucircumflex%
13281 /Udieresis/Yacute/Thorn/germandbls/agrave/aacute/acircumflex%
13282 /atilde/adieresis/aring/ae/ccedilla/egrave/eacute%
13283 /ecircumflex/edieresis/igrave/iacute/icircumflex/idieresis%
13284 /eth/ntilde/ograve/oacute/ocircumflex/otilde/odieresis%
13285 /divide/oslash/ugrave/uacute/ucircumflex/udieresis/yacute%
13286 /thorn/ydieresis%
13287 ]%
13288 >>%
13289 }%
13290 \@pdfm@mark{obj @OBJZaDb%

```

```

13291 <<%
13292 /Type/Font%
13293 /Subtype/Type1%
13294 /Name/ZaDb%
13295 /BaseFont/ZapfDingbats%
13296 >>%
13297 }%
13298 \@pdfm@mark{obj @OBJHelv%
13299 <<%
13300 /Type/Font%
13301 /Subtype/Type1%
13302 /Name/Helv%
13303 /BaseFont/Helvetica%
13304 /Encoding @OBJpdfdocencoding%
13305 >>%
13306 }%
13307 \global\let\Hy@FormObjects\relax
13308 }
13309 </dvipdfm | xetex>

```

## 47.6 Common forms part

```
13310 <*pdfform>
```

\Hy@escapestring

```

13311 \begingroup\expandafter\expandafter\expandafter\endgroup
13312 \expandafter\ifx\csname pdfescapestring\endcsname\relax
13313 \let\Hy@escapestring\@firstofone
13314 \def\Hy@escapeform#1{%
13315 \ifHy@escapeform
13316 \def\Hy@escapestring##1{%
13317 \noexpand\Hy@escapestring{\noexpand##1}%
13318 }%
13319 \edef\Hy@temp{#1}%
13320 \expandafter\Hy@@escapeform\Hy@temp\Hy@escapestring{ }\@nil
13321 \def\Hy@escapestring##1{%
13322 \@ifundefined{Hy@esc@\string##1}{%
13323 ##1%
13324 \ThisShouldNotHappen
13325 }{%
13326 \csname Hy@esc@\string##1\endcsname
13327 }%
13328 }%
13329 \else
13330 \let\Hy@escapestring\@firstofone
13331 \fi
13332 }%
13333 \def\Hy@@escapeform#1\Hy@escapestring#2#3\@nil{%
13334 \ifx\#3\%
13335 \else
13336 \expandafter
13337 \Hy@pstringdef\csname Hy@esc@\string#2\endcsname{#2}%
13338 \Hy@ReturnAfterFi{%
13339 \Hy@@escapeform#3\@nil
13340 }%
13341 \fi
13342 }%

```

```

13343 \else
13344   \def\Hy@escapeform#1{%
13345     \ifHy@escapeform
13346       \let\Hy@escapestring\pdfescapestring
13347     \else
13348       \let\Hy@escapestring\@firstofone
13349     \fi
13350   }%
13351   \Hy@escapeform{}}%
13352 \fi

```

#### \PDFForm@Name

```

13353 \def\PDFForm@Name{%
13354   \PDFForm@@Name\Fld@name
13355   \ifx\Fld@altname\relax
13356   \else
13357     \PDFForm@@Name\Fld@altname
13358   \fi
13359   \ifx\Fld@mappingname\relax
13360   \else
13361     \PDFForm@@Name\Fld@mappingname
13362   \fi
13363 }

```

#### \PDFForm@@Name

```

13364 \def\PDFForm@@Name#1{%
13365   \begingroup
13366   \ifnum\Hy@pdfversion<5 % implementation note 117, PDF spec 1.7
13367     \ifHy@unicode
13368       \Hy@unicodedefalse
13369     \fi
13370   \fi
13371   \HyPsd@XeTeXBigCharstrue
13372   \pdfstringdef\Hy@gtemp#1%
13373 \endgroup
13374 \let#1\Hy@gtemp
13375 }

```

#### \Fld@additionalactions

```

13376 \def\Fld@@additionalactions{%
K input (keystroke) format
13377   \ifx\Fld@keystroke@code\@empty
13378   \else
13379     /K<</S/JavaScript/JS(\Hy@escapestring{\Fld@keystroke@code})>>%
13380   \fi
F display format
13381   \ifx\Fld@format@code\@empty
13382   \else
13383     /F<</S/JavaScript/JS(\Hy@escapestring{\Fld@format@code})>>%
13384   \fi
V validation
13385   \ifx\Fld@validate@code\@empty
13386   \else
13387     /V<</S/JavaScript/JS(\Hy@escapestring{\Fld@validate@code})>>%
13388   \fi

```

## C calculation

```
13389 \ifx\Fld@calculate@code\@empty
13390 \else
13391 /C<</S/JavaScript/JS(\Hy@escapestring{\Fld@calculate@code})>>%
13392 \fi
```

## Fo receiving the input focus

```
13393 \ifx\Fld@onfocus@code\@empty
13394 \else
13395 /Fo<</S/JavaScript/JS(\Hy@escapestring{\Fld@onfocus@code})>>%
13396 \fi
```

## Bl loosing the input focus (blurred)

```
13397 \ifx\Fld@onblur@code\@empty
13398 \else
13399 /Bl<</S/JavaScript/JS(\Hy@escapestring{\Fld@onblur@code})>>%
13400 \fi
```

## D pressing the mouse button (down)

```
13401 \ifx\Fld@onmousedown@code\@empty
13402 \else
13403 /D<</S/JavaScript/JS(\Hy@escapestring{\Fld@onmousedown@code})>>%
13404 \fi
```

## U releasing the mouse button (up)

```
13405 \ifx\Fld@onmouseup@code\@empty
13406 \else
13407 /U<</S/JavaScript/JS(\Hy@escapestring{\Fld@onmouseup@code})>>%
13408 \fi
```

## E cursor enters the annotation's active area.

```
13409 \ifx\Fld@onenter@code\@empty
13410 \else
13411 /E<</S/JavaScript/JS(\Hy@escapestring{\Fld@onenter@code})>>%
13412 \fi
```

## X cursor exits the annotation's active area.

```
13413 \ifx\Fld@onexit@code\@empty
13414 \else
13415 /X<</S/JavaScript/JS(\Hy@escapestring{\Fld@onexit@code})>>%
13416 \fi
13417 }
13418 \def\Fld@additionalactions{%
13419 \if\Fld@@additionalactions-%
13420 \else
13421 \ifHy@pdfa
13422 \else
13423 /AA<<\Fld@@additionalactions>>%
13424 \fi
13425 \fi
13426 }
```

## \Fld@annotnames

```
13427 \def\Fld@annotnames{%
13428 /T(\Fld@name)%
13429 \ifx\Fld@altname\relax
13430 \else
13431 /TU(\Fld@altname)%
13432 \fi
```

```

13433 \ifx\Fld@mappingname\relax
13434 \else
13435 /TM(\Fld@mappingname)%
13436 \fi
13437 }

```

#### \PDFForm@Check

```

13438 \def\PDFForm@Check{%
13439 /Subtype/Widget%
13440 \Fld@annotflags
13441 \Fld@annotnames
13442 /FT/Btn%
13443 \Fld@flags
13444 /Q \Fld@align
13445 /BS<</W \Fld@borderwidth /S/\Fld@borderstyle>>%
13446 /MK<<%
13447 \ifnum\Fld@rotation=\z@
13448 \else
13449 /R \Fld@rotation
13450 \fi
13451 \ifx\Fld@bordercolor\relax
13452 \else
13453 /BC[\Fld@bordercolor]%
13454 \fi
13455 \ifx\Fld@bcolor\relax
13456 \else
13457 /BG[\Fld@bcolor]%
13458 \fi
13459 /CA(\Hy@escapestring{\Fld@cbsymbol})%
13460 >>%
13461 /DA(/ZaDb \strip@pt\Fld@charsize\space Tf%
13462 \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
13463 /H/P%
13464 \ifFld@checked /V/Yes\else /V/Off\fi
13465 \Fld@additionalactions
13466 }

```

#### \PDFForm@Push

```

13467 \ifHy@pdfa
13468 \else
13469 \def\PDFForm@Push{%
13470 /Subtype/Widget%
13471 \Fld@annotflags
13472 \Fld@annotnames
13473 /FT/Btn%
13474 \Fld@flags
13475 /H/P%
13476 /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
13477 \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
13478 \ifx\Fld@bordercolor\relax\else 1\fi
13479 \space
13480 \else
13481 /MK<<%
13482 \ifnum\Fld@rotation=\z@
13483 \else
13484 /R \Fld@rotation
13485 \fi

```

```

13486     \ifx\Fld@bordercolor\relax
13487     \else
13488     /BC[\Fld@bordercolor]%
13489     \fi
13490     >>%
13491     \fi
13492     /A<</S/JavaScript/JS(\Hy@escapestring{\Fld@onclick@code})>>%
13493     \Fld@additionalactions
13494   }%
13495 \fi

```

#### \PDFForm@List

```

13496 \def\PDFForm@List{%
13497   /Subtype/Widget%
13498   \Fld@annotflags
13499   \Fld@annotnames
13500   /FT/Ch%
13501   \Fld@flags
13502   /Q \Fld@align
13503   /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
13504   \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
13505     \ifx\Fld@bordercolor\relax\else 1\fi
13506     \ifx\Fld@bcolor\relax \else 1\fi
13507     \space
13508   \else
13509     /MK<<%
13510     \ifnum\Fld@rotation=\z@
13511     \else
13512     /R \Fld@rotation
13513     \fi
13514     \ifx\Fld@bordercolor\relax
13515     \else
13516     /BC[\Fld@bordercolor]%
13517     \fi
13518     \ifx\Fld@bcolor\relax
13519     \else
13520     /BG[\Fld@bcolor]%
13521     \fi
13522     >>%
13523   \fi
13524   /DA(/Helv \strip@pt\Fld@charsize\space Tf%
13525     \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
13526   \Fld@choices
13527   \Fld@additionalactions
13528 }

```

#### \PDFForm@Radio

```

13529 \def\PDFForm@Radio{%
13530   /Subtype/Widget%
13531   \Fld@annotflags
13532   \Fld@annotnames
13533   /FT/Btn%
13534   \Fld@flags
13535   /H/P%
13536   /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
13537   /MK<<%
13538   \ifnum\Fld@rotation=\z@

```



```

13539 \else
13540 /R \Fld@rotation
13541 \fi
13542 \ifx\Fld@bordercolor\relax
13543 \else
13544 /BC[\Fld@bordercolor]%
13545 \fi
13546 \ifx\Fld@bcolor\relax
13547 \else
13548 /BG[\Fld@bcolor]%
13549 \fi
13550 /CA(\Fld@radiosymbol)%
13551 >>%
13552 /DA(/ZaDb \strip@pt\Fld@charsize\space Tf%
13553 \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
13554 \ifx\@currValue\Fld@default
13555 /V/\Fld@default
13556 /DV/\Fld@default
13557 \else
13558 /V/Off%
13559 /DV/Off%
13560 \fi
13561 \Fld@additionalactions
13562 }

```

#### \PDFForm@Text

```

13563 \def\PDFForm@Text{%
13564 /Subtype/Widget%
13565 \Fld@annotflags
13566 \Fld@annotnames
13567 /FT/Tx%
13568 \Fld@flags
13569 /Q \Fld@align
13570 /BS<</W \Fld@borderwidth\space /S /\Fld@borderstyle>>%
13571 \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
13572 \ifx\Fld@bordercolor\relax\else 1\fi
13573 \ifx\Fld@bcolor\relax \else 1\fi
13574 \space
13575 \else
13576 /MK<<%
13577 \ifnum\Fld@rotation=\z@
13578 \else
13579 /R \Fld@rotation
13580 \fi
13581 \ifx\Fld@bordercolor\relax
13582 \else
13583 /BC[\Fld@bordercolor]%
13584 \fi
13585 \ifx\Fld@bcolor\relax
13586 \else
13587 /BG[\Fld@bcolor]%
13588 \fi
13589 >>%
13590 \fi
13591 /DA(/Helv \strip@pt\Fld@charsize\space Tf%
13592 \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
13593 /DV(\Hy@escapestring{\Fld@default})%

```

```

13594 /V(\Hy@escapestring{\Fld@value})%
13595 \Fld@additionalactions
13596 \ifnum\Fld@maxlen>\z@/MaxLen \Fld@maxlen \fi
13597 }

```

\PDFForm@Submit

```

13598 \def\PDFForm@Submit{%
13599 /Subtype/Widget%
13600 \Fld@annotflags
13601 \Fld@annotnames
13602 /FT/Btn%
13603 \Fld@flags
13604 /H/P%
13605 /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
13606 \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
13607     \ifx\Fld@bordercolor\relax\else 1\fi
13608     \space
13609 \else
13610 /MK<<%
13611     \ifnum\Fld@rotation=\z@
13612     \else
13613     /R \Fld@rotation
13614     \fi
13615     \ifx\Fld@bordercolor\relax
13616     \else
13617     /BC[\Fld@bordercolor]%
13618     \fi
13619 >>%
13620 \fi
13621 /A<<%
13622 /S/SubmitForm%
13623 /F<<%
13624     /FS/URL%
13625     /F(\Hy@escapestring{\Form@action})%
13626 >>%
13627 \Fld@submitflags
13628 >>%
13629 \Fld@additionalactions
13630 }

```

\PDFForm@Reset

```

13631 \ifHy@pdfa
13632 \else
13633 \def\PDFForm@Reset{%
13634 /Subtype/Widget%
13635 \Fld@annotflags
13636 \Fld@annotnames
13637 /FT/Btn%
13638 \Fld@flags
13639 /H/P%
13640 /DA(/Helv \strip@pt\Fld@charsize\space Tf 0 0 1 rg)%
13641 \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
13642     \ifx\Fld@bordercolor\relax\else 1\fi
13643     \space
13644 \else
13645 /MK<<%
13646     \ifnum\Fld@rotation=\z@

```

```

13647 \else
13648 /R \Fld@rotation
13649 \fi
13650 \ifx\Fld@bordercolor\relax
13651 \else
13652 /BC[\Fld@bordercolor]%
13653 \fi
13654 % /CA (Clear)
13655 % /AC (Done)
13656 >>%
13657 \fi
13658 /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
13659 /A<</S/ResetForm>>%
13660 \Fld@additionalactions
13661 }%
13662 \fi

13663 </pdfform>
13664 <*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  $\LaTeX$  macros.

To write out the current section title, and its rationalized number, we have to intercept the `\@sect` command, which is rather dangerous. But how else to see the information we need? We do the *same* for `\@ssect`, giving anchors to unnumbered sections. This allows things like bibliographies to get bookmarks when used with a manual `\addcontentsline`

```

13665 \def\phantomsection{%
13666 \Hy@MakeCurrentHrefAuto{section*}%
13667 \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
13668 }
13669 </package>

```

### 48.1 Bookmarks

```
13670 <*outlines>
```

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

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

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

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

```

13671 \def\Hy@writebookmark#1#2#3#4#5{%
13672 % section number, text, label, level, file

```

```

13673 \ifx\WriteBookmarks\relax%
13674 \else
13675 \ifnum#4>\Hy@bookmarksdepth\relax
13676 \else
13677 \@@writetorep{#1}{#2}{#3}{#4}{#5}%
13678 \fi
13679 \fi
13680 }
13681 \def\Hy@currentbookmarklevel{0}
13682 \def\Hy@numberline#1{#1 }
13683 \def\@@writetorep#1#2#3#4#5{%
13684 \begingroup
13685 \edef\Hy@tempa{#5}%
13686 \ifx\Hy@tempa\Hy@bookmarkstype
13687 \edef\Hy@level{#4}%
13688 \ifx\Hy@levelcheck Y%
13689 \@tempcnta\Hy@level\relax
13690 \advance\@tempcnta by -1 %
13691 \ifnum\Hy@currentbookmarklevel<\@tempcnta
13692 \advance\@tempcnta by -\Hy@currentbookmarklevel\relax
13693 \advance\@tempcnta by 1 %
13694 \Hy@Warning{%
13695 Difference (\the\@tempcnta) between bookmark levels is %
13696 greater \MessageBreak than one, level fixed%
13697 }%
13698 \@tempcnta\Hy@currentbookmarklevel
13699 \advance\@tempcnta by 1 %
13700 \edef\Hy@level{\the\@tempcnta}%
13701 \fi
13702 \else
13703 \global\let\Hy@levelcheck Y%
13704 \fi
13705 \global\let\Hy@currentbookmarklevel\Hy@level
13706 \@tempcnta\Hy@level\relax
13707 \expandafter\xdef\csname Parent\Hy@level\endcsname{#3}%
13708 \advance\@tempcnta by -1 %
13709 \edef\Hy@tempa{#3}%
13710 \edef\Hy@tempb{\csname Parent\the\@tempcnta\endcsname}%
13711 \ifx\Hy@tempa\Hy@tempb
13712 \Hy@Warning{%
13713 The anchor of a bookmark and its parent's must not%
13714 \MessageBreak be the same. Added a new anchor%
13715 }%
13716 \phantomsection
13717 \fi
13718 \ifHy@bookmarksnumbered
13719 \let\numberline\Hy@numberline
13720 \let\booknumberline\Hy@numberline
13721 \let\partnumberline\Hy@numberline
13722 \let\chapternumberline\Hy@numberline
13723 \else
13724 \let\numberline\@gobble
13725 \let\booknumberline\@gobble
13726 \let\partnumberline\@gobble
13727 \let\chapternumberline\@gobble
13728 \fi
13729 \HyPsd@XeTeXBigCharstrue

```

```

13730 \pdfstringdef\Hy@tempa{#2}%
13731 \HyPsd@SanitizeForOutFile\Hy@tempa
13732 \if@filesw
13733 \stepcounter{bookmark@seq@number}%
13734 \ifundefined{@outlinefile}{%
13735 }{%
13736 \protected@write\@outlinefile{}{%
13737 \protect\BOOKMARK
13738 [\Hy@level][\@bookmarkopenstatus{\Hy@level}]{#3}%
13739 {\Hy@tempa}\Hy@tempb}%
13740 \@percentchar\space\thebookmark@seq@number
13741 }%
13742 }%
13743 \fi
13744 \fi
13745 \endgroup
13746 }
13747 \newcounter{bookmark@seq@number}

13748 \begingroup
13749 \lccode'('= '{%
13750 \lccode')='}%
13751 \lccode'1=\z@
13752 \lccode'2=\z@
13753 \lccode'3=\z@
13754 \lccode'5=\z@
13755 \lccode'7=\z@
13756 \lccode'\#=\z@
13757 \lccode'\='=\z@
13758 \lccode'\{=\z@
13759 \lccode'\}=\z@
13760 \lowercase{%
13761 \endgroup
13762 \def\HyPsd@SanitizeForOutFile#1{%
13763 \@onelevel@sanitize\Hy@tempa
13764 \escapechar'\%
13765 \edef\Hy@tempa{%
13766 \expandafter\HyPsd@SanitizeOut@BraceLeft\Hy@tempa\@nil
13767 }%
13768 \edef\Hy@tempa{%
13769 \expandafter\HyPsd@SanitizeOut@BraceRight\Hy@tempa\@nil
13770 }%
13771 }%
13772 \def\HyPsd@SanitizeOut@BraceLeft#1(#2\@nil{%
13773 #1%
13774 \ifx\#2\%
13775 \expandafter\ltx@gobble
13776 \else
13777 \expandafter\ltx@firstofone
13778 \fi
13779 {%
13780 \string\173%
13781 \HyPsd@SanitizeOut@BraceLeft#2\@nil
13782 }%
13783 }%
13784 \def\HyPsd@SanitizeOut@BraceRight#1)#2\@nil{%
13785 #1%
13786 \ifx\#2\%

```

```

13787 \expandafter\ltx@gobble
13788 \else
13789 \expandafter\ltx@firstofone
13790 \fi
13791 {%
13792 \string\175%
13793 \HyPsd@SanitizeOut@BraceRight#2\@nil
13794 }%
13795 }%
13796 }

```

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

```

13797 \newcommand{\currentpdfbookmark}{%
13798 \pdfbookmark[\Hy@currentbookmarklevel]%
13799 }
13800 \newcommand{\subpdfbookmark}{%
13801 \@tempcnta\Hy@currentbookmarklevel
13802 \Hy@StepCount\@tempcnta
13803 \expandafter\pdfbookmark\expandafter[\the\@tempcnta]%
13804 }
13805 \newcommand{\belowpdfbookmark}[2]{%
13806 \@tempcnta\Hy@currentbookmarklevel
13807 \Hy@StepCount\@tempcnta
13808 \expandafter\pdfbookmark\expandafter[\the\@tempcnta]{#1}{#2}%
13809 \advance\@tempcnta by -1 %
13810 \xdef\Hy@currentbookmarklevel{\the\@tempcnta}%
13811 }

```

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.

```

13812 \renewcommand\pdfbookmark[3][0]{%
13813 \Hy@writebookmark}{#2}{#3.#1}{#1}{toc}%
13814 \hyper@anchorstart{#3.#1}\hyper@anchorend
13815 }
13816 \def\BOOKMARK{%
13817 \@ifnextchar[{\@BOOKMARK}{\@@BOOKMARK[1][-]}%
13818 }
13819 \def\@BOOKMARK[#1]{%
13820 \@ifnextchar[{\@@BOOKMARK[{#1}]}{\@@BOOKMARK[{#1}][-]}%
13821 }

```

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`

```

13822 \RequirePackage{rerunfilecheck}[2009/12/10]
13823 \def\Hy@OutlineRerunCheck{%
13824 \RerunFileCheck{\jobname.out}{%
13825 \immediate\closeout\@outlinefile
13826 }{%
13827 Rerun to get outlines right\MessageBreak
13828 or use package ‘bookmark’%
13829 }%
13830 }

```

## 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.

13831  $\langle *v\text{tex} \rangle$

13832 `\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.

```

13833 \begingroup
13834   \catcode'\'=12 %
13835   \ifnum\Hy@VTeXversion<650 %
13836     \catcode'\=12 %
13837     \gdef\hv@pdf@char#1#2#3{%
13838       \char
13839       \ifcase'#1#2#3 %
13840         "00\or"01\or"02\or"03\or"04\or"05\or"06\or"07%
13841         \or"08\or"09\or"0A\or"0B\or"0C\or"0D\or"0E\or"0F%
13842         \or"10\or"11\or"12\or"13\or"14\or"15\or"16\or"17%
13843         \or"18\or"19\or"1A\or"1B\or"1C\or"1D\or"1E\or"1F%
13844         \or"20\or"21\or"22\or"23\or"24\or"25\or"26\or"27%
13845         \or"28\or"29\or"2A\or"2B\or"2C\or"2D\or"2E\or"2F%
13846         \or"30\or"31\or"32\or"33\or"34\or"35\or"36\or"37%
13847         \or"38\or"39\or"3A\or"3B\or"3C\or"3D\or"3E\or"3F%
13848         \or"40\or"41\or"42\or"43\or"44\or"45\or"46\or"47%
13849         \or"48\or"49\or"4A\or"4B\or"4C\or"4D\or"4E\or"4F%
13850         \or"50\or"51\or"52\or"53\or"54\or"55\or"56\or"57%
13851         \or"58\or"59\or"5A\or"5B\or"5C\or"5D\or"5E\or"5F%
13852         \or"60\or"61\or"62\or"63\or"64\or"65\or"66\or"67%
13853         \or"68\or"69\or"6A\or"6B\or"6C\or"6D\or"6E\or"6F%
13854         \or"70\or"71\or"72\or"73\or"74\or"75\or"76\or"77%
13855         \or"78\or"79\or"7A\or"7B\or"7C\or"7D\or"7E\or"7F%
13856         \or"80\or"81\or"82\or"83\or"84\or"85\or"86\or"87%
13857         \or"88\or"89\or"8A\or"8B\or"8C\or"8D\or"8E\or"8F%
13858         \or"90\or"91\or"92\or"93\or"94\or"95\or"96\or"97%
13859         \or"98\or"99\or"9A\or"9B\or"9C\or"9D\or"9E\or"9F%
13860         \or"A0\or"A1\or"A2\or"A3\or"A4\or"A5\or"A6\or"A7%
13861         \or"A8\or"A9\or"AA\or"AB\or"AC\or"AD\or"AE\or"AF%
13862         \or"B0\or"B1\or"B2\or"B3\or"B4\or"B5\or"B6\or"B7%
13863         \or"B8\or"B9\or"BA\or"BB\or"BC\or"BD\or"BE\or"BF%
13864         \or"C0\or"C1\or"C2\or"C3\or"C4\or"C5\or"C6\or"C7%
13865         \or"C8\or"C9\or"CA\or"CB\or"CC\or"CD\or"CE\or"CF%
13866         \or"D0\or"D1\or"D2\or"D3\or"D4\or"D5\or"D6\or"D7%
13867         \or"D8\or"D9\or"DA\or"DB\or"DC\or"DD\or"DE\or"DF%
13868         \or"E0\or"E1\or"E2\or"E3\or"E4\or"E5\or"E6\or"E7%
13869         \or"E8\or"E9\or"EA\or"EB\or"EC\or"ED\or"EE\or"EF%
13870         \or"F0\or"F1\or"F2\or"F3\or"F4\or"F5\or"F6\or"F7%
13871         \or"F8\or"F9\or"FA\or"FB\or"FC\or"FD\or"FE\or"FF%
13872       \fi
13873     }%
13874   \else
13875     \gdef\hv@pdf@char{\char'}%
13876   \fi
13877 \endgroup

```

\@@BOOKMARK

```

13878 \def\@@BOOKMARK[#1][#2]#3#4#5{%
13879 \expandafter\edef\csname @count@#3\endcsname{%
13880 \the\@serial@counter
13881 }%
13882 \edef\@mycount{\the\@serial@counter}%
13883 \Hy@StepCount\@serial@counter
13884 \edef\@parcount{%
13885 \expandafter\ifx\csname @count@#5\endcsname\relax
13886 0%
13887 \else
13888 \csname @count@#5\endcsname
13889 \fi
13890 }%
13891 \immediate\special{%
13892 !outline \HyperDestNameFilter{#3};p=\@parcount,i=\@mycount,%
13893 s=\ifx#2-c\else o\fi,t=#4%
13894 }%
13895 }%

```

\ReadBookmarks

```

13896 \def\ReadBookmarks{%
13897 \begingroup
13898 \def\0{\hv@pdf@char 0}%
13899 \def\1{\hv@pdf@char 1}%
13900 \def\2{\hv@pdf@char 2}%
13901 \def\3{\hv@pdf@char 3}%
13902 \def\{({}%
13903 \def\)}{)%
13904 \def\do##1{%
13905 \ifnum\catcode'##1=\active
13906 \@makeother##1%
13907 \else
13908 \ifnum\catcode'##1=6 %
13909 \@makeother##1%
13910 \fi
13911 \fi
13912 }%
13913 \dospecials
13914 \Hy@safe@activetrue
13915 \InputIfFileExists{\jobname.out}{\}{}%
13916 \endgroup
13917 \ifx\WriteBookmarks\relax
13918 \else
13919 \if@filesw
13920 \newwrite\@outlinefile
13921 \Hy@OutlineRerunCheck
13922 \immediate\openout\@outlinefile=\jobname.out\relax
13923 \ifHy@typexml
13924 \immediate\write\@outlinefile{<relaxxml>\relax}%
13925 \fi
13926 \fi
13927 \fi
13928 }

13929 </vtex>
13930 <!*vtex>

```



```

13931 \def\ReadBookmarks{%
13932   \pdf@ifdraftmode{}\{%
13933     \begingroup
13934     \def\do##1{%
13935       \ifnum\catcode'##1=\active
13936         \@makeother##1%
13937       \else
13938         \ifnum\catcode'##1=6 %
13939           \@makeother##1%
13940         \fi
13941       \fi
13942     }%
13943     \dospecials
13944     \Hy@safe@activetrue
13945     \escapechar='\%
13946     \def\@@BOOKMARK[##1][##2]##3##4##5{%
13947       \calc@bm@number{##5}%
13948     }%
13949     \InputIfFileExists{\jobname.out}{\}%
13950     \ifx\WriteBookmarks\relax
13951       \global\let\WriteBookmarks\relax
13952     \fi
13953     \def\@@BOOKMARK[##1][##2]##3##4##5{%
13954       \def\Hy@temp{##4}%
13955     }%
13956     \Hy@pstringdef\Hy@pstringName{\HyperDestNameFilter{##3}}%
13957     \Hy@OutlineName{\Hy@pstringName{
13958       ##2\check@bm@number{##3}}%
13959     }{%
13960       \expandafter\strip@prefix\meaning\Hy@temp
13961     }%
13962   }%
13963 }%
13964 \pdfmark{%
13965   pdfmark=/OUT,%
13966   Count={##2\check@bm@number{##3}},%
13967   Dest={##3},%
13968   Title=\expandafter\strip@prefix\meaning\Hy@temp
13969 }%
13970 }%
13971 }%
13972 \Hy@pstringdef\Hy@pstringName{\HyperDestNameFilter{##3}}%
13973 \@pdfm@mark{%
13974   outline \ifHy@DvipdfmxOutlineOpen
13975     [%
13976     \ifnum##21>\z@
13977     \else
13978     -%
13979     \fi
13980     ] %
13981     \fi
13982     ##1<<%
13983     /Title(\expandafter\strip@prefix\meaning\Hy@temp)%
13984     /A<<%
13985     /S/GoTo%
13986     /D(\Hy@pstringName)%
13987     >>%

```

```

13988     >>%
13989     }%
13990 </dvipdfm | xetex>
13991     }%
13992     \begingroup
13993     \def\WriteBookmarks{0}%
13994     \InputIfFileExists{\jobname.out}{-}{-}%
13995     \endgroup
13996     %{\escapechar\m@ne\InputIfFileExists{\jobname.out}{-}{-}}%
13997     \endgroup
13998 }%
13999 \ifx\WriteBookmarks\relax
14000 \else
14001     \if@filesw
14002         \newwrite\@outlinefile
14003         \Hy@OutlineRerunCheck
14004         \immediate\openout\@outlinefile=\jobname.out\relax
14005         \ifHy@typexml
14006             \immediate\write\@outlinefile{<relaxxml>\relax}%
14007         \fi
14008     \fi
14009 \fi
14010 }
14011 <*pdfTex>
14012 \def\Hy@OutlineName#1#2#3#4{%
14013     \pdfoutline goto name{#2}count#3{#4}%
14014 }
14015 </pdfTex>
14016 \def\check@bm@number#1{%
14017     \expandafter\ifx\csname B_#1\endcsname\relax
14018         0%
14019     \else
14020         \csname B_#1\endcsname
14021     \fi
14022 }
14023 \def\calc@bm@number#1{%
14024     \@tempcnta=\check@bm@number{#1}\relax
14025     \advance\@tempcnta by 1 %
14026     \expandafter\xdef\csname B_#1\endcsname{\the\@tempcnta}%
14027 }
14028 </!vtex>

14029 \ifHy@implicit
14030 \else
14031     \expandafter\endinput
14032 \fi

14033 </outlines>
14034 <*outlines | hypertex>

14035 \newlength\Hy@SectionHShift
14036 \def\Hy@SectionAnchorHref#1{%
14037     \ifx\protect\@typeset@protect
14038         \Hy@@@SectionAnchor{#1}%
14039     \fi
14040 }
14041 \DeclareRobustCommand*\Hy@@@SectionAnchor[1]{%
14042     \leavevmode
14043     \hbox to 0pt{%

```

```

14044 \kern-\Hy@SectionHShift
14045 \Hy@raisedlink{%
14046   \hyper@anchorstart{#1}\hyper@anchorend
14047 }%
14048 \hss
14049 }%
14050 }
14051 \let\H@old@ssect\@ssect
14052 \def\@ssect#1#2#3#4#5{%
14053   \Hy@MakeCurrentHrefAuto{section*}%
14054   \setlength{\Hy@SectionHShift}{#1}%
14055   \begingroup
14056     \toks@{\H@old@ssect{#1}{#2}{#3}{#4}}%
14057     \toks\tw\expandafter{%
14058       \expandafter\Hy@SectionAnchorHref\expandafter{\@currentHref}%
14059       #5%
14060     }%
14061   \edef\x{\endgroup
14062     \the\toks@\the\toks\tw@}%
14063   }\x
14064 }
14065 \let\H@old@schapter\@schapter
14066 \def\@schapter#1{%
14067   \begingroup
14068     \let\@mkboth\@gobbletwo
14069     \Hy@MakeCurrentHrefAuto{\Hy@chapapp*}%
14070     \Hy@raisedlink{%
14071       \hyper@anchorstart{\@currentHref}\hyper@anchorend
14072     }%
14073   \endgroup
14074   \H@old@schapter{#1}%
14075 }

```

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:

```

14076 \ltx@ifundefined{@chapter}{}{%
14077   \let\Hy@org@chapter\@chapter
14078   \def\@chapter{%
14079     \def\Hy@next{%
14080       \Hy@MakeCurrentHrefAuto{\Hy@chapapp*}%
14081       \Hy@raisedlink{%
14082         \hyper@anchorstart{\@currentHref}\hyper@anchorend
14083       }%
14084     }%
14085     \ifnum\c@secnumdepth>\m@ne
14086       \ltx@ifundefined{if@mainmatter}%
14087       \iftrue{\csname if@mainmatter\endcsname}%
14088       \let\Hy@next\relax
14089     \fi
14090   \fi
14091   \Hy@next
14092   \Hy@org@chapter
14093 }%
14094 }
14095 \let\H@old@part\@part
14096 \begingroup\expandafter\expandafter\expandafter\endgroup

```

```

14097 \expandafter\ifx\csname chapter\endcsname\relax
14098   \let\Hy@secnum@part\z@
14099 \else
14100   \let\Hy@secnum@part\m@ne
14101 \fi
14102 \def\@part{%
14103   \ifnum\Hy@secnum@part>\c@secnumdepth
14104     \phantomsection
14105   \fi
14106   \H@old@part
14107 }

14108 \let\H@old@spart\@spart
14109 \def\@spart#1{%
14110   \Hy@MakeCurrentHrefAuto{part*}%
14111   \Hy@raisedlink{%
14112     \hyper@anchorstart{\@currentHref}\hyper@anchorend
14113   }%
14114   \H@old@spart{#1}%
14115 }

14116 \let\H@old@sect\@sect
14117 \def\@sect#1#2#3#4#5#6[#7]#8{%
14118   \ifnum #2>\c@secnumdepth
14119     \expandafter\@firstoftwo
14120   \else
14121     \expandafter\@secondoftwo
14122   \fi
14123   {%
14124     \Hy@MakeCurrentHrefAuto{section*}%
14125     \setlength{\Hy@SectionHShift}{#3}%
14126     \begingroup
14127       \toks@{\H@old@sect{#1}{#2}{#3}{#4}{#5}{#6}[{#7}]}%
14128       \toks\tw@\expandafter{%
14129         \expandafter\Hy@SectionAnchorHref\expandafter{\@currentHref}%
14130         #8%
14131       }%
14132       \edef\x{\endgroup
14133         \the\toks@{\the\toks\tw@}}%
14134       }\x
14135     }{%
14136       \H@old@sect{#1}{#2}{#3}{#4}{#5}{#6}[{#7}]{#8}%
14137     }%
14138 }

14139 </outlines | hypertex>
14140 <*outlines>

14141 \expandafter\def\csname Parent-4\endcsname{}
14142 \expandafter\def\csname Parent-3\endcsname{}
14143 \expandafter\def\csname Parent-2\endcsname{}
14144 \expandafter\def\csname Parent-1\endcsname{}
14145 \expandafter\def\csname Parent0\endcsname{}
14146 \expandafter\def\csname Parent1\endcsname{}
14147 \expandafter\def\csname Parent2\endcsname{}
14148 \expandafter\def\csname Parent3\endcsname{}
14149 \expandafter\def\csname Parent4\endcsname{}

14150 </outlines>

```

## 49 Compatibility with koma-script classes

14151  $\langle$ \*outlines | hypertex $\rangle$

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.

```
14152 \def\Hy@tempa{%
14153   \def\@addchap{##1}##2{%
14154     \typeout{##2}%
14155     \if@twoside
14156       \mkboth{##1}{}%
14157     \else
14158       \mkboth{}{##1}%
14159     \fi
14160     \addtocontents{lof}{\protect\addvspace{10\p@}}%
14161     \addtocontents{lot}{\protect\addvspace{10\p@}}%
14162     \Hy@MakeCurrentHrefAuto{\Hy@chapapp*}%
14163     \Hy@raisedlink{%
14164       \hyper@anchorstart{\@currentHref}\hyper@anchorend
14165     }%
14166     \if@twocolumn
14167       \@topnewpage[\@makeschapterhead{##2}]%
14168     \else
14169       \@makeschapterhead{##2}%
14170       \@afterheading
14171     \fi
14172     \addcontentsline{toc}{chapter}{##1}%
14173   }%
14174 }
14175 \ifclassloaded{scrbook}{%
14176   \ifclasslater{scrbook}{2001/01/01}{%
14177     \let\Hy@tempa\@empty
14178   }{}%
14179 }{%
14180   \ifclassloaded{scrreprt}{%
14181     \ifclasslater{scrreprt}{2001/01/01}{%
14182       \let\Hy@tempa\@empty
14183     }{}%
14184   }{%
14185     \let\Hy@tempa\@empty
14186   }%
14187 }%
14188 \Hy@tempa
14189  $\rangle$ outlines | hypertex $\rangle$ 
```

## 50 Encoding definition files for encodings of PDF strings

This was contributed by Heiko Oberdiek.

### 50.1 PD1 encoding

```
14190  $\langle$ *pd1enc $\rangle$ 
14191 \DeclareFontEncoding{PD1}{}{}

Accents
14192 \DeclareTextAccent{\`}{PD1}{\textasciigrave}
```

```

14193 \DeclareTextAccent{'}{PD1}{\textacute}
14194 \DeclareTextAccent{~}{PD1}{\textasciicircum}
14195 \DeclareTextAccent{~}{PD1}{\texttilde}
14196 \DeclareTextAccent{"}{PD1}{\textasciidieresis}
14197 \DeclareTextAccent{r}{PD1}{\textring}
14198 \DeclareTextAccent{v}{PD1}{\textasciicaron}
14199 \DeclareTextAccent{.}{PD1}{\textdotaccent}
14200 \DeclareTextAccent{c}{PD1}{\textcedilla}
14201 \DeclareTextAccent{=}{PD1}{\textasciimacron}
14202 \DeclareTextAccent{b}{PD1}{\textmacronbelow}
14203 \DeclareTextAccent{d}{PD1}{\textdotbelow}
14204 \DeclareTextCompositeCommand{'}{PD1}{\@empty}{\textasciigrave}
14205 \DeclareTextCompositeCommand{'}{PD1}{\@empty}{\textacute}
14206 \DeclareTextCompositeCommand{~}{PD1}{\@empty}{\textasciicircum}
14207 \DeclareTextCompositeCommand{~}{PD1}{\@empty}{\texttilde}
14208 \DeclareTextCompositeCommand{"}{PD1}{\@empty}{\textasciidieresis}
14209 \DeclareTextCompositeCommand{r}{PD1}{\@empty}{\textring}
14210 \DeclareTextCompositeCommand{v}{PD1}{\@empty}{\textasciicaron}
14211 \DeclareTextCompositeCommand{.}{PD1}{\@empty}{\textdotaccent}
14212 \DeclareTextCompositeCommand{c}{PD1}{\@empty}{\textcedilla}
14213 \DeclareTextCompositeCommand{=}{PD1}{\@empty}{\textasciimacron}
14214 \DeclareTextCompositeCommand{b}{PD1}{\@empty}{\textmacronbelow}
14215 \DeclareTextCompositeCommand{d}{PD1}{\@empty}{\textdotbelow}
14216 \DeclareTextCompositeCommand{'}{PD1}{\ }{\textasciigrave}
14217 \DeclareTextCompositeCommand{'}{PD1}{\ }{\textacute}
14218 \DeclareTextCompositeCommand{~}{PD1}{\ }{\textasciicircum}
14219 \DeclareTextCompositeCommand{~}{PD1}{\ }{\texttilde}
14220 \DeclareTextCompositeCommand{"}{PD1}{\ }{\textasciidieresis}
14221 \DeclareTextCompositeCommand{r}{PD1}{\ }{\textring}
14222 \DeclareTextCompositeCommand{v}{PD1}{\ }{\textasciicaron}
14223 \DeclareTextCompositeCommand{.}{PD1}{\ }{\textdotaccent}
14224 \DeclareTextCompositeCommand{c}{PD1}{\ }{\textcedilla}
14225 \DeclareTextCompositeCommand{=}{PD1}{\ }{\textasciimacron}
14226 \DeclareTextCompositeCommand{b}{PD1}{\ }{\textmacronbelow}
14227 \DeclareTextCompositeCommand{d}{PD1}{\ }{\textdotbelow}
14228 \DeclareTextCommand{k}{PD1}[1]{\TextSymbolUnavailable{k{#1}}#1}
14229 \DeclareTextCommand{t}{PD1}[1]{\TextSymbolUnavailable{t{#1}}#1}
14230 \DeclareTextCommand{newtie}{PD1}[1]{%
14231 \TextSymbolUnavailable{newtie{#1}}#1%
14232 }

```

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

```

14233 % U+0009 (CHARACTER TABULATION)
14234 \DeclareTextCommand{textHT}{PD1}{\011}% U+0009
14235 % U+000A (LINE FEED)
14236 \DeclareTextCommand{textLF}{PD1}{\012}% U+000A
14237 % U+000D (CARRIAGE RETURN)
14238 \DeclareTextCommand{textCR}{PD1}{\015}% U+000D

```

Accent glyph names

```

14239 % U+02D8 BREVE; breve
14240 \DeclareTextCommand{textasciibreve}{PD1}{\030}% U+02D8
14241 % U+02C7 CARON; caron
14242 \DeclareTextCommand{textasciicaron}{PD1}{\031}% U+02C7
14243 % U+02C6 MODIFIER LETTER CIRCUMFLEX ACCENT; circumflex
14244 \DeclareTextCommand{textcircumflex}{PD1}{\032}% U+02C6
14245 % U+02D9 DOT ABOVE; dotaccent
14246 \DeclareTextCommand{textdotaccent}{PD1}{\033}% U+02D9
14247 % U+02DD DOUBLE ACUTE ACCENT; hungarumlaut

```

14248 \DeclareTextCommand{\texthungarumlaut}{PD1}{\034}% U+02DD  
 14249 % U+02DB OGONEK; ogonek  
 14250 \DeclareTextCommand{\textogonek}{PD1}{\035}% U+02DB  
 14251 % U+02DA RING ABOVE; ring  
 14252 \DeclareTextCommand{\textring}{PD1}{\036}% U+02DA  
 14253 % U+02DC SMALL TILDE; ilde, \*tilde  
 14254 \DeclareTextCommand{\texttilde}{PD1}{\037}% U+02DC  
 \040: U+0020 SPACE; \*space, spacehackarabic  
 \041: U+0021 EXCLAMATION MARK; exclam  
 14255 % U+0022 QUOTATION MARK; quotedbl  
 14256 \DeclareTextCommand{\textquotedbl}{PD1}{\string"}% \042 U+0022  
 14257 % U+0023 NUMBER SIGN; numbersign  
 14258 \DeclareTextCommand{\textnumbersign}{PD1}{\043}% U+0023  
 14259 % U+0024 DOLLAR SIGN; dollar  
 14260 \DeclareTextCommand{\textdollar}{PD1}{\044}% U+0024  
 14261 % U+0025 PERCENT SIGN; percent  
 14262 \DeclareTextCommand{\textpercent}{PD1}{\045}% U+0025  
 14263 % U+0026 AMPERSAND; ampersand  
 14264 \DeclareTextCommand{\textampersand}{PD1}{\046}% U+0026  
 \047: U+0027 APOSTROPHE; quotesingle  
  
 14265 % U+0028 LEFT PARENTHESIS; parenleft  
 14266 \DeclareTextCommand{\textparenleft}{PD1}{\string\{}% \050 U+0028  
 14267 % U+0029 RIGHT PARENTHESIS; parenright  
 14268 \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  
 14269 % U+002E FULL STOP; period  
 14270 \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  
 14271 % U+003C LESS-THAN SIGN; less  
 14272 \DeclareTextCommand{\textless}{PD1}{<}% \074 U+003C  
 \075: U+003D EQUALS SIGN; equal  
 14273 % U+003E GREATER-THAN SIGN; greater  
 14274 \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  
 14275 % U+005C REVERSE SOLIDUS; backslash  
 14276 \DeclareTextCommand{\textbackslash}{PD1}{\134}% U+005C  
 \135: U+005D RIGHT SQUARE BRACKET; bracketright  
 14277 % U+005E CIRCUMFLEX ACCENT; asciicircum  
 14278 \DeclareTextCommand{\textasciicircum}{PD1}{\136}% U+005E

14279 % U+005F LOW LINE; underscore  
 14280 \DeclareTextCommand{\textunderscore}{PD1}{\137}% U+005F  
 14281 \DeclareTextCommand{\textmacronbelow}{PD1}{\137}% U+005F  
 14282 % U+0060 GRAVE ACCENT; grave  
 14283 \DeclareTextCommand{\textasciigrave}{PD1}{\140}% U+0060  
 \141: U+0061 LATIN SMALL LETTER A; a  
 ...  
 \150: U+0068 LATIN SMALL LETTER H; h  
 14284 % U+0069 LATIN SMALL LETTER I; i  
 14285 \DeclareTextCompositeCommand{\.}{PD1}{i}{i}% \151 U+0069  
 \152: U+006A LATIN SMALL LETTER J; j  
 ...  
 \172: U+007A LATIN SMALL LETTER Z; z  
 14286 % U+007B LEFT CURLY BRACKET; braceleft  
 14287 \DeclareTextCommand{\textbraceleft}{PD1}{\173}% U+007B  
 14288 % U+007C VERTICAL LINE; \*bar, verticalbar  
 14289 \DeclareTextCommand{\textbar}{PD1}{|}% U+007C  
 14290 % U+007D RIGHT CURLY BRACKET; braceright  
 14291 \DeclareTextCommand{\textbraceright}{PD1}{\175}% U+007D  
 14292 % U+007E TILDE; asciitilde  
 14293 \DeclareTextCommand{\textasciitilde}{PD1}{\176}% U+007E  
 Slot \177 (0x7F) is undefined in PDFDocEncoding.  
 14294 % U+2022 BULLET; bullet  
 14295 \DeclareTextCommand{\textbullet}{PD1}{\200}% U+2022  
 14296 % U+2020 DAGGER; dagger  
 14297 \DeclareTextCommand{\textdagger}{PD1}{\201}% U+2020  
 14298 % U+2021 DOUBLE DAGGER; daggerdbl  
 14299 \DeclareTextCommand{\textdaggerdbl}{PD1}{\202}% U+2021  
 14300 % U+2026 HORIZONTAL ELLIPSIS; ellipsis  
 14301 \DeclareTextCommand{\textellipsis}{PD1}{\203}% U+2026  
 14302 % U+2014 EM DASH; emdash  
 14303 \DeclareTextCommand{\textemdash}{PD1}{\204}% U+2014  
 14304 % U+2013 EN DASH; endash  
 14305 \DeclareTextCommand{\textendash}{PD1}{\205}% U+2013  
 14306 % U+0192 LATIN SMALL LETTER F WITH HOOK; florin  
 14307 \DeclareTextCommand{\textflorin}{PD1}{\206}% U+0192  
 14308 % U+2044 FRACTION SLASH; fraction  
 14309 \DeclareTextCommand{\textfractionsolidus}{PD1}{\207}% U+2044  
 14310 % U+2039 SINGLE LEFT-POINTING ANGLE QUOTATION MARK; guil-  
 singleft  
 14311 \DeclareTextCommand{\guilsingleft}{PD1}{\210}% U+2039  
 14312 % U+203A SINGLE RIGHT-POINTING ANGLE QUOTATION MARK; guils-  
 ingright  
 14313 \DeclareTextCommand{\guilsingright}{PD1}{\211}% U+203A  
 14314 % U+2212 MINUS SIGN; minus  
 14315 \DeclareTextCommand{\textminus}{PD1}{\212}% U+2212  
 14316 % U+2030 PER MILLE SIGN; perthousand  
 14317 \DeclareTextCommand{\textperthousand}{PD1}{\213}% U+2030  
 14318 % U+201E DOUBLE LOW-9 QUOTATION MARK; quotedblbase  
 14319 \DeclareTextCommand{\quotedblbase}{PD1}{\214}% U+201E  
 14320 % U+201C LEFT DOUBLE QUOTATION MARK; quotedblleft  
 14321 \DeclareTextCommand{\textquotedblleft}{PD1}{\215}% U+201C  
 14322 % U+201D RIGHT DOUBLE QUOTATION MARK; quotedblright  
 14323 \DeclareTextCommand{\textquotedblright}{PD1}{\216}% U+201D  
 14324 % U+2018 LEFT SINGLE QUOTATION MARK; quoteleft  
 14325 \DeclareTextCommand{\textquoteleft}{PD1}{\217}% U+2018



14326 % U+2019 RIGHT SINGLE QUOTATION MARK; quoteright  
 14327 \DeclareTextCommand{\textquoteright}{PD1}{\220}% U+2019  
 14328 % U+201A SINGLE LOW-9 QUOTATION MARK; quotesinglbase  
 14329 \DeclareTextCommand{\quotesinglbase}{PD1}{\221}% U+201A  
 14330 % U+2122 TRADE MARK SIGN; trademark  
 14331 \DeclareTextCommand{\texttrademark}{PD1}{\222}% U+2122  
 14332 % U+FB01 LATIN SMALL LIGATURE FI; fi  
 14333 \DeclareTextCommand{\textfi}{PD1}{\223}% U+FB01  
 14334 % U+FB02 LATIN SMALL LIGATURE FL; fl  
 14335 \DeclareTextCommand{\textfl}{PD1}{\224}% U+FB02  
 14336 % U+0141 LATIN CAPITAL LETTER L WITH STROKE; Lslash  
 14337 \DeclareTextCommand{\L}{PD1}{\225}% U+0141  
 14338 % U+0152 LATIN CAPITAL LIGATURE OE; OE  
 14339 \DeclareTextCommand{\OE}{PD1}{\226}% U+0152  
 14340 % U+0160 LATIN CAPITAL LETTER S WITH CARON; Scaron  
 14341 \DeclareTextCompositeCommand{\v}{PD1}{S}{\227}% U+0160  
 14342 % U+0178 LATIN CAPITAL LETTER Y WITH DIAERESIS; Ydieresis  
 14343 \DeclareTextCompositeCommand{\"}{PD1}{Y}{\230}% U+0178  
 14344 \DeclareTextCommand{\IJ}{PD1}{\230}  
 14345 % U+017D LATIN CAPITAL LETTER Z WITH CARON; Zcaron  
 14346 \DeclareTextCompositeCommand{\v}{PD1}{Z}{\231}% U+017D  
 14347 % U+0131 LATIN SMALL LETTER DOTLESS I; dotlessi  
 14348 \DeclareTextCommand{\i}{PD1}{\232}% U+0131  
 14349 % U+0142 LATIN SMALL LETTER L WITH STROKE; lslash  
 14350 \DeclareTextCommand{\l}{PD1}{\233}% U+0142  
 14351 % U+0153 LATIN SMALL LIGATURE OE; oe  
 14352 \DeclareTextCommand{\oe}{PD1}{\234}% U+0153  
 14353 % U+0161 LATIN SMALL LETTER S WITH CARON; scaron  
 14354 \DeclareTextCompositeCommand{\v}{PD1}{s}{\235}% U+0161  
 14355 % U+017E LATIN SMALL LETTER Z WITH CARON; zcaron  
 14356 \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.  
 14357 % U+20AC EURO SIGN; \*Euro, euro  
 14358 \DeclareTextCommand{\texteuro}{PD1}{\240}% U+20AC  
 14359 % U+00A1 INVERTED EXCLAMATION MARK; exclamdown  
 14360 \DeclareTextCommand{\textexclamdown}{PD1}{\241}% U+00A1  
 14361 % U+00A2 CENT SIGN; cent  
 14362 \DeclareTextCommand{\textcent}{PD1}{\242}% U+00A2  
 14363 % U+00A3 POUND SIGN; sterling  
 14364 \DeclareTextCommand{\textsterling}{PD1}{\243}% U+00A3  
 14365 % U+00A4 CURRENCY SIGN; currency  
 14366 \DeclareTextCommand{\textcurrency}{PD1}{\244}% U+00A4  
 14367 % U+00A5 YEN SIGN; yen  
 14368 \DeclareTextCommand{\textyen}{PD1}{\245}% U+00A5  
 14369 % U+00A6 BROKEN BAR; brokenbar  
 14370 \DeclareTextCommand{\textbrokenbar}{PD1}{\246}% U+00A6  
 14371 % U+00A7 SECTION SIGN; section  
 14372 \DeclareTextCommand{\textsection}{PD1}{\247}% U+00A7  
 14373 % U+00A8 DIAERESIS; dieresis  
 14374 \DeclareTextCommand{\textasciidieresis}{PD1}{\250}% U+00A8  
 14375 % U+00A9 COPYRIGHT SIGN; copyright  
 14376 \DeclareTextCommand{\textcopyright}{PD1}{\251}% U+00A9  
 14377 % U+00AA FEMININE ORDINAL INDICATOR; ordfeminine  
 14378 \DeclareTextCommand{\textordfeminine}{PD1}{\252}% U+00AA  
 14379 % U+00AB LEFT-POINTING DOUBLE ANGLE QUOTATION MARK; guille-  
 motleft

14380 \DeclareTextCommand{\guillemotleft}{PD1}{\253}% U+00AB  
14381 % U+00AC NOT SIGN; logicalnot  
14382 \DeclareTextCommand{\textlogicalnot}{PD1}{\254}% U+00AC  
14383 \DeclareTextCommand{\textlnot}{PD1}{\254}% logical not  
No glyph \255 in PDFDocEncoding.  
14384 % U+00AE REGISTERED SIGN; registered  
14385 \DeclareTextCommand{\textregistered}{PD1}{\256}% U+00AE  
14386 % U+00AF MACRON; \*macron, overscore  
14387 \DeclareTextCommand{\textasciimacron}{PD1}{\257}% U+00AF  
14388 % U+00B0 DEGREE SIGN; degree  
14389 \DeclareTextCommand{\textdegree}{PD1}{\260}% U+00B0  
14390 % U+00B1 PLUS-MINUS SIGN; plusminus  
14391 \DeclareTextCommand{\textplusminus}{PD1}{\261}% U+00B1  
14392 % U+00B2 SUPERSCRIP T TWO; twosuperior  
14393 \DeclareTextCommand{\texttwosuperior}{PD1}{\262}% U+00B2  
14394 % U+00B3 SUPERSCRIP T THREE; threesuperior  
14395 \DeclareTextCommand{\textthreesuperior}{PD1}{\263}% U+00B3  
14396 % U+00B4 ACUTE ACCENT; acute  
14397 \DeclareTextCommand{\textacute}{PD1}{\264}% U+00B4  
14398 % U+00B5 MICRO SIGN; mu, mu1  
14399 \DeclareTextCommand{\textmu}{PD1}{\265}% U+00B5  
14400 % U+00B6 PILCROW SIGN; paragraph  
14401 \DeclareTextCommand{\textparagraph}{PD1}{\266}% U+00B6  
14402 % U+00B7 MIDDLE DOT; middot, \*periodcentered  
14403 \DeclareTextCommand{\textperiodcentered}{PD1}{\267}% U+00B7  
14404 % U+00B8 CEDILLA; cedilla  
14405 \DeclareTextCommand{\textcedilla}{PD1}{\270}% U+00B8  
14406 % U+00B9 SUPERSCRIP T ONE; onesuperior  
14407 \DeclareTextCommand{\textonesuperior}{PD1}{\271}% U+00B9  
14408 % U+00BA MASCULINE ORDINAL INDICATOR; ordmasculine  
14409 \DeclareTextCommand{\textordmasculine}{PD1}{\272}% U+00BA  
14410 % U+00BB RIGHT-POINTING DOUBLE ANGLE QUOTATION MARK; guille-  
motright  
14411 \DeclareTextCommand{\guillemotright}{PD1}{\273}% U+00BB  
14412 % U+00BC VULGAR FRACTION ONE QUARTER; onequarter  
14413 \DeclareTextCommand{\textonequarter}{PD1}{\274}% U+00BC  
14414 % U+00BD VULGAR FRACTION ONE HALF; onehalf  
14415 \DeclareTextCommand{\textonehalf}{PD1}{\275}% U+00BD  
14416 % U+00BE VULGAR FRACTION THREE QUARTERS; threequarters  
14417 \DeclareTextCommand{\textthreequarters}{PD1}{\276}% U+00BE  
14418 % U+00BF INVERTED QUESTION MARK; questiondown  
14419 \DeclareTextCommand{\textquestiondown}{PD1}{\277}% U+00BF  
14420 % U+00C0 LATIN CAPITAL LETTER A WITH GRAVE; Agrave  
14421 \DeclareTextCompositeCommand{\`}{PD1}{A}{\300}% U+00C0  
14422 % U+00C1 LATIN CAPITAL LETTER A WITH ACUTE; Aacute  
14423 \DeclareTextCompositeCommand{\'}{PD1}{A}{\301}% U+00C1  
14424 % U+00C2 LATIN CAPITAL LETTER A WITH CIRCUMFLEX; Acircumflex  
14425 \DeclareTextCompositeCommand{\^}{PD1}{A}{\302}% U+00C2  
14426 % U+00C3 LATIN CAPITAL LETTER A WITH TILDE; Atilde  
14427 \DeclareTextCompositeCommand{\~}{PD1}{A}{\303}% U+00C3  
14428 % U+00C4 LATIN CAPITAL LETTER A WITH DIAERESIS; Adieresis  
14429 \DeclareTextCompositeCommand{\"}{PD1}{A}{\304}% U+00C4  
14430 % U+00C5 LATIN CAPITAL LETTER A WITH RING ABOVE; Aring  
14431 \DeclareTextCompositeCommand{\r}{PD1}{A}{\305}% U+00C5  
14432 % U+00C6 LATIN CAPITAL LETTER AE; AE  
14433 \DeclareTextCommand{\AE}{PD1}{\306}% U+00C6  
14434 % U+00C7 LATIN CAPITAL LETTER C WITH CEDILLA; Ccedilla

14435 \DeclareTextCompositeCommand{\c}{PD1}{C}{\307}% U+00C7  
14436 % U+00C8 LATIN CAPITAL LETTER E WITH GRAVE; Egrave  
14437 \DeclareTextCompositeCommand{\`}{PD1}{E}{\310}% U+00C8  
14438 % U+00C9 LATIN CAPITAL LETTER E WITH ACUTE; Eacute  
14439 \DeclareTextCompositeCommand{\'}{PD1}{E}{\311}% U+00C9  
14440 % U+00CA LATIN CAPITAL LETTER E WITH CIRCUMFLEX; Ecircumflex  
14441 \DeclareTextCompositeCommand{\^}{PD1}{E}{\312}% U+00CA  
14442 % U+00CB LATIN CAPITAL LETTER E WITH DIAERESIS; Edieresis  
14443 \DeclareTextCompositeCommand{\"}{PD1}{E}{\313}% U+00CB  
14444 % U+00CC LATIN CAPITAL LETTER I WITH GRAVE; Igrave  
14445 \DeclareTextCompositeCommand{\`}{PD1}{I}{\314}% U+00CC  
14446 % U+00CD LATIN CAPITAL LETTER I WITH ACUTE; Iacute  
14447 \DeclareTextCompositeCommand{\'}{PD1}{I}{\315}% U+00CD  
14448 % U+00CE LATIN CAPITAL LETTER I WITH CIRCUMFLEX; Icircumflex  
14449 \DeclareTextCompositeCommand{\^}{PD1}{I}{\316}% U+00CE  
14450 % U+00CF LATIN CAPITAL LETTER I WITH DIAERESIS; Idieresis  
14451 \DeclareTextCompositeCommand{\"}{PD1}{I}{\317}% U+00CF  
14452 % U+00D0 LATIN CAPITAL LETTER ETH; Eth  
14453 \DeclareTextCommand{\DH}{PD1}{\320}% U+00D0  
14454 \DeclareTextCommand{\DJ}{PD1}{\320}% U+00D0  
14455 % U+00D1 LATIN CAPITAL LETTER N WITH TILDE; Ntilde  
14456 \DeclareTextCompositeCommand{\~}{PD1}{N}{\321}% U+00D1  
14457 % U+00D2 LATIN CAPITAL LETTER O WITH GRAVE; Ograve  
14458 \DeclareTextCompositeCommand{\`}{PD1}{O}{\322}% U+00D2  
14459 % U+00D3 LATIN CAPITAL LETTER O WITH ACUTE; Oacute  
14460 \DeclareTextCompositeCommand{\'}{PD1}{O}{\323}% U+00D3  
14461 % U+00D4 LATIN CAPITAL LETTER O WITH CIRCUMFLEX; Ocircumflex  
14462 \DeclareTextCompositeCommand{\^}{PD1}{O}{\324}% U+00D4  
14463 % U+00D5 LATIN CAPITAL LETTER O WITH TILDE; Otilde  
14464 \DeclareTextCompositeCommand{\~}{PD1}{O}{\325}% U+00D5  
14465 % U+00D6 LATIN CAPITAL LETTER O WITH DIAERESIS; Odieresis  
14466 \DeclareTextCompositeCommand{\"}{PD1}{O}{\326}% U+00D6  
14467 % U+00D7 MULTIPLICATION SIGN; multiply  
14468 \DeclareTextCommand{\textmultiply}{PD1}{\327}% U+00D7  
14469 % U+00D8 LATIN CAPITAL LETTER O WITH STROKE; Oslash  
14470 \DeclareTextCommand{\O}{PD1}{\330}% U+00D8  
14471 % U+00D9 LATIN CAPITAL LETTER U WITH GRAVE; Ugrave  
14472 \DeclareTextCompositeCommand{\`}{PD1}{U}{\331}% U+00D9  
14473 % U+00DA LATIN CAPITAL LETTER U WITH ACUTE; Uacute  
14474 \DeclareTextCompositeCommand{\'}{PD1}{U}{\332}% U+00DA  
14475 % U+00DB LATIN CAPITAL LETTER U WITH CIRCUMFLEX; Ucircumflex  
14476 \DeclareTextCompositeCommand{\^}{PD1}{U}{\333}% U+00DB  
14477 % U+00DC LATIN CAPITAL LETTER U WITH DIAERESIS; Udieresis  
14478 \DeclareTextCompositeCommand{\"}{PD1}{U}{\334}% U+00DC  
14479 % U+00DD LATIN CAPITAL LETTER Y WITH ACUTE; Yacute  
14480 \DeclareTextCompositeCommand{\'}{PD1}{Y}{\335}% U+00DD  
14481 % U+00DE LATIN CAPITAL LETTER THORN; Thorn  
14482 \DeclareTextCommand{\TH}{PD1}{\336}% U+00DE  
14483 % U+00DF LATIN SMALL LETTER SHARP S; germandbls  
14484 \DeclareTextCommand{\ss}{PD1}{\337}% U+00DF  
14485 % U+00E0 LATIN SMALL LETTER A WITH GRAVE; agrave  
14486 \DeclareTextCompositeCommand{\`}{PD1}{a}{\340}% U+00E0  
14487 % U+00E1 LATIN SMALL LETTER A WITH ACUTE; aacute  
14488 \DeclareTextCompositeCommand{\'}{PD1}{a}{\341}% U+00E1  
14489 % U+00E2 LATIN SMALL LETTER A WITH CIRCUMFLEX; acircumflex  
14490 \DeclareTextCompositeCommand{\^}{PD1}{a}{\342}% U+00E2  
14491 % U+00E3 LATIN SMALL LETTER A WITH TILDE; atilde

14492 \DeclareTextCompositeCommand{\~}{PD1}{a}{\343}% U+00E3  
14493 % U+00E4 LATIN SMALL LETTER A WITH DIAERESIS; adieresis  
14494 \DeclareTextCompositeCommand{\"}{PD1}{a}{\344}% U+00E4  
14495 % U+00E5 LATIN SMALL LETTER A WITH RING ABOVE; aring  
14496 \DeclareTextCompositeCommand{\r}{PD1}{a}{\345}% U+00E5  
14497 % U+00E6 LATIN SMALL LETTER AE; ae  
14498 \DeclareTextCommand{\ae}{PD1}{\346}% U+00E6  
14499 % U+00E7 LATIN SMALL LETTER C WITH CEDILLA; ccedilla  
14500 \DeclareTextCompositeCommand{\c}{PD1}{c}{\347}% U+00E7  
14501 % U+00E8 LATIN SMALL LETTER E WITH GRAVE; egrave  
14502 \DeclareTextCompositeCommand{\`}{PD1}{e}{\350}% U+00E8  
14503 % U+00E9 LATIN SMALL LETTER E WITH ACUTE; eacute  
14504 \DeclareTextCompositeCommand{\'}{PD1}{e}{\351}% U+00E9  
14505 % U+00EA LATIN SMALL LETTER E WITH CIRCUMFLEX; ecircumflex  
14506 \DeclareTextCompositeCommand{\^}{PD1}{e}{\352}% U+00EA  
14507 % U+00EB LATIN SMALL LETTER E WITH DIAERESIS; edieresis  
14508 \DeclareTextCompositeCommand{\"}{PD1}{e}{\353}% U+00EB  
14509 % U+00EC LATIN SMALL LETTER I WITH GRAVE; igrave  
14510 \DeclareTextCompositeCommand{\`}{PD1}{i}{\354}% U+00EC  
14511 \DeclareTextCompositeCommand{\'}{PD1}{i}{\354}% U+00EC  
14512 % U+00ED LATIN SMALL LETTER I WITH ACUTE; iacute  
14513 \DeclareTextCompositeCommand{\`}{PD1}{i}{\355}% U+00ED  
14514 \DeclareTextCompositeCommand{\'}{PD1}{i}{\355}% U+00ED  
14515 % U+00EE LATIN SMALL LETTER I WITH CIRCUMFLEX; icircumflex  
14516 \DeclareTextCompositeCommand{\^}{PD1}{i}{\356}% U+00EE  
14517 \DeclareTextCompositeCommand{\^}{PD1}{i}{\356}% U+00EE  
14518 % U+00EF LATIN SMALL LETTER I WITH DIAERESIS; idieresis  
14519 \DeclareTextCompositeCommand{\"}{PD1}{i}{\357}% U+00EF  
14520 \DeclareTextCompositeCommand{\"}{PD1}{i}{\357}% U+00EF  
14521 % U+00F0 LATIN SMALL LETTER ETH; eth  
14522 \DeclareTextCommand{\dh}{PD1}{\360}% U+00F0  
14523 % U+00F1 LATIN SMALL LETTER N WITH TILDE; ntilde  
14524 \DeclareTextCompositeCommand{\~}{PD1}{n}{\361}% U+00F1  
14525 % U+00F2 LATIN SMALL LETTER O WITH GRAVE; ograve  
14526 \DeclareTextCompositeCommand{\`}{PD1}{o}{\362}% U+00F2  
14527 % U+00F3 LATIN SMALL LETTER O WITH ACUTE; oacute  
14528 \DeclareTextCompositeCommand{\'}{PD1}{o}{\363}% U+00F3  
14529 % U+00F4 LATIN SMALL LETTER O WITH CIRCUMFLEX; ocircumflex  
14530 \DeclareTextCompositeCommand{\^}{PD1}{o}{\364}% U+00F4  
14531 % U+00F5 LATIN SMALL LETTER O WITH TILDE; otilde  
14532 \DeclareTextCompositeCommand{\~}{PD1}{o}{\365}% U+00F5  
14533 % U+00F6 LATIN SMALL LETTER O WITH DIAERESIS; odieresis  
14534 \DeclareTextCompositeCommand{\"}{PD1}{o}{\366}% U+00F6  
14535 % U+00F7 DIVISION SIGN; divide  
14536 \DeclareTextCommand{\textdivide}{PD1}{\367}% U+00F7  
14537 % U+00F8 LATIN SMALL LETTER O WITH STROKE; oslash  
14538 \DeclareTextCommand{\o}{PD1}{\370}% U+00F8  
14539 % U+00F9 LATIN SMALL LETTER U WITH GRAVE; ugrave  
14540 \DeclareTextCompositeCommand{\`}{PD1}{u}{\371}% U+00F9  
14541 % U+00FA LATIN SMALL LETTER U WITH ACUTE; uacute  
14542 \DeclareTextCompositeCommand{\'}{PD1}{u}{\372}% U+00FA  
14543 % U+00FB LATIN SMALL LETTER U WITH CIRCUMFLEX; ucircumflex  
14544 \DeclareTextCompositeCommand{\^}{PD1}{u}{\373}% U+00FB  
14545 % U+00FC LATIN SMALL LETTER U WITH DIAERESIS; udieresis  
14546 \DeclareTextCompositeCommand{\"}{PD1}{u}{\374}% U+00FC  
14547 % U+00FD LATIN SMALL LETTER Y WITH ACUTE; yacute  
14548 \DeclareTextCompositeCommand{\'}{PD1}{y}{\375}% U+00FD

14549 % U+00FE LATIN SMALL LETTER THORN; thorn  
 14550 \DeclareTextCommand{\th}{PD1}{\376}% U+00FE  
 14551 % U+00FF LATIN SMALL LETTER Y WITH DIAERESIS; ydieresis  
 14552 \DeclareTextCompositeCommand{"}{PD1}{y}{\377}% U+00FF  
 14553 \DeclareTextCommand{\ij}{PD1}{\377}% U+00FF

Glyphs that consist of several characters.

14554 \DeclareTextCommand{\SS}{PD1}{SS}  
 14555 \DeclareTextCommand{\textcelsius}{PD1}{\textdegree C}

Aliases (german.sty)

14556 \DeclareTextCommand{\textglqq}{PD1}{\quotedblbase}  
 14557 \DeclareTextCommand{\textgrqq}{PD1}{\textquotedblleft}  
 14558 \DeclareTextCommand{\textglq}{PD1}{\quotesinglbase}  
 14559 \DeclareTextCommand{\textgrq}{PD1}{\textquoteleft}  
 14560 \DeclareTextCommand{\textflqq}{PD1}{\guillemotleft}  
 14561 \DeclareTextCommand{\textfrqq}{PD1}{\guillemotright}  
 14562 \DeclareTextCommand{\textflq}{PD1}{\guilsinglleft}  
 14563 \DeclareTextCommand{\textfrq}{PD1}{\guilsinglright}

Aliases (math names)

14564 \DeclareTextCommand{\textneg}{PD1}{\textlogicalnot}  
 14565 \DeclareTextCommand{\texttimes}{PD1}{\textmultiply}  
 14566 \DeclareTextCommand{\textdiv}{PD1}{\textdivide}  
 14567 \DeclareTextCommand{\textpm}{PD1}{\textplusminus}  
 14568 \DeclareTextCommand{\textcdot}{PD1}{\textperiodcentered}  
 14569 \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).

14570 \DeclareTextCompositeCommand{\k}{PD1}{a}{a}% aogonek  
 14571 \DeclareTextCompositeCommand{\'}{PD1}{c}{c}% cacute  
 14572 \DeclareTextCompositeCommand{\k}{PD1}{e}{e}% eogonek  
 14573 \DeclareTextCompositeCommand{\'}{PD1}{n}{n}% nacute  
 14574 \DeclareTextCompositeCommand{\'}{PD1}{s}{s}% sacute  
 14575 \DeclareTextCompositeCommand{\'}{PD1}{z}{z}% zacute  
 14576 \DeclareTextCompositeCommand{\.}{PD1}{z}{z}% zdot  
 14577 \DeclareTextCompositeCommand{\k}{PD1}{A}{A}% Aogonek  
 14578 \DeclareTextCompositeCommand{\'}{PD1}{C}{C}% Cacute  
 14579 \DeclareTextCompositeCommand{\k}{PD1}{E}{E}% Eogonek  
 14580 \DeclareTextCompositeCommand{\'}{PD1}{N}{N}% Nacute  
 14581 \DeclareTextCompositeCommand{\'}{PD1}{S}{S}% Sacute  
 14582 \DeclareTextCompositeCommand{\'}{PD1}{Z}{Z}% Zacute  
 14583 \DeclareTextCompositeCommand{\.}{PD1}{Z}{Z}% Zdot  
 14584 </pdlenc>

## 50.2 PU encoding

14585 <\*puenc>  
 14586 \DeclareFontEncoding{PU}{-}{-}

### 50.2.1 NFSS2 accents

14587 % U+0300 COMBINING GRAVE ACCENT; gravecmb, \*gravecomb  
 14588 \DeclareTextCommand{\'}{PU}[1]{\#1\83\000}% U+0300  
 14589 % U+0301 COMBINING ACUTE ACCENT; acutecmb, \*acutecomb  
 14590 \DeclareTextCommand{\'}{PU}[1]{\#1\83\001}% U+0301  
 14591 % U+0302 COMBINING CIRCUMFLEX ACCENT; circumflexcmb  
 14592 \DeclareTextCommand{\^}{PU}[1]{\#1\83\002}% U+0302  
 14593 % U+0303 COMBINING TILDE; tildecmb, \*tildecmb

14594 \DeclareTextCommand{\~}{PU}[1]{#1\83\003}% U+0303  
 14595 % U+0304 COMBINING MACRON; macroncmb  
 14596 \DeclareTextCommand{\=}{PU}[1]{#1\83\004}% U+0304  
 14597 % U+0306 COMBINING BREVE; brevecmb  
 14598 \DeclareTextCommand{\u}{PU}[1]{#1\83\006}% U+0306  
 14599 \DeclareTextCommand{\U}{PU}[1]{#1\83\006}% U+0306  
 14600 % U+0307 COMBINING DOT ABOVE; dotaccentcmb  
 14601 \DeclareTextCommand{\.}{PU}[1]{#1\83\007}% U+0307  
 14602 % U+0308 COMBINING DIAERESIS; dieresiscmb  
 14603 \DeclareTextCommand{\"}{PU}[1]{#1\83\010}% U+0308  
 14604 % U+030A COMBINING RING ABOVE; ringcmb  
 14605 \DeclareTextCommand{\r}{PU}[1]{#1\83\012}% U+030A  
 14606 % U+030B COMBINING DOUBLE ACUTE ACCENT; hungarumlautcmb  
 14607 \DeclareTextCommand{\H}{PU}[1]{#1\83\013}% U+030B  
 14608 % U+030C COMBINING CARON; caroncmb  
 14609 \DeclareTextCommand{\v}{PU}[1]{#1\83\014}% U+030C  
 14610 % U+030F COMBINING DOUBLE GRAVE ACCENT; dblgravecmb  
 14611 \DeclareTextCommand{\G}{PU}[1]{#1\83\017}% U+030F  
 14612 \DeclareTextCommand{\C}{PU}[1]{#1\83\017}% U+030F  
 14613 % U+0311 COMBINING INVERTED BREVE; breveinvertedcmb  
 14614 \DeclareTextCommand{\newtie}{PU}[1]{#1\83\021}% U+0311  
 14615 % U+0323 COMBINING DOT BELOW; dotbelowcmb, \*dotbelowcomb  
 14616 \DeclareTextCommand{\d}{PU}[1]{#1\83\043}% U+0323  
 14617 % U+0331 COMBINING MACRON BELOW; macronbelowcmb  
 14618 \DeclareTextCommand{\b}{PU}[1]{#1\83\061}% U+0331  
 14619 % U+0327 COMBINING CEDILLA; cedillacmb  
 14620 \DeclareTextCommand{\c}{PU}[1]{#1\83\047}% U+0327  
 14621 % U+0328 COMBINING OGONEK; ogonekcmb  
 14622 \DeclareTextCommand{\k}{PU}[1]{#1\83\050}% U+0328  
 14623 % U+0361 COMBINING DOUBLE INVERTED BREVE; breveinverteddoublecmb  
 14624 \DeclareTextCommand{\t}{PU}[1]{#1\83\141}% U+0361  
 14625 % U+20DD COMBINING ENCLOSING CIRCLE  
 14626 \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.

14627 \DeclareTextCompositeCommand{\'}{PU}{\@empty}{\textasciigrave}  
 14628 \DeclareTextCompositeCommand{\'}{PU}{\@empty}{\textacute}  
 14629 \DeclareTextCompositeCommand{\^}{PU}{\@empty}{\textasciicircum}  
 14630 \DeclareTextCompositeCommand{\~}{PU}{\@empty}{\texttilde}  
 14631 \DeclareTextCompositeCommand{\"}{PU}{\@empty}{\textasciidieresis}  
 14632 \DeclareTextCompositeCommand{\r}{PU}{\@empty}{\textring}  
 14633 \DeclareTextCompositeCommand{\v}{PU}{\@empty}{\textasciicaron}  
 14634 \DeclareTextCompositeCommand{\.}{PU}{\@empty}{\textdotaccent}  
 14635 \DeclareTextCompositeCommand{\c}{PU}{\@empty}{\textcedilla}  
 14636 \DeclareTextCompositeCommand{\u}{PU}{\@empty}{\textasciibreve}  
 14637 \DeclareTextCompositeCommand{\G}{PU}{\@empty}{\textdoublegrave}  
 14638 \DeclareTextCompositeCommand{\=}{PU}{\@empty}{\textasciimacron}  
 14639 \DeclareTextCompositeCommand{\H}{PU}{\@empty}{\texthungarumlaut}  
 14640 \DeclareTextCompositeCommand{\k}{PU}{\@empty}{\textogonek}  
 14641 \DeclareTextCompositeCommand{\b}{PU}{\@empty}{\textmacronbelow}  
 14642 \DeclareTextCompositeCommand{\d}{PU}{\@empty}{\textdotbelow}  
 14643 \DeclareTextCompositeCommand{\t}{PU}{\@empty}{\texttie}  
 14644 \DeclareTextCompositeCommand{\newtie}{PU}{\@empty}{\textnewtie}  
 14645 \DeclareTextCompositeCommand{\textcircled}{PU}{\@empty}{\textbigcircle}  
 14646 \DeclareTextCompositeCommand{\'}{PU}{\ }{\textasciigrave}  
 14647 \DeclareTextCompositeCommand{\'}{PU}{\ }{\textacute}  
 14648 \DeclareTextCompositeCommand{\^}{PU}{\ }{\textasciicircum}

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14649 \DeclareTextCompositeCommand{\~}{PU}{\ }{\texttilde}
14650 \DeclareTextCompositeCommand{\"}{PU}{\ }{\textasciidieresis}
14651 \DeclareTextCompositeCommand{\r}{PU}{\ }{\textring}
14652 \DeclareTextCompositeCommand{\v}{PU}{\ }{\textasciicaron}
14653 \DeclareTextCompositeCommand{\.}{PU}{\ }{\textdotaccent}
14654 \DeclareTextCompositeCommand{\c}{PU}{\ }{\textcedilla}
14655 \DeclareTextCompositeCommand{\u}{PU}{\ }{\textasciibreve}
14656 \DeclareTextCompositeCommand{\G}{PU}{\ }{\textdoublegrave}
14657 \DeclareTextCompositeCommand{\=}{PU}{\ }{\textasciimacron}
14658 \DeclareTextCompositeCommand{\H}{PU}{\ }{\texthungarumlaut}
14659 \DeclareTextCompositeCommand{\k}{PU}{\ }{\textogonek}
14660 \DeclareTextCompositeCommand{\b}{PU}{\ }{\textmacronbelow}
14661 \DeclareTextCompositeCommand{\d}{PU}{\ }{\textdotbelow}
14662 \DeclareTextCompositeCommand{\t}{PU}{\ }{\texttie}
14663 \DeclareTextCompositeCommand{\newtie}{PU}{\ }{\textnewtie}
14664 \DeclareTextCompositeCommand{\textcircled}{PU}{\ }{\textbigcircle}

```

Accents for capitals (see encoding TS1)

```

14665 \DeclareTextCommand{\capitalcedilla}{PU}[1]{\c{#1}}
14666 \DeclareTextCommand{\capitalogonek}{PU}[1]{\k{#1}}
14667 \DeclareTextCommand{\capitalgrave}{PU}[1]{\`{#1}}
14668 \DeclareTextCommand{\capitalacute}{PU}[1]{\'{#1}}
14669 \DeclareTextCommand{\capitalcircumflex}{PU}[1]{\^{#1}}
14670 \DeclareTextCommand{\capitaltilde}{PU}[1]{\~{#1}}
14671 \DeclareTextCommand{\capitaldieresis}{PU}[1]{\"{#1}}
14672 \DeclareTextCommand{\capitalhungarumlaut}{PU}[1]{\H{#1}}
14673 \DeclareTextCommand{\capitalring}{PU}[1]{\r{#1}}
14674 \DeclareTextCommand{\capitalcaron}{PU}[1]{\v{#1}}
14675 \DeclareTextCommand{\capitalbreve}{PU}[1]{\u{#1}}
14676 \DeclareTextCommand{\capitalmacron}{PU}[1]{\={#1}}
14677 \DeclareTextCommand{\capitaldotaccent}{PU}[1]{\.{#1}}
14678 \DeclareTextCommand{\capitaltie}{PU}[1]{\t{#1}}
14679 \DeclareTextCommand{\capitalnewtie}{PU}[1]{\newtie{#1}}

```

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

Special white space escape characters.

```

14680 % U+0009 (CHARACTER TABULATION)
14681 \DeclareTextCommand{\textHT}{PU}{\80\011}% U+0009
14682 % U+000A (LINE FEED)
14683 \DeclareTextCommand{\textLF}{PU}{\80\012}% U+000A
14684 % U+000D (CARRIAGE RETURN)
14685 \DeclareTextCommand{\textCR}{PU}{\80\015}% U+000D

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

14686 % U+0022 QUOTATION MARK; quotedbl
14687 \DeclareTextCommand{\textquotedbl}{PU}{\string"}% \80\042 U+0022
14688 % U+0023 NUMBER SIGN; numbersign
14689 \DeclareTextCommand{\textnumbersign}{PU}{\80\043}% U+0023
14690 % U+0024 DOLLAR SIGN; dollar
14691 \DeclareTextCommand{\textdollar}{PU}{\80\044}% U+0024
14692 % U+0025 PERCENT SIGN; percent
14693 \DeclareTextCommand{\textpercent}{PU}{\80\045}% U+0025
14694 % U+0026 AMPERSAND; ampersand
14695 \DeclareTextCommand{\textampersand}{PU}{\80\046}% U+0026
14696 % U+0027 APOSTROPHE; quotesingle
14697 \DeclareTextCommand{\textquotesingle}{PU}{\80\047}% U+0027
14698 % U+0028 LEFT PARENTHESIS; parenleft

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14699 \DeclareTextCommand{\textparenleft}{PU}{\80\050}% U+0028  
14700 % U+0029 RIGHT PARENTHESIS; parenright  
14701 \DeclareTextCommand{\textparenright}{PU}{\80\051}% U+0029  
14702 % U+002A ASTERISK; asterisk  
14703 \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  
14704 % U+003C LESS-THAN SIGN; less  
14705 \DeclareTextCommand{\textless}{PU}{<}% \80\074 U+003C  
\80\075: U+003D EQUALS SIGN; equal  
14706 % U+003E GREATER-THAN SIGN; greater  
14707 \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  
14708 % U+005C REVERSE SOLIDUS; backslash  
14709 \DeclareTextCommand{\textbackslash}{PU}{\80\134}% U+005C  
\80\135: U+005D RIGHT SQUARE BRACKET; bracketright  
14710 % U+005E CIRCUMFLEX ACCENT; asciicircum  
14711 \DeclareTextCommand{\textasciicircum}{PU}{\80\136}% U+005E  
14712 % U+005F LOW LINE; underscore  
14713 \DeclareTextCommand{\textunderscore}{PU}{\80\137}% U+005F  
14714 % U+0060 GRAVE ACCENT; grave  
14715 \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  
14716 % U+0069 LATIN SMALL LETTER I; i  
14717 \DeclareTextCompositeCommand{\.}{PU}{i}{i}% \80\151 U+0069  
14718 \DeclareTextCompositeCommand{\.}{PU}{i}{i}% \80\151 U+0069  
\80\152: U+006A LATIN SMALL LETTER J; j  
...  
\80\172: U+007A LATIN SMALL LETTER Z; z  
14719 % U+007B LEFT CURLY BRACKET; braceleft  
14720 \DeclareTextCommand{\textbraceleft}{PU}{\80\173}% U+007B  
14721 % U+007C VERTICAL LINE; \*bar, verticalbar  
14722 \DeclareTextCommand{\textbar}{PU}{|}% \80\174 U+007C  
14723 % U+007D RIGHT CURLY BRACKET; braceright  
14724 \DeclareTextCommand{\textbraceright}{PU}{\80\175}% U+007D  
14725 % U+007E TILDE; asciitilde  
14726 \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  
14727 % U+00A1 INVERTED EXCLAMATION MARK; exclamdown  
14728 \DeclareTextCommand{\textexclamdown}{PU}{\80\241}% U+00A1  
14729 % U+00A2 CENT SIGN; cent  
14730 \DeclareTextCommand{\textcent}{PU}{\80\242}% U+00A2  
14731 % U+00A3 POUND SIGN; sterling  
14732 \DeclareTextCommand{\textsterling}{PU}{\80\243}% U+00A3  
14733 % U+00A4 CURRENCY SIGN; currency  
14734 \DeclareTextCommand{\textcurrency}{PU}{\80\244}% U+00A4  
14735 % U+00A5 YEN SIGN; yen  
14736 \DeclareTextCommand{\textyen}{PU}{\80\245}% U+00A5  
14737 % U+00A6 BROKEN BAR; brokenbar  
14738 \DeclareTextCommand{\textbrokenbar}{PU}{\80\246}% U+00A6  
14739 % U+00A7 SECTION SIGN; section  
14740 \DeclareTextCommand{\textsection}{PU}{\80\247}% U+00A7  
14741 % U+00A8 DIAERESIS; dieresis  
14742 \DeclareTextCommand{\textasciidieresis}{PU}{\80\250}% U+00A8  
14743 % U+00A9 COPYRIGHT SIGN; copyright  
14744 \DeclareTextCommand{\textcopyright}{PU}{\80\251}% U+00A9  
14745 % U+00AA FEMININE ORDINAL INDICATOR; ordfeminine  
14746 \DeclareTextCommand{\textordfeminine}{PU}{\80\252}% U+00AA  
14747 % U+00AB LEFT-POINTING DOUBLE ANGLE QUOTATION MARK; guillemotleft  
14748 \DeclareTextCommand{\guillemotleft}{PU}{\80\253}% U+00AB  
14749 % U+00AC NOT SIGN; logicalnot  
14750 \DeclareTextCommand{\textlogicalnot}{PU}{\80\254}% U+00AC  
14751 \DeclareTextCommand{\textlnot}{PU}{\80\254}% U+00AC  
\\80\255: U+00AD SOFT HYPHEN; sfthyphen, softthyphen  
14752 % U+00AE REGISTERED SIGN; registered  
14753 \DeclareTextCommand{\textregistered}{PU}{\80\256}% U+00AE  
14754 % U+00AF MACRON; \*macron, overscore  
14755 \DeclareTextCommand{\textasciimacron}{PU}{\80\257}% U+00AF  
14756 % U+00B0 DEGREE SIGN; degree  
14757 \DeclareTextCommand{\textdegree}{PU}{\80\260}% U+00B0  
14758 % U+00B1 PLUS-MINUS SIGN; plusminus  
14759 \DeclareTextCommand{\textplusminus}{PU}{\80\261}% U+00B1  
14760 % U+00B2 SUPERScript TWO; twosuperior  
14761 \DeclareTextCommand{\texttwosuperior}{PU}{\80\262}% U+00B2  
14762 % U+00B3 SUPERScript THREE; threesuperior  
14763 \DeclareTextCommand{\textthreesuperior}{PU}{\80\263}% U+00B3  
14764 % U+00B4 ACUTE ACCENT; acute  
14765 \DeclareTextCommand{\textacute}{PU}{\80\264}% U+00B4  
14766 \DeclareTextCommand{\textasciiacute}{PU}{\80\264}% U+00B4  
14767 % U+00B5 MICRO SIGN; mu, mul  
14768 \DeclareTextCommand{\textmu}{PU}{\80\265}% U+00B5  
14769 % U+00B6 PILCROW SIGN; paragraph  
14770 \DeclareTextCommand{\textparagraph}{PU}{\80\266}% U+00B6  
14771 % U+00B7 MIDDLE DOT; middot, \*periodcentered  
14772 \DeclareTextCommand{\textperiodcentered}{PU}{\80\267}% U+00B7  
14773 % U+00B8 CEDILLA; cedilla  
14774 \DeclareTextCommand{\textcedilla}{PU}{\80\270}% U+00B8  
14775 % U+00B9 SUPERScript ONE; onesuperior  
14776 \DeclareTextCommand{\textonesuperior}{PU}{\80\271}% U+00B9  
14777 % U+00BA MASCULINE ORDINAL INDICATOR; ordmasculine  
14778 \DeclareTextCommand{\textordmasculine}{PU}{\80\272}% U+00BA

14779 % U+00BB RIGHT-POINTING DOUBLE ANGLE QUOTATION MARK; guillemotright  
 14780 \DeclareTextCommand{\guillemotright}{PU}{\80\273}% U+00BB  
 14781 % U+00BC VULGAR FRACTION ONE QUARTER; onequarter  
 14782 \DeclareTextCommand{\textonequarter}{PU}{\80\274}% U+00BC  
 14783 % U+00BD VULGAR FRACTION ONE HALF; onehalf  
 14784 \DeclareTextCommand{\textonehalf}{PU}{\80\275}% U+00BD  
 14785 % U+00BE VULGAR FRACTION THREE QUARTERS; threequarters  
 14786 \DeclareTextCommand{\textthreequarters}{PU}{\80\276}% U+00BE  
 14787 % U+00BF INVERTED QUESTION MARK; questiondown  
 14788 \DeclareTextCommand{\textquestiondown}{PU}{\80\277}% U+00BF  
 14789 % U+00C0 LATIN CAPITAL LETTER A WITH GRAVE; Agrave  
 14790 \DeclareTextCompositeCommand{\`}{PU}{A}{\80\300}% U+00C0  
 14791 % U+00C1 LATIN CAPITAL LETTER A WITH ACUTE; Aacute  
 14792 \DeclareTextCompositeCommand{\'}{PU}{A}{\80\301}% U+00C1  
 14793 % U+00C2 LATIN CAPITAL LETTER A WITH CIRCUMFLEX; Acircumflex  
 14794 \DeclareTextCompositeCommand{\^}{PU}{A}{\80\302}% U+00C2  
 14795 % U+00C3 LATIN CAPITAL LETTER A WITH TILDE; Atilde  
 14796 \DeclareTextCompositeCommand{\~}{PU}{A}{\80\303}% U+00C3  
 14797 % U+00C4 LATIN CAPITAL LETTER A WITH DIAERESIS; Adieresis  
 14798 \DeclareTextCompositeCommand{\"}{PU}{A}{\80\304}% U+00C4  
 14799 % U+00C5 LATIN CAPITAL LETTER A WITH RING ABOVE; Aring  
 14800 \DeclareTextCompositeCommand{\r}{PU}{A}{\80\305}% U+00C5  
 14801 % U+00C6 LATIN CAPITAL LETTER AE; AE  
 14802 \DeclareTextCommand{\AE}{PU}{\80\306}% U+00C6  
 14803 % U+00C7 LATIN CAPITAL LETTER C WITH CEDILLA; Ccedilla  
 14804 \DeclareTextCompositeCommand{\c}{PU}{C}{\80\307}% U+00C7  
 14805 % U+00C8 LATIN CAPITAL LETTER E WITH GRAVE; Egrave  
 14806 \DeclareTextCompositeCommand{\`}{PU}{E}{\80\310}% U+00C8  
 14807 % U+00C9 LATIN CAPITAL LETTER E WITH ACUTE; Eacute  
 14808 \DeclareTextCompositeCommand{\'}{PU}{E}{\80\311}% U+00C9  
 14809 % U+00CA LATIN CAPITAL LETTER E WITH CIRCUMFLEX; Ecircumflex  
 14810 \DeclareTextCompositeCommand{\^}{PU}{E}{\80\312}% U+00CA  
 14811 % U+00CB LATIN CAPITAL LETTER E WITH DIAERESIS; Edieresis  
 14812 \DeclareTextCompositeCommand{\"}{PU}{E}{\80\313}% U+00CB  
 14813 % U+00CC LATIN CAPITAL LETTER I WITH GRAVE; Igrave  
 14814 \DeclareTextCompositeCommand{\`}{PU}{I}{\80\314}% U+00CC  
 14815 % U+00CD LATIN CAPITAL LETTER I WITH ACUTE; Iacute  
 14816 \DeclareTextCompositeCommand{\'}{PU}{I}{\80\315}% U+00CD  
 14817 % U+00CE LATIN CAPITAL LETTER I WITH CIRCUMFLEX; Icircumflex  
 14818 \DeclareTextCompositeCommand{\^}{PU}{I}{\80\316}% U+00CE  
 14819 % U+00CF LATIN CAPITAL LETTER I WITH DIAERESIS; Idieresis  
 14820 \DeclareTextCompositeCommand{\"}{PU}{I}{\80\317}% U+00CF  
 14821 % U+00D0 LATIN CAPITAL LETTER ETH; Eth  
 14822 \DeclareTextCommand{\DH}{PU}{\80\320}% U+00D0  
 14823 % U+00D1 LATIN CAPITAL LETTER N WITH TILDE; Ntilde  
 14824 \DeclareTextCompositeCommand{\~}{PU}{N}{\80\321}% U+00D1  
 14825 % U+00D2 LATIN CAPITAL LETTER O WITH GRAVE; Ograve  
 14826 \DeclareTextCompositeCommand{\`}{PU}{O}{\80\322}% U+00D2  
 14827 % U+00D3 LATIN CAPITAL LETTER O WITH ACUTE; Oacute  
 14828 \DeclareTextCompositeCommand{\'}{PU}{O}{\80\323}% U+00D3  
 14829 % U+00D4 LATIN CAPITAL LETTER O WITH CIRCUMFLEX; Ocircumflex  
 14830 \DeclareTextCompositeCommand{\^}{PU}{O}{\80\324}% U+00D4  
 14831 % U+00D5 LATIN CAPITAL LETTER O WITH TILDE; Otilde  
 14832 \DeclareTextCompositeCommand{\~}{PU}{O}{\80\325}% U+00D5  
 14833 % U+00D6 LATIN CAPITAL LETTER O WITH DIAERESIS; Odieresis  
 14834 \DeclareTextCompositeCommand{\"}{PU}{O}{\80\326}% U+00D6

14835 % U+00D7 MULTIPLICATION SIGN; multiply  
14836 \DeclareTextCommand{\textmultiply}{PU}{\80\327}% U+00D7  
14837 % U+00D8 LATIN CAPITAL LETTER O WITH STROKE; Oslash  
14838 \DeclareTextCommand{\O}{PU}{\80\330}% U+00D8  
14839 % U+00D9 LATIN CAPITAL LETTER U WITH GRAVE; Ugrave  
14840 \DeclareTextCompositeCommand{\'}{PU}{U}{\80\331}% U+00D9  
14841 % U+00DA LATIN CAPITAL LETTER U WITH ACUTE; Uacute  
14842 \DeclareTextCompositeCommand{\'}{PU}{U}{\80\332}% U+00DA  
14843 % U+00DB LATIN CAPITAL LETTER U WITH CIRCUMFLEX; Ucircumflex  
14844 \DeclareTextCompositeCommand{\^}{PU}{U}{\80\333}% U+00DB  
14845 % U+00DC LATIN CAPITAL LETTER U WITH DIAERESIS; Udieresis  
14846 \DeclareTextCompositeCommand{\"}{PU}{U}{\80\334}% U+00DC  
14847 % U+00DD LATIN CAPITAL LETTER Y WITH ACUTE; Yacute  
14848 \DeclareTextCompositeCommand{\'}{PU}{Y}{\80\335}% U+00DD  
14849 % U+00DE LATIN CAPITAL LETTER THORN; Thorn  
14850 \DeclareTextCommand{\TH}{PU}{\80\336}% U+00DE  
14851 % U+00DF LATIN SMALL LETTER SHARP S; germandbls  
14852 \DeclareTextCommand{\ss}{PU}{\80\337}% U+00DF  
14853 % U+00E0 LATIN SMALL LETTER A WITH GRAVE; agrave  
14854 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\340}% U+00E0  
14855 % U+00E1 LATIN SMALL LETTER A WITH ACUTE; aacute  
14856 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\341}% U+00E1  
14857 % U+00E2 LATIN SMALL LETTER A WITH CIRCUMFLEX; acircumflex  
14858 \DeclareTextCompositeCommand{\^}{PU}{a}{\80\342}% U+00E2  
14859 % U+00E3 LATIN SMALL LETTER A WITH TILDE; atilde  
14860 \DeclareTextCompositeCommand{\~}{PU}{a}{\80\343}% U+00E3  
14861 % U+00E4 LATIN SMALL LETTER A WITH DIAERESIS; adieresis  
14862 \DeclareTextCompositeCommand{\"}{PU}{a}{\80\344}% U+00E4  
14863 % U+00E5 LATIN SMALL LETTER A WITH RING ABOVE; aring  
14864 \DeclareTextCompositeCommand{\r}{PU}{a}{\80\345}% U+00E5  
14865 % U+00E6 LATIN SMALL LETTER AE; ae  
14866 \DeclareTextCommand{\ae}{PU}{\80\346}% U+00E6  
14867 % U+00E7 LATIN SMALL LETTER C WITH CEDILLA; ccedilla  
14868 \DeclareTextCompositeCommand{\c}{PU}{c}{\80\347}% U+00E7  
14869 % U+00E8 LATIN SMALL LETTER E WITH GRAVE; egrave  
14870 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\350}% U+00E8  
14871 % U+00E9 LATIN SMALL LETTER E WITH ACUTE; eacute  
14872 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\351}% U+00E9  
14873 % U+00EA LATIN SMALL LETTER E WITH CIRCUMFLEX; ecircumflex  
14874 \DeclareTextCompositeCommand{\^}{PU}{e}{\80\352}% U+00EA  
14875 % U+00EB LATIN SMALL LETTER E WITH DIAERESIS; edieresis  
14876 \DeclareTextCompositeCommand{\"}{PU}{e}{\80\353}% U+00EB  
14877 % U+00EC LATIN SMALL LETTER I WITH GRAVE; igrave  
14878 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\354}% U+00EC  
14879 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\354}% U+00EC  
14880 % U+00ED LATIN SMALL LETTER I WITH ACUTE; iacute  
14881 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\355}% U+00ED  
14882 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\355}% U+00ED  
14883 % U+00EE LATIN SMALL LETTER I WITH CIRCUMFLEX; icircumflex  
14884 \DeclareTextCompositeCommand{\^}{PU}{i}{\80\356}% U+00EE  
14885 \DeclareTextCompositeCommand{\^}{PU}{i}{\80\356}% U+00EE  
14886 % U+00EF LATIN SMALL LETTER I WITH DIAERESIS; idieresis  
14887 \DeclareTextCompositeCommand{\"}{PU}{i}{\80\357}% U+00EF  
14888 \DeclareTextCompositeCommand{\"}{PU}{i}{\80\357}% U+00EF  
14889 % U+00F0 LATIN SMALL LETTER ETH; eth  
14890 \DeclareTextCommand{\dh}{PU}{\80\360}% U+00F0  
14891 % U+00F1 LATIN SMALL LETTER N WITH TILDE; ntilde

14892 \DeclareTextCompositeCommand{\~}{PU}{n}{\80\361}% U+00F1  
 14893 % U+00F2 LATIN SMALL LETTER O WITH GRAVE; ograve  
 14894 \DeclareTextCompositeCommand{\`}{PU}{o}{\80\362}% U+00F2  
 14895 % U+00F3 LATIN SMALL LETTER O WITH ACUTE; oacute  
 14896 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\363}% U+00F3  
 14897 % U+00F4 LATIN SMALL LETTER O WITH CIRCUMFLEX; ocircumflex  
 14898 \DeclareTextCompositeCommand{\^}{PU}{o}{\80\364}% U+00F4  
 14899 % U+00F5 LATIN SMALL LETTER O WITH TILDE; otilde  
 14900 \DeclareTextCompositeCommand{\~}{PU}{o}{\80\365}% U+00F5  
 14901 % U+00F6 LATIN SMALL LETTER O WITH DIAERESIS; odieresis  
 14902 \DeclareTextCompositeCommand{\"}{PU}{o}{\80\366}% U+00F6  
 14903 % U+00F7 DIVISION SIGN; divide  
 14904 \DeclareTextCommand{\textdivide}{PU}{\80\367}% U+00F7  
 14905 % U+00F8 LATIN SMALL LETTER O WITH STROKE; oslash  
 14906 \DeclareTextCommand{\o}{PU}{\80\370}% U+00F8  
 14907 % U+00F9 LATIN SMALL LETTER U WITH GRAVE; ugrave  
 14908 \DeclareTextCompositeCommand{\`}{PU}{u}{\80\371}% U+00F9  
 14909 % U+00FA LATIN SMALL LETTER U WITH ACUTE; uacute  
 14910 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\372}% U+00FA  
 14911 % U+00FB LATIN SMALL LETTER U WITH CIRCUMFLEX; ucircumflex  
 14912 \DeclareTextCompositeCommand{\^}{PU}{u}{\80\373}% U+00FB  
 14913 % U+00FC LATIN SMALL LETTER U WITH DIAERESIS; udieresis  
 14914 \DeclareTextCompositeCommand{\"}{PU}{u}{\80\374}% U+00FC  
 14915 % U+00FD LATIN SMALL LETTER Y WITH ACUTE; yacute  
 14916 \DeclareTextCompositeCommand{\'}{PU}{y}{\80\375}% U+00FD  
 14917 % U+00FE LATIN SMALL LETTER THORN; thorn  
 14918 \DeclareTextCommand{\th}{PU}{\80\376}% U+00FE  
 14919 % U+00FF LATIN SMALL LETTER Y WITH DIAERESIS; ydieresis  
 14920 \DeclareTextCompositeCommand{\"}{PU}{y}{\80\377}% U+00FF

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

14921 % U+0100 LATIN CAPITAL LETTER A WITH MACRON; Amacron  
 14922 \DeclareTextCompositeCommand{\=}{PU}{A}{\81\000}% U+0100  
 14923 % U+0101 LATIN SMALL LETTER A WITH MACRON; amacron  
 14924 \DeclareTextCompositeCommand{\=}{PU}{a}{\81\001}% U+0101  
 14925 % U+0102 LATIN CAPITAL LETTER A WITH BREVE; Abreve  
 14926 \DeclareTextCompositeCommand{\u}{PU}{A}{\81\002}% U+0102  
 14927 % U+0103 LATIN SMALL LETTER A WITH BREVE; abreve  
 14928 \DeclareTextCompositeCommand{\u}{PU}{a}{\81\003}% U+0103  
 14929 % U+0104 LATIN CAPITAL LETTER A WITH OGONEK; Aogonek  
 14930 \DeclareTextCompositeCommand{\k}{PU}{A}{\81\004}% U+0104  
 14931 % U+0105 LATIN SMALL LETTER A WITH OGONEK; aogonek  
 14932 \DeclareTextCompositeCommand{\k}{PU}{a}{\81\005}% U+0105  
 14933 % U+0106 LATIN CAPITAL LETTER C WITH ACUTE; Cacute  
 14934 \DeclareTextCompositeCommand{\'}{PU}{C}{\81\006}% U+0106  
 14935 % U+0107 LATIN SMALL LETTER C WITH ACUTE; cacute  
 14936 \DeclareTextCompositeCommand{\'}{PU}{c}{\81\007}% U+0107  
 14937 % U+0108 LATIN CAPITAL LETTER C WITH CIRCUMFLEX; Ccircumflex  
 14938 \DeclareTextCompositeCommand{\^}{PU}{C}{\81\010}% U+0108  
 14939 % U+0109 LATIN SMALL LETTER C WITH CIRCUMFLEX; ccircumflex  
 14940 \DeclareTextCompositeCommand{\^}{PU}{c}{\81\011}% U+0109  
 14941 % U+010A LATIN CAPITAL LETTER C WITH DOT ABOVE; Cdot, Cdotaccent  
 14942 \DeclareTextCompositeCommand{\.}{PU}{C}{\81\012}% U+010A  
 14943 % U+010B LATIN SMALL LETTER C WITH DOT ABOVE; cdot, cdotaccent  
 14944 \DeclareTextCompositeCommand{\.}{PU}{c}{\81\013}% U+010B  
 14945 % U+010C LATIN CAPITAL LETTER C WITH CARON; Ccaron

14946 \DeclareTextCompositeCommand{\v}{PU}{C}{\81\014}% U+010C  
14947 % U+010D LATIN SMALL LETTER C WITH CARON; ccaron  
14948 \DeclareTextCompositeCommand{\v}{PU}{c}{\81\015}% U+010D  
14949 % U+010E LATIN CAPITAL LETTER D WITH CARON; Dcaron  
14950 \DeclareTextCompositeCommand{\v}{PU}{D}{\81\016}% U+010E  
14951 % U+010F LATIN SMALL LETTER D WITH CARON; dcaron  
14952 \DeclareTextCompositeCommand{\v}{PU}{d}{\81\017}% U+010F  
14953 % U+0110 LATIN CAPITAL LETTER D WITH STROKE; Dcroat, Dslash  
14954 \DeclareTextCommand{\DJ}{PU}{\81\020}% U+0110  
14955 % U+0111 LATIN SMALL LETTER D WITH STROKE; dcroat, dmacron  
14956 \DeclareTextCommand{\dj}{PU}{\81\021}% U+0111  
14957 % U+0112 LATIN CAPITAL LETTER E WITH MACRON; Emacron  
14958 \DeclareTextCompositeCommand{\=}{PU}{E}{\81\022}% U+0112  
14959 % U+0113 LATIN SMALL LETTER E WITH MACRON; emacron  
14960 \DeclareTextCompositeCommand{\=}{PU}{e}{\81\023}% U+0113  
14961 % U+0114 LATIN CAPITAL LETTER E WITH BREVE; Ebreve  
14962 \DeclareTextCompositeCommand{\u}{PU}{E}{\81\024}% U+0114  
14963 % U+0115 LATIN SMALL LETTER E WITH BREVE; ebreve  
14964 \DeclareTextCompositeCommand{\u}{PU}{e}{\81\025}% U+0115  
14965 % U+0116 LATIN CAPITAL LETTER E WITH DOT ABOVE; Edot, Edotaccent  
14966 \DeclareTextCompositeCommand{\.}{PU}{E}{\81\026}% U+0116  
14967 % U+0117 LATIN SMALL LETTER E WITH DOT ABOVE; edot, edotaccent  
14968 \DeclareTextCompositeCommand{\.}{PU}{e}{\81\027}% U+0117  
14969 % U+0118 LATIN CAPITAL LETTER E WITH OGONEK; Eogonek  
14970 \DeclareTextCompositeCommand{\k}{PU}{E}{\81\030}% U+0118  
14971 % U+0119 LATIN SMALL LETTER E WITH OGONEK; eogonek  
14972 \DeclareTextCompositeCommand{\k}{PU}{e}{\81\031}% U+0119  
14973 % U+011A LATIN CAPITAL LETTER E WITH CARON; Ecaron  
14974 \DeclareTextCompositeCommand{\v}{PU}{E}{\81\032}% U+011A  
14975 % U+011B LATIN SMALL LETTER E WITH CARON; ecaron  
14976 \DeclareTextCompositeCommand{\v}{PU}{e}{\81\033}% U+011B  
14977 % U+011C LATIN CAPITAL LETTER G WITH CIRCUMFLEX; Gcircumflex  
14978 \DeclareTextCompositeCommand{\^}{PU}{G}{\81\034}% U+011C  
14979 % U+011D LATIN SMALL LETTER G WITH CIRCUMFLEX; gcircumflex  
14980 \DeclareTextCompositeCommand{\^}{PU}{g}{\81\035}% U+011D  
14981 % U+011E LATIN CAPITAL LETTER G WITH BREVE; Gbreve  
14982 \DeclareTextCompositeCommand{\u}{PU}{G}{\81\036}% U+011E  
14983 % U+011F LATIN SMALL LETTER G WITH BREVE; gbreve  
14984 \DeclareTextCompositeCommand{\u}{PU}{g}{\81\037}% U+011F  
14985 % U+0120 LATIN CAPITAL LETTER G WITH DOT ABOVE; Gdot, Gdotaccent  
14986 \DeclareTextCompositeCommand{\.}{PU}{G}{\81\040}% U+0120  
14987 % U+0121 LATIN SMALL LETTER G WITH DOT ABOVE; gdot, gdotaccent  
14988 \DeclareTextCompositeCommand{\.}{PU}{g}{\81\041}% U+0121  
14989 % U+0122 LATIN CAPITAL LETTER G WITH CEDILLA; Gcedilla, Gcommaaccent  
14990 \DeclareTextCompositeCommand{\c}{PU}{G}{\81\042}% U+0122  
14991 % U+0123 LATIN SMALL LETTER G WITH CEDILLA; gcedilla, gcommaaccent  
14992 \DeclareTextCompositeCommand{\c}{PU}{g}{\81\043}% U+0123  
14993 % U+0124 LATIN CAPITAL LETTER H WITH CIRCUMFLEX; Hcircumflex  
14994 \DeclareTextCompositeCommand{\^}{PU}{H}{\81\044}% U+0124  
14995 % U+0125 LATIN SMALL LETTER H WITH CIRCUMFLEX; hcircumflex  
14996 \DeclareTextCompositeCommand{\^}{PU}{h}{\81\045}% U+0125  
14997 % U+0126 LATIN CAPITAL LETTER H WITH STROKE; Hbar  
14998 \DeclareTextCommand{\textHslash}{PU}{\81\046}% U+0126  
14999 % U+0127 LATIN SMALL LETTER H WITH STROKE; hbar  
15000 \DeclareTextCommand{\texthslash}{PU}{\81\047}% U+0127  
15001 % U+0128 LATIN CAPITAL LETTER I WITH TILDE; Itilde

15002 \DeclareTextCompositeCommand{\~}{PU}{i}{\81\050}% U+0128  
 15003 % U+0129 LATIN SMALL LETTER I WITH TILDE; itilde  
 15004 \DeclareTextCompositeCommand{\-}{PU}{i}{\81\051}% U+0129  
 15005 \DeclareTextCompositeCommand{\-}{PU}{i}{\81\051}% U+0129  
 15006 % U+012A LATIN CAPITAL LETTER I WITH MACRON; Imacron  
 15007 \DeclareTextCompositeCommand{\=}{PU}{I}{\81\052}% U+012A  
 15008 % U+012B LATIN SMALL LETTER I WITH MACRON; imacron  
 15009 \DeclareTextCompositeCommand{\=}{PU}{i}{\81\053}% U+012B  
 15010 \DeclareTextCompositeCommand{\=}{PU}{i}{\81\053}% U+012B  
 15011 % U+012C LATIN CAPITAL LETTER I WITH BREVE; Ibreve  
 15012 \DeclareTextCompositeCommand{\u}{PU}{I}{\81\054}% U+012C  
 15013 % U+012D LATIN SMALL LETTER I WITH BREVE; ibreve  
 15014 \DeclareTextCompositeCommand{\u}{PU}{i}{\81\055}% U+012D  
 15015 \DeclareTextCompositeCommand{\u}{PU}{i}{\81\055}% U+012D  
 15016 % U+012E LATIN CAPITAL LETTER I WITH OGONEK; Iogonek  
 15017 \DeclareTextCompositeCommand{\k}{PU}{I}{\81\056}% U+012E  
 15018 % U+012F LATIN SMALL LETTER I WITH OGONEK; iogonek  
 15019 \DeclareTextCompositeCommand{\k}{PU}{i}{\81\057}% U+012F  
 15020 \DeclareTextCompositeCommand{\k}{PU}{i}{\81\057}% U+012F  
 15021 % U+0130 LATIN CAPITAL LETTER I WITH DOT ABOVE; Idot, Idotaccent  
 15022 \DeclareTextCompositeCommand{\.}{PU}{I}{\81\060}% U+0130  
 15023 % U+0131 LATIN SMALL LETTER DOTLESS I; dotlessi  
 15024 \DeclareTextCommand{\i}{PU}{\81\061}% U+0131  
 15025 % U+0132 LATIN CAPITAL LIGATURE IJ; IJ  
 15026 \DeclareTextCommand{\IJ}{PU}{\81\062}% U+0132  
 15027 % U+0133 LATIN SMALL LIGATURE IJ; ij  
 15028 \DeclareTextCommand{\ij}{PU}{\81\063}% U+0133  
 15029 % U+0134 LATIN CAPITAL LETTER J WITH CIRCUMFLEX; Jcircumflex  
 15030 \DeclareTextCompositeCommand{\^}{PU}{J}{\81\064}% U+0134  
 15031 % U+0135 LATIN SMALL LETTER J WITH CIRCUMFLEX; jcircumflex  
 15032 \DeclareTextCompositeCommand{\^}{PU}{j}{\81\065}% U+0135  
 15033 \DeclareTextCompositeCommand{\^}{PU}{j}{\81\065}% U+0135  
 15034 % U+0136 LATIN CAPITAL LETTER K WITH CEDILLA; Kcedilla, Kcommaac-  
 cent  
 15035 \DeclareTextCompositeCommand{\c}{PU}{K}{\81\066}% U+0136  
 15036 % U+0137 LATIN SMALL LETTER K WITH CEDILLA; kcedilla, kcommaaccent  
 15037 \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.

15038 % U+0138 LATIN SMALL LETTER KRA; kgreenlandic  
 15039 \DeclareTextCommand{\textkra}{PU}{\81\070}% U+0138  
 15040 % U+0139 LATIN CAPITAL LETTER L WITH ACUTE; Lacute  
 15041 \DeclareTextCompositeCommand{\'}{PU}{L}{\81\071}% U+0139  
 15042 % U+013A LATIN SMALL LETTER L WITH ACUTE; lacute  
 15043 \DeclareTextCompositeCommand{\'}{PU}{l}{\81\072}% U+013A  
 15044 % U+013B LATIN CAPITAL LETTER L WITH CEDILLA; Lcedilla, Lcommaac-  
 cent  
 15045 \DeclareTextCompositeCommand{\c}{PU}{L}{\81\073}% U+013B  
 15046 % U+013C LATIN SMALL LETTER L WITH CEDILLA; lcedilla, lcommaaccent  
 15047 \DeclareTextCompositeCommand{\c}{PU}{l}{\81\074}% U+013C  
 15048 % U+013D LATIN CAPITAL LETTER L WITH CARON; Lcaron  
 15049 \DeclareTextCompositeCommand{\v}{PU}{L}{\81\075}% U+013D  
 15050 % U+013E LATIN SMALL LETTER L WITH CARON; lcaron  
 15051 \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.

15052 % U+013F LATIN CAPITAL LETTER L WITH MIDDLE DOT; Ldot, Ldotaccent  
15053 \DeclareTextCompositeCommand{\.}{PU}{L}{\81\077}% U+013F  
15054 % U+0140 LATIN SMALL LETTER L WITH MIDDLE DOT; ldot, ldotaccent  
15055 \DeclareTextCompositeCommand{\.}{PU}{l}{\81\100}% U+0140  
15056 % U+0141 LATIN CAPITAL LETTER L WITH STROKE; Lslash  
15057 \DeclareTextCommand{\L}{PU}{\81\101}% U+0141  
15058 % U+0142 LATIN SMALL LETTER L WITH STROKE; lslash  
15059 \DeclareTextCommand{\l}{PU}{\81\102}% U+0142  
15060 % U+0143 LATIN CAPITAL LETTER N WITH ACUTE; Nacute  
15061 \DeclareTextCompositeCommand{\' }{PU}{N}{\81\103}% U+0143  
15062 % U+0144 LATIN SMALL LETTER N WITH ACUTE; nacute  
15063 \DeclareTextCompositeCommand{\' }{PU}{n}{\81\104}% U+0144  
15064 % U+0145 LATIN CAPITAL LETTER N WITH CEDILLA; Ncedilla, Ncommaaccent  
15065 \DeclareTextCompositeCommand{\c}{PU}{N}{\81\105}% U+0145  
15066 % U+0146 LATIN SMALL LETTER N WITH CEDILLA; ncedilla, ncommaaccent  
15067 \DeclareTextCompositeCommand{\c}{PU}{n}{\81\106}% U+0146  
15068 % U+0147 LATIN CAPITAL LETTER N WITH CARON; Ncaron  
15069 \DeclareTextCompositeCommand{\v}{PU}{N}{\81\107}% U+0147  
15070 % U+0148 LATIN SMALL LETTER N WITH CARON; ncaron  
15071 \DeclareTextCompositeCommand{\v}{PU}{n}{\81\110}% U+0148  
15072 % U+0149 LATIN SMALL LETTER N PRECEDED BY APOSTROPHE; napostrophe, quoterightn  
15073 \DeclareTextCommand{\textnapostrophe}{PU}{\81\111}% U+0149  
15074 % U+014A LATIN CAPITAL LETTER ENG; Eng  
15075 \DeclareTextCommand{\NG}{PU}{\81\112}% U+014A  
15076 % U+014B LATIN SMALL LETTER ENG; eng  
15077 \DeclareTextCommand{\ng}{PU}{\81\113}% U+014B  
15078 % U+014C LATIN CAPITAL LETTER O WITH MACRON; Omacron  
15079 \DeclareTextCompositeCommand{\=}{PU}{O}{\81\114}% U+014C  
15080 % U+014D LATIN SMALL LETTER O WITH MACRON; omacron  
15081 \DeclareTextCompositeCommand{\=}{PU}{o}{\81\115}% U+014D  
15082 % U+014E LATIN CAPITAL LETTER O WITH BREVE; Obreve  
15083 \DeclareTextCompositeCommand{\u}{PU}{O}{\81\116}% U+014E  
15084 % U+014F LATIN SMALL LETTER O WITH BREVE; obreve  
15085 \DeclareTextCompositeCommand{\u}{PU}{o}{\81\117}% U+014F  
15086 % U+0150 LATIN CAPITAL LETTER O WITH DOUBLE ACUTE; Odblacut  
15087 \DeclareTextCompositeCommand{\H}{PU}{O}{\81\120}% U+0150  
15088 % U+0151 LATIN SMALL LETTER O WITH DOUBLE ACUTE; odblacut, ohungarumlaut  
15089 \DeclareTextCompositeCommand{\H}{PU}{o}{\81\121}% U+0151  
15090 % U+0152 LATIN CAPITAL LIGATURE OE; OE  
15091 \DeclareTextCommand{\OE}{PU}{\81\122}% U+0152  
15092 % U+0153 LATIN SMALL LIGATURE OE; oe  
15093 \DeclareTextCommand{\oe}{PU}{\81\123}% U+0153  
15094 % U+0154 LATIN CAPITAL LETTER R WITH ACUTE; Racute  
15095 \DeclareTextCompositeCommand{\' }{PU}{R}{\81\124}% U+0154  
15096 % U+0155 LATIN SMALL LETTER R WITH ACUTE; racute  
15097 \DeclareTextCompositeCommand{\' }{PU}{r}{\81\125}% U+0155  
15098 % U+0156 LATIN CAPITAL LETTER R WITH CEDILLA; Rcedilla, Rcommaaccent  
15099 \DeclareTextCompositeCommand{\c}{PU}{R}{\81\126}% U+0156  
15100 % U+0157 LATIN SMALL LETTER R WITH CEDILLA; rcedilla, rcommaaccent  
15101 \DeclareTextCompositeCommand{\c}{PU}{r}{\81\127}% U+0157

15102 % U+0158 LATIN CAPITAL LETTER R WITH CARON; Rcaron  
 15103 \DeclareTextCompositeCommand{\v}{PU}{R}{\81\130}% U+0158  
 15104 % U+0159 LATIN SMALL LETTER R WITH CARON; rcaron  
 15105 \DeclareTextCompositeCommand{\v}{PU}{r}{\81\131}% U+0159  
 15106 % U+015A LATIN CAPITAL LETTER S WITH ACUTE; Sacute  
 15107 \DeclareTextCompositeCommand{\'}{PU}{S}{\81\132}% U+015A  
 15108 % U+015B LATIN SMALL LETTER S WITH ACUTE; sacute  
 15109 \DeclareTextCompositeCommand{\'}{PU}{s}{\81\133}% U+015B  
 15110 % U+015C LATIN CAPITAL LETTER S WITH CIRCUMFLEX; Scircumflex  
 15111 \DeclareTextCompositeCommand{\^}{PU}{S}{\81\134}% U+015C  
 15112 % U+015D LATIN SMALL LETTER S WITH CIRCUMFLEX; scircumflex  
 15113 \DeclareTextCompositeCommand{\^}{PU}{s}{\81\135}% U+015D  
 15114 % U+015E LATIN CAPITAL LETTER S WITH CEDILLA; Scedilla  
 15115 \DeclareTextCompositeCommand{\c}{PU}{S}{\81\136}% U+015E  
 15116 % U+015F LATIN SMALL LETTER S WITH CEDILLA; scedilla  
 15117 \DeclareTextCompositeCommand{\c}{PU}{s}{\81\137}% U+015F  
 15118 % U+0160 LATIN CAPITAL LETTER S WITH CARON; Scaron  
 15119 \DeclareTextCompositeCommand{\v}{PU}{S}{\81\140}% U+0160  
 15120 % U+0161 LATIN SMALL LETTER S WITH CARON; scaron  
 15121 \DeclareTextCompositeCommand{\v}{PU}{s}{\81\141}% U+0161  
 15122 % U+0162 LATIN CAPITAL LETTER T WITH CEDILLA; Tcedilla, Tcommaac-  
 cent  
 15123 \DeclareTextCompositeCommand{\c}{PU}{T}{\81\142}% U+0162  
 15124 % U+0163 LATIN SMALL LETTER T WITH CEDILLA; tcedilla, tcommaaccent  
 15125 \DeclareTextCompositeCommand{\c}{PU}{t}{\81\143}% U+0163  
 15126 % U+0164 LATIN CAPITAL LETTER T WITH CARON; Tcaron  
 15127 \DeclareTextCompositeCommand{\v}{PU}{T}{\81\144}% U+0164  
 15128 % U+0165 LATIN SMALL LETTER T WITH CARON; tcaron  
 15129 \DeclareTextCompositeCommand{\v}{PU}{t}{\81\145}% U+0165  
 15130 % U+0166 LATIN CAPITAL LETTER T WITH STROKE; Tbar  
 15131 \DeclareTextCommand{\textTslash}{PU}{\81\146}% U+0166  
 15132 % U+0167 LATIN SMALL LETTER T WITH STROKE; tbar  
 15133 \DeclareTextCommand{\texttslash}{PU}{\81\147}% U+0167  
 15134 % U+0168 LATIN CAPITAL LETTER U WITH TILDE; Utilde  
 15135 \DeclareTextCompositeCommand{\~}{PU}{U}{\81\150}% U+0168  
 15136 % U+0169 LATIN SMALL LETTER U WITH TILDE; utilde  
 15137 \DeclareTextCompositeCommand{\~}{PU}{u}{\81\151}% U+0169  
 15138 % U+016A LATIN CAPITAL LETTER U WITH MACRON; Umacron  
 15139 \DeclareTextCompositeCommand{\=}{PU}{U}{\81\152}% U+016A  
 15140 % U+016B LATIN SMALL LETTER U WITH MACRON; umacron  
 15141 \DeclareTextCompositeCommand{\=}{PU}{u}{\81\153}% U+016B  
 15142 % U+016C LATIN CAPITAL LETTER U WITH BREVE; Ubreve  
 15143 \DeclareTextCompositeCommand{\u}{PU}{U}{\81\154}% U+016C  
 15144 % U+016D LATIN SMALL LETTER U WITH BREVE; ubreve  
 15145 \DeclareTextCompositeCommand{\u}{PU}{u}{\81\155}% U+016D  
 15146 % U+016E LATIN CAPITAL LETTER U WITH RING ABOVE; Uring  
 15147 \DeclareTextCompositeCommand{\r}{PU}{U}{\81\156}% U+016E  
 15148 % U+016F LATIN SMALL LETTER U WITH RING ABOVE; uring  
 15149 \DeclareTextCompositeCommand{\r}{PU}{u}{\81\157}% U+016F  
 15150 % U+0170 LATIN CAPITAL LETTER U WITH DOUBLE ACUTE; Udbla-  
 cute, Uhungarumlaut  
 15151 \DeclareTextCompositeCommand{\H}{PU}{U}{\81\160}% U+0170  
 15152 % U+0171 LATIN SMALL LETTER U WITH DOUBLE ACUTE; udblacute, uhun-  
 garumlaut  
 15153 \DeclareTextCompositeCommand{\H}{PU}{u}{\81\161}% U+0171  
 15154 % U+0172 LATIN CAPITAL LETTER U WITH OGONEK; Uogonek  
 15155 \DeclareTextCompositeCommand{\k}{PU}{U}{\81\162}% U+0172



15156 % U+0173 LATIN SMALL LETTER U WITH OGONEK; uogonek  
 15157 \DeclareTextCompositeCommand{\k}{PU}{u}{\81\163}% U+0173  
 15158 % U+0174 LATIN CAPITAL LETTER W WITH CIRCUMFLEX; Wcircumflex  
 15159 \DeclareTextCompositeCommand{\^}{PU}{W}{\81\164}% U+0174  
 15160 % U+0175 LATIN SMALL LETTER W WITH CIRCUMFLEX; wcircumflex  
 15161 \DeclareTextCompositeCommand{\^}{PU}{w}{\81\165}% U+0175  
 15162 % U+0176 LATIN CAPITAL LETTER Y WITH CIRCUMFLEX; Ycircumflex  
 15163 \DeclareTextCompositeCommand{\^}{PU}{Y}{\81\166}% U+0176  
 15164 % U+0177 LATIN SMALL LETTER Y WITH CIRCUMFLEX; ycircumflex  
 15165 \DeclareTextCompositeCommand{\^}{PU}{y}{\81\167}% U+0177  
 15166 % U+0178 LATIN CAPITAL LETTER Y WITH DIAERESIS; Ydieresis  
 15167 \DeclareTextCompositeCommand{"}{PU}{Y}{\81\170}% U+0178  
 15168 % U+0179 LATIN CAPITAL LETTER Z WITH ACUTE; Zacute  
 15169 \DeclareTextCompositeCommand{'}{PU}{Z}{\81\171}% U+0179  
 15170 % U+017A LATIN SMALL LETTER Z WITH ACUTE; zacute  
 15171 \DeclareTextCompositeCommand{'}{PU}{z}{\81\172}% U+017A  
 15172 % U+017B LATIN CAPITAL LETTER Z WITH DOT ABOVE; Zdot, Zdotaccent  
 15173 \DeclareTextCompositeCommand{.}{PU}{Z}{\81\173}% U+017B  
 15174 % U+017C LATIN SMALL LETTER Z WITH DOT ABOVE; zdot, zdotaccent  
 15175 \DeclareTextCompositeCommand{.}{PU}{z}{\81\174}% U+017C  
 15176 % U+017D LATIN CAPITAL LETTER Z WITH CARON; Zcaron  
 15177 \DeclareTextCompositeCommand{\v}{PU}{Z}{\81\175}% U+017D  
 15178 % U+017E LATIN SMALL LETTER Z WITH CARON; zcaron  
 15179 \DeclareTextCompositeCommand{\v}{PU}{z}{\81\176}% U+017E  
 15180 % U+017F LATIN SMALL LETTER LONG S; longs, slong  
 15181 \DeclareTextCommand{\textlongS}{PU}{\81\177}% U+017F

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

15182 % U+0192 LATIN SMALL LETTER F WITH HOOK; florin  
 15183 \DeclareTextCommand{\textflorin}{PU}{\81\222}% U+0192  
 15184 % U+01CD LATIN CAPITAL LETTER A WITH CARON; Acaron  
 15185 \DeclareTextCompositeCommand{\v}{PU}{A}{\81\315}% U+01CD  
 15186 % U+01CE LATIN SMALL LETTER A WITH CARON; acaron  
 15187 \DeclareTextCompositeCommand{\v}{PU}{a}{\81\316}% U+01CE  
 15188 % U+01CF LATIN CAPITAL LETTER I WITH CARON; Icaron  
 15189 \DeclareTextCompositeCommand{\v}{PU}{I}{\81\317}% U+01CF  
 15190 % U+01D0 LATIN SMALL LETTER I WITH CARON; icaron  
 15191 \DeclareTextCompositeCommand{\v}{PU}{i}{\81\320}% U+01D0  
 15192 \DeclareTextCompositeCommand{\v}{PU}{i}{\81\320}% U+01D0  
 15193 % U+01D1 LATIN CAPITAL LETTER O WITH CARON; Ocaron  
 15194 \DeclareTextCompositeCommand{\v}{PU}{O}{\81\321}% U+01D1  
 15195 % U+01D2 LATIN SMALL LETTER O WITH CARON; ocaron  
 15196 \DeclareTextCompositeCommand{\v}{PU}{o}{\81\322}% U+01D2  
 15197 % U+01D3 LATIN CAPITAL LETTER U WITH CARON; Ucaron  
 15198 \DeclareTextCompositeCommand{\v}{PU}{U}{\81\323}% U+01D3  
 15199 % U+01D4 LATIN SMALL LETTER U WITH CARON; ucaron  
 15200 \DeclareTextCompositeCommand{\v}{PU}{u}{\81\324}% U+01D4  
 15201 % U+01E4 LATIN CAPITAL LETTER G WITH STROKE; Gstroke  
 15202 \DeclareTextCommand{\textGslash}{PU}{\81\344}% U+01E4  
 15203 % U+01E5 LATIN SMALL LETTER G WITH STROKE; gstroke  
 15204 \DeclareTextCommand{\textgslash}{PU}{\81\345}% U+01E5  
 15205 % U+01E6 LATIN CAPITAL LETTER G WITH CARON; Gcaron  
 15206 \DeclareTextCompositeCommand{\v}{PU}{G}{\81\346}% U+01E6  
 15207 % U+01E7 LATIN SMALL LETTER G WITH CARON; gcaron  
 15208 \DeclareTextCompositeCommand{\v}{PU}{g}{\81\347}% U+01E7  
 15209 % U+01E8 LATIN CAPITAL LETTER K WITH CARON; Kcaron  
 15210 \DeclareTextCompositeCommand{\v}{PU}{K}{\81\350}% U+01E8

15211 % U+01E9 LATIN SMALL LETTER K WITH CARON; kcaron  
15212 \DeclareTextCompositeCommand{\v}{PU}{k}{\81\351}% U+01E9  
15213 % U+01EA LATIN CAPITAL LETTER O WITH OGONEK; Oogonek  
15214 \DeclareTextCompositeCommand{\k}{PU}{O}{\81\352}% U+01EA  
15215 % U+01EB LATIN SMALL LETTER O WITH OGONEK; oogonek  
15216 \DeclareTextCompositeCommand{\k}{PU}{o}{\81\353}% U+01EB  
15217 % U+01F0 LATIN SMALL LETTER J WITH CARON; jcaron  
15218 \DeclareTextCompositeCommand{\v}{PU}{j}{\81\360}% U+01F0  
15219 \DeclareTextCompositeCommand{\v}{PU}{j}{\81\360}% U+01F0  
15220 % U+01F4 LATIN CAPITAL LETTER G WITH ACUTE; Gacute  
15221 \DeclareTextCompositeCommand{\'}{PU}{G}{\81\364}% U+01F4  
15222 % U+01F5 LATIN SMALL LETTER G WITH ACUTE; gacute  
15223 \DeclareTextCompositeCommand{\'}{PU}{g}{\81\365}% U+01F5  
15224 % U+01F8 LATIN CAPITAL LETTER N WITH GRAVE  
15225 \DeclareTextCompositeCommand{\'}{PU}{N}{\81\370}% U+01F8  
15226 % U+01F9 LATIN SMALL LETTER N WITH GRAVE  
15227 \DeclareTextCompositeCommand{\'}{PU}{n}{\81\371}% U+01F9  
15228 % U+01FC LATIN CAPITAL LETTER AE WITH ACUTE; AEacute  
15229 \DeclareTextCompositeCommand{\'}{PU}{AE}{\81\374}% U+01FC  
15230 % U+01FD LATIN SMALL LETTER AE WITH ACUTE; aeacute  
15231 \DeclareTextCompositeCommand{\'}{PU}{ae}{\81\375}% U+01FD  
15232 % U+01FE LATIN CAPITAL LETTER O WITH STROKE AND ACUTE; \*Oslasha-  
cute, Ostrokeacut  
15233 \DeclareTextCompositeCommand{\'}{PU}{O}{\81\376}% U+01FE  
15234 % U+01FF LATIN SMALL LETTER O WITH STROKE AND ACUTE; \*oslasha-  
cute, ostrokeacute  
15235 \DeclareTextCompositeCommand{\'}{PU}{o}{\81\377}% U+01FF  
15236 % U+0200 LATIN CAPITAL LETTER A WITH DOUBLE GRAVE; Adblgrave  
15237 \DeclareTextCompositeCommand{\G}{PU}{A}{\82\000}% U+0200  
15238 % U+0201 LATIN SMALL LETTER A WITH DOUBLE GRAVE; adblgrave  
15239 \DeclareTextCompositeCommand{\G}{PU}{a}{\82\001}% U+0201  
15240 % U+0204 LATIN CAPITAL LETTER E WITH DOUBLE GRAVE; Edblgrave  
15241 \DeclareTextCompositeCommand{\G}{PU}{E}{\82\004}% U+0204  
15242 % U+0205 LATIN SMALL LETTER E WITH DOUBLE GRAVE; edblgrave  
15243 \DeclareTextCompositeCommand{\G}{PU}{e}{\82\005}% U+0205  
15244 % U+0208 LATIN CAPITAL LETTER I WITH DOUBLE GRAVE; Idblgrave  
15245 \DeclareTextCompositeCommand{\G}{PU}{I}{\82\010}% U+0208  
15246 % U+0209 LATIN SMALL LETTER I WITH DOUBLE GRAVE; idblgrave  
15247 \DeclareTextCompositeCommand{\G}{PU}{i}{\82\011}% U+0209  
15248 \DeclareTextCompositeCommand{\G}{PU}{i}{\82\011}% U+0209  
15249 % U+020C LATIN CAPITAL LETTER O WITH DOUBLE GRAVE; Odblgrave  
15250 \DeclareTextCompositeCommand{\G}{PU}{O}{\82\014}% U+020C  
15251 % U+020D LATIN SMALL LETTER O WITH DOUBLE GRAVE; odblgrave  
15252 \DeclareTextCompositeCommand{\G}{PU}{o}{\82\015}% U+020D  
15253 % U+0210 LATIN CAPITAL LETTER R WITH DOUBLE GRAVE; Rdblgrave  
15254 \DeclareTextCompositeCommand{\G}{PU}{R}{\82\020}% U+0210  
15255 % U+0211 LATIN SMALL LETTER R WITH DOUBLE GRAVE; rdblgrave  
15256 \DeclareTextCompositeCommand{\G}{PU}{r}{\82\021}% U+0211  
15257 % U+0214 LATIN CAPITAL LETTER U WITH DOUBLE GRAVE; Udblgrave  
15258 \DeclareTextCompositeCommand{\G}{PU}{U}{\82\024}% U+0214  
15259 % U+0215 LATIN SMALL LETTER U WITH DOUBLE GRAVE; udblgrave  
15260 \DeclareTextCompositeCommand{\G}{PU}{u}{\82\025}% U+0215  
15261 % U+021E LATIN CAPITAL LETTER H WITH CARON  
15262 \DeclareTextCompositeCommand{\v}{PU}{H}{\82\036}% U+021E  
15263 % U+021F LATIN SMALL LETTER H WITH CARON  
15264 \DeclareTextCompositeCommand{\v}{PU}{h}{\82\037}% U+021F  
15265 % U+0226 LATIN CAPITAL LETTER A WITH DOT ABOVE

15266 \DeclareTextCompositeCommand{\.}{PU}{A}{\82\046}% U+0226  
 15267 % U+0227 LATIN SMALL LETTER A WITH DOT ABOVE  
 15268 \DeclareTextCompositeCommand{\.}{PU}{a}{\82\047}% U+0227  
 15269 % U+0228 LATIN CAPITAL LETTER E WITH CEDILLA  
 15270 \DeclareTextCompositeCommand{\c}{PU}{E}{\82\050}% U+0228  
 15271 % U+0229 LATIN SMALL LETTER E WITH CEDILLA  
 15272 \DeclareTextCompositeCommand{\c}{PU}{e}{\82\051}% U+0229  
 15273 % U+022E LATIN CAPITAL LETTER O WITH DOT ABOVE  
 15274 \DeclareTextCompositeCommand{\.}{PU}{O}{\82\056}% U+022E  
 15275 % U+022F LATIN SMALL LETTER O WITH DOT ABOVE  
 15276 \DeclareTextCompositeCommand{\.}{PU}{o}{\82\057}% U+022F  
 15277 % U+0232 LATIN CAPITAL LETTER Y WITH MACRON  
 15278 \DeclareTextCompositeCommand{\=}{PU}{Y}{\82\062}% U+0232  
 15279 % U+0233 LATIN SMALL LETTER Y WITH MACRON  
 15280 \DeclareTextCompositeCommand{\=}{PU}{y}{\82\063}% U+0233  
 15281 % U+0237 LATIN SMALL LETTER DOTLESS J  
 15282 \DeclareTextCommand{\j}{PU}{\82\067}% U+0237

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

15283 % U+02C7 CARON; caron  
 15284 \DeclareTextCommand{\textasciicaron}{PU}{\82\307}% U+02C7  
 15285 % U+02D8 BREVE; breve  
 15286 \DeclareTextCommand{\textasciibreve}{PU}{\82\330}% U+02D8  
 15287 % U+02D9 DOT ABOVE; dotaccent  
 15288 \DeclareTextCommand{\textdotaccent}{PU}{\82\331}% U+02D9  
 15289 % U+02DA RING ABOVE; ring  
 15290 \DeclareTextCommand{\textring}{PU}{\82\332}% U+02DA  
 15291 % U+02DB OGONEK; ogonek  
 15292 \DeclareTextCommand{\textogonek}{PU}{\82\333}% U+02DB  
 15293 % U+02DC SMALL TILDE; ilde, \*tilde  
 15294 \DeclareTextCommand{\texttilde}{PU}{\82\334}% U+02DC  
 15295 % U+02DD DOUBLE ACUTE ACCENT; hungarumlaut  
 15296 \DeclareTextCommand{\texthungarumlaut}{PU}{\82\335}% U+02DD  
 15297 \DeclareTextCommand{\textacutedbl}{PU}{\texthungarumlaut}% U+02DD  
 15298 % U+02F5 MODIFIER LETTER MIDDLE DOUBLE GRAVE ACCENT  
 15299 \DeclareTextCommand{\textgravedbl}{PU}{\82\365}% U+02F5  
 15300 % U+02F7 MODIFIER LETTER LOW TILDE  
 15301 \DeclareTextCommand{\texttildelow}{PU}{\82\367}% U+02F7

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

15302 % U+030F COMBINING DOUBLE GRAVE ACCENT; dblgravecmb  
 15303 \DeclareTextCommand{\textdoublegrave}{PU}{\83\017}% U+030F  
 15304 % U+0311 COMBINING INVERTED BREVE; breveinvertedcmb  
 15305 \DeclareTextCommand{\textnewtie}{PU}{\83\021}% U+0311  
 15306 % U+0323 COMBINING DOT BELOW; dotbelowcmb, \*dotbelowcomb  
 15307 \DeclareTextCommand{\textdotbelow}{PU}{\83\043}% U+0323  
 15308 % U+0331 COMBINING MACRON BELOW; macronbelowcmb  
 15309 \DeclareTextCommand{\textmacronbelow}{PU}{\83\061}% U+0331  
 15310 % U+0361 COMBINING DOUBLE INVERTED BREVE; breveinverteddoublecmb  
 15311 \DeclareTextCommand{\texttie}{PU}{\83\141}% U+0361

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

15312 % U+0374 GREEK NUMERAL SIGN; numeralsigngreek  
 15313 \DeclareTextCommand{\textnumeralsigngreek}{PU}{\83\164}% U+0374  
 15314 % U+0375 GREEK LOWER NUMERAL SIGN; numeralsignlowergreek  
 15315 \DeclareTextCommand{\textnumeralsignlowergreek}{PU}{\83\165}% U+0375  
 15316 % U+0386 GREEK CAPITAL LETTER ALPHA WITH TONOS; Alphanos

15317 \DeclareTextCompositeCommand{\'}{PU}{\textAlpha}{\83\206}% U+0386  
15318 % U+0388 GREEK CAPITAL LETTER EPSILON WITH TONOS; Epsilontonos  
15319 \DeclareTextCompositeCommand{\'}{PU}{\textEpsilon}{\83\210}% U+0388  
15320 % U+0389 GREEK CAPITAL LETTER ETA WITH TONOS; Etatonos  
15321 \DeclareTextCompositeCommand{\'}{PU}{\textEta}{\83\211}% U+0389  
15322 % U+038A GREEK CAPITAL LETTER IOTA WITH TONOS; Iotatonos  
15323 \DeclareTextCompositeCommand{\'}{PU}{\textIota}{\83\212}% U+038A  
15324 % U+038C GREEK CAPITAL LETTER OMICRON WITH TONOS; Omi-  
crintonos  
15325 \DeclareTextCompositeCommand{\'}{PU}{\textOmicron}{\83\214}% U+038C  
15326 % U+038E GREEK CAPITAL LETTER UPSILON WITH TONOS; Upsilonontonos  
15327 \DeclareTextCompositeCommand{\'}{PU}{\textUpsilon}{\83\216}% U+038E  
15328 % U+038F GREEK CAPITAL LETTER OMEGA WITH TONOS; Omegatonos  
15329 \DeclareTextCompositeCommand{\'}{PU}{\textOmega}{\83\217}% U+038F  
15330 % U+0390 GREEK SMALL LETTER IOTA WITH DIALYTIKA AND TONOS; io-  
tadiesistonos  
15331 \DeclareTextCompositeCommand{\'}{PU}{\textIotadiesis}{\83\220}% U+0390  
15332 % U+0391 GREEK CAPITAL LETTER ALPHA; Alpha  
15333 \DeclareTextCommand{\textAlpha}{PU}{\83\221}% U+0391  
15334 % U+0392 GREEK CAPITAL LETTER BETA; Beta  
15335 \DeclareTextCommand{\textBeta}{PU}{\83\222}% U+0392  
15336 % U+0393 GREEK CAPITAL LETTER GAMMA; Gamma  
15337 \DeclareTextCommand{\textGamma}{PU}{\83\223}% U+0393  
15338 % U+0394 GREEK CAPITAL LETTER DELTA; Deltagreek, \*Delta  
15339 \DeclareTextCommand{\textDelta}{PU}{\83\224}% U+0394  
15340 % U+0395 GREEK CAPITAL LETTER EPSILON; Epsilon  
15341 \DeclareTextCommand{\textEpsilon}{PU}{\83\225}% U+0395  
15342 % U+0396 GREEK CAPITAL LETTER ZETA; Zeta  
15343 \DeclareTextCommand{\textZeta}{PU}{\83\226}% U+0396  
15344 % U+0397 GREEK CAPITAL LETTER ETA; Eta  
15345 \DeclareTextCommand{\textEta}{PU}{\83\227}% U+0397  
15346 % U+0398 GREEK CAPITAL LETTER THETA; Theta  
15347 \DeclareTextCommand{\textTheta}{PU}{\83\230}% U+0398  
15348 % U+0399 GREEK CAPITAL LETTER IOTA; Iota  
15349 \DeclareTextCommand{\textIota}{PU}{\83\231}% U+0399  
15350 % U+039A GREEK CAPITAL LETTER KAPPA; Kappa  
15351 \DeclareTextCommand{\textKappa}{PU}{\83\232}% U+039A  
15352 % U+039B GREEK CAPITAL LETTER LAMDA; Lambda  
15353 \DeclareTextCommand{\textLambda}{PU}{\83\233}% U+039B  
15354 % U+039C GREEK CAPITAL LETTER MU; Mu  
15355 \DeclareTextCommand{\textMu}{PU}{\83\234}% U+039C  
15356 % U+039D GREEK CAPITAL LETTER NU; Nu  
15357 \DeclareTextCommand{\textNu}{PU}{\83\235}% U+039D  
15358 % U+039E GREEK CAPITAL LETTER XI; Xi  
15359 \DeclareTextCommand{\textXi}{PU}{\83\236}% U+039E  
15360 % U+039F GREEK CAPITAL LETTER OMICRON; Omicron  
15361 \DeclareTextCommand{\textOmicron}{PU}{\83\237}% U+039F  
15362 % U+03A0 GREEK CAPITAL LETTER PI; Pi  
15363 \DeclareTextCommand{\textPi}{PU}{\83\240}% U+03A0  
15364 % U+03A1 GREEK CAPITAL LETTER RHO; Rho  
15365 \DeclareTextCommand{\textRho}{PU}{\83\241}% U+03A1  
15366 % U+03A3 GREEK CAPITAL LETTER SIGMA; Sigma  
15367 \DeclareTextCommand{\textSigma}{PU}{\83\243}% U+03A3  
15368 % U+03A4 GREEK CAPITAL LETTER TAU; Tau  
15369 \DeclareTextCommand{\textTau}{PU}{\83\244}% U+03A4  
15370 % U+03A5 GREEK CAPITAL LETTER UPSILON; Upsilon  
15371 \DeclareTextCommand{\textUpsilon}{PU}{\83\245}% U+03A5

15372 % U+03A6 GREEK CAPITAL LETTER PHI; Phi  
 15373 \DeclareTextCommand{\textPhi}{PU}{\83\246}% U+03A6  
 15374 % U+03A7 GREEK CAPITAL LETTER CHI; Chi  
 15375 \DeclareTextCommand{\textChi}{PU}{\83\247}% U+03A7  
 15376 % U+03A8 GREEK CAPITAL LETTER PSI; Psi  
 15377 \DeclareTextCommand{\textPsi}{PU}{\83\250}% U+03A8  
 15378 % U+03A9 GREEK CAPITAL LETTER OMEGA; Omegagreek, \*Omega  
 15379 \DeclareTextCommand{\textOmega}{PU}{\83\251}% U+03A9  
 15380 % U+03AA GREEK CAPITAL LETTER IOTA WITH DIALYTIKA; Iotadieresis  
 15381 \DeclareTextCommand{\textIotadieresis}{PU}{\83\252}% U+03AA  
 15382 \DeclareTextCompositeCommand{"}{PU}{\textIota}{\83\252}% U+03AA  
 15383 % U+03AB GREEK CAPITAL LETTER UPSILON WITH DIALYTIKA; Up-  
 silondieresis  
 15384 \DeclareTextCompositeCommand{"}{PU}{\textUpsilon}{\83\253}% U+03AB  
 15385 % U+03AC GREEK SMALL LETTER ALPHA WITH TONOS; alphanos  
 15386 \DeclareTextCompositeCommand{'}{PU}{\textalpha}{\83\254}% U+03AC  
 15387 % U+03AD GREEK SMALL LETTER EPSILON WITH TONOS; epsilon  
 15388 \DeclareTextCompositeCommand{'}{PU}{\textepsilon}{\83\255}% U+03AD  
 15389 % U+03AE GREEK SMALL LETTER ETA WITH TONOS; etanos  
 15390 \DeclareTextCompositeCommand{'}{PU}{\texteta}{\83\256}% U+03AE  
 15391 % U+03AF GREEK SMALL LETTER IOTA WITH TONOS; iotanos  
 15392 \DeclareTextCompositeCommand{'}{PU}{\textiota}{\83\257}% U+03AF  
 15393 % U+03B0 GREEK SMALL LETTER UPSILON WITH DIALYTIKA AND TONOS; up-  
 silondieresis  
 15394 \DeclareTextCompositeCommand{"}{PU}{\textupsilon}{\83\260}% U+03B0  
 15395 % U+03B1 GREEK SMALL LETTER ALPHA; alpha  
 15396 \DeclareTextCommand{\textalpha}{PU}{\83\261}% U+03B1  
 15397 % U+03B2 GREEK SMALL LETTER BETA; beta  
 15398 \DeclareTextCommand{\textbeta}{PU}{\83\262}% U+03B2  
 15399 % U+03B3 GREEK SMALL LETTER GAMMA; gamma  
 15400 \DeclareTextCommand{\textgamma}{PU}{\83\263}% U+03B3  
 15401 % U+03B4 GREEK SMALL LETTER DELTA; delta  
 15402 \DeclareTextCommand{\textdelta}{PU}{\83\264}% U+03B4  
 15403 % U+03B5 GREEK SMALL LETTER EPSILON; epsilon  
 15404 \DeclareTextCommand{\textepsilon}{PU}{\83\265}% U+03B5  
 15405 % U+03B6 GREEK SMALL LETTER ZETA; zeta  
 15406 \DeclareTextCommand{\textzeta}{PU}{\83\266}% U+03B6  
 15407 % U+03B7 GREEK SMALL LETTER ETA; eta  
 15408 \DeclareTextCommand{\texteta}{PU}{\83\267}% U+03B7  
 15409 % U+03B8 GREEK SMALL LETTER THETA; theta  
 15410 \DeclareTextCommand{\texttheta}{PU}{\83\270}% U+03B8  
 15411 % U+03B9 GREEK SMALL LETTER IOTA; iota  
 15412 \DeclareTextCommand{\textiota}{PU}{\83\271}% U+03B9  
 15413 % U+03BA GREEK SMALL LETTER KAPPA; kappa  
 15414 \DeclareTextCommand{\textkappa}{PU}{\83\272}% U+03BA  
 15415 % U+03BB GREEK SMALL LETTER LAMDA; lambda  
 15416 \DeclareTextCommand{\textlambda}{PU}{\83\273}% U+03BB  
 15417 % U+03BC GREEK SMALL LETTER MU; mugreek, \*mu  
 15418 \DeclareTextCommand{\textmugreek}{PU}{\83\274}% U+03BC  
 15419 % U+03BD GREEK SMALL LETTER NU; nu  
 15420 \DeclareTextCommand{\textnu}{PU}{\83\275}% U+03BD  
 15421 % U+03BE GREEK SMALL LETTER XI; xi  
 15422 \DeclareTextCommand{\textxi}{PU}{\83\276}% U+03BE  
 15423 % U+03BF GREEK SMALL LETTER OMICRON; omicron  
 15424 \DeclareTextCommand{\textomicron}{PU}{\83\277}% U+03BF  
 15425 % U+03C0 GREEK SMALL LETTER PI; pi  
 15426 \DeclareTextCommand{\textpi}{PU}{\83\300}% U+03C0

15427 % U+03C1 GREEK SMALL LETTER RHO; rho  
 15428 \DeclareTextCommand{\textrho}{PU}{\83\301}% U+03C1  
 15429 % U+03C2 GREEK SMALL LETTER FINAL SIGMA; \*sigma1, sigmafinal  
 15430 \DeclareTextCommand{\textvarsigma}{PU}{\83\302}% U+03C2  
 15431 % U+03C3 GREEK SMALL LETTER SIGMA; sigma  
 15432 \DeclareTextCommand{\textsigma}{PU}{\83\303}% U+03C3  
 15433 % U+03C4 GREEK SMALL LETTER TAU; tau  
 15434 \DeclareTextCommand{\texttau}{PU}{\83\304}% U+03C4  
 15435 % U+03C5 GREEK SMALL LETTER UPSILON; upsilon  
 15436 \DeclareTextCommand{\textupsilon}{PU}{\83\305}% U+03C5  
 15437 % U+03C6 GREEK SMALL LETTER PHI; phi  
 15438 \DeclareTextCommand{\textphi}{PU}{\83\306}% U+03C6  
 15439 % U+03C7 GREEK SMALL LETTER CHI; chi  
 15440 \DeclareTextCommand{\textchi}{PU}{\83\307}% U+03C7  
 15441 % U+03C8 GREEK SMALL LETTER PSI; psi  
 15442 \DeclareTextCommand{\textpsi}{PU}{\83\310}% U+03C8  
 15443 % U+03C9 GREEK SMALL LETTER OMEGA; omega  
 15444 \DeclareTextCommand{\textomega}{PU}{\83\311}% U+03C9  
 15445 % U+03CA GREEK SMALL LETTER IOTA WITH DIALYTIKA; iodadieresis  
 15446 \DeclareTextCompositeCommand{"}{PU}{\textiota}{\83\312}% U+03CA  
 15447 % U+03CB GREEK SMALL LETTER UPSILON WITH DIALYTIKA; up-  
 silondieresis  
 15448 \DeclareTextCompositeCommand{"}{PU}{\textupsilon}{\83\313}% U+03CB  
 15449 % U+03CC GREEK SMALL LETTER OMICRON WITH TONOS; omicrontonos  
 15450 \DeclareTextCompositeCommand{'}{PU}{\textomicron}{\83\314}% U+03CC  
 15451 % U+03CD GREEK SMALL LETTER UPSILON WITH TONOS; upsilontonos  
 15452 \DeclareTextCommand{\textupsilonacute}{PU}{\83\315}% U+03CD  
 15453 \DeclareTextCompositeCommand{'}{PU}{\textupsilon}{\83\315}% U+03CD  
 15454 % U+03CE GREEK SMALL LETTER OMEGA WITH TONOS; omegatonos  
 15455 \DeclareTextCompositeCommand{'}{PU}{\textomega}{\83\316}% U+03CE  
 15456 % U+03DA GREEK LETTER STIGMA; Stigmagreek  
 15457 \DeclareTextCommand{\textStigmagreek}{PU}{\83\332}% U+03DA  
 15458 % U+03DB GREEK SMALL LETTER STIGMA  
 15459 \DeclareTextCommand{\textstigmagreek}{PU}{\83\333}% U+03DB  
 15460 % U+03DC GREEK LETTER DIGAMMA; Digammagreek  
 15461 \DeclareTextCommand{\textDigammagreek}{PU}{\83\334}% U+03DC  
 15462 % U+03DD GREEK SMALL LETTER DIGAMMA  
 15463 \DeclareTextCommand{\textdigammagreek}{PU}{\83\335}% U+03DD  
 15464 % U+03DE GREEK LETTER KOPPA; Koppagreek  
 15465 \DeclareTextCommand{\textKoppagreek}{PU}{\83\336}% U+03DE  
 15466 % U+03DF GREEK SMALL LETTER KOPPA  
 15467 \DeclareTextCommand{\textkoppagreek}{PU}{\83\337}% U+03DF  
 15468 % U+03E0 GREEK LETTER SAMPI; Sampigreek  
 15469 \DeclareTextCommand{\textSampigreek}{PU}{\83\340}% U+03E0  
 15470 % U+03E1 GREEK SMALL LETTER SAMPI  
 15471 \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.

15472 % U+0400 CYRILLIC CAPITAL LETTER IE WITH GRAVE  
 15473 \DeclareTextCompositeCommand{'}{PU}{\CYRE}{\84\000}% U+0400  
 15474 % U+0401 CYRILLIC CAPITAL LETTER IO; Iocyrillic, \*afii10023  
 15475 \DeclareTextCommand{\CYRYO}{PU}{\84\001}% U+0401  
 15476 \DeclareTextCompositeCommand{"}{PU}{\CYRE}{\84\001}% ???  
 15477 % U+0402 CYRILLIC CAPITAL LETTER DJE; Djecyrillic, \*afii10051  
 15478 \DeclareTextCommand{\CYRDJE}{PU}{\84\002}% U+0402

15479 % U+0403 CYRILLIC CAPITAL LETTER GJE; Gjecyrillic, \*afii10052  
 15480 \DeclareTextCompositeCommand{\'}{PU}{\CYRG}{\84\003}% U+0403  
 15481 % U+0404 CYRILLIC CAPITAL LETTER UKRAINIAN IE; Ecyrillic, \*afii10053  
 15482 \DeclareTextCommand{\CYRIE}{PU}{\84\004}% U+0404  
 15483 % U+0405 CYRILLIC CAPITAL LETTER DZE; Dzecyrillic, \*afii10054  
 15484 \DeclareTextCommand{\CYRDZE}{PU}{\84\005}% U+0405  
 15485 % U+0406 CYRILLIC CAPITAL LETTER BYELORUSSIAN-UKRAINIAN I; Icyril-  
 lic, \*afii10055  
 15486 \DeclareTextCommand{\CYRII}{PU}{\84\006}% U+0406  
 15487 % U+0407 CYRILLIC CAPITAL LETTER YI; Yicyrillic, \*afii10056  
 15488 \DeclareTextCommand{\CYRYI}{PU}{\84\007}% U+0407  
 15489 \DeclareTextCompositeCommand{\"}{PU}{\CYRII}{\84\007}% U+0407  
 15490 % U+0408 CYRILLIC CAPITAL LETTER JE; Jecyrillic, \*afii10057  
 15491 \DeclareTextCommand{\CYRJE}{PU}{\84\010}% U+0408  
 15492 % U+0409 CYRILLIC CAPITAL LETTER LJE; Ljecyrillic, \*afii10058  
 15493 \DeclareTextCommand{\CYRLJE}{PU}{\84\011}% U+0409  
 15494 % U+040A CYRILLIC CAPITAL LETTER NJE; Njecyrillic, \*afii10059  
 15495 \DeclareTextCommand{\CYRNJE}{PU}{\84\012}% U+040A  
 15496 % U+040B CYRILLIC CAPITAL LETTER TSHE; Tshecyrillic, \*afii10060  
 15497 \DeclareTextCommand{\CYRTSHE}{PU}{\84\013}% U+040B  
 15498 % U+040C CYRILLIC CAPITAL LETTER KJE; Kjecyrillic, \*afii10061  
 15499 \DeclareTextCompositeCommand{\'}{PU}{\CYRK}{\84\014}% U+040C  
 15500 % U+040D CYRILLIC CAPITAL LETTER I WITH GRAVE  
 15501 \DeclareTextCompositeCommand{\`}{PU}{\CYRI}{\84\015}% U+040D  
 15502 % U+040E CYRILLIC CAPITAL LETTER SHORT U; Ushortcyrillic, \*afii10062  
 15503 \DeclareTextCommand{\CYRUSHRT}{PU}{\84\016}% U+040E  
 15504 \DeclareTextCompositeCommand{\U}{PU}{\CYRU}{\84\016}% U+040E  
 15505 % U+040F CYRILLIC CAPITAL LETTER DZHE; Dzhecyrillic, \*afii10145  
 15506 \DeclareTextCommand{\CYRDZHE}{PU}{\84\017}% U+040F  
 15507 % U+0410 CYRILLIC CAPITAL LETTER A; Acyrillic, \*afii10017  
 15508 \DeclareTextCommand{\CYRA}{PU}{\84\020}% U+0410  
 15509 % U+0411 CYRILLIC CAPITAL LETTER BE; Becyrillic, \*afii10018  
 15510 \DeclareTextCommand{\CYRB}{PU}{\84\021}% U+0411  
 15511 % U+0412 CYRILLIC CAPITAL LETTER VE; Vecyrillic, \*afii10019  
 15512 \DeclareTextCommand{\CYRV}{PU}{\84\022}% U+0412  
 15513 % U+0413 CYRILLIC CAPITAL LETTER GHE; Gecyrillic, \*afii10020  
 15514 \DeclareTextCommand{\CYRG}{PU}{\84\023}% U+0413  
 15515 % U+0414 CYRILLIC CAPITAL LETTER DE; Decyrillic, \*afii10021  
 15516 \DeclareTextCommand{\CYRD}{PU}{\84\024}% U+0414  
 15517 % U+0415 CYRILLIC CAPITAL LETTER IE; Iecyrillic, \*afii10022  
 15518 \DeclareTextCommand{\CYRE}{PU}{\84\025}% U+0415  
 15519 % U+0416 CYRILLIC CAPITAL LETTER ZHE; Zhecyrillic, \*afii10024  
 15520 \DeclareTextCommand{\CYRZH}{PU}{\84\026}% U+0416  
 15521 % U+0417 CYRILLIC CAPITAL LETTER ZE; Zecyrillic, \*afii10025  
 15522 \DeclareTextCommand{\CYRZ}{PU}{\84\027}% U+0417  
 15523 % U+0418 CYRILLIC CAPITAL LETTER I; Iicyrillic, \*afii10026  
 15524 \DeclareTextCommand{\CYRI}{PU}{\84\030}% U+0418  
 15525 % U+0419 CYRILLIC CAPITAL LETTER SHORT I; Iishortcyrillic, \*afii10027  
 15526 \DeclareTextCommand{\CYRISHRT}{PU}{\84\031}% U+0419  
 15527 \DeclareTextCompositeCommand{\U}{PU}{\CYRI}{\84\031}% U+0419  
 15528 % U+041A CYRILLIC CAPITAL LETTER KA; Kacyrillic, \*afii10028  
 15529 \DeclareTextCommand{\CYRK}{PU}{\84\032}% U+041A  
 15530 % U+041B CYRILLIC CAPITAL LETTER EL; Elcyrillic, \*afii10029  
 15531 \DeclareTextCommand{\CYRL}{PU}{\84\033}% U+041B  
 15532 % U+041C CYRILLIC CAPITAL LETTER EM; Emcyrillic, \*afii10030  
 15533 \DeclareTextCommand{\CYRM}{PU}{\84\034}% U+041C  
 15534 % U+041D CYRILLIC CAPITAL LETTER EN; Encyrillic, \*afii10031

15535 \DeclareTextCommand{\CYRN}{PU}{\84\035}% U+041D  
15536 % U+041E CYRILLIC CAPITAL LETTER O; Ocyrillic, \*afii10032  
15537 \DeclareTextCommand{\CYRO}{PU}{\84\036}% U+041E  
15538 % U+041F CYRILLIC CAPITAL LETTER PE; Pecyrillic, \*afii10033  
15539 \DeclareTextCommand{\CYRP}{PU}{\84\037}% U+041F  
15540 % U+0420 CYRILLIC CAPITAL LETTER ER; Ercyrillic, \*afii10034  
15541 \DeclareTextCommand{\CYRR}{PU}{\84\040}% U+0420  
15542 % U+0421 CYRILLIC CAPITAL LETTER ES; Escyrillic, \*afii10035  
15543 \DeclareTextCommand{\CYRS}{PU}{\84\041}% U+0421  
15544 % U+0422 CYRILLIC CAPITAL LETTER TE; Tecyrillic, \*afii10036  
15545 \DeclareTextCommand{\CYRT}{PU}{\84\042}% U+0422  
15546 % U+0423 CYRILLIC CAPITAL LETTER U; Ucyrillic, \*afii10037  
15547 \DeclareTextCommand{\CYRU}{PU}{\84\043}% U+0423  
15548 % U+0424 CYRILLIC CAPITAL LETTER EF; Efcyrillic, \*afii10038  
15549 \DeclareTextCommand{\CYRF}{PU}{\84\044}% U+0424  
15550 % U+0425 CYRILLIC CAPITAL LETTER HA; Khacyrillic, \*afii10039  
15551 \DeclareTextCommand{\CYRH}{PU}{\84\045}% U+0425  
15552 % U+0426 CYRILLIC CAPITAL LETTER TSE; Tsecyrillic, \*afii10040  
15553 \DeclareTextCommand{\CYRC}{PU}{\84\046}% U+0426  
15554 % U+0427 CYRILLIC CAPITAL LETTER CHE; Checyrillic, \*afii10041  
15555 \DeclareTextCommand{\CYRCH}{PU}{\84\047}% U+0427  
15556 % U+0428 CYRILLIC CAPITAL LETTER SHA; Shacyrillic, \*afii10042  
15557 \DeclareTextCommand{\CYRSH}{PU}{\84\050}% U+0428  
15558 % U+0429 CYRILLIC CAPITAL LETTER SHCHA; Shchacyrillic, \*afii10043  
15559 \DeclareTextCommand{\CYRSHCH}{PU}{\84\051}% U+0429  
15560 % U+042A CYRILLIC CAPITAL LETTER HARD SIGN; Hardsigncyrillic, \*afii10044  
15561 \DeclareTextCommand{\CYRHRDSN}{PU}{\84\052}% U+042A  
15562 % U+042B CYRILLIC CAPITAL LETTER YERU; Yericyrillic, \*afii10045  
15563 \DeclareTextCommand{\CYRERY}{PU}{\84\053}% U+042B  
15564 % U+042C CYRILLIC CAPITAL LETTER SOFT SIGN; Softsigncyrillic, \*afii10046  
15565 \DeclareTextCommand{\CYRSFTSN}{PU}{\84\054}% U+042C  
15566 % U+042D CYRILLIC CAPITAL LETTER E; Ereversedcyrillic, \*afii10047  
15567 \DeclareTextCommand{\CYREREV}{PU}{\84\055}% U+042D  
15568 % U+042E CYRILLIC CAPITAL LETTER YU; IUcyrillic, \*afii10048  
15569 \DeclareTextCommand{\CYRYU}{PU}{\84\056}% U+042E  
15570 % U+042F CYRILLIC CAPITAL LETTER YA; IAcyrillic, \*afii10049  
15571 \DeclareTextCommand{\CYRYA}{PU}{\84\057}% U+042F  
15572 % U+0430 CYRILLIC SMALL LETTER A; acyrillic, \*afii10065  
15573 \DeclareTextCommand{\cyra}{PU}{\84\060}% U+0430  
15574 % U+0431 CYRILLIC SMALL LETTER BE; \*afii10066, becyrillic  
15575 \DeclareTextCommand{\cyrb}{PU}{\84\061}% U+0431  
15576 % U+0432 CYRILLIC SMALL LETTER VE; \*afii10067, vecyrillic  
15577 \DeclareTextCommand{\cyrv}{PU}{\84\062}% U+0432  
15578 % U+0433 CYRILLIC SMALL LETTER GHE; \*afii10068, gecyrillic  
15579 \DeclareTextCommand{\cyrg}{PU}{\84\063}% U+0433  
15580 % U+0434 CYRILLIC SMALL LETTER DE; \*afii10069, decyrillic  
15581 \DeclareTextCommand{\cyrd}{PU}{\84\064}% U+0434  
15582 % U+0435 CYRILLIC SMALL LETTER IE; \*afii10070, iecyrillic  
15583 \DeclareTextCommand{\cyre}{PU}{\84\065}% U+0435  
15584 % U+0436 CYRILLIC SMALL LETTER ZHE; \*afii10072, zhacyrillic  
15585 \DeclareTextCommand{\cyrz}{PU}{\84\066}% U+0436  
15586 % U+0437 CYRILLIC SMALL LETTER ZE; \*afii10073, zecyrillic  
15587 \DeclareTextCommand{\cyrz}{PU}{\84\067}% U+0437  
15588 % U+0438 CYRILLIC SMALL LETTER I; \*afii10074, iicyrillic  
15589 \DeclareTextCommand{\cyri}{PU}{\84\070}% U+0438  
15590 % U+0439 CYRILLIC SMALL LETTER SHORT I; \*afii10075, iishortcyrillic  
15591 \DeclareTextCommand{\cyrishrt}{PU}{\84\071}% U+0439



15592 \DeclareTextCompositeCommand{\U}{PU}{\cyri}{\84\071}% U+0439  
15593 % U+043A CYRILLIC SMALL LETTER KA; \*afii10076, kacyrillic  
15594 \DeclareTextCommand{\cyrk}{PU}{\84\072}% U+043A  
15595 % U+043B CYRILLIC SMALL LETTER EL; \*afii10077, elcyrillic  
15596 \DeclareTextCommand{\cyrI}{PU}{\84\073}% U+043B  
15597 % U+043C CYRILLIC SMALL LETTER EM; \*afii10078, emcyrillic  
15598 \DeclareTextCommand{\cyrm}{PU}{\84\074}% U+043C  
15599 % U+043D CYRILLIC SMALL LETTER EN; \*afii10079, encyrillic  
15600 \DeclareTextCommand{\cyrn}{PU}{\84\075}% U+043D  
15601 % U+043E CYRILLIC SMALL LETTER O; \*afii10080, ocyrillic  
15602 \DeclareTextCommand{\cyro}{PU}{\84\076}% U+043E  
15603 % U+043F CYRILLIC SMALL LETTER PE; \*afii10081, pecyrillic  
15604 \DeclareTextCommand{\cyrp}{PU}{\84\077}% U+043F  
15605 % U+0440 CYRILLIC SMALL LETTER ER; \*afii10082, ercyrillic  
15606 \DeclareTextCommand{\cyrr}{PU}{\84\100}% U+0440  
15607 % U+0441 CYRILLIC SMALL LETTER ES; \*afii10083, escyrillic  
15608 \DeclareTextCommand{\cyrS}{PU}{\84\101}% U+0441  
15609 % U+0442 CYRILLIC SMALL LETTER TE; \*afii10084, tecyrillic  
15610 \DeclareTextCommand{\cyrt}{PU}{\84\102}% U+0442  
15611 % U+0443 CYRILLIC SMALL LETTER U; \*afii10085, ucyrillic  
15612 \DeclareTextCommand{\cyrU}{PU}{\84\103}% U+0443  
15613 % U+0444 CYRILLIC SMALL LETTER EF; \*afii10086, efcyrillic  
15614 \DeclareTextCommand{\cyrF}{PU}{\84\104}% U+0444  
15615 % U+0445 CYRILLIC SMALL LETTER HA; \*afii10087, khacyrillic  
15616 \DeclareTextCommand{\cyrh}{PU}{\84\105}% U+0445  
15617 % U+0446 CYRILLIC SMALL LETTER TSE; \*afii10088, tsecyrillic  
15618 \DeclareTextCommand{\cyrC}{PU}{\84\106}% U+0446  
15619 % U+0447 CYRILLIC SMALL LETTER CHE; \*afii10089, checyrillic  
15620 \DeclareTextCommand{\cyrch}{PU}{\84\107}% U+0447  
15621 % U+0448 CYRILLIC SMALL LETTER SHA; \*afii10090, shacyrillic  
15622 \DeclareTextCommand{\cyrsh}{PU}{\84\110}% U+0448  
15623 % U+0449 CYRILLIC SMALL LETTER SHCHA; \*afii10091, shchacyrillic  
15624 \DeclareTextCommand{\cyrshch}{PU}{\84\111}% U+0449  
15625 % U+044A CYRILLIC SMALL LETTER HARD SIGN; \*afii10092, hardsigncyrillic  
15626 \DeclareTextCommand{\cyrhrdsn}{PU}{\84\112}% U+044A  
15627 % U+044B CYRILLIC SMALL LETTER YERU; \*afii10093, yericyrillic  
15628 \DeclareTextCommand{\cyrery}{PU}{\84\113}% U+044B  
15629 % U+044C CYRILLIC SMALL LETTER SOFT SIGN; \*afii10094, softsigncyrillic  
15630 \DeclareTextCommand{\cyrSftsn}{PU}{\84\114}% U+044C  
15631 % U+044D CYRILLIC SMALL LETTER E; \*afii10095, ereversedcyrillic  
15632 \DeclareTextCommand{\cyrerev}{PU}{\84\115}% U+044D  
15633 % U+044E CYRILLIC SMALL LETTER YU; \*afii10096, iucyrillic  
15634 \DeclareTextCommand{\cyrYU}{PU}{\84\116}% U+044E  
15635 % U+044F CYRILLIC SMALL LETTER YA; \*afii10097, iacyrillic  
15636 \DeclareTextCommand{\cyrYA}{PU}{\84\117}% U+044F  
15637 % U+0450 CYRILLIC SMALL LETTER IE WITH GRAVE  
15638 \DeclareTextCompositeCommand{\'}{PU}{\cyre}{\84\120}% U+0450  
15639 % U+0451 CYRILLIC SMALL LETTER IO; \*afii10071, iocyrillic  
15640 \DeclareTextCommand{\cyrYO}{PU}{\84\121}% U+0451  
15641 \DeclareTextCompositeCommand{\"}{PU}{\cyre}{\84\121}% U+0451  
15642 % U+0452 CYRILLIC SMALL LETTER DJE; \*afii10099, djecyrillic  
15643 \DeclareTextCommand{\cyrDJE}{PU}{\84\122}% U+0452  
15644 % U+0453 CYRILLIC SMALL LETTER GJE; \*afii10100, gjecyrillic  
15645 \DeclareTextCompositeCommand{\`}{PU}{\cyrG}{\84\123}% U+0453  
15646 % U+0454 CYRILLIC SMALL LETTER UKRAINIAN IE; \*afii10101, ecyrillic  
15647 \DeclareTextCommand{\cyrIE}{PU}{\84\124}% U+0454  
15648 % U+0455 CYRILLIC SMALL LETTER DZE; \*afii10102, dzecyrillic

15649 \DeclareTextCommand{\cyrdze}{PU}{\84\125}% U+0455  
15650 % U+0456 CYRILLIC SMALL LETTER BYELORUSSIAN-UKRAINIAN I; \*afii10103, icyril-  
lic  
15651 \DeclareTextCommand{\cyrii}{PU}{\84\126}% U+0456  
15652 % U+0457 CYRILLIC SMALL LETTER YI; \*afii10104, yicyrillic  
15653 \DeclareTextCommand{\cyryi}{PU}{\84\127}% U+0457  
15654 \DeclareTextCompositeCommand{"}{PU}{\cyrii}{\84\127}% U+0457  
15655 % U+0458 CYRILLIC SMALL LETTER JE; \*afii10105, jecyrillic  
15656 \DeclareTextCommand{\cyrje}{PU}{\84\130}% U+0458  
15657 % U+0459 CYRILLIC SMALL LETTER LJE; \*afii10106, ljecyrillic  
15658 \DeclareTextCommand{\cyrlje}{PU}{\84\131}% U+0459  
15659 % U+045A CYRILLIC SMALL LETTER NJE; \*afii10107, njecyrillic  
15660 \DeclareTextCommand{\cyrnje}{PU}{\84\132}% U+045A  
15661 % U+045B CYRILLIC SMALL LETTER TSHE; \*afii10108, tshecyrillic  
15662 \DeclareTextCommand{\cyrtshe}{PU}{\84\133}% U+045B  
15663 % U+045C CYRILLIC SMALL LETTER KJE; \*afii10109, kjecyrillic  
15664 \DeclareTextCompositeCommand{\'}{PU}{\cyrk}{\84\134}% U+045C  
15665 % U+045D CYRILLIC SMALL LETTER I WITH GRAVE  
15666 \DeclareTextCompositeCommand{\'}{PU}{\cyri}{\84\135}% U+045D  
15667 % U+045E CYRILLIC SMALL LETTER SHORT U; \*afii10110, ushortcyrillic  
15668 \DeclareTextCommand{\cyrushrt}{PU}{\84\136}% U+045E  
15669 \DeclareTextCompositeCommand{\U}{PU}{\curu}{\84\136}% U+045E  
15670 % U+045F CYRILLIC SMALL LETTER DZHE; \*afii10193, dzhecyrillic  
15671 \DeclareTextCommand{\cyrdzhe}{PU}{\84\137}% U+045F  
15672 % U+0460 CYRILLIC CAPITAL LETTER OMEGA; Omegacyrillic  
15673 \DeclareTextCommand{\CYROMEGA}{PU}{\84\140}% U+0460  
15674 % U+0461 CYRILLIC SMALL LETTER OMEGA; omegacyrillic  
15675 \DeclareTextCommand{\cyromega}{PU}{\84\141}% U+0461  
15676 % U+0462 CYRILLIC CAPITAL LETTER YAT; Yatcyrillic, \*afii10146  
15677 \DeclareTextCommand{\CYRYAT}{PU}{\84\142}% U+0462  
15678 % U+0463 CYRILLIC SMALL LETTER YAT; \*afii10194, yatcyrillic  
15679 \DeclareTextCommand{\cyryat}{PU}{\84\143}% U+0463  
15680 % U+0464 CYRILLIC CAPITAL LETTER IOTIFIED E; Eiotifiedcyrillic  
15681 \DeclareTextCommand{\CYRIOTE}{PU}{\84\144}% U+0464  
15682 % U+0465 CYRILLIC SMALL LETTER IOTIFIED E; eiotifiedcyrillic  
15683 \DeclareTextCommand{\cyriote}{PU}{\84\145}% U+0465  
15684 % U+0466 CYRILLIC CAPITAL LETTER LITTLE YUS; Yuslittlecyrillic  
15685 \DeclareTextCommand{\CYRLYUS}{PU}{\84\146}% U+0466  
15686 % U+0467 CYRILLIC SMALL LETTER LITTLE YUS; yuslittlecyrillic  
15687 \DeclareTextCommand{\cyrlyus}{PU}{\84\147}% U+0467  
15688 % U+0468 CYRILLIC CAPITAL LETTER IOTIFIED LITTLE YUS; Yuslittleio-  
tifiedcyrillic  
15689 \DeclareTextCommand{\CYRIOTLYUS}{PU}{\84\150}% U+0468  
15690 % U+0469 CYRILLIC SMALL LETTER IOTIFIED LITTLE YUS; yuslittleioti-  
fiedcyrillic  
15691 \DeclareTextCommand{\cyriotlyus}{PU}{\84\151}% U+0469  
15692 % U+046A CYRILLIC CAPITAL LETTER BIG YUS; Yusbigcyrillic  
15693 \DeclareTextCommand{\CYRBYUS}{PU}{\84\152}% U+046A  
15694 % U+046B CYRILLIC SMALL LETTER BIG YUS; yusbigcyrillic  
15695 \DeclareTextCommand{\cyrbyus}{PU}{\84\153}% U+046B  
15696 % U+046C CYRILLIC CAPITAL LETTER IOTIFIED BIG YUS; Yusbigiotified-  
cyrillic  
15697 \DeclareTextCommand{\CYRIOTBYUS}{PU}{\84\154}% U+046C  
15698 % U+046D CYRILLIC SMALL LETTER IOTIFIED BIG YUS; yusbigiotifiedcyril-  
lic  
15699 \DeclareTextCommand{\cyriotbyus}{PU}{\84\155}% U+046D  
15700 % U+046E CYRILLIC CAPITAL LETTER KSI; Ksicyrillic

15701 \DeclareTextCommand{\CYRKSI}{PU}{\84\156}% U+046E  
 15702 % U+046F CYRILLIC SMALL LETTER KSI; kscyrillic  
 15703 \DeclareTextCommand{\cyrksi}{PU}{\84\157}% U+046F  
 15704 % U+0470 CYRILLIC CAPITAL LETTER PSI; Psicyrillic  
 15705 \DeclareTextCommand{\CYRPSI}{PU}{\84\160}% U+0470  
 15706 % U+0471 CYRILLIC SMALL LETTER PSI; psicyrillic  
 15707 \DeclareTextCommand{\cyrpsi}{PU}{\84\161}% U+0471  
 15708 % U+0472 CYRILLIC CAPITAL LETTER FITA; Fitacyrillic, \*afii10147  
 15709 \DeclareTextCommand{\CYRFITA}{PU}{\84\162}% U+0472  
 15710 % U+0473 CYRILLIC SMALL LETTER FITA; \*afii10195, fitacyrillic  
 15711 \DeclareTextCommand{\cyrfita}{PU}{\84\163}% U+0473  
 15712 % U+0474 CYRILLIC CAPITAL LETTER IZHITSA; Izhitsacyrillic, \*afii10148  
 15713 \DeclareTextCommand{\CYRIZH}{PU}{\84\164}% U+0474  
 15714 % U+0475 CYRILLIC SMALL LETTER IZHITSA; \*afii10196, izhitsacyrillic  
 15715 \DeclareTextCommand{\cyrizh}{PU}{\84\165}% U+0475  
 15716 % U+0476 CYRILLIC CAPITAL LETTER IZHITSA WITH DOUBLE GRAVE AC-  
 CENT; Izhitsadblgravecyrillic  
 15717 \DeclareTextCompositeCommand{\C}{PU}{\CYRIZH}{\84\166}% U+0476  
 15718 % U+0477 CYRILLIC SMALL LETTER IZHITSA WITH DOUBLE GRAVE AC-  
 CENT; izhitsadblgravecyrillic  
 15719 \DeclareTextCompositeCommand{\C}{PU}{\cyrizh}{\84\167}% U+0477  
 15720 % U+0478 CYRILLIC CAPITAL LETTER UK; Ukcyrillic  
 15721 \DeclareTextCommand{\CYRUK}{PU}{\84\170}% U+0478  
 15722 % U+0479 CYRILLIC SMALL LETTER UK; ukcyrillic  
 15723 \DeclareTextCommand{\cyruk}{PU}{\84\171}% U+0479  
 15724 % U+047A CYRILLIC CAPITAL LETTER ROUND OMEGA; Omegaroundcyril-  
 lic  
 15725 \DeclareTextCommand{\CYROMEGARND}{PU}{\84\172}% U+047A  
 15726 % U+047B CYRILLIC SMALL LETTER ROUND OMEGA; omegaroundcyrillic  
 15727 \DeclareTextCommand{\cyromegarnd}{PU}{\84\173}% U+047B  
 15728 % U+047C CYRILLIC CAPITAL LETTER OMEGA WITH TITLO; Omegatitlo-  
 cyrillic  
 15729 \DeclareTextCommand{\CYROMEGATITLO}{PU}{\84\174}% U+047C  
 15730 % U+047D CYRILLIC SMALL LETTER OMEGA WITH TITLO; omegatitlo-  
 cyrillic  
 15731 \DeclareTextCommand{\cyromegatitlo}{PU}{\84\175}% U+047D  
 15732 % U+047E CYRILLIC CAPITAL LETTER OT; Otcyrillic  
 15733 \DeclareTextCommand{\CYROT}{PU}{\84\176}% U+047E  
 15734 % U+047F CYRILLIC SMALL LETTER OT; otcyrillic  
 15735 \DeclareTextCommand{\cyrot}{PU}{\84\177}% U+047F  
 15736 % U+0480 CYRILLIC CAPITAL LETTER KOPPA; Koppacyrillic  
 15737 \DeclareTextCommand{\CYRKOPPA}{PU}{\84\200}% U+0480  
 15738 % U+0481 CYRILLIC SMALL LETTER KOPPA; koppacyrillic  
 15739 \DeclareTextCommand{\cyrkoppa}{PU}{\84\201}% U+0481  
 15740 % U+0482 CYRILLIC THOUSANDS SIGN; thousandcyrillic  
 15741 \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

15742 % U+048A CYRILLIC CAPITAL LETTER SHORT I WITH TAIL  
 15743 \DeclareTextCommand{\CYRISHRTDSC}{PU}{\84\212}% U+048A  
 15744 % U+048B CYRILLIC SMALL LETTER SHORT I WITH TAIL  
 15745 \DeclareTextCommand{\cyrishrtdsc}{PU}{\84\213}% U+048B  
 15746 % U+048C CYRILLIC CAPITAL LETTER SEMISOFT SIGN  
 15747 \DeclareTextCommand{\CYRSEMISFTSN}{PU}{\84\214}% U+048C  
 15748 % U+048D CYRILLIC SMALL LETTER SEMISOFT SIGN  
 15749 \DeclareTextCommand{\cyrsemisftsn}{PU}{\84\215}% U+048D  
 15750 % U+048E CYRILLIC CAPITAL LETTER ER WITH TICK  
 15751 \DeclareTextCommand{\CYRRTICK}{PU}{\84\216}% U+048E  
 15752 % U+048F CYRILLIC SMALL LETTER ER WITH TICK  
 15753 \DeclareTextCommand{\cyrrtick}{PU}{\84\217}% U+048F  
 15754 % U+0490 CYRILLIC CAPITAL LETTER GHE WITH UPTURN; Gheupturn-  
 cyrillic, \*afii10050  
 15755 \DeclareTextCommand{\CYRGUP}{PU}{\84\220}% U+0490  
 15756 % U+0491 CYRILLIC SMALL LETTER GHE WITH UPTURN; \*afii10098, ghe-  
 upturncyrillic  
 15757 \DeclareTextCommand{\cyrgup}{PU}{\84\221}% U+0491  
 15758 % U+0492 CYRILLIC CAPITAL LETTER GHE WITH STROKE; Ghestroke-  
 cyrillic  
 15759 \DeclareTextCommand{\CYRGHCRS}{PU}{\84\222}% U+0492  
 15760 % U+0493 CYRILLIC SMALL LETTER GHE WITH STROKE; ghestrokecyrillic  
 15761 \DeclareTextCommand{\cyrghcrs}{PU}{\84\223}% U+0493  
 15762 % U+0494 CYRILLIC CAPITAL LETTER GHE WITH MIDDLE HOOK; Ghemid-  
 dlehookcyrillic  
 15763 \DeclareTextCommand{\CYRGHK}{PU}{\84\224}% U+0494  
 15764 % U+0495 CYRILLIC SMALL LETTER GHE WITH MIDDLE HOOK; ghemid-  
 dlehookcyrillic  
 15765 \DeclareTextCommand{\cyrghk}{PU}{\84\225}% U+0495  
 15766 % U+0496 CYRILLIC CAPITAL LETTER ZHE WITH DESCENDER; Zhedescen-  
 dercyrillic  
 15767 \DeclareTextCommand{\CYRZHDSC}{PU}{\84\226}% U+0496  
 15768 % U+0497 CYRILLIC SMALL LETTER ZHE WITH DESCENDER; zhedescen-  
 dercyrillic  
 15769 \DeclareTextCommand{\cyrzhdsc}{PU}{\84\227}% U+0497  
 15770 % U+0498 CYRILLIC CAPITAL LETTER ZE WITH DESCENDER; Zedescen-  
 dercyrillic  
 15771 \DeclareTextCommand{\CYRZDSC}{PU}{\84\230}% U+0498  
 15772 \DeclareTextCompositeCommand{\c}{PU}{\CYRZ}{\84\230}% U+0498  
 15773 % U+0499 CYRILLIC SMALL LETTER ZE WITH DESCENDER; zedescender-  
 cyrillic  
 15774 \DeclareTextCommand{\cyrzdesc}{PU}{\84\231}% U+0499  
 15775 \DeclareTextCompositeCommand{\c}{PU}{\cyrz}{\84\231}% U+0499  
 15776 % U+049A CYRILLIC CAPITAL LETTER KA WITH DESCENDER; Kadescen-  
 dercyrillic  
 15777 \DeclareTextCommand{\CYRKDSC}{PU}{\84\232}% U+049A  
 15778 % U+049B CYRILLIC SMALL LETTER KA WITH DESCENDER; kadescender-  
 cyrillic  
 15779 \DeclareTextCommand{\cyrkdsc}{PU}{\84\233}% U+049B  
 15780 % U+049C CYRILLIC CAPITAL LETTER KA WITH VERTICAL STROKE; Kaver-  
 ticalstrokecyrillic  
 15781 \DeclareTextCommand{\CYRKVCRS}{PU}{\84\234}% U+049C  
 15782 % U+049D CYRILLIC SMALL LETTER KA WITH VERTICAL STROKE; kaver-  
 ticalstrokecyrillic  
 15783 \DeclareTextCommand{\cyrkvcrs}{PU}{\84\235}% U+049D  
 15784 % U+049E CYRILLIC CAPITAL LETTER KA WITH STROKE; Kastrokecyrillic  
 15785 \DeclareTextCommand{\CYRKHCRS}{PU}{\84\236}% U+049E

15786 % U+049F CYRILLIC SMALL LETTER KA WITH STROKE; kastrokecyrillic  
 15787 \DeclareTextCommand{\cyrkhrs}{PU}{\84\237}% U+049F  
 15788 % U+04A0 CYRILLIC CAPITAL LETTER BASHKIR KA; Kabashkircyrillic  
 15789 \DeclareTextCommand{\CYRKBEAK}{PU}{\84\240}% U+04A0  
 15790 % U+04A1 CYRILLIC SMALL LETTER BASHKIR KA; kabashkircyrillic  
 15791 \DeclareTextCommand{\cyrkbeak}{PU}{\84\241}% U+04A1  
 15792 % U+04A2 CYRILLIC CAPITAL LETTER EN WITH DESCENDER; Endescendercyrillic  
 15793 \DeclareTextCommand{\CYRNDSC}{PU}{\84\242}% U+04A2  
 15794 % U+04A3 CYRILLIC SMALL LETTER EN WITH DESCENDER; endescendercyrillic  
 15795 \DeclareTextCommand{\cyrndsc}{PU}{\84\243}% U+04A3  
 15796 % U+04A4 CYRILLIC CAPITAL LIGATURE EN GHE; Enghecyrillic  
 15797 \DeclareTextCommand{\CYRNG}{PU}{\84\244}% U+04A4  
 15798 % U+04A5 CYRILLIC SMALL LIGATURE EN GHE; enghecyrillic  
 15799 \DeclareTextCommand{\cyrng}{PU}{\84\245}% U+04A5  
 15800 % U+04A6 CYRILLIC CAPITAL LETTER PE WITH MIDDLE HOOK; Pemiddlehookcyrillic  
 15801 \DeclareTextCommand{\CYRPHK}{PU}{\84\246}% U+04A6  
 15802 % U+04A7 CYRILLIC SMALL LETTER PE WITH MIDDLE HOOK; pemiddlehookcyrillic  
 15803 \DeclareTextCommand{\cyrphk}{PU}{\84\247}% U+04A7  
 15804 % U+04A8 CYRILLIC CAPITAL LETTER ABKHASIAN HA; Haabkhasiancyrillic  
 15805 \DeclareTextCommand{\CYRABHHA}{PU}{\84\250}% U+04A8  
 15806 % U+04A9 CYRILLIC SMALL LETTER ABKHASIAN HA; haabkhasiancyrillic  
 15807 \DeclareTextCommand{\cyrabhha}{PU}{\84\251}% U+04A9  
 15808 % U+04AA CYRILLIC CAPITAL LETTER ES WITH DESCENDER; Esdescendercyrillic  
 15809 \DeclareTextCommand{\CYRSDSC}{PU}{\84\252}% U+04AA  
 15810 \DeclareTextCompositeCommand{\CYRSDSC}{PU}{\CYRS}{\84\252}% U+04AA  
 15811 % U+04AB CYRILLIC SMALL LETTER ES WITH DESCENDER; esdescendercyrillic  
 15812 \DeclareTextCommand{\cyrsdsc}{PU}{\84\253}% U+04AB  
 15813 \DeclareTextCompositeCommand{\k}{PU}{\cyrs}{\84\253}% U+04AB  
 15814 % U+04AC CYRILLIC CAPITAL LETTER TE WITH DESCENDER; Tedescendercyrillic  
 15815 \DeclareTextCommand{\CYRTDSC}{PU}{\84\254}% U+04AC  
 15816 % U+04AD CYRILLIC SMALL LETTER TE WITH DESCENDER; tedescendercyrillic  
 15817 \DeclareTextCommand{\cyrtdsc}{PU}{\84\255}% U+04AD  
 15818 % U+04AE CYRILLIC CAPITAL LETTER STRAIGHT U; Ustraightcyrillic  
 15819 \DeclareTextCommand{\CYRY}{PU}{\84\256}% U+04AE  
 15820 % U+04AF CYRILLIC SMALL LETTER STRAIGHT U; ustraightcyrillic  
 15821 \DeclareTextCommand{\cyry}{PU}{\84\257}% U+04AF  
 15822 % U+04B0 CYRILLIC CAPITAL LETTER STRAIGHT U WITH STROKE; Ustraightstrokecyrillic  
 15823 \DeclareTextCommand{\CYRYHCRS}{PU}{\84\260}% U+04B0  
 15824 % U+04B1 CYRILLIC SMALL LETTER STRAIGHT U WITH STROKE; usstraightstrokecyrillic  
 15825 \DeclareTextCommand{\cyryhcrs}{PU}{\84\261}% U+04B1  
 15826 % U+04B2 CYRILLIC CAPITAL LETTER HA WITH DESCENDER; Hadesendercyrillic  
 15827 \DeclareTextCommand{\CYRHDSC}{PU}{\84\262}% U+04B2  
 15828 % U+04B3 CYRILLIC SMALL LETTER HA WITH DESCENDER; hadescendercyrillic  
 15829 \DeclareTextCommand{\cyrhdsc}{PU}{\84\263}% U+04B3

15830 % U+04B4 CYRILLIC CAPITAL LIGATURE TE TSE; Tetsecyrillic  
 15831 \DeclareTextCommand{\CYRTETSE}{PU}{\84\264}% U+04B4  
 15832 % U+04B5 CYRILLIC SMALL LIGATURE TE TSE; tetsecyrillic  
 15833 \DeclareTextCommand{\cyrtetse}{PU}{\84\265}% U+04B5  
 15834 % U+04B6 CYRILLIC CAPITAL LETTER CHE WITH DESCENDER; Chedescendercyrillic  
 15835 \DeclareTextCommand{\CYRCHRDSC}{PU}{\84\266}% U+04B6  
 15836 % U+04B7 CYRILLIC SMALL LETTER CHE WITH DESCENDER; chedescendercyrillic  
 15837 \DeclareTextCommand{\cyrchrdsc}{PU}{\84\267}% U+04B7  
 15838 % U+04B8 CYRILLIC CAPITAL LETTER CHE WITH VERTICAL STROKE; Chev-  
 erticalstrokecyrillic  
 15839 \DeclareTextCommand{\CYRCHVCRS}{PU}{\84\270}% U+04B8  
 15840 % U+04B9 CYRILLIC SMALL LETTER CHE WITH VERTICAL STROKE; chev-  
 erticalstrokecyrillic  
 15841 \DeclareTextCommand{\cyrchvcrs}{PU}{\84\271}% U+04B9  
 15842 % U+04BA CYRILLIC CAPITAL LETTER SHHA; Shhacyrillic  
 15843 \DeclareTextCommand{\CYRSHHA}{PU}{\84\272}% U+04BA  
 15844 % U+04BB CYRILLIC SMALL LETTER SHHA; shhacyrillic  
 15845 \DeclareTextCommand{\cyrshha}{PU}{\84\273}% U+04BB  
 15846 % U+04BC CYRILLIC CAPITAL LETTER ABKHASIAN CHE; Cheabkhasian-  
 cyrillic  
 15847 \DeclareTextCommand{\CYRABHCH}{PU}{\84\274}% U+04BC  
 15848 % U+04BD CYRILLIC SMALL LETTER ABKHASIAN CHE; cheabkhasiancyril-  
 lic  
 15849 \DeclareTextCommand{\cyrabhch}{PU}{\84\275}% U+04BD  
 15850 % U+04BE CYRILLIC CAPITAL LETTER ABKHASIAN CHE WITH DESCEN-  
 DER; Chedescenderabkhasiancyrillic  
 15851 \DeclareTextCommand{\CYRABHCHDSC}{PU}{\84\276}% U+04BE  
 15852 \DeclareTextCompositeCommand{\k}{PU}{\CYRABHCH}{\84\276}% U+04BE  
 15853 % U+04BF CYRILLIC SMALL LETTER ABKHASIAN CHE WITH DESCEN-  
 DER; chedescenderabkhasiancyrillic  
 15854 \DeclareTextCommand{\cyrabhchdsc}{PU}{\84\277}% U+04BF  
 15855 \DeclareTextCompositeCommand{\k}{PU}{\cyrabhch}{\84\277}% U+04BF  
 15856 % U+04C0 CYRILLIC LETTER PALOCHKA; palochkacyrillic  
 15857 \DeclareTextCommand{\CYRpalochka}{PU}{\84\300}% U+04C0  
 15858 % U+04C1 CYRILLIC CAPITAL LETTER ZHE WITH BREVE; Zhebrevecyrillic  
 15859 \DeclareTextCompositeCommand{\U}{PU}{\CYRZH}{\84\301}% U+04C1  
 15860 % U+04C2 CYRILLIC SMALL LETTER ZHE WITH BREVE; zhebrevecyrillic  
 15861 \DeclareTextCompositeCommand{\U}{PU}{\cyrzh}{\84\302}% U+04C2  
 15862 % U+04C3 CYRILLIC CAPITAL LETTER KA WITH HOOK; Kahookcyrillic  
 15863 \DeclareTextCommand{\CYRKHK}{PU}{\84\303}% U+04C3  
 15864 % U+04C4 CYRILLIC SMALL LETTER KA WITH HOOK; kahookcyrillic  
 15865 \DeclareTextCommand{\cyrkhk}{PU}{\84\304}% U+04C4  
 15866 % U+04C5 CYRILLIC CAPITAL LETTER EL WITH TAIL  
 15867 \DeclareTextCommand{\CYRLDSC}{PU}{\84\305}% U+04C5  
 15868 % U+04C6 CYRILLIC SMALL LETTER EL WITH TAIL  
 15869 \DeclareTextCommand{\cyrldsc}{PU}{\84\306}% U+04C6  
 15870 % U+04C7 CYRILLIC CAPITAL LETTER EN WITH HOOK; Enhookcyrillic  
 15871 \DeclareTextCommand{\CYRNHK}{PU}{\84\307}% U+04C7  
 15872 % U+04C8 CYRILLIC SMALL LETTER EN WITH HOOK; enhookcyrillic  
 15873 \DeclareTextCommand{\cyrnhk}{PU}{\84\310}% U+04C8  
 15874 % U+04CB CYRILLIC CAPITAL LETTER KHAKASSIAN CHE; Chekhakassian-  
 cyrillic  
 15875 \DeclareTextCommand{\CYRCHLDSC}{PU}{\84\313}% U+04CB  
 15876 % U+04CC CYRILLIC SMALL LETTER KHAKASSIAN CHE; chekhakassian-  
 cyrillic

15877 \DeclareTextCommand{\cyrchldsc}{PU}{\84\314}% U+04CC  
15878 % U+04CD CYRILLIC CAPITAL LETTER EM WITH TAIL  
15879 \DeclareTextCommand{\CYRMDSC}{PU}{\84\315}% U+04CD  
15880 % U+04CE CYRILLIC SMALL LETTER EM WITH TAIL  
15881 \DeclareTextCommand{\cyrmdsc}{PU}{\84\316}% U+04CE  
\84\317: U+04CF CYRILLIC SMALL LETTER PALOCHKA  
15882 % U+04D0 CYRILLIC CAPITAL LETTER A WITH BREVE; Abrevacyrillic  
15883 \DeclareTextCompositeCommand{\U}{PU}{\CYRA}{\84\320}% U+04D0  
15884 % U+04D1 CYRILLIC SMALL LETTER A WITH BREVE; abrevacyrillic  
15885 \DeclareTextCompositeCommand{\U}{PU}{\cyra}{\84\321}% U+04D1  
15886 % U+04D2 CYRILLIC CAPITAL LETTER A WITH DIAERESIS; Adieresiscyrillic  
15887 \DeclareTextCompositeCommand{\U}{PU}{\CYRA}{\84\322}% U+04D2  
15888 % U+04D3 CYRILLIC SMALL LETTER A WITH DIAERESIS; adieresiscyrillic  
15889 \DeclareTextCompositeCommand{\U}{PU}{\cyra}{\84\323}% U+04D3  
15890 % U+04D4 CYRILLIC CAPITAL LIGATURE A IE; Aiecyrillic  
15891 \DeclareTextCommand{\CYRAE}{PU}{\84\324}% U+04D4  
15892 % U+04D5 CYRILLIC SMALL LIGATURE A IE; aiecyrillic  
15893 \DeclareTextCommand{\cyrae}{PU}{\84\325}% U+04D5  
15894 % U+04D6 CYRILLIC CAPITAL LETTER IE WITH BREVE; Iebrevacyrillic  
15895 \DeclareTextCompositeCommand{\U}{PU}{\CYRE}{\84\326}% U+04D6  
15896 % U+04D7 CYRILLIC SMALL LETTER IE WITH BREVE; iebrevacyrillic  
15897 \DeclareTextCompositeCommand{\U}{PU}{\cyre}{\84\327}% U+04D7  
15898 % U+04D8 CYRILLIC CAPITAL LETTER SCHWA; Schwacyrillic  
15899 \DeclareTextCommand{\CYRSCHWA}{PU}{\84\330}% U+04D8  
15900 % U+04D9 CYRILLIC SMALL LETTER SCHWA; \*afii10846, schwacyrillic  
15901 \DeclareTextCommand{\cyrschwa}{PU}{\84\331}% U+04D9  
15902 % U+04DA CYRILLIC CAPITAL LETTER SCHWA WITH DIAERESIS; Schwadiere-  
15903 \DeclareTextCompositeCommand{\U}{PU}{\CYRSCHWA}{\84\332}% U+04DA  
15904 % U+04DB CYRILLIC SMALL LETTER SCHWA WITH DIAERESIS; schwadiere-  
15905 \DeclareTextCompositeCommand{\U}{PU}{\cyrschwa}{\84\333}% U+04DB  
15906 % U+04DC CYRILLIC CAPITAL LETTER ZHE WITH DIAERESIS; Zhediere-  
15907 \DeclareTextCompositeCommand{\U}{PU}{\CYRZH}{\84\334}% U+04DC  
15908 % U+04DD CYRILLIC SMALL LETTER ZHE WITH DIAERESIS; zhedieres-  
15909 \DeclareTextCompositeCommand{\U}{PU}{\cyrzh}{\84\335}% U+04DD  
15910 % U+04DE CYRILLIC CAPITAL LETTER ZE WITH DIAERESIS; Zedieres-  
15911 \DeclareTextCompositeCommand{\U}{PU}{\CYRZ}{\84\336}% U+04DE  
15912 % U+04DF CYRILLIC SMALL LETTER ZE WITH DIAERESIS; zedierescyrillic  
15913 \DeclareTextCompositeCommand{\U}{PU}{\cyrz}{\84\337}% U+04DF  
15914 % U+04E0 CYRILLIC CAPITAL LETTER ABKHASIAN DZE; Dzeabkhasian-  
15915 \DeclareTextCommand{\CYRABHDZE}{PU}{\84\340}% U+04E0  
15916 % U+04E1 CYRILLIC SMALL LETTER ABKHASIAN DZE; dzeabkhasiancyrillic  
15917 \DeclareTextCommand{\cyrabhdze}{PU}{\84\341}% U+04E1  
15918 % U+04E2 CYRILLIC CAPITAL LETTER I WITH MACRON; Imacroncyrillic  
15919 \DeclareTextCompositeCommand{\U}{PU}{\CYRI}{\84\342}% U+04E2  
15920 % U+04E3 CYRILLIC SMALL LETTER I WITH MACRON; imacroncyrillic  
15921 \DeclareTextCompositeCommand{\U}{PU}{\cyri}{\84\343}% U+04E3  
15922 % U+04E4 CYRILLIC CAPITAL LETTER I WITH DIAERESIS; Idieresiscyrillic  
15923 \DeclareTextCompositeCommand{\U}{PU}{\CYRI}{\84\344}% U+04E4  
15924 % U+04E5 CYRILLIC SMALL LETTER I WITH DIAERESIS; idieresiscyrillic  
15925 \DeclareTextCompositeCommand{\U}{PU}{\cyri}{\84\345}% U+04E5

15926 % U+04E6 CYRILLIC CAPITAL LETTER O WITH DIAERESIS; Odieresiscyrillic  
 15927 \DeclareTextCompositeCommand{"}{PU}{\CYRO}{\84\346}% U+04E6  
 15928 % U+04E7 CYRILLIC SMALL LETTER O WITH DIAERESIS; odieresiscyrillic  
 15929 \DeclareTextCompositeCommand{"}{PU}{\cyro}{\84\347}% U+04E7  
 15930 % U+04E8 CYRILLIC CAPITAL LETTER BARRED O; Obarredcyrillic  
 15931 \DeclareTextCommand{\CYROTLD}{PU}{\84\350}% U+04E8  
 15932 % U+04E9 CYRILLIC SMALL LETTER BARRED O; obarredcyrillic  
 15933 \DeclareTextCommand{\cyrotld}{PU}{\84\351}% U+04E9  
 15934 % U+04EA CYRILLIC CAPITAL LETTER BARRED O WITH DIAERESIS; Obarreddieresiscyrillic  
 15935 \DeclareTextCompositeCommand{"}{PU}{\CYROTLD}{\84\352}% U+04EA  
 15936 % U+04EB CYRILLIC SMALL LETTER BARRED O WITH DIAERESIS; obarreddieresiscyrillic  
 15937 \DeclareTextCompositeCommand{"}{PU}{\cyrotld}{\84\353}% U+04EB  
 15938 % U+04EC CYRILLIC CAPITAL LETTER E WITH DIAERESIS  
 15939 \DeclareTextCompositeCommand{"}{PU}{\CYREREV}{\84\354}% U+04EC  
 15940 % U+04ED CYRILLIC SMALL LETTER E WITH DIAERESIS  
 15941 \DeclareTextCompositeCommand{"}{PU}{\cyreref}{\84\355}% U+04ED  
 15942 % U+04EE CYRILLIC CAPITAL LETTER U WITH MACRON; Umacroncyrillic  
 15943 \DeclareTextCompositeCommand{=}{PU}{\CYRU}{\84\356}% U+04EE  
 15944 % U+04EF CYRILLIC SMALL LETTER U WITH MACRON; umacroncyrillic  
 15945 \DeclareTextCompositeCommand{=}{PU}{\cyru}{\84\357}% U+04EF  
 15946 % U+04F0 CYRILLIC CAPITAL LETTER U WITH DIAERESIS; Udieresiscyrillic  
 15947 \DeclareTextCompositeCommand{"}{PU}{\CYRU}{\84\360}% U+04F0  
 15948 % U+04F1 CYRILLIC SMALL LETTER U WITH DIAERESIS; udieresiscyrillic  
 15949 \DeclareTextCompositeCommand{"}{PU}{\cyru}{\84\361}% U+04F1  
 15950 % U+04F2 CYRILLIC CAPITAL LETTER U WITH DOUBLE ACUTE; Uhungarumlautcyrillic  
 15951 \DeclareTextCompositeCommand{H}{PU}{\CYRU}{\84\362}% U+04F2  
 15952 % U+04F3 CYRILLIC SMALL LETTER U WITH DOUBLE ACUTE; uhungarumlautcyrillic  
 15953 \DeclareTextCompositeCommand{H}{PU}{\cyru}{\84\363}% U+04F3  
 15954 % U+04F4 CYRILLIC CAPITAL LETTER CHE WITH DIAERESIS; Chedieresiscyrillic  
 15955 \DeclareTextCompositeCommand{"}{PU}{\CYRCH}{\84\364}% U+04F4  
 15956 % U+04F5 CYRILLIC SMALL LETTER CHE WITH DIAERESIS; chedieresiscyrillic  
 15957 \DeclareTextCompositeCommand{"}{PU}{\cyrch}{\84\365}% U+04F5  
 15958 % U+04F6 CYRILLIC CAPITAL LETTER GHE WITH DESCENDER  
 15959 \DeclareTextCommand{\CYRGDSC}{PU}{\84\366}% U+04F6  
 15960 % U+04F7 CYRILLIC SMALL LETTER GHE WITH DESCENDER  
 15961 \DeclareTextCommand{\cyrgdsc}{PU}{\84\367}% U+04F7  
 15962 % U+04F8 CYRILLIC CAPITAL LETTER YERU WITH DIAERESIS; Yerudieresiscyrillic  
 15963 \DeclareTextCompositeCommand{"}{PU}{\CYRERY}{\84\370}% U+04F8  
 15964 % U+04F9 CYRILLIC SMALL LETTER YERU WITH DIAERESIS; yerudieresiscyrillic  
 15965 \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  
 15966 % U+04FC CYRILLIC CAPITAL LETTER HA WITH HOOK  
 15967 \DeclareTextCommand{\CYRHHK}{PU}{\84\374}% U+04FC  
 15968 % U+04FD CYRILLIC SMALL LETTER HA WITH HOOK  
 15969 \DeclareTextCommand{\cyrhk}{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

15970 % U+0E3F THAI CURRENCY SYMBOL BAHT; bahtthai  
 15971 \DeclareTextCommand{\textbaht}{PU}{\9016\077}% U+0E3F

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

15972 % U+1E02 LATIN CAPITAL LETTER B WITH DOT ABOVE; Bdotaccent  
 15973 \DeclareTextCompositeCommand{\.}{PU}{B}{\9036\002}% U+1E02  
 15974 % U+1E03 LATIN SMALL LETTER B WITH DOT ABOVE; bdotaccent  
 15975 \DeclareTextCompositeCommand{\.}{PU}{b}{\9036\003}% U+1E03  
 15976 % U+1E06 LATIN CAPITAL LETTER B WITH LINE BELOW; Blinebelow  
 15977 \DeclareTextCompositeCommand{\b}{PU}{B}{\9036\006}% U+1E06  
 15978 % U+1E07 LATIN SMALL LETTER B WITH LINE BELOW; blinebelow  
 15979 \DeclareTextCompositeCommand{\b}{PU}{b}{\9036\007}% U+1E07  
 15980 % U+1E0A LATIN CAPITAL LETTER D WITH DOT ABOVE; Ddotaccent  
 15981 \DeclareTextCompositeCommand{\.}{PU}{D}{\9036\012}% U+1E0A  
 15982 % U+1E0B LATIN SMALL LETTER D WITH DOT ABOVE; ddotaccent  
 15983 \DeclareTextCompositeCommand{\.}{PU}{d}{\9036\013}% U+1E0B  
 15984 % U+1E0E LATIN CAPITAL LETTER D WITH LINE BELOW; Dlinebelow  
 15985 \DeclareTextCompositeCommand{\b}{PU}{D}{\9036\016}% U+1E0E  
 15986 % U+1E0F LATIN SMALL LETTER D WITH LINE BELOW; dlinebelow  
 15987 \DeclareTextCompositeCommand{\b}{PU}{d}{\9036\017}% U+1E0F  
 15988 % U+1E10 LATIN CAPITAL LETTER D WITH CEDILLA; Dcedilla  
 15989 \DeclareTextCompositeCommand{\c}{PU}{D}{\9036\020}% U+1E10  
 15990 % U+1E11 LATIN SMALL LETTER D WITH CEDILLA; dcedilla  
 15991 \DeclareTextCompositeCommand{\c}{PU}{d}{\9036\021}% U+1E11  
 15992 % U+1E1E LATIN CAPITAL LETTER F WITH DOT ABOVE; Fdotaccent  
 15993 \DeclareTextCompositeCommand{\.}{PU}{F}{\9036\036}% U+1E1E  
 15994 % U+1E1F LATIN SMALL LETTER F WITH DOT ABOVE; fdotaccent  
 15995 \DeclareTextCompositeCommand{\.}{PU}{f}{\9036\037}% U+1E1F  
 15996 % U+1E20 LATIN CAPITAL LETTER G WITH MACRON; Gmacron  
 15997 \DeclareTextCompositeCommand{\=}{PU}{G}{\9036\040}% U+1E20  
 15998 % U+1E21 LATIN SMALL LETTER G WITH MACRON; gmacron  
 15999 \DeclareTextCompositeCommand{\=}{PU}{g}{\9036\041}% U+1E21  
 16000 % U+1E22 LATIN CAPITAL LETTER H WITH DOT ABOVE; Hdotaccent  
 16001 \DeclareTextCompositeCommand{\.}{PU}{H}{\9036\042}% U+1E22  
 16002 % U+1E23 LATIN SMALL LETTER H WITH DOT ABOVE; hdotaccent  
 16003 \DeclareTextCompositeCommand{\.}{PU}{h}{\9036\043}% U+1E23  
 16004 % U+1E26 LATIN CAPITAL LETTER H WITH DIAERESIS; Hdieresis  
 16005 \DeclareTextCompositeCommand{\"}{PU}{H}{\9036\046}% U+1E26  
 16006 % U+1E27 LATIN SMALL LETTER H WITH DIAERESIS; hdieresis  
 16007 \DeclareTextCompositeCommand{\"}{PU}{h}{\9036\047}% U+1E27  
 16008 % U+1E28 LATIN CAPITAL LETTER H WITH CEDILLA; Hcedilla  
 16009 \DeclareTextCompositeCommand{\c}{PU}{H}{\9036\050}% U+1E28  
 16010 % U+1E29 LATIN SMALL LETTER H WITH CEDILLA; hcedilla  
 16011 \DeclareTextCompositeCommand{\c}{PU}{h}{\9036\051}% U+1E29  
 16012 % U+1E30 LATIN CAPITAL LETTER K WITH ACUTE; Kacute  
 16013 \DeclareTextCompositeCommand{\'}{PU}{K}{\9036\060}% U+1E30  
 16014 % U+1E31 LATIN SMALL LETTER K WITH ACUTE; kacute  
 16015 \DeclareTextCompositeCommand{\'}{PU}{k}{\9036\061}% U+1E31  
 16016 % U+1E34 LATIN CAPITAL LETTER K WITH LINE BELOW; Klinebelow  
 16017 \DeclareTextCompositeCommand{\b}{PU}{K}{\9036\064}% U+1E34  
 16018 % U+1E35 LATIN SMALL LETTER K WITH LINE BELOW; klinebelow  
 16019 \DeclareTextCompositeCommand{\b}{PU}{k}{\9036\065}% U+1E35

16020 % U+1E3A LATIN CAPITAL LETTER L WITH LINE BELOW; Llinebelow  
16021 \DeclareTextCompositeCommand{\b}{PU}{L}{\9036\072}% U+1E3A  
16022 % U+1E3B LATIN SMALL LETTER L WITH LINE BELOW; llinebelow  
16023 \DeclareTextCompositeCommand{\b}{PU}{l}{\9036\073}% U+1E3B  
16024 % U+1E3E LATIN CAPITAL LETTER M WITH ACUTE; Macute  
16025 \DeclareTextCompositeCommand{\'}{PU}{M}{\9036\076}% U+1E3E  
16026 % U+1E3F LATIN SMALL LETTER M WITH ACUTE; macute  
16027 \DeclareTextCompositeCommand{\'}{PU}{m}{\9036\077}% U+1E3F  
16028 % U+1E40 LATIN CAPITAL LETTER M WITH DOT ABOVE; Mdotaccent  
16029 \DeclareTextCompositeCommand{\.}{PU}{M}{\9036\100}% U+1E40  
16030 % U+1E41 LATIN SMALL LETTER M WITH DOT ABOVE; mdotaccent  
16031 \DeclareTextCompositeCommand{\.}{PU}{m}{\9036\101}% U+1E41  
16032 % U+1E44 LATIN CAPITAL LETTER N WITH DOT ABOVE; Ndotaccent  
16033 \DeclareTextCompositeCommand{\.}{PU}{N}{\9036\104}% U+1E44  
16034 % U+1E45 LATIN SMALL LETTER N WITH DOT ABOVE; ndotaccent  
16035 \DeclareTextCompositeCommand{\.}{PU}{n}{\9036\105}% U+1E45  
16036 % U+1E48 LATIN CAPITAL LETTER N WITH LINE BELOW; Nlinebelow  
16037 \DeclareTextCompositeCommand{\b}{PU}{N}{\9036\110}% U+1E48  
16038 % U+1E49 LATIN SMALL LETTER N WITH LINE BELOW; nlinebelow  
16039 \DeclareTextCompositeCommand{\b}{PU}{n}{\9036\111}% U+1E49  
16040 % U+1E54 LATIN CAPITAL LETTER P WITH ACUTE; Pacute  
16041 \DeclareTextCompositeCommand{\'}{PU}{P}{\9036\124}% U+1E54  
16042 % U+1E55 LATIN SMALL LETTER P WITH ACUTE; pacute  
16043 \DeclareTextCompositeCommand{\'}{PU}{p}{\9036\125}% U+1E55  
16044 % U+1E56 LATIN CAPITAL LETTER P WITH DOT ABOVE; Pdotaccent  
16045 \DeclareTextCompositeCommand{\.}{PU}{P}{\9036\126}% U+1E56  
16046 % U+1E57 LATIN SMALL LETTER P WITH DOT ABOVE; pdotaccent  
16047 \DeclareTextCompositeCommand{\.}{PU}{p}{\9036\127}% U+1E57  
16048 % U+1E58 LATIN CAPITAL LETTER R WITH DOT ABOVE; Rdotaccent  
16049 \DeclareTextCompositeCommand{\.}{PU}{R}{\9036\130}% U+1E58  
16050 % U+1E59 LATIN SMALL LETTER R WITH DOT ABOVE; rdotaccent  
16051 \DeclareTextCompositeCommand{\.}{PU}{r}{\9036\131}% U+1E59  
16052 % U+1E5E LATIN CAPITAL LETTER R WITH LINE BELOW; Rlinebelow  
16053 \DeclareTextCompositeCommand{\b}{PU}{R}{\9036\136}% U+1E5E  
16054 % U+1E5F LATIN SMALL LETTER R WITH LINE BELOW; rlinebelow  
16055 \DeclareTextCompositeCommand{\b}{PU}{r}{\9036\137}% U+1E5F  
16056 % U+1E60 LATIN CAPITAL LETTER S WITH DOT ABOVE; Sdotaccent  
16057 \DeclareTextCompositeCommand{\.}{PU}{S}{\9036\140}% U+1E60  
16058 % U+1E61 LATIN SMALL LETTER S WITH DOT ABOVE; sdotaccent  
16059 \DeclareTextCompositeCommand{\.}{PU}{s}{\9036\141}% U+1E61  
16060 % U+1E6E LATIN CAPITAL LETTER T WITH LINE BELOW; Tlinebelow  
16061 \DeclareTextCompositeCommand{\b}{PU}{T}{\9036\156}% U+1E6E  
16062 % U+1E6F LATIN SMALL LETTER T WITH LINE BELOW; tlinebelow  
16063 \DeclareTextCompositeCommand{\b}{PU}{t}{\9036\157}% U+1E6F  
16064 % U+1E7C LATIN CAPITAL LETTER V WITH TILDE; Vtilde  
16065 \DeclareTextCompositeCommand{\~}{PU}{V}{\9036\174}% U+1E7C  
16066 % U+1E7D LATIN SMALL LETTER V WITH TILDE; vtilde  
16067 \DeclareTextCompositeCommand{\~}{PU}{v}{\9036\175}% U+1E7D  
16068 % U+1E80 LATIN CAPITAL LETTER W WITH GRAVE; Wgrave  
16069 \DeclareTextCompositeCommand{\'}{PU}{W}{\9036\200}% U+1E80  
16070 % U+1E81 LATIN SMALL LETTER W WITH GRAVE; wgrave  
16071 \DeclareTextCompositeCommand{\'}{PU}{w}{\9036\201}% U+1E81  
16072 % U+1E82 LATIN CAPITAL LETTER W WITH ACUTE; Wacute  
16073 \DeclareTextCompositeCommand{\'}{PU}{W}{\9036\202}% U+1E82  
16074 % U+1E83 LATIN SMALL LETTER W WITH ACUTE; wacute  
16075 \DeclareTextCompositeCommand{\'}{PU}{w}{\9036\203}% U+1E83  
16076 % U+1E84 LATIN CAPITAL LETTER W WITH DIAERESIS; Wdieresis

16077 \DeclareTextCompositeCommand{"}{PU}{W}{\9036\204}% U+1E84  
 16078 % U+1E85 LATIN SMALL LETTER W WITH DIAERESIS; wdieresis  
 16079 \DeclareTextCompositeCommand{"}{PU}{w}{\9036\205}% U+1E85  
 16080 % U+1E86 LATIN CAPITAL LETTER W WITH DOT ABOVE; Wdotaccent  
 16081 \DeclareTextCompositeCommand{.}{PU}{W}{\9036\206}% U+1E86  
 16082 % U+1E87 LATIN SMALL LETTER W WITH DOT ABOVE; wdotaccent  
 16083 \DeclareTextCompositeCommand{.}{PU}{w}{\9036\207}% U+1E87  
 16084 % U+1E8A LATIN CAPITAL LETTER X WITH DOT ABOVE; Xdotaccent  
 16085 \DeclareTextCompositeCommand{.}{PU}{X}{\9036\212}% U+1E8A  
 16086 % U+1E8B LATIN SMALL LETTER X WITH DOT ABOVE; xdotaccent  
 16087 \DeclareTextCompositeCommand{.}{PU}{x}{\9036\213}% U+1E8B  
 16088 % U+1E8C LATIN CAPITAL LETTER X WITH DIAERESIS; Xdieresis  
 16089 \DeclareTextCompositeCommand{"}{PU}{X}{\9036\214}% U+1E8C  
 16090 % U+1E8D LATIN SMALL LETTER X WITH DIAERESIS; xdieresis  
 16091 \DeclareTextCompositeCommand{"}{PU}{x}{\9036\215}% U+1E8D  
 16092 % U+1E8E LATIN CAPITAL LETTER Y WITH DOT ABOVE; Ydotaccent  
 16093 \DeclareTextCompositeCommand{.}{PU}{Y}{\9036\216}% U+1E8E  
 16094 % U+1E8F LATIN SMALL LETTER Y WITH DOT ABOVE; ydotaccent  
 16095 \DeclareTextCompositeCommand{.}{PU}{y}{\9036\217}% U+1E8F  
 16096 % U+1E90 LATIN CAPITAL LETTER Z WITH CIRCUMFLEX; Zcircumflex  
 16097 \DeclareTextCompositeCommand{^}{PU}{Z}{\9036\220}% U+1E90  
 16098 % U+1E91 LATIN SMALL LETTER Z WITH CIRCUMFLEX; zcircumflex  
 16099 \DeclareTextCompositeCommand{^}{PU}{z}{\9036\221}% U+1E91  
 16100 % U+1E94 LATIN CAPITAL LETTER Z WITH LINE BELOW; Zlinebelow  
 16101 \DeclareTextCompositeCommand{\b}{PU}{Z}{\9036\224}% U+1E94  
 16102 % U+1E95 LATIN SMALL LETTER Z WITH LINE BELOW; zlinebelow  
 16103 \DeclareTextCompositeCommand{\b}{PU}{z}{\9036\225}% U+1E95  
 16104 % U+1E96 LATIN SMALL LETTER H WITH LINE BELOW; hlinebelow  
 16105 \DeclareTextCompositeCommand{\b}{PU}{h}{\9036\226}% U+1E96  
 16106 % U+1E97 LATIN SMALL LETTER T WITH DIAERESIS; tdieresis  
 16107 \DeclareTextCompositeCommand{"}{PU}{t}{\9036\227}% U+1E97  
 16108 % U+1E98 LATIN SMALL LETTER W WITH RING ABOVE; wring  
 16109 \DeclareTextCompositeCommand{\r}{PU}{w}{\9036\230}% U+1E98  
 16110 % U+1E99 LATIN SMALL LETTER Y WITH RING ABOVE; yring  
 16111 \DeclareTextCompositeCommand{\r}{PU}{y}{\9036\231}% U+1E99  
 16112 % U+1E9B LATIN SMALL LETTER LONG S WITH DOT ABOVE; slongdotac-  
 cent  
 16113 \DeclareTextCompositeCommand{.}{PU}{\textlongs}{\9036\233}% U+1E9B  
 16114 % U+1EBC LATIN CAPITAL LETTER E WITH TILDE; Etilde  
 16115 \DeclareTextCompositeCommand{\~}{PU}{E}{\9036\274}% U+1EBC  
 16116 % U+1EBD LATIN SMALL LETTER E WITH TILDE; etilde  
 16117 \DeclareTextCompositeCommand{\~}{PU}{e}{\9036\275}% U+1EBD  
 16118 % U+1EF2 LATIN CAPITAL LETTER Y WITH GRAVE; Ygrave  
 16119 \DeclareTextCompositeCommand{`}{PU}{Y}{\9036\362}% U+1EF2  
 16120 % U+1EF3 LATIN SMALL LETTER Y WITH GRAVE; ygrave  
 16121 \DeclareTextCompositeCommand{`}{PU}{y}{\9036\363}% U+1EF3  
 16122 % U+1EF8 LATIN CAPITAL LETTER Y WITH TILDE; Ytilde  
 16123 \DeclareTextCompositeCommand{\~}{PU}{Y}{\9036\370}% U+1EF8  
 16124 % U+1EF9 LATIN SMALL LETTER Y WITH TILDE; ytilde  
 16125 \DeclareTextCompositeCommand{\~}{PU}{y}{\9036\371}% U+1EF9

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

16126 % U+200C ZERO WIDTH NON-JOINER; \*afi61664, zerowidthnonjoiner  
 16127 \DeclareTextCommand{\textcompwordmark}{PU}{\9040\014}% U+200C  
 16128 % U+2013 EN DASH; endash  
 16129 \DeclareTextCommand{\textendash}{PU}{\9040\023}% U+2013  
 16130 % U+2014 EM DASH; emdash

16131 \DeclareTextCommand{\textemdash}{PU}{\9040\024}% U+2014  
 16132 % U+2016 DOUBLE VERTICAL LINE; dblverticalbar  
 16133 \DeclareTextCommand{\textbardbl}{PU}{\9040\026}% U+2016  
 16134 % U+2018 LEFT SINGLE QUOTATION MARK; quoteleft  
 16135 \DeclareTextCommand{\textquoteleft}{PU}{\9040\030}% U+2018  
 16136 % U+2019 RIGHT SINGLE QUOTATION MARK; quoteright  
 16137 \DeclareTextCommand{\textquoteright}{PU}{\9040\031}% U+2019  
 16138 % U+201A SINGLE LOW-9 QUOTATION MARK; quotesinglbase  
 16139 \DeclareTextCommand{\quotesinglbase}{PU}{\9040\032}% U+201A  
 16140 % U+201C LEFT DOUBLE QUOTATION MARK; quotedblleft  
 16141 \DeclareTextCommand{\textquotedblleft}{PU}{\9040\034}% U+201C  
 16142 % U+201D RIGHT DOUBLE QUOTATION MARK; quotedblright  
 16143 \DeclareTextCommand{\textquotedblright}{PU}{\9040\035}% U+201D  
 16144 % U+201E DOUBLE LOW-9 QUOTATION MARK; quotedblbase  
 16145 \DeclareTextCommand{\quotedblbase}{PU}{\9040\036}% U+201E  
 16146 % U+2020 DAGGER; dagger  
 16147 \DeclareTextCommand{\textdagger}{PU}{\9040\040}% U+2020  
 16148 % U+2021 DOUBLE DAGGER; daggerdbl  
 16149 \DeclareTextCommand{\textdaggerdbl}{PU}{\9040\041}% U+2021  
 16150 % U+2022 BULLET; bullet  
 16151 \DeclareTextCommand{\textbullet}{PU}{\9040\042}% U+2022  
 16152 % U+2026 HORIZONTAL ELLIPSIS; ellipsis  
 16153 \DeclareTextCommand{\textellipsis}{PU}{\9040\046}% U+2026  
 16154 % U+2030 PER MILLE SIGN; perthousand  
 16155 \DeclareTextCommand{\textperthousand}{PU}{\9040\060}% U+2030  
 16156 % U+2031 PER TEN THOUSAND SIGN  
 16157 \DeclareTextCommand{\textpertenthousand}{PU}{\9040\061}% U+2031  
 16158 % U+2039 SINGLE LEFT-POINTING ANGLE QUOTATION MARK; guil-  
 ingleft  
 16159 \DeclareTextCommand{\guilsingleft}{PU}{\9040\071}% U+2039  
 16160 % U+203A SINGLE RIGHT-POINTING ANGLE QUOTATION MARK; guil-  
 singright  
 16161 \DeclareTextCommand{\guilsingright}{PU}{\9040\072}% U+203A  
 16162 % U+203B REFERENCE MARK; referencemark  
 16163 \DeclareTextCommand{\textreferencemark}{PU}{\9040\073}% U+203B  
 16164 % U+203D INTERROBANG  
 16165 \DeclareTextCommand{\textinterrobang}{PU}{\9040\075}% U+203D  
 16166 % U+2044 FRACTION SLASH; fraction  
 16167 \DeclareTextCommand{\textfractionsolidus}{PU}{\9040\104}% U+2044  
 16168 % U+2045 LEFT SQUARE BRACKET WITH QUILL  
 16169 \DeclareTextCommand{\textlquill}{PU}{\9040\105}% U+2045  
 16170 % U+2046 RIGHT SQUARE BRACKET WITH QUILL  
 16171 \DeclareTextCommand{\textrquill}{PU}{\9040\106}% U+2046  
 16172 % U+2052 COMMERCIAL MINUS SIGN  
 16173 \DeclareTextCommand{\textdiscount}{PU}{\9040\122}% U+2052

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

16174 % U+2070 SUPERSCRIPT ZERO; zerosuperior  
 16175 \DeclareTextCommand{\textzerosuperior}{PU}{\9040\160}% U+2070  
 16176 % U+2074 SUPERSCRIPT FOUR; foursuperior  
 16177 \DeclareTextCommand{\textfoursuperior}{PU}{\9040\164}% U+2074  
 16178 % U+2075 SUPERSCRIPT FIVE; fivesuperior  
 16179 \DeclareTextCommand{\textfivesuperior}{PU}{\9040\165}% U+2075  
 16180 % U+2076 SUPERSCRIPT SIX; sixsuperior  
 16181 \DeclareTextCommand{\textsixsuperior}{PU}{\9040\166}% U+2076  
 16182 % U+2077 SUPERSCRIPT SEVEN; sevensuperior  
 16183 \DeclareTextCommand{\textsevensuperior}{PU}{\9040\167}% U+2077

16184 % U+2078 SUPERSCRIPT EIGHT; eightsuperior  
 16185 \DeclareTextCommand{\texteightsuperior}{PU}{\9040\170}% U+2078  
 16186 % U+2079 SUPERSCRIPT NINE; ninesuperior  
 16187 \DeclareTextCommand{\textninesuperior}{PU}{\9040\171}% U+2079  
 16188 % U+207A SUPERSCRIPT PLUS SIGN; plussuperior  
 16189 \DeclareTextCommand{\textplussuperior}{PU}{\9040\172}% U+207A  
 16190 % U+207B SUPERSCRIPT MINUS  
 16191 \DeclareTextCommand{\textminussuperior}{PU}{\9040\173}  
 16192 % U+207C SUPERSCRIPT EQUALS SIGN; equalsuperior  
 16193 \DeclareTextCommand{\textequalsuperior}{PU}{\9040\174}  
 16194 % U+207D SUPERSCRIPT LEFT PARENTHESIS; parenleftsuperior  
 16195 \DeclareTextCommand{\textparenleftsuperior}{PU}{\9040\175}  
 16196 % U+207E SUPERSCRIPT RIGHT PARENTHESIS; parenrightsuperior  
 16197 \DeclareTextCommand{\textparenrightsuperior}{PU}{\9040\176}  
 16198 % U+207F SUPERSCRIPT LATIN SMALL LETTER N; nsuperior  
 16199 \DeclareTextCommand{\textnsuperior}{PU}{\9040\177}  
 16200 % U+2080 SUBSCRIPT ZERO; zeroinferior  
 16201 \DeclareTextCommand{\textzeroinferior}{PU}{\9040\200}% U+2080  
 16202 % U+2081 SUBSCRIPT ONE; oneinferior  
 16203 \DeclareTextCommand{\textoneinferior}{PU}{\9040\201}% U+2081  
 16204 % U+2082 SUBSCRIPT TWO; twoinferior  
 16205 \DeclareTextCommand{\texttwoinferior}{PU}{\9040\202}% U+2082  
 16206 % U+2083 SUBSCRIPT THREE; threeinferior  
 16207 \DeclareTextCommand{\textthreeinferior}{PU}{\9040\203}% U+2083  
 16208 % U+2084 SUBSCRIPT FOUR; fourinferior  
 16209 \DeclareTextCommand{\textfourinferior}{PU}{\9040\204}% U+2084  
 16210 % U+2085 SUBSCRIPT FIVE; fiveinferior  
 16211 \DeclareTextCommand{\textfiveinferior}{PU}{\9040\205}% U+2085  
 16212 % U+2086 SUBSCRIPT SIX; sixinferior  
 16213 \DeclareTextCommand{\textsixinferior}{PU}{\9040\206}% U+2086  
 16214 % U+2087 SUBSCRIPT SEVEN; seveninferior  
 16215 \DeclareTextCommand{\textseveninferior}{PU}{\9040\207}% U+2087  
 16216 % U+2088 SUBSCRIPT EIGHT; eightinferior  
 16217 \DeclareTextCommand{\texteightinferior}{PU}{\9040\210}% U+2088  
 16218 % U+2089 SUBSCRIPT NINE; nineinferior  
 16219 \DeclareTextCommand{\textnineinferior}{PU}{\9040\211}% U+2089  
 16220 % U+208D SUBSCRIPT LEFT PARENTHESIS; parenleftinferior  
 16221 \DeclareTextCommand{\textparenleftinferior}{PU}{\9040\215}% U+208D  
 16222 % U+208E SUBSCRIPT RIGHT PARENTHESIS; parenrightinferior  
 16223 \DeclareTextCommand{\textparenrightinferior}{PU}{\9040\216}% U+208E

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

16224 % U+20A1 COLON SIGN; \*colonmonetary, colonsign  
 16225 \DeclareTextCommand{\textcolonmonetary}{PU}{\9040\241}% U+20A1  
 16226 % U+20A4 LIRA SIGN; afii08941, \*lira  
 16227 \DeclareTextCommand{\textlira}{PU}{\9040\244}% U+20A4  
 16228 % U+20A6 NAIRA SIGN  
 16229 \DeclareTextCommand{\textnaira}{PU}{\9040\246}% U+20A6  
 16230 % U+20A7 PESETA SIGN; peseta  
 16231 \DeclareTextCommand{\textpeseta}{PU}{\9040\247}% U+20A7  
 16232 % U+20A9 WON SIGN; won  
 16233 \DeclareTextCommand{\textwon}{PU}{\9040\251}% U+20A9  
 16234 % U+20AB DONG SIGN; dong  
 16235 \DeclareTextCommand{\textdong}{PU}{\9040\253}% U+20AB  
 16236 % U+20AC EURO SIGN; \*Euro, euro  
 16237 \DeclareTextCommand{\texteuro}{PU}{\9040\254}% U+20AC  
 16238 % U+20B1 PESO SIGN

16239 \DeclareTextCommand{\textpeso}{PU}{\9040\261}% U+20B1  
 16240 % U+20B2 GUARANI SIGN  
 16241 \DeclareTextCommand{\textguarani}{PU}{\9040\262}% U+20B2

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

16242 % U+2103 DEGREE CELSIUS; centigrade  
 16243 \DeclareTextCommand{\textcelsius}{PU}{\9041\003}% U+2103  
 16244 % U+2116 NUMERO SIGN; \*afi61352, numero  
 16245 \DeclareTextCommand{\textnumero}{PU}{\9041\026}% U+2116  
 16246 % U+2117 SOUND RECORDING COPYRIGHT  
 16247 \DeclareTextCommand{\textcircledP}{PU}{\9041\027}% U+2117  
 16248 % U+211E PRESCRIPTION TAKE; prescription  
 16249 \DeclareTextCommand{\textrecipe}{PU}{\9041\036}% U+211E  
 16250 % U+2120 SERVICE MARK  
 16251 \DeclareTextCommand{\textservicemark}{PU}{\9041\040}% U+2120  
 16252 % U+2122 TRADE MARK SIGN; trademark  
 16253 \DeclareTextCommand{\texttrademark}{PU}{\9041\042}% U+2122  
 16254 % U+2126 OHM SIGN; Ohm, Omega  
 16255 \DeclareTextCommand{\textohm}{PU}{\9041\046}% U+2126  
 16256 % U+2127 INVERTED OHM SIGN  
 16257 \DeclareTextCommand{\textmho}{PU}{\9041\047}% U+2127  
 16258 % U+212B ANGSTROM SIGN; angstrom  
 16259 \DeclareTextCommand{\textangstrom}{PU}{\9041\053}% U+212B  
 16260 % U+212E ESTIMATED SYMBOL; estimated  
 16261 \DeclareTextCommand{\textestimated}{PU}{\9041\056}% U+212E  
 16262 % U+2135 ALEF SYMBOL; aleph  
 16263 \DeclareTextCommand{\textaleph}{PU}{\9041\065}% U+2135

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

16264 % U+2190 LEFTWARDS ARROW; arrowleft  
 16265 \DeclareTextCommand{\textleftarrow}{PU}{\9041\220}% U+2190  
 16266 % U+2191 UPWARDS ARROW; arrowup  
 16267 \DeclareTextCommand{\textuparrow}{PU}{\9041\221}% U+2191  
 16268 % U+2192 RIGHTWARDS ARROW; arrowright  
 16269 \DeclareTextCommand{\textrightarrow}{PU}{\9041\222}% U+2192  
 16270 % U+2193 DOWNWARDS ARROW; arrowdown  
 16271 \DeclareTextCommand{\textdownarrow}{PU}{\9041\223}% U+2193

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

16272 % U+2212 MINUS SIGN; minus  
 16273 \DeclareTextCommand{\textminus}{PU}{\9042\022}% U+2212  
 16274 % U+221A SQUARE ROOT; radical  
 16275 \DeclareTextCommand{\textsurd}{PU}{\9042\032}% U+221A

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

16276 % U+2329 LEFT-POINTING ANGLE BRACKET; angleleft  
 16277 \DeclareTextCommand{\textlangle}{PU}{\9043\051}% U+2329  
 16278 % U+232A RIGHT-POINTING ANGLE BRACKET; angleright  
 16279 \DeclareTextCommand{\textrangle}{PU}{\9043\052}% U+232A

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

16280 % U+2422 BLANK SYMBOL  
 16281 \DeclareTextCommand{\textblank}{PU}{\9044\042}% U+2422  
 16282 % U+2423 OPEN BOX; blank  
 16283 \DeclareTextCommand{\textvisiblespace}{PU}{\9044\043}% U+2423

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

16284 % U+2460 CIRCLED DIGIT ONE; onecircle  
 16285 \DeclareTextCompositeCommand{\textcircled}{PU}{1}{\9044\140}% U+2460  
 16286 % U+2461 CIRCLED DIGIT TWO; twocircle  
 16287 \DeclareTextCompositeCommand{\textcircled}{PU}{2}{\9044\141}% U+2461  
 16288 % U+2462 CIRCLED DIGIT THREE; threecircle  
 16289 \DeclareTextCompositeCommand{\textcircled}{PU}{3}{\9044\142}% U+2462  
 16290 % U+2463 CIRCLED DIGIT FOUR; fourcircle  
 16291 \DeclareTextCompositeCommand{\textcircled}{PU}{4}{\9044\143}% U+2463  
 16292 % U+2464 CIRCLED DIGIT FIVE; fivecircle  
 16293 \DeclareTextCompositeCommand{\textcircled}{PU}{5}{\9044\144}% U+2464  
 16294 % U+2465 CIRCLED DIGIT SIX; sixcircle  
 16295 \DeclareTextCompositeCommand{\textcircled}{PU}{6}{\9044\145}% U+2465  
 16296 % U+2466 CIRCLED DIGIT SEVEN; sevendigit  
 16297 \DeclareTextCompositeCommand{\textcircled}{PU}{7}{\9044\146}% U+2466  
 16298 % U+2467 CIRCLED DIGIT EIGHT; eightcircle  
 16299 \DeclareTextCompositeCommand{\textcircled}{PU}{8}{\9044\147}% U+2467  
 16300 % U+2468 CIRCLED DIGIT NINE; ninecircle  
 16301 \DeclareTextCompositeCommand{\textcircled}{PU}{9}{\9044\150}% U+2468  
 16302 % U+2469 CIRCLED NUMBER TEN; tencircle  
 16303 \DeclareTextCompositeCommand{\textcircled}{PU}{10}{\9044\151}% U+2469  
 16304 % U+246A CIRCLED NUMBER ELEVEN; elevencircle  
 16305 \DeclareTextCompositeCommand{\textcircled}{PU}{11}{\9044\152}% U+246A  
 16306 % U+246B CIRCLED NUMBER TWELVE; twelvecircle  
 16307 \DeclareTextCompositeCommand{\textcircled}{PU}{12}{\9044\153}% U+246B  
 16308 % U+246C CIRCLED NUMBER THIRTEEN; thirteencircle  
 16309 \DeclareTextCompositeCommand{\textcircled}{PU}{13}{\9044\154}% U+246C  
 16310 % U+246D CIRCLED NUMBER FOURTEEN; fourteencircle  
 16311 \DeclareTextCompositeCommand{\textcircled}{PU}{14}{\9044\155}% U+246D  
 16312 % U+246E CIRCLED NUMBER FIFTEEN; fifteencircle  
 16313 \DeclareTextCompositeCommand{\textcircled}{PU}{15}{\9044\156}% U+246E  
 16314 % U+246F CIRCLED NUMBER SIXTEEN; sixteencircle  
 16315 \DeclareTextCompositeCommand{\textcircled}{PU}{16}{\9044\157}% U+246F  
 16316 % U+2470 CIRCLED NUMBER SEVENTEEN; seventeencircle  
 16317 \DeclareTextCompositeCommand{\textcircled}{PU}{17}{\9044\160}% U+2470  
 16318 % U+2471 CIRCLED NUMBER EIGHTEEN; eighteencircle  
 16319 \DeclareTextCompositeCommand{\textcircled}{PU}{18}{\9044\161}% U+2471  
 16320 % U+2472 CIRCLED NUMBER NINETEEN; nineteencircle  
 16321 \DeclareTextCompositeCommand{\textcircled}{PU}{19}{\9044\162}% U+2472  
 16322 % U+2473 CIRCLED NUMBER TWENTY; twentycircle  
 16323 \DeclareTextCompositeCommand{\textcircled}{PU}{20}{\9044\163}% U+2473  
 16324 % U+24B6 CIRCLED LATIN CAPITAL LETTER A; Acircle  
 16325 \DeclareTextCompositeCommand{\textcircled}{PU}{A}{\9044\266}% U+24B6  
 16326 % U+24B7 CIRCLED LATIN CAPITAL LETTER B; Bcircle  
 16327 \DeclareTextCompositeCommand{\textcircled}{PU}{B}{\9044\267}% U+24B7  
 16328 % U+24B8 CIRCLED LATIN CAPITAL LETTER C; Ccircle  
 16329 \DeclareTextCompositeCommand{\textcircled}{PU}{C}{\9044\270}% U+24B8  
 16330 % U+24B9 CIRCLED LATIN CAPITAL LETTER D; Dcircle  
 16331 \DeclareTextCompositeCommand{\textcircled}{PU}{D}{\9044\271}% U+24B9  
 16332 % U+24BA CIRCLED LATIN CAPITAL LETTER E; Ecircle  
 16333 \DeclareTextCompositeCommand{\textcircled}{PU}{E}{\9044\272}% U+24BA  
 16334 % U+24BB CIRCLED LATIN CAPITAL LETTER F; Fcircle  
 16335 \DeclareTextCompositeCommand{\textcircled}{PU}{F}{\9044\273}% U+24BB  
 16336 % U+24BC CIRCLED LATIN CAPITAL LETTER G; Gcircle  
 16337 \DeclareTextCompositeCommand{\textcircled}{PU}{G}{\9044\274}% U+24BC  
 16338 % U+24BD CIRCLED LATIN CAPITAL LETTER H; Hcircle  
 16339 \DeclareTextCompositeCommand{\textcircled}{PU}{H}{\9044\275}% U+24BD  
 16340 % U+24BE CIRCLED LATIN CAPITAL LETTER I; Icircle

16341 \DeclareTextCompositeCommand{\textcircled}{PU}{I}{\9044\276}% U+24BE  
16342 % U+24BF CIRCLED LATIN CAPITAL LETTER J; Jcircle  
16343 \DeclareTextCompositeCommand{\textcircled}{PU}{J}{\9044\277}% U+24BF  
16344 % U+24C0 CIRCLED LATIN CAPITAL LETTER K; Kcircle  
16345 \DeclareTextCompositeCommand{\textcircled}{PU}{K}{\9044\300}% U+24C0  
16346 % U+24C1 CIRCLED LATIN CAPITAL LETTER L; Lcircle  
16347 \DeclareTextCompositeCommand{\textcircled}{PU}{L}{\9044\301}% U+24C1  
16348 % U+24C2 CIRCLED LATIN CAPITAL LETTER M; Mcircle  
16349 \DeclareTextCompositeCommand{\textcircled}{PU}{M}{\9044\302}% U+24C2  
16350 % U+24C3 CIRCLED LATIN CAPITAL LETTER N; Ncircle  
16351 \DeclareTextCompositeCommand{\textcircled}{PU}{N}{\9044\303}% U+24C3  
16352 % U+24C4 CIRCLED LATIN CAPITAL LETTER O; Ocircle  
16353 \DeclareTextCompositeCommand{\textcircled}{PU}{O}{\9044\304}% U+24C4  
16354 % U+24C5 CIRCLED LATIN CAPITAL LETTER P; Pcircle  
16355 \DeclareTextCompositeCommand{\textcircled}{PU}{P}{\9044\305}% U+24C5  
16356 % U+24C6 CIRCLED LATIN CAPITAL LETTER Q; Qcircle  
16357 \DeclareTextCompositeCommand{\textcircled}{PU}{Q}{\9044\306}% U+24C6  
16358 % U+24C7 CIRCLED LATIN CAPITAL LETTER R; Rcircle  
16359 \DeclareTextCompositeCommand{\textcircled}{PU}{R}{\9044\307}% U+24C7  
16360 % U+24C8 CIRCLED LATIN CAPITAL LETTER S; Scircle  
16361 \DeclareTextCompositeCommand{\textcircled}{PU}{S}{\9044\310}% U+24C8  
16362 % U+24C9 CIRCLED LATIN CAPITAL LETTER T; Tcircle  
16363 \DeclareTextCompositeCommand{\textcircled}{PU}{T}{\9044\311}% U+24C9  
16364 % U+24CA CIRCLED LATIN CAPITAL LETTER U; Ucircle  
16365 \DeclareTextCompositeCommand{\textcircled}{PU}{U}{\9044\312}% U+24CA  
16366 % U+24CB CIRCLED LATIN CAPITAL LETTER V; Vcircle  
16367 \DeclareTextCompositeCommand{\textcircled}{PU}{V}{\9044\313}% U+24CB  
16368 % U+24CC CIRCLED LATIN CAPITAL LETTER W; Wcircle  
16369 \DeclareTextCompositeCommand{\textcircled}{PU}{W}{\9044\314}% U+24CC  
16370 % U+24CD CIRCLED LATIN CAPITAL LETTER X; Xcircle  
16371 \DeclareTextCompositeCommand{\textcircled}{PU}{X}{\9044\315}% U+24CD  
16372 % U+24CE CIRCLED LATIN CAPITAL LETTER Y; Ycircle  
16373 \DeclareTextCompositeCommand{\textcircled}{PU}{Y}{\9044\316}% U+24CE  
16374 % U+24CF CIRCLED LATIN CAPITAL LETTER Z; Zcircle  
16375 \DeclareTextCompositeCommand{\textcircled}{PU}{Z}{\9044\317}% U+24CF  
16376 % U+24D0 CIRCLED LATIN SMALL LETTER A; acircle  
16377 \DeclareTextCompositeCommand{\textcircled}{PU}{a}{\9044\320}% U+24D0  
16378 % U+24D1 CIRCLED LATIN SMALL LETTER B; bcircle  
16379 \DeclareTextCompositeCommand{\textcircled}{PU}{b}{\9044\321}% U+24D1  
16380 % U+24D2 CIRCLED LATIN SMALL LETTER C; ccircle  
16381 \DeclareTextCompositeCommand{\textcircled}{PU}{c}{\9044\322}% U+24D2  
16382 % U+24D3 CIRCLED LATIN SMALL LETTER D; dcircle  
16383 \DeclareTextCompositeCommand{\textcircled}{PU}{d}{\9044\323}% U+24D3  
16384 % U+24D4 CIRCLED LATIN SMALL LETTER E; ecircle  
16385 \DeclareTextCompositeCommand{\textcircled}{PU}{e}{\9044\324}% U+24D4  
16386 % U+24D5 CIRCLED LATIN SMALL LETTER F; fcircle  
16387 \DeclareTextCompositeCommand{\textcircled}{PU}{f}{\9044\325}% U+24D5  
16388 % U+24D6 CIRCLED LATIN SMALL LETTER G; gcircle  
16389 \DeclareTextCompositeCommand{\textcircled}{PU}{g}{\9044\326}% U+24D6  
16390 % U+24D7 CIRCLED LATIN SMALL LETTER H; hcircle  
16391 \DeclareTextCompositeCommand{\textcircled}{PU}{h}{\9044\327}% U+24D7  
16392 % U+24D8 CIRCLED LATIN SMALL LETTER I; icircle  
16393 \DeclareTextCompositeCommand{\textcircled}{PU}{i}{\9044\330}% U+24D8  
16394 % U+24D9 CIRCLED LATIN SMALL LETTER J; jcircle  
16395 \DeclareTextCompositeCommand{\textcircled}{PU}{j}{\9044\331}% U+24D9  
16396 % U+24DA CIRCLED LATIN SMALL LETTER K; kcircle  
16397 \DeclareTextCompositeCommand{\textcircled}{PU}{k}{\9044\332}% U+24DA



16398 % U+24DB CIRCLED LATIN SMALL LETTER L; lcircle  
 16399 \DeclareTextCompositeCommand{\textcircled}{PU}{l}{\9044\333}% U+24DB  
 16400 % U+24DC CIRCLED LATIN SMALL LETTER M; mcircle  
 16401 \DeclareTextCompositeCommand{\textcircled}{PU}{m}{\9044\334}% U+24DC  
 16402 % U+24DD CIRCLED LATIN SMALL LETTER N; ncircle  
 16403 \DeclareTextCompositeCommand{\textcircled}{PU}{n}{\9044\335}% U+24DD  
 16404 % U+24DE CIRCLED LATIN SMALL LETTER O; ocircle  
 16405 \DeclareTextCompositeCommand{\textcircled}{PU}{o}{\9044\336}% U+24DE  
 16406 % U+24DF CIRCLED LATIN SMALL LETTER P; pcircle  
 16407 \DeclareTextCompositeCommand{\textcircled}{PU}{p}{\9044\337}% U+24DF  
 16408 % U+24E0 CIRCLED LATIN SMALL LETTER Q; qcircle  
 16409 \DeclareTextCompositeCommand{\textcircled}{PU}{q}{\9044\340}% U+24E0  
 16410 % U+24E1 CIRCLED LATIN SMALL LETTER R; rcircle  
 16411 \DeclareTextCompositeCommand{\textcircled}{PU}{r}{\9044\341}% U+24E1  
 16412 % U+24E2 CIRCLED LATIN SMALL LETTER S; scircle  
 16413 \DeclareTextCompositeCommand{\textcircled}{PU}{s}{\9044\342}% U+24E2  
 16414 % U+24E3 CIRCLED LATIN SMALL LETTER T; tcircle  
 16415 \DeclareTextCompositeCommand{\textcircled}{PU}{t}{\9044\343}% U+24E3  
 16416 % U+24E4 CIRCLED LATIN SMALL LETTER U; ucircle  
 16417 \DeclareTextCompositeCommand{\textcircled}{PU}{u}{\9044\344}% U+24E4  
 16418 % U+24E5 CIRCLED LATIN SMALL LETTER V; vcircle  
 16419 \DeclareTextCompositeCommand{\textcircled}{PU}{v}{\9044\345}% U+24E5  
 16420 % U+24E6 CIRCLED LATIN SMALL LETTER W; wcircle  
 16421 \DeclareTextCompositeCommand{\textcircled}{PU}{w}{\9044\346}% U+24E6  
 16422 % U+24E7 CIRCLED LATIN SMALL LETTER X; xcircle  
 16423 \DeclareTextCompositeCommand{\textcircled}{PU}{x}{\9044\347}% U+24E7  
 16424 % U+24E8 CIRCLED LATIN SMALL LETTER Y; ycircle  
 16425 \DeclareTextCompositeCommand{\textcircled}{PU}{y}{\9044\350}% U+24E8  
 16426 % U+24E9 CIRCLED LATIN SMALL LETTER Z; zcircle  
 16427 \DeclareTextCompositeCommand{\textcircled}{PU}{z}{\9044\351}% U+24E9  
 16428 % U+24EA CIRCLED DIGIT ZERO  
 16429 \DeclareTextCompositeCommand{\textcircled}{PU}{0}{\9044\352}% U+24EA

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

16430 % U+25E6 WHITE BULLET; \*openbullet, whitebullet  
 16431 \DeclareTextCommand{\textopenbullet}{PU}{\9045\346}% U+25E6  
 16432 % U+25EF LARGE CIRCLE; largecircle  
 16433 \DeclareTextCommand{\textbigcircle}{PU}{\9045\357}% U+25EF

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

16434 % U+266A EIGHTH NOTE; musicalnote  
 16435 \DeclareTextCommand{\textmusicalnote}{PU}{\9046\152}% U+266A  
 16436 % U+26AD MARRIAGE SYMBOL  
 16437 \DeclareTextCommand{\textmarried}{PU}{\9046\255}% U+26AD  
 16438 % U+26AE DIVORCE SYMBOL  
 16439 \DeclareTextCommand{\textdivorced}{PU}{\9046\256}% U+26AE

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

16440 % U+27E6 MATHEMATICAL LEFT WHITE SQUARE BRACKET  
 16441 \DeclareTextCommand{\textlbrackdbl}{PU}{\9047\346}% U+27E6  
 16442 % U+27E7 MATHEMATICAL RIGHT WHITE SQUARE BRACKET  
 16443 \DeclareTextCommand{\textrbrackdbl}{PU}{\9047\347}% U+27E7

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

16444 % U+FB01 LATIN SMALL LIGATURE FI; fi  
 16445 \DeclareTextCommand{\textfi}{PU}{\9373\001}% U+FB01  
 16446 % U+FB02 LATIN SMALL LIGATURE FL; fl

```
16447 \DeclareTextCommand{\textfl}{PU}{\9373\002}% U+FB02
```

### 50.2.25 Miscellaneous

```
16448 \DeclareTextCommand{\SS}{PU}{SS}
```

### 50.2.26 Aliases

Aliases (german.sty)

```
16449 \DeclareTextCommand{\textglqq}{PU}{\quotedblbase}
16450 \DeclareTextCommand{\textgrqq}{PU}{\textquotedblleft}
16451 \DeclareTextCommand{\textglq}{PU}{\quotesinglbase}
16452 \DeclareTextCommand{\textgrq}{PU}{\textquoteleft}
16453 \DeclareTextCommand{\textflqq}{PU}{\guillemotleft}
16454 \DeclareTextCommand{\textfrqq}{PU}{\guillemotright}
16455 \DeclareTextCommand{\textflq}{PU}{\guilsinglleft}
16456 \DeclareTextCommand{\textfrq}{PU}{\guilsinglright}
```

Aliases (math names)

```
16457 \DeclareTextCommand{\textneg}{PU}{\textlogicalnot}
16458 \DeclareTextCommand{\texttimes}{PU}{\textmultiply}
16459 \DeclareTextCommand{\textdiv}{PU}{\textdivide}
16460 \DeclareTextCommand{\textpm}{PU}{\textplusminus}
16461 \DeclareTextCommand{\textcdot}{PU}{\textperiodcentered}
16462 \puenc
```

## 50.3 PU encoding, additions for VnTeX

This file is provided by Han The Thanh.

```
16463 \*puvncenc

16464 \DeclareTextCommand{\abreve}{PU}{\81\003}
16465 \DeclareTextCommand{\acircumflex}{PU}{\80\342}
16466 \DeclareTextCommand{\dj}{PU}{\81\021}
16467 \DeclareTextCommand{\ecircumflex}{PU}{\80\352}
16468 \DeclareTextCommand{\ocircumflex}{PU}{\80\364}
16469 \DeclareTextCommand{\ohorn}{PU}{\81\241}
16470 \DeclareTextCommand{\uhorn}{PU}{\81\260}
16471 \DeclareTextCommand{\ABREVE}{PU}{\81\002}
16472 \DeclareTextCommand{\ACIRCUMFLEX}{PU}{\80\302}
16473 \DeclareTextCommand{\DJ}{PU}{\81\020}
16474 \DeclareTextCommand{\ECIRCUMFLEX}{PU}{\80\312}
16475 \DeclareTextCommand{\OCIRCUMFLEX}{PU}{\80\324}
16476 \DeclareTextCommand{\OHORN}{PU}{\81\240}
16477 \DeclareTextCommand{\UHORN}{PU}{\81\257}

16478 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\341}
16479 \DeclareTextCompositeCommand{\d}{PU}{a}{\9036\241}
16480 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\340}
16481 \DeclareTextCompositeCommand{\h}{PU}{a}{\9036\243}
16482 \DeclareTextCompositeCommand{\~}{PU}{a}{\80\343}
16483 \DeclareTextCompositeCommand{\'}{PU}{\abreve}{\9036\257}
16484 \DeclareTextCompositeCommand{\d}{PU}{\abreve}{\9036\267}
16485 \DeclareTextCompositeCommand{\'}{PU}{\abreve}{\9036\261}
16486 \DeclareTextCompositeCommand{\h}{PU}{\abreve}{\9036\263}
16487 \DeclareTextCompositeCommand{\~}{PU}{\abreve}{\9036\265}
16488 \DeclareTextCompositeCommand{\'}{PU}{\acircumflex}{\9036\245}
16489 \DeclareTextCompositeCommand{\d}{PU}{\acircumflex}{\9036\255}
16490 \DeclareTextCompositeCommand{\'}{PU}{\acircumflex}{\9036\247}
```

16491 \DeclareTextCompositeCommand{\h}{PU}{\acircumflex}{\9036\251}  
16492 \DeclareTextCompositeCommand{\~}{PU}{\acircumflex}{\9036\253}  
16493 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\351}  
16494 \DeclareTextCompositeCommand{\d}{PU}{e}{\9036\271}  
16495 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\350}  
16496 \DeclareTextCompositeCommand{\h}{PU}{e}{\9036\273}  
16497 \DeclareTextCompositeCommand{\~}{PU}{e}{\9036\275}  
16498 \DeclareTextCompositeCommand{\'}{PU}{\ecircumflex}{\9036\277}  
16499 \DeclareTextCompositeCommand{\d}{PU}{\ecircumflex}{\9036\307}  
16500 \DeclareTextCompositeCommand{\'}{PU}{\ecircumflex}{\9036\301}  
16501 \DeclareTextCompositeCommand{\h}{PU}{\ecircumflex}{\9036\303}  
16502 \DeclareTextCompositeCommand{\~}{PU}{\ecircumflex}{\9036\305}  
16503 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\355}  
16504 \DeclareTextCompositeCommand{\d}{PU}{i}{\9036\313}  
16505 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\354}  
16506 \DeclareTextCompositeCommand{\h}{PU}{i}{\9036\311}  
16507 \DeclareTextCompositeCommand{\~}{PU}{i}{\81\051}  
16508 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\363}  
16509 \DeclareTextCompositeCommand{\d}{PU}{o}{\9036\315}  
16510 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\362}  
16511 \DeclareTextCompositeCommand{\h}{PU}{o}{\9036\317}  
16512 \DeclareTextCompositeCommand{\~}{PU}{o}{\80\365}  
16513 \DeclareTextCompositeCommand{\'}{PU}{\ocircumflex}{\9036\321}  
16514 \DeclareTextCompositeCommand{\d}{PU}{\ocircumflex}{\9036\331}  
16515 \DeclareTextCompositeCommand{\~}{PU}{\ocircumflex}{\9036\323}  
16516 \DeclareTextCompositeCommand{\h}{PU}{\ocircumflex}{\9036\325}  
16517 \DeclareTextCompositeCommand{\~}{PU}{\ocircumflex}{\9036\327}  
16518 \DeclareTextCompositeCommand{\'}{PU}{\ohorn}{\9036\333}  
16519 \DeclareTextCompositeCommand{\d}{PU}{\ohorn}{\9036\343}  
16520 \DeclareTextCompositeCommand{\~}{PU}{\ohorn}{\9036\335}  
16521 \DeclareTextCompositeCommand{\h}{PU}{\ohorn}{\9036\337}  
16522 \DeclareTextCompositeCommand{\~}{PU}{\ohorn}{\9036\341}  
16523 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\372}  
16524 \DeclareTextCompositeCommand{\d}{PU}{u}{\9036\345}  
16525 \DeclareTextCompositeCommand{\~}{PU}{u}{\80\371}  
16526 \DeclareTextCompositeCommand{\h}{PU}{u}{\9036\347}  
16527 \DeclareTextCompositeCommand{\~}{PU}{u}{\81\151}  
16528 \DeclareTextCompositeCommand{\'}{PU}{\uhorn}{\9036\351}  
16529 \DeclareTextCompositeCommand{\d}{PU}{\uhorn}{\9036\361}  
16530 \DeclareTextCompositeCommand{\~}{PU}{\uhorn}{\9036\353}  
16531 \DeclareTextCompositeCommand{\h}{PU}{\uhorn}{\9036\355}  
16532 \DeclareTextCompositeCommand{\~}{PU}{\uhorn}{\9036\357}  
16533 \DeclareTextCompositeCommand{\'}{PU}{y}{\80\375}  
16534 \DeclareTextCompositeCommand{\d}{PU}{y}{\9036\365}  
16535 \DeclareTextCompositeCommand{\~}{PU}{y}{\9036\363}  
16536 \DeclareTextCompositeCommand{\h}{PU}{y}{\9036\367}  
16537 \DeclareTextCompositeCommand{\~}{PU}{y}{\9036\371}  
16538 \DeclareTextCompositeCommand{\~}{PU}{A}{\80\301}  
16539 \DeclareTextCompositeCommand{\d}{PU}{A}{\9036\240}  
16540 \DeclareTextCompositeCommand{\~}{PU}{A}{\80\300}  
16541 \DeclareTextCompositeCommand{\h}{PU}{A}{\9036\242}  
16542 \DeclareTextCompositeCommand{\~}{PU}{A}{\80\303}  
16543 \DeclareTextCompositeCommand{\~}{PU}{\ABREVE}{\9036\256}  
16544 \DeclareTextCompositeCommand{\d}{PU}{\ABREVE}{\9036\266}  
16545 \DeclareTextCompositeCommand{\~}{PU}{\ABREVE}{\9036\260}  
16546 \DeclareTextCompositeCommand{\h}{PU}{\ABREVE}{\9036\262}  
16547 \DeclareTextCompositeCommand{\~}{PU}{\ABREVE}{\9036\264}

```

16548 \DeclareTextCompositeCommand{\'}{PU}{\ACIRCUMFLEX}{\9036\244}
16549 \DeclareTextCompositeCommand{\d}{PU}{\ACIRCUMFLEX}{\9036\254}
16550 \DeclareTextCompositeCommand{\'}{PU}{\ACIRCUMFLEX}{\9036\246}
16551 \DeclareTextCompositeCommand{\h}{PU}{\ACIRCUMFLEX}{\9036\250}
16552 \DeclareTextCompositeCommand{\~}{PU}{\ACIRCUMFLEX}{\9036\252}
16553 \DeclareTextCompositeCommand{\'}{PU}{E}{\80\311}
16554 \DeclareTextCompositeCommand{\d}{PU}{E}{\9036\270}
16555 \DeclareTextCompositeCommand{\'}{PU}{E}{\80\310}
16556 \DeclareTextCompositeCommand{\h}{PU}{E}{\9036\272}
16557 \DeclareTextCompositeCommand{\~}{PU}{E}{\9036\274}
16558 \DeclareTextCompositeCommand{\'}{PU}{\ECIRCUMFLEX}{\9036\276}
16559 \DeclareTextCompositeCommand{\d}{PU}{\ECIRCUMFLEX}{\9036\306}
16560 \DeclareTextCompositeCommand{\'}{PU}{\ECIRCUMFLEX}{\9036\300}
16561 \DeclareTextCompositeCommand{\h}{PU}{\ECIRCUMFLEX}{\9036\302}
16562 \DeclareTextCompositeCommand{\~}{PU}{\ECIRCUMFLEX}{\9036\304}
16563 \DeclareTextCompositeCommand{\'}{PU}{I}{\80\315}
16564 \DeclareTextCompositeCommand{\d}{PU}{I}{\9036\312}
16565 \DeclareTextCompositeCommand{\'}{PU}{I}{\80\314}
16566 \DeclareTextCompositeCommand{\h}{PU}{I}{\9036\310}
16567 \DeclareTextCompositeCommand{\~}{PU}{I}{\81\050}
16568 \DeclareTextCompositeCommand{\'}{PU}{O}{\80\323}
16569 \DeclareTextCompositeCommand{\d}{PU}{O}{\9036\314}
16570 \DeclareTextCompositeCommand{\'}{PU}{O}{\80\322}
16571 \DeclareTextCompositeCommand{\h}{PU}{O}{\9036\316}
16572 \DeclareTextCompositeCommand{\~}{PU}{O}{\80\325}
16573 \DeclareTextCompositeCommand{\'}{PU}{\OCIRCUMFLEX}{\9036\320}
16574 \DeclareTextCompositeCommand{\d}{PU}{\OCIRCUMFLEX}{\9036\330}
16575 \DeclareTextCompositeCommand{\'}{PU}{\OCIRCUMFLEX}{\9036\322}
16576 \DeclareTextCompositeCommand{\h}{PU}{\OCIRCUMFLEX}{\9036\324}
16577 \DeclareTextCompositeCommand{\~}{PU}{\OCIRCUMFLEX}{\9036\326}
16578 \DeclareTextCompositeCommand{\'}{PU}{\OHORN}{\9036\332}
16579 \DeclareTextCompositeCommand{\d}{PU}{\OHORN}{\9036\342}
16580 \DeclareTextCompositeCommand{\'}{PU}{\OHORN}{\9036\334}
16581 \DeclareTextCompositeCommand{\h}{PU}{\OHORN}{\9036\336}
16582 \DeclareTextCompositeCommand{\~}{PU}{\OHORN}{\9036\340}
16583 \DeclareTextCompositeCommand{\'}{PU}{U}{\80\332}
16584 \DeclareTextCompositeCommand{\d}{PU}{U}{\9036\344}
16585 \DeclareTextCompositeCommand{\'}{PU}{U}{\80\331}
16586 \DeclareTextCompositeCommand{\h}{PU}{U}{\9036\346}
16587 \DeclareTextCompositeCommand{\~}{PU}{U}{\81\150}
16588 \DeclareTextCompositeCommand{\'}{PU}{\UHORN}{\9036\350}
16589 \DeclareTextCompositeCommand{\d}{PU}{\UHORN}{\9036\360}
16590 \DeclareTextCompositeCommand{\'}{PU}{\UHORN}{\9036\352}
16591 \DeclareTextCompositeCommand{\h}{PU}{\UHORN}{\9036\354}
16592 \DeclareTextCompositeCommand{\~}{PU}{\UHORN}{\9036\356}
16593 \DeclareTextCompositeCommand{\'}{PU}{Y}{\80\335}
16594 \DeclareTextCompositeCommand{\d}{PU}{Y}{\9036\364}
16595 \DeclareTextCompositeCommand{\'}{PU}{Y}{\9036\362}
16596 \DeclareTextCompositeCommand{\h}{PU}{Y}{\9036\366}
16597 \DeclareTextCompositeCommand{\~}{PU}{Y}{\9036\370}
16598 </puvnenc>

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## 50.4 PU encoding, additions for Arabi

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16599 <*puarenc>
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16600 \DeclareTextCommand{\hamza}{PU}{\86\041}% 0621;afi57409;ARABIC LETTER HAMZA

16601 \DeclareTextCommand{\alefmadda}{PU}{\86\042}% 0622;afi57410;ARABIC LETTER ALEF WITH MADDA ABOVE

16602 \DeclareTextCommand{\alefhamza}{PU}{\86\043}% 0623;afi57411;ARABIC LETTER ALEF WITH HAMZA ABOVE

16603 \DeclareTextCommand{\wawhamza}{PU}{\86\044}% 0624;afi57412;ARABIC LETTER WAW WITH HAMZA ABOVE

16604 \DeclareTextCommand{\aleflowerhamza}{PU}{\86\045}% 0625;afi57413;ARABIC LETTER ALEF WITH HAMZA BELOW

16605 \DeclareTextCommand{\yahamza}{PU}{\86\046}% 0626;afi57414;ARABIC LETTER YEH WITH HAMZA ABOVE

16606 \DeclareTextCommand{\alef}{PU}{\86\047}% 0627;afi57415;ARABIC LETTER ALEF

16607 \DeclareTextCommand{\baa}{PU}{\86\050}% 0628;afi57416;ARABIC LETTER BEH

16608 \DeclareTextCommand{\T}{PU}{\86\051}% 0629;afi57417;ARABIC LETTER TEH MARBUTA

16609 \DeclareTextCommand{\taa}{PU}{\86\052}% 062A;afi57418;ARABIC LETTER TEH

16610 \DeclareTextCommand{\thaa}{PU}{\86\053}% 062B;afi57419;ARABIC LETTER THEH

16611 \DeclareTextCommand{\jeem}{PU}{\86\054}% 062C;afi57420;ARABIC LETTER JEEM

16612 \DeclareTextCommand{\Haa}{PU}{\86\055}% 062D;afi57421;ARABIC LETTER HAH

16613 \DeclareTextCommand{\kha}{PU}{\86\056}% 062E;afi57422;ARABIC LETTER KHAH

16614 \DeclareTextCommand{\dal}{PU}{\86\057}% 062F;afi57423;ARABIC LETTER DAL

16615 \DeclareTextCommand{\dhal}{PU}{\86\060}% 0630;afi57424;ARABIC LETTER THAL

16616 \DeclareTextCommand{\ra}{PU}{\86\061}% 0631;afi57425;ARABIC LETTER REH

16617 \DeclareTextCommand{\zay}{PU}{\86\062}% 0632;afi57426;ARABIC LETTER ZAIN

16618 \DeclareTextCommand{\seen}{PU}{\86\063}% 0633;afi57427;ARABIC LETTER SEEN

16619 \DeclareTextCommand{\sheen}{PU}{\86\064}% 0634;afi57428;ARABIC LETTER SHEEN

16620 \DeclareTextCommand{\sad}{PU}{\86\065}% 0635;afi57429;ARABIC LETTER SAD

16621 \DeclareTextCommand{\dad}{PU}{\86\066}% 0636;afi57430;ARABIC LETTER DAD

16622 \DeclareTextCommand{\Ta}{PU}{\86\067}% 0637;afi57431;ARABIC LETTER TAH

16623 \DeclareTextCommand{\za}{PU}{\86\070}% 0638;afi57432;ARABIC LETTER ZAH

16624 \DeclareTextCommand{\ayn}{PU}{\86\071}% 0639;afi57433;ARABIC LETTER AIN

16625 \DeclareTextCommand{\ghayn}{PU}{\86\072}% 063A;afi57434;ARABIC LETTER GHAIN

16626 \DeclareTextCommand{\tatweel}{PU}{\86\100}% 0640;afi57440;ARABIC TATWEEL

16627 \DeclareTextCommand{\fa}{PU}{\86\101}% 0641;afi57441;ARABIC LETTER FEH

16628 \DeclareTextCommand{\qaf}{PU}{\86\102}% 0642;afi57442;ARABIC LETTER QAF

16629 \DeclareTextCommand{\kaf}{PU}{\86\103}% 0643;afi57443;ARABIC LETTER KAF

16630 \DeclareTextCommand{\lam}{PU}{\86\104}% 0644;afi57444;ARABIC LETTER LAM

16631 \DeclareTextCommand{\meem}{PU}{\86\105}% 0645;afi57445;ARABIC LETTER MEEM

16632 \DeclareTextCommand{\nun}{PU}{\86\106}% 0646;afi57446;ARABIC LETTER NOON

16633 \DeclareTextCommand{\ha}{PU}{\86\107}% 0647;afi57470;ARABIC LETTER HEH

16634 \DeclareTextCommand{\waw}{PU}{\86\110}% 0648;afi57448;ARABIC LETTER WAW

16635 \DeclareTextCommand{\alefmaqsura}{PU}{\86\111}% 0649;afi57449;ARABIC LETTER ALEF MAKSURA

16636 \DeclareTextCommand{\ya}{PU}{\86\112}% 064A;afi57450;ARABIC LETTER YEH

16637 \DeclareTextCommand{\nasb}{PU}{\86\113}% 064B;afi57451;ARABIC FATHATAN

16638 \DeclareTextCommand{\raff}{PU}{\86\114}% 064C;afi57452;ARABIC DAMMATAN

16639 \DeclareTextCommand{\jarr}{PU}{\86\115}% 064D;afi57453;ARABIC KASRATAN

16640 \DeclareTextCommand{\fatha}{PU}{\86\116}% 064E;afi57454;ARABIC FATHA

16641 \DeclareTextCommand{\damma}{PU}{\86\117}% 064F;afi57455;ARABIC DAMMA

16642 \DeclareTextCommand{\kasra}{PU}{\86\120}% 0650;afi57456;ARABIC KASRA

16643 \DeclareTextCommand{\shadda}{PU}{\86\121}% 0651;afi57457;ARABIC SHADDA

16644 \DeclareTextCommand{\sukun}{PU}{\86\122}% 0652;afi57458;ARABIC SUKUN

Farsi

```
16645 \DeclareTextCommand{\peh}{PU}{\86\176}% 067E;afi57506;ARABIC LETTER PEH
16646 \DeclareTextCommand{\tcheh}{PU}{\86\206}% 0686;afi57507;ARABIC LET-
TER TCHEH
16647 \DeclareTextCommand{\jeh}{PU}{\86\230}% 0698;afi57508;ARABIC LETTER JEH
16648 \DeclareTextCommand{\farsikaf}{PU}{\86\251}% 06A9???;afi????;FARSI LET-
TER KAF
16649 \DeclareTextCommand{\gaf}{PU}{\86\257}% 06AF;afi57509;ARABIC LETTER GAF
16650 \DeclareTextCommand{\farsiya}{PU}{\86\314}% 06CC;afi????;FARSI LET-
TER YEH

16651 \DeclareTextCommand{\ZWNJ}{PU}{\9040\014}% 200C;ZWNJ%
16652 \DeclareTextCommand{\noboundary}{PU}{\86\325}% 200D;ZWJ
16653 </puarenc>
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## 51 End of file hyccheck.tex

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16654 <*check>
16655 \typeout{}
16656 \begin{document}
16657 \end{document}
16658 </check>
```

## 52 Index

Numbers written in *italic* refer to the page where the corresponding entry is described; numbers underlined refer to the code line of the definition; numbers in *roman* refer to the code lines where the entry is used.

Symbols		
\!	195, 220, 2073	
\"	202, 227, 3171, 13836, 14196, 14208, 14220, 14343, 14429, 14443, 14451, 14466, 14478, 14494, 14508, 14519, 14520, 14534, 14546, 14552, 14603, 14631, 14650, 14671, 14798, 14812, 14820, 14834, 14846, 14862, 14876, 14887, 14888, 14902, 14914, 14920, 15167, 15382, 15384, 15394, 15446, 15448, 15476, 15489, 15641, 15654, 15887, 15889, 15903, 15905, 15907, 15909, 15911, 15913, 15923, 15925, 15927, 15929, 15935, 15937, 15939, 15941, 15947, 15949, 15955, 15957, 15963, 15965, 16005, 16007, 16077, 16079, 16089, 16091, 16107	15317, 15319, 15321, 15323, 15325, 15327, 15329, 15331, 15386, 15388, 15390, 15392, 15450, 15453, 15455, 15480, 15499, 15645, 15664, 16013, 16015, 16025, 16027, 16041, 16043, 16073, 16075, 16478, 16483, 16488, 16493, 16498, 16503, 16508, 16513, 16518, 16523, 16528, 16533, 16538, 16543, 16548, 16553, 16558, 16563, 16568, 16573, 16578, 16583, 16588, 16593
\#	560, 2158, 2159, 4549, 4560, 4562, 4578, 4610, 4670, 8451, 8453, 9232, 9241, 9276, 10043, 11619, 11630, 11666, 11897, 11906, 11944, 13756	\( 190, 215, 336, 766, 769, 771, 2075, 13902, 14266
\\$	184, 209, 335, 561, 4551, 4669	\) 191, 216, 337, 738, 744, 747, 2076, 13903, 14268
\%	562, 2073, 2133, 2134, 4548, 4557, 4559, 4611, 8453	\* 339
\&	185, 210, 563, 4552, 4563, 4565, 11676	\+ 200, 225, 340
\'	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, 13834, 14193, 14205, 14217, 14423, 14439, 14447, 14460, 14474, 14480, 14488, 14504, 14513, 14514, 14528, 14542, 14548, 14571, 14573, 14574, 14575, 14578, 14580, 14581, 14582, 14590, 14628, 14647, 14668, 14792, 14808, 14816, 14828, 14842, 14848, 14856, 14872, 14881, 14882, 14896, 14910, 14916, 14934, 14936, 15041, 15043, 15061, 15063, 15095, 15097, 15107, 15109, 15169, 15171, 15221, 15223, 15229, 15231, 15233, 15235,	\- 201, 226
		\. 198, 223, 333, 1234, 3495, 3895, 14199, 14211, 14223, 14285, 14576, 14583, 14601, 14634, 14653, 14677, 14717, 14718, 14942, 14944, 14966, 14968, 14986, 14988, 15022, 15053, 15055, 15173, 15175, 15266, 15268, 15274, 15276, 15973, 15975, 15981, 15983, 15993, 15995, 16001, 16003, 16029, 16031, 16033, 16035, 16045, 16047, 16049, 16051, 16057, 16059, 16081, 16083, 16085, 16087, 16093, 16095, 16113
		\/ 194, 219, 680, 681, 682, 749, 1858, 7851
		\: 189, 214
		\; 199, 224, 8146
		\< 196, 221
		\= 167, 173, 180, 183, 14201, 14213, 14225, 14596, 14638, 14657, 14676, 14922, 14924, 14958, 14960, 15007, 15009, 15010, 15079, 15081, 15139, 15141, 15278, 15280, 15919, 15921, 15943, 15945, 15997, 15999
		\> 197, 222
		\? 341
		\@ 3162
		\@@@ 2389
		\@@@BOOKMARK 13817, 13820, 13878, 13946, 13953
		\@@ListBox 12264, 12288, 12745, 12778, 13084, 13127
		\@@Menu 12472, 12480
		\@@PasswordField 12421, 12427
		\@@Radio 12249, 12270, 12470, 12494, 12730, 12751, 13069, 13090
		\@@TextField 12423, 12438
		\@@commahyperpage 7958, 7959
		\@@hyper@readexternallink 4859, 4861
		\@@hyperref 4772, 4773
		\@@latextohtmlX 2990, 5007
		\@@windex 7886, 7887
		\@@writetorep 13677, 13683
		\@Alph 6579, 6581
		\@BIBLABEL 7381, 7387, 7393
		\@BOOKMARK 13817, 13819
		\@CITE 7458, 7466
		\@CITEX 7460
		\@CheckBox 5770, 10108, 12362, 12391, 12525, 12862, 13229
		\@ChoiceMenu 5767, 10111, 12202, 12394, 12460, 12682, 13021
		\@Form 5465, 10098, 11988, 12383, 12404, 12603, 12944
		\@Gauge 5776, 10102, 12172, 12385, 12409, 12546, 12941
		\@Localurfalse 10051
		\@Localurtrue 10048
		\@M 1140, 2446, 4656, 7019
		\@MM 7144
		\@PackageError 277
		\@PackageInfo 280
		\@PackageInfoNoLine 281
		\@PackageWarning 278
		\@PackageWarningNoLine 279
		\@PushButton 5773, 10114, 12295, 12397, 12506, 12787, 13143
		\@Refstar 8261, 8268
		\@Reset 5782, 10117, 12339, 12400, 12522, 12838, 13200
		\@Roman 642
		\@SCTR 8005, 8057
		\@SetMaxRnhefLabel 7455
		\@Submit 5779, 10120, 12322, 12401, 12519, 12816, 13177
		\@TextField 5764, 10105, 12175, 12388, 12412, 12654, 12985
		\@addchap 14153
		\@addtoreset 7780, 7781, 7795, 8002

<code>\@afterheading</code> . . . . .	14170	<code>\@currValue</code> . . . . .	5555, 5557, 12275, 12282, 12489, 12500, 12756, 12765, 13098, 13115, 13554	1220, 1224, 1228, 1566, 3873, 4375, 5431, 5437, 5669, 6439, 6572, 6584, 6651, 7248, 7329, 7470, 7493, 7619, 7841, 9094, 12576, 13313, 13330, 13348	
<code>\@alph</code> . . . . .	6575, 6577	<code>\@currentHlabel</code> . . . . .	6625	<code>\@firstoftwo</code> . . . . .	651, 932, 1102, 1774, 5962, 14119
<code>\@anchorcolor</code> . . . . .	9201, 9296, 10165, 11587, 11867	<code>\@currentHref</code> . . . . .	2391, 5872, 6524, 6605, 6607, 6616, 6618, 6625, 6706, 6708, 6718, 6769, 6780, 6782, 6820, 6831, 6835, 6842, 6866, 6956, 6987, 7012, 7076, 7086, 7088, 7089, 7129, 7157, 7255, 7281, 7285, 7300, 7302, 7530, 7656, 7679, 7692, 7699, 7750, 7774, 7776, 13667, 14058, 14071, 14082, 14112, 14129, 14164	<code>\@fnsymbol</code> . . . . .	6573
<code>\@arabic</code> . . . . .	1110, 1115, 1119, 6574	<code>\@currentlabel</code> . . . . .	6748, 7147, 7523, 7530, 7755, 7762, 8011, 8063	<code>\@footnotemark</code> . . . . .	7029, 7082, 7166, 7178, 7180, 7192, 7193, 7223, 7225
<code>\@auxout</code> . . . . .	2383, 4817, 5992, 5994, 6664, 6692, 7401, 7416, 7432, 7442, 7472, 7495, 7521, 7527, 7551	<code>\@currentlabelname</code> . . . . .	2381, 7077, 7130, 7158, 7260	<code>\@footnotetext</code> . . . . .	7028, 7035, 7064, 7179, 7181, 7195, 7196, 7216
<code>\@backslashchar</code> . . . . .	862, 865, 868, 1364, 2035, 2039, 2042, 2180, 2197, 2203, 2207, 2215, 4573, 8466, 8476	<code>\@currentlabstr</code> . . . . .	2380, 2388	<code>\@for</code> . . . . .	3514, 5073, 7467, 7490, 12211, 12273, 12478, 12485, 12495, 12691, 12754, 13030, 13096
<code>\@baseurl</code> . . . . .	3481, 3483, 4917, 8918, 8921, 9186, 9188, 9470, 9472, 9956, 9966, 10016, 10018, 10543, 10545, 10923, 10937, 11572, 11574, 11773, 11787, 11853, 11855	<code>\@dblarg</code> . . . . .	2508, 7250, 7331	<code>\@fourthoffive</code> . . . . .	4487, 4805, 8325, 8332
<code>\@begintheorem</code> . . . . .	6923, 6926, 6951, 6958, 6982, 6989	<code>\@definecounter</code> . . . . .	7735, 7736	<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, 4539, 5416, 5659, 5926, 5930, 5948, 5950, 5966, 5967, 5970, 5971, 5973, 6418, 6433, 6437, 6912, 6938, 6971, 7237, 7326, 7655, 8390, 9096, 10423, 10426, 12604, 12945, 13724, 13725, 13726, 13727
<code>\@bibitem</code> . . . . .	7408, 7439	<code>\@ehc</code> . . . . .	2737, 2848, 2873, 2906, 2944, 2951, 2962, 2968, 4098, 4718, 4881, 5177, 5301, 5497, 5530, 5706, 5755, 12304, 12350, 12797, 12849, 13153, 13211	<code>\@gobblefour</code> . . . . .	590, 690, 1260, 1261, 1262, 3680, 8126
<code>\@biblabel</code> . . . . .	7381, 7428	<code>\@ehd</code> . . . . .	63, 296, 302, 317, 7236, 7325	<code>\@gobbleopt</code> . . . . .	5973, 5975
<code>\@bookmarkopenstatus</code> . . . . .	4373, 4390, 13738	<code>\@endForm</code> . . . . .	5466, 10101, 12171, 12384, 12408, 12653, 12971	<code>\@gobbletwo</code> . . . . .	588, 658, 683, 691, 692, 839, 1259, 1681, 1758, 1762, 2562, 3678, 3679, 4050, 5362, 5952, 5961, 5969, 5973, 8313, 14068
<code>\@bookmarksopenlevel</code> . . . . .	3444, 3446, 4376	<code>\@endparentv</code> . . . . .	6921, 6947, 6978	<code>\@harvarditem</code> . . . . .	7540, 7542
<code>\@bsphack</code> . . . . .	2376, 4810, 7525	<code>\@eqnocr</code> . . . . .	6850	<code>\@hyper@anchor</code> . . . . .	4967, 4968
<code>\@capstartfalse</code> . . . . .	7275	<code>\@eqnstarfalse</code> . . . . .	6826, 6853	<code>\@hyper@itemfalse</code> . . . . .	6469, 6485, 6499
<code>\@caption</code> . . . . .	7240, 7252, 7295, 7331, 7333	<code>\@eqnstartrue</code> . . . . .	6850	<code>\@hyper@itemtrue</code> . . . . .	6470
<code>\@capytype</code> . . . . .	2385, 7235, 7239, 7243, 7250, 7257, 7299, 7324, 7328, 7331	<code>\@eqnswtrue</code> . . . . .	6796, 6805	<code>\@hyper@launch</code> . . . . .	4887, 4896, 8810, 10320, 11307
<code>\@car</code> . . . . .	1646, 1662, 1680, 1700, 3423, 5083, 8870, 8881	<code>\@esphack</code> . . . . .	2397, 4821, 7535, 7898	<code>\@hyper@linkfile</code> . . . . .	4868, 4871, 4875, 4907
<code>\@cdr</code> . . . . .	8871, 8882	<code>\@extra@b@citeb</code> . . . . .	7366, 7369, 7386, 7391, 7411, 7459, 7481, 7497, 7504	<code>\@hyper@readexternallink</code> . . . . .	4862, 4866
<code>\@chapter</code> . . . . .	14077, 14078	<code>\@extra@b@info</code> . . . . .	7365, 7368, 7372	<code>\@hyperdef</code> . . . . .	4780, 4781
<code>\@cite</code> . . . . .	7458, 7489, 7586, 7592	<code>\@fifthoffive</code> . . . . .	4058, 4488, 4804, 8212, 8330	<code>\@hyperpage</code> . . . . .	7950, 7951
<code>\@cite@opt</code> . . . . .	7587, 7593, 7597, 7607	<code>\@filebordercolor</code> . . . . .	3984, 8785, 8787, 9801, 9803, 10251, 10253, 11289	<code>\@hyperref</code> . . . . .	4761, 4772
<code>\@citea</code> . . . . .	7461, 7468, 7469, 7488, 7491, 7492	<code>\@filecolor</code> . . . . .	3473, 8806, 9413, 9430, 9819, 10257	<code>\@ifclasslater</code> . . . . .	14176, 14181
<code>\@citeb</code> . . . . .	7467, 7470, 7472, 7474, 7478, 7481, 7490, 7493, 7495, 7497, 7501, 7504	<code>\@firstoffive</code> . . . . .	4484, 4493, 8251, 8335		
<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> . . . . .	7588, 7594, 7596				
<code>\@citedatax</code> . . . . .	7603, 7608				
<code>\@citedatax@opt</code> . . . . .	7600, 7606				
<code>\@citeseppen</code> . . . . .	7585, 7591				
<code>\@citex</code> . . . . .	7487				
<code>\@clubpenalty</code> . . . . .	7021				
<code>\@commahyperpage</code> . . . . .	7953, 7958				
<code>\@ctrerr</code> . . . . .	6553, 6562				
<code>\@currDisplay</code> . . . . .	5553, 12214, 12277, 12489, 12503, 12694, 12758, 13033, 13100				



<code>\ifclassloaded</code> . 2368, 4515, 6636, 6673, 7450, 7986, 7990, 9099, 14175, 14180	<code>\listctr</code> . . . . . 7417, 7443	<code>\nocnterr</code> . . . . . 7794, 7808
<code>\ifnextchar</code> . . . . 12, 88, 103, 123, 684, 4663, 4761, 4780, 4829, 5465, 5764, 5767, 5770, 5773, 5776, 5779, 5782, 5973, 6045, 6054, 7182, 7200, 7540, 7598, 10948, 11218, 11232, 13817, 13820	<code>\cm</code> . . . . . 1123, 7469, 7492, 10470	<code>\nocounterr</code> . . . . . 7793, 7807
<code>\ifpackagelater</code> . . . 233, 252, 996, 2399, 6627, 7805	<code>\mainaux</code> 5990, 5991, 6401, 6409, 12572, 12596	<code>\noparitemfalse</code> . . . . . 6998
<code>\ifpackageloaded</code> . 513, 892, 995, 2371, 2789, 3400, 3404, 4037, 4203, 6508, 6626, 6639, 6701, 6734, 6738, 6758, 6792, 6906, 7025, 7096, 7136, 7296, 7510, 7583, 7747, 7804, 7846, 7847, 7848, 7995, 8260, 8403, 8407, 11845	<code>\makecaption</code> . 7276, 7278, 7344	<code>\cnx</code> . . . . . 7797, 7811, 7814, 7816
<code>\ifpackagewith</code> . 3291, 4038, 7770	<code>\makefnmark</code> . . . . . 7091, 7228	<code>\onelevel@sanitize</code> . . 2555, 2559, 2771, 3422, 4075, 4105, 4126, 4629, 4929, 4932, 4945, 4959, 5173, 5409, 5493, 6262, 6264, 6612, 7685, 8237, 9591, 13763
<code>\ifstar</code> 66, 4510, 4513, 4522, 4526, 5907, 5911, 5979, 5983, 8268, 8294, 8313	<code>\makefnmark</code> . . . . . 7148	<code>\oparg</code> . . 6923, 6926, 6951, 6958, 6982, 6989
<code>\ifundefined</code> . . 34, 375, 911, 919, 935, 938, 2539, 2651, 2719, 2803, 3309, 3345, 3353, 3360, 3373, 3421, 4010, 5172, 5492, 6371, 6512, 6517, 6740, 6761, 6762, 6815, 6837, 6861, 6898, 7241, 7259, 7375, 7458, 7474, 7497, 7744, 7785, 7793, 7794, 7807, 7808, 7815, 8509, 9992, 10611, 10612, 11402, 12604, 12945, 13322, 13734	<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, 4563, 8438, 13906, 13909, 13936, 13939	<code>\outlinefile</code> . 13736, 13825, 13920, 13922, 13924, 14002, 14004, 14006
<code>\indexfile</code> 7890, 7905, 7913, 7917, 7922	<code>\makeschapterhead</code> 14167, 14169	<code>\pagerefstar</code> . . . 4513, 8253, 8284
<code>\inlabeledfalse</code> . . . . . 7000	<code>\mem@titleref</code> . . . . . 4522	<code>\pagesetref</code> . . . . . 8203
<code>\inmathwarn</code> . . . . . 554, 555	<code>\mem@titleref@nolink</code> . . . . 4522	<code>\parboxrestore</code> . 7146, 7268, 7339
<code>\inpencc@undefined@</code> . . . . 2235	<code>\menubordercolor</code> . . . . . 3983, 9154, 9156, 9867, 9869, 10355, 10357	<code>\parcount</code> . . . . . 13884, 13892
<code>\@labels</code> . . . . . 7016	<code>\menucolor</code> . . 9169, 9873, 10361	<code>\@part</code> . . . . . 14095, 14102
<code>\@latex@</code> . . . . . 6076, 6077	<code>\minipagefalse</code> . . . . . 6996	<code>\pdfauthor</code> 3696, 3989, 8978, 9452, 9903, 10584, 10849, 11704
<code>\@latex@error</code> . . . . . 7236, 7325	<code>\mkboth</code> 658, 8108, 14068, 14156, 14158	<code>\pdfborder</code> . . . . . 3541, 3542, 3543, 3550, 3554, 3577, 3579, 4456, 8664, 9609, 10153, 10715, 10810, 11210, 11222, 11237, 11258, 11286, 11317, 11346, 11433, 11521, 11681
<code>\@latex@warning</code> 4799, 7477, 7500, 8187, 8207, 8224, 8341	<code>\mpfn</code> . . . . . 7032, 7201, 7213	<code>\pdfborderstyle</code> . . . . . 3558, 3559, 3560, 3569, 3573, 3581, 3583, 4457, 5621, 8665, 9610, 10154, 10716, 10811, 11211, 11223, 11238, 11259, 11287, 11318, 11347, 11434, 11522, 11682
<code>\@bibitem</code> . . . . . 7382, 7427	<code>\mpfootnotetext</code> 7035, 7048, 7049	<code>\pdfcreationdate</code> . . . . . 3713, 3992, 8982, 8984, 9444, 9446, 9895, 9897, 10824, 10826, 11696, 11698
<code>\@linkbordercolor</code> . . . 3981, 8734, 10155	<code>\mycount</code> . . . . . 13882, 13892	<code>\pdfcreator</code> . . . . . 3708, 3991, 8981, 9443, 9894, 10587, 10848, 11695
<code>\@linkcolor</code> . . . . . 10970	<code>\namedef</code> 1240, 2813, 2814, 2815, 2816, 2817, 2818, 2819, 2820, 3300, 3312, 5183, 5184, 5185, 5186, 5508, 5509, 6637, 6849, 6852, 7515, 7516, 7517, 7518	<code>\pdfdirection</code> . 8941, 9508, 9936, 10555, 10903, 11753
<code>\@linkdim</code> . . . . . 480, 9250, 9251, 9259, 9260, 9261, 9330, 9331, 9343, 9344, 9345, 9367, 9368, 9381, 9382, 9383, 9405, 9406, 9419, 9420, 9421, 11640, 11641, 11649, 11650, 11651, 11915, 11916, 11929, 11930, 11931	<code>\namerefstar</code> . . . . . 4526, 8256	<code>\pdfduplex</code> . . 8947, 9514, 9942, 10561, 10909, 11759
	<code>\nameuse</code> . 2385, 2810, 5189, 5500	<code>\pdfhighlight</code> . . . . . 3533, 3987, 8684, 8686, 8745, 8781, 8783, 8818, 8820, 9150, 9152, 10714, 10809, 11209, 11257, 11285, 11316
	<code>\ne</code> . . . . . 1109, 2756, 2894, 4361, 4688, 9734, 9739, 10522, 11427, 12980	<code>\pdfhightlight</code> . . . . . 8743
	<code>\newctr</code> . . . . . 7740, 7741	<code>\pdfkeywords</code> . . . . . 3732, 3995, 8994, 9441, 9908, 10592, 10850, 11693
	<code>\newl@bel</code> . . . . . 6039, 7368	
	<code>\newlistfalse</code> . . . . . 6997	
	<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, 4595, 4599, 4604, 4934, 4942, 4948, 4950, 5083, 5650, 5653, 5672, 6064, 6067, 6074, 6076, 6077, 6162, 6209, 6210, 6212, 6235, 6252, 6306, 6308, 6764, 6773, 6775, 6787, 7937, 7939, 7946, 7969, 7972, 7982, 8191, 8194, 8349, 8380, 8462, 8468, 8472, 8478, 8870, 8871, 8881, 8882, 10388, 10390, 13320, 13333, 13339, 13766, 13769, 13772, 13781, 13784, 13793	
	<code>\nobreakfalse</code> . . . . . 6036, 7019	

\@pdflang . . . . .	3973, 4002, 8967, 8969, 9536, 9538, 9976, 9978, 10933, 10935, 11783, 11785	\@pdfprintscaling 8946, 9513, 9941, 10560, 10908, 11758	\@protected@testopt@xargs . 688
\@pdfm@dest . . . . .	9553, 9612, 9616	\@pdfproducer . . . . .	\@refstar . . . . . 4510, 8250
\@pdfm@mark . . . . .	6389, 9552, 9604, 9624, 9638, 9640, 9654, 9656, 9661, 9662, 9692, 9716, 9718, 9723, 9741, 9763, 9795, 9828, 9856, 9890, 9957, 9984, 12948, 12949, 12950, 12969, 13011, 13017, 13106, 13120, 13135, 13141, 13166, 13173, 13191, 13197, 13219, 13225, 13247, 13253, 13258, 13290, 13298, 13973	. . . . . 3702, 3990, 8846, 8990, 8992, 9434, 9435, 9453, 9455, 9879, 9880, 9884, 9904, 9906, 10499, 10500, 10504, 10507, 10508, 10588, 10590, 10835, 10839, 11343, 11344, 11426, 11428, 11430, 11518, 11519, 11686, 11687, 11705, 11707	\@runbordercolor 3985, 8822, 8824, 10339, 10341, 11320
\@pdfmoddate . . . . .	3719, 3993, 8986, 8988, 9448, 9450, 9899, 9901, 10828, 10832, 11700, 11702	\@pdfremotestartview 3899, 3901, 3902, 3903, 3914, 3918, 3920, 3921, 3923, 3999, 8798, 9810, 11297	\@runcolor . . . . . 8842, 10345
\@pdfnonfullscreenpagemode . . . . .	8940, 9507, 9935, 10554, 10902, 11752	\@pdfstartpage . . . . .	\@safe@activesfalse . . . . . 640, 4490
\@pdfnumcopies . . . . .	8956, 8958, 9523, 9525, 9951, 9953, 10570, 10572, 10918, 10920, 11768, 11770	. . . . . 3882, 3884, 4000, 8926, 8930, 9478, 9483, 9959, 9963, 10535, 10539, 10873, 10878, 11723, 11728	\@safe@activestrue . . . . . 639, 4489
\@pdfpageduration . . . . .	3491, 9038, 9042, 9047, 10479, 10481, 10484, 10754, 10756, 10764	\@pdfstartview . . . . .	\@savsf . . . . . 8649, 8657
\@pdfpagelayout 8966, 9535, 9975, 10575, 10577, 10932, 11782		. . . . . 3889, 3891, 3998, 8928, 8930, 9480, 9484, 9961, 9963, 10537, 10875, 10879, 11725, 11729	\@schapter . . . . . 14065, 14066
\@pdfpagemode 4191, 4192, 4386, 4387, 4396, 4397, 8920, 9491, 9970, 10542, 10886, 11736		\@pdfsubject . . . . .	\@secondoffive . 4059, 4485, 4498, 8213, 8214, 8254
\@pdfpagescrop . . . . .	3927, 3997, 8905, 8909, 9474, 9475, 9496, 9498, 9982, 9984, 10531, 10533, 10891, 10893, 11741, 11743	. . . . . 3726, 3994, 8980, 9457, 9893, 10586, 10847, 11709	\@secondoftwo . . . 628, 930, 1105, 1632, 1772, 4058, 4059, 14121
\@pdfpagetransition . . . . .	3487, 9014, 9018, 9023, 10368, 10370, 10372, 10737, 10739, 10747	\@pdftempa . . . . . 4873, 4874, 4877	\@sect . . . . . 14116, 14117
\@pdfpicktraybypdfsize . . . 8948, 8950, 9515, 9517, 9943, 9945, 10562, 10564, 10910, 10912, 11760, 11762		\@pdftempwordfile . . . 4864, 4874	\@seqnrcr . . . . . 6850
\@pdfprintarea . 8944, 9511, 9939, 10558, 10906, 11756		\@pdftempwordrun . . 4865, 4877	\@serial@counter . . 13832, 13880, 13882, 13883
\@pdfprintclip . 8945, 9512, 9940, 10559, 10907, 11757		\@pdftitle 3690, 3988, 8979, 9442, 9892, 10585, 10846, 11694	\@seteqlabel . . . . . 7771, 7772
\@pdfprintpagerange . . . . .	3648, 4001, 8952, 8954, 9519, 9521, 9947, 9949, 10566, 10568, 10914, 10916, 11764, 11766	\@pdftrapped . . 3737, 3740, 3743, 3752, 3761, 3996, 8995, 8997, 9909, 9911, 10851	\@setminipage . . . . . 7270, 7341
		\@pdfview . . . . . 3863, 8646, 8654, 9559, 9563, 9567, 9571, 9575, 9579, 9580, 9583, 9584, 9587, 9591, 9593, 9608, 10152, 10162, 10174, 10652, 10672, 11348, 11435, 11523, 11795	\@setref . . 4493, 4498, 8182, 8183, 8220
		\@pdfviewarea . 8942, 9509, 9937, 10556, 10904, 11754	\@sharp . . . . . 6764, 6770
		\@pdfviewclip . 8943, 9510, 9938, 10557, 10905, 11755	\@skiphyperreffalse . . 6486, 7397, 7409
		\@pdfviewparams . . . . 3865, 3867, 10652, 10672, 11349, 11436, 11524, 11796	\@skiphyperreftrue . . . 7383, 7409
		\@percentchar . 4558, 4559, 4611, 13740	\@spaces . . . . . 284
		\@processme . . 5541, 5542, 9020, 9026, 9044, 9050, 9066, 9072, 10951, 10952, 11060, 11061, 11064, 11065	\@spart . . . . . 14108, 14109
		\@protected@testopt . . . . . 687	\@ssect . . . . . 14051, 14052
			\@startlos . . . . . 8120, 8127, 8176
			\@starttoc . . . . . 6024
			\@tempa . 6922, 6923, 6926, 6928, 6950, 6957, 6961, 6981, 6988, 6992, 7098, 7102, 7105, 7117
			\@tempb . . . . . 6878, 6882
			\@tempboxa 9248, 9250, 9259, 9328, 9330, 9333, 9334, 9343, 9349, 9350, 9365, 9367, 9370, 9371, 9381, 9387, 9388, 9403, 9405, 9408, 9409, 9419, 9425, 9426, 11638, 11640, 11649, 11913, 11915, 11929
			\@tempcnta . 13689, 13690, 13691, 13692, 13693, 13695, 13698, 13699, 13700, 13706, 13708, 13710, 13801, 13802, 13803, 13806, 13807, 13808, 13809, 13810, 14024, 14025, 14026
			\@tempdima . . . . . 2449, 5804, 5805, 5806, 5807, 5808, 5809, 5810, 5811, 8639, 12210, 12215, 12217, 12253, 12254, 12255, 12259, 12260, 12261, 12262, 12690, 12695, 12697, 12734, 12735, 12736, 12740, 12741, 12742, 12743, 13029, 13034, 13036, 13073,

13074, 13075, 13079, 13080,  
 13081, 13082  
 \@tempdimb 12214, 12215, 12694,  
 12695, 13033, 13034  
 \@tempswafalse . . . . . 7602  
 \@tempswatruer 7572, 7575, 7578,  
 7599  
 \@temptokena . 3278, 3283, 3286,  
 3288  
 \@tfor . . . . . 6879  
 \@the@H@page . . . . . 7621, 7623  
 \@thefnmark . . 7033, 7044, 7109,  
 7147, 7164, 7171, 7202, 7214,  
 7221  
 \@thirdoffive . . . . . 4486, 8257  
 \@thm . . . . . 6930, 6931, 6964  
 \@topnewpage . . . . . 14167  
 \@topsep . . . . . 6920, 6946, 6977  
 \@topsepadd . . . 6921, 6947, 6978  
 \@typeset@protect . . . . . 14037  
 \@undefined . . 388, 391, 693, 3282,  
 5963, 5998, 6011, 6023, 6224,  
 6242, 6287, 7235, 7298, 7310,  
 7315, 7324, 8245, 8637, 8850,  
 8859, 10125, 10510, 10524  
 \@undottedtocline . . . . . 8172  
 \@unprocessedoptions . . . . 4336  
 \@urlbordercolor . . . . . 3982, 8747, 8749, 9834, 9836,  
 10275, 10277, 11260  
 \@urlcolor . . . . . 8766,  
 9255, 9268, 9375, 9392, 9848,  
 10281, 11645, 11658, 11924,  
 11937  
 \@urltype 9221, 9226, 10021, 10047,  
 10182, 10196, 11607, 11612,  
 11886, 11891  
 \@vpageref . . . . . 8278  
 \@whilenum . . . . . 1276  
 \@wrintex . . . . . 7854, 7855, 7886  
 \@writefile . . . . . 7528  
 \@x@sf . . . . . 7084, 7093, 7227, 7229  
 \@xfootnote . . . . . 7200  
 \@xfootnotemark . . . . 7041, 7218  
 \@xfootnotenext . . . . 7030, 7211  
 \@xp 7761, 7796, 7797, 7810, 7811,  
 7813, 7814  
 \[ . . . 192, 217, 334, 3547, 3565, 4730  
 \{ 342, 364, 557, 2075, 10643, 13758  
 \} 343, 369, 558, 2076, 10643, 13759  
 \] . . . . . 193, 218  
 ^ . . . . . 186, 211, 332, 2173,  
 2174, 3189, 4546, 4547, 4555,  
 14194, 14206, 14218, 14425,  
 14441, 14449, 14462, 14476,  
 14490, 14506, 14516, 14517,  
 14530, 14544, 14592, 14629,

14648, 14669, 14794, 14810,  
 14818, 14830, 14844, 14858,  
 14874, 14884, 14885, 14898,  
 14912, 14938, 14940, 14978,  
 14980, 14994, 14996, 15030,  
 15032, 15033, 15111, 15113,  
 15159, 15161, 15163, 15165,  
 16097, 16099  
 \\_ . 187, 212, 565, 4550, 4567, 4568  
 \' . . . . . 166, 172, 179, 182,  
 3125, 3259, 3262, 3264, 3272,  
 13757, 14192, 14204, 14216,  
 14421, 14437, 14445, 14458,  
 14472, 14486, 14502, 14510,  
 14511, 14526, 14540, 14588,  
 14627, 14646, 14667, 14790,  
 14806, 14814, 14826, 14840,  
 14854, 14870, 14878, 14879,  
 14894, 14908, 15225, 15227,  
 15473, 15501, 15638, 15666,  
 16069, 16071, 16119, 16121,  
 16480, 16485, 16490, 16495,  
 16500, 16505, 16510, 16515,  
 16520, 16525, 16530, 16535,  
 16540, 16545, 16550, 16555,  
 16560, 16565, 16570, 16575,  
 16580, 16585, 16590, 16595  
 \l 188, 213, 338, 1981, 2074, 2115,  
 3071, 4025, 7850, 8437, 8447  
 \~ . . . . . 564, 1278, 2223, 3183,  
 3191, 3192, 3193, 4119, 4571,  
 14195, 14207, 14219, 14427,  
 14456, 14464, 14492, 14524,  
 14532, 14594, 14630, 14649,  
 14670, 14796, 14824, 14832,  
 14860, 14892, 14900, 15002,  
 15004, 15005, 15135, 15137,  
 16065, 16067, 16115, 16117,  
 16123, 16125, 16482, 16487,  
 16492, 16497, 16502, 16507,  
 16512, 16517, 16522, 16527,  
 16532, 16537, 16542, 16547,  
 16552, 16557, 16562, 16567,  
 16572, 16577, 16582, 16587,  
 16592, 16597

# Numbers

\3 . . . . . 541, 1322, 1323,  
 1324, 1325, 1326, 1327, 1328,  
 1329, 1438, 1439, 1440, 1441,  
 1442, 1443, 1444, 1445, 2337,  
 13901, 14421, 14423, 14425,  
 14427, 14429, 14431, 14433,  
 14435, 14437, 14439, 14441,  
 14443, 14445, 14447, 14449,  
 14451, 14453, 14454, 14456,  
 14458, 14460, 14462, 14464,  
 14466, 14468, 14470, 14472,

14474, 14476, 14478, 14480,  
 14482, 14484, 14486, 14488,  
 14490, 14492, 14494, 14496,  
 14498, 14500, 14502, 14504,  
 14506, 14508, 14510, 14511,  
 14513, 14514, 14516, 14517,  
 14519, 14520, 14522, 14524,  
 14526, 14528, 14530, 14532,  
 14534, 14536, 14538, 14540,  
 14542, 14544, 14546, 14548,  
 14550, 14552, 14553, 14626,  
 14790, 14792, 14794, 14796,  
 14798, 14800, 14802, 14804,  
 14806, 14808, 14810, 14812,  
 14814, 14816, 14818, 14820,  
 14822, 14824, 14826, 14828,  
 14830, 14832, 14834, 14836,  
 14838, 14840, 14842, 14844,  
 14846, 14848, 14850, 14852,  
 14854, 14856, 14858, 14860,  
 14862, 14864, 14866, 14868,  
 14870, 14872, 14874, 14876,  
 14878, 14879, 14881, 14882,  
 14884, 14885, 14887, 14888,  
 14890, 14892, 14894, 14896,  
 14898, 14900, 14902, 14904,  
 14906, 14908, 14910, 14912,  
 14914, 14916, 14918, 14920,  
 15185, 15187, 15189, 15191,  
 15192, 15194, 15196, 15198,  
 15200, 15202, 15204, 15206,  
 15208, 15210, 15212, 15214,  
 15216, 15218, 15219, 15221,  
 15223, 15225, 15227, 15229,  
 15231, 15233, 15235, 15284,  
 15286, 15288, 15290, 15292,  
 15294, 15296, 15299, 15301,  
 15426, 15428, 15430, 15432,  
 15434, 15436, 15438, 15440,  
 15442, 15444, 15446, 15448,  
 15450, 15452, 15453, 15455,  
 15457, 15459, 15461, 15463,  
 15465, 15467, 15469, 15471,  
 15857, 15859, 15861, 15863,  
 15865, 15867, 15869, 15871,  
 15873, 15875, 15877, 15879,  
 15881, 15883, 15885, 15887,  
 15889, 15891, 15893, 15895,  
 15897, 15899, 15901, 15903,  
 15905, 15907, 15909, 15911,  
 15913, 15915, 15917, 15919,  
 15921, 15923, 15925, 15927,  
 15929, 15931, 15933, 15935,  
 15937, 15939, 15941, 15943,  
 15945, 15947, 15949, 15951,  
 15953, 15955, 15957, 15959,  
 15961, 15963, 15965, 15967,

15969, 16119, 16121, 16123, 16125, 16345, 16347, 16349, 16351, 16353, 16355, 16357, 16359, 16361, 16363, 16365, 16367, 16369, 16371, 16373, 16375, 16377, 16379, 16381, 16383, 16385, 16387, 16389, 16391, 16393, 16395, 16397, 16399, 16401, 16403, 16405, 16407, 16409, 16411, 16413, 16415, 16417, 16419, 16421, 16423, 16425, 16427, 16429, 16431, 16433, 16441, 16443, 16465, 16467, 16468, 16472, 16474, 16475, 16478, 16480, 16482, 16493, 16495, 16499, 16500, 16501, 16502, 16503, 16504, 16505, 16506, 16508, 16509, 16510, 16511, 16512, 16513, 16514, 16515, 16516, 16517, 16518, 16519, 16520, 16521, 16522, 16523, 16524, 16525, 16526, 16528, 16529, 16530, 16531, 16532, 16533, 16534, 16535, 16536, 16537, 16538, 16540, 16542, 16553, 16555, 16559, 16560, 16561, 16562, 16563, 16564, 16565, 16566, 16568, 16569, 16570, 16571, 16572, 16573, 16574, 16575, 16576, 16577, 16578, 16579, 16580, 16581, 16582, 16583, 16584, 16585, 16586, 16588, 16589, 16590, 16591, 16592, 16593, 16594, 16595, 16596, 16597, 16650, 16652	16121, 16123, 16125, 16127, 16129, 16131, 16133, 16135, 16137, 16139, 16141, 16143, 16145, 16147, 16149, 16151, 16153, 16155, 16157, 16159, 16161, 16163, 16165, 16167, 16169, 16171, 16173, 16175, 16177, 16179, 16181, 16183, 16185, 16187, 16189, 16191, 16193, 16195, 16197, 16199, 16201, 16203, 16205, 16207, 16209, 16211, 16213, 16215, 16217, 16219, 16221, 16223, 16225, 16227, 16229, 16231, 16233, 16235, 16237, 16239, 16241, 16243, 16245, 16247, 16249, 16251, 16253, 16255, 16257, 16259, 16261, 16263, 16265, 16267, 16269, 16271, 16273, 16275, 16277, 16279, 16281, 16283, 16285, 16287, 16289, 16291, 16293, 16295, 16297, 16299, 16301, 16303, 16305, 16307, 16309, 16311, 16313, 16315, 16317, 16319, 16321, 16323, 16325, 16327, 16329, 16331, 16333, 16335, 16337, 16339, 16341, 16343, 16345, 16347, 16349, 16351, 16353, 16355, 16357, 16359, 16361, 16363, 16365, 16367, 16369, 16371, 16373, 16375, 16377, 16379, 16381, 16383, 16385, 16387, 16389, 16391, 16393, 16395, 16397, 16399, 16401, 16403, 16405, 16407, 16409, 16411, 16413, 16415, 16417, 16419, 16421, 16423, 16425, 16427, 16429, 16431, 16433, 16435, 16437, 16439, 16441, 16443, 16445, 16447, 16479, 16481, 16483, 16484, 16485, 16486, 16487, 16488, 16489, 16490, 16491, 16492, 16494, 16496, 16497, 16498, 16499, 16500, 16501, 16502, 16504, 16506, 16509, 16511, 16513, 16514, 16515, 16516, 16517, 16518, 16519, 16520, 16521, 16522, 16524, 16526, 16528, 16529, 16530, 16531, 16532, 16533, 16534, 16535, 16536, 16537, 16538, 16539, 16540, 16541, 16542, 16543, 16544, 16545, 16546, 16547, 16548, 16549, 16550, 16551, 16552, 16554, 16556, 16557, 16558, 16559, 16560, 16561,	16562, 16564, 16566, 16569, 16571, 16573, 16574, 16575, 16576, 16577, 16578, 16579, 16580, 16581, 16582, 16584, 16586, 16588, 16589, 16590, 16591, 16592, 16594, 16595, 16596, 16597, 16651
\9 . . . . . 544, 1342, 1345, 1376, 2265, 2280, 2289, 2317, 2337, 14626, 15971, 15973, 15975, 15977, 15979, 15981, 15983, 15985, 15987, 15989, 15991, 15993, 15995, 15997, 15999, 16001, 16003, 16005, 16007, 16009, 16011, 16013, 16015, 16017, 16019, 16021, 16023, 16025, 16027, 16029, 16031, 16033, 16035, 16037, 16039, 16041, 16043, 16045, 16047, 16049, 16051, 16053, 16055, 16057, 16059, 16061, 16063, 16065, 16067, 16069, 16071, 16073, 16075, 16077, 16079, 16081, 16083, 16085, 16087, 16089, 16091, 16093, 16095, 16097, 16099, 16101, 16103, 16105, 16107, 16109, 16111, 16113, 16115, 16117, 16119,		
		\_ . . . . . 345, 672, 3206, 3209, 3895, 7469, 7492, 14216, 14217, 14218, 14219, 14220, 14221, 14222, 14223, 14224, 14225, 14226, 14227, 14646, 14647, 14648, 14649, 14650, 14651, 14652, 14653, 14654, 14655, 14656, 14657, 14658, 14659, 14660, 14661, 14662, 14663, 14664
		A
	\ABREVE . . 16471, 16543, 16544, 16545, 16546, 16547	
	\abreve 16464, 16483, 16484, 16485, 16486, 16487	
	\AccFancyVerbLineautorefname . . . . . . 3233	
	\Accfootnoteautorefname . . 3213	
	\Acctheoremautorefname . . 3237	
	\ACIRCUMFLEX . 16472, 16548, 16549, 16550, 16551, 16552	
	\acircumflex . . 3264, 16465, 16488, 16489, 16490, 16491, 16492	
	\Acrobatmenu . 2420, 4055, 5960, 9145, 9853, 10348, 11204	
	\active . . . . . 1256, 1263, 4547, 4548, 4549, 4550, 4551, 4552, 4555, 4557, 4560, 4568, 13905, 13935	
	\add@accent . . . . . 556	
	\addcontentsline 7264, 7335, 7653, 7658, 7729, 14172	
	\addtocontents 7698, 7730, 8003, 8055, 14160, 14161	
	\addtocounter . 6648, 6671, 6680, 6691, 6695, 6900, 9743	
	\addvspace . . . . . 14160, 14161	
	\adl@LT@array . . . . . 6762	
	\advance . . . . . 478, 479, 1277, 4696, 5033, 5361, 5407, 5805, 5806, 5809, 5810, 6179, 8895, 9260, 9344, 9382, 9420, 10506, 11650, 11930, 12217, 12260, 12261, 12697, 12741, 12742, 12980, 13036, 13080, 13081, 13690, 13692, 13693, 13699, 13708, 13809, 14025	
	\AE . . . . . 14433, 14802, 15229	

`\ae` . . . . . 14498, 14866, 15231  
`\afterassignment` 1870, 1876, 1882  
`\AfterBeginDocument` . . 375, 389  
`\aftergroup` . . . . . 7151  
`\alef` . . . . . 16606  
`\alefhamza` . . . . . 16602  
`\aleflowerhamza` . . . . . 16604  
`\alefmadda` . . . . . 16601  
`\alefmaqsura` . . . . . 16635  
`\Alph` . . . . . 6228, 6541, 6542  
`\alph` . . . . . 6229, 6871, 6902  
`\AMSautorefname` . . . . . 8412  
`\anchor@spot` . . 4972, 4985, 4992,  
4998, 5000, 8704, 9201, 9296,  
10093, 10165, 10649, 10995,  
10998, 11587, 11867  
`\appendix` . . . . . 6538, 6539  
`\appendixautorefname` 3081, 3099,  
3117, 3135, 3153, 3171, 3189,  
3221, 3222, 3247, 3265, 8422  
`\arabic` . . . 6225, 6444, 6447, 6450,  
6451, 6452, 6454, 6455, 6456,  
6457, 6459, 6460, 6461, 6462,  
6463, 6464, 6467, 6477, 6478,  
6518, 6655, 7738, 7744, 7792,  
7806, 7991, 7996, 7998  
`\AtBeginDocument` . . 376, 5996,  
6752, 11957  
`\AtBeginShipout` 6108, 9180, 9689  
`\AtBeginShipoutBox` . 6112, 6115,  
9175, 9176, 9690, 9691  
`\AtBeginShipoutFirst` 6119, 9989,  
11399, 11514  
`\AtEndDocument` . . . . . 6010  
`\AtEndOfPackage` . . . . . 386  
`\AtVeryEndDocument` 6327, 12613  
`\author` . . . . . 6044, 6054  
`\autopageref` . . . . . 4190, 8293  
`\autoref` . . . 662, 4189, 8312, 11952  
`\ayn` . . . . . 16624

## B

`\b` . . . 893, 897, 903, 14202, 14214,  
14226, 14618, 14641, 14660,  
15977, 15979, 15985, 15987,  
16017, 16019, 16021, 16023,  
16037, 16039, 16053, 16055,  
16061, 16063, 16101, 16103,  
16105  
`\baa` . . . . . 16607  
`\back@none` . . . . 3016, 3026, 3039  
`\back@page` . . . . . 3018, 3031  
`\back@section` . 3017, 3023, 3029,  
3035  
`\back@slide` . . . . . 3019, 3028  
`\backcite` . . . . . 7529  
`\backref` . . . . . 7560, 11956

`\baselineskip` . . 2423, 5818, 5819,  
5820, 5821, 5822, 5823, 9315,  
10668, 10700, 11382  
`\bbl@cite@choice` . . . . . 7376  
`\BeforeTeXIVht` . . . . . 2855  
`\begin` . . . . . 11977, 16656  
`\belowpdfbookmark` . . . . 13805  
`\bfseries` . . . 606, 7475, 7498, 8186,  
8206, 8223, 8340  
`\bgroup` . . . . . 681,  
4663, 7138, 7150, 8611, 9707,  
10093, 10689, 12416, 12508,  
12529  
`\bibcite` . . 7367, 7373, 7377, 7402,  
7417, 7433, 7443  
`\bitsetGetDec` . 5085, 5218, 5236,  
5250, 5263, 5279, 5311, 5336  
`\bitsetGetHex` . . . . . 5086  
`\bitsetGetSetBitList` . . . . 5074  
`\bitsetIsEmpty` 5215, 5233, 5247,  
5260, 5276, 5308, 5333  
`\bitsetReset` . . . 5188, 5222, 5241,  
5255, 5268, 5284, 5316  
`\bitsetSetValue` . . . . 5054, 5064  
`\BOOKMARK` . . . . 13737, 13816  
`\booknumberline` . . 13720, 13725  
`\box` 5812, 6115, 8625, 9721, 11041  
`\bullet` . . . . 8138, 8146, 8156, 8164

## C

`\C` . . . . . 14612, 15717, 15719  
`\c` . . . . . 894, 898, 904, 3183,  
3191, 3192, 3193, 6067, 6074,  
14200, 14212, 14224, 14435,  
14500, 14620, 14635, 14654,  
14665, 14804, 14868, 14990,  
14992, 15035, 15037, 15045,  
15047, 15065, 15067, 15099,  
15101, 15115, 15117, 15123,  
15125, 15270, 15272, 15772,  
15775, 15989, 15991, 16009,  
16011  
`\c@footnote` 7043, 7100, 7108, 7220  
`\c@Hy@tempcnt` 4681, 4682, 4688,  
4696  
`\c@page` . . 6161, 6179, 6180, 6184,  
6196, 6198, 6203, 6210, 6212,  
6214, 6243, 7616  
`\c@secnumdepth` . . 14085, 14103,  
14118  
`\c@slidesection` . . 8004, 8132, 8133  
`\c@slidesubsection` . . . . . 8056  
`\c@tocdepth` . . . . . 3414, 3419  
`\calc@bm@number` . 13947, 14023  
`\calculate@pdfview` . . 3859, 3862  
`\capitalacute` . . . . . 14668  
`\capitalbreve` . . . . . 14675

`\capitalcaron` . . . . . 14674  
`\capitalcedilla` . . . . . 14665  
`\capitalcircumflex` . . . . . 14669  
`\capitaldieresis` . . . . . 14671  
`\capitaldotaccent` . . . . . 14677  
`\capitalgrave` . . . . . 14667  
`\capitalhungarumlaut` . . . 14672  
`\capitalmacron` . . . . . 14676  
`\capitalnewtie` . . . . . 14679  
`\capitalogonek` . . . . . 14666  
`\capitalring` . . . . . 14673  
`\capitaltie` . . . . . 14678  
`\capitaltilde` . . . . . 14670  
`\caption` . . . 7234, 7236, 7323, 7325  
`\catcode` . 172, 173, 184, 185, 186,  
187, 206, 819, 820, 956, 1256,  
1263, 1981, 1982, 2115, 2116,  
2172, 2173, 2174, 4406, 4408,  
4546, 4547, 4548, 4549, 4550,  
4551, 4552, 4555, 4557, 4560,  
4568, 4578, 4669, 4670, 8437,  
10730, 10731, 13834, 13836,  
13905, 13908, 13935, 13938  
`\cf@encoding` . . . . . 1581  
`\chapterautorefname` . 3082, 3100,  
3118, 3136, 3154, 3172, 3190,  
3219, 3248, 3266, 8423  
`\chapternumberline` 13722, 13727  
`\char` . . . . . 12643, 13838, 13875  
`\chardef` 289, 322, 2641, 2642, 2643,  
2644, 2894, 2896, 4331, 4361,  
10990, 10993, 10999  
`\check@bm@number` 13958, 13966,  
14016, 14024  
`\CheckBox` . . . . . 5769  
`\CheckCommand` . . . . . 7097  
`\checkcommand` . . 42, 6690, 7211,  
7218, 7225, 7323, 7333, 7427,  
7439, 7729, 7732, 7792, 8220  
`\checklatex` . . 4, 7210, 7322, 7426,  
7728, 8219  
`\checkpackage` . . . . 9, 6689, 7791  
`\ChoiceBox` . . . . . 5411  
`\ChoiceMenu` . . . . . 5766  
`\citation` . . . . . 7472, 7495, 7521  
`\citeauthoryear` . . . . 7587, 7593  
`\citeN` . . . . . 7584  
`\CJK@char` . . . . . 1259  
`\CJK@charx` . . . . . 1260  
`\CJK@CJK` . . . . . 1248  
`\CJK@eight` . . . . 1459, 1462, 1576  
`\CJK@five` . . . . 1459, 1461, 1576  
`\CJK@four` . . . . 1458, 1461, 1575  
`\CJK@hundred` . . . . . 1525  
`\CJK@hundredmillion` . . . . 1488  
`\CJK@ignorespaces` . . . . . 1258  
`\CJK@kern` . . . . . 1246



\CJK@minus	1450	\cyra	3203, 3210, 3212, 3217, 3220, 3225, 3226, 3232, 3236, 15573, 15885, 15889	\cyrghk	15765
\CJK@nine	1459, 1463, 1576	\CYRABHCH	15847, 15852	\CYRGUP	15755
\CJK@null	1552	\cyrabhch	15849, 15855	\cyrgup	15757
\CJK@one	1458, 1460, 1575	\CYRABHCHDSC	15851	\CYRH	15551
\CJK@punctchar	1261	\cyrabhchdsc	15854	\cyrh	15616
\CJK@punctcharx	1262	\CYRABHDZE	15915	\CYRHDSC	15827
\CJK@seven	1459, 1462, 1576	\cyrabhdze	15917	\cyrhdsc	15829
\CJK@six	1459, 1462, 1576	\CYRABHHA	15805	\CYRHHK	15967
\CJK@ten	1460, 1461, 1462, 1463, 1540	\cyrabhha	15807	\cyrhkh	15969
\CJK@tenthousand	1473, 1494	\CYRAE	15891	\CYRHRDSN	15561
\CJK@thousand	1510	\cyrac	15893	\cyrhrdsn	15626
\CJK@three	1458, 1461, 1575	\CYRB	15510	\CYRI	15501, 15524, 15527, 15919, 15923
\CJK@two	1458, 1460, 1575	\cyrb	3217, 15575	\cyri	3203, 3206, 3210, 3216, 3221, 3223, 15589, 15592, 15666, 15921, 15925
\CJK@zero	1458, 1476, 1493, 1497, 1513, 1528, 1550	\CYRBYUS	15693	\CYRIE	15482
\CJKdigits	1335	\cyrbyus	15695	\cyrie	15647
\CJKkern	1247	\CYRC	15553	\CYRII	15486, 15489
\CJKnumber	1334	\cyrch	15618	\cyril	15651, 15654
\close@pdfink	8698, 8723, 8732, 8767, 8807, 8843, 9170	\CYRCH	15555, 15955	\CYRIOTBYUS	15697
\closeout	5990, 13825	\cyrch	3209, 3210, 3218, 15620, 15957	\cyriotbyus	15699
\clubpenalty	7019, 7021	\CYRCHLDSC	15875	\CYRIOTE	15681
\codeof	7551	\cyrchldsc	15877	\cyriote	15683
\color@begingroup	8611, 9707	\CYRCHRDSC	15835	\CYRIOTLYUS	15689
\color@endgroup	8618, 9714	\cyrchrdsc	15837	\cyriotlyus	15691
\columnwidth	7145	\CYRCHVCRS	15839	\CYRISHRT	15526
\comma@entry	5402, 5409, 5411	\cyrchvcrs	15841	\cyrishrt	15591
\comma@parse	5401	\CYRD	15516	\CYRISHRTDSC	15743
\contentsline	5999, 6000, 6012, 7699, 7703, 7730, 7732	\cyrd	3206, 3209, 3220, 3225, 3226, 15581	\cyrishrtdsc	15745
\copy	8621, 9176, 9691, 9717	\CYRDJE	15478	\CYRIZH	15713, 15717
\count@	858, 860, 861, 864, 867, 870, 873, 1275, 1276, 1277, 1278, 1871, 3430, 3431, 3436, 3437, 5032, 5033, 5048, 5344, 5359, 5361, 5385, 5407, 5423, 8890, 8891, 8892, 8893, 8894, 8895, 8898, 10502, 10503, 10504, 10505, 10506, 10509	\cyrdje	15643	\cyrizh	15715, 15719
\CurrentBorderColor	8688, 8690, 8717, 8719, 8727, 8729, 8734, 10155, 10189, 10191, 10207, 10209, 10228, 10230, 10288, 10290, 10307, 10309	\CYRDZE	15484	\CYRJE	15491
\currentpdfbookmark	13797	\cyrdze	15649	\cyrje	15656
\curu	15669	\CYRDZHE	15506	\CYRK	15499, 15529
\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	15671	\cyrk	3212, 3213, 3215, 3229, 3230, 3232, 3233, 3234, 15594, 15664
\CYRA	15508, 15883, 15887	\CYRE	15473, 15476, 15518, 15895	\CYRKBEAK	15789
		\cyre	3203, 3209, 3210, 3223, 3235, 3236, 3237, 15583, 15638, 15641, 15897	\cyrkbeak	15791
		\cyreref	15941	\CYRKDSC	15777
		\CYREREV	15567, 15939	\cyrkdsc	15779
		\cyrerev	15632	\CYRKHCRS	15785
		\CYRERY	15563, 15963	\cyrkhcrs	15787
		\cyrery	3201, 3203, 15628, 15965	\CYRKHK	15863
		\CYRF	15549	\cyrkhk	15865
		\cyrf	15614	\CYRKOPPA	15737
		\CYRFITA	15709	\cyrkoppa	15739
		\cyrfita	15711	\CYRKSI	15701
		\CYRG	15480, 15514	\cyrksi	15703
		\cyrgh	3219, 15579, 15645	\CYRKVCRS	15781
		\CYRGDSC	15959	\cyrkvcrs	15783
		\cyrghdsc	15961	\CYRL	15531
		\CYRGHCRS	15759	\cyril	3217, 3219, 3221, 3223, 15596
		\cyrghcrs	15761	\CYRLDSC	15867
		\CYRGHK	15763	\cyrldsc	15869

\CYRLJE ..... 15493  
\cyrlje ..... 15658  
\CYRLYUS ..... 15685  
\cyrlyus ..... 15687  
\CYRM ..... 15533  
\cym ..... 3206, 3210, 3236, 3237, 15598  
\CYRMDSC ..... 15879  
\cymdsc ..... 15881  
\CYRN ..... 15535  
\cym ..... 3203, 3209, 3210, 3212, 3213,  
3215, 3223, 3229, 3230, 15600  
\CYRNDSC ..... 15793  
\cymdsc ..... 15795  
\CYRNG ..... 15797  
\cymng ..... 15799  
\CYRNHK ..... 15871  
\cymhk ..... 15873  
\CYRNJE ..... 15495  
\cymje ..... 15660  
\CYRO ..... 15537, 15927  
\cyro ..... 3206, 3209, 3212, 3213, 3223,  
3232, 3233, 3235, 3236, 3237,  
15602, 15929  
\CYROMEGA ..... 15673  
\cyromega ..... 15675  
\CYROMEGARND ..... 15725  
\cyromegarnd ..... 15727  
\CYROMEGATITLO ... 15729  
\cyromegatitlo ..... 15731  
\CYROT ..... 15733  
\cyrot ..... 15735  
\CYROTLTLD ..... 15931, 15935  
\cyrotld ..... 15933, 15937  
\CYRP ..... 15539  
\cyrp ..... 3206, 3209, 3210, 3214, 3215,  
3221, 3223, 3227, 3228, 3229,  
3230, 15604  
\CYRpalochka ..... 15857  
\CYRPHK ..... 15801  
\cyrphk ..... 15803  
\CYRPSI ..... 15705  
\cyrpsi ..... 15707  
\CYRR ..... 15541  
\cyr ..... 3201, 3203, 3206, 3209, 3210,  
3216, 3220, 3221, 3223, 3225,  
3226, 3231, 3232, 3233, 3234,  
3235, 3236, 3237, 15606  
\CYRRTICK ..... 15751  
\cyrrtick ..... 15753  
\CYRS ..... 15543, 15810  
\cys ..... 3206, 3209, 3212, 3213, 3216,  
3231, 3232, 3233, 3234, 3238,  
15608, 15813  
\CYRSCHWA ..... 15899, 15903  
\cyschwa ..... 15901, 15905  
\CYRSDSC ..... 15809, 15810  
\cysdsc ..... 15812

\CYRSEMISFTSN ..... 15747  
\cyrsemisftsn ..... 15749  
\CYRSFTSN ..... 15565  
\cysftsn ..... 15630  
\CYRSH ..... 15557  
\cyrsh ..... 15622  
\CYRSHCH ..... 15559  
\cyrshch ..... 15624  
\CYRSHHA ..... 15843  
\cyrshha ..... 15845  
\CYRT ..... 15545  
\cyr ..... 3206, 3209, 3215, 3217, 3229,  
3230, 3231, 3232, 3233, 3234,  
3235, 3236, 3237, 15610  
\CYRTDSC ..... 15815  
\cyrtdsc ..... 15817  
\CYRTETSE ..... 15831  
\cyrtdsc ..... 15833  
\cyrthousands ..... 15741  
\CYRTSHE ..... 15497  
\cyrtshe ..... 15662  
\CYRU ..... 15504, 15547, 15943, 15947,  
15951  
\cyru ..... 3213,  
3215, 3229, 3230, 3233, 3237,  
15612, 15945, 15949, 15953  
\CYRUK ..... 15721  
\cyruk ..... 15723  
\CYRUSHRT ..... 15503  
\cyrushrt ..... 15668  
\CYRV ..... 15512  
\cyrv ..... 3201, 3203, 15577  
\CYRY ..... 15819  
\cyry ..... 15821  
\CYRYA ..... 15571  
\cyrya ..... 15636  
\CYRYAT ..... 15677  
\cyrat ..... 15679  
\CYRYHCERS ..... 15823  
\cyrhcrs ..... 15825  
\CYRYI ..... 15488  
\cyr ..... 15653  
\CYRYO ..... 15475  
\cyr ..... 15640  
\CYRYU ..... 15569  
\cyr ..... 15634  
\CYRZ ..... 15522, 15772, 15911  
\cyrz ..... 3220, 3225, 3226, 15587,  
15775, 15913  
\CYRZDSC ..... 15771  
\cyrz ..... 15774  
\CYRZH ..... 15520, 15859, 15907  
\cyrzh ..... 3203, 3223, 15585, 15861,  
15909  
\CYRZHDSC ..... 15767  
\cyrzhdsc ..... 15769

## D

\d ..... 895, 899, 905, 3261, 3265, 3267,  
3268, 3269, 3270, 3271, 3273,  
14203, 14215, 14227, 14616,  
14642, 14661, 16479, 16484,  
16489, 16494, 16499, 16504,  
16509, 16514, 16519, 16524,  
16529, 16534, 16539, 16544,  
16549, 16554, 16559, 16564,  
16569, 16574, 16579, 16584,  
16589, 16594  
\dad ..... 16621  
\dal ..... 16614  
\damma ..... 16641  
\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  
\DeclareFontEncoding ... 14191,  
14586  
\DeclareFontFamily 915, 923, 2723  
\DeclareFontShape 916, 924, 2724  
\DeclareFontSubstitution ... 917,  
925, 2725  
\DeclareLocalOptions .... 4034  
\DeclareRobustCommand . 4509,  
4512, 4521, 4525, 4660, 4747,  
4749, 4751, 4760, 5763, 5766,  
5769, 5772, 5775, 5778, 5781,  
5906, 5910, 5978, 5982, 8267,  
8293, 8312, 14041  
\DeclareTextAccent 14192, 14193,  
14194, 14195, 14196, 14197,  
14198, 14199, 14200, 14201,  
14202, 14203  
\DeclareVoidOption .. 2852, 2866,  
2876, 2881, 2886, 2899, 2909,  
2914, 2919, 2925, 2954, 2971,  
2978, 2983, 2988, 2993, 3342,  
3350, 3358  
\DefaultHeightofCheckBox . 5818,  
12367, 12867, 13234  
\DefaultHeightofChoiceMenu ...  
. 5820, 12207, 12687, 13026  
\DefaultHeightofReset .... 5816,  
12341, 12840, 13202  
\DefaultHeightofSubmit ... 5814,  
12324, 12818, 13179  
\DefaultHeightofText 5822, 12184,  
12663, 12994  
\DefaultHeightofTextMultiline ..  
. 5823, 12182, 12661, 12992  
\DefaultOptionsofCheckBox 5828,  
12369, 12869, 13236

\DefaultOptionsofComboBox	5831	11163, 11165, 11167, 11169,	E
\DefaultOptionsofListBox	5830	11171, 11173, 11175, 11177,	\ECIRCUMFLEX . 16474, 16558,
\DefaultOptionsofPopdownBox	5832	11179, 11181, 11183, 11184,	16559, 16560, 16561, 16562
\DefaultOptionsofPushButton	5827, 12299, 12791, 13147	11185, 11186, 11187, 11188,	\ecircumflex . 16467, 16498, 16499,
\DefaultOptionsofRadio	5833	11189, 11190, 11191, 11192,	16500, 16501, 16502
\DefaultOptionsofReset	5826, 12344, 12843, 13205	11193, 11194	\EdefEscapeHex . . . . . 838
\DefaultOptionsofSubmit	5825, 12327, 12821, 13182	\df@tag . . . . . 7753, 7759	\EdefEscapeName . . . 3798, 3842,
\DefaultOptionsofText	5829, 12189, 12668, 12999	\DH . . . . . 14453, 14822	12272, 12275, 12753, 12756,
\DefaultWidthofCheckBox	5819, 12366, 12866, 13233	\dh . . . . . 14522, 14890	13092, 13098
\DefaultWidthofChoiceMenu	5821, 12206, 12686, 13025	\dhal . . . . . 16615	\EdefEscapeString . . . . . 792, 802
\DefaultWidthofReset	5817, 12340, 12839, 13201	\dimen@ . . . . . 519, 520, 524,	\EdefUnescapeName . . . . . 3799
\DefaultWidthofSubmit	5815, 12323, 12817, 13178	1877, 1945, 1946, 1949, 1951,	\EdefUnescapeString . . . . . 787
\DefaultWidthofText	5824, 12179, 12658, 12989	4011, 4012, 4014, 4021, 4022,	\egroup . . 682, 8618, 9714, 10093,
\define@key	2540, 2542, 2585, 2600, 2603,	10469, 10470, 10472, 11032,	10725, 12425, 12517, 12542
	2606, 2614, 2617, 2627, 2630,	11044, 11047	\em . . . . . 612
	2633, 2650, 2662, 2664, 2667,	\dimexpr . . 531, 2241, 2243, 2251,	\emph . . . . . 591
	2670, 2687, 2691, 2694, 2697,	2256, 2259, 2261, 2275, 2277,	\empty . . . . . 1258, 3418
	2700, 2703, 2706, 2709, 2744,	2280, 2281, 2288, 2291, 2294,	\enc@html . . . . . 5476, 5479
	2802, 2891, 2999, 3010, 3013,	2295, 2296, 2297, 2307, 2312,	\enc@update . . . . . 553
	3020, 3049, 3068, 3071, 3308,	2320, 2324, 2329, 2339, 2342,	\END 1606, 1607, 1633, 1634, 1649,
	3365, 3368, 3383, 3408, 3411,	2347, 2350, 2355, 2356	1650, 1667, 1668, 1685, 1686,
	3415, 3443, 3448, 3452, 3455,	\ding . . . . . 5650, 5653	2054, 2060, 2065, 2167, 2169,
	3462, 3474, 3482, 3485, 3488,	\DingObject . . . . . 12765	9017, 9030, 9034, 9041, 9054,
	3492, 3507, 3516, 3526, 3533,	\discretionary . . . . . 683	9058, 9064, 9076, 9080
	3540, 3557, 3647, 3656, 3686,	\divide . . . . . 8891, 10503	\end . . . . . 16657
	3692, 3698, 3704, 3710, 3716,	\DJ . . . 3273, 14454, 14954, 16473	\endeqnarray . . . 6828, 6846, 6853
	3722, 3728, 3734, 3767, 3774,	\dj . . . . . 3270, 3271, 14956, 16466	\endequation . . . . . 6791, 6823
	3808, 3859, 3860, 3880, 3887,	\do . . . . . 1276, 2557, 2562, 2567,	\endForm . . . . . 5466
	3897, 3927, 3928, 3931, 3934,	3514, 3535, 3536, 3537, 3538,	\endinput . . . . . 64,
	3937, 3940, 3943, 3946, 3949,	3587, 3588, 3589, 3590, 3591,	2863, 2938, 4186, 4291, 8180,
	3972, 3975, 3978, 4677, 4706,	3592, 3595, 3596, 3597, 3598,	10658, 11975, 14031
	4712, 4724, 5026, 5114, 5170,	3599, 3600, 3603, 3604, 3607,	\endlinechar . . . . . 4545
	5472, 5477, 5490, 5518, 5560,	3608, 3609, 3610, 3611, 3614,	\endNoHyper . . . . . 5942
	5563, 5566, 5570, 5573, 5577,	3615, 3616, 3617, 3618, 3621,	\EndPreamble . . . . . 11978
	5580, 5584, 5588, 5592, 5595,	3622, 3623, 3624, 3625, 3628,	\endsubeqnarray . . . . . 6857, 6868
	5599, 5602, 5605, 5608, 5611,	3629, 3630, 3631, 3632, 3635,	\eqnarray . . . . . 6827, 6829, 6850
	5614, 5630, 5633, 5636, 5639,	3636, 3639, 3640, 3641, 3644,	\equal . . . . . 7548
	5642, 5645, 5675, 5678, 5681,	3645, 3651, 3652, 3653, 3654,	\equation . . 6790, 6799, 6803, 6812
	5684, 5703, 5709, 5724, 5730,	3965, 3966, 3967, 3968, 3969,	\equationautorefname 3075, 3093,
	5747, 5752, 5758, 6340, 6351,	3970, 5074, 6882, 7467, 7490,	3111, 3129, 3147, 3165, 3183,
	11071, 11073, 11076, 11078,	12211, 12273, 12478, 12485,	3201, 3202, 3241, 3259, 8412,
	11080, 11089, 11097, 11104,	12495, 12691, 12754, 13030,	8416
	11106, 11108, 11110, 11112,	13096, 13904, 13934	\errmessage . . . . . 3305
	11114, 11123, 11133, 11135,	\documentclass . . . . . 2	\es@roman . . . . . 642
	11137, 11138, 11144, 11153,	\dospecials . . . . . 13913, 13943	\es@save@dot . . . . . 1234
	11155, 11157, 11159, 11161,	\dots . . . . . 568	\escapechar . 537, 843, 4133, 6875,
		\dp . . . . . 5808, 5811,	13764, 13945, 13996
		7143, 9250, 9330, 9367, 9405,	\eTeX . . . . . 577, 11983
		11033, 11036, 11640, 11915,	\etex@unexpanded . . . 1809, 1816
		12975	\eTeXversion . . . 8850, 8852, 8854
		\dth@counter . . 6948, 6949, 6979,	\evensidemargin . . . . . 7640
		6980, 7007	\everypar . . . . . 7021
		\dth@everypar . . . . . 6995	\ExecuteOptions 4026, 4027, 4031
		\dvipdfm@setdim . . 12972, 13013,	\ext@figure . . . . . 7988
		13112, 13137, 13168, 13193,	\ext@table . . . . . 7987
		13221, 13249	\extra@b@citeb . . . . . 7474
			\extrasvietnam . . . . . 3351



\extravietnamese . . . . .	3343		
<b>F</b>			
\fa . . . . .	16627		
\FancyVerbLineautorefname . . . . .	3088,		
	3106, 3124, 3142, 3160, 3178,		
	3196, 3231, 3234, 3254, 3272,		
	8429		
\farsikaf . . . . .	16648		
\farsiya . . . . .	16650		
\fatha . . . . .	16640		
\fbox . . . . .	12647, 12650		
\Field@addtoks . . . . .	5540, 5571, 5574,		
	5725, 5748		
\Field@boolkey . . . . .	5027, 5115, 5534,		
	5564, 5567		
\Field@toks . . . . .	5538, 5539, 5541,		
	12417, 12434, 12445, 12456,		
	12466, 12483, 12501, 12509,		
	12514, 12530, 12539		
\Field@Width . . . . .	5451, 5597		
\figureautorefname . . . . .	3078, 3096,		
	3114, 3132, 3150, 3168, 3186,		
	3216, 3244, 3262, 8419		
\filename@area . . . . .	4913		
\filename@base . . . . .	4913		
\filename@ext . . . . .	4910, 4911, 4913,		
	4914		
\filename@parse . . . . .	4909		
\find@pdfink . . . . .	8667, 8721, 8731		
\Fld@additionalactions . . . . .	13376,		
	13419, 13423		
\Fld@@DingDef . . . . .	5650, 5653, 5672		
\Fld@additionalactions . . . . .	13376,		
	13465, 13493, 13527, 13561,		
	13595, 13629, 13660		
\Fld@align . . . . .	5455, 5637, 13444,		
	13502, 13569		
\Fld@altname . . . . .	5587, 5589, 13355,		
	13357, 13429, 13431		
\Fld@annotflags . . . . .	5234, 5236, 13440,		
	13471, 13498, 13531, 13565,		
	13600, 13635		
\Fld@annotnames . . . . .	13427, 13441,		
	13472, 13499, 13532, 13566,		
	13601, 13636		
\Fld@bcolor . . . . .	5457, 5679, 13455,		
	13457, 13518, 13520, 13546,		
	13548, 13573, 13585, 13587		
\fld@bcolor . . . . .	13506		
\Fld@bordercolor . . . . .	5458, 5682,		
	13451, 13453, 13478, 13486,		
	13488, 13505, 13514, 13516,		
	13542, 13544, 13572, 13581,		
	13583, 13607, 13615, 13617,		
	13642, 13650, 13652		
\Fld@bordersep . . . . .	5459, 5631		
\Fld@borderstyle . . . . .	5461, 5615, 5616, 5617, 5627,		
	13445, 13476, 13503, 13536,		
	13570, 13605, 13658		
\Fld@borderwidth . . . . .	5460, 5612,		
	5802, 5805, 5806, 5809, 5810,		
	12260, 12261, 12741, 12742,		
	13080, 13081, 13445, 13476,		
	13503, 13536, 13570, 13605,		
	13658		
\Fld@calculate@code . . . . .	5690, 13389,		
	13391		
\Fld@cbsymbol . . . . .	5462, 5643, 13459		
\Fld@charsize . . . . .	5452, 5453, 5609,		
	12259, 12740, 13079, 13461,		
	13524, 13552, 13591, 13640		
\Fld@checkedfalse . . . . .	5448		
\Fld@checkequal . . . . .	5552, 12212,		
	12274, 12486, 12496, 12692,		
	12755, 13031, 13097		
\Fld@choices . . . . .	5341, 5349, 5351,		
	5355, 5364, 5372, 5377, 5425,		
	5427, 5435, 5436, 13526		
\Fld@color . . . . .	5456, 5685, 13462,		
	13525, 13553, 13592		
\Fld@default . . . . .	5366, 5369, 5371, 5634,		
	12177, 12193, 12204, 12244,		
	12272, 12364, 12415, 12433,		
	12447, 12455, 12462, 12488,		
	12498, 12528, 12538, 12656,		
	12673, 12684, 12725, 12753,		
	12864, 12987, 13004, 13023,		
	13064, 13092, 13231, 13554,		
	13555, 13556, 13593		
\Fld@DingDef . . . . .	5643, 5646, 5648		
\Fld@disabledfalse . . . . .	5449		
\Fld@export . . . . .	5179, 5182, 5189, 5481		
\Fld@findlength . . . . .	12465, 12476		
\Fld@flags . . . . .	5248, 5250, 5261, 5263, 5277,		
	5279, 5309, 5311, 5334, 5336,		
	13443, 13474, 13501, 13534,		
	13568, 13603, 13638		
\Fld@format@code . . . . .	5688, 13381,		
	13383		
\Fld@getmethodfalse . . . . .	5501		
\Fld@getmethodtrue . . . . .	5503		
\Fld@height . . . . .	5606, 12180, 12196,		
	12207, 12262, 12279, 12291,		
	12324, 12341, 12367, 12375,		
	12659, 12677, 12687, 12743,		
	12770, 12783, 12818, 12840,		
	12867, 12877, 12990, 13006,		
	13026, 13082, 13094, 13130,		
	13179, 13202, 13234, 13242		
\Fld@hiddenfalse . . . . .	5137		
\Fld@hiddentrue . . . . .	5138		
\Fld@invisiblefalse . . . . .	5133		
\Fld@invisibletrue . . . . .	5134		
\Fld@keystroke@code . . . . .	5691, 13377,		
	13379		
\Fld@listcount . . . . .	12271, 12276,		
	12287, 12752, 12757, 12771,		
	12777, 13091, 13099, 13103,		
	13108, 13119, 13126		
\Fld@loc . . . . .	5561		
\Fld@mappingname . . . . .	5591, 5593,		
	13359, 13361, 13433, 13435		
\Fld@maxlen . . . . .	5454, 5600, 13596		
\Fld@menulength . . . . .	5450, 5603,		
	12209, 12213, 12259, 12477,		
	12478, 12481, 12689, 12693,		
	12740, 13028, 13032, 13079		
\Fld@name . . . . .	5585, 12176, 12203,		
	12296, 12363, 12414, 12419,		
	12430, 12431, 12442, 12443,		
	12452, 12453, 12461, 12482,		
	12499, 12507, 12512, 12527,		
	12536, 12655, 12683, 12788,		
	12863, 12986, 13022, 13144,		
	13230, 13354, 13428		
\Fld@norotatefalse . . . . .	5150		
\Fld@norotatetrue . . . . .	5149		
\Fld@noviewfalse . . . . .	5153		
\Fld@noviewtrue . . . . .	5154		
\Fld@nozoomfalse . . . . .	5146		
\Fld@nozoomtrue . . . . .	5145		
\Fld@onblur@code . . . . .	5693, 13397,		
	13399		
\Fld@onclick@code . . . . .	5687, 5759,		
	13492		
\Fld@onenter@code . . . . .	5696, 13409,		
	13411		
\Fld@onexit@code . . . . .	5697, 13413,		
	13415		
\Fld@onfocus@code . . . . .	5692, 13393,		
	13395		
\Fld@onmousedown@code . . . . .	5694,		
	13401, 13403		
\Fld@onmouseup@code . . . . .	5695,		
	13405, 13407		
\Fld@printfalse . . . . .	5142		
\Fld@printtrue . . . . .	5141		
\Fld@radiosymbol . . . . .	5463, 5646,		
	13550		
\Fld@rotation . . . . .	5464, 5676, 13447,		
	13449, 13477, 13482, 13484,		
	13504, 13510, 13512, 13538,		
	13540, 13571, 13577, 13579,		
	13606, 13611, 13613, 13641,		
	13646, 13648		
\Fld@submitflags . . . . .	5216, 5218,		
	13627		

`\Fld@temp` 5649, 5651, 5654, 5655, 5664, 5665  
`\Fld@validate@code` . 5689, 13385, 13387  
`\Fld@value` 5367, 5374, 5376, 5640, 12178, 12193, 12205, 12243, 12244, 12657, 12673, 12685, 12724, 12725, 12988, 13004, 13024, 13063, 13064, 13594  
`\Fld@width` . . 5596, 12179, 12192, 12196, 12206, 12242, 12253, 12255, 12279, 12291, 12311, 12323, 12331, 12340, 12354, 12366, 12372, 12375, 12658, 12672, 12677, 12686, 12723, 12734, 12736, 12770, 12783, 12804, 12817, 12825, 12839, 12853, 12866, 12873, 12877, 12989, 13003, 13006, 13025, 13062, 13073, 13075, 13094, 13130, 13161, 13178, 13186, 13201, 13215, 13233, 13240, 13242  
`\float@caption` . . . . . 7244, 7304  
`\float@makebox` . . . . . 7306, 7307  
`\floatingpenalty` . . . . . 7144  
`\fiq` . . . . . 649  
`\fiqq` . . . . . 647  
`\fmtname` . . . . . 7  
`\fmtversion` . . . . . 7  
`\fontencoding` 545, 549, 584, 12639  
`\fontfamily` . . . . . 585, 12638  
`\fontseries` . 586, 6915, 6941, 6972, 12640  
`\fontshape` . . . . . 587, 4472, 12641  
`\fontsize` . . . . . 588  
`\footins` . . . . . 7138  
`\footnote` . . . . . 5003  
`\footnoteautorefname` 3076, 3094, 3112, 3130, 3148, 3166, 3184, 3205, 3208, 3242, 3260, 8413, 8417  
`\footnotesep` . . . . . 7142, 7149  
`\footnotesize` . . . . . 617, 7140  
`\footnotetext` . . . . . 7100  
`\footref` . . . . . 7168, 7169  
`\Form` . . . . . 5465  
`\Form@action` 5475, 12406, 13625  
`\Form@boolkey` . . . . . 5469  
`\Form@htmlfalse` . . . . 5468, 5487  
`\Form@htmltrue` . . . . . 5480  
`\Form@method` 5499, 5507, 12406  
`\frq` . . . . . 650  
`\frqq` . . . . . 648  
`\futurelet` . . . . . 702, 1600  
`\FV@SetLineNo` . . . . . 6629  
`\FV@StepLineNo` 6628, 6630, 6631

## G

`\G` . . . 14611, 14637, 14656, 15237, 15239, 15241, 15243, 15245, 15247, 15248, 15250, 15252, 15254, 15256, 15258, 15260  
`\g@addto@macro` . . . . . 6122, 6273, 7376, 7650, 9084, 10493, 10781, 11351, 11437, 11499, 11801, 11989  
`\G@refundefinedtrue` . 4798, 7476, 7499, 8185, 8205, 8222, 8339  
`\gaf` . . . . . 16649  
`\Gauge` . . . . . 5775  
`\GenericError` . . . . . 690, 3680  
`\GenericInfo` . . . . . 692, 3678  
`\GenericWarning` . 283, 691, 3679  
`\getpagerefnumber` . . . . . 6743  
`\getrefbykeydefault` . . 6699, 6700  
`\gexmode` . . . 10524, 10525, 10613  
`\ghayn` . . . . . 16625  
`\Gin@setfile` . . . . . 7830, 7831  
`\glossary` . . . . . 656  
`\glq` . . . . . 645  
`\glqq` . . . . . 643  
`\Greeknumeral` . . . . . 1098  
`\greeknumeral` . . . . . 1097  
`\grq` . . . . . 646  
`\grqq` . . . . . 644  
`\guill@spacing` . . . . . 1027  
`\guillemotleft` . 1067, 14380, 14560, 14748, 16453  
`\guillemotright` 1068, 14411, 14561, 14780, 16454  
`\guilsinglleft` 14311, 14562, 16159, 16455  
`\guilsinglright` 14313, 14563, 16161, 16456

## H

`\H` . . . 14607, 14639, 14658, 14672, 15087, 15089, 15151, 15153, 15951, 15953  
`\h` 3263, 16481, 16486, 16491, 16496, 16501, 16506, 16511, 16516, 16521, 16526, 16531, 16536, 16541, 16546, 16551, 16556, 16561, 16566, 16571, 16576, 16581, 16586, 16591, 16596  
`\H@@footnotemark` . . 7029, 7046, 7173, 7180, 7192, 7203  
`\H@@footnotetext` . . 7028, 7038, 7065, 7122, 7181, 7195, 7203  
`\H@@mpfootnotetext` . 7036, 7048, 7050  
`\H@definecounter` . . . 7735, 7737  
`\H@endeqnarray` . . . . 6828, 6847  
`\H@endequation` . . . . 6791, 6823

`\H@endsubeqnarray` . . 6857, 6869  
`\H@eqnarray` . . . . . 6827, 6832  
`\H@equation` . . . . . 6790, 6814  
`\H@item` . . 6465, 6471, 7384, 7409  
`\H@newctr` . . . . . 7740, 7742  
`\H@old@part` . . . . . 14095, 14106  
`\H@old@schapter` . . 14065, 14074  
`\H@old@ssect` 14116, 14127, 14136  
`\H@old@spart` . . . . . 14108, 14114  
`\H@old@ssect` . . . . . 14051, 14056  
`\H@refstepcounter` . . . 6480, 6490, 6630, 6754, 6767, 6813, 6954, 6985, 7239, 8001, 8054  
`\H@seteqlabel` . . . . . 7771, 7773  
`\H@subeqnarray` . . . . 6856, 6860  
`\ha` . . . . . 16633  
`\Haa` . . . . . 16612  
`\halign` . . . . . 665  
`\hamza` . . . . . 16600  
`\HAR@checkcitations` . . . . 7564  
`\HAR@citetoaux` . . . . . 7520  
`\HAR@tempa` . . 7565, 7566, 7567, 7568, 7569, 7570  
`\harvardcite` . . . . . 7514, 7551  
`\harvarditem` . . . . . 7539  
`\hbox` . . . . . 1869, 1875, 1881, 2453, 3429, 3435, 4948, 4950, 5597, 5796, 5797, 5798, 5799, 7504, 7635, 8611, 9175, 9251, 9261, 9331, 9345, 9368, 9383, 9406, 9421, 9690, 9707, 10689, 11036, 11047, 11641, 11651, 11916, 11931, 12554, 13005, 13093, 13129, 13159, 13187, 13216, 13241, 14043  
`\hc@currentHref` . . . . . 7255  
`\HCode` 12406, 12408, 12419, 12428, 12440, 12448, 12450, 12481, 12487, 12492, 12497, 12511, 12516, 12520, 12523, 12532  
`\headerps@out` 6374, 11341, 11352, 11424, 11438, 11491, 11500, 11513, 11527, 11566, 11684, 11802, 11990  
`\hfill` 5796, 5797, 5798, 5799, 7395, 7428  
`\Hfootnoteautorefname` . . . 8413  
`\hhyperref` . . . . . 5008  
`\hoffset` . . . . . 7636  
`\hphantom` . . . . . 627  
`\href` . 657, 4660, 5002, 5003, 5968  
`\href@` . . . . . 4663, 4666, 4671  
`\href@split` . . . . . 4671, 4672  
`\hsize` . . . . . 7145  
`\hskip` 1880, 1958, 2494, 2495, 4657, 5802, 12554  
`\hspace` . . . . . 653, 7554, 7555

\hss . . . . .	7644, 14048	\hvtex@trans@params . . .	10409, 10411, 10435	\Hy@bookmarksdepth	3414, 3419, 3431, 3437, 13675
\ht . . . . .	5804, 5807, 9259, 9334, 9343, 9350, 9371, 9381, 9388, 9409, 9419, 9426, 11032, 11649, 11929, 12973	\Hy@@boolkey . . . . .	2508, 2509	\Hy@bookmarksnumberedfalse . . . . .	442
\htmladdimg . . . . .	5001	\Hy@@CleanupFile . . .	4948, 4950	\Hy@bookmarksopenfalse . . .	443
\htmladdnormallink . . . . .	5002	\Hy@@DefNameKey . .	2582, 2584	\Hy@bookmarkstrue . . . . .	444
\htmladdnormallinkfoot . . .	5003	\Hy@@escapeform . .	13320, 13333, 13339	\Hy@bookmarkstype . .	3449, 3451, 7666, 13686
\htmlref . . . . .	5004	\Hy@@SectionAnchor	14038, 14041	\Hy@boolkey . .	2508, 2601, 2604, 2607, 2628, 2631, 2634, 2665, 2668, 2671, 2688, 2692, 2695, 2698, 2701, 2704, 2707, 2710, 3011, 3014, 3069, 3366, 3369, 3384, 3409, 3412, 3453, 3456, 3508, 3657, 3929, 3932, 3935, 3938, 3941, 3944, 3947, 3955, 3976, 3979, 6341
\Huge . . . . .	614	\Hy@@Temp	3459, 3461, 5699, 5701	\Hy@BorderArrayPatch . .	11084, 11087, 11350, 11800
\huge . . . . .	618	\Hy@@VersionCheck . . .	305, 324	\Hy@breaklinks@unsupported . . . . .	2676, 10641
\Hurl . . . . .	4746, 4748, 4750	\Hy@abspage . .	6142, 6207, 6323, 6400	\Hy@breaklinksfalse . . . . .	445
\hv@pdf@char	13833, 13898, 13899, 13900, 13901	\Hy@acropatmenu . . .	4071, 4112, 9146, 9854, 10349, 11205	\Hy@breaklinksunhbox . .	10986, 11039
\hvtex@buffer	10388, 10392, 10400, 10403, 10412, 10416, 10432	\Hy@activeanchorfalse	4543, 8712, 9203, 9218, 9297, 9307, 9619, 10078, 10095, 10166, 10179, 10675, 11589, 11604, 11869, 11883	\Hy@CatcodeWrapper	4401, 4460, 4504, 4533
\hvtex@gettoken . .	10387, 10401, 10405, 10414, 10418	\Hy@activeanchortrue . . . .	8708, 9200, 9214, 9295, 9304, 9615, 10074, 10092, 10164, 10176, 10665, 11586, 11600, 11866, 11879	\Hy@centerwindowfalse . . . .	446
\hvtex@gettoken@ . .	10388, 10390	\Hy@ActiveCarriageReturn	4579, 4582	\Hy@chapapp . .	6535, 6543, 6569, 14069, 14080, 14162
\hvtex@par@dimension . .	10383, 10424	\Hy@AllowHyphens . .	4653, 10663, 10695, 11019	\Hy@chapterstring . . .	6530, 6532, 6535, 6568
\hvtex@par@direction . . .	10384, 10427	\Hy@AnchorName . . .	4783, 4785, 4788, 4790, 4812, 4814, 4818, 4823, 4825	\Hy@CheckOptionValue . . .	2552, 2589
\hvtex@par@duration	10385, 10419	\Hy@appendixstring . .	6534, 6543	\Hy@CJKbookmarksfalse . . .	447
\hvtex@par@motion	10386, 10421	\Hy@AtBeginDocument . . . . .	378, 1006, 2728, 2788, 2859, 2934, 2990, 3371, 4008, 4044, 4182, 4188, 4287, 4440, 4530, 5874, 5987, 6407, 6635, 7511, 8259, 8406, 8606, 9092, 9702, 10147, 11526, 11564, 12569, 12570	\Hy@cjkpu . . . . .	1269, 1271, 1292
\hvtex@param@dimension	10396, 10425, 10443, 10446	\Hy@AtBeginDocumentHook	379, 384, 390, 391	\Hy@CleanupFile	4946, 8773, 9791, 10243, 11276
\hvtex@param@direction . .	10397, 10428, 10454, 10462	\Hy@AtEndOfPackage . .	381, 901, 2369, 3344, 3352, 3359, 4170, 4196, 4202, 4392	\Hy@colorlink . . . . .	4464, 4472, 4476, 8607, 8693, 8766, 8806, 8842, 9169, 9201, 9224, 9255, 9268, 9296, 9312, 9337, 9353, 9375, 9392, 9413, 9430, 9703, 9780, 9819, 9848, 9873, 10165, 10187, 10257, 10281, 10314, 10345, 10361, 10693, 10970, 10972, 11587, 11610, 11645, 11658, 11867, 11889, 11924, 11937
\hvtex@param@duration . .	10398, 10420, 10467, 10469	\Hy@AtEndOfPackageHook . .	382, 385, 387, 388	\Hy@ColorList . . . . .	3513, 3514
\hvtex@param@motion . . .	10399, 10422, 10443, 10450	\Hy@author . . . . .	6056, 6060	\Hy@CounterExists . .	6430, 6443, 6446
\hvtex@parse@trans	10372, 10394	\Hy@babelnormalise . .	4761, 4763	\Hy@currentbookmarklevel	13681, 13691, 13692, 13698, 13705, 13798, 13801, 13806, 13810
\hvtex@produce@trans . . .	10433, 10439	\Hy@backout . .	4539, 5926, 5930, 7350	\Hy@defaultdriver . . .	4276, 4301, 4311, 4322
\hvtex@token	10391, 10402, 10408, 10415, 10420, 10423, 10426, 10428	\Hy@backreffalse	441, 3040, 3062, 4194	\Hy@DefFormAction . .	5473, 5475
\hvtex@trans@code	10376, 10377, 10378, 10379, 10380, 10381, 10382, 10395, 10441, 10442, 10444, 10446, 10448, 10450, 10452, 10454, 10456, 10457, 10458, 10459, 10460, 10462	\Hy@backreftrue	3033, 3037, 3059		
\hvtex@trans@effect@Blinds	10376	\Hy@BeginAnnot	9732, 9748, 9789, 9826, 9855		
\hvtex@trans@effect@Box . .	10377	\Hy@bibcite . . . . .	7373, 7377		
\hvtex@trans@effect@Dissolve . . . . .	10378				
\hvtex@trans@effect@Glitter . . . . .	10379				
\hvtex@trans@effect@R . .	10382				
\hvtex@trans@effect@Split	10380				
\hvtex@trans@effect@Wipe	10381				
\hvtex@trans@par . .	10415, 10419, 10421, 10424, 10427				

<code>\Hy@DefNameKey</code> . . .	2581, 3534, 3586, 3594, 3602, 3606, 3613, 3620, 3627, 3634, 3638, 3643, 3650, 3964	<code>\Hy@EndAnnot</code> . . .	4362, 4369, 9738, 9783, 9822, 9851, 9876	<code>\Hy@float@caption</code> . . .	7245, 7295, 7297
<code>\Hy@DEST</code> . . . . .	10987, 11051	<code>\Hy@endcolorlink</code> . . . . .	4468, 4473, 4477, 8616, 8699, 9201, 9238, 9262, 9270, 9296, 9320, 9341, 9355, 9379, 9392, 9417, 9430, 9712, 9740, 10165, 10238, 10257, 10281, 10314, 10345, 10361, 10720, 10979, 11587, 11626, 11652, 11660, 11867, 11903, 11928, 11937	<code>\Hy@float@currentHref</code>	7298, 7300, 7302, 7310, 7313, 7315
<code>\Hy@DestName</code> . . . . .	8654, 8661	<code>\Hy@EndWrap</code> . . . . .	4402, 4404, 4405, 4438	<code>\Hy@footnote@currentHref</code> .	5873, 7053, 7058, 7068, 7073, 7076, 7088, 7090, 7113, 7154, 7157
<code>\Hy@DisableOption</code> . . . . .	2538, 4064, 4065, 4066, 4068, 4175, 4201, 4338, 4339, 4340, 4341, 4342, 4343, 4344, 4345, 4346, 4347, 4348, 4349, 4350, 4351, 4352, 4353, 4354, 4355, 4400, 4453, 4481, 4482, 4541, 4542, 5878, 5879, 5880, 5881, 5882, 5883, 5884, 5885, 5886, 5887, 5888, 5889, 5890, 5891, 5892, 5893, 5894, 5895, 5896, 5897, 5898, 5899, 5900, 5901, 6080, 6275, 7207, 7835, 7933, 7934, 8531, 8634, 9002, 9003, 9004, 9005, 9006, 9007, 9008, 9009, 9010, 9011, 9141, 9458, 9459, 9460, 9461, 9462, 9463, 9464, 9465, 9466, 9467, 9730, 9916, 9917, 9918, 9919, 9920, 9921, 9922, 9923, 9924, 9925, 10007, 10149, 10593, 10594, 10595, 10596, 10597, 10598, 10599, 10600, 10601, 10602, 10860, 10861, 10862, 10863, 10864, 10865, 10866, 10867, 10868, 10869, 11417, 11710, 11711, 11712, 11713, 11714, 11715, 11716, 11717, 11718, 11719	<code>\Hy@Error</code> . . . . .	277, 293, 299, 313, 2732, 2845, 2870, 2903, 2941, 2948, 2959, 2965, 4096, 4714, 4879, 5174, 5298, 5494, 5526, 5704, 5753, 12302, 12348, 12795, 12847, 13151, 13209	<code>\Hy@FormObjects</code> .	12607, 12883, 12937, 12947, 13257, 13307
<code>\Hy@displaydoctitlefalse</code> . . .	476	<code>\Hy@escapeform</code> . . . . .	12195, 12278, 12290, 12314, 12332, 12355, 12374, 12675, 12760, 12781, 12807, 12827, 12854, 12875, 13010, 13102, 13133, 13165, 13189, 13217, 13246, 13314, 13344, 13351	<code>\Hy@GlobalStepCount</code> .	479, 6207, 6599, 6622, 7626, 8043, 8094
<code>\Hy@DistillerDestFix</code> . . . . .	7612, 10606, 10608	<code>\Hy@escapeformfalse</code> . . . . .	448	<code>\Hy@gtemp</code> . . . . .	816, 817, 4134, 4140, 4142, 5371, 5372, 5376, 5377, 5388, 5402, 8486, 8488, 13372, 13374
<code>\Hy@draftfalse</code> . . . . .	406	<code>\Hy@escapestring</code> . . . . .	13311, 13379, 13383, 13387, 13391, 13395, 13399, 13403, 13407, 13411, 13415, 13459, 13492, 13593, 13594, 13625	<code>\Hy@href</code> . . . . .	4663, 4665
<code>\Hy@drafttrue</code> . . . . .	407	<code>\Hy@EveryPageAnchor</code> . . . . .	7611, 7651	<code>\Hy@href@nextactionraw</code> . .	4700, 4723, 4725, 4726, 4728, 4733, 4737, 4739, 8762, 8802, 8838, 9165, 9776, 9815, 9844, 9864, 10202, 10270, 10334, 11301, 11330
<code>\Hy@driver</code> . . . . .	481, 2681, 2856, 2868, 2878, 2883, 2888, 2901, 2911, 2916, 2921, 2928, 2931, 2957, 2973, 2980, 2985, 2995, 4204, 4207, 4211, 4214, 4218, 4221, 4223, 4227, 4233, 4237, 4240, 4244, 4249, 4253, 4256, 4260, 4263, 4265, 4269, 4274, 4278, 4281, 4284, 4295, 4298, 4301, 4310, 4311, 4322, 4324, 4330, 4332, 4334	<code>\Hy@EveryPageBoxHook</code> . . . . .	6106, 6110, 6114, 7650, 10493, 10781	<code>\Hy@href@page</code> . . . . .	4678, 4680, 4684, 4685, 4687, 4694, 4697, 8798, 9810, 11297
<code>\Hy@odth@currentHref</code> . . . . .	6956, 6987, 7012	<code>\Hy@EveryPageHook</code> . . . . .	6105, 6109, 6273, 9084	<code>\Hy@hyperfootnotesfalse</code> . .	7025
<code>\Hy@DviErrMsg</code> . . . . .	2823, 2825, 2828, 2834, 2847	<code>\Hy@ExchangeLeftParenthesis</code> . . . . .	8462, 8468	<code>\Hy@hyperfootnotestrue</code> . . .	451
<code>\Hy@DviModetrue</code> . . . . .	2832, 2837	<code>\Hy@ExchangeRightParenthesis</code> . . . . .	8472, 8478	<code>\Hy@hyperindextrue</code> . . . . .	452
<code>\Hy@DvipdfmxOutlineOpentru</code>		<code>\Hy@false</code> . . . . .	2417, 2519, 3025, 3061, 5523	<code>\Hy@hypertexnamesfalse</code> . .	2373
		<code>\Hy@figuresfalse</code> . . . . .	449	<code>\Hy@hypertexnamestrue</code> . . .	453
		<code>\Hy@finalfalse</code> . . . . .	407	<code>\Hy@ifStringEndsWith</code> . . . . .	4914, 4926
		<code>\Hy@finaltrue</code> . . . . .	406	<code>\Hy@implicittrue</code> . . . . .	454
		<code>\Hy@FirstPage</code> . . . . .	4082	<code>\Hy@Info</code> . . . . .	280, 2527, 4145, 4147, 4150, 4152, 4155, 4157, 4160, 4162

\Hy@linktoc@all . . . . . 2644  
\Hy@linktoc@none . . . . . 2641  
\Hy@linktoc@page . . . 2636, 2643, 2646  
\Hy@linktoc@section . . 2638, 2642, 2648  
\Hy@linktocpagefalse . . . . . 455  
\Hy@localanchornamefalse . . 456  
\Hy@LT@currentHref . . 6769, 6780  
\Hy@LT@footnotetext . . 7112, 7121  
\Hy@make@anchor . . . 7748, 7754, 7760  
\Hy@make@df@tag@@ . . 7752, 7767  
\Hy@make@df@tag@@@ . . 7758, 7768  
\Hy@MakeCurrentHref . . 6610, 6623  
\Hy@MakeCurrentHrefAuto . . . . 6621, 6703, 7749, 13666, 14053, 14069, 14080, 14110, 14124, 14162  
\Hy@MakeRemoteAction . . 4683, 8776, 9794, 11279  
\Hy@maketitle@end . . 7184, 7189, 7191  
\Hy@maketitle@optarg . . 7182, 7187  
\Hy@Match . . 328, 330, 3002, 3494, 3543, 3560, 3903, 4728, 5617  
\Hy@MaybeStopNow . . 2924, 4032  
\Hy@menubartrue . . . . . 457  
\Hy@Message . . . . . 282, 2858, 2933, 4181, 4286, 4330, 10099, 10103, 10106, 10109, 10112, 10115, 10118, 10121, 12173, 12383, 12386, 12389, 12392, 12395, 12398, 12400, 12401, 12410, 12547, 12942  
\Hy@naturalnamesfalse . . . . 458  
\Hy@nestingfalse . . . . . 459  
\Hy@newline@author . . . . . 6099  
\Hy@newline@title . . . . . 6098  
\Hy@newwindowfalse . . . . . 461  
\Hy@newwindowsetfalse . . 460, 3952  
\Hy@newwindowsettrue . . . 3954, 4702  
\Hy@newwindowtrue . . . . . 4703  
\Hy@next . . 6223, 6233, 6238, 14079, 14088, 14091  
\Hy@nextfalse . . . . . 4114, 7845  
\Hy@NextPage . . . . . 4076  
\Hy@nexttrue . . . . . 4115, 4116, 4117, 7846, 7847, 7848  
\Hy@number . . . . . 3872, 3876, 3884  
\Hy@numberline . . . 13682, 13719, 13720, 13721, 13722  
\Hy@ObsoletePaperOption . . 2610, 2618  
\Hy@ocgcolor . . . . . 8610, 8624, 9706, 9720  
\Hy@ocgcolorlinksfalse . . . . 4448  
\Hy@org@chapter . . . . . 14077, 14092  
\Hy@OrgMakeLabel . . . . . 11958, 11965  
\Hy@OutlineName . . . . . 13957, 14012  
\Hy@OutlineRerunCheck . . 13822, 13921, 14003  
\Hy@pageanchortrue . . . . . 462  
\Hy@pagecounter . . . . . 484, 486, 6661, 7626, 7628  
\Hy@pageheight . . . . . 4022, 11439, 11528  
\Hy@pagelabelsfalse . . . . . 6129  
\Hy@pagelabelstrue . . . . . 463  
\Hy@param . . . . . 6567, 6568, 6569, 6596, 6600  
\Hy@pdfafalse . . . . . 477  
\Hy@pdfencoding@pdfdoc . . 2783  
\Hy@pdfmarkerrortrue . . . 10950  
\Hy@pdfmarkerrortrue . . . 11117, 11126  
\Hy@pdfminorversion . . . 8498, 8504, 8507, 8515, 8520, 8522, 8525, 8529  
\Hy@pdfpagehiddenfalse . . . 464  
\Hy@pdfstringdef . . . . . 815, 5346, 5354  
\Hy@pdfstringfalse . . . . . 465, 5903  
\Hy@pdfstringtrue . . . . . 669, 5875  
\Hy@pdfversion . . . . . 2810, 2821, 5348, 8520, 8522, 8526, 8529, 13366  
\Hy@plainpagesfalse . . . . . 466  
\Hy@PrevPage . . . . . 4079  
\Hy@ps@CR . . . . . 11481, 11488, 11493, 11494, 11511, 11532, 11533, 11534, 11540, 11547, 11554, 11561  
\Hy@pstringB . . . . . 8918, 8923, 9956, 9968, 10923, 10939, 11773, 11789  
\Hy@pstringD . . . . . 8775, 8800, 9793, 9812, 11278, 11299  
\Hy@pstringdef . . . . . 8433, 8653, 8677, 8737, 8774, 8775, 8812, 8813, 8918, 9557, 9757, 9792, 9793, 9827, 9956, 10186, 10262, 10321, 10322, 10923, 11115, 11124, 11251, 11277, 11278, 11309, 11310, 11773, 13337, 13956, 13972  
\Hy@pstringDest . . . . . 8653, 8654, 9557, 9604, 11115, 11116, 11120, 11124, 11125, 11129  
\Hy@pstringF . . . . . 8772, 8773, 8774, 8794, 8812, 8831, 8836, 9790, 9791, 9792, 9807, 10242, 10243, 10247, 10321, 10328, 10332, 11275, 11276, 11277, 11294, 11309, 11325, 11328  
\Hy@pstringName . . . . . 13956, 13957, 13972, 13986  
\Hy@pstringP . . . . . 8813, 8836, 10322, 10332, 11310, 11328  
\Hy@pstringURI . . . . . 8737, 8758, 9827, 9840, 10186, 10198, 10262, 10266, 11251, 11263  
\Hy@PutCatalog . . . . . 6269, 6277, 6389  
\Hy@raisedlink . . . . . 2441, 6523, 6705, 6726, 6727, 6728, 6731, 6781, 6820, 6823, 7009, 7056, 7071, 7126, 7152, 7283, 7361, 7385, 7390, 7410, 7750, 7775, 11339, 11422, 11680, 11844, 13667, 14045, 14070, 14081, 14111, 14163  
\Hy@raiselinksfalse . . . . . 467, 7513  
\Hy@RemoveDurPageAttr . . . 9041, 9054  
\Hy@RemoveHidPageAttr . . . 9064, 9076  
\Hy@RemovePercentCr . . . . 4595, 4599, 4604  
\Hy@RemoveTransPageAttr . . 9016, 9030  
\Hy@reserved@a . . . . . 4828, 6830, 6859, 12413, 12463, 12526  
\Hy@RestoreCatcodes . . . . . 205, 4028, 4337  
\Hy@RestoreLastskip . . . . . 2462, 8655, 9204, 9219, 9298, 9308, 9606, 10079, 10096, 10167, 10180, 10656, 10676, 11590, 11605, 11870, 11884  
\Hy@RestoreSavedSpaceFactor . . 2437, 9249, 9329, 9366, 9404, 11639, 11914  
\Hy@RestoreSpaceFactor . . . . . 2428, 2454, 2459, 9248, 9256, 9263, 9328, 9338, 9346, 9365, 9376, 9384, 9403, 9414, 9422, 10690, 10726, 11017, 11025, 11049, 11638, 11646, 11653, 11913, 11925, 11932, 11966, 11970  
\Hy@ReturnAfterElseFi . . . . 487, 4583  
\Hy@ReturnAfterElseFiFiEnd . . . . . 491, 1843  
\Hy@ReturnAfterFi . . . . . 487, 507, 2021, 4587, 4603, 7945, 7981, 8467, 8477, 13338  
\Hy@ReturnAfterFiFiEnd . . . . 490, 1835, 1849, 1927, 1934



\Hy@ReturnEnd . . . 489, 490, 491, 1855, 1939	10206, 10227, 10250, 10274, 10306, 10338, 10354	\Hy@temp@B . . . . . 1828, 1829
\Hy@safe@activesfalse 492, 4494, 4499, 4842, 8328	\Hy@setpdfversiontrue . . . . 2809	\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, 4581, 4582, 4593, 4597, 4766, 4770, 4833, 4836, 4845, 4847, 5478, 5479, 5519, 5520, 5523, 5527, 6213, 6215, 6253, 6255, 6400, 6402, 6877, 6879, 6880, 6883, 6884, 6885, 7240, 7245, 7250, 7665, 7666, 7684, 7685, 7691, 8007, 8008, 8059, 8060, 9225, 9226, 10047, 10195, 10196, 11611, 11612, 11890, 11891, 13685, 13686, 13709, 13711, 13730, 13731, 13739, 13763, 13765, 13766, 13768, 13769, 14152, 14177, 14182, 14185, 14188
\Hy@safe@activetrue . 492, 4123, 4492, 4497, 4575, 4612, 4620, 4648, 4765, 4834, 8235, 8317, 13914, 13944	\Hy@setref@link . . . . . 8191, 8194	\Hy@tempb 6214, 6215, 6254, 6255, 13710, 13711, 13739
\Hy@saved@currentHref . . . 7086, 7089	\Hy@slidetitle . . . . . 8020, 8022, 8029, 8037, 8047, 8071, 8073, 8080, 8088, 8098	\Hy@tempcolor . . . . 10702, 10704, 10717, 10793, 10795, 10807
\Hy@saved@footnotemark . 7178, 7193	\Hy@startlinkName . . . 8681, 8695	\Hy@TempPageAnchor . . . 7616, 7623, 7627, 7643
\Hy@saved@footnotetext . . 7179, 7196	\Hy@stepCount 478, 6184, 12213, 12276, 12478, 12693, 12757, 13032, 13099, 13802, 13807, 13883	\Hy@Test@Alph . . . . . 6556, 6579
\Hy@saved@hook . . . . . 6084, 6094	\Hy@stringlocalhost . 4944, 4945, 4960	\Hy@Test@alph . . . . . 6547, 6575
\Hy@saved@refstepcounter . 6507, 6755	\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, 4235, 4237, 4242, 4244, 4251, 4253, 4258, 4260, 4263, 4323, 4324, 5071, 5075, 5076, 5087, 5171, 5172, 5173, 5175, 5179, 5491, 5492, 5493, 5495, 5499, 5500, 5615, 5627, 5698, 5714, 5715, 5716, 5717, 5718, 5719, 5720, 5721, 5723, 5729, 5735, 5736, 5737, 5738, 5739, 5740, 5741, 5742, 5743, 5744, 5745, 6164, 6167, 6176, 6178, 6182, 6186, 6230, 6232, 6655, 6658, 6661, 6667, 6793, 6799, 6907, 6930, 7162, 7168, 7942, 7943, 8933, 8962, 8964, 9477, 9482, 9488, 9492, 9495, 9500, 9531, 9533, 9928, 9971, 9973, 10823, 10826, 10830, 10831, 10837, 10838, 10844, 10872, 10877, 10883, 10887, 10890, 10895, 10928, 10930, 10991, 10992, 10996, 11081, 11082, 11090, 11091, 11195, 11196, 11722, 11727, 11733, 11737, 11740, 11745, 11778, 11780, 13319, 13320, 13954, 13960, 13968, 13983	\Hy@testname . . . . . 8669, 8670, 8675, 8677, 8678, 8692, 9749, 9750, 9755, 9757, 9759, 9775, 10214, 10215, 10220, 10224, 10293, 10294, 10299, 10303, 10798, 10799, 10804, 10815
\Hy@saveLastskip . . . . 2462, 8651, 9192, 9207, 9289, 9301, 9554, 10066, 10082, 10157, 10170, 10646, 10660, 11579, 11593, 11859, 11873	\Hy@temp@A 728, 729, 1827, 1829, 1840, 1842, 1847, 1848, 1851, 3771, 3773, 7864, 7865, 7866, 7873, 7901, 7902, 7903, 7912	\Hy@texhtfalse . . . . . 469
\Hy@saveSavedSpaceFactor . . . . 2436, 9247, 9327, 9364, 9402, 11637, 11912		\Hy@texhttrue . . . . . 2853, 4205
\Hy@saveSpaceFactor . . . . 2425, 2445, 2456, 9246, 9258, 9326, 9340, 9363, 9378, 9401, 9416, 10688, 10724, 11009, 11021, 11029, 11636, 11648, 11911, 11927, 11961, 11968		\Hy@title . . . . . 6047, 6051
\Hy@scanauthor . . . . . 6054, 6059		\Hy@toclevel . . . . . 7676, 7680, 7693
\Hy@scanoptauthor . . . 6054, 6055		\Hy@toolbartrue . . . . . 470
\Hy@scanopttitle . . . . 6045, 6046		\Hy@true . 2416, 2515, 2517, 3055, 3057, 5520
\Hy@scantitle . . . . . 6045, 6050		\Hy@typexmlfalse . . . . . 471
\Hy@secnum@part . 14098, 14100, 14103		\Hy@undefinedname . . . . . 8666, 8673, 8675, 9745, 9753, 9755, 10183, 10218, 10220, 10297, 10299, 10789, 10802, 10804
\Hy@SectionAnchorHref . . . . 667, 14036, 14058, 14129		\Hy@unicodefalse . . . 472, 795, 805, 2739, 2740, 2748, 3712, 3718, 6657, 7620, 13368
\Hy@SectionHShift 14035, 14044, 14054, 14125		\Hy@unicodetrue 2740, 6334, 6348
\Hy@seminarslidesfalse . . . 7993		\Hy@useHidKeyfalse . . . . . 3506
\Hy@seminarslidestrue . . . . 7991		\Hy@useHidKeytrue . . . . . 3510
\Hy@setbreaklinks . . . . 2673, 2677, 2689, 8494, 9547		\Hy@UseMaketitleInfos . . . . . 6100, 8975, 9439, 9888, 10582, 10821, 11691
\Hy@SetCatcodes 181, 231, 4030		
\Hy@SetNewWindow . . . . . 3958, 8796, 8833, 9814, 10329, 11293, 11324		
\Hy@setouterhbox . 10985, 11016		
\Hy@setpagesizetrue . . . . . 468		
\Hy@setpdfborder . . . . . 3576, 8683, 8742, 8780, 8817, 9149, 9768, 9800, 9833, 9866,		

\Hy@UseMaketitleString . . .	6081, 6101, 6102	
\Hy@UseNameKey . . . . .	2594, 8940, 8941, 8942, 8943, 8944, 8945, 8946, 8947, 8966, 9507, 9508, 9509, 9510, 9511, 9512, 9513, 9514, 9535, 9935, 9936, 9937, 9938, 9939, 9940, 9941, 9942, 9975, 10554, 10555, 10556, 10557, 10558, 10559, 10560, 10561, 10902, 10903, 10904, 10905, 10906, 10907, 10908, 10909, 10932, 11752, 11753, 11754, 11755, 11756, 11757, 11758, 11759, 11782	2679, 2793, 3478, 3530, 3663, 3763, 4015, 4062, 4213, 4222, 4239, 4255, 4264, 6028, 6130, 6300, 6414, 6642, 7667, 7822, 10958
\Hy@usetitlefalse . . . . .	473	
\Hy@varioref@refstepcounter	6746, 6753	
\Hy@varioref@undefined . . .	6737, 6741, 8323	
\Hy@VerboseAnchor . . . . .	4645, 8652, 9193, 9208, 9290, 9302, 9555, 10067, 10083, 10158, 10171, 10647, 10661, 11580, 11594, 11860, 11874	\Hy@WarningPageBorderColor . . . . . 3527, 3529, 3531
\Hy@verbosefalse . . . . .	474	\Hy@WarningPageColor . . . . . 3475, 3477, 3479
\Hy@VerboseGlobalTemp . . .	4621, 4622, 4623, 4624, 4628	\Hy@WarnOptionDisabled . . . . . 2544, 2546
\Hy@VerboseLinkInfo . . . . .	4628, 4629, 4632, 4639	\Hy@WarnOptionValue . . . . . 2525, 2531, 3042, 3064
\Hy@VerboseLinkStart . . . . .	4617, 8715, 8725, 9223, 9275, 9311, 9323, 9747, 10023, 10046, 10185, 10286, 10679, 10791, 11609, 11665, 11888, 11943	\Hy@windowuitrue . . . . . 475
\Hy@VerboseLinkStop . . . . .	4633, 8700	\Hy@wrapper@babel . . . . . 4121, 4139
\Hy@VersionCheck . . . . .	290, 4334	\Hy@WrapperDef . . . . . 4131, 8647, 9191, 9206, 9288, 9300, 9553, 10065, 10081, 10156, 10169, 10645, 10659, 11578, 11592, 11858, 11872
\Hy@VersionChecked . . . . .	289, 322, 4331, 4333	\Hy@writebookmark . . . . . 2421, 7677, 8027, 8035, 8045, 8078, 8086, 8096, 13671, 13813
\Hy@vt@PutCatalog . . . . .	6306, 6308	\HyC@cmd . . . . . 87, 109, 122
\Hy@VTeXversion . . . . .	6286, 6298, 10246, 10365, 10501, 13835	\HyC@check . . . . . 68, 71, 74
\Hy@WarnHTMLFieldOption . . . . .	5545, 5578, 5581, 5731	\HyC@checkcommand . . . . . 50, 57, 59
\Hy@Warning . . . . .	278, 353, 514, 1767, 2532, 2547, 2572, 2652, 2767, 2772, 3375, 3427, 3497, 3549, 3568, 3747, 3794, 3802, 3913, 4444, 4689, 4732, 4848, 4970, 5128, 5483, 5546, 5620, 6344, 6359, 7657, 8304, 8353, 8671, 9588, 9592, 9751, 10216, 10295, 10800, 11118, 11127, 13694, 13712	\HyC@checkFailed . . . . . 146, 157
\Hy@WarningNoLine . . . . .	279, 2611, 2679, 2793, 3478, 3530, 3663, 3763, 4015, 4062, 4213, 4222, 4239, 4255, 4264, 6028, 6130, 6300, 6414, 6642, 7667, 7822, 10958	\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 . . . . . 5679, 5682
		\HyColor@FieldColor . . . . . 5685
		\HyColor@HyperrefBorderColor . . . . . 3517
		\HyColor@HyperrefColor . . . . . 3463
		\HyColor@UseColor . . . . . 4466, 8613, 8624, 9709, 9720
		\HyField@@AddToFields . . . . . 12589, 12593
		\HyField@@PDFChoices . . . . . 5366, 5367, 5382
		\HyField@@SetFlag . . . . . 5061, 5063
		\HyField@@UseFlag . . . . . 5051, 5053
		\HyField@AddToFields . . . . . 12559, 12588, 12678, 12772, 12785, 12811, 12835, 12858, 12879
		\HyField@AdvanceAnnotCount . . . . . 12979, 13008, 13104, 13134, 13162, 13190, 13218, 13244
		\HyField@afields . . . . . 12556, 12578, 12579, 12581, 12616
		\HyField@AfterAuxOpen . . . . . 12569, 12576, 12594
		\HyField@AnnotCount . . . . . 12977, 12980, 12983
		\HyField@AuxAddToFields . . . . . 12568, 12573, 12577, 12597
		\HyField@FlagsAnnot . . . . . 5221, 5240, 5254, 5267, 5283, 5315
		\HyField@FlagsCheckBox . . . . . 5253, 12371, 12872, 13239
		\HyField@FlagsChoice . . . . . 5314, 12252, 12733, 13072
		\HyField@FlagsPushButton . . . . . 5239, 12310, 12329, 12353, 12803, 12823, 12852, 13160, 13184, 13214
		\HyField@FlagsRadioButton . . . . . 5266, 12248, 12729, 13068
		\HyField@FlagsSubmit . . . . . 5187, 12330, 12824, 13185
		\HyField@FlagsText . . . . . 5282, 12191, 12671, 13002
		\HyField@NeedAppearancesfalse . . . . . 5511, 5524
		\HyField@NeedAppearancetrue . . . . . 5514, 5517, 5521
		\HyField@NewBitsetFlag . . . . . 5019, 5022, 5030

\HyField@NewFlag . . . 5017, 5093,  
5094, 5095, 5096, 5097, 5098,  
5099, 5100, 5101, 5102, 5103,  
5104, 5105, 5106, 5107, 5108,  
5109, 5110, 5111, 5112, 5117,  
5118, 5119, 5120, 5121, 5122,  
5123, 5124, 5125, 5158, 5160,  
5161, 5163, 5164, 5166, 5167,  
5168, 5169  
\HyField@NewFlagOnly . . . 5021,  
5159, 5162, 5165  
\HyField@NewOption 5018, 5024  
\HyField@PDFAFlagWarning . . .  
5127, 5135, 5139, 5143, 5147,  
5151, 5155  
\HyField@PDFChoices . . . . 5339,  
12289, 12779, 13128  
\HyField@PrintFlags . 5068, 5214,  
5232, 5246, 5259, 5275, 5307,  
5332  
\HyField@SetFlag . . . 5060, 5200,  
5206, 5211, 5245, 5273  
\HyField@SetKeys . . 5443, 12188,  
12219, 12222, 12241, 12298,  
12326, 12343, 12368, 12667,  
12699, 12702, 12721, 12790,  
12820, 12842, 12868, 12998,  
13038, 13041, 13060, 13146,  
13181, 13204, 13235  
\HyField@TheAnnotCount 12982,  
13012, 13017, 13109, 13121,  
13136, 13141, 13167, 13173,  
13192, 13197, 13220, 13225,  
13248, 13253  
\HyField@UseFlag . . . 5050, 5191,  
5192, 5193, 5194, 5195, 5196,  
5197, 5198, 5201, 5202, 5203,  
5204, 5207, 5208, 5209, 5212,  
5223, 5224, 5225, 5226, 5227,  
5228, 5229, 5230, 5231, 5242,  
5243, 5244, 5256, 5257, 5258,  
5269, 5270, 5271, 5272, 5274,  
5285, 5286, 5287, 5288, 5289,  
5290, 5291, 5292, 5303, 5306,  
5317, 5318, 5319, 5320, 5322,  
5324, 5325, 5328, 5331  
\HyInd@@@wrindex . . 7860, 7863,  
7894, 7900  
\HyInd@@hyperpage . 7940, 7950  
\HyInd@@wrindex . . . 7855, 7856  
\HyInd@EncapChar . . 3072, 4025,  
7850  
\HyInd@hyperpage . . . 7937, 7939,  
7946  
\HyInd@org@wrindex . 7854, 7858,  
7868, 7874, 7876, 7879  
\HyInd@pagelink 7955, 7961, 7963,  
7966  
\HyInd@ParenLeft . . . 7837, 7865,  
7902  
\HyInd@ParenRight . . 7838, 7866,  
7873, 7903, 7912  
\HyInd@removespaces 7969, 7972,  
7982  
\HyInfo@AddonHandler . . . 3789,  
3792  
\HyInfo@AddonList . . 3816, 3817,  
3851, 3858  
\HyInfo@Addons 3837, 3853, 8999,  
9913, 10853, 10857  
\HyInfo@AddonUnsupportedtrue  
. . . 9437, 10580, 11689  
\HyInfo@do . . . . 3791, 3818, 3841  
\HyInfo@GenerateAddons . 3835,  
8976, 9889, 10822  
\HyInfo@Key . . 3799, 3800, 3808,  
3813, 3818, 3821, 3828, 3842,  
3846  
\HyInfo@KeyEscaped . 3798, 3799  
\HyInfo@trapped@false 3739, 3758  
\HyInfo@trapped@true 3736, 3757  
\HyInfo@trapped@unknown 3742,  
3759  
\HyInfo@TrappedUnsupported . .  
. . . 3760, 3764, 9440, 10583,  
11692  
\HyInfo@Value . . . . . 3812, 3814  
\HyLang@addto 3276, 3292, 3310,  
3343, 3351  
\HyLang@afrikaans . . . . . 3074  
\HyLang@DeclareLang 3290, 3319,  
3320, 3321, 3322, 3323, 3324,  
3325, 3326, 3327, 3328, 3329,  
3330, 3331, 3332, 3333, 3334,  
3335, 3336, 3337, 3338, 3339,  
3340, 3341  
\HyLang@english . . . . . 3092  
\HyLang@french . . . . . 3110  
\HyLang@german . . . . . 3128  
\HyLang@italian . . . . . 3146  
\HyLang@magyar . . . . . 3164  
\HyLang@portuges . . . . . 3182  
\HyLang@russian . . . . . 3200  
\HyLang@spanish . . . . . 3240  
\HyLang@vietnamese . 3258, 3343,  
3351  
\HyLinguex@OrgB . . . . . 893, 897  
\HyLinguex@OrgC . . . . . 894, 898  
\HyLinguex@OrgD . . . . . 895, 899  
\HyLinguex@Restore . . 896, 909,  
913, 921, 2721  
\HyOpt@CheckDvi . . . 2841, 2877,  
2882, 2887, 2910, 2915, 2920,  
2972, 2979, 2984, 2989, 2994  
\HyOpt@DriverFallback . . . 2998,  
3001, 3002, 3006, 4300, 4305  
\HyOpt@DriverType . 4273, 4275,  
4302, 4312, 4314, 4330  
\HyOrg@addtoreset . . 7780, 7782,  
7809  
\HyOrg@appendix . . . 6538, 6544  
\HyOrg@author . 6044, 6057, 6061  
\HyOrg@float@makebox . . . 7306,  
7308  
\HyOrg@hyperpage . . 7840, 7842,  
7843  
\HyOrg@languageshorthands 965,  
979, 990, 1000  
\HyOrg@make@df@tag@@ . 7765  
\HyOrg@make@df@tag@@@ 7766  
\HyOrg@maketitle . . . 7176, 7183,  
7188  
\HyOrg@subequations 6894, 6901  
\HyOrg@title . . . 6043, 6048, 6052  
\HyOrg@url . . . . . 4745  
\HyPat@NonNegativeReal . 3544,  
3545, 3546, 3547, 3563, 3565,  
3894, 3904, 3905, 3906, 3908,  
3909, 3910  
\HyPat@ObjRef 4729, 4730, 4743,  
8495, 9548, 10642  
\hyper@@anchor 4046, 4755, 4757,  
4788, 4790, 4823, 4825, 4967,  
5915, 5931, 5948, 7052, 7057,  
7067, 7072, 7124, 7127, 7153,  
7281, 7284, 7312, 7616, 7623,  
7628, 8026, 8034, 8044, 8077,  
8085, 8095  
\hyper@@link . . 4615, 4673, 4778,  
4802, 4804, 4828, 7369, 7515,  
7516, 7517, 7565, 7567, 7569,  
8196, 8211, 8313  
\hyper@@normalise . . 4584, 4588,  
4592  
\hyper@@anchor . . . . .  
. . . . 4994, 5918, 5933, 5998,  
6011, 8703, 9191, 9288, 9611,  
10081, 10156, 10645, 11578,  
11858  
\hyper@anchorend . . . . .  
. . . . . 4049, 5902, 5920,  
5935, 5951, 6524, 6707, 6782,  
6823, 6842, 6866, 7013, 7363,  
7388, 7391, 7411, 7544, 7750,  
7776, 8710, 9216, 9306, 9618,  
10076, 10178, 10667, 11602,  
11881, 13667, 13814, 14046,  
14071, 14082, 14112, 14164



\hyper@anchorstart . . . . .	11666, 11906, 11908, 11944	\hyperlink 4614, 5970, 7978, 8116,
4048, 5902, 5919,	\hyper@livelink . . . . . 5916, 5943	8124, 8139, 8147, 8157, 8165,
5934, 5950, 6524, 6706, 6782,	\hyper@makecurrent . 6520, <u>6565</u> ,	8172
6820, 6842, 6866, 7010, 7361,	6768, 6819, 6841, 6865, 6955,	\hyperlinkfileprefix . . 3484, 3485,
7386, 7391, 7411, 7544, 7750,	6986, 7087, 7257, 7299	3486, 11850
7776, 8706, 9206, 9300, 9614,	\hyper@n@rmalise . . . 4576, 4580	\HyperLocalCurrentHref . . 6603,
10065, 10169, 10659, 11592,	\hyper@nat@current . . . . . 7352	6605, 6611, 6612, 6613, 6614,
11872, 13667, 13814, 14046,	\hyper@nat@anchorend . . . . 7363	6616
14071, 14082, 14112, 14164	\hyper@nat@anchorstart . . . . 7360	\hyperpage 5976, 7840, 7841, 7843,
\hyper@chars . . . . .	\hyper@nat@linkbreak . . . . . 7357	7936
4609, 8738, 9196, 9210, 9230,	\hyper@nat@linkend . . . . . 7354	\HyperRaiseLinkDefault . . 2423,
9252, 9266, 9280, 9360, 9398,	\hyper@nat@linkstart . . . . . 7349	2450
10032, 10053, 10069, 10086,	\hyper@normalise . . . 4026, 4031,	\HyperRaiseLinkHook 2422, 2451
10161, 10173, 10263, 11252,	4553, 4663, 4666, 4747, 4749,	\HyperRaiseLinkLength . . 2449,
11596, 11616, 11642, 11656,	4751, 4772, 5473	2450, 2453
11670, 11876, 11895, 11918,	\hyper@p@geduration . <u>9037</u> , 9086,	\hyperref . 4760, 5008, 5009, 5972,
11935, 11948	10478, 10495, <u>10753</u> , 10783	8271, 8275, 8285, 8299
\hyper@currentanchor . . . 10664,	\hyper@p@gehidden . . <u>9061</u> , 9087,	\hypersetup 2760, 2800, 3328, 3775,
10673, 10696, 10713	10488, 10496, <u>10770</u> , 10784	4027, 5966
\hyper@currentlinktype . . 10697,	\hyper@p@getransition <u>9013</u> , 9085,	\hypertarget . . . . . 4753, 5971
10701, 10705	10367, 10494, <u>10736</u> , 10782	\HyPL@@@CheckThePage . 6234,
\hyper@chash . . 4561, 4562, 4610,	\hyper@quote . 5871, 9198, 9212,	<u>6252</u>
4890, 4902, 4919, 4922, 5869,	9227, 9232, 9253, 9267, 9281,	\HyPL@@@CheckThePage . . 6210,
10026	10026, 10036, 10049, 10072,	<u>6212</u>
\hyper@image . 4751, 4752, 9278,	10090, 11584, 11598, 11613,	\HyPL@Alph . . . . . 6150
10317, 10786, 11668, 11946	11619, 11643, 11657, 11671,	\HyPL@alph . . . . . 6151
\hyper@last . . . . . 6018, 6023	11864, 11877, 11892, 11897,	\HyPL@arabic . . . . . 6147
\hyper@link . . . . . 4047,	11920, 11936, 11949	\HyPL@CheckThePage 6162, <u>6209</u>
4837, 5916, 5917, 5932, 5943,	\hyper@readexternallink . . 4839,	\HyPL@Entry . 6402, 6410, 6418,
5949, 8724, 9274, 9322, 9784,	4855	<u>6420</u>
10022, 10285, 10790, 11664,	\hyper@refstepcounter 6498, 6501,	\HyPL@EveryPage . . . <u>6152</u> , 6273
11942	<u>6509</u>	\HyPL@Format 6225, 6226, 6227,
\hyper@link@ . . 4054, 4829, 4831,	\hyper@tilde 4570, 4571, 4572, 5870	6228, 6229, <u>6241</u>
5914, 5925, 5929, 5940, 5956	\hyperbaseurl . . 3481, 3482, 5967	\HyPL@found . 6224, 6231, 6235,
\hyper@linkend . . . . . 4051,	\hypercalcbp . . . . . 494, <u>494</u>	6242, 6252, 6254
5922, 5937, 5953, 7092, 7355,	\hypercalcbpdef . . 496, 533, 3891,	\HyPL@Labels . <u>6141</u> , 6264, 6265,
7358, 7711, 7715, 7719, 7721,	3901	6267, 6269, 6320, 6321, 6413,
8723, 9236, 9319, 9783, 9785,	\hyperdef . . . . . 4780, 5969	6421, 6422
10058, 10236, 10699, 11624,	\HyperDestNameFilter . . . . .	\HyPL@LastNumber . 6145, 6180,
11901	4007, 4649, 8653, 8678, 9198,	6203
\hyper@linkfile . . . . .	9212, 9232, 9276, 9557, 9758,	\HyPL@LastPrefix . . . 6146, 6174,
. . . . 4053, 4915, 5924, 5939,	10026, 10036, 10054, 10072,	6205
5955, 8770, 9240, 9396, 9787,	10090, 10162, 10174, 10223,	\HyPL@LastType 6144, 6165, 6204
10042, 10240, 11273, 11628,	10302, 11115, 11124, 11584,	\HyPL@page . . 6155, 6157, 6162,
11905	11598, 11619, 11666, 11864,	6170
\hyper@linkstart . . . . . 4050,	11877, 11897, 11944, 13892,	\HyPL@Prefix . 6170, 6172, 6174,
5921, 5936, 5952, 7090, 7351,	13956, 13972	6188, 6191, 6193, 6205, 6219,
7358, 7711, 7715, 7719, 7721,	\HyperFirstAtBeginDocument . .	<u>6257</u>
8714, 9222, 9310, 9746, 9785,	. . 5995, 5997, 6019, 6022	\HyPL@Roman . . . . . 6148
10045, 10184, 10678, 11608,	\hypergetpageref . . . . . 6700	\HyPL@roman . . . . . 6149
11887	\hypergetref . . . . . 6699	\HyPL@SetPageLabels <u>6263</u> , 6328,
\hyper@linkurl . . . . .	\HyperGlobalCurrentHref . 6585,	6416
4052, 4750, 4890, 4897, 4918,	6587, 6595, 6596, 6600, 6603,	\HyPL@storePageLabel . . . 6188,
4922, 5923, 5938, 5954, 8735,	6607, 6613, 6614, 6618	<u>6190</u> , <u>6260</u> , <u>6318</u> , <u>6397</u>
9241, 9243, 9276, 9358, 9824,	\hyperimage . . . 4751, 5001, 7832	\HyPL@thisLabel 6138, 6140, 6154,
10030, 10043, 10260, 10318,	\hyperindexformat . . . . . 7839	6157, 6158
10787, 11249, 11629, 11633,		

`\HyPL@Type` . . 6160, 6165, 6169, 6187, 6195, 6204, 6218, 6256  
`\HyPL@Useless` . . . . . 6261, 6267  
`\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@@@AppendItalcrr` . 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@AMSclassfix` . 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@usorbian` . . . . 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@GetOneByte` . . . . 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@SpanishPatch . 636, 1231	3700, 3706, 3724, 3730, 3810, 13371, 13729
\HyPsd@LanguageShorthands . . . . . 966, 971, 983	\HyPsd@String . . . . . 709, 711, 714, 716, 721, 723, 1830, 1831, 1841, 1893, 1894, 1898, 1899, 1914, 1915, 1945, 1957, 2016, 2017	\HyPsd@XSPACE 678, 754, 1603
\HyPsd@LetCommand . 702, 703, 1719	\HyPsd@StringSubst . . 724, 726, 732, 738, 741, 744, 747, 766, 769, 771, 2069	\HyPsd@xspace . . . 752, 754, 755
\HyPsd@LetUnexpandableSpace . . . 671, 672, 673, 674, 1599, 1602	\HyPsd@Subst . 720, 729, 733, 739, 745, 749, 753, 758, 759, 760, 761, 762, 763, 767, 770, 2053, 2070, 2085, 2086, 2087	\HyRef@@StarSetRef . 8239, 8244
\HyPsd@LoadStringEnc . . . 2764, 2784, 2786, 2790, 2792, 6339	\HyPsd@temp . . . . 787, 789, 790, 792, 793, 800, 802, 803, 2745, 2746, 2747, 2750, 2753, 2759, 2771, 2775, 6352, 6353, 6354, 6356, 6357, 6362	\HyRef@autopageref . 8296, 8298
\HyPsd@LoadUnicode 2713, 2718, 2726, 2729, 2731, 2738, 6333	\HyPsd@ToBigChar 844, 845, 854	\HyRef@autopagerefname . 8295, 8299, 8301
\HyPsd@nameref . . . . 661, 1667	\HyPsd@ToBigChars . . . 797, 836	\HyRef@autoref . . . . 8313, 8315
\HyPsd@pageref . . . . 660, 1649	\HyPsd@tocsection . . 1619, 1620, 1621, 1622, 1623, 1624, 1625, 1627	\HyRef@autosetref . . . 8318, 8321
\HyPsd@pdfencoding . 784, 2712, 2715, 2747, 2759, 2762, 2763, 2768, 2783, 6335, 6337, 6354, 6357	\HyPsd@UnescapedString . . 789, 838, 839, 845	\HyRef@CaseStar . . . . 8382, 8388
\HyPsd@pdfencoding@auto . 784, 2753, 2763, 2780, 6337, 6356	\HyPsd@UnexpandableSpace . . . 1602, 1788, 1812, 1947, 1959	\HyRef@currentHtag . 8334, 8352, 8355, 8361, 8368, 8374, 8389
\HyPsd@pdfencoding@pdfdoc . . . . . 2746, 2768, 2781	\HyPsd@unichar 2232, 2299, 2305, 2310	\HyRef@MakeUppercaseFirstOfFive . . . . . 8262, 8264
\HyPsd@pdfencoding@unicode . . . . 2750, 2782, 6335, 6353	\HyPsd@unichar@first@byte 2318, 2338	\HyRef@name . 8350, 8351, 8356, 8363, 8381, 8382, 8383, 8385
\HyPsd@PrerenderUnicode 3673, 3689, 3695, 3701, 3707, 3725, 3731, 3811	\HyPsd@unichar@octtwo . . 2340, 2348, 2354	\HyRef@Ref . . . . . 8268, 8270
\HyPsd@protected@testopt . 687, 688, 1760	\HyPsd@unichar@second@byte . . . . . 2326, 2346	\HyRef@ShowKeysInit 8391, 8404, 8408
\HyPsd@ProtectSpaces 708, 1777, 1798, 1847	\HyPsd@UnicodeReplacementCharacter . . . . . 2302, 2337	\HyRef@ShowKeysRef 8322, 8390
\HyPsd@ref . . . . . 659, 1633	\HyPsd@utf@viii@undeferr . . 552, 2360	\HyRef@StarSetRef . . 8233, 8251, 8254, 8257, 8262
\HyPsd@RemoveBraces 710, 1819, 1836, 1844, 1850	\HyPsd@UTFviii . 546, 2220, 2225	\HyRef@StripStar . . . 8349, 8380
\HyPsd@RemoveCmdPrefix 1977, 1983	\HyPsd@UTFviii@@three . . 2255, 2264	\HyRef@testreftype . . 8327, 8346
\HyPsd@RemoveMask 718, 1786, 1792, 1805, 1815	\HyPsd@UTFviii@@two 2240, 2246	\HyRef@thisref . . . . 8324, 8327
\HyPsd@RemoveSpaceWarning . . . . . 1951, 1963, 1989	\HyPsd@UTFviii@ccxliv@def 2230, 2236	\HyTmp@found . 5393, 5403, 5406
\HyPsd@ReplaceSpaceWarning . . . . . 1946, 1958, 2002	\HyPsd@UTFviii@ccxliv@undef . . . . . 2229, 2235	\HyTmp@key . . . . . 5387, 5388
\HyPsd@Rest . . 1864, 1924, 1932, 1935, 1942, 1947, 1953, 1959, 1965	\HyPsd@UTFviii@four 2228, 2273	\HyTmp@optitem . . . 5343, 5359, 5386, 5391, 5397, 5418, 5429
\HyPsd@RussianPatch . 637, 1237	\HyPsd@UTFviii@three 2227, 2254	\HyTmp@optlist 5342, 5357, 5358, 5389, 5390, 5395, 5396, 5404, 5405, 5425, 5427, 5434, 5437
\HyPsd@SanitizeForOutFile . . . . . 13731, 13762	\HyPsd@UTFviii@two 2226, 2239	\HyXeTeX@CheckUnicode . 3659, 3670, 3687, 3693, 3699, 3705, 3723, 3729, 3809, 6367
\HyPsd@SanitizeOut@BraceLeft . . . 13766, 13772, 13781	\HyPsd@Warning 1764, 1969, 1990, 2003, 2032, 2038	
\HyPsd@SanitizeOut@BraceRight . . . 13769, 13784, 13793	\HyPsd@XeTeXBigCharsfalse 811, 825, 830	<b>I</b>
\HyPsd@SPACEOPTI . 712, 727, 728, 730, 732, 734, 735, 774, 776, 1899, 2101	\HyPsd@XeTeXBigCharstrue . . . . . 824, 833, 3688, 3694,	\i 14348, 14511, 14514, 14517, 14520, 14717, 14879, 14882, 14885, 14888, 15005, 15010, 15015, 15020, 15024, 15191, 15247
\HyPsd@spaceopti . . . . 776, 2046		\if . . . . . 1628, 2410, 6178, 6186, 6883, 6884, 10441, 10444, 10448, 10452, 10456, 10458, 10460, 13419

<code>\if@minipage</code> . . . . .	7269, 7340	<code>\ifHy@activeanchor</code> . . .	396, 4991	<code>\ifHy@pdfa</code> . . . . .	440, 4069,
<code>\if@nmbrlist</code> . . . . .	6470	<code>\ifHy@backref</code> . . .	397, 4164, 4536,		4443, 4878, 5126, 5702, 5751,
<code>\if@nobreak</code> . . . . .	7018		5849, 7522, 7558		5864, 8682, 8754, 8792, 8829,
<code>\if@skiphyperref</code> . . . . .	6484, 6494	<code>\ifHy@bookmarks</code> . . . .	398, 4384		9161, 9767, 9799, 9832, 9860,
<code>\if@twocolumn</code> . . . . .	14166	<code>\ifHy@bookmarksnumbered</code> .	399,		10205, 10226, 10249, 10273,
<code>\if@twoside</code> . . . . .	14155		8019, 8070, 13718		10305, 10337, 10353, 11139,
<code>\ifcase</code> . . . . .	346, 1158,	<code>\ifHy@bookmarksopen</code> .	400, 4374		12150, 12301, 12347, 12624,
	1180, 1203, 1297, 1346, 1368,	<code>\ifHy@breaklinks</code> 401, 2678, 10680,			12794, 12846, 12961, 13150,
	1371, 1377, 1413, 1457, 1573,		10721, 11015, 11038		13208, 13421, 13467, 13631
	2268, 2750, 3424, 4333, 5189,	<code>\ifHy@centerwindow</code> . . . . .		<code>\ifHy@pdfmarkerror</code>	10947, 10955
	5294, 5423, 5500, 6548, 6557,		402, 8938, 9505, 9933, 10552,	<code>\ifHy@pdfpagehidden</code> .	426, 3509,
	7707, 7865, 7902, 8131, 8323,		10900, 11750		9065, 10490, 10776
	10514, 11004, 13477, 13504,	<code>\ifHy@CJKbookmarks</code> .	403, 1249	<code>\ifHy@pdfstring</code> . .	427, 929, 6488
	13571, 13606, 13641, 13839	<code>\ifHy@colorlinks</code> .	404, 4455, 5854,	<code>\ifHy@plainpages</code>	428, 4159, 6654,
<code>\ifcat</code> 1865, 1892, 1897, 1902, 1905,			11565		7615
	1908, 1911, 4978, 4980	<code>\ifHy@displaydoctitle</code> . . . . .		<code>\ifHy@psize</code> . . . . .	429
<code>\ifdim</code> 1614, 1945, 1949, 1957, 1961,			439, 8939, 9506, 9934, 10553,	<code>\ifHy@raiselinks</code> .	430, 9245, 9325,
	2465, 2484, 4012, 4359, 9105,		10901, 11751		9362, 9400, 11635, 11910
	9109, 9114, 9118, 9125, 9128,	<code>\ifHy@draft</code> . . . . .	405, 4045	<code>\ifHy@seminarslides</code> . . . . .	431
	9132, 9135, 9993, 9994, 9999,	<code>\ifHy@DviMode</code> .	2822, 2842, 3000	<code>\ifHy@setpagesize</code>	432, 9093, 9990,
	10000, 10132, 10135, 10139,	<code>\ifHy@DvipdfmxOutlineOpen</code> . .			10129, 11400
	10142, 11033, 11044, 11403,		4357, 13974	<code>\ifHy@setpdfversion</code> . .	2801, 8519
	11404, 11409, 11410, 12215,	<code>\ifHy@escapeform</code> . . .	408, 13315,	<code>\ifHy@texht</code>	433, 4231, 4483, 4531,
	12253, 12254, 12695, 12734,		13345		5537, 5569, 5722, 5746, 5902,
	12735, 13034, 13073, 13074	<code>\ifHy@figures</code>	409, 4144, 5834, 7829		8179
<code>\ifetex@unexpanded</code> . . . . .	1771	<code>\ifHy@fitwindow</code>	410, 8937, 9504,	<code>\ifHy@toolbar</code> . .	434, 8934, 9501,
<code>\iffalse</code> . . . . .	831, 5512		9932, 10551, 10899, 11749		9929, 10548, 10896, 11746
<code>\ifFileExists</code> . . . . .	6027, 11975	<code>\ifHy@frenchlinks</code> . . . .	411, 4471	<code>\ifHy@typexml</code> . .	395, 4169, 4458,
<code>\ifFld@checked</code>	5446, 12533, 13464	<code>\ifHy@href@ismap</code> . . .	4711, 8759,		4502, 5989, 13923, 14005
<code>\ifFld@comb</code> . . . . .	5293		9841, 10199, 10267, 11264	<code>\ifHy@unicode</code> .	435, 542, 575, 578,
<code>\ifFld@combo</code> .	5321, 5326, 12228,	<code>\ifHy@hyperfootnotes</code> .	412, 7026		725, 737, 765, 773, 782, 1108,
	12257, 12708, 12738, 13047,	<code>\ifHy@hyperindex</code>	413, 4154, 5844,		1268, 1971, 1992, 2005, 2034,
	13077		7836		2040, 2300, 2711, 2761, 3661,
<code>\ifFld@disabled</code> . . . .	5447, 12534	<code>\ifHy@hypertextnames</code>	414, 6571,		6342, 13367
<code>\ifFld@edit</code> . . . . .	5327		6653, 7614, 8024, 8075	<code>\ifHy@useHidKey</code> . . . .	3505, 9062,
<code>\ifFld@fileselect</code> . . . . .	5296	<code>\ifHy@implicit</code> . .	415, 4176, 14029		10489, 10771
<code>\ifFld@hidden</code>	12192, 12242, 12311,	<code>\ifHy@linktocpage</code>	416, 2635, 2645	<code>\ifHy@usetitle</code> . . . . .	436, 6042
	12331, 12354, 12372, 12432,	<code>\ifHy@localanchorname</code>	417, 6604,		437, 4618, 4634,
	12444, 12454, 12537, 12672,		6615		4646, 5069, 7682
	12723, 12804, 12825, 12853,	<code>\ifHy@menubar</code> .	418, 8935, 9502,	<code>\ifHy@windowui</code> .	438, 8936, 9503,
	12873, 13003, 13062, 13161,		9930, 10549, 10897, 11747		9931, 10550, 10898, 11748
	13186, 13215, 13240	<code>\ifHy@naturalnames</code> . .	419, 6583,	<code>\ifHyField@NeedAppearances</code> . . . .	
<code>\ifFld@multiline</code> . . . .	5294, 12181,		8025, 8076		5510, 5512, 5515, 12152,
	12439, 12660, 12991	<code>\ifHy@nesting</code> . .	420, 4149, 4754,		12626, 12963
<code>\ifFld@multiselect</code> . . . . .	5365		4787, 4822, 4976, 5839, 7051,	<code>\ifHyInfo@AddonUnsupported</code> . .	
<code>\ifFld@password</code> . . .	5295, 12420		7066, 7123, 7280		3787, 3801, 3836
<code>\ifFld@popdown</code> . . .	5113, 12229,	<code>\ifHy@newwindow</code> . . .	422, 3961,	<code>\ifHyPsd@XeTeXBigChars</code> . .	829,
	12709, 13048		10246		831, 834, 837
<code>\ifFld@radio</code> .	12225, 12247, 12469,	<code>\ifHy@newwindowset</code> . .	421, 3959	<code>\ifmeasuring@</code> . . . . .	6508, 6521
	12705, 12728, 13044, 13067	<code>\ifHy@next</code> . . . .	1007, 4118, 7853	<code>\ifmmode</code> . . . . .	10683, 11010
<code>\ifFld@readonly</code> . . .	12441, 12451,	<code>\ifHy@ocgcolorlinks</code> . .	423, 3374,	<code>\ifnum</code> . . . . .	258,
	12535		4441, 4451, 5859, 8514, 8532,		861, 864, 867, 870, 873, 984,
<code>\ifForm@html</code> . . . . .	5467		8609, 8617, 9622, 9705, 9713		1109, 1112, 1123, 1124, 1128,
<code>\ifhmode</code> .	2426, 2430, 2483, 2492,	<code>\ifHy@pageanchor</code>	424, 6640, 6652,		1136, 1140, 1143, 1153, 1175,
	4655, 6908, 6932, 6965, 7084,		6667, 7613		1198, 1338, 1449, 1465, 1469,
	7093, 7227, 7229, 8648, 8656,	<code>\ifHy@pagelabels</code>	425, 6126, 6318,		1489, 1502, 1505, 1518, 1520,
	11960		6396		1533, 1535, 1541, 2179, 2182,

2258, 2301, 2304, 2316, 2431,  
2927, 2930, 2956, 3425, 3426,  
4368, 4375, 4688, 5348, 5419,  
5430, 6161, 6180, 6196, 6298,  
8133, 8171, 8515, 8520, 8854,  
8861, 8867, 8875, 9734, 9739,  
10246, 10365, 10501, 10509,  
10511, 10512, 10522, 10525,  
10611, 10613, 10733, 11427,  
12608, 12771, 13103, 13108,  
13119, 13366, 13447, 13477,  
13482, 13504, 13510, 13538,  
13571, 13577, 13596, 13606,  
13611, 13641, 13646, 13675,  
13691, 13835, 13905, 13908,  
13935, 13938, 13976, 14085,  
14103, 14118

`\ifodd` . . . . . 2282, 2287, 7637

`\ifpdf` . . . . . 256, 2824, 2867, 4210, 4277

`\ifpdfstringunicode` . . . . . 547, 550

`\ifportrait` . . . . . 9104

`\ifthenelse` . . . . . 7548

`\iftrue` 834, 1778, 1800, 2064, 5515,  
14087

`\ifvmode` . . . . . 2442, 2464, 2473

`\ifvoid` . . . . . 6775, 6779, 7003

`\ifvtex` . . . . . 2830, 2926, 2955

`\ifvtexdvi` . . . . . 2831

`\ifvtexhtml` . . . . . 4252, 4283

`\ifvtexpdf` . . . . . 4294

`\ifvtexps` . . . . . 4297

`\ifxetex` 788, 821, 2827, 2900, 3660,  
4236, 4280, 4358

`\ignorespaces` . . . . . 666, 6735, 6903,  
7159, 7265, 7276, 7279, 7336,  
7344, 7406, 7421, 7437, 7446,  
7556, 8004, 8056

`\IJ` . . . . . 14344, 15026

`\ij` . . . . . 14553, 15028

`\immediate` . . . . . 5990,  
5991, 5992, 5994, 6034, 6311,  
6401, 6409, 6664, 6692, 7401,  
7416, 7432, 7442, 7472, 7495,  
7521, 7551, 8534, 8549, 8564,  
10616, 11424, 12550, 12572,  
12614, 13825, 13891, 13922,  
13924, 14004, 14006

`\incr@eqnum` . . . . . 6794, 6807

`\indent` . . . . . 6913, 6939

`\index` . . . . . 655

`\indexentry` 7891, 7906, 7914, 7918,  
7923

`\input` . . . . . 912, 920,  
2720, 3346, 3354, 3361, 4332,  
11342, 11425, 11516, 11685

`\InputIfFileExists` . . . . . 4029, 13915,  
13949, 13994, 13996

`\inputlineno` . . . . . 4625, 4983

`\insert` . . . . . 7138

`\IntCalcAdd` . . . . . 2208

`\IntCalcDec` . . . . . 1360

`\IntCalcDiv` 1354, 1363, 1368, 1471,  
1480, 1492, 1509, 1524, 1539,  
2192, 2198, 2204

`\intcalcDiv` . 1344, 2199, 2206, 2209

`\IntCalcMod` . . . . . 1356, 1365, 1371,  
1475, 1481, 1496, 1512, 1527,  
1541, 1543, 2194, 2199, 2200,  
2206, 2209, 2211

`\intcalcMod` . . . . . 1346

`\intcalcSub` . . . . . 2186

`\interfootnotelinepenalty` . . . . . 7141

`\interlinepenalty` . . . . . 7141

`\item` 6465, 6468, 7428, 7440, 7543

`\Itemautorefname` . . . . . 8414

`\itemautorefname` . . . . . 3077, 3095,  
3113, 3131, 3149, 3167, 3185,  
3214, 3215, 3243, 3261, 8414,  
8415, 8418

`\itemindent` . . . . . 7004

`\itshape` . . . . . 608

## J

`\j` . . . . . 15033, 15218, 15282

`\jarr` . . . . . 16639

`\jeem` . . . . . 16611

`\jeh` . . . . . 16647

`\jobname` 5991, 6027, 6034, 11975,  
13824, 13915, 13922, 13949,  
13994, 13996, 14004

## K

`\k` . . . . . 14228, 14570, 14572, 14577,  
14579, 14622, 14640, 14659,  
14666, 14930, 14932, 14970,  
14972, 15017, 15019, 15020,  
15155, 15157, 15214, 15216,  
15813, 15852, 15855

`\kaf` . . . . . 16629

`\kasra` . . . . . 16642

`\keepPDF@SetupDoc` 11569, 11576

`\kern` 1874, 1946, 1951, 1963, 7004,  
7632, 7633, 7634, 7636, 7637,  
7642, 14044

`\kernel@ifnextchar` . . . . . 685

`\kha` . . . . . 16613

`\KV@href@pdfnewwindow` . . . . . 4709

`\KV@href@pdfnewwindow@default`  
. . . . . 4710

`\KV@Hyp@draft` . . . . . 2609

`\KV@Hyp@nolinks` . . . . . 2609

`\KV@Hyp@pdfnewwindow` . . . . . 4709

`\KV@Hyp@pdfnewwindow@default`  
. . . . . 4710

`\kv@key` . . . . . 3795, 3798, 3805, 5346,  
5349, 5351, 5355, 5359

`\kv@parse` . . . . . 5345

`\kv@parse@normalized` 3820, 3827

`\kv@processor@default` 3823, 3830

`\kv@set@family@handler` . . . . . 3788

`\kv@value` . . . . . 3793, 5347, 5354, 5355

`\kvsetkeys` . . . . . 2800,  
2854, 2974, 3667, 3768, 4070,  
4307, 4325, 4442, 5444, 8516,  
10954, 12169, 12405, 12418,  
12467, 12510, 12531, 12605,  
12946

## L

`\L` . . . . . 14337, 15057

`\l` . . . . . 14350, 15059

`\l@slide` . . . . . 8004, 8114, 8119, 8123,  
8130

`\l@subslide` . . . . . 8056, 8119, 8126, 8170

`\label` . . . . . 654, 7655

`\label@hyperref` . . . . . 4794, 4796

`\label@hyperdef` . . . . . 4780, 4808

`\label@hyperref` . . . . . 4761, 4793, 5005

`\labelsep` . . . . . 7555

`\labelwidth` . . . . . 7554

`\lam` . . . . . 16630

`\language@group` . . . . . 633

`\languageshorthands` . . . . . 965, 966,  
1000

`\LARGE` . . . . . 615

`\Large` . . . . . 616

`\large` . . . . . 619, 8136, 8144, 8154, 8162

`\lastbox` . . . . . 7002

`\lastpage@putlabel` . . . . . 6635

`\lastskip` . . . . . 2465, 2469, 2476, 2484,  
2488, 2495

`\LaTeX` . . . . . 572, 574, 11981, 11982

`\LaTeXe` . . . . . 573, 11982

`\LayoutCheckField` . . . . . 5790, 12373,  
12874, 13245

`\LayoutChoiceField` . . . . . 5787, 12246,  
12727, 13066

`\LayoutPushButtonField` . . . . . 5793,  
12305, 12312, 12798, 12805,  
13154, 13163

`\LayoutTextField` . . . . . 5784, 12194,  
12674, 13009

`\lccode` . . . . . 364, 369, 860,  
1278, 2073, 2074, 2075, 2076,  
2077, 2078, 2079, 2080, 2081,  
2082, 2223, 5662, 7850, 7851,  
13749, 13750, 13751, 13752,  
13753, 13754, 13755, 13756,  
13757, 13758, 13759

`\ldots` . . . . . 567

`\leavevmode` . . . . . 663, 2420,  
4055, 4072, 4112, 4883, 5960,



7083, 7226, 7462, 8274, 8282, 8668, 8739, 8777, 8814, 9244, 9324, 9361, 9399, 9788, 9825, 10024, 10033, 10087, 10241, 10264, 10292, 10323, 10682, 11008, 11253, 11280, 11311, 11634, 11909, 12306, 12313, 12346, 12759, 12780, 12799, 12806, 12826, 12845, 13101, 13132, 13155, 13164, 13188, 13207, 14042	4116, 4117, 4516, 4517, 4713, 6082, 6449, 6536, 6540, 6855, 7364, 8302, 8303, 8347, 8348, 8350, 8351, 8716, 8726, 9124, 10131, 10188, 10287, 10658, 10701, 10792, 10969, 14076, 14086	\MakeUppercaseUnsupportedInPdfStrings ..... 629
\letLTXcmds@gtemp ..... 240	\ltx@ifundefined ..... 7011	\MathBSuppress .. 10034, 10038
\LetLtxMacro . 5905, 5909, 5977, 5981	\ltx@leftbracechar ..... 342, 366	\mathdisplay ..... 6797, 6806
\limits ..... 4601	\ltx@LocalAppendToMacro . 234, 379, 382	\mathdisplay@push .. 6795, 6804
\listofslides ..... 8105	\ltx@one ..... 258	\mathversion ..... 624
\listslidenam . 8104, 8107, 8109, 8111	\ltx@rightbracechar .... 343, 371	\maxdimen ..... 3446, 12554
\literalps@out 2418, 10605, 10610, 10662, 10668, 10694, 10700, 10965, 10976, 11005, 11006, 11034, 11036, 11045, 11047, 11340, 11423, 11486, 11683	\ltx@secondoftwo .. 254, 261, 265, 348, 4516, 4517, 4519, 4937	\MaybeStopEarly 482, 2857, 2932, 4180, 4285, 6429
\lower ... 9251, 9331, 9368, 9406, 11036, 11641, 11916	\ltx@space ..... 345	\mbox 664, 7475, 7498, 8619, 9715
\lowercase ... 365, 370, 880, 1279, 2083, 2224, 2511, 3021, 3051, 3735, 3771, 5018, 5019, 5022, 5027, 5051, 5061, 5115, 5171, 5491, 5564, 5567, 5663, 7852, 10732, 13760	\ltx@undefined ..... 236	\mddefault ..... 6915, 6941, 6972
\slide@flag 8131, 8134, 8152, 8171, 8175	\ltx@zero . 2077, 2078, 2079, 2080, 2081, 2082	\mdseries ..... 607
\LT@array ..... 6760	\LTXcmds@gtemp . 235, 236, 237, 239, 244, 245, 247	\meaning ..... 62, 153, 159, 2381, 6066, 6596, 6880, 13960, 13968, 13983
\LT@foot ..... 6775, 6779	\luatexrevision ..... 8898	\measuring@false ..... 6508
\LT@p@ftn . 7099, 7102, 7106, 7116	\luatexversion ..... 8890, 8895	\mediaheight 10125, 10127, 10133, 10140
\LT@p@ftntext ..... 7097, 7104	<b>M</b>	\mediawidth ..... 10136, 10143
\LT@start ..... 6777, 6787	\m@ne ..... 4133, 4637, 4696, 5033, 6680, 6875, 9743, 13996, 14085, 14100	\meem ..... 16631
\ltx@backslashchar . 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 344	\make@df@tag@@ .... 7765, 7767	\message ..... 8132
\ltx@empty . 237, 240, 2823, 2998, 3006, 3502, 4300, 4310, 10992	\make@df@tag@@@ ... 7766, 7768	\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, 4240, 4241, 4256, 4257, 4265, 4266, 4445, 4690, 4691, 4715, 4716, 4732, 4733, 5072, 5077, 5086, 5129, 5175, 5299, 5412, 5484, 5495, 5527, 5528, 5547, 5621, 5622, 5623, 5624, 6131, 6345, 6360, 6361, 6643, 7659, 7689, 7690, 7691, 7692, 7693, 7824, 8672, 9752, 10217, 10296, 10801, 12562, 12564, 13696, 13714, 13827
\ltx@firstofone 2843, 13777, 13789	\make@stripped@name 6513, 6816, 6838, 6862, 6873	\MF ..... 582, 11984
\ltx@firstoftwo 259, 351, 359, 4517, 4939	\makeatletter ..... 3, 943, 6026	\MP ..... 583, 11985
\ltx@gobble 286, 2849, 6279, 13775, 13787	\MakeButtonField .. 5800, 12307, 12315, 12333, 12351, 12356, 12800, 12809, 12833, 12850, 12856, 13156, 13159, 13187, 13212, 13216	\multiply .... 8894, 10470, 10505
\ltx@ifpackagelater ..... 362	\MakeCheckField ... 5797, 12375, 12877, 13242	<b>N</b>
\ltx@ifpackageloaded ..... 1245	\MakeChoiceField .. 5799, 12291, 12783, 13130	\n ..... 871
\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,	\MakeFieldObject . 12549, 12636, 12646, 12649	\name@of@eq ..... 6481, 6511
	\MakeLowercase ..... 630	\name@of@slide ..... 6482, 6492
	\MakeLowercaseUnsupportedInPdfStrings ..... 630	\nameref ..... 661, 4521, 4525
	\MakeRadioField ... 5796, 12279, 12770, 13094	\nasb ..... 16637
	\makeslideheading ..... 8014	\netscape ..... 9287
	\makeslidesubheading .... 8066	\new@ifnextchar ..... 686
	\maketag@@@ ..... 7754	\new@pdfink ... 8647, 8704, 8707
	\MakeTextField .... 5798, 12196, 12677, 13006	\new@refstepcounter . 6789, 6821
	\maketitle ..... 7176, 7177	
	\MakeUppercase 629, 8109, 8111, 8265	

\newblock . . . . .	7559	3309, 3310, 3312, 3328, 3516,	\numexpr . . . . .	2248, 2249, 2250, 2252,
\newcommand . . . . .	4,	3517, 3519, 3853, 4135, 4139,		2258, 2266, 2267, 2268, 2269,
	9, 42, 2419, 5964, 5968, 6444,	4140, 4307, 4595, 4768, 4848,		2270, 2271, 2275, 2277, 2281,
	6447, 6450, 6451, 6452, 6454,	4978, 4980, 5081, 6234, 6235,		2283, 2285, 2287, 2291, 2294,
	6455, 6456, 6457, 6459, 6460,	6244, 6246, 6249, 6374, 6677,		2295, 2297, 2306, 2311, 2328,
	6461, 6462, 6463, 6464, 6473,	6678, 6680, 6705, 6706, 6707,		2342, 2350, 2356, 3877
	6474, 6475, 6476, 6477, 6478,	6708, 6709, 6717, 6718, 6719,	\nun . . . . .	16632
	6871, 7792, 7991, 7996, 7997,	6879, 7100, 7108, 7109, 7110,		
	13797, 13800, 13805	7112, 7236, 7325, 7400, 7415,	<b>O</b>	
\newcount . . . . .	483,	7431, 7784, 7786, 8239, 8240,	\O . . . . .	14470, 14838, 15233
	484, 2424, 4681, 5450, 6142,	8356, 8357, 8362, 8364, 8369,	\o . . . . .	14538, 14906, 15235
	12287, 12777, 12977, 13126,	8370, 8375, 8376, 8897, 9489,	\obeylines . . . . .	11482
	13832	10884, 10951, 11483, 11734,	\OBJ@acroform . . . . .	12632, 12633
\newcounter . . . . .	6466, 7027, 9621,	12221, 12222, 12223, 12224,	\OBJ@Helv . . . . .	12611, 12620, 12936
	13747	12701, 12702, 12703, 12704,	\OBJ@OCG@print . . . . .	8563, 8566,
\newdimen . . . . .	480, 5451, 5452	13040, 13041, 13042, 13043,		8574, 8600, 9639, 9641, 9654,
\newif . . . . .	395, 396, 397, 398,	13317		9658, 9667, 9696
	399, 400, 401, 402, 403, 404,	\nofrenchguillemets . . . . .	\OBJ@OCG@view . . . . .	8548, 8566,
	405, 408, 409, 410, 411, 412,	693, 695		8599, 9623, 9625, 9638, 9658,
	413, 414, 415, 416, 417, 418,	\NoHy@OrgPageRef . . . . .		9695
	419, 420, 421, 422, 423, 424,	5909, 5911,	\OBJ@OCGs . . . . .	8569, 8572, 8578,
	425, 426, 427, 428, 429, 430,	5981, 5983		8583, 8588, 9655, 9657, 9661,
	431, 432, 433, 434, 435, 436,	\NoHy@OrgRef . . . . .		9665, 9671, 9676, 9681
	437, 438, 439, 440, 829, 1007,	5905, 5907, 5977,	\OBJ@pdfdocencoding . . . . .	12609,
	2801, 2822, 3505, 3787, 4357,	5979		12917, 12933
	4711, 5025, 5113, 5446, 5447,	\NoHyper . . . . .	\OBJ@ZaDb . . . . .	12610, 12619, 12926
	5467, 5510, 6483, 6484, 6508,	5913	\OCIRCUMFLEX . . . . .	16475, 16573,
	6825, 10013, 10947	\nohyperpage . . . . .		16574, 16575, 16576, 16577
\newlabel . . . . .	2384, 4818, 6004, 6005,	5959, 7935, 7937,	\ocircumflex . . . . .	16468, 16513, 16514,
	6013, 6039, 6665, 6693	7939		16515, 16516, 16517
\newlabelxx . . . . .	6006, 6007	\nolinkurl . . . . .	\oddsidemargin . . . . .	7638
\newlength . . . . .	14035	4747	\OE . . . . .	14339, 15091
\newline . . . . .	570, 6087	\nolinkurl@ . . . . .	\oe . . . . .	14352, 15093
\newname . . . . .	6514, 6817, 6839, 6863,	4747, 4748	\offinterlineskip . . . . .	6113
	6876, 6885	\NomFancyVerbLineautorefname	\OHORN . . . . .	16476, 16578, 16579,
\newsavebox . . . . .	9551, 10984	. . . . .		16580, 16581, 16582
\newtie . . . . .	14230, 14231, 14614, 14644,	3232	\ohorn . . . . .	3259, 3266, 16469, 16518,
	14663, 14679	\Nomfootnoteautorefname . . . . .		16519, 16520, 16521, 16522
\newtoks . . . . .	90, 5538, 10819, 11056,	3212	\oldb . . . . .	903
	11057	\Nomtheoremautorefname . . . . .	\oldc . . . . .	904
\newwrite . . . . .	6033, 13920, 14002	3236	\oldcontentsline . . . . .	5999, 6002, 6012
\next . . . . .	7549, 7550, 7551, 10433,	\nonumber . . . . .	\oldd . . . . .	905
	10435, 10437	6850, 6853	\oldnewlabel . . . . .	6004, 6009, 6013
\nfss@text . . . . .	8186, 8206, 8223, 8340	\normalfont . . . . .	\OMEGA . . . . .	11980
\NG . . . . .	15075	602, 6909, 6935, 6968	\on@line . . . . .	7686, 7687
\ng . . . . .	15077	\normalsize . . . . .	\openout . . . . .	5991, 6034, 13922, 14004
\noboundary . . . . .	16652	620, 7272, 7343	\OpMode . . . . .	2927, 2930, 2943, 2956,
\nobreak . . . . .	2466, 2474, 2485, 2493,	\NR@getttitle . . . . .		2961, 10522, 10613, 11427
	7084, 7227	7262	\or . . . . .	349,
\nobreakspace . . . . .	674, 8277, 8306,	\null . . . . .		1160, 1161, 1162, 1163, 1164,
	8309	7540, 7548, 8228, 8336		1165, 1166, 1167, 1168, 1182,
\noexpand . . . . .	22,	\number . . . . .		1183, 1184, 1185, 1186, 1187,
	93, 95, 108, 116, 169, 171, 172,	1126, 1130, 1133, 1141,		1188, 1189, 1190, 1205, 1206,
	173, 176, 206, 849, 953, 1292,	1144, 1146, 1451, 1453, 1480,		1207, 1208, 1209, 1210, 1211,
	1725, 1742, 1865, 2237, 2472,	1481, 2183, 2241, 2242, 2243,		1212, 1213, 1298, 1299, 1300,
	2473, 2474, 2477, 2491, 2492,	2244, 2248, 2249, 2250, 2251,		1301, 1302, 1303, 1304, 1305,
	2493, 2496, 3304, 3306, 3308,	2252, 2256, 2257, 2258, 2259,		1306, 1307, 1308, 1309, 1310,
		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,		
		4359, 4376, 5039, 6573, 6574,		
		6577, 6581, 8526, 8529, 9315,		
		9333, 9334, 9349, 9350, 9370,		
		9371, 9387, 9388, 9408, 9409,		
		9425, 9426		
		\numberline . . . . .		
		7265, 7336, 13719,		
		13724		
		\numberwithin . . . . .		
		7789		

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, 5199, 5205, 5210, 5424, 6548, 6549, 6550, 6551, 6557, 6558, 6559, 6560, 7709, 7713, 8151, 8160, 10515, 13840, 13841, 13842, 13843, 13844, 13845, 13846, 13847, 13848, 13849, 13850, 13851, 13852, 13853, 13854, 13855, 13856, 13857, 13858, 13859, 13860, 13861, 13862, 13863, 13864, 13865, 13866, 13867, 13868, 13869, 13870, 13871	\par . 6908, 6933, 6966, 7264, 7292, 7334, 7344, 7542, 7562 \paragraphautorefname . . . 3086, 3104, 3122, 3140, 3158, 3176, 3194, 3227, 3229, 3252, 3270, 8427 \partautorefname 3080, 3098, 3116, 3134, 3152, 3170, 3188, 3218, 3246, 3264, 8421 \partnumberline . . . 13721, 13726 \PassOptionsToPackage . . . 2975, 3032, 3036, 3058, 4039, 4326 \pdf@addtoks 11059, 11078, 11084, 11093, 11100, 11104, 11106, 11108, 11110, 11112, 11120, 11129, 11133, 11135, 11137, 11140, 11149, 11153, 11155, 11157, 11159, 11161, 11163, 11165, 11167, 11169, 11171, 11173, 11175, 11177, 11179, 11181, 11183, 11184, 11185, 11186, 11187, 11188, 11189, 11190, 11191, 11192, 11193, 11198 \pdf@addtoksx 11053, 11063, 11076 \pdf@box . . . 10984, 11016, 11024, 11032, 11033, 11036, 11043 \pdf@defaulttoks . . 10951, 11057, 11058, 11068 \pdf@docset . . . . . 10819 \pdf@endanchor . 8660, 8704, 8711 \pdf@escapestring . . . . . 8486 \PDF@FinishDoc . . . . 2860, 2861, 2935, 2936, 4004, 4057, 4183, 4184, 4288, 4289, 5958, 6123, 6124, 8973, 9184, 9438, 9887, 10014, 10581, 10820, 11690, 11851 \pdf@ifdraftmode . . . . 254, 257, 265, 6278, 8533, 8974, 9083, 12606, 13932 \pdf@linktype 10969, 10973, 11073, 11074 \pdf@rect . . . 10961, 10975, 10988 \PDF@SetupDoc . . . . . . . . . 4003, 4056, 5876, 5877, 5957, 8904, 9185, 9469, 9927, 10015, 10530, 10871, 11571, 11721, 11852 \PDF@SetupDox . . . . . 8904 \pdf@strcmp . . . . . 984 \pdf@toks . . 10951, 10966, 10977, 11056, 11060, 11064 \pdf@type . . 10953, 10957, 10966, 10977, 11051, 11071 \pdfannotlink . . . . . 8638	\pdfbookmark . 2419, 5963, 5964, 13798, 13803, 13808, 13812 \pdfcatalog 6281, 8570, 8919, 8961, 12633 \PDFdefaults . . . . . 11067 \pdfdest . . . . . 8662 \pdfdraftmode . . . . . 258 \pdfendlink . . 8701, 12677, 12770, 12784, 12810, 12834, 12857, 12878 \pdfescapestring . . . . . 13346 \pdfform . . . . . 8640 \PDFForm@@Name 13354, 13357, 13361, 13364 \PDFForm@Check . 12374, 12376, 12875, 12876, 13246, 13250, 13438 \PDFForm@List . . . 12290, 12292, 12781, 12782, 13133, 13138, 13496 \PDFForm@Name . 12670, 12722, 12793, 12871, 13001, 13061, 13149, 13238, 13353 \PDFForm@Push . . 12314, 12316, 12807, 12808, 13165, 13169, 13467 \PDFForm@Radio . 12278, 12282, 12760, 12762, 13102, 13114, 13529 \PDFForm@Reset . . 12355, 12357, 12854, 12855, 13217, 13222, 13631 \PDFForm@Submit 12332, 12335, 12827, 12829, 13189, 13194, 13598 \PDFForm@Text . . 12195, 12197, 12675, 12676, 13010, 13013, 13563 \pdfhorigin . . . . . 9101 \pdfinfo . . . . . 8977 \pdflastform . . . . . 8641 \pdflastlink . . . . . 12590 \pdflastobj 8548, 8563, 8569, 12632, 12917, 12926, 12936 \pdflastxform . 8641, 12552, 12554 \pdflinkmargin . . 8636, 8639, 8644 \pdfliteral . . . . 8620, 8622, 8627 \pdfm@box . . 9551, 12973, 12974, 12975, 13005, 13016, 13093, 13118, 13129, 13140, 13159, 13172, 13187, 13196, 13216, 13224, 13241, 13252 \pdfmark . 6392, 9489, 9498, 9528, 10649, 10669, 10708, 10743, 10760, 10772, 10806, 10843, 10855, 10884, 10893, 10924, 10948, 11206, 11220, 11235,
---	---	--



11247, 11254, 11281, 11312, 11734, 11743, 11774, 12196, 12279, 12291, 12315, 12333, 12356, 12375, 13964	\PrerenderUnicode . . . . . 3681	\ReadBookmarks 4042, 4060, 4197, 4393, 4533, 13896, 13931
\pdfmark@ . . . . . 10948, 10949	\process@me . . . 6064, 6076, 6077, 8907, 8916	\real@setref . . . . . 8182, 8248
\pdfmatch . . . . . 346	\ProcessKeyvalOptions . . . 4043	\realfootnote . . . . . 7199
\pdfminorversion . . . . . 8507	\protect . . . . . 1866, 4798, 7265, 7336, 7400, 7415, 7431, 7547, 7554, 7555, 7699, 7730, 8004, 8056, 8185, 8205, 8211, 8222, 8339, 9195, 9292, 10085, 10160, 11582, 11862, 13737, 14037, 14160, 14161	\Ref . . . . . 8267, 8271, 8276
\PDFNextPage . . . . . 11218	\protected@edef . . . . . 4833, 6230, 6748, 6877, 6897, 8669, 9749, 10214, 10293, 10798	\ref . . . 659, 4189, 4509, 5013, 5905, 5906, 5977, 5978, 7164, 7171, 8286, 11952
\PDFNextPage@ . . . 11218, 11219	\protected@write 2383, 4817, 7527, 7890, 7905, 7913, 7917, 7922, 13736	\ref@one . . . . . 4774, 4775
\pdfobj . . . 8534, 8549, 8564, 12614, 12884, 12918, 12927	\protected@xdef . . . . . 7109, 7202	\rEfLiNK . . . . . 11953, 11954
\PDFOpen . . . . . 11246	\providecommand . . . . . . . . . . 2400, 2401, 3401, 3402, 3405, 3406, 4276, 4489, 4490, 4609, 4752, 5995, 6260, 6285, 6410, 7365, 7366, 7381, 7459, 7987, 7988, 8104, 8412, 8413, 8414, 8415, 8416, 8417, 8418, 8419, 8420, 8421, 8422, 8423, 8424, 8425, 8426, 8427, 8428, 8429, 8430, 8431, 8493, 8646, 8664, 8665, 9183, 9286, 9287, 9546, 9608, 9609, 9610, 10011, 10130, 10152, 10153, 10154, 10606, 10985, 10986, 11338, 11346, 11347, 11348, 11349, 11421, 11433, 11434, 11435, 11436, 11480, 11521, 11522, 11523, 11524, 11679, 11681, 11682, 11795, 11796, 11843, 12573	\refstepcounter 6480, 6487, 6507, 6730, 6753, 6754, 6755, 6764, 6789, 6813, 6821, 6925, 7328
\pdfoptionpdfminorversion 8504	\PushButton . . . . . 5772	\rem@ptetc . . . . . 10733, 10735
\pdfoutline . . . . . 14013	\put@me@back . . . 4973, 4986, 4996	\renewcommand 2375, 7307, 7806, 13812
\pdfpageattr . . . 9017, 9021, 9022, 9032, 9041, 9045, 9046, 9056, 9064, 9067, 9068, 9078	Q	\RequirePackage . . . . . 22, 232, 250, 251, 269, 270, 271, 272, 273, 274, 275, 276, 394, 1243, 1770, 2369, 2785, 2855, 4171, 4172, 4461, 4505, 4537, 4744, 5016, 5947, 6104, 6326, 10012, 11848, 13822
\pdfpageheight 9111, 9120, 9129, 9136	\qaf . . . . . 16628	\RerunFileCheck . . . . . 13824
\pdfpagemresources . . . . . 8597	\quotedblbase 14319, 14556, 16145, 16449	\Reset . . . . . 5781
\pdfpagesattr . . . 8908, 8910, 8912	\quotesinglbase . . . 14329, 14558, 16139, 16451	\reset@font 7475, 7498, 8186, 8206, 8223, 8340
\pdfpagewidth . . . 9107, 9116, 9126, 9133	R	\revtex@checking . . . . . 7452
\PDFPreviousPage . . . . . 11231	\r . . . 874, 14197, 14209, 14221, 14431, 14496, 14605, 14632, 14651, 14673, 14800, 14864, 15147, 15149, 16109, 16111	\Rightarrow . . . . . 8138
\PDFPreviousPage@ 11232, 11234	\ra . . . . . 16616	\rlap . . . . . 8621, 9717
\pdfrefform . . . . . 8642	\raff . . . . . 16638	\rm . . . . . 613
\pdfrefobj . . . 12609, 12610, 12611	\raise 2453, 9261, 9345, 9383, 9421, 11047, 11651, 11931	\rmfamily . . . . . 603
\pdfrefxform . . . . . 8642, 12554		\Roman . . . . . 6226
\pdfstartlink . . . . . 8637, 8638, 8696, 8740, 8778, 8815, 9147, 12676, 12761, 12782, 12808, 12828, 12855, 12876		\roman . . . . . 6227
\pdfstringdef 535, 816, 3690, 3696, 3702, 3708, 3713, 3719, 3726, 3732, 3812, 5371, 5376, 5402, 6090, 6170, 6172, 6658, 7621, 13372, 13730		\romannumeral . . . . . 959, 960
\pdfstringdefDisableCommands . . . . 902, 941, 5961, 6085		\rule . . . . . 7149
\pdfstringdefPostHook . . . 812, 935		
\pdfstringdefPreHook . . . 670, 935, 947, 949, 6084, 6094		S
\pdfstringdefWarn . . . 569, 570, 665, 952, 1733, 1738, 1757, 1761		\sad . . . . . 16620
\pdfTeXrevision . . . 8864, 8872, 8883		\sbox . . . . . 3677, 5801, 9248, 9328, 9365, 9403, 10985, 11024, 11638, 11913, 12549
\pdfTeXversion . . . 8859, 8861, 8864, 8867, 8870, 8871, 8875, 8881, 8882, 12608		\scr@LT@array . . . . . 6763
\pdfvorigin . . . . . 9102		\scriptsize . . . . . 621
\pdfxform . . . . . 8640, 12550		\scriptstyle . . . . . 7465
\peh . . . . . 16645		\scrollmode 1785, 1810, 1820, 1833, 1925, 2057
\penalty . . . 1868, 2446, 4656, 7469, 7492		\scshape . . . . . 609, 6914, 6940
\phantom . . . . . 625		\section . . . . . 8106
\phantomsection 4005, 5965, 7661, 13665, 13716, 14104		\sectionautorefname . . . 3083, 3101, 3119, 3137, 3155, 3173, 3191, 3220, 3249, 3267, 8424
\Preamble . . . . . 11976		\seen . . . . . 16618
		\selectfont . . . . . 589, 4472, 12642
		\set@display@protect . . . . . 4124
		\setbox . . . . . 1869, 1875, 1881, 3429, 3435, 5597, 6112,

7002, 8611, 9175, 9690, 9707,  
13005, 13093, 13129, 13159,  
13187, 13216, 13241

\setcounter ..... 4687

\setkeys ..... 4662, 4707

\setlength ..... 519, 520, 2450,  
9101, 9102, 9107, 9111, 9116,  
9120, 9126, 9129, 9133, 9136,  
10133, 10136, 10140, 10143,  
10469, 14054, 14125

\setpdfinkmargin 3860, 3861, 8636

\settowidth . 12214, 12694, 13033

\SetupKeyvalOptions . 2504, 4033

\sffamily ..... 604

\shadda ..... 16643

\sheen ..... 16619

\shortciteN ..... 7590

\SK@ ..... 8398

\SK@@ref ..... 8398

\SK@ref ..... 8395

\skip@ 1883, 1957, 1958, 1961, 1963,  
2469, 2475, 2488, 2494

\slide@cline 8124, 8137, 8145, 8155,  
8163

\Slide@contents ..... 8129

\slide@contents ..... 8122

\slide@heading ..... 8000

\slide@subheading ..... 8053

\slide@undottedcline ..... 8115

\slidenumberline 8116, 8124, 8138,  
8146, 8156, 8164

\SliTeX ..... 581

\slshape ..... 610

\small ..... 622

\smash ..... 2447

\spacefactor 2426, 2432, 7084, 7093,  
7227, 7229, 8649, 8657

\special@paper ..... 4006

\SpecialDvipdfmxOutlineOpen .  
.. 2894, 2896, 4361, 4368

\splitmaxdepth ..... 7143

\splittopskip ..... 7142

\SS ..... 14554, 16448

\ss .... 3130, 14484, 14569, 14852

\st@rredfalse ..... 6796, 6805

\stepcounter .. 6497, 6678, 6747,  
6896, 7085, 7201, 9733, 13733

\stockheight ... 4010, 9135, 9136,  
10000, 10001, 10139, 10140,  
11410, 11411

\stockwidth ... 9132, 9133, 9999,  
10001, 10142, 10143, 11409,  
11411

\stop@hyper ..... 5928

\StringEncodingConvertTest 790,  
800

\strip@period ..... 2388

\strip@prefix 62, 2381, 6066, 6596,  
6880, 13960, 13968, 13983

\strip@pt ..... 524, 531,  
4022, 9107, 9111, 9116, 9120,  
10472, 13461, 13524, 13552,  
13591, 13640

\strip@pt@and@otherjunk 10668,  
10700, 10735

\strutbox ..... 7143

\sub@label ..... 2375

\subeqnarray ..... 6856, 6858

\subequations ..... 6894, 6895

\subfig@oldlabel ..... 2377

\Submit ..... 5778

\SubmitObject ..... 12830

\SubmitPObject ..... 12830

\subparagraphautorefname 3087,  
3105, 3123, 3141, 3159, 3177,  
3195, 3228, 3230, 3253, 3271,  
8428

\subpdfbookmark ..... 13800

\subsection ..... 11675

\subsectionautorefname ... 3084,  
3102, 3120, 3138, 3156, 3174,  
3192, 3225, 3250, 3268, 8425

\subsubsectionautorefname 3085,  
3103, 3121, 3139, 3157, 3175,  
3193, 3226, 3251, 3269, 8426

\sukun ..... 16644

\surd ..... 8146

## T

\T ..... 16608

\t .... 14229, 14624, 14643, 14662,  
14678

\T@nameref ..... 4526

\T@pageref .... 4496, 4513, 8284

\T@ref ..... 4491, 4510

\T@temp ..... 7453, 7456

\Ta ..... 16622

\taa ..... 16609

\tableautorefname ... 3079, 3097,  
3115, 3133, 3151, 3169, 3187,  
3217, 3245, 3263, 8420

\tagform@ ..... 7760

\tatweel ..... 16626

\tch eh ..... 16646

\temp@online ..... 7686, 7689

\TeX ... 571, 572, 579, 581, 11979,  
11981, 11983

\texorpdfstring ..... 928, 5962

\textacute .. 14193, 14205, 14217,  
14397, 14628, 14647, 14765

\textacutedbl ..... 15297

\textaleph ..... 16263

\textAlpha ... 1160, 15317, 15333

\textalpha ... 1160, 15386, 15396

\textampersand 563, 14264, 14695

\textangstrom ..... 16259

\textasciicute ..... 14766

\textasciibreve .... 14240, 14636,  
14655, 15286

\textasciicaron .... 14198, 14210,  
14222, 14242, 14633, 14652,  
15284

\textasciicircum ... 14194, 14206,  
14218, 14278, 14629, 14648,  
14711

\textasciidieresis .. 14196, 14208,  
14220, 14374, 14631, 14650,  
14742

\textasciigrave 14192, 14204, 14216,  
14283, 14627, 14646, 14715

\textasciimacron .. 14201, 14213,  
14225, 14387, 14638, 14657,  
14755

\textasciitilde . 564, 4572, 14293,  
14726

\textasteriskcentered .... 14703

\textbackslash ... 559, 724, 2363,  
14276, 14709

\textbaht ..... 15971

\textbar ..... 14289, 14722

\textbardbl ..... 16133

\textBeta ..... 1161, 15335

\textbeta .... 1161, 14569, 15398

\textbf ..... 596

\textbigcircle 14645, 14664, 16433

\textblank ..... 16281

\textbraceleft .. 557, 2364, 14287,  
14720

\textbraceright 558, 2364, 14291,  
14724

\textbrokenbar .... 14370, 14738

\textbullet ..... 14295, 16151

\textcdot ..... 14568, 16461

\textcedilla . 14200, 14212, 14224,  
14405, 14635, 14654, 14774

\textcelsius ..... 14555, 16243

\textcent ..... 14362, 14730

\textChi ..... 1210, 15375

\textchi ..... 1210, 15440

\textcircled . 14626, 14645, 14664,  
16285, 16287, 16289, 16291,  
16293, 16295, 16297, 16299,  
16301, 16303, 16305, 16307,  
16309, 16311, 16313, 16315,  
16317, 16319, 16321, 16323,  
16325, 16327, 16329, 16331,  
16333, 16335, 16337, 16339,  
16341, 16343, 16345, 16347,  
16349, 16351, 16353, 16355,  
16357, 16359, 16361, 16363,  
16365, 16367, 16369, 16371,

16373, 16375, 16377, 16379, 16381, 16383, 16385, 16387, 16389, 16391, 16393, 16395, 16397, 16399, 16401, 16403, 16405, 16407, 16409, 16411, 16413, 16415, 16417, 16419, 16421, 16423, 16425, 16427, 16429	\textfi . . . . . 761, 14335, 16447	\textMu . . . . . 1185, 15355
\textcircledP . . . . . 16247	\textflorin . . . . . 14307, 15183	\textmu . . . . . 1185, 14399, 14768
\textcircumflex . . . . . 14244	\textflq . . . . . 649, 14562, 16455	\textmugreek . . . . . 15418
\textcolonmonetary . . . . . 16225	\textflqq . . . . . 647, 14560, 16453	\textmultiply 14468, 14565, 14836, 16458
\textcolor 628, 12604, 12647, 12650, 12945	\textfourinferior . . . . . 16209	\textmusicalnote . . . . . 16435
\textcompwordmark . . . . . 16127	\textfoursuperior . . . . . 16177	\textnaira . . . . . 16229
\textcopyright . . . . . 14376, 14744	\textfractionsolidus 14309, 16167	\textnapostrophe . . . . . 15073
\textCR . . . . . 14238, 14685	\textfrq . . . . . 650, 14563, 16456	\textneg . . . . . 14564, 16457
\textcurrency . . . . . 14366, 14734	\textfrqq . . . . . 648, 14561, 16454	\textnewtie . 14644, 14663, 15305
\textdagger . . . . . 14297, 16147	\textGamma . . . . . 1162, 15337	\textnineinferior . . . . . 16219
\textdaggerdbl . . . . . 14299, 16149	\textgamma . . . . . 1162, 15400	\textninesuperior . . . . . 16187
\textdegree . 14389, 14555, 14757	\textglq . . . . . 645, 14558, 16451	\textnormal . . . . . 592
\textDelta . . . . . 1163, 15339	\textglqq . . . . . 643, 14556, 16449	\textnsuperior . . . . . 16199
\textdelta . . . . . 1163, 15402	\textgravedbl . . . . . 15299	\textNu . . . . . 1186, 15357
\textDigammagreek . . . . . 15461	\textgreater . . . . . 14274, 14707	\textnu . . . . . 1186, 15420
\textdigammagreek . . . . . 15463	\textgrq . . . . . 646, 14559, 16452	\textnumbersign 560, 14258, 14689
\textdiscount . . . . . 16173	\textgrqq . . . . . 644, 14557, 16450	\textnumeralsigngreek 1137, 15313
\textdiv . . . . . 14566, 16459	\textGslash . . . . . 15202	\textnumeralsignlowergreek 1154, 1176, 1199, 15315
\textdivide . . 14536, 14566, 14904, 16459	\textgslash . . . . . 15204	\textnumero . . . . . 16245
\textdivorced . . . . . 16439	\textguarani . . . . . 16241	\textogonek . 14250, 14640, 14659, 15292
\textdollar . . . . . 561, 14260, 14691	\textHslash . . . . . 14998	\textohm . . . . . 16255
\textdong . . . . . 16235	\textHT . . . . . 14234, 14681	\textOmega . . 1212, 15329, 15379
\textdotaccent 14199, 14211, 14223, 14246, 14634, 14653, 15288	\texthungarumlaut 14248, 14639, 14658, 15296, 15297	\textomega . . 1212, 15444, 15455
\textdotbelow 14203, 14215, 14227, 14270, 14642, 14661, 15307	\textinterrobang . . . . . 16165	\textOmicron . 1188, 15325, 15361
\textdoublegrave . . 14637, 14656, 15303	\textIota 1182, 15323, 15349, 15382	\textomicron . 1188, 15424, 15450
\textdownarrow . . . . . 16271	\textiota 1182, 15392, 15412, 15446	\textonehalf . . . . . 14415, 14784
\texteightinferior . . . . . 16217	\textIotadieresis . . . 15331, 15381	\textoneinferior . . . . . 16203
\texteightsuperior . . . . . 16185	\textit . . . . . 598	\textonequarter . . . 14413, 14782
\textellipsis 567, 568, 14301, 16153	\textKappa . . . . . 1183, 15351	\textonesuperior . . 14407, 14776
\textemdash . . 758, 14303, 16131	\textkappa . . . . . 1183, 15414	\textopenbullet . . . . . 16431
\textendash . . . 759, 14305, 16129	\textKoppagreek . . . 1190, 15465	\textordfeminine . . 14378, 14746
\textEpsilon . 1164, 15319, 15341	\textkoppagreek . . . 1190, 15467	\textordmasculine . 14409, 14778
\textepsilon 575, 578, 1164, 15388, 15404	\textkra . . . . . 15039	\textparagraph 566, 14401, 14770
\textequalssuperior . . . . . 16193	\textLambda . . . . . 1184, 15353	\textparenleft . . 766, 767, 14266, 14699
\textestimated . . . . . 16261	\textlambda . . . . . 1184, 15416	\textparenleftinferior . . . . . 16221
\textEta . . . . . 1167, 15321, 15345	\textlangle . . . . . 16277	\textparenleftsuperior . . . 16195
\texteta . . . . . 1167, 15390, 15408	\textlatin . . . . . 631, 6584	\textparenright . . . 14268, 14701
\texteuro . . . . . 14358, 16237	\textlbrackdbl . . . . . 16441	\textparenrightinferior . . . 16223
\textexclamdown 762, 1071, 14360, 14728	\textleftarrow . . . . . 16265	\textparenrightsuperior . . 16197
\textfi . . . . . 760, 14333, 16445	\textless . . . . . 14272, 14705	\textpercent . . . 562, 14262, 14693
\TextField . . . . . 5763	\textLF . . . . . 14236, 14683	\textperiodcentered 14403, 14568, 14772, 16461
\textfiveinferior . . . . . 16211	\textlira . . . . . 16227	\textpertenthousand . . . . . 16157
\textfivesuperior . . . . . 16179	\textlnot . . . . . 14383, 14751	\textperthousand . . 14317, 16155
	\textlogicalnot . . . . 14382, 14564, 14750, 16457	\textpeseta . . . . . 16231
	\textlongs . . . . . 15181, 16113	\textpeso . . . . . 16239
	\textlquill . . . . . 16169	\textPhi . . . . . 1209, 15373
	\textmacronbelow . 14202, 14214, 14226, 14281, 14641, 14660, 15309	\textphi . . . . . 1209, 15438
	\textmarried . . . . . 16437	\textPi . . . . . 1189, 15363
	\textmd . . . . . 597	\textpi . . . . . 1189, 15426
	\textmho . . . . . 16257	\textplussign . . . 14391, 14567, 14759, 16460
	\textminus . . . . . 14315, 16273	\textplussuperior . . . . . 16189
	\textminussuperior . . . . . 16191	

<code>\textpm</code> . . . . .	14567, 16460	<code>\texttrademark</code> . . .	14331, 16253	<code>\theHslidesubsection</code> .	7997, 8085, 8089
<code>\textPsi</code> . . . . .	1211, 15377	<code>\textTslash</code> . . . . .	15131	<code>\theHsubequation</code> . . . . .	6871
<code>\textpsi</code> . . . . .	1211, 15442	<code>\texttslash</code> . . . . .	15133	<code>\theHsubparagraph</code> . . . . .	6462
<code>\textquestiondown</code> . . .	763, 1072, 14419, 14788	<code>\texttt</code> . . . . .	595	<code>\theHsubsection</code> . . . . .	6459, 6460
<code>\textquotedbl</code> . . . . .	14256, 14687	<code>\texttwoinferior</code> . . . . .	16205	<code>\theHsubsubsection</code> . .	6460, 6461
<code>\textquotedblleft</code> . .	14321, 14557, 16141, 16450	<code>\texttwosuperior</code> . .	14393, 14761	<code>\theHtable</code> . . . . .	6452, 6456
<code>\textquotedblright</code> .	14323, 16143	<code>\textunderscore</code> .	565, 4566, 4567, 4569, 14280, 14713	<code>\theHtheorem</code> . . . . .	6463
<code>\textquoteleft</code> 14325, 14559, 16135, 16452		<code>\textup</code> . . . . .	601	<code>\theHthm</code> . . . . .	6464
<code>\textquoteright</code> . . .	14327, 16137	<code>\textuparrow</code> . . . . .	16267	<code>\theHy@tempcnt</code> 4682, 4690, 4697	
<code>\textquotesingle</code> . . . . .	14697	<code>\textUpsilon</code> .	1208, 15327, 15371, 15384	<code>\thelisting</code> . . . . .	3405
<code>\texttriangle</code> . . . . .	16279	<code>\textupsilon</code> . .	1208, 15436, 15448, 15453	<code>\thelstlisting</code> . . . . .	3401
<code>\texttrbrackdbl</code> . . . . .	16443	<code>\textupsilonacute</code> . .	15394, 15452	<code>\thempfn</code> . .	7033, 7110, 7202, 7214
<code>\textrecipe</code> . . . . .	16249	<code>\textvarsigma</code> . . . . .	15430	<code>\theoremautorefname</code> .	3089, 3107, 3125, 3143, 3161, 3179, 3197, 3235, 3255, 3273, 8430
<code>\textreferencemark</code> . . . . .	16163	<code>\textvisiblespace</code> . . . . .	16283	<code>\thepage</code> .	2386, 4800, 6132, 6155, 6658, 6666, 6693, 7478, 7501, 7530, 7621, 7699, 7730, 7891, 7908, 7914, 7918, 7925, 8188, 8208, 8225, 8342
<code>\textregistered</code> . . . .	14385, 14753	<code>\textwon</code> . . . . .	16233	<code>\theslideheading</code> . . . . .	8017
<code>\textRho</code> . . . . .	1205, 15365	<code>\textXi</code> . . . . .	1187, 15359	<code>\theslidesection</code> 8005, 8012, 8020, 8026, 8028, 8030, 8036, 8046	
<code>\textrho</code> . . . . .	1205, 15428	<code>\textxi</code> . . . . .	1187, 15422	<code>\theslidesubheading</code> . .	8018, 8069
<code>\textrightarrow</code> . . . . .	16269	<code>\textyen</code> . . . . .	14368, 14736	<code>\theslidesubsection</code> . .	8057, 8064, 8071, 8077, 8079, 8081, 8087, 8097
<code>\textring</code> . . .	14197, 14209, 14221, 14252, 14632, 14651, 15290	<code>\textzeroinferior</code> . . . . .	16201	<code>\This@name</code> 6491, 6492, 6510, 6511	
<code>\textrm</code> . . . . .	593	<code>\textzerosuperior</code> . . . . .	16175	<code>\thispdfpagelabel</code> . . . . .	6137
<code>\textrquill</code> . . . . .	16171	<code>\textZeta</code> . . . . .	1166, 15343	<code>\ThisShouldNotHappen</code> . .	13324
<code>\textSampi</code> . . . . .	1213, 15469	<code>\textzeta</code> . . . . .	1166, 15406	<code>\thm@headfont</code> . . . . .	6914, 6940
<code>\textsampi</code> . . . . .	1213, 15471	<code>\TH</code> . . . . .	14482, 14850	<code>\thm@headpunct</code> 6916, 6942, 6973	
<code>\textsc</code> . . . . .	599	<code>\th</code> . . . . .	14550, 14918	<code>\thm@headsep</code> . .	6917, 6943, 6974
<code>\textsection</code> . . . . .	14372, 14740	<code>\thaa</code> . . . . .	16610	<code>\thm@indent</code> . . . . .	6913, 6939
<code>\textservicemark</code> . . . . .	16251	<code>\thebookmark@seq@number</code> 13740		<code>\thm@notefont</code> . .	6915, 6941, 6972
<code>\textseveninferior</code> . . . . .	16215	<code>\theequation</code> . .	6513, 6816, 6838, 6862, 6898	<code>\thm@postskip</code> . .	6921, 6947, 6978
<code>\textsevensuperior</code> . . . . .	16183	<code>\thefootnote</code> . . . . .	7044, 7221	<code>\thm@preskip</code> . .	6920, 6946, 6977
<code>\textsf</code> . . . . .	594, 12647, 12650	<code>\theHchapter</code> . .	6454, 6455, 6456, 6457, 6542	<code>\thm@space@setup</code> . . .	6918, 6944, 6975
<code>\textSigma</code> . . . . .	1206, 15367	<code>\theHenumi</code> . . . . .	6473	<code>\thm@swap</code> . . . . .	6912, 6938, 6971
<code>\textsigma</code> . . . . .	1206, 15432	<code>\theHenumii</code> . . . . .	6474	<code>\thmheadnl</code> . . . . .	6911, 6937, 6970
<code>\textsixinferior</code> . . . . .	16213	<code>\theHenumiii</code> . . . . .	6475	<code>\tiny</code> . . . . .	623
<code>\textsixsuperior</code> . . . . .	16181	<code>\theHenumiv</code> . . . . .	6476	<code>\title</code> . . . . .	6043, 6045
<code>\textsl</code> . . . . .	600	<code>\theHequation</code> .	6444, 6514, 6817, 6839, 6863, 6871, 6898, 6902	<code>\TMP@EnsureCode</code> . .	4403, 4410, 4411, 4412, 4413, 4414, 4415, 4416, 4417, 4418, 4419, 4420, 4421, 4422, 4423, 4424, 4425, 4426, 4427, 4428, 4429, 4430, 4431, 4432, 4433, 4434, 4435, 4436
<code>\textsterling</code> . . . . .	14364, 14732	<code>\theHfigure</code> . . . . .	6451, 6455	<code>\tocappendix</code> . . . . .	1621
<code>\textStigma</code> . . . . .	1165, 15457	<code>\theHHfootnote</code> . . . . .	6477, 6479	<code>\tocchapter</code> . . . . .	1620
<code>\textstigma</code> . . . . .	1165, 15459	<code>\theHHmpfootnote</code> . . . . .	6479	<code>\toclevel@chapter</code> . . . . .	3392
<code>\textsurd</code> . . . . .	16275	<code>\theHItem</code> 6467, 6473, 6474, 6475, 6476		<code>\toclevel@figure</code> . . . . .	3398
<code>\TextSymbolUnavailable</code> .	14228, 14229, 14231	<code>\theHlisting</code> . . . . .	3405	<code>\toclevel@listing</code> . . . . .	3406
<code>\textTau</code> . . . . .	1207, 15369	<code>\theHlstlisting</code> . . . . .	3401	<code>\toclevel@lstlisting</code> . . . . .	3402
<code>\texttau</code> . . . . .	1207, 15434	<code>\theHmpfootnote</code> . . . . .	6478		
<code>\textTheta</code> . . . . .	1168, 15347	<code>\theHparagraph</code> . . . . .	6461, 6462		
<code>\texttheta</code> . . . . .	1168, 15410	<code>\theHparentequation</code> .	6897, 6902		
<code>\textthreeinferior</code> . . . . .	16207	<code>\theHpart</code> . . . . .	6447		
<code>\textthreequarters</code> .	14417, 14786	<code>\theHsection</code> . .	6444, 6450, 6457, 6459, 6463, 6464, 6541		
<code>\textthreesuperior</code> .	14395, 14763	<code>\theHslide</code> . . . . .	7991		
<code>\texttie</code> . . . . .	14643, 14662, 15311	<code>\theHslidesection</code> 7996, 7998, 8034, 8038			
<code>\texttilde</code> . . . . .	4119, 14195, 14207, 14219, 14254, 14630, 14649, 15294				
<code>\texttildelow</code> . . . . .	15301				
<code>\texttimes</code> . . . . .	14565, 16458				

<code>\toclevel@paragraph</code> . . . . .	3396	<code>\UHORN</code> . . .	16477, 16588, 16589, 16590, 16591, 16592	<code>\VTeXInitMediaSize</code>	10130, 10147
<code>\toclevel@part</code> . . . . .	3388, 3390	<code>\uhorn</code> . .	3259, 3266, 16470, 16528, 16529, 16530, 16531, 16532	<code>\VTeXOS</code> . . .	10510, 10511, 10512, 10514
<code>\toclevel@section</code> . . . . .	3393	<code>\UnDef</code> . . . . .	11953	<code>\VTeXversion</code> .	6287, 6290, 6293, 10502, 10506
<code>\toclevel@subfigure</code> . . . . .	2400	<code>\unhbox</code>	7016, 10986, 13016, 13140, 13172, 13196, 13224, 13252	<b>W</b>	
<code>\toclevel@subparagraph</code> . . .	3397	<code>\unhcopy</code> . . . . .	13118	<code>\waw</code> . . . . .	16634
<code>\toclevel@subsection</code> . . . .	3394	<code>\unichar</code> . . . . .	2232	<code>\wawhamza</code> . . . . .	16603
<code>\toclevel@subsubsection</code> . . .	3395	<code>\Unicode</code> . . . . .	1333	<code>\wd</code> . . . . .	9333, 9349, 9370, 9387, 9408, 9425, 12974
<code>\toclevel@subtable</code> . . . . .	2401	<code>\unrestored@protected@xdef</code>	7033, 7044, 7164, 7171, 7214, 7221	<code>\write</code>	4637, 5992, 5994, 6401, 6409, 6664, 6692, 7401, 7416, 7432, 7442, 7472, 7495, 7521, 7551, 12572, 12596, 13924, 14006
<code>\toclevel@table</code> . . . . .	3399	<code>\unskip</code> . .	6908, 6933, 6966, 7463, 8274, 8278, 8282, 8287	<code>\WriteBookmarks</code> . . . . .	4061, 4198, 4372, 4394, 13673, 13917, 13950, 13951, 13993, 13999
<code>\tocparagraph</code> . . . . .	1625	<code>\upshape</code> . .	611, 6915, 6941, 6972	<code>\wwwbrowser</code> . . .	9287, 9372, 9389
<code>\tocpart</code> . . . . .	1619	<code>\Url</code> . . . . .	4746	<b>X</b>	
<code>\tocsection</code> . . . . .	1622	<code>\url</code> . . . . .	4745, 4749	<code>\x</code> . . . . .	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, 4306, 4309, 4636, 4642, 4835, 4846, 4850, 4853, 4928, 4929, 4930, 4942, 4953, 4954, 4955, 4956, 4959, 4960, 5034, 5048, 5073, 5077, 5080, 5090, 6065, 6066, 6071, 6676, 6683, 6716, 6723, 6764, 6773, 6775, 6787, 7975, 7976, 8198, 8201, 8236, 8237, 8238, 8240, 8242, 8596, 8604, 8892, 8893, 8896, 8898, 8901, 9558, 9559, 9560, 9562, 9563, 9564, 9566, 9567, 9568, 9570, 9571, 9572, 9574, 9575, 9576, 9578, 9579, 9580, 9582, 9583, 9584, 9586, 9587, 9589, 9595, 9604, 10610, 10615, 10619, 10990, 10993, 10999, 11004, 11146, 11147, 12220, 12240, 12700, 12720, 13039, 13059, 14061, 14063, 14132, 14134
<code>\tocsubsection</code> . . . . .	1623	<code>\url@</code> . . . . .	4749, 4750		
<code>\tocsubsubsection</code> . . . . .	1624	<code>\use@file</code> . . . . .	4913, 4915, 4922		
<code>\toks</code> . . . . .	244, 245, 947, 948, 949, 4837, 4839, 4841, 4845, 4850, 8196, 8197, 8199, 14057, 14062, 14128, 14133	<code>\usefont</code> . . . . .	590		
<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, 4305, 4307, 4952, 4957, 4961, 4965, 6232, 6234, 6320, 6322, 6372, 6384, 6675, 6679, 6715, 6720, 7761, 7762, 7968, 7973, 7975, 7978, 14056, 14062, 14127, 14133	<code>\utf@viii@undeferr</code> . . . . .	552		
<code>\topmargin</code> . . . . .	7633	<code>\UTFviii@four@octets</code>	2228, 2237		
<code>\trivlist</code> . . . . .	6910, 6936, 6969	<code>\UTFviii@three@octets</code> . . . .	2227		
<code>\tryhyper@link</code> . . . . .	4775, 4777	<code>\UTFviii@two@octets</code> . . . .	2226		
<code>\ttfamily</code> . . . . .	605	<b>V</b>			
<code>\ttl@b</code> . . . . .	6726, 6731	<code>\v</code> . . . . .	14198, 14210, 14222, 14341, 14346, 14354, 14356, 14609, 14633, 14652, 14674, 14946, 14948, 14950, 14952, 14974, 14976, 15049, 15051, 15069, 15071, 15103, 15105, 15119, 15121, 15127, 15129, 15177, 15179, 15185, 15187, 15189, 15191, 15192, 15194, 15196, 15198, 15200, 15206, 15208, 15210, 15212, 15218, 15219, 15262, 15264		
<code>\ttl@gobblecontents</code> . . . . .	6735	<code>\V@@@footnotetext</code> . . . . .	7151		
<code>\ttl@Hy@PatchSaveWrite</code> . .	6709, 6713	<code>\V@@footnotetext</code> . . . . .	7137		
<code>\ttl@Hy@refstepcounter</code> . . .	6725	<code>\value</code>	7417, 7443, 7637, 7786, 9734, 9739		
<code>\ttl@Hy@saveanchor</code> . .	6704, 6728	<code>\vbox</code>	5796, 5797, 5798, 5799, 6112, 7631		
<code>\ttl@Hy@SavedCurrentHref</code>	6708, 6719	<code>\vfill</code> . . . . .	5796, 5797, 5798, 5799		
<code>\ttl@Hy@steplink</code> . . . . .	6702	<code>\voffset</code> . . . . .	7632		
<code>\ttl@savewrite</code> . . . . .	6715, 6717	<code>\vpageref</code> . . . . .	8287		
<code>\tw@</code> . . . . .	14057, 14062, 14128, 14133	<code>\vphantom</code> . . . . .	626		
<code>\typeout</code> . . . . .	5, 6, 7, 19, 26, 27, 36, 131, 155, 158, 159, 160, 4982, 14154, 16655	<code>\Vr@f</code> . . . . .	8273		
<b>U</b>		<code>\vr@f</code> . . . . .	8281		
<code>\U</code> . . . . .	14599, 15504, 15527, 15592, 15669, 15859, 15861, 15883, 15885, 15895, 15897	<code>\vref@pagenum</code> . . . . .	6739		
<code>\u</code> . . . . .	14598, 14636, 14655, 14675, 14926, 14928, 14962, 14964, 14982, 14984, 15012, 15014, 15015, 15083, 15085, 15143, 15145	<code>\vref@space</code> . . . .	8274, 8277, 8282		
		<code>\vskip</code> . . . . .	2475, 2476		
		<code>\vss</code> . . . . .	7646		
		<code>\vtex@trans@special</code>	10440, 10442, 10445, 10449, 10453, 10457, 10459, 10461, 10465, 10471, 10472, 10475		

