

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

Sebastian Rahtz

Email: `sebastian.rahtz at oucs.ox.ac.uk`

Heiko Oberdiek

Email: `heiko.oberdiek at gmail.com`

2011/10/01 v6.82j

## 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 . . . . .	14
4.5	Switches . . . . .	15
<b>5</b>	<b>Common help macros</b>	<b>17</b>
5.1	Macros for recursions . . . . .	17
5.2	Babel's protection of shorthand characters . . . . .	17
5.3	Coordinate transformations . . . . .	17
<b>6</b>	<b>Dealing with PDF strings</b>	<b>19</b>
6.1	Description of PDF strings . . . . .	19
6.2	Definition of <code>\pdfstringdef</code> . . . . .	19
6.2.1	Preprocessing . . . . .	20
6.2.2	Expansion . . . . .	25
6.2.3	Postprocessing . . . . .	26
6.3	Encodings . . . . .	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>76</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>88</b>
<b>15</b>	<b>PDF-specific options</b>	<b>90</b>
15.1	Package <code>xspace</code> support . . . . .	100
15.2	Option <code>draft</code> . . . . .	101
15.3	PDF/A . . . . .	101
15.4	Patch for babel's <code>\texttilde</code> . . . . .	102
15.4.1	Driver loading . . . . .	104
15.4.2	Bookmarks . . . . .	107
<b>16</b>	<b>User hypertext macros</b>	<b>110</b>
<b>17</b>	<b>Underlying basic hypertext macros</b>	<b>116</b>
<b>18</b>	<b>Compatibility with the <i>LT<sub>ε</sub>X2html</i> package</b>	<b>120</b>
<b>19</b>	<b>Forms creation</b>	<b>120</b>
19.1	Field flags . . . . .	120
19.1.1	Declarations of field flags . . . . .	122
19.1.2	Set submit flags . . . . .	124
19.1.3	Set annot flags in fields . . . . .	125
19.1.4	Pushbutton field . . . . .	125
19.1.5	Check box field . . . . .	126
19.1.6	Radio button field . . . . .	126
19.1.7	Text fields . . . . .	126
19.1.8	Choice fields . . . . .	127
19.2	Choice field . . . . .	127
19.3	Forms . . . . .	129
<b>20</b>	<b>Setup</b>	<b>136</b>

<b>21 Low-level utility macros</b>	<b>137</b>
<b>22 Localized nullifying of package</b>	<b>138</b>
<b>23 Package nohyperref</b>	<b>139</b>
<b>24 The Mangling Of Aux and Toc Files</b>	<b>140</b>
<b>25 Title strings</b>	<b>141</b>
<b>26 Page numbers</b>	<b>142</b>
<b>27 Every page</b>	<b>142</b>
27.1 PDF/PageLabels . . . . .	143
27.1.1 pdfTeX and VTeX . . . . .	147
27.1.2 xetex . . . . .	148
27.1.3 pdfmarkbase, dvipdfm, xetex . . . . .	149
<b>28 Automated L<sup>A</sup>T<sub>E</sub>X hypertext cross-references</b>	<b>150</b>
<b>29 Package lastpage support</b>	<b>155</b>
<b>30 Package ifthen support</b>	<b>156</b>
<b>31 Package titlesec and titletoc support</b>	<b>156</b>
<b>32 Package varioref support</b>	<b>157</b>
<b>33 Package longtable support</b>	<b>158</b>
<b>34 Equations</b>	<b>158</b>
<b>35 Footnotes</b>	<b>163</b>
<b>36 Float captions</b>	<b>167</b>
<b>37 Bibliographic references</b>	<b>170</b>
37.1 Package harvard . . . . .	173
37.2 Package chicago . . . . .	174
<b>38 Page numbers</b>	<b>175</b>
<b>39 Table of contents</b>	<b>177</b>
<b>40 New counters</b>	<b>179</b>
<b>41 AMSL<sup>A</sup>T<sub>E</sub>X compatibility</b>	<b>179</b>
41.1 \@addtoreset and \numberwithin patches . . . . .	180
<b>42 Included figures</b>	<b>181</b>
<b>43 hyperindex entries</b>	<b>181</b>
<b>44 Compatibility with foiltex</b>	<b>184</b>
<b>45 Compatibility with seminar slide package</b>	<b>184</b>

<b>46 Configuration files</b>	<b>193</b>
46.1 PS/PDF strings	193
46.2 pdftex	194
46.2.1 Fix for problem with different nesting levels	207
46.3 hypertext	207
46.4 dviwindo	210
46.5 dvipdfm/xetex dvi to PDF converter	215
46.6 VTeX typesetting system	224
46.7 Fix for Adobe bug number 466320	237
46.8 Direct pdfmark support	237
46.9 Rokicki's dvips	251
46.10 VTeX's vtexpdfmark driver	253
46.11 Textures	254
46.12 dvipsone	258
46.13 TeX4ht	262
<b>47 Driver-specific form support</b>	<b>264</b>
47.1 pdfmarks	264
47.2 HyperTeX	271
47.3 TeX4ht	272
47.4 pdfTeX	274
47.5 dvipdfm, xetex	281
47.6 Common forms part	288
<b>48 Bookmarks in the PDF file</b>	<b>295</b>
48.1 Bookmarks	296
48.1.1 Rerun warning	299
48.1.2 Driver stuff	299
<b>49 Compatibility with koma-script classes</b>	<b>305</b>
<b>50 Encoding definition files for encodings of PDF strings</b>	<b>306</b>
50.1 PD1 encoding	306
50.2 PU encoding	314
50.2.1 NFSS2 accents	314
50.2.2 Basic Latin: U+0000 to U+007F	316
50.2.3 Latin-1 Supplement: U+0080 to U+00FF	317
50.2.4 Latin Extended-A: U+0080 to U+017F	321
50.2.5 Latin Extended-B: U+0180 to U+024F	325
50.2.6 Spacing Modifier Letters: U+02B0 to U+02FF	327
50.2.7 Combining Diacritical Marks: U+0300 to U+036F	328
50.2.8 Greek and Coptic: U+0370 to U+03FF	328
50.2.9 Cyrillic: U+0400 to U+04FF	331
50.2.10 Thai: U+0E00 to U+0E7F	341
50.2.11 Latin Extended Additional: U+1E00 to U+1EFF	341
50.2.12 General Punctuation: U+2000 to U+206F	344
50.2.13 Superscripts and Subscripts: U+2070 to U+209F	345
50.2.14 Currency Symbols: U+20A0 to U+20CF	346
50.2.15 Letterlike Symbols: U+2100 to U+214F	346
50.2.16 Arrows: U+2190 to U+21FF	346
50.2.17 Mathematical Operators: U+2200 to U+22FF	347
50.2.18 Miscellaneous Technical: U+2300 to U+23FF	347
50.2.19 Control Pictures: U+2400 to U+243F	347

50.2.20 Enclosed Alphanumerics: U+2460 to U+24FF . . . . .	347
50.2.21 Box Drawing: U+2500 to U+257F . . . . .	350
50.2.22 Miscellaneous Symbols: U+2600 to U+26FF . . . . .	350
50.2.23 Miscellaneous Mathematical Symbols-A: U+27C0 to U+27EF . . . . .	350
50.2.24 Alphabetic Presentation Forms: U+FB00 to U+FB4F . . . . .	350
50.2.25 Miscellaneous . . . . .	350
50.2.26 Aliases . . . . .	350
50.3 PU encoding, additions for VnT <sub>E</sub> X . . . . .	350
50.4 PU encoding, additions for Arabi . . . . .	353
<b>51 End of file hycheck.tex</b>	<b>354</b>
<b>52 Index</b>	<b>355</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  $\LaTeX$  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  $\LaTeX$ '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!

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

```

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

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

255 \RequirePackage{infwarerr}[2010/04/08]
256 \RequirePackage{keyval}[1997/11/10]
257 \RequirePackage{kvsetkeys}[2007/09/29]
258 \RequirePackage{pdfescape}[2007/11/11]
259 \RequirePackage{ifvtex}
260 \RequirePackage{ifxetex}[2006/08/21]
261 \RequirePackage{hycolor}
262 \RequirePackage{letltxmacro}[2008/06/13]
263 \def\Hy@Error{\@PackageError{hyperref}}
264 \def\Hy@Warning{\@PackageWarning{hyperref}}
265 \def\Hy@WarningNoLine{\@PackageWarningNoLine{hyperref}}
266 \def\Hy@Info{\@PackageInfo{hyperref}}

```

```

267 \def\Hy@InfoNoLine{\@PackageInfoNoLine{hyperref}}
268 \def\Hy@Message#1{%
269   \GenericWarning{%
270     (hyperref)\@spaces\@spaces\@spaces\@spaces
271   }{%
272     Package hyperref Message: #1\ltx@gobble
273   }%
274 }

```

## 4.2 Version check

\Hy@VersionChecked

```

275 \chardef\Hy@VersionChecked=0 %

```

\Hy@VersionCheck

```

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

```

\Hy@@VersionCheck

```

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

```

### 4.3 Checks with regular expressions

```

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

```

### 4.4 Compatibility with format dumps

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

The default definition of `\AfterBeginDocument` cannot be done by `\let` because of

problems with xypic.

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

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

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

`\Hy@AtEndOfPackage`

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

`\Hy@AtBeginDocumentHook`

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

`\Hy@AtEndOfPackageHook`

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

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

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

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

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

## 4.5 Switches

```
381 \newif\ifHy@stopppedearly
382 \newif\ifHy@typexml
383 \newif\ifHy@activeanchor
384 \newif\ifHy@backref
385 \newif\ifHy@bookmarks
386 \newif\ifHy@bookmarksnumbered
387 \newif\ifHy@bookmarksopen
388 \newif\ifHy@breaklinks
389 \newif\ifHy@pdfcenterwindow
390 \newif\ifHy@CJKbookmarks
391 \newif\ifHy@colorlinks
392 \newif\ifHy@draft
393 \let\Hy@finaltrue\Hy@draftfalse
394 \let\Hy@finalfalse\Hy@drafttrue
395 \newif\ifHy@pdfescapeform
396 \newif\ifHy@hyperfigures
```

```

397 \newif\ifHy@pdffitwindow
398 \newif\ifHy@frenchlinks
399 \newif\ifHy@hyperfootnotes
400 \newif\ifHy@hyperindex
401 \newif\ifHy@hypertextnames
402 \newif\ifHy@implicit
403 \newif\ifHy@linktopage
404 \newif\ifHy@localanchorname
405 \newif\ifHy@pdfmenubar
406 \newif\ifHy@naturalnames
407 \newif\ifHy@nesting
408 \newif\ifHy@pdfnewwindowset
409 \newif\ifHy@pdfnewwindow
410 \newif\ifHy@ocgcolorlinks
411 \newif\ifHy@pageanchor
412 \newif\ifHy@pdfpagelabels
413 \newif\ifHy@pdfpagehidden
414 \newif\ifHy@pdfstring
415 \newif\ifHy@plainpages
416 \newif\ifHy@psize
417 \newif\ifHy@raiselinks
418 \newif\ifHy@seminarslides
419 \newif\ifHy@setpagesize
420 \newif\ifHy@texht
421 \newif\ifHy@pdftoolbar
422 \newif\ifHy@unicode
423 \newif\ifHy@pdfusetitle
424 \newif\ifHy@verbose
425 \let\Hy@debugtrue\Hy@verbosetrue
426 \let\Hy@debugfalse\Hy@verbosefalse
427 \newif\ifHy@pdfwindowui
428 \newif\ifHy@pdfdisplaydoctitle
429 \newif\ifHy@pdfa

```

Defaults for the switches are now set.

```

430 \Hy@backreffalse
431 \Hy@bookmarksnumberedfalse
432 \Hy@bookmarksopenfalse
433 \Hy@bookmarkstrue
434 \Hy@breaklinksfalse
435 \Hy@pdfcenterwindowfalse
436 \Hy@CJKbookmarksfalse
437 \Hy@pdfescapeformfalse
438 \Hy@hyperfiguresfalse
439 \Hy@pdffitwindowfalse
440 \Hy@hyperfootnotetrue
441 \Hy@hyperindextrue
442 \Hy@hypertextnametrue
443 \Hy@implicittrue
444 \Hy@linktopagefalse
445 \Hy@localanchornamefalse
446 \Hy@pdfmenubartrue
447 \Hy@naturalnamesfalse
448 \Hy@nestingfalse
449 \Hy@pdfnewwindowsetfalse
450 \Hy@pdfnewwindowfalse
451 \Hy@pageanchortrue
452 \Hy@pdfpagelabelstrue

```



```

453 \Hy@pdfpagehiddenfalse
454 \Hy@pdfstringfalse
455 \Hy@plainpagesfalse
456 \Hy@raiselinksfalse
457 \Hy@setpagesizetrue
458 \Hy@texhtfalse
459 \Hy@pdftoolbartrue
460 \Hy@typexmlfalse
461 \Hy@unicodedefalse
462 \Hy@pdfusetitlefalse
463 \Hy@verbosefalse
464 \Hy@pdfwindowuitrue
465 \Hy@pdfdisplaydoctitlefalse
466 \Hy@pdfafalse

```

## 5 Common help macros

\Hy@StepCount

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

\Hy@GlobalStepCount

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

```

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

```

### 5.1 Macros for recursions

```

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

```

### 5.2 Babel's protection of shorthand characters

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

```

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

```

### 5.3 Coordinate transformations

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

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

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

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

- Without e-TeX's features `\hypercalsbp` cannot be implemented expandable (practically) and have to be supported by `\hypercalsbpdef`. Limitations:
  - Works only in options that use `\hypercalsbpdef` (currently only `pdfstartview`).
  - For calculations package `calc` has to be loaded.
  - The expansion of the argument is done at definition time.

Example (T<sub>E</sub>X):

```

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

\hypercalsbp
481 \begingroup\expandafter\expandafter\expandafter\endgroup
482 \expandafter\ifx\csname dimexpr\endcsname\relax
483   \def\hypercalsbpdef#1#2{%
484     \begingroup
485       \toks@{%
486         \HyCal@scan#2\hypercalsbp\@nil
487       \expandafter\endgroup
488       \expandafter\def\expandafter#1\expandafter{\the\toks@}%
489     }%
490   \def\HyCal@scan#1\hypercalsbp#2\@nil{%
491     \toks@\expandafter{\the\toks@ #1}%
492     \ifx\#2\%
493       \else
494         \ltx@ReturnAfterFi{%
495           \HyCal@do#2\@nil
496         }%
497       \fi
498     }%
499   \def\HyCal@do#1#2\@nil{%
500     \ifpackageloaded{calc}{}%
501     \Hy@Warning{%
502       For calculations \string\hypercalsbp\space needs\MessageBreak
503       package calc or e-TeX%
504     }%
505   }%
506   \setlength{\dimen@}{#1}%
507   \setlength{\dimen@}{0.99626401\dimen@}%
508   \edef\x{%
509     \toks@{%
510       \the\toks@
511       \strip@pt\dimen@
512     }%
513   }\x
514   \HyCal@scan#2\@nil
515 }%
516 \else
517   \def\hypercalsbp#1{%
518     \strip@pt\dimexpr 0.99626401\dimexpr(#1)\relax\relax
519   }%
520   \def\hypercalsbpdef\def}%
521 \fi

```

## 6 Dealing with PDF strings

The PDF string stuff done by Heiko Oberdiek.

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

### 6.1 Description of PDF strings

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

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

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

### 6.2 Definition of `\pdfstringdef`

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

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

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

1. Preprocessing. Here the expansion is prepared. The encoding is set and many commands are redefined, so that they work appropriate.
2. Expansion. The  $\text{\TeX}$  string is expanded the first time to get a PDF string.
3. Postprocessing. The result of the expansion is checked and converted to the final form.

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

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

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

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

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

```
523 \begingroup
```

### 6.2.1 Preprocessing

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

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

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

```
524 \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.

```
525 \edef\0{\string\0}%
526 \edef\1{\string\1}%
527 \edef\2{\string\2}%
528 \edef\3{\string\3}%
```

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

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

```
529 \ifHy@unicode
530 \edef\8{\string\8}%
531 \edef\9{\string\9}%
532 \fontencoding{PU}%
533 \HyPsd@UTFviii
534 \def\ifpdfstringunicode###1##2{##1}%
535 \else
536 \fontencoding{PD1}%
537 \def\ifpdfstringunicode###1##2{##2}%
538 \fi
539 \let\utf@viii@undeferr\HyPsd@utf@viii@undeferr
540 \enc@update
```

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

```
541 \@inmathwarn\pdfstringdef
```

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

disabled. And with the help of it the assignments in \@changed@cmd can easily be caught (see below).

```
542 \let\@inmathwarn\HyPsd@inmathwarn
```

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

```
543 \let\add@accent\HyPsd@add@accent
```

**Commands that don't use NFSS directly.** There are several commands that prints characters in the printable ASCII area that don't obey the NFSS, so they have to be redefined here.

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

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

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

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

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

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

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

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

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

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

```

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

```

**Environments.**

```

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

```

**Package color.**

```

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

```

**Upper- and lowercase.**

```

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

```

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

```

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

```

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

```

631 \let\cyr\relax

```

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

```

632 \let\es@roman\@Roman

```

**Package german.**

```

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

```

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

**Package FrenchPro.** This package uses:

```

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

```

```

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

```

**AMS classes.**

```

642 \HyPsd@AMSclassfix

```

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

```

643 \let\hspace\HyPsd@hspace

```

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

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

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

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

**Miscellaneous commands.**

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

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

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

**Patch for cjk bookmarks.**

```
658 \HyPsd@CJKhook
```

**User hook.** The switch `\Hy@pdfstring` is turned on. So user commands can detect that they are processed not to be typeset 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`).

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

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

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

**Package xspace.**

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



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

```
673 \let\discretionary\@gobbletwo
```

\@ifstar is defined in 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:

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

Support for package 'xargs':

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

## 6.2.2 Expansion

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

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

**\csname:** First the string is expanded within a \csname and \endcsname. Then the command name is converted to characters with catcode 12 by \string and the first escape character removed by \@gobble. This method has the great *advantage* that stomach tokens that aren't allowed in PDF strings are detected by T<sub>E</sub>X and reported as errors in order to force the user to write correct things. So he get no wrong results by forgetting the proofreading of his text. But the *disadvantage* is that old wrong code cannot 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).

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

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

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

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

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

### 6.2.3 Postprocessing

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

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

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

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

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

```

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

```

**Check tokens.** After removing the spaces and the grouping characters the string now should only 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.

```

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

```

`\HyPsd@CheckCatcodes` should 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.

```

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

```

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

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

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

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

```

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

```

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

```

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

```

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

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

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

```

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

```

**Ligatures.** 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.

```

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

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

```

754 \let\HyPsd@empty\@empty
```

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

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

```

755 \ifHy@unicode
756 \HyPsd@StringSubst{\textparenleft#1%
757 \HyPsd@Subst(\textparenleft#1%
758 \else
759 \HyPsd@StringSubst\({\050}\#1%
760 \HyPsd@Subst({\050}\#1%
761 \HyPsd@StringSubst{\050}\string\{}\#1%
762 \fi
```

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

With Unicode the spaces are replaced by their octal sequences.

```

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

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

```

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

### Try conversion back to PDFDocEncoding.

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

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

```
802 \pdfstringdefPostHook#1%
803 \endgroup
804 }
```

`\Hy@pdfstringdef`

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

## 6.3 Encodings

### 6.3.1 XeTeX

```
809 \edef\Hy@temp{\catcode0=\the\catcode0\relax}
810 \catcode\z@=12 %
811 \ifxetex
812 \expandafter\@firstofone
813 \else
814 \let\HyPsd@XeTeXBigCharstrue\@empty
815 \let\HyPsd@XeTeXBigCharsfalse\@empty
816 \expandafter\@gobble
817 \fi
818 {%
```

```

819 \newif\ifHyPsd@XeTeXBigChars
820 \def\HyPsd@XeTeXBigCharsfalse{%
821   \global\let\ifHyPsd@XeTeXBigChars\iffalse
822 }%
823 \def\HyPsd@XeTeXBigCharstrue{%
824   \global\let\ifHyPsd@XeTeXBigChars\iftrue
825 }%
826 \def\HyPsd@ToBigChars#1{%
827   \ifHyPsd@XeTeXBigChars
828     \EdefEscapeHex\HyPsd@UnescapedString{%
829       \expandafter\@gobbletwo\HyPsd@UnescapedString
830     }%
831     \begingroup
832     \toks@{%}%
833     \escapechar=92\relax
834     \let\x\HyPsd@ToBigChar
835     \expandafter\HyPsd@ToBigChar\HyPsd@UnescapedString
836     \relax\relax\relax\relax\relax\relax\relax
837     \edef\x{%
838       \endgroup
839       \gdef\noexpand#1{\the\toks@}%
840     }%
841     \x
842   \fi
843 }%
844 \def\HyPsd@ToBigChar#1#2#3#4{%
845   \ifx\relax#1\relax
846     \let\x\relax
847   \else
848     \count@=#1#2#3#4\relax
849     \let\y\@empty
850     \lccode\z@=\count@
851     \ifnum\count@=40 % (
852       \let\y\@backslashchar
853     \else
854       \ifnum\count@=41 % )
855         \let\y\@backslashchar
856       \else
857         \ifnum\count@=92 % backslash
858           \let\y\@backslashchar
859         \else
860           \ifnum\count@=10 % newline
861             \edef\y##1{\string\n}%
862           \else
863             \ifnum\count@=13 % carriage return
864               \edef\y##1{\string\r}%
865             \fi
866           \fi
867         \fi
868       \fi
869     \fi
870   \lowercase{%
871     \toks@\expandafter{%
872       \the\expandafter\toks@
873       \y
874       ^^@%
875     }%

```

```

876 }%
877 \fi
878 \x
879 }%
880 }
881 \Hy@temp

```

### 6.3.2 Workaround for package linguex

```

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

```

### 6.3.3 PD1 encoding

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

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

```

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

```

### 6.3.4 PU encoding

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

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

```

908 \def\HyPsd@InitUnicode{%
909 \@ifundefined{T@PU}{%
910 \input{puenc.def}%
911 \HyLinguex@Restore

```



```

912 }{}%
913 \DeclareFontFamily{PU}{pdf}{}%
914 \DeclareFontShape{PU}{pdf}{m}{n}{ <-> cmr10 }{}%
915 \DeclareFontSubstitution{PU}{pdf}{m}{n}%
916 \let\HyPsd@InitUnicode\relax
917 }

```

## 6.4 Additional user commands

### 6.4.1 `\texorpdfstring`

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

```

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

```

### 6.4.2 Hooks for `\pdfstringdef`

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

```

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

```

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

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

```

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

```

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

```

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

```

`\HyPsd@DisableCommands`

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

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

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

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

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

## 6.5 Help macros for expansion

### 6.5.1 `\ignorespaces`

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

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

### 6.5.2 Babel languages

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

```
\pdfstringdefDisableCommands{%
  \languageshorthands{system}%
}
```

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

```
952 \def\HyPsd@BabelPatch{%
953   \let\HyOrg@languageshorthands\languageshorthands
954   \let\languageshorthands\HyPsd@LanguageShorthands
955 }
956 \begingroup\expandafter\expandafter\expandafter\endgroup
957 \expandafter\ifx\csname pdf@strcmp\endcsname\relax
958   \let\HyPsd@langshort@system\@empty
```

```

959 \def\HyPsd@LanguageShorthands#1{%
960   \expandafter\ifx\csname HyPsd@langshort@#1\endcsname
961     \HyPsd@langshort@system
962   \expandafter\@gobble
963 \else
964   \expandafter\@firstofone
965 \fi
966 {%
967   \HyOrg@languageshorthands{#1}%
968 }%
969 }%
970 \else
971 \def\HyPsd@LanguageShorthands#1{%
972   \ifnum\pdf@strcmp{#1}{system}=\z@
973     \expandafter\@gobble
974   \else
975     \expandafter\@firstofone
976   \fi
977   {%
978     \HyOrg@languageshorthands{#1}%
979   }%
980 }%
981 \fi
982 \def\Hy@temp{%
983   \@ifpackageloaded{babel}{%
984     \@ifpackagelater{babel}{2008/03/16}{%
985       \let\Hy@temp\@empty
986     }{%
987       \def\HyPsd@BabelPatch{%
988         \let\HyOrg@languageshorthands\languageshorthands
989       }%
990     }%
991   }{}%
992 }
993 \Hy@temp
994 \expandafter\Hy@AtBeginDocument\expandafter{\Hy@temp}
995 \newif\ifHy@next

  Nothing to do for english.
996 \ltx@ifundefined{danish@sh@.sel}{}{%
997   \def\HyPsd@babel@danish{%
998     \declare@shorthand{danish}{|}{|}%
999     \declare@shorthand{danish}{~}{-}%
1000   }%
1001 }
1002 \ltx@ifundefined{dutch@sh@.sel}{}{%
1003   \def\HyPsd@babel@dutch{%
1004     \declare@shorthand{dutch}{|}{|}%
1005     \declare@shorthand{dutch}{~}{-}%
1006   }%
1007 }
1008 \ltx@ifundefined{finnish@sh@.sel}{}{%
1009   \def\HyPsd@babel@finnish{%
1010     \declare@shorthand{finnish}{|}{|}%
1011   }%
1012 }
1013 \ltx@ifundefined{french@sh@.sel}{}{%

```

```

1014 \def\HyPsd@babel@frenchb{%
1015   \def\guill@spacing{ }%
1016 }%
1017 }
1018 \ltx@ifundefined{german@sh@"@sel}{ }{%
1019   \def\HyPsd@babel@german{%
1020     \declare@shorthand{german}{f}{f}%
1021     \declare@shorthand{german}{|}{|}%
1022     \declare@shorthand{german}{~}{-}%
1023   }%
1024 }
1025 \ltx@ifundefined{macedonian@sh@"@sel}{ }{%
1026   \def\HyPsd@babel@macedonian{%
1027     \declare@shorthand{macedonian}{|}{|}%
1028     \declare@shorthand{macedonian}{~}{-}%
1029   }%
1030 }{ }
1031 \ltx@ifundefined{ngerman@sh@"@sel}{ }{%
1032   \def\HyPsd@babel@ngerman{%
1033     \declare@shorthand{ngerman}{|}{|}%
1034     \declare@shorthand{ngerman}{~}{-}%
1035   }%
1036 }
1037 \ltx@ifundefined{portuges@sh@"@sel}{ }{%
1038   \def\HyPsd@babel@portuges{%
1039     \declare@shorthand{portuges}{|}{|}%
1040   }%
1041 }
1042 \ltx@ifundefined{russian@sh@"@sel}{ }{%
1043   \def\HyPsd@babel@russian{%
1044     \declare@shorthand{russian}{|}{|}%
1045     \declare@shorthand{russian}{~}{-}%
1046   }%
1047 }
1048 \ltx@ifundefined{slovene@sh@"@sel}{ }{%
1049   \def\HyPsd@babel@slovene{%
1050     \declare@shorthand{slovene}{|}{|}%
1051   }%
1052 }

```

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

```

1053 \ltx@ifundefined{spanish@sh@>@sel}{ }{%
1054   \def\HyPsd@babel@spanish{%
1055     \declare@shorthand{spanish}{<<}{\guillemotleft}%
1056     \declare@shorthand{spanish}{>>}{\guillemotright}%
1057     \declare@shorthand{spanish}{=}{-}%
1058     \declare@shorthand{spanish}{~}{-}%
1059     \declare@shorthand{spanish}{!}{\textexclamdown}%
1060     \declare@shorthand{spanish}{?}{\textquestiondown}%
1061   }%
1062 }
1063 \ltx@ifundefined{swedish@sh@"@sel}{ }{%
1064   \def\HyPsd@babel@swedish{%
1065     \declare@shorthand{swedish}{|}{|}%
1066     \declare@shorthand{swedish}{~}{-}%
1067   }%
1068 }
1069 \ltx@ifundefined{ukrainian@sh@"@sel}{ }{%

```

```

1070 \def\HyPsd@babel@ukrainian{%
1071   \declare@shorthand{ukrainian}{~}{~}%
1072   \declare@shorthand{ukrainian}{~}{~}%
1073 }%
1074 }
1075 \ltx@ifundefined{usorbian@sh@~}{~}{~}%
1076 \def\HyPsd@babel@usorbian{%
1077   \declare@shorthand{usorbian}{f}{f}%
1078   \declare@shorthand{usorbian}{f}{f}%
1079 }%
1080 }
1081 \ltx@ifundefined{greek@sh@~}{~}{~}%
1082 \let\HyPsd@GreekPatch\@empty
1083 }%
1084 \def\HyPsd@GreekPatch{%
1085   \let\greeknumeral\HyPsd@greeknumeral
1086   \let\Greeknumeral\HyPsd@Greeknumeral
1087 }%
1088 }
1089 \def\HyPsd@greeknumeral#1{%
1090   \HyPsd@GreekNum\@firstoftwo{#1}%
1091 }
1092 \def\HyPsd@Greeknumeral#1{%
1093   \HyPsd@GreekNum\@secondoftwo{#1}%
1094 }
1095 \def\HyPsd@GreekNum#1#2{%
1096   \ifHy@unicode
1097     \ifnum#2<\@ne
1098       \@arabic{#2}%
1099     \else
1100       \ifnum#2<1000000 %
1101         \HyPsd@@GreekNum#1{#2}%
1102       \else
1103         \@arabic{#2}%
1104       \fi
1105     \fi
1106   \else
1107     \@arabic{#2}%
1108   \fi
1109 }
1110 \def\HyPsd@@GreekNum#1#2{%
1111   \ifnum#2<\@m
1112     \ifnum#2<10 %
1113       \expandafter\HyPsd@GreekNumI
1114       \expandafter\@gobble\expandafter#1\number#2%
1115     \else
1116       \ifnum#2<100 %
1117         \expandafter\HyPsd@GreekNumII
1118         \expandafter\@gobble\expandafter#1\number#2%
1119       \else
1120         \expandafter\HyPsd@GreekNumIII
1121         \expandafter\@gobble\expandafter#1\number#2%
1122       \fi
1123     \fi
1124   \ifnum#2>\z@
1125     \textnumeralsigngreek
1126   \fi

```

```

1127 \else
1128   \ifnum#2<\@M
1129     \expandafter\HyPsd@GreekNumIV\expandafter#1\number#2%
1130   \else
1131     \ifnum#2<100000 %
1132       \expandafter\HyPsd@GreekNumV\expandafter#1\number#2%
1133     \else
1134       \expandafter\HyPsd@GreekNumVI\expandafter#1\number#2%
1135     \fi
1136   \fi
1137 \fi
1138 }
1139 \def\HyPsd@GreekNumI#1#2#3{%
1140   #1{%
1141     \ifnum#3>\z@
1142       \textnumeralsignlowergreek
1143     \fi
1144   }%
1145   \expandafter#2%
1146   \ifcase#3 %
1147     {}{}%
1148   \or\textalpha\textAlpha
1149   \or\textbeta\textBeta
1150   \or\textgamma\textGamma
1151   \or\textdelta\textDelta
1152   \or\textepsilon\textEpsilon
1153   \or\textstigmagreek\textStigmagreek
1154   \or\textzeta\textZeta
1155   \or\texteta\textEta
1156   \or\texttheta\textTheta
1157   \else
1158     {}{}%
1159   \fi
1160 }
1161 \def\HyPsd@GreekNumII#1#2#3#4{%
1162   #1{%
1163     \ifnum#3>\z@
1164       \textnumeralsignlowergreek
1165     \fi
1166   }%
1167   \expandafter#2%
1168   \ifcase#3 %
1169     {}{}%
1170   \or\textiota\textIota
1171   \or\textkappa\textKappa
1172   \or\textlambda\textLambda
1173   \or\textmu\textMu
1174   \or\textnu\textNu
1175   \or\textxi\textXi
1176   \or\textomicron\textOmicron
1177   \or\textpi\textPi
1178   \or\textkoppagreek\textKoppagreek
1179   \else
1180     {}{}%
1181   \fi
1182   \HyPsd@GreekNumI#1#2#4%
1183 }

```

```

1184 \def\HyPsd@GreekNumIII#1#2#3#4#5{%
1185   #1{%
1186     \ifnum#3>\z@
1187       \textnumeralsignlowergreek
1188       \fi
1189   }%
1190   \expandafter#2%
1191   \ifcase#3 %
1192     {}{}%
1193   \or\textrho\textRho
1194   \or\textsigma\textSigma
1195   \or\texttau\textTau
1196   \or\textupsilon\textUpsilon
1197   \or\textphi\textPhi
1198   \or\textchi\textChi
1199   \or\textpsi\textPsi
1200   \or\textomega\textOmega
1201   \or\textsampigreek\textSampigreek
1202   \else
1203     {}{}%
1204   \fi
1205   \HyPsd@GreekNumII#1#2#4#5%
1206 }
1207 \def\HyPsd@GreekNumIV#1#2#3#4#5{%
1208   \HyPsd@GreekNumI\@firstofone#1#2%
1209   \HyPsd@@GreekNum#1{#3#4#5}%
1210 }
1211 \def\HyPsd@GreekNumV#1#2#3#4#5#6{%
1212   \HyPsd@GreekNumII\@firstofone#1#2#3%
1213   \HyPsd@@GreekNum#1{#4#5#6}%
1214 }
1215 \def\HyPsd@GreekNumVI#1#2#3#4#5#6#7{%
1216   \HyPsd@GreekNumIII\@firstofone#1#2#3#4%
1217   \HyPsd@@GreekNum#1{#5#6#7}%
1218 }
1219 \def\HyPsd@SpanishPatch{%
1220   \ltx@ifundefined{es@save@dot}{%
1221     }{%
1222       \let\.\es@save@dot
1223     }%
1224 }

```

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

~.

```

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

```

### 6.5.3 CJK patch

```

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

```

\HyPsd@CJKhook

```

1232 \def\HyPsd@CJKhook{%

```

```

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

```

#### 6.5.4 CJK bookmarks

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

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

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

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

```

1243 \begingroup
1244   \catcode"7F=\active
1245   \toks@{}%
1246   \let\CJK@ignorespaces\empty
1247   \def\CJK@char#1{\@gobbletwo}%
1248   \let\CJK@charx\@gobblefour
1249   \let\CJK@punctchar\@gobblefour
1250   \def\CJK@punctcharx#1{\@gobblefour}%
1251   \catcode"7F=\active
1252   \def^^7f#1^^7f#2^^7f{%
1253     \string #1\HyPsd@DecimalToOctal{#2}%
1254   }%
1255   % ... ?
1256   \ifHy@unicode
1257     \def\Hy@cjkpu{\80}%
1258   \else
1259     \let\Hy@cjkpu\@empty
1260   \fi
1261   \HyPsd@CJKActiveChars
1262 }%
1263 \count@=127 %
1264 \@whilenum\count@<255 \do{%
1265   \advance\count@ by 1 %
1266   \lccode'\~=\count@
1267   \lowercase{%
1268     \toks@\expandafter{\the\toks@ ~}%
1269   }%
1270 }%
1271 \toks@\expandafter{\the\toks@ !}%
1272 \xdef\HyPsd@CJKhook@bookmarks{%
1273   \the\toks@
1274 }%
1275 \endgroup

```



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

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

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

```
1284 \def\HyPsd@DecimalToOctal#1{%
1285   \ifcase #1 %
1286     \000\or \001\or \002\or \003\or \004\or \005\or \006\or \007%
1287     \or \010\or \011\or \012\or \013\or \014\or \015\or \016\or \017%
1288     \or \020\or \021\or \022\or \023\or \024\or \025\or \026\or \027%
1289     \or \030\or \031\or \032\or \033\or \034\or \035\or \036\or \037%
1290     \or \040\or \041\or \042\or \043\or \044\or \045\or \046\or \047%
1291     \or \050\or \051\or \052\or \053\or \054\or \055\or \056\or \057%
1292     \or 0\or 1\or 2\or 3\or 4\or 5\or 6\or 7%
1293     \or 8\or 9\or \072\or \073\or \074\or \075\or \076\or \077%
1294     \or @\or A\or B\or C\or D\or E\or F\or G%
1295     \or H\or I\or J\or K\or L\or M\or N\or O%
1296     \or P\or Q\or R\or S\or T\or U\or V\or W%
1297     \or X\or Y\or Z\or \133\or \134\or \135\or \136\or \137%
1298     \or \140\or a\or b\or c\or d\or e\or f\or g%
1299     \or h\or i\or j\or k\or l\or m\or n\or o%
1300     \or p\or q\or r\or s\or t\or u\or v\or w%
1301     \or x\or y\or z\or \173\or \174\or \175\or \176\or \177%
1302     \or \200\or \201\or \202\or \203\or \204\or \205\or \206\or \207%
1303     \or \210\or \211\or \212\or \213\or \214\or \215\or \216\or \217%
1304     \or \220\or \221\or \222\or \223\or \224\or \225\or \226\or \227%
1305     \or \230\or \231\or \232\or \233\or \234\or \235\or \236\or \237%
1306     \or \240\or \241\or \242\or \243\or \244\or \245\or \246\or \247%
1307     \or \250\or \251\or \252\or \253\or \254\or \255\or \256\or \257%
1308     \or \260\or \261\or \262\or \263\or \264\or \265\or \266\or \267%
1309     \or \270\or \271\or \272\or \273\or \274\or \275\or \276\or \277%
1310     \or \300\or \301\or \302\or \303\or \304\or \305\or \306\or \307%
1311     \or \310\or \311\or \312\or \313\or \314\or \315\or \316\or \317%
1312     \or \320\or \321\or \322\or \323\or \324\or \325\or \326\or \327%
1313     \or \330\or \331\or \332\or \333\or \334\or \335\or \336\or \337%
1314     \or \340\or \341\or \342\or \343\or \344\or \345\or \346\or \347%
1315     \or \350\or \351\or \352\or \353\or \354\or \355\or \356\or \357%
1316     \or \360\or \361\or \362\or \363\or \364\or \365\or \366\or \367%
1317     \or \370\or \371\or \372\or \373\or \374\or \375\or \376\or \377%
1318   \fi
1319 }
```

### 6.5.5 CJK unicode

`\HyPsd@CJKhook@unicode`

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

\HyPsd@CJK@Unicode

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

1340 \def\HyPsd@HighA#1!{%
1341   \expandafter\expandafter\expandafter\HyPsd@HighB
1342   \IntCalcDiv#1!64!!%
1343   \expandafter\expandafter\expandafter\HyPsd@HighD
1344   \IntCalcMod#1!64!!%
1345 }
1346 \def\HyPsd@HighB#1!{%
1347   \expandafter\expandafter\expandafter\HyPsd@HighC
1348   \IntCalcDec#1!!%
1349 }
1350 \def\HyPsd@HighC#1!{%
1351   \IntCalcDiv#1!4!%
1352   \@backslashchar
1353   \IntCalcMod#1!4!%
1354 }
1355 \def\HyPsd@HighD#1!{%
1356   \ifcase\IntCalcDiv#1!8! %
1357     0\or 1\or 2\or 3\or 4\or 5\or 6\or 7%
1358   \fi
1359   \ifcase\IntCalcMod#1!8! %
1360     0\or 1\or 2\or 3\or 4\or 5\or 6\or 7%
1361   \fi
1362 }
1363 \def\HyPsd@DecimalToOctalFirst#1{%
1364   \9%
1365   \ifcase#1 %
1366     000\or 001\or 002\or 003\or 004\or 005\or 006\or 007%
1367     \or 010\or 011\or 012\or 013\or 014\or 015\or 016\or 017%
1368     \or 020\or 021\or 022\or 023\or 024\or 025\or 026\or 027%
1369     \or 030\or 031\or 032\or 033\or 034\or 035\or 036\or 037%
1370     \or 040\or 041\or 042\or 043\or 044\or 045\or 046\or 047%
1371     \or 050\or 051\or 052\or 053\or 054\or 055\or 056\or 057%
1372     \or 060\or 061\or 062\or 063\or 064\or 065\or 066\or 067%
1373     \or 070\or 071\or 072\or 073\or 074\or 075\or 076\or 077%
1374     \or 100\or 101\or 102\or 103\or 104\or 105\or 106\or 107%
1375     \or 120\or 111\or 112\or 113\or 114\or 115\or 116\or 117%
1376     \or 120\or 121\or 122\or 123\or 124\or 125\or 126\or 127%
1377     \or 130\or 131\or 132\or 133\or 134\or 135\or 136\or 137%
1378     \or 140\or 141\or 142\or 143\or 144\or 145\or 146\or 147%
1379     \or 150\or 151\or 152\or 153\or 154\or 155\or 156\or 157%
1380     \or 160\or 161\or 162\or 163\or 164\or 165\or 166\or 167%
```

```

1381 \or 170\or 171\or 172\or 173\or 174\or 175\or 176\or 177%
1382 \or 200\or 201\or 202\or 203\or 204\or 205\or 206\or 207%
1383 \or 210\or 211\or 212\or 213\or 214\or 215\or 216\or 217%
1384 \or 220\or 221\or 222\or 223\or 224\or 225\or 226\or 227%
1385 \or 230\or 231\or 232\or 233\or 234\or 235\or 236\or 237%
1386 \or 240\or 241\or 242\or 243\or 244\or 245\or 246\or 247%
1387 \or 250\or 251\or 252\or 253\or 254\or 255\or 256\or 257%
1388 \or 260\or 261\or 262\or 263\or 264\or 265\or 266\or 267%
1389 \or 270\or 271\or 272\or 273\or 274\or 275\or 276\or 277%
1390 \or 300\or 301\or 302\or 303\or 304\or 305\or 306\or 307%
1391 \or 310\or 311\or 312\or 313\or 314\or 315\or 316\or 317%
1392 \or 320\or 321\or 322\or 323\or 324\or 325\or 326\or 327%
1393 \or 330\or 331\or 332\or 333\or 334\or 335\or 336\or 337%
1394 \or 340\or 341\or 342\or 343\or 344\or 345\or 346\or 347%
1395 \or 350\or 351\or 352\or 353\or 354\or 355\or 356\or 357%
1396 \or 360\or 361\or 362\or 363\or 364\or 365\or 366\or 367%
1397 \or 370\or 371\or 372\or 373\or 374\or 375\or 376\or 377%
1398 \fi
1399 }
1400 \def\HyPsd@DecimalToOctalSecond#1{%
1401 \ifcase #1 %
1402 \000\or \001\or \002\or \003\or \004\or \005\or \006\or \007%
1403 \or \010\or \011\or \012\or \013\or \014\or \015\or \016\or \017%
1404 \or \020\or \021\or \022\or \023\or \024\or \025\or \026\or \027%
1405 \or \030\or \031\or \032\or \033\or \034\or \035\or \036\or \037%
1406 \or \040\or \041\or \042\or \043\or \044\or \045\or \046\or \047%
1407 \or \050\or \051\or \052\or \053\or \054\or \055\or \056\or \057%
1408 \or \060\or \061\or \062\or \063\or \064\or \065\or \066\or \067%
1409 \or \070\or \071\or \072\or \073\or \074\or \075\or \076\or \077%
1410 \or \100\or \101\or \102\or \103\or \104\or \105\or \106\or \107%
1411 \or \110\or \111\or \112\or \113\or \114\or \115\or \116\or \117%
1412 \or \120\or \121\or \122\or \123\or \124\or \125\or \126\or \127%
1413 \or \130\or \131\or \132\or \133\or \134\or \135\or \136\or \137%
1414 \or \140\or \141\or \142\or \143\or \144\or \145\or \146\or \147%
1415 \or \150\or \151\or \152\or \153\or \154\or \155\or \156\or \157%
1416 \or \160\or \161\or \162\or \163\or \164\or \165\or \166\or \167%
1417 \or \170\or \171\or \172\or \173\or \174\or \175\or \176\or \177%
1418 \or \200\or \201\or \202\or \203\or \204\or \205\or \206\or \207%
1419 \or \210\or \211\or \212\or \213\or \214\or \215\or \216\or \217%
1420 \or \220\or \221\or \222\or \223\or \224\or \225\or \226\or \227%
1421 \or \230\or \231\or \232\or \233\or \234\or \235\or \236\or \237%
1422 \or \240\or \241\or \242\or \243\or \244\or \245\or \246\or \247%
1423 \or \250\or \251\or \252\or \253\or \254\or \255\or \256\or \257%
1424 \or \260\or \261\or \262\or \263\or \264\or \265\or \266\or \267%
1425 \or \270\or \271\or \272\or \273\or \274\or \275\or \276\or \277%
1426 \or \300\or \301\or \302\or \303\or \304\or \305\or \306\or \307%
1427 \or \310\or \311\or \312\or \313\or \314\or \315\or \316\or \317%
1428 \or \320\or \321\or \322\or \323\or \324\or \325\or \326\or \327%
1429 \or \330\or \331\or \332\or \333\or \334\or \335\or \336\or \337%
1430 \or \340\or \341\or \342\or \343\or \344\or \345\or \346\or \347%
1431 \or \350\or \351\or \352\or \353\or \354\or \355\or \356\or \357%
1432 \or \360\or \361\or \362\or \363\or \364\or \365\or \366\or \367%
1433 \or \370\or \371\or \372\or \373\or \374\or \375\or \376\or \377%
1434 \fi
1435 }
1436 \def\HyPsd@CJKnumber#1{%
1437 \ifnum#1<\z@

```

```

1438 \CJK@minus
1439 \expandafter\HyPsd@@CJKnumber\expandafter{\number-\number#1}%
1440 \else
1441 \expandafter\HyPsd@@CJKnumber\expandafter{\number#1}%
1442 \fi
1443 }
1444 \def\HyPsd@@CJKnumber#1{%
1445 \ifcase#1 %
1446 \CJK@zero\or\CJK@one\or\CJK@two\or\CJK@three\or\CJK@four\or
1447 \CJK@five\or\CJK@six\or\CJK@seven\or\CJK@eight\or\CJK@nine\or
1448 \CJK@ten\or\CJK@ten\CJK@one\or\CJK@ten\CJK@two\or
1449 \CJK@ten\CJK@three\or\CJK@ten\CJK@four\or\CJK@ten\CJK@five\or
1450 \CJK@ten\CJK@six\or\CJK@ten\CJK@seven\or\CJK@ten\CJK@eight\or
1451 \CJK@ten\CJK@nine
1452 \else
1453 \ifnum#1<10000 %
1454 \HyPsd@CJKnumberFour#1!\@empty{20}%
1455 \@empty
1456 \else
1457 \ifnum#1<100000000 %
1458 \expandafter\expandafter\expandafter\HyPsd@CJKnumberFour
1459 \IntCalcDiv#1!10000!%
1460 !\{20}%
1461 \CJK@tenthousand
1462 \expandafter\expandafter\expandafter\HyPsd@CJKnumberFour
1463 \IntCalcMod#1!10000!%
1464 !\CJK@zero{10}%
1465 \@empty
1466 \else
1467 \expandafter\HyPsd@CJKnumberLarge
1468 \number\IntCalcDiv#1!100000000!\expandafter!%
1469 \number\IntCalcMod#1!100000000!!%
1470 \fi
1471 \fi
1472 \fi
1473 }
1474 \def\HyPsd@CJKnumberLarge#1!#2!{%
1475 \HyPsd@CJKnumberFour#1!\{20}%
1476 \CJK@hundredmillion
1477 \ifnum#2=\z@
1478 \else
1479 \expandafter\expandafter\expandafter\HyPsd@CJKnumberFour
1480 \IntCalcDiv#2!10000!%
1481 !\CJK@zero{10}%
1482 \CJK@tenthousand
1483 \expandafter\expandafter\expandafter\HyPsd@CJKnumberFour
1484 \IntCalcMod#2!10000!%
1485 !\CJK@zero{10}%
1486 \@empty
1487 \fi
1488 }
1489 \def\HyPsd@CJKnumberFour#1!#2#3{%
1490 \ifnum#1=\z@
1491 \expandafter\@gobble
1492 \else
1493 \ifnum#1<1000 %
1494 #2%

```

```

1495 \HyPsd@CJKnumberThree#1!#{#3}%
1496 \else
1497 \HyPsd@@CJKnumber{\IntCalcDiv#1!1000!}%
1498 \CJK@thousand
1499 \expandafter\expandafter\expandafter\HyPsd@CJKnumberThree
1500 \IntCalcMod#1!1000!%
1501 !\CJK@zero{10}%
1502 \fi
1503 \fi
1504 }
1505 \def\HyPsd@CJKnumberThree#1!#2#3{%
1506 \ifnum#1=\z@
1507 \else
1508 \ifnum#1<100 %
1509 #2%
1510 \HyPsd@CJKnumberTwo#1!#{#3}%
1511 \else
1512 \HyPsd@@CJKnumber{\IntCalcDiv#1!100!}%
1513 \CJK@hundred
1514 \expandafter\expandafter\expandafter\HyPsd@CJKnumberTwo
1515 \IntCalcMod#1!100!%
1516 !\CJK@zero{10}%
1517 \fi
1518 \fi
1519 }
1520 \def\HyPsd@CJKnumberTwo#1!#2#3{%
1521 \ifnum#1=\z@
1522 \else
1523 \ifnum#1<#3 %
1524 #2%
1525 \HyPsd@@CJKnumber{#1}%
1526 \else
1527 \HyPsd@@CJKnumber{\IntCalcDiv#1!10!}%
1528 \CJK@ten
1529 \ifnum\IntCalcMod#1!10!=\z@
1530 \else
1531 \HyPsd@@CJKnumber{\IntCalcMod#1!10!}%
1532 \fi
1533 \fi
1534 \fi
1535 }
1536 \def\HyPsd@CJKdigits#1{%
1537 \ifx*#1\relax
1538 \expandafter\HyPsd@@CJKdigits\expandafter\CJK@zero
1539 \else
1540 \HyPsd@@CJKdigits\CJK@null{#1}%
1541 \fi
1542 }
1543 \def\HyPsd@@CJKdigits#1#2{%
1544 \ifx\#2\%
1545 \else
1546 \HyPsd@@@CJKdigits#1#2\@nil
1547 \fi
1548 }%
1549 \def\HyPsd@@@CJKdigits#1#2#3\@nil{%
1550 \HyPsd@CJKdigit#1{#2}%
1551 \ifx\#3\%

```

```

1552 \expandafter\@gobble
1553 \else
1554 \expandafter\@firstofone
1555 \fi
1556 {%
1557 \HyPsd@@@CJKdigits#1#3\@nil
1558 }%
1559 }
1560 \def\HyPsd@CJKdigit#1#2{%
1561 \ifcase#2 %
1562 #1\or
1563 \CJK@one\or\CJK@two\or\CJK@three\or\CJK@four\or
1564 \CJK@five\or\CJK@six\or\CJK@seven\or\CJK@eight\or\CJK@nine
1565 \fi
1566 }

```

### 6.5.6 \@inmathwarn-Patch

\HyPsd@inmathwarn The patch of \@inmathwarn is needed to get rid of the infinite error loop with glyphs of other encodings (see the explanation above). Potentially the patch is dangerous, if the code in ltoutenc.dtx changes. Checked with L<sup>A</sup>T<sub>E</sub>X 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 (L<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub> release [1998/12/01]). In the normal case \pdfstringdef is executed in a context where \protect has the meaning of \@typesetprotect (= \relax).

```

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

```

```

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

```

\HyPsd@add@accent

```

1583 \def\HyPsd@add@accent#1#2{%
1584   \HyPsd@GLYPHERR\expandafter\@gobble\string#1+\string#2>%
1585   #2%
1586 }%

```

### 6.5.7 Unexpandable spaces

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

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

These properties are used in \HyPsd@CheckCatcodes.

```

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

```

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

```

1590 \HyPsd@LetUnexpandableSpace\HyPsd@UnexpandableSpace

```

### 6.5.8 Marker for commands

\HyPsd@XSPACE \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.

```

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

```

### 6.5.9 \hspace fix

\HyPsd@hspace

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

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

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

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

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

### 6.5.10 Fix for AMS classes

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

### 6.5.11 Reference commands

\HyPsd@href

```
1620 \def\HyPsd@href#1#{\@secondoftwo}
```

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

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

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

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



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

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

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

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

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

```
1638 \def\HyPsd@@pageref#1*#2\END{%
1639   \ifx\#2\%
1640     \HyPsd@@@pageref{#1}%
1641   \else
1642     \expandafter\HyPsd@@@pageref
1643   \fi
1644 }
```

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

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

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

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

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

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

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

```
1663 \def\HyPsd@@@nameref#1{%
1664   \expandafter\ifx\csname r@#1\endcsname\relax
1665     ??%
1666   \else
1667     \expandafter\expandafter\expandafter\expandafter
1668     \expandafter\expandafter\expandafter\@car
1669     \expandafter\expandafter\expandafter\@gobbletwo
```

```

1670 \csname r@#1\endcsname{}{}\@nil
1671 \fi
1672 }

```

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

```

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

```

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

```

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

```

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

```

1681 \def\HyPsd@@@autoref#1{%
1682 \expandafter\ifx\csname r@#1\endcsname\relax
1683 ??%
1684 \else
1685 \expandafter\expandafter\expandafter\HyPsd@autorefname
1686 \csname r@#1\endcsname{}{}\@nil
1687 \expandafter\expandafter\expandafter
1688 \@car\csname r@#1\endcsname\@nil
1689 \fi
1690 }

```

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

```

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

```

`\HyPsd@@autorefname`

```

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

```

## 6.5.12 Redefining the defining commands

Definitions aren't allowed, because they aren't executed in an only expanding context. So the command to be defined isn't defined and can perhaps be undefined. This would causes TeX to stop with an error message. With a deep trick it is possible to define commands in such a context: `\csname` does the job, it defines the command to be `\relax`, if it has no meaning.

Active characters cannot be defined with this trick. It is possible to define all undefined active characters (perhaps that they have the meaning of `\relax`). To avoid side effects this should be done in `\pdfstringdef` shortly before the `\xdef` job. But checking and defining all possible active characters of the full range (0 until 255) would take a while. `\pdfstringdef` is slow enough, so this isn't done.

`\HyPsd@DefCommand` and `\HyPsd@LetCommand` expands to the commands `\<def>-command` and `\<let>-command` with the meaning of `\def` and `\let`. So it is detected by `\HyPsd@CheckCatcodes` and the command name `\<def>-command` or `\<let>-command` should indicate a forbidden definition command.

The command to be defined is converted to a string and back to a command name with the help of `\csname`. If the command is already defined, `\noexpand` prevents a further expansion, even though the command would expand to legal stuff. If the command don't have the meaning of `\relax`, `\HyPsd@CheckCatcodes` will produce a warning. (The command itself can be legal, but the warning is legitimate because of the position after a defining command.)

The difference between `\HyPsd@DefCommand` and `\HyPsd@LetCommand` is that the first one also cancels this arguments, the parameter and definition text. The right side of the `\let` commands cannot be canceled with an undelimited parameter because of a possible space token after `\futurelet`.

To avoid unmachted `\if...` tokens, the cases `\let\if...\iftrue` and `\let\if...\iffalse` are checked and ignored.

```

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

```

```

1740 \expandafter\expandafter\expandafter{%
1741 \expandafter\@gobble\string#1\@empty
1742 }%
1743 }

```

### 6.5.13 \ifnextchar

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

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

```

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

```

### 6.5.14 \@protected@testoptifnextchar

`\HyPsd@protected@testopt` Macros with optional arguments doesn't work properly, because they call `\ifnextchar` to detect the optional argument (see the explanation of `\HyPsd@ifnextchar`). But a warning, that `\ifnextchar` doesn't work, doesn't help the user very much. Therefore `\@protected@testopt` is also disabled, because its first argument is the problematic macro with the optional argument and it is called before `\ifnextchar`.

```

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

```

## 6.6 Help macros for postprocessing

### 6.6.1 Generic warning.

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

```

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

```

### 6.6.2 Protecting spaces

```

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

```

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

```

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

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

```

1771 \def\HyPsd@@ProtectSpacesFi#1 #2\HyPsd@End#3\fi{%
1772   \fi
1773   \ifx\scrollmode#2\scrollmode
1774     \HyPsd@RemoveMask#1\HyPsd@End#3%
1775   \else
1776     \gdef#3{#1\HyPsd@UnexpandableSpace#2}%
1777     \expandafter\HyPsd@@ProtectSpacesFi#3\HyPsd@End#3%
1778   \fi
1779 }%
```

### Remove mask.

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

```

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

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

### 6.6.3 Remove grouping braces

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

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

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

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

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

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

`\HyPsd@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`.

```
1845 \def\HyPsd@AppendItalcorr#1{%
1846   \expandafter\HyPsd@@AppendItalcorr\expandafter{\/#1%
```

```

1847 }
1848 \def\HyPsd@@AppendItalcorr#1#2{%
1849   \expandafter\def\expandafter#2\expandafter{#2#1}%
1850 }

```

#### 6.6.4 Catcode check

##### Check catcodes.

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

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

```

1851 \def\HyPsd@CheckCatcodes#1#2\HyPsd@End{%
1852   \global\let\HyPsd@Rest\relax
1853   \ifcat\relax\noexpand#1\relax
1854     \ifx#1\protect
1855       \else
1856         \ifx#1\penalty
1857           \setbox\z@=\hbox{%
1858             \afterassignment\HyPsd@AfterCountRemove
1859             \count@=#2\HyPsd@End
1860           }%
1861         \else
1862           \ifx#1\kern
1863             \setbox\z@=\hbox{%
1864               \afterassignment\HyPsd@AfterDimenRemove
1865               \dimen@=#2\HyPsd@End
1866             }%
1867           \else
1868             \ifx#1\hskip
1869               \setbox\z@=\hbox{%
1870                 \afterassignment\HyPsd@AfterSkipRemove
1871                 \skip@=#2\HyPsd@End
1872               }%
1873             \else
1874               \HyPsd@CatcodeWarning{#1}%
1875             \fi
1876           \fi
1877         \fi
1878       \fi
1879     \else
1880       \ifcat#1A% letter
1881         \expandafter\def\expandafter\HyPsd@String\expandafter{%
1882           \HyPsd@String#1%
1883         }%
1884       \else
1885         \ifcat#1 % SPACE
1886           \expandafter\def\expandafter\HyPsd@String\expandafter{%
1887             \HyPsd@String\HyPsd@SPACEOPTI
1888           }%
1889         \else

```

```

1890 \ifcat$#1%
1891 \HyPsd@CatcodeWarning{math shift}%
1892 \else
1893 \ifcat&#1%
1894 \HyPsd@CatcodeWarning{alignment tab}%
1895 \else
1896 \ifcat^#1%
1897 \HyPsd@CatcodeWarning{superscript}%
1898 \else
1899 \ifcat_#1%
1900 \HyPsd@CatcodeWarning{subscript}%
1901 \else
1902 \expandafter\def\expandafter\HyPsd@String\expandafter{%
1903 \HyPsd@String#1%
1904 }%
1905 \fi
1906 \fi
1907 \fi
1908 \fi
1909 \fi
1910 \fi
1911 \fi
1912 \ifx\HyPsd@Rest\relax
1913 \ifx\scrollmode#2\scrollmode
1914 \else
1915 \Hy@ReturnAfterFiFiEnd{%
1916 \HyPsd@CheckCatcodes#2\HyPsd@End
1917 }%
1918 \fi
1919 \else
1920 \ifx\HyPsd@Rest\@empty
1921 \else
1922 \Hy@ReturnAfterFiFiEnd{%
1923 \expandafter\HyPsd@CheckCatcodes\HyPsd@Rest\HyPsd@End
1924 }%
1925 \fi
1926 \fi
1927 \Hy@ReturnEnd
1928 }

```

### Remove counts, dimens, skips.

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

```

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

```

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

```

1932 \def\HyPsd@AfterDimenRemove#1\HyPsd@End{%
1933 \ifdim\ifx\HyPsd@String\@empty\z@\else\dimen@\fi>1ex %
1934 \HyPsd@ReplaceSpaceWarning{string\kern\space\the\dimen@}%
1935 \gdef\HyPsd@Rest{\HyPsd@UnexpandableSpace #1}%
1936 \else
1937 \ifdim\dimen@=\z@

```



```

1938 \else
1939 \HyPsd@RemoveSpaceWarning{\string\kern\space\the\dimen@}%
1940 \fi
1941 \gdef\HyPsd@Rest{#1}%
1942 \fi
1943 }

```

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

```

1944 \def\HyPsd@AfterSkipRemove#1\HyPsd@end{%
1945 \ifdim\ifx\HyPsd@String\@empty\z@\else\skip@\fi>lex %
1946 \HyPsd@ReplaceSpaceWarning{\string\hskip\space\the\skip@}%
1947 \gdef\HyPsd@Rest{\HyPsd@UnexpandableSpace #1}%
1948 \else
1949 \ifdim\skip@=\z@
1950 \else
1951 \HyPsd@RemoveSpaceWarning{\string\kern\space\the\skip@}%
1952 \fi
1953 \gdef\HyPsd@Rest{#1}%
1954 \fi
1955 }

```

### Catcode warnings.

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

```

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

```

`\HyPsd@RemoveSpaceWarning`

```

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

```

```

1986 \MessageBreak #1\MessageBreak
1987 removed%
1988 }%
1989 }

```

\HyPsd@ReplaceSpaceWarning

```

1990 \def\HyPsd@ReplaceSpaceWarning#1{%
1991 \HyPsd@Warning{%
1992 Token not allowed in a PDF string (%
1993 \ifHy@unicode
1994 Unicode%
1995 \else
1996 PDFDocEncoding%
1997 \fi
1998 }:%
1999 \MessageBreak #1\MessageBreak
2000 replaced by space%
2001 }%
2002 }

```

### 6.6.5 Check for wrong glyphs

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

```

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

```

**Spaces.**

`\HyPsd@spaceopti` In the string the spaces are represented by `\HyPsd@spaceopti` tokens. Within an `\edef` it prints itself as a simple space and looks for its next argument. If another space follows, so it replaces the next `\HyPsd@spaceopti` by an protected space `\040`.

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

### 6.6.6 Replacing tokens

`\HyPsd@Subst` To save tokens `\HyPsd@StringSubst` is 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.

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

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

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

`\HyPsd@EscapeTeX`

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

```

2073 \HyPsd@Subst!{|045}#1%
2074 \HyPsd@Subst({|173}#1%
2075 \HyPsd@Subst){|175}#1%
2076 }%
2077 }

```

### 6.6.7 Support for package xspace

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

```

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

```

### 6.6.8 Converting to Unicode

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

```

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

```

`\HyPsd@ConvertToUnicode`

```

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

```

```

2115 |fi
2116 }%

```

\HyPsd@DoConvert

```

2117 |gdef|HyPsd@DoConvert#1{%
2118 |ifx#1|@empty
2119 |else
2120 |ltx@ReturnAfterFi{%
2121 |ifx#1\%%
2122 \%%
2123 |expandafter|HyPsd@DoEscape
2124 |else
2125 |HyPsd@Char{#1}%
2126 |expandafter|HyPsd@DoConvert
2127 |fi
2128 }%
2129 |fi
2130 }%

```

\HyPsd@DoEscape

```

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

```

\HyPsd@GetTwoBytes

```

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

```

\HyPsd@GetOneByte

```

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

```

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

```

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

```

\HyPsd@Char

```

2159 \begingroup

```

```

2160 \catcode0=9 %
2161 \catcode'\^=7 %
2162 \catcode'\^^=12 %
2163 \def\x{^^^0000}%
2164 \expandafter\endgroup
2165 \ifx\x\@empty
2166 \def\HyPsd@Char#1{%
2167 \ifnum'#1<128 %
2168 \@backslashchar 000#1%
2169 \else
2170 \ifnum'#1<65536 %
2171 \expandafter\HyPsd@CharTwoByte\number'#1!%
2172 \else
2173 \expandafter\expandafter\expandafter\HyPsd@CharSurrogate
2174 \intcalcSub{'#1}{65536}!%
2175 \fi
2176 \fi
2177 }%
2178 \def\HyPsd@CharTwoByte#1!{%
2179 \expandafter\expandafter\expandafter\HyPsd@CharOctByte
2180 \IntCalcDiv#1!256!!%
2181 \expandafter\expandafter\expandafter\HyPsd@CharOctByte
2182 \IntCalcMod#1!256!!%
2183 }%
2184 \def\HyPsd@CharOctByte#1!{%
2185 \@backslashchar
2186 \IntCalcDiv#1!64!%
2187 \intcalcDiv{\IntCalcMod#1!64!}{8}%
2188 \IntCalcMod#1!8!%
2189 }%
2190 \def\HyPsd@CharSurrogate#1!{%
2191 \@backslashchar 33%
2192 \IntCalcDiv#1!262144!%
2193 \expandafter\expandafter\expandafter\HyPsd@CharOctByte
2194 \intcalcDiv{\IntCalcMod#1!262144!}{1024}!%
2195 \@backslashchar 33%
2196 \expandafter\expandafter\expandafter\IntCalcAdd
2197 \intcalcDiv{\IntCalcMod#1!1024!}{256}!4!%
2198 \expandafter\expandafter\expandafter\HyPsd@CharOctByte
2199 \IntCalcMod#1!256!!%
2200 }%
2201 \else
2202 \def\HyPsd@Char#1{%
2203 \@backslashchar 000#1%
2204 }%
2205 \fi

```

### 6.6.9 Support for UTF-8 input encoding

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

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

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

```

2206 \begingroup\expandafter\expandafter\expandafter\endgroup
2207 \expandafter\ifx\csname numexpr\endcsname\relax
2208   \let\HyPsd@UTFviii\relax
2209 \else
2210   \begingroup
2211     \lccode'\~='^f4\relax
2212   \lowercase{\endgroup
2213     \def\HyPsd@UTFviii{%
2214       \let\UTFviii@two@octets\HyPsd@UTFviii@two
2215       \let\UTFviii@three@octets\HyPsd@UTFviii@three
2216       \let\UTFviii@four@octets\HyPsd@UTFviii@four
2217       \ifx~\HyPsd@UTFviii@ccxliv@undef
2218         \let~\HyPsd@UTFviii@ccxliv@def
2219       \fi
2220       \let\unichar\HyPsd@unichar
2221     }%
2222   }%
2223   \def\HyPsd@UTFviii@ccxliv@undef{\@inpencc@undefined@{utf8}}%
2224   \edef\HyPsd@UTFviii@ccxliv@def{%
2225     \noexpand\UTFviii@four@octets\string ^f4%
2226   }%

```

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

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

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

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

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

$$(5)$$

```

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

```

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

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

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

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

$$\begin{aligned} d &:= B - 4 * (B/4) & (9) \\ e &:= C/8 - 16 & (10) \\ f &:= C - 8 * (C/8) & (11) \end{aligned}$$

(12)

```

2242 \def\HyPsd@UTFviii@three#1#2#3{%
2243 \expandafter\HyPsd@UTFviii@@three
2244 \number\dimexpr.25\dimexpr'#1sp\expandafter\relax\expandafter| %
2245 \number'#1\expandafter| %
2246 \number\ifnum\numexpr'#2-128\relax <32 0\else 1\fi\expandafter| %
2247 \number\dimexpr.25\dimexpr'#2sp\expandafter\relax\expandafter| %
2248 \number'#2\expandafter| %
2249 \number\dimexpr.125\dimexpr'#3sp\expandafter\relax\expandafter| %
2250 \number'#3 \@nil
2251 }%
2252 \def\HyPsd@UTFviii@@three#1|#2|#3|#4|#5|#6|#7\@nil{%
2253 \expandafter\9%
2254 \number\numexpr #1-56\expandafter\relax
2255 \number\numexpr 2*(#2-4*#1)+#3\expandafter\relax
2256 \number\numexpr #4 - 32 -\ifcase#3 0\else 8\fi\expandafter\relax
2257 \csname\number\numexpr #5-4*#4\relax\expandafter\endcsname
2258 \number\numexpr #6-16\expandafter\relax
2259 \number\numexpr #7-8*#6\relax
2260 }%

```

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

```

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

```

```

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

```



2286 }%

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

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

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

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

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

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

```

2337 \number
2338 \numexpr#1-64*\number\dimexpr.015625\dimexpr#1sp%
2339 \relax\relax\relax
2340 }%
2341 }%
2342 \def\HyPsd@unichar@octtwo#1{%
2343 \number\dimexpr.125\dimexpr#1sp\relax\relax
2344 \number\numexpr#1-8*\number\dimexpr.125\dimexpr#1sp%
2345 \relax\relax\relax
2346 }%
2347 \fi

```

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

```

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

```

## 7 Support of other packages

### 7.1 Class memoir

```

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

```

### 7.2 Package subfigure

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

```

2359 \@ifpackageloaded{subfigure}{%
2360 \ltx@ifundefined{sub@label}{%
2361 \Hy@hypertextnamesfalse
2362 }{%
2363 \renewcommand*{\sub@label}[1]{%
2364 \@bsphack
2365 \subfig@oldlabel{#1}%
2366 \if@filesw
2367 \begingroup
2368 \edef\@currentlabstr{%
2369 \expandafter\strip@prefix\meaning\@currentlabelname
2370 }%
2371 \protected@write\@auxout{}{%
2372 \string\newlabel{sub@#1}{%
2373 {\@nameuse{\@thesub\@capytype}}%
2374 {\thepage}%
2375 }%
2376 \expandafter\strip@period\@currentlabstr
2377 \relax.\relax\@@@%
2378 }%
2379 {\@currentHref}%
2380 }%
2381 }%

```

```

2382     }%
2383     \endgroup
2384     \fi
2385     \@esphack
2386 }%
2387 \@ifpackagelater{subfigure}{2002/03/26}{\%
2388     \providecommand*{\toclevel@subfigure}{1}%
2389     \providecommand*{\toclevel@subtable}{1}%
2390 }%
2391 }%
2392 }{}

```

### 7.3 Package xr and xr-hyper

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

```

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

```

If reading external aux files check whether they have a non zero fourth field in \newlabel and if so, add the URL as the fifth field.

```

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

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

```

Providing dummy definitions.

```

2406 \let\literalps@out\@gobble
2407 \newcommand\pdfbookmark[3]{}{}
2408 \def\Acrobatmenu#1#2{\leavevmode#2}
2409 \def\Hy@writebookmark#1#2#3#4#5{}%

```

## 8 Help macros for links

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

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

```

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

```

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

```

2412 \newcount\Hy@SavedSpaceFactor
2413 \def\Hy@SaveSpaceFactor{%
2414   \global\Hy@SavedSpaceFactor=\ifhmode\spacefactor\else\z@\fi
2415 }
2416 \def\Hy@RestoreSpaceFactor{%
2417   \relax
2418   \ifhmode
2419     \ifnum\Hy@SavedSpaceFactor>\z@
2420       \spacefactor=\Hy@SavedSpaceFactor
2421     \fi
2422   \fi
2423 }
2424 \def\Hy@SaveSavedSpaceFactor{%
2425   \edef\Hy@RestoreSavedSpaceFactor{%
2426     \global\Hy@SavedSpaceFactor=\the\Hy@SavedSpaceFactor\relax
2427   }%
2428 }
2429 \def\Hy@raisedlink#1{%
2430   \ifvmode
2431     #1%
2432   \else
2433     \Hy@SaveSpaceFactor
2434     \penalty\@M
2435     \smash{%
2436       \begingroup
2437         \let\HyperRaiseLinkLength\@tempdima
2438         \setlength\HyperRaiseLinkLength\HyperRaiseLinkDefault
2439         \HyperRaiseLinkHook
2440       \expandafter\endgroup
2441       \expandafter\raise\the\HyperRaiseLinkLength\hbox{%
2442         \Hy@RestoreSpaceFactor
2443         #1%
2444         \Hy@SaveSpaceFactor
2445       }%
2446     }%
2447     \Hy@RestoreSpaceFactor
2448   \fi
2449 }

```

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

```

2450 \def\Hy@SaveLastskip{%
2451   \let\Hy@RestoreLastskip\relax
2452   \ifvmode
2453     \ifdim\lastskip=\z@
2454       \let\Hy@RestoreLastskip\nobreak
2455     \else
2456       \begingroup
2457         \skip@=-\lastskip
2458       \edef\x{%
2459         \endgroup
2460       \def\noexpand\Hy@RestoreLastskip{%
2461         \noexpand\ifvmode
2462           \noexpand\nobreak
2463           \vskip\the\skip@
2464           \vskip\the\lastskip\relax
2465         \noexpand\fi

```

```

2466     }%
2467     }%
2468     \x
2469     \fi
2470 \else
2471 \ifhmode
2472 \ifdim\lastskip=\z@
2473 \let\Hy@RestoreLastskip\nobreak
2474 \else
2475 \begingroup
2476 \skip@=-\lastskip
2477 \edef\x{%
2478 \endgroup
2479 \def\noexpand\Hy@RestoreLastskip{%
2480 \noexpand\ifhmode
2481 \noexpand\nobreak
2482 \hskip\the\skip@
2483 \hskip\the\lastskip\relax
2484 \noexpand\fi
2485 }%
2486 }%
2487 \x
2488 \fi
2489 \fi
2490 \fi
2491 }%

```

## 9 Options

```

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

```

### 9.1 Help macros

`\IfHyperBooleanExists`

```

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

```

```

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

```

`\IfHyperBoolean`

```

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

```

`\Hy@boolkey`

```

2511 \def\Hy@boolkey#1#2{%
2512   \edef\Hy@tempa{#2}%
2513   \lowercase\expandafter{%
2514     \expandafter\def\expandafter\Hy@tempa\expandafter{\Hy@tempa}%
2515   }%
2516   \ifx\Hy@tempa\@empty
2517     \let\Hy@tempa\Hy@true
2518   \fi
2519   \ifx\Hy@tempa\Hy@true
2520   \else
2521     \ifx\Hy@tempa\Hy@false
2522     \else
2523       \let\Hy@tempa\relax
2524     \fi
2525   \fi
2526   \ifx\Hy@tempa\relax
2527     \Hy@WarnOptionValue{#2}{#1}{‘true’ or ‘false’}%
2528   \else
2529     \Hy@Info{Option ‘#1’ set ‘\Hy@tempa’}%
2530     \csname Hy@#1\Hy@tempa\endcsname
2531   \fi
2532 }

```

\Hy@WarnOptionValue

```

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

```

\Hy@DisableOption

```

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

```

\Hy@WarnOptionDisabled

```

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

```

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

```

2554 \def\Hy@CheckOptionValue#1#2#3{%
2555   \begingroup
2556   \edef\x{#1}%
2557   \@onelevel@sanitize\x
2558   \let\y=y%

```

```

2559 \def\do##1##2{%
2560 \def\z{##1}%
2561 \@onelevel@sanitize\z
2562 \ifx\x\z
2563 \let\y=n%
2564 \let\do\@gobbletwo
2565 \fi
2566 }%
2567 ##3%
2568 \ifx\y y%
2569 \def\do##1##2{%
2570 * '##1'%
2571 \ifx\##2\\\else\space(##2)\fi
2572 \MessageBreak
2573 }%
2574 \Hy@Warning{%
2575 Values of option '#2':\MessageBreak
2576 ##3%
2577 * An empty value disables the option.\MessageBreak
2578 Unknown value '\x'%
2579 }%
2580 \fi
2581 \endgroup
2582 }

```

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

```

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

```

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

```

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

```

`\Hy@UseNameKey`

```

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

```

## 9.2 Defining the options

```

2602 \define@key{Hyp}{implicit}[true]{%
2603   \Hy@boolkey{implicit}{#1}%
2604 }
2605 \define@key{Hyp}{draft}[true]{%
2606   \Hy@boolkey{draft}{#1}%
2607 }
2608 \define@key{Hyp}{final}[true]{%
2609   \Hy@boolkey{final}{#1}%
2610 }
2611 \let\KV@Hyp@nolinks\KV@Hyp@draft
2612 \def\Hy@ObsoletePaperOption#1{%
2613   \Hy@WarningNoLine{%
2614     Option '#1' is no longer used%
2615   }%
2616   \define@key{Hyp}{#1}[true]{}%
2617 }
2618 \def\Hy@temp#1{%
2619   \define@key{Hyp}{#1}[true]{%
2620     \Hy@ObsoletePaperOption{#1}%
2621   }%
2622 }
2623 \Hy@temp{a4paper}
2624 \Hy@temp{a5paper}
2625 \Hy@temp{b5paper}
2626 \Hy@temp{letterpaper}
2627 \Hy@temp{legalpaper}
2628 \Hy@temp{executivepaper}
2629 \define@key{Hyp}{setpagesize}[true]{%
2630   \Hy@boolkey{setpagesize}{#1}%
2631 }
2632 \define@key{Hyp}{debug}[true]{%
2633   \Hy@boolkey{debug}{#1}%
2634 }
2635 \define@key{Hyp}{linktocpage}[true]{%
2636   \Hy@boolkey{linktocpage}{#1}%
2637   \ifHy@linktocpage
2638     \let\Hy@linktoc\Hy@linktoc@page
2639   \else
2640     \let\Hy@linktoc\Hy@linktoc@section
2641   \fi
2642 }
2643 \chardef\Hy@linktoc@none=0 %
2644 \chardef\Hy@linktoc@section=1 %
2645 \chardef\Hy@linktoc@page=2 %
2646 \chardef\Hy@linktoc@all=3 %
2647 \ifHy@linktocpage
2648   \let\Hy@linktoc\Hy@linktoc@page
2649 \else
2650   \let\Hy@linktoc\Hy@linktoc@section
2651 \fi
2652 \define@key{Hyp}{linktoc}{%
2653   \@ifundefined{Hy@linktoc@#1}{%
2654     \Hy@Warning{%
2655       Unexpected value '#1' of\MessageBreak
2656       option 'linktoc' instead of 'none',\MessageBreak
2657       'section', 'page' or 'all'%
2658     }%

```



```

2659 }{%
2660   \expandafter\let\expandafter\Hy@linktoc
2661   \csname Hy@linktoc@#1\endcsname
2662 }%
2663 }
2664 \define@key{Hyp}{extension}{\def\XR@ext{#1}}
2665 \let\XR@ext\relax
2666 \define@key{Hyp}{verbose}[true]{%
2667   \Hy@boolkey{verbose}{#1}%
2668 }
2669 \define@key{Hyp}{typexml}[true]{%
2670   \Hy@boolkey{typexml}{#1}%
2671 }

```

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

```

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

```

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

```

2675 \def\Hy@setbreaklinks#1{%
2676   \csname breaklinks#1\endcsname
2677 }
2678 \def\Hy@breaklinks@unsupported{%
2679   \ifx\Hy@setbreaklinks\@gobble
2680     \ifHy@breaklinks
2681       \Hy@WarningNoLine{%
2682         You have enabled option 'breaklinks'.\MessageBreak
2683         But driver '\Hy@driver.def' does not support this.\MessageBreak
2684         Expect trouble with the link areas of broken links%
2685       }%
2686     \fi
2687   \fi
2688 }
2689 \define@key{Hyp}{breaklinks}[true]{%
2690   \Hy@boolkey{breaklinks}{#1}%
2691   \let\Hy@setbreaklinks\@gobble
2692 }
2693 \define@key{Hyp}{localanchorname}[true]{%
2694   \Hy@boolkey{localanchorname}{#1}%
2695 }

```

Determines whether an automatic anchor is put on each page

```

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

```

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

```

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

```

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

```

2702 \define@key{Hyp}{naturalnames}[true]{%

```

```

2703 \Hy@boolkey{naturalnames}{#1}%
2704 }

```

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

```

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

```

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

```

2708 \define@key{Hyp}{nesting}[true]{%
2709 \Hy@boolkey{nesting}{#1}%
2710 }

2711 \define@key{Hyp}{unicode}[true]{%
2712 \Hy@boolkey{unicode}{#1}%
2713 \ifHy@unicode
2714 \def\HyPsd@pdfencoding{unicode}%
2715 \HyPsd@LoadUnicode
2716 \else
2717 \def\HyPsd@pdfencoding{pdfdoc}%
2718 \fi
2719 }

2720 \def\HyPsd@LoadUnicode{%
2721 \ifundefined{T@PU}{%
2722 \input{puenc.def}%
2723 \HyLinguex@Restore
2724 }{}%
2725 \DeclareFontFamily{PU}{pdf}{}%
2726 \DeclareFontShape{PU}{pdf}{m}{n}{<-> cmr10 }{}%
2727 \DeclareFontSubstitution{PU}{pdf}{m}{n}%
2728 \global\let\HyPsd@LoadUnicode\relax
2729 }

2730 \Hy@AtBeginDocument{%
2731 \ifx\HyPsd@LoadUnicode\relax
2732 \else
2733 \def\HyPsd@LoadUnicode{%
2734 \Hy@Error{%
2735 Unicode support for bookmarks is not available.\MessageBreak
2736 Activate unicode support by using one of the options\MessageBreak
2737 'unicode', 'pdfencoding=unicode', 'pdfencoding=auto'\MessageBreak
2738 in the preamble%
2739 }\@ehc
2740 \global\let\HyPsd@LoadUnicode\relax
2741 \global\Hy@unicodedefalse
2742 \global\let\Hy@unicodetrue\Hy@unicodedefalse
2743 }%
2744 \fi
2745 }

2746 \define@key{Hyp}{pdfencoding}{%
2747 \edef\HyPsd@temp{#1}%
2748 \ifx\HyPsd@temp\HyPsd@pdfencoding@pdfdoc
2749 \let\HyPsd@pdfencoding\HyPsd@temp
2750 \Hy@unicodedefalse
2751 \else
2752 \ifcase\ifx\HyPsd@temp\HyPsd@pdfencoding@unicode
2753 \z@
2754 \else
2755 \ifx\HyPsd@temp\HyPsd@pdfencoding@auto

```

```

2756         \z@
2757     \else
2758         \@ne
2759     \fi
2760 \fi
2761 \let\HyPsd@pdfencoding\HyPsd@temp
2762 \hypersetup{unicode}%
2763 \ifHy@unicode
2764     \def\HyPsd@pdfencoding{#1}%
2765     \ifx\HyPsd@pdfencoding\HyPsd@pdfencoding@auto
2766         \HyPsd@LoadStringEnc
2767     \fi
2768 \else
2769     \Hy@Warning{Cannot switch to unicode bookmarks}%
2770     \let\HyPsd@pdfencoding\HyPsd@pdfencoding@pdfdoc
2771 \fi
2772 \else
2773     \@onelevel@sanitize\HyPsd@temp
2774     \Hy@Warning{%
2775         Values of option 'pdfencoding':\MessageBreak
2776         'pdfdoc', 'unicode', 'auto'.\MessageBreak
2777         Ignoring unknown value '\HyPsd@temp'%
2778     }%
2779 \fi
2780 \fi
2781 }
2782 \def\HyPsd@pdfencoding@auto{auto}
2783 \def\HyPsd@pdfencoding@pdfdoc{pdfdoc}
2784 \def\HyPsd@pdfencoding@unicode{unicode}
2785 \let\HyPsd@pdfencoding\Hy@pdfencoding@pdfdoc
2786 \def\HyPsd@LoadStringEnc{%
2787     \RequirePackage{stringenc}[2009/12/15]%
2788     \let\HyPsd@LoadStringEnc\relax
2789 }
2790 \Hy@AtBeginDocument{%
2791     \@ifpackageloaded{stringenc}{%
2792         \let\HyPsd@LoadStringEnc\relax
2793     }{%
2794         \def\HyPsd@LoadStringEnc{%
2795             \Hy@WarningNoLine{%
2796                 Missing package 'stringenc'. Use 'pdfencoding=auto'\MessageBreak
2797                 in the preamble or load the package there%
2798             }%
2799         }%
2800     }%
2801 }
2802 \def\hypersetup{\kvsetkeys{Hyp}}
2803 \newif\ifHy@setpdfversion
2804 \define@key{Hyp}{pdfversion}{%
2805     \@ifundefined{Hy@pdfversion@#1}{%
2806         \PackageWarning{hyperref}{%
2807             Unsupported PDF version '#1'.\MessageBreak
2808             Valid values: 1.2 until 1.9%
2809         }%
2810     }{%
2811         \Hy@setpdfversiontrue
2812         \edef\Hy@pdfversion{\@nameuse{Hy@pdfversion@#1}}%

```

```

2813 }%
2814 }
2815 \@namedef{Hy@pdfversion@1.2}{2}%
2816 \@namedef{Hy@pdfversion@1.3}{3}%
2817 \@namedef{Hy@pdfversion@1.4}{4}%
2818 \@namedef{Hy@pdfversion@1.5}{5}%
2819 \@namedef{Hy@pdfversion@1.6}{6}%
2820 \@namedef{Hy@pdfversion@1.7}{7}%
2821 \@namedef{Hy@pdfversion@1.8}{8}%
2822 \@namedef{Hy@pdfversion@1.9}{9}%
2823 \def\Hy@pdfversion{2}

```

## 10 Options for different drivers

```

2824 \newif\ifHy@DviMode
2825 \let\Hy@DviErrMsg\ltx@empty
2826 \ifpdf
2827   \def\Hy@DviErrMsg{pdfTeX or LuaTeX is running in PDF mode}%
2828 \else
2829   \ifxetex
2830     \def\Hy@DviErrMsg{XeTeX is running}%
2831   \else
2832     \ifvtex
2833       \ifvtexdvi
2834         \Hy@DviModetrue
2835       \else
2836         \def\Hy@DviErrMsg{VTeX is running, but not in DVI mode}%
2837       \fi
2838     \else
2839       \Hy@DviModetrue
2840     \fi
2841   \fi
2842 \fi
2843 \def\Hy@Opt@CheckDvi#1{%
2844   \ifHy@DviMode
2845     \expandafter\ltx@firstofone
2846   \else
2847     \Hy@Error{%
2848       Wrong DVI mode driver option ‘#1’,\MessageBreak
2849       because \Hy@DviErrMsg
2850     }\@ehc
2851     \expandafter\ltx@gobble
2852   \fi
2853 }
2854 \DeclareVoidOption{tex4ht}{%
2855   \Hy@texhttrue
2856   \kvsetkeys{Hyp}{colorlinks=true}%
2857   \def\BeforeTeXIVht{\RequirePackage{color}}%
2858   \def\Hy@driver{htex4ht}%
2859   \def\MaybeStopEarly{%
2860     \Hy@Message{Stopped early}%
2861     \Hy@AtBeginDocument{%
2862       \PDF@FinishDoc
2863       \gdef\PDF@FinishDoc{}%
2864     }%
2865   \endinput
2866 }%

```

```

2867 }
2868 \DeclareVoidOption{pdftex}{%
2869   \ifpdf
2870     \def\Hy@driver{hpdftex}%
2871   \else
2872     \Hy@Error{%
2873       Wrong driver option 'pdftex',\MessageBreak
2874       because pdfTeX in PDF mode is not detected%
2875     }\@ehc
2876   \fi
2877 }
2878 \DeclareVoidOption{nativepdf}{%
2879   \HyOpt@CheckDvi{nativepdf}{%
2880     \def\Hy@driver{hdvips}%
2881   }%
2882 }
2883 \DeclareVoidOption{dvipdfm}{%
2884   \HyOpt@CheckDvi{dvipdfm}{%
2885     \def\Hy@driver{hdvipdfm}%
2886   }%
2887 }
2888 \DeclareVoidOption{dvipdfmx}{%
2889   \HyOpt@CheckDvi{dvipdfmx}{%
2890     \def\Hy@driver{hdvipdfm}%
2891   }%
2892 }
2893 \define@key{Hyp}{dvipdfmx-outline-open}[true]{%
2894   \expandafter\ifx\csname if#1\expandafter\endcsname
2895     \csname iftrue\endcsname
2896   \chardef\SpecialDvipdfmxOutlineOpen\@ne
2897   \else
2898     \chardef\SpecialDvipdfmxOutlineOpen\z@
2899   \fi
2900 }
2901 \DeclareVoidOption{xetex}{%
2902   \ifxetex
2903     \def\Hy@driver{hxetex}%
2904   \else
2905     \Hy@Error{%
2906       Wrong driver option 'xetex',\MessageBreak
2907       because XeTeX is not detected%
2908     }\@ehc
2909   \fi
2910 }
2911 \DeclareVoidOption{pdfmark}{%
2912   \HyOpt@CheckDvi{pdfmark}{%
2913     \def\Hy@driver{hdvips}%
2914   }%
2915 }
2916 \DeclareVoidOption{dvips}{%
2917   \HyOpt@CheckDvi{dvips}{%
2918     \def\Hy@driver{hdvips}%
2919   }%
2920 }
2921 \DeclareVoidOption{hypertex}{%
2922   \HyOpt@CheckDvi{hypertex}{%
2923     \def\Hy@driver{hypertex}%

```

```

2924 }%
2925 }
2926 \let\Hy@MaybeStopNow\relax
2927 \DeclareVoidOption{vtex}{%
2928   \ifvtex
2929     \ifnum 0\ifnum\OpMode<1 1\fi \ifnum\OpMode>3 1\fi =0 %
2930     \def\Hy@driver{hvtex}%
2931   \else
2932     \ifnum\OpMode=10\relax
2933     \def\Hy@driver{hvtexhtm}%
2934     \def\MaybeStopEarly{%
2935       \Hy@Message{Stopped early}%
2936       \Hy@AtBeginDocument{%
2937         \PDF@FinishDoc
2938         \gdef\PDF@FinishDoc{}}%
2939     }%
2940     \endinput
2941   }%
2942   \else
2943     \Hy@Error{%
2944       Wrong driver option 'vtex',\MessageBreak
2945       because of wrong OpMode (\the\OpMode)%
2946     }\@ehc
2947   \fi
2948 \fi
2949 \else
2950 \Hy@Error{%
2951   Wrong driver option 'vtex',\MessageBreak
2952   because VTeX is not running%
2953 }\@ehc
2954 \fi
2955 }
2956 \DeclareVoidOption{vtexpdfmark}{%
2957   \ifvtex
2958     \ifnum 0\ifnum\OpMode<1 1\fi \ifnum\OpMode>3 1\fi =0 %
2959     \def\Hy@driver{hvtexmrk}%
2960   \else
2961     \Hy@Error{%
2962       Wrong driver option 'vtexpdfmark',\MessageBreak
2963       because of wrong OpMode (\the\OpMode)%
2964     }\@ehc
2965   \fi
2966 \else
2967 \Hy@Error{%
2968   Wrong driver option 'vtexpdfmark',\MessageBreak
2969   because VTeX is not running%
2970 }\@ehc
2971 \fi
2972 }
2973 \DeclareVoidOption{dviwindo}{%
2974   \HyOpt@CheckDvi{dviwindo}{%
2975     \def\Hy@driver{hdviwind}%
2976     \kvsetkeys{Hyp}{colorlinks}%
2977     \PassOptionsToPackage{dviwindo}{color}%
2978   }%
2979 }
2980 \DeclareVoidOption{dvipsone}{%

```

```

2981 \HyOpt@CheckDvi{dvipsone}{%
2982   \def\Hy@driver{hdvipson}%
2983 }%
2984 }
2985 \DeclareVoidOption{textures}{%
2986   \HyOpt@CheckDvi{textures}{%
2987     \def\Hy@driver{htexture}%
2988   }%
2989 }
2990 \DeclareVoidOption{latex2html}{%
2991   \HyOpt@CheckDvi{latex2html}{%
2992     \Hy@AtBeginDocument{\@@@latextohtmlX}%
2993   }%
2994 }

```

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

```

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

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

```

## 11 Options to add extra features

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

```

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

```

The automatic footnote linking can be disabled by option hyperfootnotes.

```

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

```

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

```

3018 \def\back@none{none}
3019 \def\back@section{section}
3020 \def\back@page{page}
3021 \def\back@slide{slide}
3022 \define@key{Hyp}{backref}[section]{%
3023   \lowercase{\def\Hy@tempa{#1}}%
3024   \ifx\Hy@tempa\@empty
3025     \let\Hy@tempa\back@section
3026   \fi
3027   \ifx\Hy@tempa\Hy>false

```

```

3028 \let\Hy@tempa\back@none
3029 \fi
3030 \ifx\Hy@tempa\back@slide
3031 \let\Hy@tempa\back@section
3032 \fi
3033 \ifx\Hy@tempa\back@page
3034 \PassOptionsToPackage{hyperpageref}{backref}%
3035 \Hy@backreftrue
3036 \else
3037 \ifx\Hy@tempa\back@section
3038 \PassOptionsToPackage{hyperref}{backref}%
3039 \Hy@backreftrue
3040 \else
3041 \ifx\Hy@tempa\back@none
3042 \Hy@backreffalse
3043 \else
3044 \Hy@WarnOptionValue{#1}{backref}{%
3045 'section', 'slide', 'page', 'none',\MessageBreak
3046 or 'false'}%
3047 \fi
3048 \fi
3049 \fi
3050 }
3051 \define@key{Hyp}{pagebackref}[true]{%
3052 \edef\Hy@tempa{#1}%
3053 \lowercase\expandafter{%
3054 \expandafter\def\expandafter\Hy@tempa\expandafter{\Hy@tempa}%
3055 }%
3056 \ifx\Hy@tempa\@empty
3057 \let\Hy@tempa\Hy>true
3058 \fi
3059 \ifx\Hy@tempa\Hy>true
3060 \PassOptionsToPackage{hyperpageref}{backref}%
3061 \Hy@backreftrue
3062 \else
3063 \ifx\Hy@tempa\Hy>false
3064 \Hy@backreffalse
3065 \else
3066 \Hy@WarnOptionValue{#1}{pagebackref}{'true' or 'false'}%
3067 \fi
3068 \fi
3069 }

```

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

```

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

```

Configuration of encap char.

```

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

```

## 12 Language options

The `\autoref` feature depends on the language.



```

3076 \def\HyLang@afrikaans{%
3077   \def\equationautorefname{Vergelyking}%
3078   \def\footnoteautorefname{Voetnota}%
3079   \def\itemautorefname{Item}%
3080   \def\figureautorefname{Figuur}%
3081   \def\tableautorefname{Tabel}%
3082   \def\partautorefname{Deel}%
3083   \def\appendixautorefname{Bylae}%
3084   \def\chapterautorefname{Hoofstuk}%
3085   \def\sectionautorefname{Afdeling}%
3086   \def\subsectionautorefname{Subafdeling}%
3087   \def\subsubsectionautorefname{Subsubafdeling}%
3088   \def\paragraphautorefname{Paragraaf}%
3089   \def\subparagraphautorefname{Subparagraaf}%
3090   \def\FancyVerbLineautorefname{Lyn}%
3091   \def\theoremautorefname{Teorema}%
3092   \def\pageautorefname{Bladsy}%
3093 }
3094 \def\HyLang@english{%
3095   \def\equationautorefname{Equation}%
3096   \def\footnoteautorefname{footnote}%
3097   \def\itemautorefname{item}%
3098   \def\figureautorefname{Figure}%
3099   \def\tableautorefname{Table}%
3100   \def\partautorefname{Part}%
3101   \def\appendixautorefname{Appendix}%
3102   \def\chapterautorefname{chapter}%
3103   \def\sectionautorefname{section}%
3104   \def\subsectionautorefname{subsection}%
3105   \def\subsubsectionautorefname{subsubsection}%
3106   \def\paragraphautorefname{paragraph}%
3107   \def\subparagraphautorefname{subparagraph}%
3108   \def\FancyVerbLineautorefname{line}%
3109   \def\theoremautorefname{Theorem}%
3110   \def\pageautorefname{page}%
3111 }
3112 \def\HyLang@french{%
3113   \def\equationautorefname{'Equation}%
3114   \def\footnoteautorefname{note}%
3115   \def\itemautorefname{item}%
3116   \def\figureautorefname{Figure}%
3117   \def\tableautorefname{Tableau}%
3118   \def\partautorefname{Partie}%
3119   \def\appendixautorefname{Appendice}%
3120   \def\chapterautorefname{chapitre}%
3121   \def\sectionautorefname{section}%
3122   \def\subsectionautorefname{sous-section}%
3123   \def\subsubsectionautorefname{sous-sous-section}%
3124   \def\paragraphautorefname{paragraphe}%
3125   \def\subparagraphautorefname{sous-paragraphe}%
3126   \def\FancyVerbLineautorefname{ligne}%
3127   \def\theoremautorefname{Th\'eor\`eme}%
3128   \def\pageautorefname{page}%
3129 }
3130 \def\HyLang@german{%
3131   \def\equationautorefname{Gleichung}%
3132   \def\footnoteautorefname{Fu\ss note}%

```

```

3133 \def\itemautorefname{Punkt}%
3134 \def\figureautorefname{Abbildung}%
3135 \def\tableautorefname{Tabelle}%
3136 \def\partautorefname{Teil}%
3137 \def\appendixautorefname{Anhang}%
3138 \def\chapterautorefname{Kapitel}%
3139 \def\sectionautorefname{Abschnitt}%
3140 \def\subsectionautorefname{Unterabschnitt}%
3141 \def\subsubsectionautorefname{Unterunterabschnitt}%
3142 \def\paragraphautorefname{Absatz}%
3143 \def\subparagraphautorefname{Unterabsatz}%
3144 \def\FancyVerbLineautorefname{Zeile}%
3145 \def\theoremautorefname{Theorem}%
3146 \def\pageautorefname{Seite}%
3147 }
3148 \def\HyLang@italian{%
3149 \def\equationautorefname{Equazione}%
3150 \def\footnoteautorefname{nota}%
3151 \def\itemautorefname{punto}%
3152 \def\figureautorefname{Figura}%
3153 \def\tableautorefname{Tabella}%
3154 \def\partautorefname{Parte}%
3155 \def\appendixautorefname{Appendice}%
3156 \def\chapterautorefname{Capitolo}%
3157 \def\sectionautorefname{sezione}%
3158 \def\subsectionautorefname{sottosezione}%
3159 \def\subsubsectionautorefname{sottosottosezione}%
3160 \def\paragraphautorefname{paragrafo}%
3161 \def\subparagraphautorefname{sottoparagrafo}%
3162 \def\FancyVerbLineautorefname{linea}%
3163 \def\theoremautorefname{Teorema}%
3164 \def\pageautorefname{Pag.\@}%
3165 }
3166 \def\HyLang@magyar{%
3167 \def\equationautorefname{Egyenlet}%
3168 \def\footnoteautorefname{1\`abjegyzet}%
3169 \def\itemautorefname{Elem}%
3170 \def\figureautorefname{\`Abra}%
3171 \def\tableautorefname{T\`abl\`azat}%
3172 \def\partautorefname{R\`esz}%
3173 \def\appendixautorefname{F\`uggel\`ek}%
3174 \def\chapterautorefname{fejezet}%
3175 \def\sectionautorefname{szakasz}%
3176 \def\subsectionautorefname{alszakasz}%
3177 \def\subsubsectionautorefname{alalszakasz}%
3178 \def\paragraphautorefname{bekezd\`es}%
3179 \def\subparagraphautorefname{albekezd\`es}%
3180 \def\FancyVerbLineautorefname{sor}%
3181 \def\theoremautorefname{T\`etel}%
3182 \def\pageautorefname{oldal}%
3183 }
3184 \def\HyLang@portuges{%
3185 \def\equationautorefname{Equa\c c\~ao}%
3186 \def\footnoteautorefname{Nota de rodap\`e}%
3187 \def\itemautorefname{Item}%
3188 \def\figureautorefname{Figura}%
3189 \def\tableautorefname{Tabela}%

```



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

```
3218 \def\figureautorefname{\cyr\cyrr\cyri\cyrs.}%
3219 \def\tableautorefname{\cyr\cyrt\cyra\cyrb\cyrl.}%
```

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

```
3220 \def\partautorefname{\cyr\cyrch.}%
3221 \def\chapterautorefname{\cyr\cyrg\cyrl.}%
3222 \def\sectionautorefname{\cyr\cyrr\cyra\cyrz\cyrd.}%
```

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

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

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

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

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

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

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

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

The name of verbatim line. Here could be a standard of the abbreviation (used very rare). But the author preprint publications (which have not any editor or corrector) can use this abbreviation for the page reference. So the meaning of the line reference can be read as reference to the page.

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

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

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

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

```
3236 % \def\FancyVerbLineautorefname{\cyr\cyrs\cyrt\cyrr\cyrk.}%
```

The names of theorem: if we want have “the good face of the book”, so the theorem reference must have the full name (like equation reference). But ...

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

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

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

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

```

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

3242 \def\HyLang@spanish{%
3243 \def\equationautorefname{Ecuaci\'}on}%
3244 \def\footnoteautorefname{Nota a pie de p\'}agina}%
3245 \def\itemautorefname{Elemento}%
3246 \def\figureautorefname{Figura}%
3247 \def\tableautorefname{Tabla}%
3248 \def\partautorefname{Parte}%
3249 \def\appendixautorefname{Ap\'}endice}%
3250 \def\chapterautorefname{Cap\'}itulo}%
3251 \def\sectionautorefname{Secci\'}on}%
3252 \def\subsectionautorefname{Subsecci\'}on}%
3253 \def\subsubsectionautorefname{Subsubsecci\'}on}%
3254 \def\paragraphautorefname{P\'}arrafo}%
3255 \def\subparagraphautorefname{Subp\'}arrafo}%
3256 \def\FancyVerbLineautorefname{L\'}inea}%
3257 \def\theoremautorefname{Teorema}%
3258 \def\pageautorefname{P\'}agina}%
3259 }

3260 \def\HyLang@vietnamese{%
3261 \def\equationautorefname{Ph\'}uhorn\'}\ohorn\'}ng tr\'}inh}%
3262 \def\footnoteautorefname{Ch\'}u th\'}ich}%
3263 \def\itemautorefname{m\'}d\'}u\'}c}%
3264 \def\figureautorefname{H\'}inh}%
3265 \def\tableautorefname{B\'}h\'}a\'}ng}%
3266 \def\partautorefname{Ph\'}\acircumflex\'}n}%
3267 \def\appendixautorefname{Ph\'}d\'}u\'}l\'}d\'}u\'}c}%
3268 \def\chapterautorefname{ch\'}uhorn\'}\ohorn\'}ng}%
3269 \def\sectionautorefname{m\'}d\'}u\'}c}%
3270 \def\subsectionautorefname{m\'}d\'}u\'}c}%
3271 \def\subsubsectionautorefname{m\'}d\'}u\'}c}%
3272 \def\paragraphautorefname{\dj\'}o\'}d\'}a\'}n}%
3273 \def\subparagraphautorefname{\dj\'}o\'}d\'}a\'}n}%
3274 \def\FancyVerbLineautorefname{d\'}ong}%
3275 \def\theoremautorefname{DJ\'}\d\'}i\'}nh l\'}y}%
3276 \def\pageautorefname{Trang}%
3277 }

```

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

```

3278 \def\HyLang@addto#1#2{%
3279 #2%
3280 \@temptokena{#2}%
3281 \ifx#1\relax
3282 \let#1\@empty
3283 \fi
3284 \ifx#1\@undefined
3285 \edef#1{\the\@temptokena}%
3286 \else
3287 \toks@\expandafter{#1}%
3288 \edef#1{\the\toks@\the\@temptokena}%
3289 \fi
3290 \@temptokena{}\toks@\@temptokena
3291 }

3292 \def\HyLang@DeclareLang#1#2#3{%

```

```

3293 \@ifpackagewith{babel}{#1}{%
3294 \expandafter\HyLang@addto
3295 \csname extras#1\expandafter\endcsname
3296 \csname HyLang@#2\endcsname
3297 \beginngroup
3298 \edef\x{\endgroup
3299 #3%
3300 }%
3301 \x
3302 \@namedef{HyLang@#1@done}{}%
3303 }{}%
3304 \beginngroup
3305 \edef\x##1##2{%
3306 \noexpand\ifx##2\relax
3307 \errmessage{No definitions for language #2' found!}%
3308 \noexpand\fi
3309 \endgroup
3310 \noexpand\define@key{Hyp}{#1}[]{}%
3311 \noexpand\@ifundefined{HyLang@#1@done}{%
3312 \noexpand\HyLang@addto{\noexpand##1}{\noexpand##2}%
3313 #3%
3314 \noexpand\@namedef{HyLang@#1@done}{}%
3315 }{}%
3316 }%
3317 }%
3318 \expandafter\x\csname extras#1\expandafter\endcsname
3319 \csname HyLang@#2\endcsname
3320 }
3321 \HyLang@DeclareLang{english}{english}{}
3322 \HyLang@DeclareLang{UKenglish}{english}{}
3323 \HyLang@DeclareLang{british}{english}{}
3324 \HyLang@DeclareLang{USenglish}{english}{}
3325 \HyLang@DeclareLang{american}{english}{}
3326 \HyLang@DeclareLang{german}{german}{}
3327 \HyLang@DeclareLang{austrian}{german}{}
3328 \HyLang@DeclareLang{ngerman}{german}{}
3329 \HyLang@DeclareLang{naustrian}{german}{}
3330 \HyLang@DeclareLang{russian}{russian}{\noexpand\hypersetup{unicode}}
3331 \HyLang@DeclareLang{brazil}{portuges}{}
3332 \HyLang@DeclareLang{brazilian}{portuges}{}
3333 \HyLang@DeclareLang{portuguese}{portuges}{}
3334 \HyLang@DeclareLang{spanish}{spanish}{}
3335 \HyLang@DeclareLang{afrikaans}{afrikaans}{}
3336 \HyLang@DeclareLang{french}{french}{}
3337 \HyLang@DeclareLang{frenchb}{french}{}
3338 \HyLang@DeclareLang{francais}{french}{}
3339 \HyLang@DeclareLang{acadian}{french}{}
3340 \HyLang@DeclareLang{canadien}{french}{}
3341 \HyLang@DeclareLang{italian}{italian}{}
3342 \HyLang@DeclareLang{magyar}{magyar}{}
3343 \HyLang@DeclareLang{hungarian}{magyar}{}

```

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

```

3344 \DeclareVoidOption{vietnamese}{%
3345 \HyLang@addto\extrasvietnamese\HyLang@vietnamese
3346 \Hy@AtEndOfPackage{%
3347 \@ifundefined{T@PU}{}{}%
3348 \input{pvnenc.def}%

```

```

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

```

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

```

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

```

## 13 Options to change appearance of links

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

```

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

```

## 14 Bookmarking

```

3397 \begingroup\expandafter\expandafter\expandafter\endgroup
3398 \expandafter\ifx\csname chapter\endcsname\relax
3399   \def\toclevel@part{0}%
3400 \else
3401   \def\toclevel@part{-1}%
3402 \fi
3403 \def\toclevel@chapter{0}
3404 \def\toclevel@section{1}
3405 \def\toclevel@subsection{2}
3406 \def\toclevel@subsubsection{3}
3407 \def\toclevel@paragraph{4}
3408 \def\toclevel@subparagraph{5}
3409 \def\toclevel@figure{0}
3410 \def\toclevel@table{0}
3411 \ifpackageloaded{listings}{%
3412   \providecommand*\theHlstlisting{\thelstlisting}%
3413   \providecommand*\toclevel@lstlisting{0}%
3414 }{}
3415 \ifpackageloaded{listing}{%
3416   \providecommand*\theHlisting{\thelisting}%
3417   \providecommand*\toclevel@listing{0}%
3418 }{}
3419 \define@key{Hyp}{bookmarks}[true]{%
3420   \Hy@boolkey{bookmarks}{#1}%
3421 }
3422 \define@key{Hyp}{bookmarksopen}[true]{%
3423   \Hy@boolkey{bookmarksopen}{#1}%
3424 }

```

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

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

```

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

```



```

3441         \count@=\x
3442         \xdef\Hy@bookmarksdepth{\the\count@}%
3443     }%
3444     \fi
3445 }{%
3446     \setbox\z@=\hbox{%
3447         \count@=\csname toplevel@\x\endcsname
3448         \xdef\Hy@bookmarksdepth{\the\count@}%
3449     }%
3450 }%
3451     \fi
3452 \endgroup
3453 }

```

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

```

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

```

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

```

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

```

Option CJKbookmarks enables the patch for CJK bookmarks.

```

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

3469 \def\Hy@temp#1{%
3470   \expandafter\Hy@@temp\csname @#1color\endcsname{#1}%
3471 }

3472 \def\Hy@@temp#1#2#3{%
3473   \define@key{Hyp}{#2color}{%
3474     \HyColor@HyperrefColor{##1}#1%
3475   }%
3476   \def#1{#3}%
3477 }

3478 \Hy@temp{link}{red}
3479 \Hy@temp{anchor}{black}
3480 \Hy@temp{cite}{green}
3481 \Hy@temp{file}{cyan}
3482 \Hy@temp{url}{magenta}
3483 \Hy@temp{menu}{red}
3484 \Hy@temp{run}{\@filecolor}
3485 \define@key{Hyp}{pagecolor}{%
3486   \Hy@WarningPageColor
3487 }
3488 \def\Hy@WarningPageColor{%
3489   \Hy@WarningNoLine{Option ‘pagecolor’ is not available anymore}%
3490   \global\let\Hy@WarningPageColor\relax
3491 }

```

```

3492 \define@key{Hyp}{allcolors}{%
3493   \HyColor@HyperrefColor{#1}\@linkcolor
3494   \HyColor@HyperrefColor{#1}\@anchorcolor
3495   \HyColor@HyperrefColor{#1}\@citecolor
3496   \HyColor@HyperrefColor{#1}\@filecolor
3497   \HyColor@HyperrefColor{#1}\@urlcolor
3498   \HyColor@HyperrefColor{#1}\@menucolor
3499   \HyColor@HyperrefColor{#1}\@runcolor
3500 }

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

```

## 15 PDF-specific options

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

```

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

```

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

```

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

```

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

```

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

```

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

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

```

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

```

```

3582     for option 'pdfborder'\MessageBreak
3583     Option setting is ignored%
3584 }%
3585 \let\@pdfborder\Hy@temp
3586 }%
3587 }
3588 \define@key{Hyp}{pdfborderstyle}{%
3589 \let\Hy@temp\@pdfborderstyle
3590 \def\@pdfborderstyle{#1}%
3591 \Hy@Match\@pdfborderstyle{%
3592 ~%
3593 ( */Type */Border%
3594 | */W +\HyPat@NonNegativeReal/%
3595 | */S */[SDBIU]%
3596 | */D *[ \HyPat@NonNegativeReal/( \HyPat@NonNegativeReal/)?]?%
3597 )* *$%
3598 }-{}-%
3599 \Hy@Warning{%
3600 Invalid value '\@pdfborderstyle'\MessageBreak
3601 for option 'pdfborderstyle'\MessageBreak
3602 Option setting is ignored%
3603 }%
3604 \let\@pdfborderstyle\Hy@temp
3605 }%
3606 }
3607 \def\Hy@setpdfborder{%
3608 \ifx\@pdfborder\@empty
3609 \else
3610 /Border[\@pdfborder]%
3611 \fi
3612 \ifx\@pdfborderstyle\@empty
3613 \else
3614 /BS<<\@pdfborderstyle>>%
3615 \fi
3616 }
3617 \Hy@DefNameKey{pdfpagemode}{%
3618 \do{UseNone}{}%
3619 \do{UseOutlines}{}%
3620 \do{UseThumbs}{}%
3621 \do{FullScreen}{}%
3622 \do{UseOC}{PDF 1.5}%
3623 \do{UseAttachments}{PDF 1.6}%
3624 }
3625 \Hy@DefNameKey{pdfnonfullscreenpagemode}{%
3626 \do{UseNone}{}%
3627 \do{UseOutlines}{}%
3628 \do{UseThumbs}{}%
3629 \do{FullScreen}{}%
3630 \do{UseOC}{PDF 1.5}%
3631 \do{UseAttachments}{PDF 1.6}%
3632 }
3633 \Hy@DefNameKey{pdfdirection}{%
3634 \do{L2R}{Left to right}%
3635 \do{R2L}{Right to left}%
3636 }
3637 \Hy@DefNameKey{pdfviewarea}{%
3638 \do{MediaBox}{}%

```

```

3639 \do{CropBox}{}%
3640 \do{BleedBox}{}%
3641 \do{TrimBox}{}%
3642 \do{ArtBox}{}%
3643 }
3644 \Hy@DefNameKey{pdfviewclip}{%
3645 \do{MediaBox}{}%
3646 \do{CropBox}{}%
3647 \do{BleedBox}{}%
3648 \do{TrimBox}{}%
3649 \do{ArtBox}{}%
3650 }
3651 \Hy@DefNameKey{pdfprintarea}{%
3652 \do{MediaBox}{}%
3653 \do{CropBox}{}%
3654 \do{BleedBox}{}%
3655 \do{TrimBox}{}%
3656 \do{ArtBox}{}%
3657 }
3658 \Hy@DefNameKey{pdfprintclip}{%
3659 \do{MediaBox}{}%
3660 \do{CropBox}{}%
3661 \do{BleedBox}{}%
3662 \do{TrimBox}{}%
3663 \do{ArtBox}{}%
3664 }
3665 \Hy@DefNameKey{pdfprintscaling}{%
3666 \do{AppDefault}{}%
3667 \do{None}{}%
3668 }
3669 \Hy@DefNameKey{pdfduplex}{%
3670 \do{Simplex}{}%
3671 \do{DuplexFlipShortEdge}{}%
3672 \do{DuplexFlipLongEdge}{}%
3673 }
3674 \Hy@DefNameKey{pdfpicktraybypdfsize}{%
3675 \do{true}{}%
3676 \do{false}{}%
3677 }
3678 \define@key{Hyp}{pdfprintpagerange}{%
3679 \def\@pdfprintpagerange{#1}%
3680 }
3681 \Hy@DefNameKey{pdfnumcopies}{%
3682 \do{2}{two copies}%
3683 \do{3}{three copies}%
3684 \do{4}{four copies}%
3685 \do{5}{five copies}%
3686 }
3687 \define@key{Hyp}{pdfusetitle}[true]{%
3688 \Hy@boolkey{pdfusetitle}{#1}%
3689 }
3690 \def\HyXeTeX@CheckUnicode{%
3691 \ifxetex
3692 \ifHy@unicode
3693 \else
3694 \Hy@WarningNoLine{%
3695 XeTeX driver only supports unicode.\MessageBreak

```

```

3696     Enabling option 'unicode'%
3697   }%
3698   \kvsetkeys{Hyp}{unicode}%
3699   \fi
3700 \else
3701   \let\HyXeTeX@CheckUnicode\relax
3702 \fi
3703 }
3704 \def\HyPsd@PrerenderUnicode#1{%
3705   \begingroup
3706   \expandafter\ifx\csname PrerenderUnicode\endcsname\relax
3707   \else
3708     \sbox0{%
3709       \let\GenericInfo\@gobbletwo
3710       \let\GenericWarning\@gobbletwo
3711       \let\GenericError\@gobblefour
3712       \PrerenderUnicode{#1}%
3713     }%
3714   \fi
3715   \endgroup
3716 }
3717 \define@key{Hyp}{pdftitle}{%
3718   \HyXeTeX@CheckUnicode
3719   \HyPsd@XeTeXBigCharstrue
3720   \HyPsd@PrerenderUnicode{#1}%
3721   \pdfstringdef\@pdftitle{#1}%
3722 }
3723 \define@key{Hyp}{pdfauthor}{%
3724   \HyXeTeX@CheckUnicode
3725   \HyPsd@XeTeXBigCharstrue
3726   \HyPsd@PrerenderUnicode{#1}%
3727   \pdfstringdef\@pdfauthor{#1}%
3728 }
3729 \define@key{Hyp}{pdfproducer}{%
3730   \HyXeTeX@CheckUnicode
3731   \HyPsd@XeTeXBigCharstrue
3732   \HyPsd@PrerenderUnicode{#1}%
3733   \pdfstringdef\@pdfproducer{#1}%
3734 }
3735 \define@key{Hyp}{pdfcreator}{%
3736   \HyXeTeX@CheckUnicode
3737   \HyPsd@XeTeXBigCharstrue
3738   \HyPsd@PrerenderUnicode{#1}%
3739   \pdfstringdef\@pdfcreator{#1}%
3740 }
3741 \define@key{Hyp}{pdfcreationdate}{%
3742   \begingroup
3743   \Hy@unicodedefalse
3744   \pdfstringdef\@pdfcreationdate{#1}%
3745   \endgroup
3746 }
3747 \define@key{Hyp}{pdfmoddate}{%
3748   \begingroup
3749   \Hy@unicodedefalse
3750   \pdfstringdef\@pdfmoddate{#1}%
3751   \endgroup
3752 }

```

```

3753 \define@key{Hyp}{pdfsubject}{%
3754   \HyXeTeX@CheckUnicode
3755   \HyPsd@XeTeXBigCharstrue
3756   \HyPsd@PrerenderUnicode{#1}%
3757   \pdfstringdef\@pdfsubject{#1}%
3758 }
3759 \define@key{Hyp}{pdfkeywords}{%
3760   \HyXeTeX@CheckUnicode
3761   \HyPsd@XeTeXBigCharstrue
3762   \HyPsd@PrerenderUnicode{#1}%
3763   \pdfstringdef\@pdfkeywords{#1}%
3764 }
3765 \define@key{Hyp}{pdftrapped}{%
3766   \lowercase{\edef\Hy@temp{#1}}%
3767   \ifx\Hy@temp\HyInfo@trapped@true
3768     \def\@pdftrapped{True}%
3769   \else
3770     \ifx\Hy@temp\HyInfo@trapped@false
3771       \def\@pdftrapped{False}%
3772     \else
3773       \ifx\Hy@temp\HyInfo@trapped@unknown
3774         \def\@pdftrapped{Unknown}%
3775       \else
3776         \ifx\Hy@temp\@empty
3777           \else
3778             \Hy@Warning{%
3779               Unsupported value ‘#1’\MessageBreak
3780               for option ‘pdftrapped’%
3781             }%
3782           \fi
3783         \def\@pdftrapped{}%
3784       \fi
3785     \fi
3786   \fi
3787 }
3788 \def\HyInfo@trapped@true{true}
3789 \def\HyInfo@trapped@false{false}
3790 \def\HyInfo@trapped@unknown{unknown}
3791 \def\HyInfo@TrappedUnsupported{%
3792   \ifx\@pdftrapped\@empty
3793     \else
3794       \Hy@WarningNoLine{‘pdftrapped’ is not supported by this driver}%
3795     \gdef\HyInfo@TrappedUnsupported{}%
3796   \fi
3797 }
3798 \define@key{Hyp}{pdfinfo}{%
3799   \kvsetkeys{pdfinfo}{#1}%
3800 }
3801 \def\Hy@temp#1{%
3802   \lowercase{\Hy@temp@A{#1}}{#1}%
3803 }
3804 \def\Hy@temp@A#1#2{%
3805   \define@key{pdfinfo}{#2}{%
3806     \hypersetup{pdf#1={##1}}%
3807   }%
3808 }
3809 \Hy@temp{Title}

```

```

3810 \Hy@temp{Author}
3811 \Hy@temp{Keywords}
3812 \Hy@temp{Subject}
3813 \Hy@temp{Creator}
3814 \Hy@temp{Producer}
3815 \Hy@temp{CreationDate}
3816 \Hy@temp{ModDate}
3817 \Hy@temp{Trapped}
3818 \newif\ifHyInfo@AddonUnsupported
3819 \kv@set@family@handler{pdfinfo}{%
3820   \HyInfo@AddonHandler{#1}{#2}%
3821 }
3822 \let\HyInfo@do\relax
3823 \def\HyInfo@AddonHandler#1#2{%
3824   \ifx\kv@value\relax
3825     \Hy@Warning{%
3826       Option 'pdfinfo': ignoring key '\kv@key' without value%
3827     }%
3828   \else
3829     \EdefEscapeName\HyInfo@KeyEscaped{\kv@key}%
3830     \EdefUnescapeName\HyInfo@Key{\HyInfo@KeyEscaped}%
3831     \expandafter\ifx\curname KV@pdfinfo@\HyInfo@Key\endcurname\relax
3832     \ifHyInfo@AddonUnsupported
3833       \Hy@Warning{%
3834         This driver does not support additional\MessageBreak
3835         information entries, therefore\MessageBreak
3836         '\kv@key' is ignored%
3837       }%
3838     \else
3839       \define@key{pdfinfo}{\HyInfo@Key}{%
3840         \HyXeTeX@CheckUnicode
3841         \HyPsd@XeTeXBigCharstrue
3842         \HyPsd@PrerenderUnicode{##1}%
3843         \pdfstringdef\HyInfo@Value{##1}%
3844         \expandafter\let\curname HyInfo@Value@\HyInfo@Key\endcurname
3845         \HyInfo@Value
3846       }%
3847     \edef\HyInfo@AddonList{%
3848       \HyInfo@AddonList
3849       \HyInfo@do{\HyInfo@Key}%
3850     }%
3851     \kv@parse@normalized{%
3852       \HyInfo@Key={#2}%
3853     }{%
3854       \kv@processor@default{pdfinfo}%
3855     }%
3856   \fi
3857 \else
3858   \kv@parse@normalized{%
3859     \HyInfo@Key={#2}%
3860   }{%
3861     \kv@processor@default{pdfinfo}%
3862   }%
3863 \fi
3864 \fi
3865 }
3866 \def\HyInfo@GenerateAddons{%

```



```

3867 \ifHyInfo@AddonUnsupported
3868   \def\HyInfo@Addons{}%
3869 \else
3870   \begingroup
3871     \toks@{ }%
3872     \def\HyInfo@do##1{%
3873       \edefEscapeName\HyInfo@Key{##1}%
3874       \edef\x{%
3875         \toks@{%
3876           \the\toks@
3877           /\HyInfo@Key(\csize HyInfo@Value@##1\endcsize)%
3878         }%
3879       }%
3880       \x
3881     }%
3882     \HyInfo@AddonList
3883     \edef\x{\endgroup
3884       \def\noexpand\HyInfo@Addons{\the\toks@}%
3885     }%
3886     \x
3887   \fi
3888 }
3889 \let\HyInfo@AddonList\ltx@empty

3890 \define@key{Hyp}{pdfview}{\calculate@pdfview#1 \ }
3891 \define@key{Hyp}{pdfinkmargin}{\setpdfinkmargin{#1}}
3892 \let\setpdfinkmargin\gobble
3893 \def\calculate@pdfview#1 #2\{%
3894   \def\@pdfview{#1}%
3895   \ifx\#2\%
3896     \def\@pdfviewparams{-32768}%
3897   \else
3898     \def\@pdfviewparams{#2}%
3899   \fi
3900 }
3901 \begingroup\expandafter\expandafter\expandafter\endgroup
3902 \expandafter\ifx\csize numexpr\endcsize\relax
3903   \def\Hy@number#1{%
3904     \expandafter\@firstofone\expandafter{\number#1}%
3905   }%
3906 \else
3907   \def\Hy@number#1{%
3908     \the\numexpr#1\relax
3909   }%
3910 \fi
3911 \define@key{Hyp}{pdfstartpage}{%
3912   \ifx\#1\%
3913     \let\@pdfstartpage\ltx@empty
3914   \else
3915     \edef\@pdfstartpage{\Hy@number{#1}}%
3916   \fi
3917 }%
3918 \define@key{Hyp}{pdfstartview}{%
3919   \ifx\#1\%
3920     \let\@pdfstartview\ltx@empty
3921   \else
3922     \hypercalcbpdef\@pdfstartview{/#1}%
3923   \fi

```

```

3924 }
3925 \def\HyPat@NonNegativeReal/{%
3926 \ *([0-9]+\.[0-9]*|[0-9]*\.[0-9]+) *%
3927 }
3928 \define@key{Hyp}{pdfremotestartview}{%
3929 \ifx\#1\%
3930 \def\@pdfremotestartview{/Fit}%
3931 \else
3932 \hypercalcbpdef\@pdfremotestartview{#1}%
3933 \edef\@pdfremotestartview{\@pdfremotestartview}%
3934 \Hy@Match\@pdfremotestartview{%
3935 ~(XYZ -?(null|\HyPat@NonNegativeReal/) %
3936 -?(null|\HyPat@NonNegativeReal/) %
3937 (null|\HyPat@NonNegativeReal/)|%
3938 Fit(|B|%
3939 (H|V|BH|BV) (null|\HyPat@NonNegativeReal/)|%
3940 R \HyPat@NonNegativeReal/ \HyPat@NonNegativeReal/ %
3941 \HyPat@NonNegativeReal/ \HyPat@NonNegativeReal/%
3942 )$%
3943 }-}{%
3944 \Hy@Warning{%
3945 Invalid value '\@pdfremotestartview'\MessageBreak
3946 of 'pdfremotestartview'\MessageBreak
3947 is replaced by 'Fit'%
3948 }%
3949 \let\@pdfremotestartview\@empty
3950 }%
3951 \ifx\@pdfremotestartview\@empty
3952 \def\@pdfremotestartview{/Fit}%
3953 \else
3954 \edef\@pdfremotestartview{/ \@pdfremotestartview}%
3955 \fi
3956 \fi
3957 }
3958 \define@key{Hyp}{pdfpagescrop}{\edef\@pdfpagescrop{#1}}
3959 \define@key{Hyp}{pdftoolbar}[true]{%
3960 \Hy@boolkey{pdftoolbar}{#1}%
3961 }
3962 \define@key{Hyp}{pdfmenubar}[true]{%
3963 \Hy@boolkey{pdfmenubar}{#1}%
3964 }
3965 \define@key{Hyp}{pdfwindowui}[true]{%
3966 \Hy@boolkey{pdfwindowui}{#1}%
3967 }
3968 \define@key{Hyp}{pdffitwindow}[true]{%
3969 \Hy@boolkey{pdffitwindow}{#1}%
3970 }
3971 \define@key{Hyp}{pdfcenterwindow}[true]{%
3972 \Hy@boolkey{pdfcenterwindow}{#1}%
3973 }
3974 \define@key{Hyp}{pdfdisplaydoctitle}[true]{%
3975 \Hy@boolkey{pdfdisplaydoctitle}{#1}%
3976 }
3977 \define@key{Hyp}{pdfa}[true]{%
3978 \Hy@boolkey{pdfa}{#1}%
3979 }
3980 \define@key{Hyp}{pdfnewwindow}[true]{%

```

```

3981 \def\Hy@temp{#1}%
3982 \ifx\Hy@temp\@empty
3983   \Hy@pdfnewwindowsetfalse
3984 \else
3985   \Hy@pdfnewwindowsettrue
3986   \Hy@boolkey{pdfnewwindow}{#1}%
3987 \fi
3988 }
3989 \def\Hy@SetNewWindow{%
3990   \ifHy@pdfnewwindowset
3991     /NewWindow %
3992   \ifHy@pdfnewwindow true\else false\fi
3993 \fi
3994 }
3995 \Hy@DefNameKey{pdfpagelayout}{%
3996   \do{SinglePage}{}%
3997   \do{OneColumn}{}%
3998   \do{TwoColumnLeft}{}%
3999   \do{TwoColumnRight}{}%
4000   \do{TwoPageLeft}{PDF 1.5}%
4001   \do{TwoPageRight}{PDF 1.5}%
4002 }
4003 \define@key{Hyp}{pdflang}{%
4004   \def\@pdflang{#1}%
4005 }
4006 \define@key{Hyp}{pdfpagelabels}[true]{%
4007   \Hy@boolkey{pdfpagelabels}{#1}%
4008 }
4009 \define@key{Hyp}{pdfescapeform}[true]{%
4010   \Hy@boolkey{pdfescapeform}{#1}%
4011 }

```

Default values:

```

4012 \def\@linkbordercolor{1 0 0}
4013 \def\@urlbordercolor{0 1 1}
4014 \def\@menubordercolor{1 0 0}
4015 \def\@filebordercolor{0 .5 .5}
4016 \def\@runbordercolor{0 .7 .7}
4017 \def\@citebordercolor{0 1 0}
4018 \def\@pdfhighlight{/I}
4019 \let\@pdftitle\ltx@empty
4020 \let\@pdfauthor\ltx@empty
4021 \let\@pdfproducer\relax
4022 \def\@pdfcreator{LaTeX with hyperref package}
4023 \let\@pdfcreationdate\ltx@empty
4024 \let\@pdfmoddate\ltx@empty
4025 \let\@pdfsubject\ltx@empty
4026 \let\@pdfkeywords\ltx@empty
4027 \let\@pdftrapped\ltx@empty
4028 \let\@pdfpagescrop\ltx@empty
4029 \def\@pdfstartview{/Fit}
4030 \def\@pdfremotestartview{/Fit}
4031 \def\@pdfstartpage{1}
4032 \let\@pdfprintpagerange\ltx@empty
4033 \let\@pdflang\ltx@empty
4034 \let\PDF@SetupDoc\@empty
4035 \let\PDF@FinishDoc\@empty
4036 \let\phantomsection\@empty

```

```

4037 \let\special@paper\@empty
4038 \def\HyperDestNameFilter#1{#1}
4039 \Hy@AtBeginDocument{%
4040   \begingroup
4041   \edef\x{\@ifundefined{stockheight}\paperheight\stockheight}%
4042   \dimen@=\x\relax
4043   \ifdim\dimen@>\z@
4044   \else
4045     \dimen@=11in\relax
4046     \Hy@WarningNoLine{%
4047       Height of page (\expandafter\string\x) %
4048       is invalid (\the\x),\MessageBreak
4049       using 11in%
4050     }%
4051   \fi
4052   \dimen@=0.99626401\dimen@
4053   \xdef\Hy@pageheight{\strip@pt\dimen@}%
4054 \endgroup
4055 }
4056 \def\HyInd@EncapChar{\|}

```

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

```

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

```

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

```

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

```

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

```

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

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

```

After processing options.

## 15.1 Package `xspace` support

```

4080 \def\Hy@xspace@end{}

```

```

4081 \ltx@ifundefined{xspaceaddexceptions}{%
4082   \Hy@AtBeginDocument{%
4083     \ltx@ifundefined{xspaceaddexceptions}{%
4084       }{%
4085         \def\Hy@xspace@end{%
4086           \ltx@gobble{end for xspace}%
4087         }%
4088         \xspaceaddexceptions{\Hy@xspace@end,\hyper@linkend,\hyper@anchorend}%
4089       }%
4090     }%
4091   }{%
4092     \def\Hy@xspace@end{%
4093       \ltx@gobble{end for xspace}%
4094     }%
4095     \xspaceaddexceptions{\Hy@xspace@end,\hyper@linkend,\hyper@anchorend}%
4096   }

```

## 15.2 Option draft

```

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

```

## 15.3 PDF/A

```

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

```

```

4134     \else
4135     \ifx\x\Hy@FirstPage
4136     \let\y=Y%
4137     \else
4138     \ifx\x\Hy@LastPage
4139     \let\y=Y%
4140     \else
4141     \let\y=N%
4142     \fi
4143     \fi
4144     \fi
4145     \fi
4146 \expandafter\endgroup
4147 \ifx\y Y%
4148 \else
4149 \Hy@Error{%
4150   PDF/A: Named action '#1' is not permitted%
4151 } \@ehc
4152 {#2}%
4153 \expandafter\@gobble
4154 \fi
4155 }%
4156 \def\Hy@temp#1{%
4157   \expandafter\def\csname Hy@#1\endcsname{#1}%
4158   \expandafter\@onelevel@sanitize\csname Hy@#1\endcsname
4159 }%
4160 \Hy@temp{NextPage}%
4161 \Hy@temp{PrevPage}%
4162 \Hy@temp{FirstPage}%
4163 \Hy@temp{LastPage}%
4164 \else
4165 \def\Hy@Acrobatmenu#1#2{\leavevmode}%
4166 \fi

```

## 15.4 Patch for babel's \texttilde

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

```

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

4174 \def\Hy@wrapper@babel#1#2{%
4175   \begingroup
4176   \Hy@safe@activetrue
4177   \set@display@protect
4178   \edef\x{#2}%
4179   \@onelevel@sanitize\x
4180   \toks@{#1}%
4181   \edef\x{\endgroup\the\toks@{\x}}%
4182   \x
4183 }
4184 \def\Hy@WrapperDef#1{%
4185   \begingroup

```

```

4186 \escapechar=\m@ne
4187 \xdef\Hy@gtemp{%
4188   \expandafter\noexpand\csname HyWrap@\string#1\endcsname
4189 }%
4190 \endgroup
4191 \edef#1{%
4192   \noexpand\Hy@wrapper@babel
4193   \expandafter\noexpand\Hy@gtemp
4194 }%
4195 \expandafter\def\Hy@gtemp
4196 }

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

```

```

4243 \let\autopageref\pageref
4244 \ifx\@pdfpagemode\@empty
4245 \gdef\@pdfpagemode{UseNone}%
4246 \fi
4247 \global\Hy@backreffalse
4248 }%
4249 \Hy@AtEndOfPackage{%
4250 \global\let\ReadBookmarks\relax
4251 \global\let\WriteBookmarks\relax
4252 }%
4253 \fi
4254 \Hy@DisableOption{implicit}

```

#### 15.4.1 Driver loading

```

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

```

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

```

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

```



```

4295     Forcing driver ‘\Hy@temp.def’ for XeTeX%
4296     }%
4297     \let\Hy@driver\Hy@temp
4298   \fi
4299 \fi
4300 \fi
4301 \fi
4302 \ifx\Hy@driver\@empty
4303 \else
4304   \def\Hy@temp{hvtexhtm}%
4305   \ifvtexhtml
4306     \ifx\Hy@driver\Hy@temp
4307     \else
4308       \Hy@WarningNoLine{%
4309         Wrong driver ‘\Hy@driver.def’;\MessageBreak
4310         VTeX is running in HTML mode.\MessageBreak
4311         Forcing driver ‘\Hy@temp.def’%
4312       }%
4313       \let\Hy@driver\Hy@temp
4314     \fi
4315   \else
4316     \ifx\Hy@driver\Hy@temp
4317     \Hy@WarningNoLine{%
4318       Wrong driver ‘\Hy@driver.def’;\MessageBreak
4319       VTeX is not running in HTML mode.\MessageBreak
4320       Using default driver%
4321     }%
4322     \let\Hy@driver\@empty
4323   \fi
4324 \fi
4325 \fi

```

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

```

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

```

```

4351         \def\Hy@driver{hvtex}%
4352     \else
4353         \ifx\HyOpt@DriverFallback\ltx@empty
4354             \let\Hy@driver\Hy@defaultdriver
4355             \def\HyOpt@DriverType{ (default)}%
4356         \else
4357             \begingroup
4358                 \toks@{\expandafter{\HyOpt@DriverFallback}}%
4359                 \edef\x{\endgroup
4360                     \noexpand\kvsetkeys{Hyp}{\the\toks@}}%
4361                 }%
4362             \x
4363             \ifx\Hy@driver\ltx@empty
4364                 \let\Hy@driver\Hy@defaultdriver
4365                 \def\HyOpt@DriverType{ (default)}%
4366             \else
4367                 \def\HyOpt@DriverType{ (fallback)}%
4368             \fi
4369         \fi
4370     \fi
4371 \fi
4372 \fi
4373 \fi
4374 \fi
4375 \ifx\Hy@driver\Hy@defaultdriver
4376     \def\Hy@temp{hdvwind}%
4377     \ifx\Hy@temp\Hy@driver
4378         \kvsetkeys{Hyp}{colorlinks}%
4379         \PassOptionsToPackage{dviwindo}{color}%
4380     \fi
4381 \fi
4382 \fi
4383 \Hy@Message{Driver\HyOpt@DriverType: \Hy@driver}%
4384 \chardef\Hy@VersionChecked=0 %
4385 \input{\Hy@driver.def}%
4386 \ifcase\Hy@VersionChecked
4387     \Hy@VersionCheck{\Hy@driver.def}%
4388 \fi
4389 \let\@unprocessedoptions\relax
4390 \Hy@RestoreCatcodes
4391 \Hy@DisableOption{tex4ht}%
4392 \Hy@DisableOption{pdftex}%
4393 \Hy@DisableOption{nativepdf}%
4394 \Hy@DisableOption{dvipdfm}%
4395 \Hy@DisableOption{dvipdfmx}%
4396 \Hy@DisableOption{dvipdfmx-outline-open}%
4397 \Hy@DisableOption{pdfmark}%
4398 \Hy@DisableOption{dvips}%
4399 \Hy@DisableOption{hypertex}%
4400 \Hy@DisableOption{vtex}%
4401 \Hy@DisableOption{vtexpdfmark}%
4402 \Hy@DisableOption{dviwindo}%
4403 \Hy@DisableOption{dvipsone}%
4404 \Hy@DisableOption{textures}%
4405 \Hy@DisableOption{latex2html}%
4406 \Hy@DisableOption{ps2pdf}%
4407 \Hy@DisableOption{xetex}%

```

```

4408 \Hy@DisableOption{pdfversion}%
4409 }

```

Support for open outlines is enabled for Xe<sub>T</sub><sub>E</sub>X >= 0.9995. I don't know, if older versions also support this. AFAIK older dvipdfmx versions will break, thus the switch cannot be turned on by default.

```

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

```

### 15.4.2 Bookmarks

```

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

```

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

```

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

```

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

```

4454 \def\Hy@CatcodeWrapper#1{%
4455 \let\Hy@EndWrap\ltx@empty

```

```

4456 \def\TMP@EnsureCode##1##2{%
4457   \edef\Hy@EndWrap{%
4458     \Hy@EndWrap
4459     \catcode##1 \the\catcode##1\relax
4460   }%
4461   \catcode##1 ##2\relax
4462 }%
4463 \TMP@EnsureCode{10}{12}% ^^J
4464 \TMP@EnsureCode{33}{12}% !
4465 \TMP@EnsureCode{34}{12}% "
4466 \TMP@EnsureCode{36}{3}% $ (math)
4467 \TMP@EnsureCode{38}{4}% & (alignment)
4468 \TMP@EnsureCode{39}{12}% '
4469 \TMP@EnsureCode{40}{12}% (
4470 \TMP@EnsureCode{41}{12}% )
4471 \TMP@EnsureCode{42}{12}% *
4472 \TMP@EnsureCode{43}{12}% +
4473 \TMP@EnsureCode{44}{12}% ,
4474 \TMP@EnsureCode{45}{12}% -
4475 \TMP@EnsureCode{46}{12}% .
4476 \TMP@EnsureCode{47}{12}% /
4477 \TMP@EnsureCode{58}{12}% :
4478 \TMP@EnsureCode{59}{12}% ;
4479 \TMP@EnsureCode{60}{12}% <
4480 \TMP@EnsureCode{61}{12}% =
4481 \TMP@EnsureCode{62}{12}% >
4482 \TMP@EnsureCode{63}{12}% ?
4483 \TMP@EnsureCode{91}{12}% [
4484 \TMP@EnsureCode{93}{12}% ]
4485 \TMP@EnsureCode{94}{7}% ^ (superscript)
4486 \TMP@EnsureCode{95}{8}% _ (subscript)
4487 \TMP@EnsureCode{96}{12}% '
4488 \TMP@EnsureCode{124}{12}% |
4489 \TMP@EnsureCode{126}{13}% ~ (active)
4490 #1\relax
4491 \Hy@EndWrap
4492 }

```

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

```

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

```

```

4511 \ifHy@typexml
4512 \else
4513   \Hy@CatcodeWrapper{%
4514     \RequirePackage{color}%
4515   }%
4516 \fi
4517 \def\Hy@colorlink#1{%
4518   \begingroup
4519   \HyColor@UseColor#1%
4520 }%
4521 \def\Hy@endcolorlink{\endgroup}%
4522 \Hy@Info{Link coloring ON}%
4523 \else
4524 \ifHy@frenchlinks
4525   \def\Hy@colorlink#1{\begingroup\fontshape{sc}\selectfont}%
4526   \def\Hy@endcolorlink{\endgroup}%
4527   \Hy@Info{French linking ON}%
4528 \else
for grouping consistency:
4529   \def\Hy@colorlink#1{\begingroup}%
4530   \def\Hy@endcolorlink{\endgroup}%
4531   \Hy@Info{Link coloring OFF}%
4532 \fi
4533 \fi
4534 \Hy@DisableOption{colorlinks}%
4535 \Hy@DisableOption{frenchlinks}%
4536 \ifHy@texht
4537   \long\def\@firstoffive#1#2#3#4#5{#1}%
4538   \long\def\@secondoffive#1#2#3#4#5{#2}%
4539   \long\def\@thirdoffive#1#2#3#4#5{#3}%
4540   \long\def\@fourthoffive#1#2#3#4#5{#4}%
4541   \long\def\@fifthoffive#1#2#3#4#5{#5}%
4542   \providecommand*\@safe@activestruet{}%
4543   \providecommand*\@safe@activesfalse{}%
4544   \def\T@ref#1{%
4545     \Hy@safe@activestruet
4546     \expandafter\@setref\csname r@#1\endcsname\@firstoffive{#1}%
4547     \Hy@safe@activesfalse
4548   }%
4549   \def\T@pageref#1{%
4550     \Hy@safe@activestruet
4551     \expandafter\@setref\csname r@#1\endcsname\@secondoffive{#1}%
4552     \Hy@safe@activesfalse
4553   }%
4554 \else
4555 \ifHy@typexml
4556 \else
4557   \Hy@CatcodeWrapper{%
4558     \RequirePackage{nameref}%
4559   }%
4560 \fi
4561 \fi
4562 \DeclareRobustCommand\ref{%
4563   \@ifstar\@refstar\T@ref
4564 }%
4565 \DeclareRobustCommand\pageref{%
4566   \@ifstar\@pagerefstar\T@pageref

```

```

4567 }%
4568 % \@ifclassloaded{memoir}{%
4569 % \ltx@ifundefined{@mem@titlerefno link}\ltx@secondoftwo{%
4570 % \ltx@ifundefined{@mem@titleref}\ltx@secondoftwo\ltx@firstoftwo
4571 % }%
4572 % }\ltx@secondoftwo
4573 % {%
4574 % \DeclareRobustCommand*{\nameref}{%
4575 % \ifstar\@mem@titlerefno link\@mem@titleref
4576 % }%
4577 % }{%
4578 % \DeclareRobustCommand*{\nameref}{%
4579 % \ifstar\@namerefstar\T@nameref
4580 % }%
4581 % }%
4582 }
4583 \Hy@AtBeginDocument{%
4584 \ifHy@texht
4585 \else
4586 \Hy@CatcodeWrapper\ReadBookmarks
4587 \fi
4588 }
4589 \ifHy@backref
4590 \RequirePackage{backref}%
4591 \else
4592 \let\Hy@backout\@gobble
4593 \fi
4594 \Hy@DisableOption{backref}
4595 \Hy@DisableOption{pagebackref}
4596 \Hy@activeanchorfalse

```

## 16 User hypertext macros

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

```

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

```

```

4614 \def#{\hyper@hash}^^A
4615 \def\#{\hyper@hash}^^A
4616 \@makeother\&^^A
4617 \edef&{\string&}^^A
4618 \edef\&{\string&}^^A
4619 \edef\textunderscore{\string_}^^A
4620 \let\_ \textunderscore
4621 \catcode'\_ \active
4622 \let\_ \textunderscore
4623 \let~\hyper@tilde
4624 \let~\hyper@tilde
4625 \let\textasciitilde\hyper@tilde
4626 \let\\ \@backslashchar
4627 \edef$\string$}^^A
4628 \Hy@safe@activetrue
4629 \hyper@n@rmalise
4630 }^^A
4631 \catcode'\#=6 ^^A
4632 \gdef\Hy@ActiveCarriageReturn{^^M}^^A
4633 \gdef\hyper@n@rmalise#1#2{^^A
4634 \def\Hy@tempa{#2}^^A
4635 \ifx\Hy@tempa\Hy@ActiveCarriageReturn
4636 \ltx@ReturnAfterElseFi{^^A
4637 \hyper@@normalise{#1}^^A
4638 }^^A
4639 \else
4640 \ltx@ReturnAfterFi{^^A
4641 \hyper@@normalise{#1}{#2}^^A
4642 }^^A
4643 \fi
4644 }^^A
4645 \gdef\hyper@@normalise#1#2{^^A
4646 \edef\Hy@tempa{^^A
4647 \endgroup
4648 \noexpand#1{\Hy@RemovePercentCr#2%^^M\@nil}^^A
4649 }^^A
4650 \Hy@tempa
4651 }^^A
4652 \gdef\Hy@RemovePercentCr#1%^^M#2\@nil{^^A
4653 #1^^A
4654 \ifx\limits#2\limits
4655 \else
4656 \ltx@ReturnAfterFi{^^A
4657 \Hy@RemovePercentCr #2\@nil
4658 }^^A
4659 \fi
4660 }^^A
4661 \endgroup
4662 \providecommand*\hyper@chars{%
4663 \let\#\hyper@hash
4664 \let\%\@percentchar
4665 \Hy@safe@activetrue
4666 }

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

4670 \def\Hy@VerboseLinkStart#1#2{%

```

```

4671 \ifHy@verbose
4672 \begingroup
4673   \Hy@safe@activetrue
4674   \xdef\Hy@VerboseGlobalTemp{(#1) ‘#2’}%
4675   \Hy@Info{Reference \Hy@VerboseGlobalTemp}%
4676   \xdef\Hy@VerboseGlobalTemp{%
4677     \Hy@VerboseGlobalTemp, %
4678     line \the\inputlineno
4679   }%
4680 \endgroup
4681 \let\Hy@VerboseLinkInfo\Hy@VerboseGlobalTemp
4682 \@onelevel@sanitize\Hy@VerboseLinkInfo
4683 \fi
4684 }

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

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

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

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

```



```

4727 \endgroup
4728 }%
4729 \endgroup

```

Option ‘page’.

```

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

```

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

```

Option ‘pdfremotestartview’.

```

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

```

Option ‘pdfnewwindow’.

```

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

```

Option ‘ismap’.

```

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

```

Option ‘nextactionraw’.

```

4776 \let\Hy@href@nextactionraw\@empty
4777 \define@key{href}{nextactionraw}{%
4778   \edef\Hy@href@nextactionraw{#1}%
4779   \ifx\Hy@href@nextactionraw\@empty
4780     \else
4781       \Hy@Match\Hy@href@nextactionraw{%
4782         ^(\HyPat@ObjRef/|<<.*[/S[/].+>>|%
4783         \[( ?\HyPat@ObjRef/|<<.*[/S[/].+>>)+ ?)]$%
4784       }-}{%
4785         \Hy@Warning{Invalid value for ‘nextactionraw’: \MessageBreak
4786           \Hy@href@nextactionraw \MessageBreak
4787           The action is discarded%
4788         }%
4789       }%
4790     \ifx\Hy@href@nextactionraw\@empty
4791       \else
4792         \edef\Hy@href@nextactionraw{/Next \Hy@href@nextactionraw}%
4793       \fi
4794     \fi
4795 }
4796 \def\HyPat@ObjRef/{.+}

```

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

```

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

```

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

```

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

```

```

4823 \Hy@tempa
4824 }
4825 \def\@hyperref{\hyper@normalise\@hyperref}
4826 \def\@hyperref#1#2#3{%
4827   \edef\ref@one{\ifx\#2\\\else#2.\fi#3}%
4828   \expandafter\tryhyper@link\ref@one\{#1}%
4829 }
4830 \def\tryhyper@link#1\#2{%
4831   \hyper@@link{#2}{#1}%
4832 }

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

```

We also have a need to give a  $\LaTeX$  *label* to a hyper reference, to ease the pain of referring to it later.

```

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

```

```

4877 \ifHy@nesting
4878 \expandafter\hyper@@anchor\expandafter{\Hy@AnchorName}{#4}%
4879 \else
4880 \expandafter\hyper@@anchor\expandafter{\Hy@AnchorName}{\relax}#4%
4881 \fi
4882 }

```

## 17 Underlying basic hypertext macros

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

```

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

```

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

```

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

```

Parameters are:

1. The URL or file name

2. The type
3. The internal name
4. The link string

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

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

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

```
4919 \def\@pdftempwordfile{file}%
4920 \def\@pdftempwordrun{run}%
4921 \def\@hyper@readexternallink#1#2#3#4:#5:#6\\\#7{%
```

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

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

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

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

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

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

otherwise its a URL

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

By default, turn run: into file:

```
4951 \def\@hyper@launch run:#1\\#2#3{% filename, anchor text, linkname
4952 \hyper@linkurl{#2}{%
4953 \Hy@linkfileprefix
4954 #1%
4955 \ifx\\#3\\%
4956 \else
4957 \hyper@hash
4958 #3%
4959 \fi
4960 }%
4961 }
```

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

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

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

4999 \def\Hy@StringLocalhost{localhost}
5000 \@onelevel@sanitize\Hy@StringLocalhost
5001 \def\Hy@CleanupFile#1{%
5002 \edef#1{#1}%
5003 \expandafter\Hy@@CleanupFile#1\hbox{//\hbox\@nil{#1}%
```

```

5004 }
5005 \def\Hy@@CleanupFile#1//#2/#3\hbox#4\@nil#5{%
5006   \begingroup
5007   \toks@{\endgroup}%
5008   \def\x{#1}%
5009   \ifx\x\@empty
5010     \def\x{#2}%
5011     \ifx\x\@empty
5012       \toks@{\endgroup\def#5{/#3}}%
5013     \else
5014       \@onelevel@sanitize\x
5015       \ifx\x\Hy@StringLocalhost
5016         \toks@{\endgroup\def#5{/#3}}%
5017       \fi
5018     \fi
5019   \fi
5020   \the\toks@
5021 }

```

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

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

```

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

```

```

5053 \let\anchor@spot\@empty
5054 }
5055 \let\anchor@spot\ltx@empty

```

## 18 Compatibility with the *LT<sub>EX</sub>2html* package

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

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

```

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

```

This is really too much. The *LT<sub>EX</sub>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.

```

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

```

## 19 Forms creation

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

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

### 19.1 Field flags

The field flags are organized in a bit set.

```

5071 \RequirePackage{bitset}

```

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

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

```

\HyField@NewFlag #1: type: F annot flags, Ff field flags
#2: PDF name
#3: PDF position
5072 \def\HyField@NewFlag#1#2{%
5073   \lowercase{\HyField@NewOption{#2}}%

```



```

5074 \lowercase{\HyField@NewBitsetFlag{#2}}{#2}{#1}%
5075 }

```

\HyField@NewFlagOnly

```

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

```

\HyField@NewOption #1: option name

```

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

```

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

#1: option

#2: PDF name

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

#4: PDF position

```

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

```

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

```

5105 \def\HyField@UseFlag#1#2{%
5106 \lowercase{\HyField@@UseFlag{#2}}{#1}%
5107 }

```

\HyField@@UseFlag

```

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

```

```

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

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

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

```

### 19.1.1 Declarations of field flags

“Table 8.70 Field flags common to all field types”

```

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

```

“Table 8.75 Field flags specific to button fields”

```

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

```

“Table 8.77 Field flags specific to text fields”

```

5155 \HyField@NewFlag{Ff}{Multiline}{13}
5156 \HyField@NewFlag{Ff}{Password}{14}
5157 \HyField@NewFlag{Ff}{FileSelect}{21}% PDF 1.4
5158 \HyField@NewFlag{Ff}{DoNotSpellCheck}{23}% PDF 1.4

```

5159 \HyField@NewFlag{Ff}{DoNotScroll}{24}% PDF 1.4  
 5160 \HyField@NewFlag{Ff}{Comb}{25}% PDF 1.4  
 5161 \HyField@NewFlag{Ff}{RichText}{26}% PDF 1.5

“Table 8.79 field flags specific to choice fields”

5162 \HyField@NewFlag{Ff}{Combo}{18}  
 5163 \HyField@NewFlag{Ff}{Edit}{19}  
 5164 \HyField@NewFlag{Ff}{Sort}{20}  
 5165 \HyField@NewFlag{Ff}{MultiSelect}{22}% PDF 1.4  
 5166 % \HyField@NewFlag{Ff}{DoNotSpellCheck}{23}% PDF 1.4  
 5167 \HyField@NewFlag{Ff}{CommitOnSelChange}{27}% PDF 1.5

Signature fields are not supported.

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

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

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

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

5172 \HyField@NewFlag{F}{Invisible}{1}  
 5173 \HyField@NewFlag{F}{Hidden}{2}% PDF 1.2  
 5174 \HyField@NewFlag{F}{Print}{3}% PDF 1.2  
 5175 \HyField@NewFlag{F}{NoZoom}{4}% PDF 1.2  
 5176 \HyField@NewFlag{F}{NoRotate}{5}% PDF 1.3  
 5177 \HyField@NewFlag{F}{NoView}{6}% PDF 1.3  
 5178 \HyField@NewFlag{F}{Locked}{8}% PDF 1.4  
 5179 \HyField@NewFlag{F}{ToggleNoView}{9}% PDF 1.5  
 5180 \HyField@NewFlag{F}{LockedContents}{10}% PDF 1.7  
  
 5181 \ifHy@pdfa  
 5182 \def\HyField@PDFAFflagWarning#1#2{%  
 5183 \Hy@Warning{%  
 5184 PDF/A: Annotation flag ‘#1’ must\MessageBreak  
 5185 be set to ‘#2’%  
 5186 }%  
 5187 }%  
 5188 \Fld@invisiblefalse  
 5189 \def\Fld@invisibletrue{%  
 5190 \HyField@PDFAFflagWarning{invisible}{false}%  
 5191 }%  
 5192 \Fld@hiddenfalse  
 5193 \def\Fld@hiddentrue{%  
 5194 \HyField@PDFAFflagWarning{hidden}{false}%  
 5195 }%  
 5196 \Fld@printtrue  
 5197 \def\Fld@printfalse{%  
 5198 \HyField@PDFAFflagWarning{print}{true}%  
 5199 }%  
 5200 \Fld@nozoomtrue  
 5201 \def\Fld@nozoomfalse{%  
 5202 \HyField@PDFAFflagWarning{nozoom}{true}%  
 5203 }%  
 5204 \Fld@norotatetrue

```

5205 \def\Fld@norotatefalse{%
5206   \HyField@PDFAFldWarning{norotate}{true}%
5207 }%
5208 \Fld@noviewfalse
5209 \def\Fld@noviewtrue{%
5210   \HyField@PDFAFldWarning{noview}{false}%
5211 }%
5212 \fi

```

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

```

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

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

```

## 19.1.2 Set submit flags

\HyField@FlagsSubmit

```

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

```

```

5256 \HyField@UseFlag{Submit}{IncludeNoValueFields}%
5257 \HyField@UseFlag{Submit}{GetMethod}%
5258 \HyField@UseFlag{Submit}{SubmitCoordinates}%
5259 \HyField@UseFlag{Submit}{CanonicalFormat}%
5260 \or % XFDF
5261 \HyField@SetFlag{Submit}{XFDF}%
5262 \HyField@UseFlag{Submit}{IncludeNoValueFields}%
5263 \HyField@UseFlag{Submit}{SubmitCoordinates}%
5264 \HyField@UseFlag{Submit}{CanonicalFormat}%
5265 \or % PDF
5266 \HyField@SetFlag{Submit}{SubmitPDF}%
5267 \HyField@UseFlag{Submit}{GetMethod}%
5268 \fi
5269 \HyField@PrintFlags{Submit}{submit button field}%
5270 \bitsetIsEmpty{HyField@Submit}{%
5271 \let\Fld@submitflags\tx@empty
5272 }{%
5273 \edef\Fld@submitflags{/Flags \bitsetGetDec{HyField@Submit}}}%
5274 }%
5275 }

```

### 19.1.3 Set annot flags in fields

\HyField@FlagsAnnot

```

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

```

### 19.1.4 Pushbutton field

\HyField@FlagsPushButton

```

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

```

```

5305 \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}}%
5306 }%
5307 }

```

### 19.1.5 Check box field

\HyField@FlagsCheckBox

```

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

```

### 19.1.6 Radio button field

\HyField@FlagsRadioButton

```

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

```

### 19.1.7 Text fields

\HyField@FlagsText

```

5337 \def\HyField@FlagsText{%
5338 \HyField@FlagsAnnot{text field}%
5339 \bitsetReset{HyField@Ff}%
5340 \HyField@UseFlag{Ff}{ReadOnly}%
5341 \HyField@UseFlag{Ff}{Required}%
5342 \HyField@UseFlag{Ff}{NoExport}%
5343 \HyField@UseFlag{Ff}{Multiline}%
5344 \HyField@UseFlag{Ff}{Password}%
5345 \HyField@UseFlag{Ff}{FileSelect}%
5346 \HyField@UseFlag{Ff}{DoNotSpellCheck}%
5347 \HyField@UseFlag{Ff}{DoNotScroll}%
5348 \ifFld@comb

```

```

5349 \ifcase0\ifFld@multiline
5350 \else\ifFld@password
5351 \else\ifFld@fileselect
5352 \else 1\fi\fi\fi\relax
5353 \Hy@Error{%
5354   Field option 'comb' cannot used together with\MessageBreak
5355   'multiline', 'password', or 'fileselect'%
5356 } \@ehc
5357 \else
5358 \HyField@UseFlag{Ff}{Comb}%
5359 \fi
5360 \fi
5361 \HyField@UseFlag{Ff}{RichText}%
5362 \HyField@PrintFlags{Ff}{text field}%
5363 \bitsetIsEmpty{HyField@Ff}{%
5364 \let\Fld@flags\ltx@empty
5365 }{%
5366 \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
5367 }%
5368 }

```

### 19.1.8 Choice fields

\HyField@FlagsChoice

```

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

```

## 19.2 Choice field

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

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

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

```

5394 \def\HyField@PDFChoices#1{%

```

```

5395 \begingroup
5396 \global\let\Fld@choices\ltx@empty
5397 \let\HyTmp@optlist\ltx@empty
5398 \let\HyTmp@optitem\relax
5399 \count@=0 %
5400 \kv@parse{#1}{%
5401   \Hy@pdfstringdef\kv@key\kv@key
5402   \ifx\kv@value\relax
5403     \ifnum\Hy@pdfversion<3 % implementation note 122, PDF spec 1.7
5404       \xdef\Fld@choices{\Fld@choices[(\kv@key)(\kv@key)]}%
5405     \else
5406       \xdef\Fld@choices{\Fld@choices(\kv@key)}%
5407     \fi
5408   \else
5409     \Hy@pdfstringdef\kv@value\kv@value
5410     \xdef\Fld@choices{\Fld@choices[(\kv@value)(\kv@key)]}%
5411   \fi
5412   \edef\HyTmp@optlist{%
5413     \HyTmp@optlist
5414     \HyTmp@optitem{\the\count@}{\kv@key}0%
5415   }%
5416   \advance\count@ by 1 %
5417   \@gobbletwo
5418 }%
5419 \xdef\Fld@choices{/Opt[\Fld@choices]}%
5420 \ifFld@multiselect
5421   \HyField@@PDFChoices{DV}\Fld@default
5422   \HyField@@PDFChoices{V}\Fld@value
5423 \else
5424   \ifx\Fld@default\relax
5425   \else
5426     \pdfstringdef\Hy@gtemp\Fld@default
5427     \xdef\Fld@choices{\Fld@choices/DV(\Hy@gtemp)}%
5428   \fi
5429   \ifx\Fld@value\relax
5430   \else
5431     \pdfstringdef\Hy@gtemp\Fld@value
5432     \xdef\Fld@choices{\Fld@choices/V(\Hy@gtemp)}%
5433   \fi
5434 \fi
5435 \endgroup
5436 }

```

\HyField@@PDFChoices

```

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

```



```

5451     \HyTmp@optlist
5452     \HyTmp@optitem{##1}{##2}##3%
5453 }%
5454 \fi
5455 }%
5456 \expandafter\comma@parse\expandafter{#2}{%
5457 \pdfstringdef\Hy@gtemp\comma@entry
5458 \let\HyTmp@found=N %
5459 \expandafter\let\expandafter\HyTmp@optlist\expandafter\@empty
5460 \HyTmp@optlist
5461 \ifx\HyTmp@found Y%
5462 \advance\count@ by 1 %
5463 \else
5464 \@onelevel@sanitize\comma@entry
5465 \PackageWarning{hyperref}{%
5466 \string\ChoiceBox: Ignoring value '\comma@entry',%
5467 \MessageBreak
5468 it cannot be found in the choices%
5469 }%
5470 \fi
5471 \@gobble
5472 }%
5473 \def\HyTmp@optitem##1##2##3{%
5474 \ifnum##3=1 %
5475 (##2)%
5476 \fi
5477 }%
5478 \ifcase\count@
5479 \or
5480 \xdef\Fld@choices{\Fld@choices/#1\HyTmp@optlist}%
5481 \else
5482 \xdef\Fld@choices{\Fld@choices/#1[\HyTmp@optlist]}%
5483 \ifx#1V%
5484 \def\HyTmp@optitem##1##2##3{%
5485 \ifnum##3=1 %
5486 \@firstofone{ ##1}%
5487 \fi
5488 }%
5489 \edef\HyTmp@optlist{\HyTmp@optlist}%
5490 \xdef\Fld@choices{%
5491 \Fld@choices
5492 /I[\expandafter\@firstofone\HyTmp@optlist]%
5493 }%
5494 \fi
5495 \fi
5496 \fi
5497 }

```

## 19.3 Forms

\HyField@SetKeys

```

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

5501 \newif\ifFld@checked
5502 \newif\ifFld@disabled

```

```

5503 \Fld@checkedfalse
5504 \Fld@disabledfalse
5505 \newcount\Fld@menulength
5506 \newdimen\Fld@Width
5507 \newdimen\Fld@charsize
5508 \Fld@charsize=10\p@
5509 \def\Fld@maxlen{0}
5510 \def\Fld@align{0}
5511 \def\Fld@color{0 0 0 rg}
5512 \def\Fld@bcolor{1 1 1}
5513 \def\Fld@bordercolor{1 0 0}
5514 \def\Fld@bordersep{1\p@}
5515 \def\Fld@borderwidth{1}
5516 \def\Fld@borderstyle{S}
5517 \def\Fld@cbsymbol{4}
5518 \def\Fld@radiosymbol{H}
5519 \def\Fld@rotation{0}
5520 \def\Form{\@ifnextchar[{\@Form}{\@Form[]}}
5521 \def\endForm{\@endForm}
5522 \newif\ifForm@html
5523 \Form@htmlfalse
5524 \def\Form@boolkey#1#2{%
5525   \csname Form@#2\ifx\relax#1\relax true\else#1\fi\endcsname
5526 }
5527 \define@key{Form}{action}{%
5528   \hyper@normalise\Hy@DefFormAction{#1}%
5529 }
5530 \def\Hy@DefFormAction{\def\Form@action}
5531 \def\enc@html{html}
5532 \define@key{Form}{encoding}{%
5533   \def\Hy@tempa{#1}%
5534   \ifx\Hy@tempa\enc@html
5535     \Form@htmltrue
5536   \def\Fld@export{html}%
5537   \else
5538     \Hy@Warning{%
5539       Form 'encoding' key with \MessageBreak
5540       unknown value '#1'%
5541     }%
5542     \Form@htmlfalse
5543   \fi
5544 }
5545 \define@key{Form}{method}{%
5546   \lowercase{\def\Hy@temp{#1}}%
5547   \@ifundefined{Form@method@Hy@temp}{%
5548     \@onelevel@sanitize\Hy@temp
5549     \Hy@Error{%
5550       Unknown method '\Hy@temp'.\MessageBreak
5551       Known values are 'post' and 'get'%
5552     }\@ehc
5553   }{%
5554     \let\Form@method\Hy@temp
5555     \ifcase\@nameuse{Form@method@Hy@temp} %
5556       \Fld@getmethodfalse
5557     \else
5558       \Fld@getmethodtrue
5559     \fi

```

```

5560 }%
5561 }
5562 \def\Form@method{}
5563 \@namedef{Form@method@post}{0}
5564 \@namedef{Form@method@get}{1}

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

```

```

5617 }
5618 \define@key{Field}{checked}[true]{%
5619   \lowercase{\Field@boolkey{#1}}{checked}%
5620 }
5621 \define@key{Field}{disabled}[true]{%
5622   \lowercase{\Field@boolkey{#1}}{disabled}%
5623 }
5624 \ifHy@texht
5625   \define@key{Field}{accesskey}{%
5626     \Field@addtoks{accesskey}{#1}%
5627   }%
5628   \define@key{Field}{tabkey}{%
5629     \Field@addtoks{tabkey}{#1}%
5630   }%
5631 \else
5632   \define@key{Field}{accesskey}{%
5633     \Hy@WarnHTMLFieldOption{accesskey}%
5634   }%
5635   \define@key{Field}{tabkey}{%
5636     \Hy@WarnHTMLFieldOption{tabkey}%
5637   }%
5638 \fi
5639 \define@key{Field}{name}{%
5640   \def\Fld@name{#1}%
5641 }
5642 \let\Fld@altname\relax
5643 \define@key{Field}{altname}{%
5644   \def\Fld@altname{#1}%
5645 }
5646 \let\Fld@mappingname\relax
5647 \define@key{Field}{mappingname}{%
5648   \def\Fld@mappingname{#1}%
5649 }
5650 \define@key{Field}{width}{%
5651   \def\Fld@width{#1}%
5652   \Field@Width#1\setbox0=\hbox{m}%
5653 }
5654 \define@key{Field}{maxlen}{%
5655   \def\Fld@maxlen{#1}%
5656 }
5657 \define@key{Field}{menulength}{%
5658   \Fld@menulength=#1\relax
5659 }
5660 \define@key{Field}{height}{%
5661   \def\Fld@height{#1}%
5662 }
5663 \define@key{Field}{charsize}{%
5664   \Fld@charsize#1%
5665 }
5666 \define@key{Field}{borderwidth}{%
5667   \def\Fld@borderwidth{#1}%
5668 }
5669 \define@key{Field}{borderstyle}{%
5670   \let\Hy@temp\Fld@borderstyle
5671   \def\Fld@borderstyle{#1}%
5672   \Hy@Match\Fld@borderstyle%
5673   ~[SDBIU]$%

```

```

5674 }{}{%
5675   \Hy@Warning{%
5676     Invalid value '\pdfborderstyle'\MessageBreak
5677     for option 'pdfborderstyle'. Valid values:\MessageBreak
5678     \space\space S (Solid), D (Dashed), B (Beveled),\MessageBreak
5679     \space\space I (Inset), U (Underline)\MessageBreak
5680     Option setting is ignored%
5681   }%
5682   \let\Fld@borderstyle\Hy@temp
5683 }%
5684 }
5685 \define@key{Field}{bordersep}{%
5686   \def\Fld@bordersep{#1}%
5687 }
5688 \define@key{Field}{default}{%
5689   \def\Fld@default{#1}%
5690 }
5691 \define@key{Field}{align}{%
5692   \def\Fld@align{#1}%
5693 }
5694 \define@key{Field}{value}{%
5695   \def\Fld@value{#1}%
5696 }
5697 \define@key{Field}{checkboxsymbol}{%
5698   \Fld@DingDef\Fld@cbsymbol{#1}%
5699 }
5700 \define@key{Field}{radiosymbol}{%
5701   \Fld@DingDef\Fld@radiosymbol{#1}%
5702 }
5703 \def\Fld@DingDef#1#2{%
5704   \let\Fld@temp\tx@empty
5705   \Fld@@DingDef#2\ding{}\@nil
5706   \let#1\Fld@temp
5707 }
5708 \def\Fld@@DingDef#1\ding#2#3\@nil{%
5709   \expandafter\def\expandafter\Fld@temp\expandafter{%
5710     \Fld@temp
5711     #1%
5712   }%
5713   \ifx\#3\%
5714     \expandafter\@gobble
5715   \else
5716     \begingroup
5717       \lccode'0=#2\relax
5718       \lowercase{\endgroup
5719         \expandafter\def\expandafter\Fld@temp\expandafter{%
5720           \Fld@temp
5721           0%
5722         }%
5723       }%
5724       \expandafter\@firstofone
5725     \fi
5726   {%
5727     \Fld@@DingDef#3\@nil
5728   }%
5729 }
5730 \define@key{Field}{rotation}{%

```

```

5731 \def\Fld@rotation{#1}%
5732 }

5733 \define@key{Field}{backgroundcolor}{%
5734 \HyColor@FieldBColor{#1}\Fld@bcolor{hyperref}{backgroundcolor}%
5735 }

5736 \define@key{Field}{bordercolor}{%
5737 \HyColor@FieldBColor{#1}\Fld@bordercolor{hyperref}{bordercolor}%
5738 }

5739 \define@key{Field}{color}{%
5740 \HyColor@FieldColor{#1}\Fld@color{hyperref}{color}%
5741 }

5742 \let\Fld@onclick@code\ltx@empty
5743 \let\Fld@format@code\ltx@empty
5744 \let\Fld@validate@code\ltx@empty
5745 \let\Fld@calculate@code\ltx@empty
5746 \let\Fld@keystroke@code\ltx@empty
5747 \let\Fld@onfocus@code\ltx@empty
5748 \let\Fld@onblur@code\ltx@empty
5749 \let\Fld@onmousedown@code\ltx@empty
5750 \let\Fld@onmouseup@code\ltx@empty
5751 \let\Fld@onenter@code\ltx@empty
5752 \let\Fld@onexit@code\ltx@empty
5753 \def\Hy@temp#1{%
5754 \expandafter\Hy@@temp\csname Fld@#1@code\endcsname{#1}%
5755 }

5756 \def\Hy@@temp#1#2{%
5757 \ifHy@pdfa
5758 \define@key{Field}{#2}{%
5759 \Hy@Error{%
5760 PDF/A: Additional action ‘#2’ is prohibited%
5761 }\@ehc
5762 }%
5763 \else
5764 \define@key{Field}{#2}{%
5765 \def#1{##1}%
5766 }%
5767 \fi
5768 }

5769 \Hy@temp{keystroke}
5770 \Hy@temp{format}
5771 \Hy@temp{validate}
5772 \Hy@temp{calculate}
5773 \Hy@temp{onfocus}
5774 \Hy@temp{onblur}
5775 \Hy@temp{onenter}
5776 \Hy@temp{onexit}
5777 \ifHy@texht
5778 \def\Hy@temp#1{%
5779 \define@key{Field}{#1}{%
5780 \Field@addtoks{#1}{##1}%
5781 }%
5782 }%
5783 \else
5784 \def\Hy@temp#1{%
5785 \define@key{Field}{#1}{%
5786 \Hy@WarnHTMLFieldOption{#1}%
5787 }%

```

```

5788 }%
5789 \fi
5790 \Hy@temp{ondblclick}
5791 \Hy@temp{onmousedown}
5792 \Hy@temp{onmouseup}
5793 \Hy@temp{onmouseover}
5794 \Hy@temp{onmousemove}
5795 \Hy@temp{onmouseout}
5796 \Hy@temp{onkeydown}
5797 \Hy@temp{onkeyup}
5798 \Hy@temp{onselect}
5799 \Hy@temp{onchange}
5800 \Hy@temp{onkeypress}
5801 \ifHy@texht
5802   \define@key{Field}{onclick}{%
5803     \Field@addtoks{onclick}{#1}%
5804   }%
5805 \else
5806   \ifHy@pdfa
5807     \define@key{Field}{onclick}{%
5808       \Hy@Error{%
5809         PDF/A: Action 'onclick' is prohibited%
5810       }\@ehc
5811     }%
5812   \else
5813     \define@key{Field}{onclick}{%
5814       \def\Fld@onclick@code{#1}%
5815     }%
5816   \fi
5817 \fi

5818 \DeclareRobustCommand\TextField{%
5819   \@ifnextchar[{\@TextField}{\@TextField[]}%
5820 }
5821 \DeclareRobustCommand\ChoiceMenu{%
5822   \@ifnextchar[{\@ChoiceMenu}{\@ChoiceMenu[]}%
5823 }
5824 \DeclareRobustCommand\CheckBox{%
5825   \@ifnextchar[{\@CheckBox}{\@CheckBox[]}%
5826 }
5827 \DeclareRobustCommand\PushButton{%
5828   \@ifnextchar[{\@PushButton}{\@PushButton[]}%
5829 }
5830 \DeclareRobustCommand\Gauge{%
5831   \@ifnextchar[{\@Gauge}{\@Gauge[]}%
5832 }
5833 \DeclareRobustCommand\Submit{%
5834   \@ifnextchar[{\@Submit}{\@Submit[]}%
5835 }
5836 \DeclareRobustCommand\Reset{%
5837   \@ifnextchar[{\@Reset}{\@Reset[]}%
5838 }
5839 \def\LayoutTextField#1#2{% label, field
5840   #1 #2%
5841 }
5842 \def\LayoutChoiceField#1#2{% label, field
5843   #1 #2%
5844 }

```

```

5845 \def\LayoutCheckField#1#2{% label, field
5846   #1 #2%
5847 }
5848 \def\LayoutPushButtonField#1{% button
5849   #1%
5850 }
5851 \def\MakeRadioField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
5852 \def\MakeCheckField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
5853 \def\MakeTextField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
5854 \def\MakeChoiceField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
5855 \def\MakeButtonField#1{%
5856   \sbox0{%
5857     \hskip\Fld@borderwidth bp#1\hskip\Fld@borderwidth bp%
5858   }%
5859   \@tempdima\ht0 %
5860   \advance\@tempdima by \Fld@borderwidth bp %
5861   \advance\@tempdima by \Fld@borderwidth bp %
5862   \ht0\@tempdima
5863   \@tempdima\dp0 %
5864   \advance\@tempdima by \Fld@borderwidth bp %
5865   \advance\@tempdima by \Fld@borderwidth bp %
5866   \dp0\@tempdima
5867   \box0\relax
5868 }
5869 \def\DefaultHeightofSubmit{14pt}
5870 \def\DefaultWidthofSubmit{2cm}
5871 \def\DefaultHeightofReset{14pt}
5872 \def\DefaultWidthofReset{2cm}
5873 \def\DefaultHeightofCheckBox{\baselineskip}
5874 \def\DefaultWidthofCheckBox{\baselineskip}
5875 \def\DefaultHeightofChoiceMenu{\baselineskip}
5876 \def\DefaultWidthofChoiceMenu{\baselineskip}
5877 \def\DefaultHeightofText{\baselineskip}
5878 \def\DefaultHeightofTextMultiline{4\baselineskip}
5879 \def\DefaultWidthofText{3cm}
5880 \def\DefaultOptionsofSubmit{print,name=Submit,noexport}
5881 \def\DefaultOptionsofReset{print,name=Reset,noexport}
5882 \def\DefaultOptionsofPushButton{print}
5883 \def\DefaultOptionsofCheckBox{print}
5884 \def\DefaultOptionsofText{print}

```

Default options for the types of \ChoiceMenu.

```

5885 \def\DefaultOptionsofListBox{print}
5886 \def\DefaultOptionsofComboBox{print,edit,sort}
5887 \def\DefaultOptionsofPopdownBox{print}
5888 \def\DefaultOptionsofRadio{print,notoggletooff}

```

## 20 Setup

```

5889 \ifHy@hyperfigures
5890   \Hy@Info{Hyper figures ON}%
5891 \else
5892   \Hy@Info{Hyper figures OFF}%
5893 \fi
5894 \ifHy@nesting
5895   \Hy@Info{Link nesting ON}%
5896 \else

```



```

5897 \Hy@Info{Link nesting OFF}%
5898 \fi
5899 \ifHy@hyperindex
5900 \Hy@Info{Hyper index ON}%
5901 \else
5902 \Hy@Info{Hyper index OFF}%
5903 \fi
5904 \ifHy@backref
5905 \Hy@Info{backreferencing ON}%
5906 \else
5907 \Hy@Info{backreferencing OFF}%
5908 \fi
5909 \ifHy@colorlinks
5910 \Hy@Info{Link coloring ON}%
5911 \else
5912 \Hy@Info{Link coloring OFF}%
5913 \fi
5914 \ifHy@ocgcolorlinks
5915 \Hy@Info{Link coloring with OCG ON}%
5916 \else
5917 \Hy@Info{Link coloring with OCG OFF}%
5918 \fi
5919 \ifHy@pdfa
5920 \Hy@Info{PDF/A mode ON}%
5921 \else
5922 \Hy@Info{PDF/A mode OFF}%
5923 \fi

```

## 21 Low-level utility macros

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

```

5924 \edef\hyper@hash{\string#}
5925 \edef\hyper@tilde{\string~}
5926 \edef\hyper@quote{\string"}

```

Support \label before \begin{document}.

```

5927 \def\@currentHref{Doc-Start}
5928 \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.

```

5929 \Hy@AtBeginDocument{%
5930 \Hy@pdfstringtrue
5931 \PDF@SetupDoc
5932 \let\PDF@SetupDoc\@empty
5933 \Hy@DisableOption{pdfpagescrop}%
5934 \Hy@DisableOption{pdfpagemode}%
5935 \Hy@DisableOption{pdfnonfullscreenpagemode}%
5936 \Hy@DisableOption{pdfdirection}%
5937 \Hy@DisableOption{pdfviewarea}%
5938 \Hy@DisableOption{pdfviewclip}%
5939 \Hy@DisableOption{pdfprintarea}%
5940 \Hy@DisableOption{pdfprintclip}%
5941 \Hy@DisableOption{pdfprintscaling}%
5942 \Hy@DisableOption{pdfduplex}%
5943 \Hy@DisableOption{pdfpicktraybypdfsize}%
5944 \Hy@DisableOption{pdfprintpagerange}%
5945 \Hy@DisableOption{pdfnumcopies}%

```

```

5946 \Hy@DisableOption{pdfstartview}%
5947 \Hy@DisableOption{pdfstartpage}%
5948 \Hy@DisableOption{pdftoolbar}%
5949 \Hy@DisableOption{pdfmenubar}%
5950 \Hy@DisableOption{pdfwindowui}%
5951 \Hy@DisableOption{pdfitwindow}%
5952 \Hy@DisableOption{pdfcenterwindow}%
5953 \Hy@DisableOption{pdfdisplaydoctitle}%
5954 \Hy@DisableOption{pdfpagelayout}%
5955 \Hy@DisableOption{pdflang}%
5956 \Hy@DisableOption{baseurl}%
5957 \ifHy@texht\else\hyper@anchorstart{Doc-Start}\hyper@anchorend\fi
5958 \Hy@pdfstringfalse
5959 }

```

Ignore star from referencing macros:

```

5960 \LetLtxMacro\NoHy@OrgRef\ref
5961 \DeclareRobustCommand*{\ref}{%
5962 \@ifstar\NoHy@OrgRef\NoHy@OrgRef
5963 }
5964 \LetLtxMacro\NoHy@OrgPageRef\pageref
5965 \DeclareRobustCommand*{\pageref}{%
5966 \@ifstar\NoHy@OrgPageRef\NoHy@OrgPageRef
5967 }

```

## 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.

```

5968 \def\NoHyper{%
5969 \def\hyper@link@{##1}##2##3##4{##4\Hy@xspace@end}%
5970 \def\hyper@@anchor##1##2{##2\Hy@xspace@end}%
5971 \global\let\hyper@livelink\hyper@link
5972 \gdef\hyper@link##1##2##3{##3\Hy@xspace@end}%
5973 \let\hyper@anchor\ltx@gobble
5974 \let\hyper@anchorstart\ltx@gobble
5975 \def\hyper@anchorend{\Hy@xspace@end}%
5976 \let\hyper@linkstart\ltx@gobbletwo
5977 \def\hyper@linkend{\Hy@xspace@end}%
5978 \def\hyper@linkurl##1##2{##1\Hy@xspace@end}%
5979 \def\hyper@linkfile##1##2##3{##1\Hy@xspace@end}%
5980 \let\Hy@backout\@gobble
5981 }
5982 \def\stop@hyper{%
5983 \def\hyper@link@{##1}##2##3##4{##4\Hy@xspace@end}%
5984 \let\Hy@backout\@gobble
5985 \let\hyper@@anchor\ltx@gobble
5986 \def\hyper@link##1##2##3{##3\Hy@xspace@end}%
5987 \let\hyper@anchor\ltx@gobble
5988 \let\hyper@anchorstart\ltx@gobble
5989 \def\hyper@anchorend{\Hy@xspace@end}%
5990 \let\hyper@linkstart\ltx@gobbletwo
5991 \def\hyper@linkend{\Hy@xspace@end}%
5992 \def\hyper@linkurl##1##2{##1\Hy@xspace@end}%

```

```

5993 \def\hyper@linkfile##1##2##3{##1\Hy@xspace@end}%
5994 }
5995 \def\endNoHyper{%
5996 \global\let\hyper@link\hyper@livelink
5997 }
5998 \endpackage

```

## 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:

```

5999 \*nohyperref
6000 \RequirePackage{letltxmacro}[2008/06/13]
6001 \let\hyper@@anchor\@gobble
6002 \def\hyper@link#1##2##3{##3}%
6003 \let\hyper@anchorstart\@gobble
6004 \let\hyper@anchorend\@empty
6005 \let\hyper@linkstart\@gobbletwo
6006 \let\hyper@linkend\@empty
6007 \def\hyper@linkurl#1##2{##1}%
6008 \def\hyper@linkfile#1##2##3{##1}%
6009 \def\hyper@link@{##1}##2##3{##3}%
6010 \let\PDF@SetupDoc\@empty
6011 \let\PDF@FinishDoc\@empty
6012 \def\nohyperpage#1{##1}

```

Some top-level commands:

```

6013 \def\Acrobatmenu#1##2{\leavevmode#2}
6014 \let\pdfstringdefDisableCommands\@gobbletwo
6015 \let\texorpdfstring\@firstoftwo
6016 \let\pdfbookmark\@undefined
6017 \newcommand\pdfbookmark[3]{}
6018 \let\phantomsection\@empty
6019 \let\hypersetup\@gobble
6020 \let\hyperbaseurl\@gobble
6021 \newcommand*{\href}[3]{}
6022 \let\hyperdef\@gobbletwo
6023 \let\hyperlink\@gobble
6024 \let\hypertarget\@gobble
6025 \def\hyperref{%
6026 \ifnextchar\@gobbleopt{\expandafter\@gobbletwo\@gobble}%
6027 }
6028 \long\def\@gobbleopt[#1]{}
6029 \let\hyperpage\@empty

```

Ignore star from referencing macros:

```

6030 \LetLtxMacro\NoHy@OrgRef\ref
6031 \DeclareRobustCommand*{\ref}{%
6032 \ifstar\NoHy@OrgRef\NoHy@OrgRef
6033 }
6034 \LetLtxMacro\NoHy@OrgPageRef\pageref
6035 \DeclareRobustCommand*{\pageref}{%

```

```

6036 \@ifstar\NoHy@OrgPageRef\NoHy@OrgPageRef
6037 }
6038 \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}`

```

6039 \*package
6040 \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.

```

6041 \if@filesw
6042 \ifHy@typexml
6043 \immediate\closeout\@mainaux
6044 \immediate\openout\@mainaux\jobname.aux\relax
6045 \immediate\write\@auxout{<relaxxml>\relax}%
6046 \fi
6047 \immediate\write\@auxout{%
6048 \string\providecommand\string\HyperFirstAtBeginDocument{%
6049 \string\AtBeginDocument}^^J%
6050 \string\HyperFirstAtBeginDocument{%
6051 \string\ifx\string\hyper@anchor\string\@undefined^^J%
6052 \string\global\string\let\string\oldcontentsline\string\contentsline^^J%
6053 \string\gdef\string\contentsline%
6054 \string#1\string#2\string#3\string#4{%
6055 \string\oldcontentsline%
6056 {\string#1}{\string#2}{\string#3}^^J%
6057 \string\global\string\let\string\oldnewlabel\string\newlabel^^J%
6058 \string\gdef\string\newlabel\string#1\string#2{%
6059 \string\newlabelxx{\string#1}\string#2}^^J%
6060 \string\gdef\string\newlabelxx%
6061 \string#1\string#2\string#3\string#4\string#5\string#6{%
6062 \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.

```

6063 \string\AtEndDocument{%
6064 \string\ifx\string\hyper@anchor\string\@undefined^^J%
6065 \string\let\string\contentsline\string\oldcontentsline^^J%
6066 \string\let\string\newlabel\string\oldnewlabel^^J%
6067 \string\fi%
6068 }^^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.

```

6069 \string\fi%
6070 }^^J%
6071 \string\global\string\let\string\hyper@last\relax^^J%
6072 \string\gdef\string\HyperFirstAtBeginDocument\string#1{\string#1}%
6073 }%
6074 \fi
6075 \let\HyperFirstAtBeginDocument\ltx@firstofone

```

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

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

```

6076 \ifx\hyper@last\@undefined
6077 \def\@starttoc#1{%
6078 \begingroup
6079 \makeatletter
6080 \IfFileExists{\jobname.#1}{%
6081 \Hy@WarningNoLine{%
6082 old #1 file detected, not used; run LaTeX again%
6083 }%
6084 }{}%
6085 \if@filesw
6086 \expandafter\newwrite\csname tf@#1\endcsname
6087 \immediate\openout\csname tf@#1\endcsname \jobname.#1\relax
6088 \fi
6089 \@nobreakfalse
6090 \endgroup
6091 }%
6092 \def\newlabel#1#2{\@newl@bel r{#1}{#2}{-}{-}{-}}%
6093 \fi
6094 }

```

## 25 Title strings

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

```

6095 \ifHy@pdfusetitle
6096 \let\HyOrg@title\title
6097 \let\HyOrg@author\author
6098 \def\title{\@ifnextchar{\Hy@scanopttitle}{\Hy@scantitle}}%
6099 \def\Hy@scanopttitle[#1]{%
6100 \gdef\Hy@title{#1}%
6101 \HyOrg@title{#1}%
6102 }%
6103 \def\Hy@scantitle#1{%
6104 \gdef\Hy@title{#1}%
6105 \HyOrg@title{#1}%
6106 }%
6107 \def\author{\@ifnextchar{\Hy@scanoptauthor}{\Hy@scanauthor}}%
6108 \def\Hy@scanoptauthor[#1]{%
6109 \gdef\Hy@author{#1}%
6110 \HyOrg@author{#1}%
6111 }%
6112 \def\Hy@scanauthor#1{%
6113 \gdef\Hy@author{#1}%
6114 \HyOrg@author{#1}%
6115 }%

```

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

```

6116 \begingroup
6117 \def\process@me#1\@nil#2{%
6118 \expandafter\let\expandafter\x\csname @#2\endcsname

```

```

6119 \edef\y{\expandafter\strip@prefix\meaning\x}%
6120 \def\c##1##1##2\@nil{%
6121 \ifx\\##1\\%
6122 \else
6123 \expandafter\gdef\csname Hy@#2\expandafter\endcsname
6124 \expandafter{x}%
6125 \fi
6126 }%
6127 \expandafter\c\y\relax#1\@nil
6128 }%
6129 \expandafter\process@me\string\@latex@\@nil{title}%
6130 \expandafter\process@me\string\@latex@\@nil{author}%
6131 \endgroup
6132 \fi
6133 \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.

```

6134 \def\Hy@UseMaketitleString#1{%
6135 \ltx@ifundefined{Hy@#1}{\}%
6136 \begingroup
6137 \let\Hy@saved@hook\pdfstringdefPreHook
6138 \pdfstringdefDisableCommands{%
6139 \expandafter\let\expandafter\\\csname Hy@newline@#1\endcsname
6140 \let\newline\\%
6141 }%
6142 \expandafter\ifx\csname @pdf#1\endcsname\@empty
6143 \expandafter\pdfstringdef\csname @pdf#1\endcsname{%
6144 \csname Hy@#1\endcsname\@empty
6145 }%
6146 \fi
6147 \global\let\pdfstringdefPreHook\Hy@saved@hook
6148 \endgroup
6149 }%
6150 }
6151 \def\Hy@newline@title#1{ #1}
6152 \def\Hy@newline@author#1{, #1}
6153 \def\Hy@UseMaketitleInfos{%
6154 \Hy@UseMaketitleString{title}%
6155 \Hy@UseMaketitleString{author}%
6156 }

```

## 26 Page numbers

This stuff is done by Heiko Oberdiek.

## 27 Every page

```

6157 \RequirePackage{atbegshi}[2007/09/09]
6158 \let\Hy@EveryPageHook\ltx@empty
6159 \let\Hy@EveryPageBoxHook\ltx@empty
6160 \let\Hy@FirstPageHook\ltx@empty
6161 \AtBeginShipout{%
6162   \Hy@EveryPageHook
6163   \ifx\Hy@EveryPageBoxHook\ltx@empty
6164   \else
6165     \setbox\AtBeginShipoutBox=\vbox{%
6166       \offinterlineskip
6167       \Hy@EveryPageBoxHook
6168       \box\AtBeginShipoutBox
6169     }%
6170   \fi
6171 }
6172 \AtBeginShipoutFirst{%
6173   \Hy@FirstPageHook
6174 }
6175 \g@addto@macro\Hy@FirstPageHook{%
6176   \PDF@FinishDoc
6177 \global\let\PDF@FinishDoc\ltx@empty
6178 }

```

## 27.1 PDF /PageLabels

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

```

6179 \ifHy@pdfpagelabels
6180 \begingroup\expandafter\expandafter\expandafter\endgroup
6181 \expandafter\ifx\csname thepage\endcsname\relax
6182   \Hy@pdfpagelabelsfalse
6183   \Hy@WarningNoLine{%
6184     Option 'pdfpagelabels' is turned off\MessageBreak
6185     because \string\thepage\space is undefined%
6186   }%
6187   \csname fi\endcsname
6188   \csname iffalse\expandafter\endcsname
6189 \fi

```

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

```

6190 \def\thispdfpagelabel#1{%
6191   \gdef\HyPL@thisLabel{#1}%
6192 }%
6193 \global\let\HyPL@thisLabel\relax

```

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

```

6194 \let\HyPL@Labels\ltx@empty

```

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

```

6195 \newcount\Hy@abspage
6196 \Hy@abspage=0 %

```

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

```

6197 \def\HyPL@LastType{init}%
6198 \def\HyPL@LastNumber{0}%
6199 \let\HyPL@LastPrefix\ltx@empty

```

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

```

6200 \def\HyPL@arabic{D}%
6201 \def\HyPL@Roman{R}%
6202 \def\HyPL@roman{r}%
6203 \def\HyPL@Alph{A}%
6204 \def\HyPL@alph{a}%

6205 \let\HyPL@SlidesSetPage\ltx@empty
6206 \ltx@ifclassloaded{slides}{%
6207   \def\HyPL@SlidesSetPage{%
6208     \advance\c@page\ltx@one
6209     \ifnum\value{page}>\ltx@one
6210       \protected@edef\HyPL@SlidesOptionalPage{%
6211         \Hy@SlidesFormatOptionalPage{\thepage}%
6212       }%
6213     \else
6214       \let\HyPL@SlidesOptionalPage\ltx@empty
6215     \fi
6216     \advance\c@page-\ltx@one
6217   \def\HyPL@page{%
6218     \csname the\Hy@SlidesPage\endcsname
6219     \HyPL@SlidesOptionalPage
6220   }%
6221 }%
6222 }{}%
```

`\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.

```

6223 \def\HyPL@EveryPage{%
6224   \begingroup
6225   \ifx\HyPL@thisLabel\relax
6226     \let\HyPL@page\thepage
6227     \HyPL@SlidesSetPage
6228   \else
6229     \let\HyPL@page\HyPL@thisLabel
6230     \global\let\HyPL@thisLabel\relax
6231   \fi
6232   \let\HyPL@Type\relax
6233   \ifnum\the\c@page>0 %
6234     \ifx\HyPL@SlidesSetPage\ltx@empty
6235       \expandafter\HyPL@CheckThePage\HyPL@page\@nil
6236     \fi
6237   \fi
6238   \let\Hy@temp Y%
6239   \ifx\HyPL@Type\HyPL@LastType
6240   \else
6241     \let\Hy@temp N%
6242   \fi
6243   \ifx\HyPL@Type\relax
6244     \pdfstringdef\HyPL@Prefix{\HyPL@page}%
6245   \else
6246     \pdfstringdef\HyPL@Prefix\HyPL@Prefix
6247   \fi
6248   \ifx\HyPL@Prefix\HyPL@LastPrefix
6249   \else
6250     \let\Hy@temp N%
6251   \fi
6252   \if Y\Hy@temp
```



```

6253 \advance\c@page by -1 %
6254 \ifnum\HyPL@LastNumber=\the\c@page\relax
6255 \else
6256 \let\Hy@temp N%
6257 \fi
6258 \Hy@StepCount\c@page
6259 \fi
6260 \if N\Hy@temp
6261 \ifx\HyPL@Type\relax
6262 \HyPL@StorePageLabel{/P(\HyPL@Prefix)}%
6263 \else
6264 \HyPL@StorePageLabel{%
6265 \ifx\HyPL@Prefix\@empty
6266 \else
6267 /P(\HyPL@Prefix)%
6268 \fi
6269 /S/\csname HyPL\HyPL@Type\endcsname
6270 \ifnum\the\c@page=1 %
6271 \else
6272 \space/St \the\c@page
6273 \fi
6274 }%
6275 \fi
6276 \fi
6277 \xdef\HyPL@LastNumber{\the\c@page}%
6278 \global\let\HyPL@LastType\HyPL@Type
6279 \global\let\HyPL@LastPrefix\HyPL@Prefix
6280 \endgroup
6281 \Hy@GlobalStepCount\Hy@abspage
6282 }%

```

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

```

6283 \def\HyPL@CheckThePage#1\@nil{%
6284 \HyPL@@CheckThePage{#1}#1\csname\endcsname\c@page\@nil
6285 }%

```

`\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`.

```

6286 \def\HyPL@@CheckThePage#1#2\csname#3\endcsname\c@page#4\@nil{%
6287 \def\Hy@tempa{#4}%
6288 \def\Hy@tempb{\csname\endcsname\c@page}%
6289 \ifx\Hy@tempa\Hy@tempb
6290 \expandafter\ifx\csname HyPL#3\endcsname\relax
6291 \else
6292 \def\HyPL@Type{#3}%
6293 \def\HyPL@Prefix{#2}%
6294 \fi
6295 \else
6296 \begingroup
6297 \let\Hy@next\endgroup
6298 \let\HyPL@found\@undefined
6299 \def\arabic{\HyPL@Format{arabic}}%
6300 \def\Roman{\HyPL@Format{Roman}}%
6301 \def\roman{\HyPL@Format{roman}}%

```

```

6302 \def\Alph{\HyPL@Format{Alph}}%
6303 \def\alph{\HyPL@Format{alph}}%
6304 \protected@edef\Hy@temp{#1}%
6305 \ifx\HyPL@found\relax
6306 \toks@ \expandafter{\Hy@temp}%
6307 \edef\Hy@next{\endgroup
6308 \noexpand\HyPL@@@CheckThePage\the\toks@
6309 \noexpand\HyPL@found\relax\noexpand\@nil
6310 }%
6311 \fi
6312 \Hy@next
6313 \fi
6314 }%

```

`\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`.

```

6315 \def\HyPL@Format#1#2{%
6316 \ifx\HyPL@found\@undefined
6317 \expandafter\ifx\csname c@#2\endcsname\c@page
6318 \expandafter\noexpand\csname HyPL@found\endcsname{#1}%
6319 \else
6320 \expandafter\noexpand\csname#1\endcsname{#2}%
6321 \fi
6322 \else
6323 \expandafter\noexpand\csname#1\endcsname{#2}%
6324 \fi
6325 }%

```

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

```

6326 \def\HyPL@@@CheckThePage#1\HyPL@found#2#3\@nil{%
6327 \def\Hy@tempa{#3}%
6328 \def\Hy@tempb{\HyPL@found\relax}%
6329 \ifx\Hy@tempa\Hy@tempb
6330 \def\HyPL@Type{#2}%
6331 \def\HyPL@Prefix{#1}%
6332 \fi
6333 }%

```

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

```

6334 \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`.

```

6335 \def\HyPL@Useless{0<</S/D>>}%
6336 \@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.

```

6337 \def\HyPL@SetPageLabels{%
6338 \@onelevel@sanitize\HyPL@Labels
6339 \ifx\HyPL@Labels\@empty
6340 \else
6341 \ifx\HyPL@Labels\HyPL@Useless
6342 \else

```

```

6343      \Hy@PutCatalog{/PageLabels<</Nums[\HyPL@Labels]>>}%
6344      \fi
6345      \fi
6346    }%

```

```

6347    \g@addto@macro\Hy@EveryPageHook{\HyPL@EveryPage}%
6348  \fi

```

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

```

6349 \Hy@DisableOption{pdfpagelabels}
6350 \</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

```

6351 \< *pdftex>
6352 \pdf@ifdraftmode{%
6353   \let\Hy@PutCatalog\ltx@gobble
6354 }{%
6355   \let\Hy@PutCatalog\pdfcatalog
6356 }
6357 \< /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.

```

6358 \< *vtex>
6359 \providecommand*\XR@ext}{pdf}
6360 \edef\Hy@VTeXversion{%
6361   \ifx\VTeXversion\@undefined
6362     \z@
6363   \else
6364     \ifx\VTeXversion\relax
6365       \z@
6366     \else
6367       \VTeXversion
6368     \fi
6369   \fi
6370 }
6371 \begingroup
6372   \ifnum\Hy@VTeXversion<660 %
6373     \gdef\Hy@PutCatalog#1{%
6374       \Hy@WarningNoLine{%
6375         VTeX 6.59g or above required for pdfpagelabels%
6376       }%
6377     }%
6378   \else
6379     \gdef\Hy@PutCatalog#1{%
6380       \Hy@vt@PutCatalog#1/PageLabels<<>>\@nil
6381     }%
6382     \gdef\Hy@vt@PutCatalog#1/PageLabels<<#2>>#3\@nil{%
6383       \ifx\#2\%
6384         \else

```

```

6385 \immediate\special{!pdfpagelabels #2}%
6386 \fi
6387 }%
6388 \fi
6389 \endgroup
6390 \</vtex>

6391 \<*pdftex | vtex>

```

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

```

6392 \ifHy@pdfpagelabels
6393 \def\HyPL@StorePageLabel#1{%
6394 \toks@{\expandafter{\HyPL@Labels}}%
6395 \xdef\HyPL@Labels{%
6396 \the\toks@
6397 \the\Hy@abspage<<#1>>%
6398 }%
6399 }%

```

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.

```

6400 \RequirePackage{atveryend}[2009/12/07]%
6401 \AtVeryEndDocument{%
6402 \HyPL@SetPageLabels
6403 }%

6404 \fi
6405 \</pdftex | vtex>

```

### 27.1.2 xetex

```

6406 \<*xetex>
6407 \HyPsd@LoadUnicode
6408 \Hy@unicodetrue
6409 \ifx\HyPsd@pdfencoding\HyPsd@pdfencoding@unicode
6410 \else
6411 \let\HyPsd@pdfencoding\HyPsd@pdfencoding@auto
6412 \fi
6413 \HyPsd@LoadStringEncoding
6414 \define@key{Hyp}{unicode}[true]{%
6415 \Hy@boolkey{unicode}{#1}}%
6416 \ifHy@unicode
6417 \else
6418 \Hy@Warning{%
6419 XeTeX driver only supports 'unicode=true'. Ignoring\MessageBreak
6420 option setting 'unicode=false'%
6421 }%
6422 \Hy@unicodetrue
6423 \fi
6424 }
6425 \define@key{Hyp}{pdfencoding}{%
6426 \edef\HyPsd@temp{#1}}%
6427 \ifx\HyPsd@temp\HyPsd@pdfencoding@unicode
6428 \let\HyPsd@pdfencoding\HyPsd@temp
6429 \else
6430 \ifx\HyPsd@temp\HyPsd@pdfencoding@auto
6431 \let\HyPsd@pdfencoding\HyPsd@temp

```

```

6432 \else
6433 \Hy@Warning{%
6434 XeTeX driver only supports\MessageBreak
6435 'pdfencoding=unicode|auto'. Ignoring option\MessageBreak
6436 setting 'pdfencoding=\HyPsd@temp'%
6437 }%
6438 \fi
6439 \fi
6440 }
6441 \let\HyXeTeX@CheckUnicode\relax
6442 \</xetex>

```

### 27.1.3 pdfmarkbase, dvipdfm, xetex

```

6443 <*pdfmarkbase>
6444 \begingroup
6445 \@ifundefined{headerps@out}{}{%
6446 \toks@\expandafter{\Hy@FirstPageHook}%
6447 \xdef\Hy@FirstPageHook{%
6448 \noexpand\headerps@out{%
6449 systemdict /pdfmark known%
6450 {%
6451 userdict /?pdfmark systemdict /exec get put%
6452 }{%
6453 userdict /?pdfmark systemdict /pop get put %
6454 userdict /pdfmark systemdict /cleartomark get put%
6455 }%
6456 ifelse%
6457 }%
6458 \the\toks@
6459 }%
6460 }%
6461 \endgroup
6462 \</pdfmarkbase>

\Hy@PutCatalog
6463 <dvipdfm | xetex>\def\Hy@PutCatalog#1{\@pdfm@mark{docview << #1 >>}}
6464 <*pdfmarkbase>
6465 \def\Hy@PutCatalog#1{%
6466 \pdfmark{pdfmark=/PUT,Raw={\string{Catalog}\string} << #1 >>}}%
6467 }
6468 \</pdfmarkbase>

6469 <*pdfmarkbase | dvipdfm | xetex>
6470 \ifHy@pdfpagelabels

```

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

```

6471 \def\HyPL@StorePageLabel#1{%
6472 \if@filesw
6473 \begingroup
6474 \edef\Hy@tempa{\the\Hy@abspage<<#1>>}%
6475 \immediate\write\@mainaux{%
6476 \string\HyPL@Entry{\Hy@tempa}%
6477 }%
6478 \endgroup
6479 \fi
6480 }%

```

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.

```

6481 \Hy@AtBeginDocument{%
6482   \if@filesw
6483     \immediate\write\@mainaux{%
6484       \string\providecommand\string*\string\HyPL@Entry[1]{}%
6485     }%
6486   \fi
6487   \ifx\HyPL@Labels\@empty
6488     \Hy@WarningNoLine{Rerun to get /PageLabels entry}%
6489   \else
6490     \HyPL@SetPageLabels
6491   \fi
6492   \let\HyPL@Entry\@gobble
6493 }%
```

`\HyPL@Entry`

```

6494 \def\HyPL@Entry#1{%
6495   \expandafter\gdef\expandafter\HyPL@Labels\expandafter{%
6496     \HyPL@Labels
6497     #1%
6498   }%
6499 }%

6500 \fi
6501 </pdfmarkbase | dvipdfm | xetex>
6502 <*package>

6503 \ifx\MaybeStopEarly\relax
6504 \else
6505   \Hy@stopppedearlytrue
6506   \expandafter\MaybeStopEarly
6507 \fi
6508 \Hy@stopppedearlyfalse
```

## 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

```

6509 \def\Hy@CounterExists#1{%
6510   \begingroup\expandafter\expandafter\expandafter\endgroup
```

```

6511 \expandafter\ifx\csname c@#1\endcsname\relax
6512 \expandafter\@gobble
6513 \else
6514 \begingroup\expandafter\expandafter\expandafter\endgroup
6515 \expandafter\ifx\csname the#1\endcsname\relax
6516 \expandafter\expandafter\expandafter\@gobble
6517 \else
6518 \expandafter\expandafter\expandafter\@firstofone
6519 \fi
6520 \fi
6521 }
6522 \Hy@CounterExists{section}{%
6523 \newcommand\theHequation{\theHsection.\arabic{equation}}}%
6524 }
6525 \Hy@CounterExists{part}{%
6526 \newcommand\theHpart{\arabic{part}}}%
6527 }
6528 \ltx@ifundefined{thechapter}{%
6529 \newcommand\theHsection {\arabic{section}}}%
6530 \newcommand\theHfigure {\arabic{figure}}}%
6531 \newcommand\theHtable {\arabic{table}}}%
6532 }{%
6533 \newcommand\theHchapter {\arabic{chapter}}}%
6534 \newcommand\theHfigure {\theHchapter.\arabic{figure}}}%
6535 \newcommand\theHtable {\theHchapter.\arabic{table}}}%
6536 \newcommand\theHsection {\theHchapter.\arabic{section}}}%
6537 }
6538 \newcommand\theHsubsection {\theHsection.\arabic{subsection}}
6539 \newcommand\theHsubsubsection{\theHsubsection.\arabic{subsubsection}}
6540 \newcommand\theHparagraph {\theHsubsubsection.\arabic{paragraph}}
6541 \newcommand\theHsubparagraph {\theHparagraph.\arabic{subparagraph}}
6542 \newcommand\theHtheorem {\theHsection.\arabic{theorem}}
6543 \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.

```

6544 \let\H@item\item
6545 \newcounter{Item}
6546 \def\theHItem{\arabic{Item}}
6547 \def\item{%
6548 \@hyper@itemfalse
6549 \if@nmbrlist\@hyper@itemtrue\fi
6550 \H@item
6551 }
6552 \newcommand\theHenumi {\theHItem}
6553 \newcommand\theHenumii {\theHItem}
6554 \newcommand\theHenumiii {\theHItem}
6555 \newcommand\theHenumiv {\theHItem}
6556 \newcommand\theHHfootnote {\arabic{Hfootnote}}
6557 \newcommand\theHmpfootnote{\arabic{mpfootnote}}
6558 \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.

```

6559 \let\H@refstepcounter\refstepcounter
6560 \edef\name@of@eq{equation}%
6561 \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.

```

6562 \newif\if@hyper@item
6563 \newif\if@skiphyperref
6564 \@hyper@itemfalse
6565 \@skiphyperreffalse
6566 \def\refstepcounter#1{%
6567   \ifHy@pdfstring
6568   \else
6569     \H@refstepcounter{#1}%
6570     \edef\This@name{#1}%
6571     \ifx\This@name\name@of@slide
6572     \else
6573       \if@skiphyperref
6574       \else
6575         \if@hyper@item
6576         \stepcounter{Item}%
6577         \hyper@refstepcounter{Item}%
6578         \@hyper@itemfalse
6579       \else
6580         \hyper@refstepcounter{#1}%
6581       \fi
6582     \fi
6583   \fi
6584 \fi
6585 }
6586 \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.

```

6587 \@ifpackageloaded{amsmath}{\newif\ifmeasuring@\measuring@false}

```

`\hyper@refstepcounter`

```

6588 \def\hyper@refstepcounter#1{%
6589   \edef\This@name{#1}%
6590   \ifx\This@name\name@of@eq
6591     \@ifundefined{theHequation}{%
6592       \make@stripped@name{\theequation}%
6593       \let\theHequation\newname
6594     }{}%
6595   \fi
6596   \@ifundefined{theH#1}{%
6597     \expandafter\def\csname theH#1\endcsname{\arabic{#1}}%
6598   }{}%
6599   \hyper@makecurrent{#1}%
6600   \ifmeasuring@
6601   \else
6602     \Hy@raisedlink{%
6603       \hyper@anchorstart{\@currentHref}\hyper@anchorend
6604     }%
6605   \fi
6606 }

```

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.

```

6607 \begingroup\expandafter\expandafter\expandafter\endgroup
6608 \expandafter\ifx\csname chapter\endcsname\relax
6609   \def\Hy@chapterstring{section}%
6610 \else
6611   \def\Hy@chapterstring{chapter}%
6612 \fi
6613 \def\Hy@appendixstring{appendix}
6614 \def\Hy@chapapp{\Hy@chapterstring}
6615 \ltx@ifundefined{appendix}{%
6616 }{%
6617   \let\HyOrg@appendix\appendix
6618   \def\appendix{%
6619     \ltx@ifundefined{chapter}%
6620       {\gdef\theHsection{\Alph{section}}}%
6621       {\gdef\theHchapter{\Alph{chapter}}}%
6622     \xdef\Hy@chapapp{\Hy@appendixstring}%
6623     \HyOrg@appendix
6624   }%
6625 }
```

\Hy@Test@alph

```

6626 \def\Hy@Test@alph#1{%
6627   \ifcase#1\or
6628     a\or b\or c\or d\or e\or f\or g\or h\or i\or j\or
6629     k\or l\or m\or n\or o\or p\or q\or r\or s\or t\or
6630     u\or v\or w\or x\or y\or z%
6631   \else
6632     \@ctrerr
6633   \fi
6634 }
```

\Hy@Test@Alph

```

6635 \def\Hy@Test@Alph#1{%
6636   \ifcase#1\or
6637     A\or B\or C\or D\or E\or F\or G\or H\or I\or J\or
6638     K\or L\or M\or N\or O\or P\or Q\or R\or S\or T\or
6639     U\or V\or W\or X\or Y\or Z%
6640   \else
6641     \@ctrerr
6642   \fi
6643 }
```

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

```

6644 \def\hyper@makecurrent#1{%
6645   \begingroup
6646     \edef\Hy@param{#1}%
6647     \ifx\Hy@param\Hy@chapterstring
6648       \let\Hy@param\Hy@chapapp
6649     \fi
6650     \ifHy@hypertextnames
6651       \let\@number\@firstofone
6652       \def\@fnsymbol##1{\fnsymbol\number##1}%

```

```

6653 \def\@arabic##1{\number##1}%
6654 \ifx\@alph\Hy@Test@alph
6655 \else
6656 \def\@alph{alph\number}%
6657 \fi
6658 \ifx\@Alph\Hy@Test@Alph
6659 \else
6660 \def\@Alph{Alph\number}%
6661 \fi
6662 \ifHy@naturalnames
6663 \let\textlatin\@firstofone
6664 \xdef\HyperGlobalCurrentHref{\csname the#1\endcsname}%
6665 \else
6666 \xdef\HyperGlobalCurrentHref{%
6667 \csname
6668 the%
6669 \expandafter\ifx\csname theH#1\endcsname\relax\else H\fi
6670 #1%
6671 \endcsname
6672 }%
6673 \fi
6674 \xdef\HyperGlobalCurrentHref{%
6675 \Hy@param.\expandafter\strip@prefix\meaning\HyperGlobalCurrentHref
6676 }%
6677 \else
6678 \Hy@GlobalStepCount\Hy@linkcounter
6679 \xdef\HyperGlobalCurrentHref{\Hy@param.\the\Hy@linkcounter}%
6680 \fi
6681 \endgroup
6682 \let\HyperLocalCurrentHref\HyperGlobalCurrentHref
6683 \ifHy@localanchorname
6684 \let\@currentHref\HyperLocalCurrentHref
6685 \else
6686 \global\let\@currentHref\HyperGlobalCurrentHref
6687 \fi
6688 }

```

\Hy@MakeCurrentHref

```

6689 \def\Hy@MakeCurrentHref#1{%
6690 \edef\HyperLocalCurrentHref{#1}%
6691 \@onelevel@sanitize\HyperLocalCurrentHref
6692 \global\let\HyperGlobalCurrentHref\HyperLocalCurrentHref
6693 \let\HyperLocalCurrentHref\HyperGlobalCurrentHref
6694 \ifHy@localanchorname
6695 \let\@currentHref\HyperLocalCurrentHref
6696 \else
6697 \global\let\@currentHref\HyperGlobalCurrentHref
6698 \fi
6699 }

```

\Hy@MakeCurrentHrefAuto

```

6700 \def\Hy@MakeCurrentHrefAuto#1{%
6701 \Hy@GlobalStepCount\Hy@linkcounter
6702 \Hy@MakeCurrentHref{#1.\the\Hy@linkcounter}%
6703 }

```

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

```

6704 \def\@currentHlabel{\@currentHref}

```

```

6705 \@ifpackageloaded{fancyvrb}{%
6706   \@ifpackagelater{fancyvrb}{1998/05/20}{-}{%
6707     \def\FV@StepLineNo{%
6708       \FV@SetLineNo
6709       \def\FV@StepLineNo{\H@refstepcounter{FancyVerbLine}}%
6710       \FV@StepLineNo
6711     }%
6712   }%
6713 }{}

```

## 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`

```

6714 \Hy@AtBeginDocument{%
6715   \@ifclassloaded{revtex4}{%
6716     \@namedef{ver@lastpage.sty}{1994/06/25}%
6717   }{}%
6718   \@ifpackageloaded{lastpage}{%
6719     \ifHy@pageanchor
6720     \else
6721       \Hy@WarningNoLine{%
6722         The \string\pageref{LastPage} link doesn't work\MessageBreak
6723         with disabled option 'pageanchor'%
6724       }%
6725     \fi
6726     \def\lastpage@putlabel{%
6727       \addtocounter{page}{-1}%
6728       \if@files
6729         \begingroup
6730           \let\@number\@firstofone
6731           \ifHy@pageanchor
6732             \ifHy@hypertextnames
6733               \ifHy@plainpages
6734                 \def\Hy@temp{\arabic{page}}%
6735               \else
6736                 \Hy@unicodedefalse
6737                 \pdfstringdef\Hy@temp{\thepage}%
6738             \fi
6739           \else
6740             \def\Hy@temp{\the\Hy@pagecounter}%
6741           \fi
6742         \fi
6743         \immediate\write\@auxout{%
6744           \string\newlabel
6745             {LastPage}{-}{\thepage}{-}{%
6746               \ifHy@pageanchor page.\Hy@temp\fi}{-}}%
6747       }%
6748     \endgroup

```

```

6749 \fi
6750 \addtocounter{page}{1}%
6751 }%
6752 \@ifclassloaded{revtex4}{%
6753 \begingroup
6754 \toks@{\expandafter{\lastpage@putlabel}%
6755 \edef\x{\endgroup
6756 \def\noexpand\lastpage@putlabel{%
6757 \noexpand\stepcounter{page}%
6758 \the\toks@
6759 \noexpand\addtocounter{page}\noexpand\m@ne
6760 }%
6761 }%
6762 \x
6763 }{}%
6764 }{}%
6765 }
6766 \</package>
6767 \<*check>
6768 \checkpackage{lastpage}[1994/06/25]
6769 \checkcommand\def\lastpage@putlabel{%
6770 \addtocounter{page}{-1}%
6771 \immediate\write\@auxout{%
6772 \string\newlabel{LastPage}{\the\thepage}}%
6773 }%
6774 \addtocounter{page}{1}%
6775 }
6776 \</check>
6777 \<*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.

```

6778 \def\hypergetref#1{\getrefbykeydefault{#1}{\{??\}}
6779 \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:

```

6780 \@ifpackageloaded{titlesec}{%
6781 \def\ttl@Hy@steplink#1{%
6782 \Hy@MakeCurrentHrefAuto{#1*}%
6783 \edef\ttl@Hy@saveanchor{%
6784 \noexpand\Hy@raisedlink{%
6785 \noexpand\hyper@anchorstart{\@currentHref}%
6786 \noexpand\hyper@anchorend
6787 \def\noexpand\ttl@Hy@SavedCurrentHref{\@currentHref}%
6788 \noexpand\ttl@Hy@PatchSaveWrite
6789 }%
6790 }%
6791 }%

```

```

6792 \def\ttl@Hy@PatchSaveWrite{%
6793   \begingroup
6794   \toks@{\expandafter{\ttl@savewrite}}%
6795   \edef\x{\endgroup
6796     \def\noexpand\ttl@savewrite{%
6797       \let\noexpand\@currentHref
6798       \noexpand\ttl@Hy@SavedCurrentHref
6799       \the\toks@
6800     }%
6801   }%
6802   \x
6803 }%
6804 \def\ttl@Hy@refstepcounter#1{%
6805   \let\ttl@b\Hy@raisedlink
6806   \def\Hy@raisedlink##1{%
6807     \def\ttl@Hy@saveanchor{\Hy@raisedlink{##1}}%
6808   }%
6809   \refstepcounter{#1}%
6810   \let\Hy@raisedlink\ttl@b
6811 }%
6812 }{}

Package titletoc support:
6813 \@ifpackageloaded{titletoc}{%
6814   \def\ttl@gobblecontents#1#2#3#4{\ignorespaces}%
6815 }{}

```

## 32 Package varioref support

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

```

6816 \def\Hy@varioref@undefined{???}{??}{-}{-}}
6817 \@ifpackageloaded{varioref}{%
6818   \def\vref@pagenum#1#2{%
6819     \@ifundefined{r@#2}{%
6820       \expandafter\let\csname r@#2\endcsname\Hy@varioref@undefined
6821     }{}%
6822     \edef#1{\getpagerefnumber{#2}}%
6823   }%
6824 }{}

```

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

```

6825 \def\Hy@varioref@refstepcounter#1{%
6826   \stepcounter{#1}%
6827   \protected@edef\@currentlabel{%
6828     \csname p@#1\expandafter\endcsname\csname the#1\endcsname
6829   }%
6830 }
6831 \AtBeginDocument{%
6832   \ifx\refstepcounter\Hy@varioref@refstepcounter
6833     \let\H@refstepcounter\refstepcounter
6834     \let\refstepcounter\Hy@saved@refstepcounter
6835   \fi
6836 }

```

### 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

```

6837 \ifpackageloaded{longtable}{%
6838   \begingroup
6839   \def\y{\LT@array}%
6840   \ifundefined{scr@LT@array}{%
6841     \ifundefined{adl@LT@array}{\def\y{\adl@LT@array}}%
6842   }\def\y{\scr@LT@array}%
6843   \long\def\x\refstepcounter#1#2\@sharp#3#4\@nil{%
6844     \expandafter\endgroup
6845     \expandafter\def\y[##1]##2{%
6846       \H@refstepcounter{#1}%
6847       \hyper@makecurrent{table}%
6848       \let\Hy@LT@currentHref\@currentHref
6849       #2\@sharp####4%
6850     }%
6851   }%
6852   \expandafter\expandafter\expandafter\x\y[{#1}]{#2}\@nil

```

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

```

6853 \begingroup
6854 \def\x#1\ifvoid\LT@foot#2\fi#3\@nil{%
6855   \endgroup
6856   \def\LT@start{%
6857     #1%
6858     \ifvoid\LT@foot#2\fi
6859     \let\@currentHref\Hy@LT@currentHref
6860     \Hy@raisedlink{%
6861       \hyper@anchorstart{\@currentHref}\hyper@anchorend
6862     }%
6863     #3%
6864   }%
6865 }%
6866 \expandafter\x\LT@start\@nil
6867 }{}

```

### 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.

```

6868 \let\new@refstepcounter\refstepcounter
6869 \let\H@equation\equation
6870 \let\H@endequation\endequation
6871 \ifpackageloaded{amsmath}{%
6872   \long\def\Hy@temp{%
6873     \incr@eqnum
6874     \mathdisplay@push

```

```

6875 \st@rredfalse \global\@eqnswtrue
6876 \mathdisplay{equation}%
6877 }%
6878 \ifx\Hy@temp\equation
6879 \expandafter\ifx\csname if@fleqn\expandafter\endcsname
6880 \csname iftrue\endcsname
6881 \else
6882 \long\def\equation{%
6883 \mathdisplay@push
6884 \st@rredfalse \global\@eqnswtrue
6885 \mathdisplay{equation}%
6886 \incr@eqnum
6887 }%
6888 \fi
6889 \fi
6890 }{%
6891 \def\equation{%
6892 \let\refstepcounter\H@refstepcounter
6893 \H@equation
6894 \@ifundefined{theHequation}{%
6895 \make@stripped@name{\theequation}%
6896 \let\theHequation\newname
6897 }{}%
6898 \hyper@makecurrent{equation}%
6899 \Hy@raisedlink{\hyper@anchorstart{\@currentHref}}%
6900 \let\refstepcounter\new@refstepcounter
6901 }%
6902 \def\endequation{\Hy@raisedlink{\hyper@anchorend}\H@endequation}%
6903 }

```

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.

```

6904 \newif\if@eqnstar
6905 \@eqnstarfalse
6906 \let\H@eqnarray\eqnarray
6907 \let\H@endeqnarray\endeqnarray
6908 \def\eqnarray{%
6909 \let\Hy@reserved@a\relax
6910 \def\@currentHref{}%
6911 \H@eqnarray
6912 \if@eqnstar
6913 \else
6914 \ifx\\\@currentHref\\%
6915 \else
6916 \@ifundefined{theHequation}{%
6917 \make@stripped@name{\theequation}%
6918 \let\theHequation\newname
6919 }{}%
6920 \hyper@makecurrent{equation}%
6921 \hyper@anchorstart{\@currentHref}{\hyper@anchorend
6922 \fi
6923 \fi
6924 }
6925 \def\endeqnarray{%

```

```

6926 \H@endeqnarray
6927 }

```

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.

```

6928 \@namedef{eqnarray*}{%
6929 \def\@eqncr{\nonumber\@seqncr}\@eqnstartrue\eqnarray
6930 }
6931 \@namedef{endeqnarray*}{%
6932 \nonumber\endeqnarray\@eqnstarfalse
6933 }

```

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

```

6934 \ltx@ifundefined{subeqnarray}{}{%
6935 \let\H@subeqnarray\subeqnarray
6936 \let\H@endsubeqnarray\endsubeqnarray
6937 \def\subeqnarray{%
6938 \let\Hy@reserved@a\relax
6939 \H@subeqnarray
6940 \@ifundefined{theHequation}{%
6941 \make@stripped@name{\theequation}%
6942 \let\theHequation\newname
6943 }{}%
6944 \hyper@makecurrent{equation}%
6945 \hyper@anchorstart{\@currentHref}{\hyper@anchorend
6946 }%
6947 \def\endsubeqnarray{%
6948 \H@endsubeqnarray
6949 }%
6950 \newcommand\theHsubequation{\theHequation\alph{subequation}}%
6951 }

```

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

```

6952 \def\make@stripped@name#1{%
6953 \begingroup
6954 \escapechar\m@ne
6955 \global\let\newname\@empty
6956 \protected@edef\Hy@tempa{#1}%
6957 \edef\@tempb{%
6958 \noexpand\@tfor\noexpand\Hy@tempa:=%
6959 \expandafter\strip@prefix\meaning\Hy@tempa
6960 }%
6961 \@tempb\do{%
6962 \if{\Hy@tempa\else
6963 \if}\Hy@tempa\else
6964 \xdef\newname{\newname\Hy@tempa}%
6965 \fi
6966 \fi
6967 }%
6968 \endgroup
6969 }

```

Support for amsmath's subequations:

```

6970 \begingroup\expandafter\expandafter\expandafter\endgroup
6971 \expandafter\ifx\csname subequations\endcsname\relax
6972 \else
6973 \let\HyOrg@subequations\subequations
6974 \def\subequations{%

```



```

6975 \stepcounter{equation}%
6976 \protected@edef\theHparentequation{%
6977   \@ifundefined{theHequation}\theequation\theHequation
6978 }%
6979 \addtocounter{equation}{-1}%
6980 \HyOrg@subequations
6981 \def\theHequation{\theHparentequation\alph{equation}}%
6982 \ignorespaces
6983 }%
6984 \fi

```

Support for package amsthm (Daniel Müllner):

```

6985 \@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

6986 \def\Hy@temp#1#2#3{%
6987   \ifhmode\unskip\unskip\par\fi
6988   \normalfont
6989   \trivlist
6990   \let\thmheadnl\relax
6991   \let\thm@swap\@gobble
6992   \let\thm@indent\indent % indent
6993   \thm@headfont{\scshape}% heading font small caps
6994   \thm@notefont{\fontseries\mddefault\upshape}%
6995   \thm@headpunct{.}% add period after heading
6996   \thm@headsep 5\p@ plus\p@ minus\p@\relax
6997   \thm@space@setup
6998   #1% style overrides
6999   \@topsep \thm@preskip % used by thm head
7000   \@topsepadd \thm@postskip % used by \@endparentv
7001   \def\@tempa{#2}\ifx\@empty\@tempa
7002     \def\@tempa{\@oparg{\@begintheorem{#3}{}}}%
7003   \else
7004     \refstepcounter{#2}%
7005     \def\@tempa{\@oparg{\@begintheorem{#3}{\csname the#2\endcsname}}}%
7006   \fi
7007   \@tempa
7008 }%
7009 \ifx\Hy@temp\@thm
7010 \def\@thm#1#2#3{%
7011   \ifhmode
7012     \unskip\unskip\par
7013   \fi
7014   \normalfont
7015   \trivlist
7016   \let\thmheadnl\relax
7017   \let\thm@swap\@gobble
7018   \let\thm@indent\indent % indent
7019   \thm@headfont{\scshape}% heading font small caps
7020   \thm@notefont{\fontseries\mddefault\upshape}%
7021   \thm@headpunct{.}% add period after heading
7022   \thm@headsep 5\p@ plus\p@ minus\p@\relax
7023   \thm@space@setup
7024   #1% style overrides

```

```

7025 \topsep \thm@preskip % used by thm head
7026 \topsepadd \thm@postskip % used by \endparenv
7027 \def\dth@counter{#2}%
7028 \ifx\@empty\dth@counter
7029 \def\@tempa{%
7030 \oparg{\@begintheorem{#3}{}}{}%
7031 }%
7032 \else
7033 \H@refstepcounter{#2}%
7034 \hyper@makecurrent{#2}%
7035 \let\Hy@dth@currentHref\@currentHref
7036 \def\@tempa{%
7037 \oparg{\@begintheorem{#3}{\csname the#2\endcsname}}{}%
7038 }%
7039 \fi
7040 \@tempa
7041 }%
7042 \else
7043 \def\@thm#1#2#3{%
7044 \ifhmode
7045 \unskip\unskip\par
7046 \fi
7047 \normalfont
7048 \trivlist
7049 \let\thmheadnl\relax
7050 \let\thm@swap\@gobble
7051 \thm@notefont{\fontseries\mddefault\upshape}%
7052 \thm@headpunct{.}% add period after heading
7053 \thm@headsep 5\p@ plus\p@ minus\p@\relax
7054 \thm@space@setup
7055 #1% style overrides
7056 \topsep \thm@preskip % used by thm head
7057 \topsepadd \thm@postskip % used by \endparenv
7058 \def\dth@counter{#2}%
7059 \ifx\@empty\dth@counter
7060 \def\@tempa{%
7061 \oparg{\@begintheorem{#3}{}}{}%
7062 }%
7063 \else
7064 \H@refstepcounter{#2}%
7065 \hyper@makecurrent{#2}%
7066 \let\Hy@dth@currentHref\@currentHref
7067 \def\@tempa{%
7068 \oparg{\@begintheorem{#3}{\csname the#2\endcsname}}{}%
7069 }%
7070 \fi
7071 \@tempa
7072 }%
7073 \fi
7074 \dth@everypar={%
7075 \@minipagefalse
7076 \global\@newlistfalse
7077 \@noparitemfalse
7078 \if@inlabel
7079 \global\@inlabelfalse
7080 \begingroup
7081 \setbox\z@\lastbox

```

```

7082     \ifvoid\z@
7083     \kern-\itemindent
7084     \fi
7085 \endgroup
7086 \ifx\@empty\dth@counter
7087 \else
7088   \Hy@raisedlink{%
7089     \hyper@anchorstart{%
7090       \ltx@ifundefined{Hy@dth@currentHref}%
7091       \@currentHref\Hy@dth@currentHref
7092     }\hyper@anchorend
7093   }%
7094 \fi
7095 \unhbox\@labels
7096 \fi
7097 \if@nobreak
7098   \@nobreakfalse \clubpenalty\@M
7099 \else
7100   \clubpenalty\@clubpenalty \everypar{}%
7101 \fi
7102 }%
7103 }{}

```

## 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.

```

7104 \ifHy@hyperfootnotes
7105   \newcounter{Hfootnote}%
7106   \let\H@@@footnotetext\@footnotetext
7107   \let\H@@@footnotemark\@footnotemark
7108   \def\@xfootnotenext[#1]{%
7109     \begingroup
7110       \csname c@\@mpfn\endcsname #1\relax
7111       \unrestored@protected@xdef\@thefnmark{\thempfn}%
7112     \endgroup
7113     \ifx\@footnotetext\@mpfootnotetext
7114       \expandafter\H@@@mpfootnotetext
7115     \else
7116       \expandafter\H@@@footnotetext
7117     \fi
7118   }%
7119   \def\@xfootnotemark[#1]{%
7120     \begingroup
7121       \c@footnote #1\relax
7122       \unrestored@protected@xdef\@thefnmark{\thefootnote}%
7123     \endgroup
7124     \H@@@footnotemark
7125   }%
7126   \let\H@@@mpfootnotetext\@mpfootnotetext
7127   \long\def\@mpfootnotetext#1{%
7128     \H@@@mpfootnotetext{%
7129       \ifHy@nesting
7130         \expandafter\hyper@@anchor\expandafter{%

```

```

7131     \Hy@footnote@currentHref
7132   }{#1}%
7133   \else
7134     \Hy@raisedlink{%
7135       \expandafter\hyper@@anchor\expandafter{%
7136         \Hy@footnote@currentHref
7137       }{\relax}%
7138     }#1%
7139   \fi
7140 }%
7141 }%
7142 \long\def\@footnotetext#1{%
7143   \H@@footnotetext{%
7144     \ifHy@nesting
7145       \expandafter\hyper@@anchor\expandafter{%
7146         \Hy@footnote@currentHref
7147       }{#1}%
7148     \else
7149       \Hy@raisedlink{%
7150         \expandafter\hyper@@anchor\expandafter{%
7151           \Hy@footnote@currentHref
7152         }{\relax}%
7153       }%
7154       \let\@currentHref\Hy@footnote@currentHref
7155       \let\@currentlabelname\@empty
7156       #1%
7157     \fi
7158   }%
7159 }%

```

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.

```

7160 \def\@footnotemark{%
7161   \leavevmode
7162   \ifhmode\edef\@x@sf{\the\spacefactor}\nobreak\fi
7163   \stepcounter{Hfootnote}%
7164   \global\let\Hy@saved@currentHref\@currentHref
7165   \hyper@makecurrent{Hfootnote}%
7166   \global\let\Hy@footnote@currentHref\@currentHref
7167   \global\let\@currentHref\Hy@saved@currentHref
7168   \hyper@linkstart{link}{\Hy@footnote@currentHref}%
7169   \@makefnmark
7170   \hyper@linkend
7171   \ifhmode\spacefactor\@x@sf\fi
7172   \relax
7173 }%

```

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

```

7174 \ifpackageloaded{tabularx}{%
7175   \let\HyOrg@TX@endtabularx\TX@endtabularx
7176   \def\Hy@tabularx@hook{%
7177     \let\@footnotetext\H@@footnotetext
7178     \let\@footnotemark\H@@footnotemark
7179     \let\@mpfootnotetext\H@@mpfootnotetext
7180   }%

```

```

7181 \begingroup
7182 \toks@{\expandafter{\TX@endtabularx}}%
7183 \xdef\Hy@gtemp{%
7184   \noexpand\Hy@tabularx@hook
7185   \the\toks@
7186 }%
7187 \endgroup
7188 \let\TX@endtabularx\Hy@gtemp
7189 }{}%

```

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

```

7190 \ifpackageloaded{longtable}{%
7191   \CheckCommand*{\LT@p@ftntext}[1]{%
7192     \edef\@tempa{%
7193       \the\LT@p@ftn
7194       \noexpand\footnotetext[\the\c@footnote]%
7195     }%
7196     \global\LT@p@ftn\expandafter{\@tempa{#1}}%
7197   }%
7198   \long\def\LT@p@ftntext#1{%
7199     \edef\@tempa{%
7200       \the\LT@p@ftn
7201       \begingroup
7202         \noexpand\c@footnote=\the\c@footnote\relax
7203         \noexpand\protected@xdef\noexpand\@thefnmark{%
7204           \noexpand\thempfn
7205         }%
7206         \noexpand\Hy@LT@footnotetext{%
7207           \Hy@footnote@currentHref
7208         }%
7209       }%
7210       \global\LT@p@ftn\expandafter{%
7211         \@tempa{#1}%
7212       }%
7213     }%
7214   }%
7215   \long\def\Hy@LT@footnotetext#1#2{%
7216     \H@@footnotetext{%
7217       \ifHy@nesting
7218         \hyper@@anchor{#1}{#2}%
7219       \else
7220         \Hy@raisedlink{%
7221           \hyper@@anchor{#1}{\relax}%
7222         }%
7223         \def\@currentHref{#1}%
7224         \let\@currentlabelname\@empty
7225         #2%
7226       \fi
7227     }%
7228   }%
7229 }{}%

```

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

```

7230 \ifpackageloaded{fancyvrb}{%
7231   \def\V@@footnotetext{%

```

```

7232 \insert\footins\bgroup
7233 \csname reset@font\endcsname
7234 \footnotesize
7235 \interlinepenalty\interfootnotelinepenalty
7236 \splittopskip\footnotesep
7237 \splitmaxdepth\dp\strutbox
7238 \floatingpenalty \@MM
7239 \hsize\columnwidth
7240 \@parboxrestore
7241 \edef\@currentlabel{\csname p@footnote\endcsname\@thefnmark}%
7242 \@makefnmark{}%
7243 \rule{\z@}{\footnotesep}%
7244 \bgroup
7245 \aftergroup\V@@@footnotetext
7246 \Hy@raisedlink{%
7247   \expandafter\hyper@@anchor\expandafter{%
7248     \Hy@footnote@currentHref
7249   }\relax}%
7250 }%
7251 \let\@currentHref\Hy@footnote@currentHref
7252 \let\@currentlabelname\@empty
7253 \ignorespaces
7254 }%
7255 }{}%

```

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

```

7256 \def\Hy@temp#1{%
7257   \begingroup
7258   \unrestored@protected@xdef\@thefnmark{\ref{#1}}%
7259   \endgroup
7260   \@footnotemark
7261 }%
7262 \ifx\Hy@temp\footref
7263 \def\footref#1{%
7264   \begingroup
7265   \unrestored@protected@xdef\@thefnmark{\ref{#1}}%
7266   \endgroup
7267   \H@@@footnotemark
7268 }%
7269 \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.

```

7270 \let\HyOrg@maketitle\maketitle
7271 \def\maketitle{%
7272   \let\Hy@saved@footnotemark\@footnotemark
7273   \let\Hy@saved@footnotetext\@footnotetext
7274   \let\@footnotemark\H@@@footnotemark
7275   \let\@footnotetext\H@@@footnotetext
7276   \@ifnextchar[\Hy@maketitle@optarg{% ]
7277     \HyOrg@maketitle
7278     \Hy@maketitle@end
7279   }%
7280 }%
7281 \def\Hy@maketitle@optarg[#1]{%
7282   \HyOrg@maketitle[{#1}]%
7283   \Hy@maketitle@end

```

```

7284 }%
7285 \def\Hy@maketitle@end{%
7286 \ifx\@footnotemark\H@@footnotemark
7287 \let\@footnotemark\Hy@saved@footnotemark
7288 \fi
7289 \ifx\@footnotetext\H@@footnotetext
7290 \let\@footnotetext\Hy@saved@footnotetext
7291 \fi
7292 }%

```

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

```

7293 \def\realfootnote{%
7294 \ifnextchar[\@xfootnote{%
7295 \stepcounter{\@mpfn}%
7296 \protected@xdef\@thefnmark{\thempfn}%
7297 \H@@footnotemark\H@@footnotetext
7298 }%
7299 }%

7300 \fi
7301 \Hy@DisableOption{hyperfootnotes}

7302 \</package>
7303 \<*check>
7304 \checklatex
7305 \checkcommand\def\@xfootnotenext[#1]{%
7306 \begingroup
7307 \csname c@\@mpfn\endcsname #1\relax
7308 \unrestored@protected@xdef\@thefnmark{\thempfn}%
7309 \endgroup
7310 \@footnotetext
7311 }
7312 \checkcommand\def\@xfootnotemark[#1]{%
7313 \begingroup
7314 \c@footnote #1\relax
7315 \unrestored@protected@xdef\@thefnmark{\thefootnote}%
7316 \endgroup
7317 \@footnotemark
7318 }
7319 \checkcommand\def\@footnotemark{%
7320 \leavevmode
7321 \ifhmode\edef\@x@sf{\the\spacefactor}\nobreak\fi
7322 \@makefnmark
7323 \ifhmode\spacefactor\@x@sf\fi
7324 \relax
7325 }
7326 \</check>
7327 \<*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.

```

7328 \def\caption{%
7329 \ifx\@captype\@undefined
7330 \latex@error{\noexpand\caption outside float}\@ehd
7331 \expandafter\@gobble

```

```

7332 \else
7333   \H@refstepcounter\@capttype
7334   \let\Hy@tempa\@caption
7335   \@ifundefined{float@caption}{%
7336   }{%
7337     \expandafter\ifx\csname @float@c@\@capttype\endcsname
7338       \float@caption
7339       \let\Hy@tempa\Hy@float@caption
7340     \fi
7341   }%
7342   \expandafter\@firstofone
7343   \fi
7344   {\@dblarg{\Hy@tempa\@capttype}}%
7345 }
7346 \long\def\@caption#1[#2]#3{%
7347   \expandafter\ifx\csname if@capstart\expandafter\endcsname
7348     \csname iftrue\endcsname
7349     \global\let\@currentHref\hc@currentHref
7350   \else
7351     \hyper@makecurrent{\@capttype}%
7352   \fi
7353   \@ifundefined{NR@gettitle}{%
7354     \def\@currentlabelname{#2}%
7355   }{%
7356     \NR@gettitle{#2}%
7357   }%
7358   \par\addcontentsline{\csname ext@#1\endcsname}{#1}{%
7359     \protect\numberline{\csname the#1\endcsname}{\ignorespaces #2}%
7360   }%
7361   \begingroup
7362     \@parboxrestore
7363     \if@minipage
7364       \@setminipage
7365     \fi
7366     \normalsize
7367     \expandafter\ifx\csname if@capstart\expandafter\endcsname
7368       \csname iftrue\endcsname
7369       \global\@capstartfalse
7370       \@makecaption{\csname fnum@#1\endcsname}{\ignorespaces#3}%
7371     \else
7372       \@makecaption{\csname fnum@#1\endcsname}{%
7373         \ignorespaces

```

If we cannot have nesting, the anchor is empty.

```

7374   \ifHy@nesting
7375     \expandafter\hyper@@@anchor\expandafter{\@currentHref}{#3}%
7376   \else
7377     \Hy@raisedlink{%
7378       \expandafter\hyper@@@anchor\expandafter{%
7379         \@currentHref
7380       }\relax}%
7381     }%
7382     #3%
7383   \fi
7384 }%
7385 \fi
7386 \par
7387 \endgroup

```



7388 }

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.

```

7389 \let\Hy@float@caption\@caption
7390 \ifpackageloaded{float}{%
7391   \def\Hy@float@caption{%
7392     \ifx\Hy@float@currentHref\@undefined
7393       \hyper@makecurrent{\@cuptype}%
7394       \global\let\Hy@float@currentHref\@currentHref
7395     \else
7396       \let\@currentHref\Hy@float@currentHref
7397     \fi
7398   \float@caption
7399 }%
7400 \let\HyOrg@float@makebox\float@makebox
7401 \renewcommand{\float@makebox}[1]{%
7402   \HyOrg@float@makebox{%
7403     #1\relax
7404     \ifx\Hy@float@currentHref\@undefined
7405     \else
7406       \expandafter\hyper@@anchor\expandafter{%
7407         \Hy@float@currentHref
7408       }\relax}%
7409     \global\let\Hy@float@currentHref\@undefined
7410   \fi
7411 }%
7412 }%
7413 }{}
7414 </package>
7415 <*check>
7416 \checklatex[1999/06/01 - 2000/06/01]
7417 \checkcommand\def\caption{%
7418   \ifx\@cuptype\@undefined
7419     \@latex@error{\noexpand\caption outside float}\@ehd
7420     \expandafter\@gobble
7421   \else
7422     \refstepcounter\@cuptype
7423     \expandafter\@firstofone
7424   \fi
7425   {\@dblarg{\@caption\@cuptype}}}%
7426 }
7427 \checkcommand\long\def\@caption#1[#2]#3{%
7428   \par
7429   \addcontentsline{\csname ext@#1\endcsname}{#1}{%
7430     \protect\numberline{\csname the#1\endcsname}{\ignorespaces #2}}%
7431   }%
7432   \begingroup
7433     \@parboxrestore
7434     \if@minipage
7435       \@setminipage
7436     \fi
7437     \normalsize
7438     \@makecaption{\csname fnum@#1\endcsname}{\ignorespaces #3}\par
7439   \endgroup
7440 }
7441 </check>
7442 <*package>

```

## 37 Bibliographic references

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

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

```

7443 \def\hyper@natlinkstart#1{%
7444   \Hy@backout{#1}%
7445   \hyper@linkstart{cite}{cite.#1}%
7446   \def\hyper@nat@current{#1}%
7447 }
7448 \def\hyper@natlinkend{%
7449   \hyper@linkend
7450 }
7451 \def\hyper@natlinkbreak#1#2{%
7452   \hyper@linkend#1\hyper@linkstart{cite}{cite.#2}%
7453 }
7454 \def\hyper@natanchorstart#1{%
7455   \Hy@raisedlink{\hyper@anchorstart{cite.#1}}%
7456 }
7457 \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.

```

7458 \ltx@ifundefined{NAT@parse}{%
7459   \providecommand*\@extra@binfo{}%
7460   \providecommand*\@extra@b@citeb{}%
7461   \def\bibcite#1#2{%
7462     \@newl@bel{b}{#1\@extra@binfo}{%
7463       \hyper@link{cite}{cite.#1\@extra@b@citeb}{#2}%
7464     }%
7465   }%
7466   \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.”.

```

7467 \let\Hy@bibcite\bibcite
7468 \begingroup
7469   \ifundefined{bbl@cite@choice}{}{%
7470     \g@addto@macro\bbl@cite@choice{%
7471       \let\bibcite\Hy@bibcite
7472     }%
7473   }%
7474 \endgroup

```

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

```

7475 \providecommand*\@BIBLABEL{\@biblabel}%
7476 \def\@lbibitem[#1]#2{%
7477   \@skiphyperreftrue
7478   \H@item[%
7479     \ifx\Hy@raisedlink\@empty

```

```

7480 \hyper@anchorstart{cite.#2\@extra@b@citeb}%
7481 \@BIBLABEL{#1}%
7482 \hyper@anchorend
7483 \else
7484 \Hy@raisedlink{%
7485 \hyper@anchorstart{cite.#2\@extra@b@citeb}\hyper@anchorend
7486 }%
7487 \@BIBLABEL{#1}%
7488 \fi
7489 \hfill
7490 ]%
7491 \@skiphyperreffalse
7492 \if@filesw
7493 \begingroup
7494 \let\protect\noexpand
7495 \immediate\write\@auxout{%
7496 \string\bibcite{#2}{#1}%
7497 }%
7498 \endgroup
7499 \fi
7500 \ignorespaces
7501 }%

```

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

```

7502 \def\@bibitem#1{%
7503 \@skiphyperrefftrue\H@item\@skiphyperreffalse
7504 \Hy@raisedlink{%
7505 \hyper@anchorstart{cite.#1\@extra@b@citeb}\relax\hyper@anchorend
7506 }%
7507 \if@filesw
7508 \begingroup
7509 \let\protect\noexpand
7510 \immediate\write\@auxout{%
7511 \string\bibcite{#1}{\the\value{\@listctr}}}%
7512 }%
7513 \endgroup
7514 \fi
7515 \ignorespaces
7516 }%
7517 }{}

7518 </package>
7519 <*check>
7520 \checklatex
7521 \checkcommand\def\@lbibitem[#1]#2{%
7522 \item[\@biblabel{#1}\hfill]%
7523 \if@filesw
7524 {%
7525 \let\protect\noexpand
7526 \immediate\write\@auxout{%
7527 \string\bibcite{#2}{#1}%
7528 }%
7529 }%
7530 \fi
7531 \ignorespaces
7532 }
7533 \checkcommand\def\@bibitem#1{%

```

```

7534 \item
7535 \if@filesw
7536 \immediate\write\@auxout{%
7537 \string\bibcite{#1}{\the\value{\@listctr}}}%
7538 }%
7539 \fi
7540 \ignorespaces
7541 }
7542 \</check>
7543 \<*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.

```

7544 \ifclassloaded{revtex}{%
7545 \Hy@Info{*** compatibility with revtex **** }%
7546 \def\revtex@checking#1#2{%
7547 \expandafter\let\expandafter\T@temp\csname b@#1\endcsname
7548 \expandafter\def\csname b@#1\endcsname{#2}%
7549 \@SetMaxRnhefLabel{#1}%
7550 \expandafter\let\csname b@#1\endcsname\T@temp
7551 }%

```

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

```

7552 \@ifundefined{CITE}{\def\CITE{\@cite}}{%
7553 \providecommand*\@extra@b@citeb{}%
7554 \def\CITE[#1]#2{%
7555 \let\@citea\@empty
7556 \leavevmode
7557 \unskip
7558 $\^{}%
7559 \scriptstyle
7560 \@CITE{%
7561 \@for\@citeb:=#2\do{%
7562 \@citea
7563 \def\@citea{,\penalty\@m\ }%
7564 \edef\@citeb{\expandafter\@firstofone\@citeb}%
7565 \if@filesw
7566 \immediate\write\@auxout{\string\citation{\@citeb}}%
7567 \fi
7568 \@ifundefined{b@\@citeb\extra@b@citeb}{%
7569 \mbox{\reset@font\bfseries ?}%
7570 \G@refundefinedtrue
7571 \@latex@warning{%
7572 Citation '\@citeb' on page \thepage \space undefined%
7573 }%
7574 }{%
7575 {\csname b@\@citeb\extra@b@citeb\endcsname}%
7576 }%
7577 }%
7578 }{#1}%
7579 }$%
7580 }%

```

No, life is too short. I am not going to understand the R<sub>ev</sub>t<sub>ex</sub> \@collapse macro, I shall just restore the original behaviour of \@citex; sigh. This is SO vile.

```

7581 \def\citex[#1]#2{%

```

```

7582 \let\@citea\@empty
7583 \@cite{%
7584   \@for\@citeb:=#2\do{%
7585     \@citea
7586     \def\@citea{,\penalty\@m\ }%
7587     \edef\@citeb{\expandafter\@firstofone\@citeb}%
7588     \if@filesw
7589       \immediate\write\@auxout{\string\citation{\@citeb}}%
7590     \fi
7591     \ifundefined{b@\@citeb\@extra@b@citeb}{%
7592       \mbox{\reset@font\bfseries ?}%
7593       \G@refundefinedtrue
7594       \@latex@warning{%
7595         Citation '\@citeb' on page \thepage \space undefined%
7596       }%
7597     }{%
7598       \hbox{\csname b@\@citeb\@extra@b@citeb\endcsname}%
7599     }%
7600   }%
7601 }{\#1}%
7602 }%
7603 }{}

```

### 37.1 Package harvard

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

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

```

7604 \ifpackageloaded{harvard}{%
7605   \Hy@AtBeginDocument{%
7606     \Hy@Info{*** compatibility with harvard **** }%
7607     \Hy@raiselinksfalse
7608     \def\harvardcite#1#2#3#4{%
7609       \global\@namedef{HAR@fn@#1}{\hyper@link[cite]{\cite.#1}{#2}}%
7610       \global\@namedef{HAR@an@#1}{\hyper@link[cite]{\cite.#1}{#3}}%
7611       \global\@namedef{HAR@yr@#1}{\hyper@link[cite]{\cite.#1}{#4}}%
7612       \global\@namedef{HAR@df@#1}{\csname HAR@fn@#1\endcsname}%
7613     }%
7614     \def\HAR@citetoaux#1{%
7615       \if@filesw\immediate\write\@auxout{\string\citation{#1}}\fi%
7616       \ifHy@backref
7617         \ifx\@empty\@currentlabel
7618           \else
7619             \@bsphack
7620             \if@filesw
7621               \protected@write\@auxout{}{%
7622                 \string\@writefile{brf}{%
7623                   \string\backcite{#1}{%
7624                     {\thepage}{\@currentlabel}{\@currentHref}%
7625                   }%
7626                 }%
7627             }%
7628           \fi

```

```

7629     \@esphack
7630     \fi
7631   \fi
7632 }%
7633 \def\harvarditem{%
7634   \@ifnextchar[{\@harvarditem}{\@harvarditem[\null]}%
7635 }%
7636 \def\@harvarditem[#1]#2#3#4#5\par{%
7637   \item[]%
7638   \hyper@anchorstart{cite.#4}\relax\hyper@anchorend
7639   \if@filesw
7640     \begingroup
7641     \def\protect##1{\string ##1\space}%
7642     \ifthenelse{\equal{#1}{\null}}{%
7643       {\def\next{{#4}{#2}{#2}{#3}}}%
7644       {\def\next{{#4}{#2}{#1}{#3}}}%
7645     \immediate\write\@auxout{\string\harvardcite\codeof\next}%
7646   \endgroup
7647   \fi
7648   \protect\hspace*{-\labelwidth}%
7649   \protect\hspace*{-\labelsep}%
7650   \ignorespaces
7651   #5%
7652   \ifHy@backref
7653     \newblock
7654     \backref{\csname br@#4\endcsname}%
7655   \fi
7656   \par
7657 }%

```

\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:

```

7658 \long\def\HAR@checkcitations#1#2#3#4{%
7659   \def\HAR@tempa{\hyper@@link[cite]{\cite.#1}{#2}}%
7660   \expandafter\ifx\csname HAR@fn@#1\endcsname\HAR@tempa
7661     \def\HAR@tempa{\hyper@@link[cite]{\cite.#1}{#3}}%
7662     \expandafter\ifx\csname HAR@an@#1\endcsname\HAR@tempa
7663       \def\HAR@tempa{\hyper@@link[cite]{\cite.#1}{#4}}%
7664       \expandafter\ifx\csname HAR@yr@#1\endcsname\HAR@tempa
7665         \else
7666           \@tempwattrue
7667         \fi
7668       \else
7669         \@tempwattrue
7670       \fi
7671     \else
7672       \@tempwattrue
7673     \fi
7674   }%
7675 }%
7676 }{}

```

## 37.2 Package chicago

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

```

7677 \ifpackageloaded{chicago}{%
\citeN
7678 \def\citeN{%
7679 \def\@citesep{-1000}%
7680 \def\@cite##1##2{##1}%
7681 \def\citeauthoryear##1##2##3{##1 (##3\@cite@opt)}%
7682 \@citedata@opt
7683 }%

\shortciteN
7684 \def\shortciteN{%
7685 \def\@citesep{-1000}%
7686 \def\@cite##1##2{##1}%
7687 \def\citeauthoryear##1##2##3{##2 (##3\@cite@opt)}%
7688 \@citedata@opt
7689 }%

\@citedata@opt
7690 \def\@citedata@opt{%
7691 \let\@cite@opt\@empty
7692 \ifnextchar [{%
7693 \@tempwattrue
7694 \@citedatax@opt
7695 }{%
7696 \@tempwafalse
7697 \@citedatax[]%
7698 }%
7699 }%

\@citedatax@opt
7700 \def\@citedatax@opt[#1]{%
7701 \def\@cite@opt{, #1}%
7702 \@citedatax[{#1}]%
7703 }%

7704 }{}

```

## 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.

```

7705 \ltx@ifclassloaded{slides}{%
7706 \def\Hy@SlidesFormatOptionalPage#1{(#1)}%
7707 \def\Hy@PageAnchorSlidesPlain{%
7708 \advance\c@page\ltx@one
7709 \edef\Hy@TempPageAnchor{%
7710 \noexpand\hyper@@anchor{%
7711 page.\the\c@slide.\the\c@overlay.\the\c@note%
7712 \ifnum\c@page=\ltx@one
7713 \else

```

```

7714     .\the\c@page
7715     \fi
7716   }%
7717 }%
7718 \advance\c@page-\ltx@one
7719 }%
7720 \def\Hy@PageAnchorSlide{%
7721   \advance\c@page\ltx@one
7722   \ifnum\c@page>\ltx@one
7723     \ltx@ifundefined{theHpage}{%
7724       \protected@edef\Hy@TheSlideOptionalPage{%
7725         \Hy@SlidesFormatOptionalPage{\thepage}%
7726       }%
7727     }{%
7728       \protected@edef\Hy@TheSlideOptionalPage{%
7729         \Hy@SlidesFormatOptionalPage{\theHpage}%
7730       }%
7731     }%
7732   \else
7733     \def\Hy@TheSlideOptionalPage{}%
7734   \fi
7735   \advance\c@page-\ltx@one
7736   \pdfstringdef\@the@H@page{%
7737     \csname
7738       the%
7739       \ltx@ifundefined{theH\Hy@SlidesPage}{}{H}%
7740       \Hy@SlidesPage
7741     \endcsname
7742     \Hy@TheSlideOptionalPage
7743   }%
7744   \ltx@gobblethree
7745 }%
7746 \def\Hy@SlidesPage{slide}%
7747 \g@addto@macro\slide{%
7748   \def\Hy@SlidesPage{slide}%
7749 }%
7750 \g@addto@macro\overlay{%
7751   \def\Hy@SlidesPage{overlay}%
7752 }%
7753 \g@addto@macro\note{%
7754   \def\Hy@SlidesPage{note}%
7755 }%
7756 }{%
7757 \def\Hy@PageAnchorSlidesPlain{}%
7758 \def\Hy@PageAnchorSlide{}%
7759 }
7760 \def\Hy@EveryPageAnchor{%
7761   \Hy@DistillerDestFix
7762   \ifHy@pageanchor
7763     \ifHy@hypertextnames
7764       \ifHy@plainpages
7765         \def\Hy@TempPageAnchor{\hyper@@anchor{page.\the\c@page}}%
7766         \Hy@PageAnchorSlidesPlain
7767       \else
7768         \begingroup
7769         \let\@number\@firstofone
7770         \Hy@unicodefalse

```



```

7771 \Hy@PageAnchorSlide
7772 \pdfstringdef\@the@H@page{\thepage}%
7773 \endgroup
7774 \EdefUnescapeString\@the@H@page{\@the@H@page}%
7775 \def\Hy@TempPageAnchor{\hyper@@anchor{page.\@the@H@page}}%
7776 \fi
7777 \else
7778 \Hy@GlobalStepCount\Hy@pagecounter
7779 \def\Hy@TempPageAnchor{%
7780 \hyper@@anchor{page.\the\Hy@pagecounter}%
7781 }%
7782 \fi
7783 \vbox to 0pt{%
7784 \kern\voffset
7785 \kern\topmargin
7786 \kern-1bp\relax
7787 \hbox to 0pt{%
7788 \kern\hoffset
7789 \kern\ifodd\value{page}%
7790 \oddsidemargin
7791 \else
7792 \evensidemargin
7793 \fi
7794 \kern-1bp\relax
7795 \Hy@TempPageAnchor\relax
7796 \hss
7797 }%
7798 \vss
7799 }%
7800 \fi
7801 }
7802 \g@addto@macro\Hy@EveryPageBoxHook{%
7803 \Hy@EveryPageAnchor
7804 }

```

## 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.

```

7805 \def\addcontentsline#1#2#3{% toc extension, type, tag
7806 \begingroup
7807 \let\label\@gobble
7808 \ifx\@currentHref\@empty
7809 \Hy@Warning{%
7810 No destination for bookmark of \string\addcontentsline,%
7811 \MessageBreak destination is added%
7812 }%
7813 \phantomsection
7814 \fi
7815 \expandafter\ifx\csname toplevel@#2\endcsname\relax
7816 \begingroup
7817 \def\Hy@tempa{#1}%
7818 \ifx\Hy@tempa\Hy@bookmarkstype
7819 \Hy@WarningNoLine{%
7820 bookmark level for unknown #2 defaults to 0%

```

```

7821     }%
7822     \else
7823         \Hy@Info{bookmark level for unknown #2 defaults to 0}%
7824     \fi
7825 \endgroup
7826 \expandafter\gdef\csname toplevel@#2\endcsname{0}%
7827 \fi
7828 \edef\Hy@toclevel{\csname toplevel@#2\endcsname}%
7829 \Hy@writebookmark{\csname the#2\endcsname}%
7830     {#3}%
7831     {\@currentHref}%
7832     {\Hy@toclevel}%
7833     {#1}%
7834 \ifHy@verbose
7835     \begingroup
7836         \def\Hy@tempa{#3}%
7837         \@onelevel@sanitize\Hy@tempa
7838         \let\temp@online\on@line
7839         \let\on@line\@empty
7840         \Hy@Info{%
7841             bookmark\temp@online:\MessageBreak
7842             thecounter {\csname the#2\endcsname}\MessageBreak
7843             text {\Hy@tempa}\MessageBreak
7844             reference {\@currentHref}\MessageBreak
7845             toplevel {\Hy@toclevel}\MessageBreak
7846             type {#1}%
7847         }%
7848     \endgroup
7849 \fi
7850 \addtocontents{#1}{%
7851     \protect\contentsline{#2}{#3}{\thepage}{\@currentHref}%
7852 }%
7853 \endgroup
7854 }
7855 \def\contentsline#1#2#3#4{%
7856     \ifx\\#4\\%
7857         \csname l@#1\endcsname{#2}{#3}%
7858     \else
7859         \ifcase\Hy@linktoc % none
7860             \csname l@#1\endcsname{#2}{#3}%
7861         \or % section
7862             \csname l@#1\endcsname{%
7863                 \hyper@linkstart{link}{#4}{#2}\hyper@linkend
7864             }{#3}%
7865         \or % page
7866             \csname l@#1\endcsname{{#2}}{%
7867                 \hyper@linkstart{link}{#4}{#3}\hyper@linkend
7868             }%
7869         \else % all
7870             \csname l@#1\endcsname{%
7871                 \hyper@linkstart{link}{#4}{#2}\hyper@linkend
7872             }{%
7873                 \hyper@linkstart{link}{#4}{#3}\hyper@linkend
7874             }%
7875         \fi
7876     \fi
7877 }

```

```

7878 </package>
7879 <*check>
7880 \checklatex
7881 \checkcommand\def\addcontentsline#1#2#3{%
7882   \addtocontents{#1}{\protect\contentsline{#2}{#3}{\thepage}}%
7883 }
7884 \checkcommand\def\contentsline#1{\csname l@#1\endcsname}
7885 </check>
7886 <*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.

```

7887 \let\H@definecounter\@definecounter
7888 \def\@definecounter#1{%
7889   \H@definecounter{#1}%
7890   \expandafter\def\csname theH#1\endcsname{\arabic{#1}}%
7891 }

```

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.

```

7892 \let\H@newctr\@newctr
7893 \def\@newctr#1[#2]{%
7894   \H@newctr#1[{#2}]%
7895   \expandafter\def\csname theH#1\endcsname{%
7896     \csname the\@ifundefined{theH#2}{H}{H}#2\endcsname.\arabic{#1}%
7897   }%
7898 }

```

## 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.

```

7899 \ifpackageloaded{amsmath}{%
7900   \def\Hy@make@anchor{%
7901     \Hy@MakeCurrentHrefAuto{AMS}%
7902     \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
7903   }%
7904   \def\Hy@make@df@tag@@#1{%
7905     \gdef\df@tag{%
7906       \maketag@@@{\Hy@make@anchor#1}%
7907       \def\@currentlabel{#1}%
7908     }%
7909   }%
7910   \def\Hy@make@df@tag@@@#1{%
7911     \gdef\df@tag{%
7912       \tagform@{\Hy@make@anchor#1}%
7913       \toks@{\xp{p@equation{#1}}}%
7914       \edef\@currentlabel{\the\toks@}%
7915     }%

```

```

7916 }%
7917 \let\HyOrg@make@df@tag@@\make@df@tag@@
7918 \let\HyOrg@make@df@tag@@@ \make@df@tag@@@
7919 \let\make@df@tag@@\Hy@make@df@tag@@
7920 \let\make@df@tag@@@ \Hy@make@df@tag@@@
7921 }{}

```

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

```

7922 \ifpackagewith{hyperref}{pdfTeX}{%
7923   \let\H@seteqlabel\@seteqlabel
7924   \def\@seteqlabel#1{%
7925     \H@seteqlabel{#1}%
7926     \xdef\@currentHref{AMS.\the\Hy@linkcounter}%
7927     \Hy@raisedlink{%
7928       \hyper@anchorstart{\@currentHref}\hyper@anchorend
7929     }%
7930   }%
7931 }{}

```

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.

```

7932 \let\HyOrg@addtoreset \@addtoreset
7933 \def\@addtoreset#1#2{%
7934   \HyOrg@addtoreset{#1}{#2}%
7935   \expandafter\xdef\csname theH#1\endcsname{%
7936     \expandafter\noexpand
7937     \csname the\@ifundefined{theH#2}{H#2\endcsname
7938     .\noexpand\the\noexpand\value{#1}%
7939   }%
7940 }

```

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

```

7941 \</package>
7942 \<*check>
7943 \checkpackage{amsmath}[1999/12/14 - 2000/06/06]
7944 \checkcommand\newcommand{\numberwithin}[3][\arabic]{%
7945   \@ifundefined{c@#2}{\@nocounterr{#2}}{%
7946     \@ifundefined{c@#3}{\@nocnterr{#3}}{%
7947       \@addtoreset{#2}{#3}%
7948       \@xp\xdef\csname the#2\endcsname{%
7949         \@xp\@nx\csname the#3\endcsname .\@nx#1{#2}%
7950       }%
7951     }%

```

```

7952 }%
7953 }%
7954 \check)
7955 \*package)
7956 \ifpackageloaded{amsmath}{%
7957 \ifpackagelater{amsmath}{1999/12/14}{%
7958 \renewcommand*{\numberwithin}{3}[\arabic]{%
7959 \ifundefined{c@#2}{\@nocounterr{#2}}{%
7960 \ifundefined{c@#3}{\@nocnterr{#3}}{%
7961 \HyOrg@addtoreset{#2}{#3}%
7962 \xp\xdef\csname the#2\endcsname{%
7963 \xp\xnx\csname the#3\endcsname .\nx#1{#2}%
7964 }%
7965 \xp\xdef\csname theH#2\endcsname{%
7966 \xp\xnx
7967 \csname the\ifundefined{theH#3}{H#3\endcsname
7968 .\nx#1{#2}%
7969 }%
7970 }%
7971 }%
7972 }%
7973 }{%
7974 \Hy@WarningNoLine{%
7975 \string\numberwithin\space of package 'amsmath' %
7976 only fixed\MessageBreak
7977 for version 2000/06/06 v2.12 or newer%
7978 }%
7979 }%
7980 }{}

```

## 42 Included figures

Simply intercept the low level graphics package macro.

```

7981 \ifHy@hyperfigures
7982 \let\Hy@Gin@setfile\Gin@setfile
7983 \def\Gin@setfile#1#2#3{%
7984 \hyperimage{#3}{\Hy@Gin@setfile{#1}{#2}{#3}}%
7985 }%
7986 \fi
7987 \Hy@DisableOption{hyperfigures}

```

## 43 hyperindex entries

Internal command names are prefixed with \HyInd@.

Hyper-indexing works crudely, by forcing code onto the end of the index entry with the | feature; this puts a hyperlink around the printed page numbers. It will not proceed if the author has already used the | specifier for something like boldening entries. That would make Makeindex fail (cannot have two | specifiers). The solution is for the author to use generic coding, and put in the requisite \hyperpage in his/her own macros along with the boldness.

This section is poor stuff; it's open to all sorts of abuse. Sensible large projects will design their own indexing macros any bypass this.

```

7988 \ifHy@hyperindex
7989 \def\HyInd@ParenLeft{({}%

```

```

7990 \def\HyInd@ParenRight{}}%
7991 \def\hyperindexformat#1#2{%
7992 \let\HyOrg@hyperpage\hyperpage
7993 \let\hyperpage\@firstofone
7994 #1{\HyOrg@hyperpage{#2}}%
7995 \let\hyperpage\HyOrg@hyperpage
7996 }%
7997 \Hy@nextfalse
7998 \@ifpackageloaded{multind}{\Hy@nexttrue}{}%
7999 \@ifpackageloaded{index}{\Hy@nexttrue}{}%
8000 \@ifpackageloaded{amsmidx}{\Hy@nexttrue}{}%
8001 \begingroup
8002 \lccode'\|=\expandafter'\HyInd@EncapChar\relax
8003 \lccode'\|/'=\|\\relax
8004 \lowercase{\endgroup
8005 \ifHy@next
8006 \let\HyInd@org@wrindex\@wrindex
8007 \def\@wrindex#1#2{\HyInd@@@wrindex{#1}#2||\\}%
8008 \def\HyInd@@@wrindex#1#2|#3|#4\\{%
8009 \ifx\\#3\\%
8010 \HyInd@org@wrindex{#1}{#2|hyperpage}%
8011 \else
8012 \HyInd@@@@wrindex{#1}{#2}#3\\%
8013 \fi
8014 }%
8015 \def\HyInd@@@@wrindex#1#2#3#4\\{%
8016 \def\Hy@temp@A{#3}%
8017 \ifcase0\ifx\Hy@temp@A\HyInd@ParenLeft 1\fi
8018 \ifx\Hy@temp@A\HyInd@ParenRight 1\fi
8019 \relax
8020 \HyInd@org@wrindex{#1}{%
8021 #2|hyperindexformat{/#3#4}%
8022 }%
8023 \else
8024 \ifx\\#4\\%
8025 \ifx\Hy@temp@A\HyInd@ParenRight
8026 \HyInd@org@wrindex{#1}{#2|#3}%
8027 \else
8028 \HyInd@org@wrindex{#1}{#2|#3hyperpage}%
8029 \fi
8030 \else
8031 \HyInd@org@wrindex{#1}{%
8032 #2|#3hyperindexformat{/#4}%
8033 }%
8034 \fi
8035 \fi
8036 }%
8037 \else
8038 \def\@wrindex#1{\@@@@wrindex#1||\\}%
8039 \def\@@@@wrindex#1|#2|#3\\{%
8040 \if@files@w
8041 \ifx\\#2\\%
8042 \protected@write\@indexfile{}{%
8043 \string\indexentry{#1|hyperpage}{\thepage}%
8044 }%
8045 \else
8046 \HyInd@@@@wrindex{#1}#2\\%

```

```

8047     \fi
8048     \fi
8049     \endgroup
8050     \@esphack
8051 }%
8052 \def\HyInd@@@wrindex#1#2#3\\{%
8053   \def\Hy@temp@A{#2}%
8054   \ifcase0\ifx\Hy@temp@A\HyInd@ParenLeft 1\fi
8055     \ifx\Hy@temp@A\HyInd@ParenRight 1\fi
8056     \relax
8057   \protected@write\@indexfile{}{%
8058     \string\indexentry{%
8059       #1|hyperindexformat{/#2#3}%
8060     }\thepage}%
8061   }%
8062 \else
8063   \ifx\\#3\\%
8064     \ifx\Hy@temp@A\HyInd@ParenRight
8065       \protected@write\@indexfile{}{%
8066         \string\indexentry{#1|#2}\thepage}%
8067     }%
8068   \else
8069     \protected@write\@indexfile{}{%
8070       \string\indexentry{#1|#2hyperpage}\thepage}%
8071     }%
8072   \fi
8073 \else
8074   \protected@write\@indexfile{}{%
8075     \string\indexentry{%
8076       #1|#2hyperindexformat{/#3}%
8077     }\thepage}%
8078   }%
8079   \fi
8080 \fi
8081 }%
8082 \fi
8083 }%
8084 \fi
8085 \Hy@DisableOption{hyperindex}
8086 \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.

```
8087 \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.

```

8088 \def\hyperpage#1{%
8089   \HyInd@hyperpage#1\nohyperpage{}\@nil
8090 }
8091 \def\HyInd@hyperpage#1\nohyperpage#2#3\@nil{%
8092   \HyInd@@@hyperpage{#1}%
8093   #2%
8094   \def\Hy@temp{#3}%
8095   \ifx\Hy@temp\@empty
8096   \else
8097     \ltx@ReturnAfterFi{%

```

```

8098 \HyInd@hyperpage#3\@nil
8099 }%
8100 \fi
8101 }
8102 \def\HyInd@@hyperpage#1{\@hyperpage#1----\}
8103 \def\@hyperpage#1--#2--#3\{\%
8104 \ifx\#2\%
8105 \@commahyperpage{#1}%
8106 \else
8107 \HyInd@pagelink{#1}--\HyInd@pagelink{#2}%
8108 \fi
8109 }
8110 \def\@commahyperpage#1{\@commahyperpage#1, \}
8111 \def\@commahyperpage#1, #2,#3\{\%
8112 \ifx\#2\%
8113 \HyInd@pagelink{#1}%
8114 \else
8115 \HyInd@pagelink{#1}, \HyInd@pagelink{#2}%
8116 \fi
8117 }

```

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

```

8118 \def\HyInd@pagelink#1{%
8119 \begingroup
8120 \toks@={}%
8121 \HyInd@removespaces#1 \@nil
8122 \endgroup
8123 }
8124 \def\HyInd@removespaces#1 #2\@nil{%
8125 \toks@=\expandafter{\the\toks@#1}%
8126 \ifx\#2\%
8127 \edef\x{\the\toks@}%
8128 \ifx\x\@empty
8129 \else
8130 \hyperlink{page.\the\toks@}{\the\toks@}%
8131 \fi
8132 \else
8133 \ltx@ReturnAfterFi{%
8134 \HyInd@removespaces#2\@nil
8135 }%
8136 \fi
8137 }

```

## 44 Compatibility with foiltex

```

8138 \@ifclassloaded{foils}{%
8139 \providecommand*\ext@table{lot}%
8140 \providecommand*\ext@figure{lof}%
8141 }{}

```

## 45 Compatibility with seminar slide package

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

```

8142 \@ifclassloaded{seminar}{%

```



```

8143 \Hy@seminarslidestrue\newcommand\theHslide{\arabic{slide}}}%
8144 }{%
8145 \Hy@seminarslidesfalse
8146 }
8147 \ifpackageloaded{slidesec}{%
8148 \newcommand\theHslidesection {\arabic{slidesection}}}%
8149 \newcommand\theHslidesubsection{%
8150 \theHslidesection.\arabic{slidesubsection}}%
8151 }%
8152 \def\slide@heading[#1]#2{%
8153 \H@refstepcounter{slidesection}%
8154 \@addtoreset{slidesubsection}{slidesection}%
8155 \addtocontents{los}{%
8156 \protect\l@slide{\the\c@slidesection}{\ignorespaces#1}}%
8157 {\@SCTR}{slideheading.\theslidesection}}%
8158 }%
8159 \def\Hy@tempa{#2}%
8160 \ifx\Hy@tempa\@empty
8161 \else
8162 {%
8163 \edef\@currentlabel{%
8164 \csname p@slidesection\endcsname\theslidesection
8165 }%
8166 \makeslideheading{#2}%
8167 }%
8168 \fi
8169 \gdef\theslideheading{#1}%
8170 \gdef\theslidesubheading{}%
8171 \ifHy@bookmarksnumbered
8172 \def\Hy@slidetitle{\theslidesection\space #1}%
8173 \else
8174 \def\Hy@slidetitle{#1}%
8175 \fi
8176 \ifHy@hypertextnames
8177 \ifHy@naturalnames
8178 \hyper@@anchor{slideheading.\theslidesection}{\relax}%
8179 \Hy@writebookmark
8180 {\theslidesection}%
8181 {\Hy@slidetitle}%
8182 {slideheading.\theslidesection}%
8183 {1}%
8184 {toc}%
8185 \else
8186 \hyper@@anchor{slideheading.\theHslidesection}{\relax}%
8187 \Hy@writebookmark
8188 {\theslidesection}%
8189 {\Hy@slidetitle}%
8190 {slideheading.\theHslidesection}%
8191 {1}%
8192 {toc}%
8193 \fi
8194 \else
8195 \Hy@GlobalStepCount\Hy@linkcounter
8196 \hyper@@anchor{slideheading.\the\Hy@linkcounter}{\relax}%
8197 \Hy@writebookmark
8198 {\theslidesection}%
8199 {\Hy@slidetitle}%

```

```

8200     {slideheading.\the\Hy@linkcounter}%
8201     {1}%
8202     {toc}%
8203   \fi
8204 }%
8205 \def\slide@subheading[#1]#2{%
8206   \H@refstepcounter{slidesubsection}%
8207   \addtocontents{los}{%
8208     \protect\l@subslide{\the\c@slidesubsection}{\ignorespaces#1}%
8209     {\@SCTR}{\slideheading.\theslidesubsection}%
8210   }%
8211   \def\Hy@tempa{#2}%
8212   \ifx\Hy@tempa\@empty
8213   \else
8214     {%
8215       \edef\@currentlabel{%
8216         \csname p@slidesubsection\endcsname\theslidesubsection
8217       }%
8218       \makeslidesubheading{#2}%
8219     }%
8220   \fi
8221   \gdef\theslidesubheading{#1}%
8222   \ifHy@bookmarksnumbered
8223     \def\Hy@slidetitle{\theslidesubsection\space #1}%
8224   \else
8225     \def\Hy@slidetitle{#1}%
8226   \fi
8227   \ifHy@hypertexnames
8228     \ifHy@naturalnames
8229       \hyper@@anchor{slideheading.\theslidesubsection}{\relax}%
8230       \Hy@writebookmark
8231         {\theslidesubsection}%
8232         {\Hy@slidetitle}%
8233         {slideheading.\theslidesubsection}%
8234         {2}%
8235         {toc}%
8236     \else
8237       \hyper@@anchor{slideheading.\theHslidesubsection}{\relax}%
8238       \Hy@writebookmark
8239         {\theslidesubsection}%
8240         {\Hy@slidetitle}%
8241         {slideheading.\theHslidesubsection}%
8242         {2}%
8243         {toc}%
8244     \fi
8245   \else
8246     \Hy@GlobalStepCount\Hy@linkcounter
8247     \hyper@@anchor{slideheading.\the\Hy@linkcounter}{\relax}%
8248     \Hy@writebookmark
8249       {\theslidesubsection}%
8250       {\Hy@slidetitle}%
8251       {slideheading.\the\Hy@linkcounter}%
8252       {1}%
8253       {toc}%
8254   \fi
8255 }%
8256 \providecommand*{\listslidenam}{List of Slides}%

```

```

8257 \def\listofslides{%
8258   \section*{%
8259     \listslidenamename
8260     \@mkboth{%
8261       \expandafter\MakeUppercase\listslidenamename
8262     }{%
8263       \expandafter\MakeUppercase\listslidenamename
8264     }%
8265   }%
8266 \def\l@slide##1##2##3##4{%
8267   \slide@undottedcline{%
8268     \slidenumberline{##3}{\hyperlink{##4}{##2}}}%
8269   }{%
8270   }%
8271   \let\l@subslide\l@slide
8272   \@startlos
8273 }%
8274 \def\slide@contents{%
8275   \def\l@slide##1##2##3##4{%
8276     \slide@ccline{\slidenumberline{##3}{\hyperlink{##4}{##2}}}{##3}%
8277   }%
8278   \let\l@subslide\@gobblefour
8279   \@startlos
8280 }%
8281 \def\Slide@contents{%
8282   \def\l@slide##1##2##3##4{%
8283     \ifcase\lslide@flag
8284       \message{##1 ** \the\c@slidesection}%
8285       \ifnum##1>\c@slidesection
8286         \def\lslide@flag{1}%
8287         {%
8288           \large
8289           \slide@ccline{%
8290             \slidenumberline{\$ \Rightarrow \bullet$}%
8291             {\hyperlink{##4}{##2}}}%
8292           }{##3}%
8293         }%
8294       \else
8295         {%
8296           \large
8297           \slide@ccline{%
8298             \slidenumberline{\$ \surd\; \bullet$}%
8299             {\hyperlink{##4}{##2}}}%
8300           }{##3}%
8301         }%
8302       \fi
8303     \or
8304     \def\lslide@flag{2}%
8305     {%
8306       \large
8307       \slide@ccline{%
8308         \slidenumberline{\$ \bullet$}%
8309         {\hyperlink{##4}{##2}}}%
8310       }{##3}%
8311     }%
8312     \or
8313     {%

```

```

8314     \large
8315     \slide@cline{%
8316     \slidenumberline{$\bullet$}%
8317     {\hyperlink{##4}{##2}}}%
8318     }{##3}%
8319     }%
8320     \fi
8321     }%
8322     \def\l@subslide##1##2##3##4{%
8323     \ifnum\lslide@flag=1 %
8324     \@undottedtocline{2}{3.8em}{3.2em}{\hyperlink{##4}{##2}}{}}%
8325     \fi
8326     }%
8327     \def\lslide@flag{0}%
8328     \@startlos
8329     }%
8330     {}

```

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.)

```

8331 \ifHy@texht
8332 \expandafter\endinput
8333 \fi
8334 \let\real@setref\@setref
8335 \def\@setref#1##2##3{% csname, extract group, refname
8336 \ifx#1\relax
8337 \protect\G@refundefinedtrue
8338 \nfss@text{\reset@font\bfseries ??}%
8339 \@latex@warning{%
8340 Reference '#3' on page \thepage \space undefined%
8341 }%
8342 \else
8343 \expandafter\Hy@setref@link#1\@empty\@empty\@nil{##2}%
8344 \fi
8345 }

```

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

```

8346 \def\Hy@setref@link#1##2##3##4##5##6\@nil#7{%
8347 \begingroup
8348 \toks0={\hyper@@link{#5}{#4}}%
8349 \toks1=\expandafter{#7{#1}{#2}{#3}{#4}{#5}}%
8350 \edef\x{\endgroup
8351 \the\toks0 \the\toks1 }%
8352 }%
8353 \x
8354 }
8355 \def\@pagesetref#1##2##3{% csname, extract macro, ref
8356 \ifx#1\relax
8357 \protect\G@refundefinedtrue
8358 \nfss@text{\reset@font\bfseries ??}%
8359 \@latex@warning{%
8360 Reference '#3' on page \thepage \space undefined%
8361 }%
8362 \else
8363 \protect\hyper@@link
8364 {\expandafter\@fifthoffive#1}%

```

```

8365     {page.\expandafter\@secondoffive#1}%
8366     {\expandafter\@secondoffive#1}%
8367   \fi
8368 }

8369 </package>
8370 <*check>
8371 \checklatex
8372 \checkcommand\def\@setref#1#2#3{%
8373   \ifx#1\relax
8374     \protect\G@refundefinedtrue
8375     \nfss@text{\reset@font\bfseries ??}%
8376     \@latex@warning{%
8377       Reference '#3' on page \thepage\space undefined%
8378     }%
8379   \else
8380     \expandafter#2#1\null
8381   \fi
8382 }
8383 </check>
8384 <*package>

```

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

```

8385 \def\HyRef@StarSetRef#1{%
8386   \begingroup
8387   \Hy@safe@activetrue
8388   \edef\x{#1}%
8389   \@onelevel@sanitize\x
8390   \edef\x{\endgroup
8391     \noexpand\HyRef@@StarSetRef
8392     \expandafter\noexpand\csname r@\x\endcsname{\x}%
8393   }%
8394   \x
8395 }

8396 \def\HyRef@@StarSetRef#1#2#3{%
8397   \ifx#1\@undefined
8398     \let#1\relax
8399   \fi
8400   \real@setref#1#3{#2}%
8401 }

8402 \def\@refstar#1{%
8403   \HyRef@StarSetRef{#1}\@firstoffive
8404 }

8405 \def\@pagerefstar#1{%
8406   \HyRef@StarSetRef{#1}\@secondoffive
8407 }

8408 \def\@namerefstar#1{%
8409   \HyRef@StarSetRef{#1}\@thirdoffive
8410 }

8411 \Hy@AtBeginDocument{%
8412   \@ifpackageloaded{varioref}{%
8413     \def\@Refstar#1{%
8414       \HyRef@StarSetRef{#1}\HyRef@MakeUppercaseFirstOfFive
8415     }%
8416     \def\HyRef@MakeUppercaseFirstOfFive#1#2#3#4#5{%
8417       \MakeUppercase#1%
8418     }%

```

```

8419 \DeclareRobustCommand*\Ref}{%
8420 \ifstar\@Refstar\HyRef@Ref
8421 }%
8422 \def\HyRef@Ref#1{%
8423 \hyperref[{#1}]{\Ref*{#1}}%
8424 }%
8425 \def\Vr@f#1{%
8426 \leavevmode\unskip\vref@space
8427 \hyperref[{#1}]{%
8428 \Ref*{#1}%
8429 \let\vref@space\nobreakspace
8430 \@vpageref[\unskip]{#1}%
8431 }%
8432 }%
8433 \def\vr@f#1{%
8434 \leavevmode\unskip\vref@space
8435 \begingroup
8436 \let\T@pageref\@pagerefstar
8437 \hyperref[{#1}]{%
8438 \ref*{#1}%
8439 \vpageref[\unskip]{#1}%
8440 }%
8441 \endgroup
8442 }%
8443 }{}%
8444 }
8445 \DeclareRobustCommand*\autopageref}{%
8446 \ifstar{%
8447 \HyRef@autopagerefname\pageref*%
8448 }\HyRef@autopageref
8449 }
8450 \def\HyRef@autopageref#1{%
8451 \hyperref[{#1}]{\HyRef@autopagerefname\pageref*{#1}}%
8452 }
8453 \def\HyRef@autopagerefname{%
8454 \ltx@ifundefined{pageautorefname}{%
8455 \ltx@ifundefined{pagename}{%
8456 \Hy@Warning{No autoref name for 'page'}%
8457 }{%
8458 \pagename\nobreakspace
8459 }%
8460 }{}%
8461 \pageautorefname\nobreakspace
8462 }%
8463 }
8464 \DeclareRobustCommand*\autoref}{%
8465 \ifstar{\HyRef@autoref@gobbletwo}{\HyRef@autoref\hyper@@link}%
8466 }
8467 \def\HyRef@autoref#1#2{%
8468 \begingroup
8469 \Hy@safe@activetrue
8470 \expandafter\HyRef@autosetref\csize r@#2\endcsize{#2}{#1}%
8471 \endgroup
8472 }
8473 \def\HyRef@autosetref#1#2#3{% link command, csize, refname
8474 \HyRef@ShowKeysRef{#2}}%
8475 \ifcase 0\ifx#1\relax 1\fi\ifx#1\Hy@varioref@undefined 1\fi\relax

```

```

8476 \edef\HyRef@thisref{%
8477   \expandafter\@fourthoffive#1\@empty\@empty\@empty
8478 }%
8479 \expandafter\HyRef@testreftype\HyRef@thisref.\.%
8480 \Hy@safe@activesfalse
8481 #3{%
8482   \expandafter\@fifthoffive#1\@empty\@empty\@empty
8483 }{%
8484   \expandafter\@fourthoffive#1\@empty\@empty\@empty
8485 }{%
8486   \HyRef@currentHtag
8487   \expandafter\@firstoffive#1\@empty\@empty\@empty
8488   \null
8489 }%
8490 \else
8491   \protect\G@refundefinedtrue
8492   \nfss@text{\reset@font\bfseries ??}%
8493   \@latex@warning{%
8494     Reference '#2' on page \thepage\space undefined%
8495   }%
8496 \fi
8497 }
8498 \def\HyRef@testreftype#1.#2\.{%
8499   \ltx@ifundefined{#1autorefname}{%
8500     \ltx@ifundefined{#1name}{%
8501       \HyRef@StripStar#1\*\@nil{#1}%
8502       \ltx@ifundefined{\HyRef@name autorefname}{%
8503         \ltx@ifundefined{\HyRef@name name}{%
8504           \def\HyRef@currentHtag{}%
8505           \Hy@Warning{No autoref name for '#1'}%
8506         }{%
8507           \edef\HyRef@currentHtag{%
8508             \expandafter\noexpand\csname\HyRef@name name\endcsname
8509             \noexpand~%
8510           }%
8511         }%
8512       }{%
8513         \edef\HyRef@currentHtag{%
8514           \expandafter\noexpand
8515           \csname\HyRef@name autorefname\endcsname
8516           \noexpand~%
8517         }%
8518       }%
8519     }{%
8520       \edef\HyRef@currentHtag{%
8521         \expandafter\noexpand\csname#1name\endcsname
8522         \noexpand~%
8523       }%
8524     }%
8525   }{%
8526     \edef\HyRef@currentHtag{%
8527       \expandafter\noexpand\csname#1autorefname\endcsname
8528       \noexpand~%
8529     }%
8530   }%
8531 }
8532 \def\HyRef@StripStar#1*\@nil#3{%

```

```

8533 \def\HyRef@name{#2}%
8534 \ifx\HyRef@name\HyRef@CaseStar
8535 \def\HyRef@name{#1}%
8536 \else
8537 \def\HyRef@name{#3}%
8538 \fi
8539 }
8540 \def\HyRef@CaseStar{*\\}
8541 \def\HyRef@currentHtag{}

```

Support for package showkeys.

\HyRef@ShowKeysRef

```

8542 \let\HyRef@ShowKeysRef\@gobble
8543 \def\HyRef@ShowKeysInit{%
8544 \begingroup\expandafter\expandafter\expandafter\endgroup
8545 \expandafter\ifx\csname SK@@label\endcsname\relax
8546 \else
8547 \ifx\SK@ref\@empty
8548 \else
8549 \def\HyRef@ShowKeysRef{%
8550 \SK@\SK@@ref
8551 }%
8552 \fi
8553 \fi
8554 }
8555 \ifpackageloaded{showkeys}{%
8556 \HyRef@ShowKeysInit
8557 }{%
8558 \Hy@AtBeginDocument{%
8559 \ifpackageloaded{showkeys}{%
8560 \HyRef@ShowKeysInit
8561 }{}%
8562 }%
8563 }

```

Defaults for the names that \autoref uses.

```

8564 \providecommand*\AMSautorefname{\equationautorefname}
8565 \providecommand*\Hfootnoteautorefname{\footnoteautorefname}
8566 \providecommand*\Itemautorefname{\itemautorefname}
8567 \providecommand*\itemautorefname{item}
8568 \providecommand*\equationautorefname{Equation}
8569 \providecommand*\footnoteautorefname{footnote}
8570 \providecommand*\itemautorefname{item}
8571 \providecommand*\figureautorefname{Figure}
8572 \providecommand*\tableautorefname{Table}
8573 \providecommand*\partautorefname{Part}
8574 \providecommand*\appendixautorefname{Appendix}
8575 \providecommand*\chapterautorefname{chapter}
8576 \providecommand*\sectionautorefname{section}
8577 \providecommand*\subsectionautorefname{subsection}
8578 \providecommand*\subsubsectionautorefname{subsubsection}
8579 \providecommand*\paragraphautorefname{paragraph}
8580 \providecommand*\subparagraphautorefname{subparagraph}
8581 \providecommand*\FancyVerbLineautorefname{line}
8582 \providecommand*\theoremautorefname{Theorem}
8583 \providecommand*\pageautorefname{page}
8584 \end{package}

```



## 46 Configuration files

### 46.1 PS/PDF strings

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

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

```
8585 (*pdfTEX | dvipdfm | xetex | vtex | pdfmarkbase | dviwindo)
8586 \begingroup\expandafter\expandafter\expandafter\endgroup
8587 \expandafter\ifx\csname pdfTEXescapestring\endcsname\relax
8588 \begingroup
8589 \catcode'\|=0 %
8590 \@makeother\|%
8591 |@firstofone{|endgroup
8592 |def|Hy@pstringdef#1#2{%
8593 |begingroup
8594 |edef~{|string~}%
8595 |xdef|Hy@gtemp{#2}%
8596 |endgroup
8597 |let#1|Hy@gtemp
8598 |@onelevel@sanitize#1%
8599 |edef#1{|expandafter|Hy@ExchangeBackslash#1\|@nil}%
8600 |edef#1{|expandafter|Hy@ExchangeLeftParenthesis#1(|@nil}%
8601 |edef#1{|expandafter|Hy@ExchangeRightParenthesis#1)|@nil}%
8602 }%
8603 |def|Hy@ExchangeBackslash#1\#2|@nil{%
8604 #1%
8605 |ifx|\#2\|}%
8606 |else
8607 \|%
8608 |ltx@ReturnAfterFi{%
8609 |Hy@ExchangeBackslash#2|@nil
8610 }%
8611 |fi
8612 }%
8613 }%
8614 \def\Hy@ExchangeLeftParenthesis#1(#2\@nil{%
8615 #1%
8616 \ifx\#2\|}%
8617 \else
8618 \@backslashchar(%
8619 \ltx@ReturnAfterFi{%
8620 \Hy@ExchangeLeftParenthesis#2\@nil
8621 }%
8622 \fi
8623 }%
8624 \def\Hy@ExchangeRightParenthesis#1)#2\@nil{%
8625 #1%
8626 \ifx\#2\|}%
8627 \else
8628 \@backslashchar)%
8629 \ltx@ReturnAfterFi{%
8630 \Hy@ExchangeRightParenthesis#2\@nil
```

```

8631 }%
8632 \fi
8633 }%
8634 \else
8635 \def\Hy@pstringdef#1#2{%
8636 \begingroup
8637 \edef~{\string~}%
8638 \xdef\Hy@gtemp{\pdf@escapestring{#2}}%
8639 \endgroup
8640 \let#1\Hy@gtemp
8641 }%
8642 \fi
8643 </pdfTeX | dvipdfm | xetex | vtex | pdfmarkbase | dviwindo>

```

## 46.2 pdfTeX

```

8644 <*pdfTeX>
8645 \providecommand*{\XR@ext}{pdf}
8646 \Hy@setbreaklinks{true}
8647 \def\HyPat@ObjRef{%
8648 [0-9]*[1-9][0-9]* 0 R%
8649 }

```

This driver is for Han The Thanh's T<sub>E</sub>X variant which produces PDF directly. This has new primitives to do PDF things, which usually translate almost directly to PDF code, so there is a lot of flexibility which we do not at present harness.

Set PDF version if requested by option pdfversion.

- pdfT<sub>E</sub>X 1.10a, 2003-01-16: \pdfoptionpdfminorversion
- pdfT<sub>E</sub>X 1.30, 2005-08-081: \pdfminorversion

```

8650 \let\Hy@pdfminorversion\relax
8651 \begingroup\expandafter\expandafter\expandafter\endgroup
8652 \expandafter\ifx\csname pdfminorversion\endcsname\relax
8653 \begingroup\expandafter\expandafter\expandafter\endgroup
8654 \expandafter\ifx\csname pdfoptionpdfminorversion\endcsname\relax
8655 \else
8656 \def\Hy@pdfminorversion{\pdfoptionpdfminorversion}%
8657 \fi
8658 \else
8659 \def\Hy@pdfminorversion{\pdfminorversion}%
8660 \fi
8661 \@ifundefined{Hy@pdfminorversion}{%
8662 \PackageInfo{hyperref}{%
8663 PDF version is not set, because pdfTeX is too old (<1.10a)%
8664 }%
8665 }{%
8666 \ifHy@ocgcolorlinks
8667 \ifnum\Hy@pdfminorversion<5 %
8668 \kvsetkeys{Hyp}{pdfversion=1.5}%
8669 \fi
8670 \fi
8671 \ifHy@setpdfversion
8672 \ifnum\Hy@pdfminorversion=\Hy@pdfversion\relax
8673 \else
8674 \Hy@pdfminorversion=\Hy@pdfversion\relax
8675 \fi
8676 \PackageInfo{hyperref}{%

```

```

8677 \expandafter\string\Hy@pdfminorversion
8678 :=\number\Hy@pdfversion\space
8679 }%
8680 \fi
8681 \edef\Hy@pdfversion{\number\Hy@pdfminorversion}%
8682 }
8683 \Hy@DisableOption{pdfversion}%

8684 \ifHy@ocgcolorlinks
8685 \pdf@ifdraftmode{}{%
8686 \immediate\pdfobj{%
8687 <<%
8688 /Type/OCG%
8689 /Name(View)%
8690 /Usage<<%
8691 /Print<<%
8692 /PrintState/OFF%
8693 >>%
8694 /View<<%
8695 /ViewState/ON%
8696 >>%
8697 >>%
8698 >>%
8699 }%
8700 \edef\OBJ@OCG@view{\the\pdflastobj\space 0 R}%
8701 \immediate\pdfobj{%
8702 <<%
8703 /Type/OCG%
8704 /Name(Print)%
8705 /Usage<<%
8706 /Print<<%
8707 /PrintState/ON%
8708 >>%
8709 /View<<%
8710 /ViewState/OFF%
8711 >>%
8712 >>%
8713 >>%
8714 }%
8715 \edef\OBJ@OCG@print{\the\pdflastobj\space 0 R}%
8716 \immediate\pdfobj{%
8717 [%
8718 \OBJ@OCG@view\space\OBJ@OCG@print
8719 ]%
8720 }%
8721 \edef\OBJ@OCGs{\the\pdflastobj\space 0 R}%
8722 \pdfcatalog{%
8723 /OCProperties<<%
8724 /OCGs \OBJ@OCGs
8725 /D<<%
8726 /OFF[\OBJ@OCG@print]%
8727 /AS[%
8728 <<%
8729 /Event/View%
8730 /OCGs \OBJ@OCGs
8731 /Category[/View]%
8732 >>%
8733 <<%

```

```

8734         /Event/Print%
8735         /OCGs \OBJ@OCGs
8736         /Category[/Print]%
8737     >>%
8738     <<%
8739         /Event/Export%
8740         /OCGs \OBJ@OCGs
8741         /Category[/Print]%
8742     >>%
8743     ]%
8744     >>%
8745     >>%
8746     }%
8747     \beginngroup
8748     \edef\x{\endgroup
8749     \pdfpageresources{%
8750         /Properties<<%
8751         /OCView \OBJ@OCG@view
8752         /OCPrint \OBJ@OCG@print
8753     >>%
8754     }%
8755     }%
8756     \x
8757     }%
8758     \Hy@AtBeginDocument{%
8759     \def\Hy@colorlink#1{%
8760     \beginngroup
8761     \ifHy@ocgcolorlinks
8762     \def\Hy@ocgcolor{#1}%
8763     \setbox0=\hbox\bgroup\color@beginngroup
8764     \else
8765     \HyColor@UseColor#1%
8766     \fi
8767     }%
8768     \def\Hy@endcolorlink{%
8769     \ifHy@ocgcolorlinks
8770     \color@endgroup\egroup
8771     \mbox{%
8772     \pdfliteral page{/OC/OCPrint BDC}%
8773     \rlap{\copy0}%
8774     \pdfliteral page{EMC/OC/OCView BDC}%
8775     \beginngroup
8776     \expandafter\HyColor@UseColor\Hy@ocgcolor
8777     \box0 %
8778     \endgroup
8779     \pdfliteral page{EMC}%
8780     }%
8781     \fi
8782     \endgroup
8783     }%
8784     }%
8785     \else
8786     \Hy@DisableOption{ocgcolorlinks}%
8787     \fi

```

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

```

8788 \def\setpdfinkmargin#1{\pdfinkmargin#1}
8789 \ifx\pdfstartlink\@undefined% less than version 14

```

```

8790 \let\pdfstartlink\pdfannotlink
8791 \let\pdfinkmargin\@tempdima
8792 \let\pdfxform\pdfform
8793 \let\pdflastxform\pdflastform
8794 \let\pdfrefxform\pdfrefform
8795 \else
8796 \pdfinkmargin1pt %
8797 \fi

```

First set up the default linking

```
8798 \providecommand*\@pdfview{XYZ}
```

First define the anchors:

```

8799 \Hy@WrapperDef\new@pdfink#1{%
8800 \ifhmode
8801 \savesf\spacefactor
8802 \fi
8803 \Hy@SaveLastskip
8804 \Hy@VerboseAnchor{#1}%
8805 \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
8806 \Hy@DestName\Hy@pstringDest\@pdfview
8807 \Hy@RestoreLastskip
8808 \ifhmode
8809 \spacefactor\@savesf
8810 \fi
8811 }
8812 \let\pdf@endanchor\@empty

```

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

```

8813 \def\Hy@DestName#1#2{%
8814 \pdfdest name{#1}#2\relax
8815 }

```

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.

```

8816 \providecommand*\@pdfborder{0 0 1}
8817 \providecommand*\@pdfborderstyle{}
8818 \def\Hy@undefinedname{UNDEFINED}
8819 \def\find@pdfink#1#2{%
8820 \leavevmode
8821 \protected@edef\Hy@testname{#2}%
8822 \ifx\Hy@testname\@empty
8823 \Hy@Warning{%
8824 Empty destination name,\MessageBreak
8825 using '\Hy@undefinedname'%
8826 }%
8827 \let\Hy@testname\Hy@undefinedname
8828 \else
8829 \Hy@pstringdef\Hy@testname{%
8830 \expandafter\HyperDestNameFilter\expandafter{\Hy@testname}%
8831 }%
8832 \fi
8833 \Hy@StartlinkName{%
8834 \ifHy@pdfa /F 4\fi
8835 \Hy@setpdfborder

```

```

8836 \ifx\@pdfhighlight\@empty
8837 \else
8838 /H\@pdfhighlight
8839 \fi
8840 \ifx\CurrentBorderColor\relax
8841 \else
8842 /C[\CurrentBorderColor]%
8843 \fi
8844 }\Hy@testname
8845 \expandafter\Hy@colorlink\csname @#1color\endcsname
8846 }
8847 \def\Hy@StartlinkName#1#2{%
8848 \pdfstartlink attr{#1}goto name{#2}\relax
8849 }
8850 \def\close@pdflink{%
8851 \Hy@endcolorlink
8852 \Hy@VerboseLinkStop
8853 \pdfendlink
8854 }
8855 \def\hyper@anchor#1{%
8856 \new@pdflink{#1}\anchor@spot\pdf@endanchor
8857 }
8858 \def\hyper@anchorstart#1{%
8859 \new@pdflink{#1}%
8860 \Hy@activeanchortrue
8861 }
8862 \def\hyper@anchorend{%
8863 \pdf@endanchor
8864 \Hy@activeanchorfalse
8865 }
8866 \def\hyper@linkstart#1#2{%
8867 \Hy@VerboseLinkStart{#1}{#2}%
8868 \ltx@ifundefined{@#1bordercolor}{%
8869 \let\CurrentBorderColor\relax
8870 }{%
8871 \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
8872 }%
8873 \find@pdflink{#1}{#2}%
8874 }
8875 \def\hyper@linkend{\close@pdflink}
8876 \def\hyper@link#1#2#3{%
8877 \Hy@VerboseLinkStart{#1}{#2}%
8878 \ltx@ifundefined{@#1bordercolor}{%
8879 \let\CurrentBorderColor\relax
8880 }{%
8881 \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
8882 }%
8883 \find@pdflink{#1}{#2}#3\Hy@xspace@end
8884 \close@pdflink
8885 }
8886 \let\CurrentBorderColor\@linkbordercolor
8887 \def\hyper@linkurl#1#2{%
8888 \begingroup
8889 \Hy@pstringdef\Hy@pstringURI{#2}%
8890 \hyper@chars
8891 \leavevmode
8892 \pdfstartlink

```

```

8893 attr{%
8894   \Hy@setpdfborder
8895   \ifx\@pdfhighlight\@empty
8896   \else
8897     /H\@pdfhighlight
8898   \fi
8899   \ifx\@urlbordercolor\relax
8900   \else
8901     /C[\@urlbordercolor]%
8902   \fi
8903 }%
8904 user{%
8905   /Subtype/Link%
8906   \ifHy@pdfa /F 4\fi
8907   /A<<%
8908     /Type/Action%
8909     /S/URI%
8910     /URI(\Hy@pstringURI)%
8911     \ifHy@href@ismap
8912       /IsMap true%
8913     \fi
8914     \Hy@href@nextactionraw
8915   >>%
8916 }%
8917 \relax
8918 \Hy@colorlink\@urlcolor#1\Hy@xspace@end
8919 \close@pdfink
8920 \endgroup
8921 }
8922 \def\hyper@linkfile#1#2#3{% anchor text, filename, linkname
8923 \begingroup
8924   \def\Hy@pstringF{#2}%
8925   \Hy@CleanupFile\Hy@pstringF
8926   \Hy@pstringdef\Hy@pstringF\Hy@pstringF
8927   \Hy@pstringdef\Hy@pstringD{#3}%
8928   \Hy@MakeRemoteAction
8929   \leavevmode
8930   \pdfstartlink
8931   attr{%
8932     \Hy@setpdfborder
8933     \ifx\@pdfhighlight\@empty
8934     \else
8935       /H\@pdfhighlight
8936     \fi
8937     \ifx\@filebordercolor\relax
8938     \else
8939       /C[\@filebordercolor]%
8940     \fi
8941   }%
8942   user {%
8943     /Subtype/Link%
8944     \ifHy@pdfa /F 4\fi
8945     /A<<%
8946       /F(\Hy@pstringF)%
8947       /S/GoToR%
8948     \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}
```

```
8949   \ifx\#3\%  
8950     /D[\Hy@href@page\@pdfremotestartview]%  
8951   \else  
8952     /D(\Hy@pstringD)%  
8953   \fi  
8954   \Hy@href@nextactionraw  
8955   >>%  
8956 }%  
8957 \relax  
8958 \Hy@colorlink\@filecolor#1\Hy@xspace@end  
8959 \close@pdflink  
8960 \endgroup  
8961 }  
8962 \def\@hyper@launch run:#1\#2#3{% filename, anchor text linkname  
8963 \begingroup  
8964   \Hy@pstringdef\Hy@pstringF{#1}%  
8965   \Hy@pstringdef\Hy@pstringP{#3}%  
8966   \leavevmode  
8967   \pdfstartlink  
8968   attr{%  
8969     \Hy@setpdfborder  
8970     \ifx\@pdfhighlight\@empty  
8971     \else  
8972       /H\@pdfhighlight  
8973     \fi  
8974     \ifx\@runbordercolor\relax  
8975     \else  
8976       /C[\@runbordercolor]%  
8977     \fi  
8978   }%  
8979   user {%  
8980     /Subtype/Link%  
8981     \ifHy@pdfa /F 4\fi  
8982     /A<<%  
8983     /F(\Hy@pstringF)%  
8984     /S/Launch%  
8985     \Hy@SetNewWindow  
8986     \ifx\#3\%  
8987     \else  
8988       /Win<</P(\Hy@pstringP)/F(\Hy@pstringF)>>%  
8989     \fi  
8990     \Hy@href@nextactionraw  
8991     >>%  
8992   }%  
8993   \relax  
8994   \Hy@colorlink\@runcolor#2\Hy@xspace@end
```



```

8995 \close@pdflink
8996 \endgroup
8997 }

```

\@pdfproducer

```

8998 \ifx\@pdfproducer\relax
8999 \begingroup\expandafter\expandafter\expandafter\endgroup
9000 \expandafter\ifx\csname luatexversion\endcsname\relax
9001 \def\@pdfproducer{pdfTeX}%
9002 \ifx\eTeXversion\@undefined
9003 \else
9004 \ifx\eTeXversion\relax
9005 \else
9006 \ifnum\eTeXversion>0 %
9007 \def\@pdfproducer{pdfTeX}%
9008 \fi
9009 \fi
9010 \fi
9011 \ifx\pdfTeXversion\@undefined
9012 \else
9013 \ifnum\pdfTeXversion<100 %
9014 \edef\@pdfproducer{%
9015 \@pdfproducer
9016 \the\pdfTeXversion.\pdfTeXrevision
9017 }%
9018 \else
9019 \ifnum\pdfTeXversion<130 %
9020 \edef\@pdfproducer{%
9021 \@pdfproducer-%
9022 \expandafter\@car\the\pdfTeXversion\@empty\@nil.%
9023 \expandafter\@cdr\the\pdfTeXversion\@empty\@nil
9024 \pdfTeXrevision
9025 }%
9026 \else
9027 \ifnum\pdfTeXversion<140 %
9028 \else
9029 \def\@pdfproducer{pdfTeX}%
9030 \fi
9031 \edef\@pdfproducer{%
9032 \@pdfproducer-%
9033 \expandafter\@car\the\pdfTeXversion\@empty\@nil.%
9034 \expandafter\@cdr\the\pdfTeXversion\@empty\@nil.%
9035 \pdfTeXrevision
9036 }%
9037 \fi
9038 \fi
9039 \fi
9040 \else
9041 \begingroup
9042 \count@=\luatexversion
9043 \divide\count@ by 100 %
9044 \edef\x{\the\count@}%
9045 \count@=-\x\relax
9046 \multiply\count@ by 100 %
9047 \advance\count@ by \luatexversion
9048 \edef\x{\endgroup
9049 \def\noexpand\@pdfproducer{%

```

```

9050      LuaTeX-\x.\the\count@.\luatexrevision
9051      }%
9052      }%
9053      \x
9054      \fi
9055      \fi

```

\PDF@SetupDox

```

9056 \def\PDF@SetupDoc{%
9057   \ifx\@pdfpagescrop\@empty
9058   \else
9059     \edef\process@me{%
9060       \pdfpagesattr={%
9061         /CropBox[\@pdfpagescrop]%
9062         \expandafter\ifx\expandafter\\the\pdfpagesattr\\%
9063         \else
9064         ^^Jthe\pdfpagesattr
9065         \fi
9066       }%
9067     }%
9068     \process@me
9069   \fi
9070   \Hy@pstringdef\Hy@pstringB{\@baseurl}%
9071   \pdfcatalog{%
9072     /PageMode/\@pdfpagemode
9073     \ifx\@baseurl\@empty
9074     \else
9075     /URI<</Base(\Hy@pstringB)>>%
9076     \fi
9077   }%
9078   \ifx\@pdfstartpage\@empty
9079   \else
9080     \ifx\@pdfstartview\@empty
9081     \else
9082       openaction goto page\@pdfstartpage{\@pdfstartview}%
9083     \fi
9084   \fi
9085   \edef\Hy@temp{%
9086     \ifHy@pdftoolbar\else /HideToolbar true\fi
9087     \ifHy@pdfmenubar\else /HideMenubar true\fi
9088     \ifHy@pdfwindowui\else /HideWindowUI true\fi
9089     \ifHy@pdffitwindow /FitWindow true\fi
9090     \ifHy@pdfcenterwindow /CenterWindow true\fi
9091     \ifHy@pdfdisplaydoctitle /DisplayDocTitle true\fi
9092     \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
9093     \Hy@UseNameKey{Direction}\@pdfdirection
9094     \Hy@UseNameKey{ViewArea}\@pdfviewarea
9095     \Hy@UseNameKey{ViewClip}\@pdfviewclip
9096     \Hy@UseNameKey{PrintArea}\@pdfprintarea
9097     \Hy@UseNameKey{PrintClip}\@pdfprintclip
9098     \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
9099     \Hy@UseNameKey{Duplex}\@pdfduplex
9100     \ifx\@pdfpicktraybypdfsize\@empty
9101     \else
9102       /PickTrayByPDFSize \@pdfpicktraybypdfsize
9103     \fi
9104     \ifx\@pdfprintpagerange\@empty
9105     \else

```

```

9106     /PrintPageRange[\@pdfprintpagerange]%
9107     \fi
9108     \ifx\@pdfnumcopies\@empty
9109     \else
9110     /NumCopies \@pdfnumcopies
9111     \fi
9112 }%
9113 \pdfcatalog{%
9114     \ifx\Hy@temp\@empty
9115     \else
9116     /ViewerPreferences<<\Hy@temp>>%
9117     \fi
9118     \Hy@UseNameKey{PageLayout}\@pdfpagelayout
9119     \ifx\@pdflang\@empty
9120     \else
9121     /Lang(\@pdflang)%
9122     \fi
9123 }%
9124 }

```

#### \PDF@FinishDoc

```

9125 \def\PDF@FinishDoc{%
9126     \pdf@ifdraftmode{ }{%
9127         \Hy@UseMaketitleInfos
9128         \HyInfo@GenerateAddons
9129         \pdfinfo{%
9130             /Author(\@pdfauthor)%
9131             /Title(\@pdftitle)%
9132             /Subject(\@pdfsubject)%
9133             /Creator(\@pdfcreator)%
9134             \ifx\@pdfcreationdate\@empty
9135             \else
9136             /CreationDate(\@pdfcreationdate)%
9137             \fi
9138             \ifx\@pdfmoddate\@empty
9139             \else
9140             /ModDate(\@pdfmoddate)%
9141             \fi
9142             \ifx\@pdfproducer\relax
9143             \else
9144             /Producer(\@pdfproducer)%
9145             \fi
9146             /Keywords(\@pdfkeywords)%
9147             \ifx\@pdftrapped\@empty
9148             \else
9149             /Trapped/\@pdftrapped
9150             \fi
9151             \HyInfo@Addons
9152         }%
9153     }%
9154     \Hy@DisableOption{pdfauthor}%
9155     \Hy@DisableOption{pdftitle}%
9156     \Hy@DisableOption{pdfsubject}%
9157     \Hy@DisableOption{pdfcreator}%
9158     \Hy@DisableOption{pdfcreationdate}%
9159     \Hy@DisableOption{pdfmoddate}%
9160     \Hy@DisableOption{pdfproducer}%
9161     \Hy@DisableOption{pdfkeywords}%

```

```

9162 \Hy@DisableOption{pdftrapped}%
9163 \Hy@DisableOption{pdfinfo}%
9164 }

```

`\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`.

```

9165 \def\hyper@pagetransition{%
9166   \ifx\@pdfpagetransition\relax
9167   \else
9168     \expandafter\Hy@RemoveTransPageAttr
9169     \the\pdfpageattr^^J/Trans{}}>>\END
9170   \ifx\@pdfpagetransition\@empty
9171   \else
9172     \edef\@processme{%
9173       \global\pdfpageattr{%
9174         \the\pdfpageattr
9175         ^^J/Trans << /S /\@pdfpagetransition\space >>%
9176       }%
9177     }%
9178     \@processme
9179   \fi
9180 \fi
9181 }

```

`\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.

```

9182 \gdef\Hy@RemoveTransPageAttr#1^^J/Trans#2#3>>#4\END{%
9183   \ifx\#2\%
9184     \global\pdfpageattr{#1}%
9185   \else
9186     \Hy@RemoveTransPageAttr#1#4\END
9187   \fi
9188 }

```

`\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`.

```

9189 \def\hyper@pageduration{%
9190   \ifx\@pdfpageduration\relax
9191   \else
9192     \expandafter
9193     \Hy@RemoveDurPageAttr\the\pdfpageattr^^J/Dur{} \END
9194     \ifx\@pdfpageduration\@empty
9195     \else
9196       \edef\@processme{%
9197         \global\pdfpageattr{%
9198           \the\pdfpageattr
9199           ^^J/Dur \@pdfpageduration\space
9200         }%
9201       }%
9202       \@processme
9203     \fi
9204   \fi
9205 }

```

`\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.

```

9206 \gdef\Hy@RemoveDurPageAttr#1^^J/Dur#2#3 #4\END{%
9207   \ifx\#2\%
9208     \global\pdfpageattr{#1}%
9209   \else
9210     \Hy@RemoveDurPageAttr#1#4\END
9211   \fi
9212 }

```

`\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).

```

9213 \def\hyper@pagehidden{%
9214   \ifHy@useHidKey
9215     \expandafter
9216     \Hy@RemoveHidPageAttr\the\pdfpageattr^^J/Hid{} \END
9217   \ifHy@pdfpagehidden
9218     \edef\@processme{%
9219       \global\pdfpageattr{%
9220         \the\pdfpageattr
9221         ^^J/Hid true % SPACE
9222       }%
9223     }%
9224     \@processme
9225   \fi
9226 \fi
9227 }

```

`\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.

```

9228 \gdef\Hy@RemoveHidPageAttr#1^^J/Hid#2#3 #4\END{%
9229   \ifx\#2\%
9230     \global\pdfpageattr{#1}%
9231   \else
9232     \Hy@RemoveHidPageAttr#1#4\END
9233   \fi
9234 }

9235 \pdf@ifdraftmode{}{%
9236   \g@addto@macro\Hy@EveryPageHook{%
9237     \hyper@pagetransition
9238     \hyper@pageduration
9239     \hyper@pagehidden
9240   }%
9241 }

```

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

```

9242 </pdfTeX>
9243 <*pdfTeX | xetex>
9244 \Hy@AtBeginDocument{%
9245   \ifHy@setpagesize

```

```

9246 \expandafter\@firstofone
9247 \else
9248 \expandafter\@gobble
9249 \fi
9250 {%
9251 \@ifclassloaded{seminar}{%
9252 <*pdftex>
9253 \setlength{\pdfhorigin}{1truein}%
9254 \setlength{\pdfvorigin}{1truein}%
9255 </pdftex>
9256 \ifportrait
9257 \ifdim\paperwidth=\z@
9258 \else
9259 \setlength{\pdfpagewidth}{\strip@pt\paperwidth truept}%
9260 \fi
9261 \ifdim\paperheight=\z@
9262 \else
9263 \setlength{\pdfpageheight}{\strip@pt\paperheight truept}%
9264 \fi
9265 \else
9266 \ifdim\paperheight=\z@
9267 \else
9268 \setlength{\pdfpagewidth}{\strip@pt\paperheight truept}%
9269 \fi
9270 \ifdim\paperwidth=\z@
9271 \else
9272 \setlength{\pdfpageheight}{\strip@pt\paperwidth truept}%
9273 \fi
9274 \fi
9275 }{%
9276 \ltx@ifundefined{stockwidth}{%
9277 \ifdim\paperwidth>\z@
9278 \setlength{\pdfpagewidth}{\paperwidth}%
9279 \fi
9280 \ifdim\paperheight>\z@
9281 \setlength{\pdfpageheight}{\paperheight}%
9282 \fi
9283 }{%
9284 \ifdim\stockwidth>\z@
9285 \setlength{\pdfpagewidth}{\stockwidth}%
9286 \fi
9287 \ifdim\stockheight>\z@
9288 \setlength{\pdfpageheight}{\stockheight}%
9289 \fi
9290 }%
9291 }%
9292 }%
9293 \Hy@DisableOption{setpagesize}%
9294 }
9295 </pdftex | xetex>
9296 <*pdftex>
9297 \def\Acrobatmenu#1#2{%
9298 \Hy@Acrobatmenu{#1}{#2}{%
9299 \pdfstartlink
9300 attr{%
9301 \Hy@setpdfborder
9302 \ifx\@pdfhighlight\@empty

```

```

9303      \else
9304        /H\@pdfhighlight
9305      \fi
9306      \ifx\@menubordercolor\relax
9307      \else
9308        /C[\@menubordercolor]%
9309      \fi
9310    }%
9311    user{%
9312      /Subtype/Link%
9313      \ifHy@pdfa /F 4\fi
9314      /A<<%
9315        /S/Named%
9316        /N/#1%
9317        \Hy@href@nextactionraw
9318      >>%
9319    }%
9320    \relax
9321    \Hy@colorlink\@menucolor#2%
9322    \close@pdflink
9323  }%
9324 }

```

#### 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`.

```

9325 \def\Hy@FixNotFirstPage{%
9326   \gdef\Hy@FixNotFirstPage{%
9327     \setbox\AtBeginShipoutBox=\hbox{%
9328       \copy\AtBeginShipoutBox
9329     }%
9330   }%
9331 }
9332 \AtBeginShipout{\Hy@FixNotFirstPage}
9333 </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 T<sub>E</sub>X file — the T<sub>E</sub>X commands between the two ends of a pair form an *anchor* in the document. In the case of an *href* command, the *anchor* is to be highlighted in the *dvi* viewer, and when clicked on will cause the scene to shift to the destination specified by *href\_string*. The *anchor* associated with a name command represents a possible location to which other hypertext links may refer, either as local references (of the form `href="#name_string"` with the *name\_string* identical to the one in the name command) or as part of a URL (of the form `URL#name_string`). Here *href\_string* is a valid URL or local identifier, while *name\_string* could be any string at all: the only caveat is that “” characters should be escaped with a backslash (\), and if it looks like a URL name it may cause problems.

```

9334 {*hypertex}
9335 \providecommand*{\XR@ext}{dvi}
9336 \let\PDF@FinishDoc\ltx@empty
9337 \def\PDF@SetupDoc{%
9338   \ifx\@baseurl\@empty
9339   \else
9340     \special{html:<base href="\@baseurl">}%
9341   \fi
9342 }
9343 \Hy@WrapperDef\hyper@anchor#1{%
9344   \Hy@SaveLastskip
9345   \Hy@VerboseAnchor{#1}%
9346   \begingroup
9347     \let\protect=\string
9348     \hyper@chars
9349     \special{html:<a name=%
9350       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
9351   \endgroup
9352   \Hy@activeanchortrue
9353   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
9354   \special{html:</a>}%
9355   \Hy@activeanchorfalse
9356   \Hy@RestoreLastskip
9357 }
9358 \Hy@WrapperDef\hyper@anchorstart#1{%
9359   \Hy@SaveLastskip
9360   \Hy@VerboseAnchor{#1}%
9361   \begingroup
9362     \hyper@chars
9363     \special{html:<a name=%
9364       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
9365   \endgroup
9366   \Hy@activeanchortrue
9367 }
9368 \def\hyper@anchorend{%
9369   \special{html:</a>}%
9370   \Hy@activeanchorfalse
9371   \Hy@RestoreLastskip
9372 }

```



```

9373 \def\@urlltype{url}
9374 \def\hyper@linkstart#1#2{%
9375   \Hy@VerboseLinkStart{#1}{#2}%
9376   \expandafter\Hy@colorlink\csname @#1color\endcsname
9377   \def\Hy@tempa{#1}%
9378   \ifx\Hy@tempa\@urlltype
9379     \special{html:<a href=\hyper@quote#2\hyper@quote>}%
9380   \else
9381     \begingroup
9382       \hyper@chars
9383       \special{html:<a href=%
9384         \hyper@quote\#\Hy@HyperDestNameFilter{#2}\hyper@quote>}%
9385     \endgroup
9386   \fi
9387 }
9388 \def\hyper@linkend{%
9389   \special{html:</a>}%
9390   \Hy@endcolorlink
9391 }
9392 \def\hyper@linkfile#1#2#3{%
9393   \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\\else\##3\fi}%
9394 }
9395 \def\hyper@linkurl#1#2{%

```

If we want to raise up the final link `\special`, we need to get its height; ask me why  $\text{\LaTeX}$  constructs make this totally foul up, and make us revert to basic  $\text{\TeX}$ . I do not know.

```

9396 \leavevmode
9397 \ifHy@raiselinks
9398   \Hy@SaveSpaceFactor
9399   \Hy@SaveSavedSpaceFactor
9400   \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
9401   \Hy@RestoreSavedSpaceFactor
9402   \@linkdim\dp\@tempboxa
9403   \lower\@linkdim\hbox{%
9404     \hyper@chars
9405     \special{html:<a href=\hyper@quote#2\hyper@quote>}%
9406   }%
9407   \Hy@colorlink\@urlcolor
9408   \Hy@RestoreSpaceFactor
9409   #1%
9410   \Hy@SaveSpaceFactor
9411   \@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).

```

9412   \advance\@linkdim by -6.5\p@
9413   \raise\@linkdim\hbox{\special{html:</a>}}%
9414   \Hy@endcolorlink
9415   \Hy@RestoreSpaceFactor
9416 \else
9417   \begingroup
9418     \hyper@chars
9419     \special{html:<a href=\hyper@quote#2\hyper@quote>}%
9420     \Hy@colorlink\@urlcolor#1\Hy@xspace@end
9421     \special{html:</a>}%
9422     \Hy@endcolorlink
9423   \endgroup

```

```

9424 \fi
9425 }

```

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

```

9426 \def\hyper@link#1#2#3{%
9427 \Hy@VerboseLinkStart{#1}{#2}%
9428 \hyper@linkurl{#3}{\# \HyperDestNameFilter{#2}}%
9429 }

9430 \def\hyper@image#1#2{%
9431 \begingroup
9432 \hyper@chars
9433 \special{html:<img src=\hyper@quote#1\hyper@quote>}%
9434 \endgroup
9435 }
9436 \</hypertex>
9437 \<*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.

```

9438 \providecommand*\XR@ext{-}{dvi}
9439 \providecommand*\wwwbrowser{c:\string\netscape\string\netscape}
9440 \Hy@WrapperDef\hyper@anchor#1{%
9441 \Hy@SaveLastskip
9442 \Hy@VerboseAnchor{#1}%
9443 \begingroup
9444 \let\protect=\string
9445 \special{mark: #1}%
9446 \endgroup
9447 \Hy@activeanchortrue
9448 \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
9449 \Hy@activeanchorfalse
9450 \Hy@RestoreLastskip
9451 }
9452 \Hy@WrapperDef\hyper@anchorstart#1{%
9453 \Hy@SaveLastskip
9454 \Hy@VerboseAnchor{#1}%
9455 \special{mark: #1}%
9456 \Hy@activeanchortrue
9457 }
9458 \def\hyper@anchorend{%
9459 \Hy@activeanchorfalse
9460 \Hy@RestoreLastskip
9461 }
9462 \def\hyper@linkstart#1#2{%
9463 \Hy@VerboseLinkStart{#1}{#2}%
9464 \expandafter\Hy@colorlink\csname @#1color\endcsname

```

```

9465 \special{button: %
9466 10000000 %
9467 \number\baselineskip\space
9468 #2%
9469 }%
9470 }
9471 \def\hyper@linkend{%
9472 \Hy@endcolorlink
9473 }
9474 \def\hyper@link#1#2#3{%
9475 \Hy@VerboseLinkStart{#1}{#2}%
9476 \leavevmode
9477 \ifHy@raiselinks
9478 \Hy@SaveSpaceFactor
9479 \Hy@SaveSavedSpaceFactor
9480 \sbox\@tempboxa{\Hy@RestoreSpaceFactor#3}%
9481 \Hy@RestoreSavedSpaceFactor
9482 \@linkdim\dp\@tempboxa
9483 \lower\@linkdim\hbox{%
9484 \special{button: %
9485 \number\wd\@tempboxa\space
9486 \number\ht\@tempboxa\space
9487 #2%
9488 }%
9489 \expandafter\Hy@colorlink\csname @#1color\endcsname
9490 \Hy@RestoreSpaceFactor
9491 #3\Hy@xspace@end
9492 \Hy@SaveSpaceFactor
9493 \Hy@endcolorlink
9494 }%
9495 \@linkdim\ht\@tempboxa
9496 \advance\@linkdim by -6.5\p@
9497 \raise\@linkdim\hbox{}%
9498 \Hy@RestoreSpaceFactor
9499 \else
9500 \special{button: %
9501 \number\wd\@tempboxa\space
9502 \number\ht\@tempboxa\space
9503 #2%
9504 }%
9505 \expandafter\Hy@colorlink\csname @#1color\endcsname
9506 #3\Hy@xspace@end
9507 \Hy@endcolorlink
9508 \fi
9509 }
9510 \def\hyper@linkurl#1#2{%
9511 \begingroup
9512 \hyper@chars
9513 \leavevmode
9514 \ifHy@raiselinks
9515 \Hy@SaveSpaceFactor
9516 \Hy@SaveSavedSpaceFactor
9517 \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
9518 \Hy@RestoreSavedSpaceFactor
9519 \@linkdim\dp\@tempboxa
9520 \lower\@linkdim\hbox{%
9521 \special{button: %

```

```

9522     \number\wd\@tempboxa\space
9523     \number\ht\@tempboxa\space
9524     launch: \wwwbrowser\space
9525     #2%
9526 }%
9527 \Hy@colorlink\@urlcolor
9528 \Hy@RestoreSpaceFactor
9529 #1\Hy@xspace@end
9530 \Hy@SaveSpaceFactor
9531 \Hy@endcolorlink
9532 }%
9533 \@linkdim\ht\@tempboxa
9534 \advance\@linkdim by -6.5\p@
9535 \raise\@linkdim\hbox{}%
9536 \Hy@RestoreSpaceFactor
9537 \else
9538 \special{button: %
9539 \number\wd\@tempboxa\space
9540 \number\ht\@tempboxa\space
9541 launch: \wwwbrowser\space
9542 #2%
9543 }%
9544 \Hy@colorlink\@urlcolor
9545 #1\Hy@xspace@end
9546 \Hy@endcolorlink
9547 \fi
9548 \endgroup
9549 }
9550 \def\hyper@linkfile#1#2#3{%
9551 \begingroup
9552 \hyper@chars
9553 \leavevmode
9554 \ifHy@raiselinks
9555 \Hy@SaveSpaceFactor
9556 \Hy@SaveSavedSpaceFactor
9557 \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
9558 \Hy@RestoreSavedSpaceFactor
9559 \@linkdim\dp\@tempboxa
9560 \lower\@linkdim\hbox{%
9561 \special{button: %
9562 \number\wd\@tempboxa\space
9563 \number\ht\@tempboxa\space
9564 #3,%
9565 file: #2%
9566 }%
9567 \Hy@colorlink\@filecolor
9568 \Hy@RestoreSpaceFactor
9569 #1\Hy@xspace@end
9570 \Hy@SaveSpaceFactor
9571 \Hy@endcolorlink
9572 }%
9573 \@linkdim\ht\@tempboxa
9574 \advance\@linkdim by -6.5\p@
9575 \raise\@linkdim\hbox{}%
9576 \Hy@RestoreSpaceFactor
9577 \else
9578 \special{button: %

```

```

9579      \number\wd\@tempboxa\space
9580      \number\ht\@tempboxa\space
9581      #3,%
9582      file: #2%
9583    }%
9584    \Hy@colorlink\@filecolor
9585      #1\Hy@xspace@end
9586    \Hy@endcolorlink
9587  \fi
9588 \endgroup
9589 }
9590 \ifx\@pdfproducer\relax
9591   \def\@pdfproducer{dviwindo + Distiller}%
9592 \fi
9593 \HyInfo@AddonUnsupportedtrue
9594 \def\PDF@FinishDoc{%
9595   \Hy@UseMaketitleInfos
9596   \HyInfo@TrappedUnsupported
9597   \special{PDF: Keywords \@pdfkeywords}%
9598   \special{PDF: Title \@pdftitle}%
9599   \special{PDF: Creator \@pdfcreator}%
9600   \ifx\@pdfcreationdate\@empty
9601     \else
9602     \special{PDF: CreationDate \@pdfcreationdate}%
9603   \fi
9604   \ifx\@pdfmoddate\@empty
9605     \else
9606     \special{PDF: ModDate \@pdfmoddate}%
9607   \fi
9608   \special{PDF: Author \@pdfauthor}%
9609   \ifx\@pdfproducer\relax
9610     \else
9611     \special{PDF: Producer \@pdfproducer}%
9612   \fi
9613   \special{PDF: Subject \@pdfsubject}%
9614   \Hy@DisableOption{pdfauthor}%
9615   \Hy@DisableOption{pdftitle}%
9616   \Hy@DisableOption{pdfsubject}%
9617   \Hy@DisableOption{pdfcreator}%
9618   \Hy@DisableOption{pdfcreationdate}%
9619   \Hy@DisableOption{pdfmoddate}%
9620   \Hy@DisableOption{pdfproducer}%
9621   \Hy@DisableOption{pdfkeywords}%
9622   \Hy@DisableOption{pdftrapped}%
9623   \Hy@DisableOption{pdfinfo}%
9624 }
9625 \def\PDF@SetupDoc{%
9626   \ifx\@baseurl\@empty
9627     \else
9628     \special{PDF: Base \@baseurl}%
9629   \fi
9630   \ifx\@pdfpagescrop\@empty\else
9631     \special{PDF: BBox \@pdfpagescrop}%
9632   \fi
9633   \def\Hy@temp{ }%
9634   \ifx\@pdfstartpage\@empty
9635     \else

```

```

9636 \ifx\@pdfstartview\@empty
9637 \else
9638 \edef\Hy@temp{%
9639 ,Page=\@pdfstartpage
9640 ,View=\@pdfstartview
9641 }%
9642 \fi
9643 \fi
9644 \edef\Hy@temp{%
9645 \noexpand\pdfmark{%
9646 pdfmark=/DOCVIEW,%
9647 PageMode=/\@pdfpagemode
9648 \Hy@temp
9649 }%
9650 }%
9651 \Hy@temp
9652 \ifx\@pdfpagescrop\@empty
9653 \else
9654 \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
9655 \fi
9656 \edef\Hy@temp{%
9657 \ifHy@pdftoolbar\else /HideToolbar true\fi
9658 \ifHy@pdfmenubar\else /HideMenubar true\fi
9659 \ifHy@pdfwindowui\else /HideWindowUI true\fi
9660 \ifHy@pdfwindow /FitWindow true\fi
9661 \ifHy@pdfcenterwindow /CenterWindow true\fi
9662 \ifHy@pdfdisplaydoctitle /DisplayDocTitle true\fi
9663 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
9664 \Hy@UseNameKey{Direction}\@pdfdirection
9665 \Hy@UseNameKey{ViewArea}\@pdfviewarea
9666 \Hy@UseNameKey{ViewClip}\@pdfviewclip
9667 \Hy@UseNameKey{PrintArea}\@pdfprintarea
9668 \Hy@UseNameKey{PrintClip}\@pdfprintclip
9669 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
9670 \Hy@UseNameKey{Duplex}\@pdfduplex
9671 \ifx\@pdfpicktraybypdfsize\@empty
9672 \else
9673 /PickTrayByPDFSize \@pdfpicktraybypdfsize
9674 \fi
9675 \ifx\@pdfprintpagerange\@empty
9676 \else
9677 /PrintPageRange[\@pdfprintpagerange]%
9678 \fi
9679 \ifx\@pdfnumcopies\@empty
9680 \else
9681 /NumCopies \@pdfnumcopies
9682 \fi
9683 }%
9684 \pdfmark{pdfmark=/PUT,%
9685 Raw={%
9686 \string{Catalog\string}<<%
9687 \ifx\Hy@temp\@empty
9688 \else
9689 /ViewerPreferences<<\Hy@temp>>%
9690 \fi
9691 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
9692 \ifx\@pdflang\@empty

```

```

9693      \else
9694      /Lang(\@pdflang)%
9695      \fi
9696      >>%
9697      }%
9698      }%
9699      }
9700      \</dviwindo>
9701      \<*dvipdfm | xetex>

```

## 46.5 dvipdfm/xetex dvi to PDF converter

Provided by Mark Wicks (mwicks@kettering.edu)

```

9702 \providecommand*{\XR@ext}{pdf}
9703 \Hy@setbreaklinks{true}
9704 \def\HyPat@ObjRef{%
9705   @[\ ]+%
9706 }
9707 \newsavebox{\pdfm@box}
9708 \def\@pdfm@mark#1{\special{pdf:#1}}
9709 \Hy@WrapperDef\@pdfm@dest#1{%
9710   \Hy@SaveLastskip
9711   \Hy@VerboseAnchor{#1}%
9712   \begingroup
9713     \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
9714     \def\x{XYZ}%
9715     \ifx\x\@pdfview
9716       \def\x{XYZ @xpos @ypos null}%
9717     \else
9718       \def\x{FitH}%
9719       \ifx\x\@pdfview
9720         \def\x{FitH @ypos}%
9721       \else
9722         \def\x{FitBH}%
9723         \ifx\x\@pdfview
9724           \def\x{FitBH @ypos}%
9725         \else
9726           \def\x{FitV}%
9727           \ifx\x\@pdfview
9728             \def\x{FitV @xpos}%
9729           \else
9730             \def\x{FitBV}%
9731             \ifx\x\@pdfview
9732               \def\x{FitBV @xpos}%
9733             \else
9734               \def\x{Fit}%
9735               \ifx\x\@pdfview
9736                 \let\x\@pdfview
9737               \else
9738                 \def\x{FitB}%
9739                 \ifx\x\@pdfview
9740                   \let\x\@pdfview
9741                 \else
9742                   \def\x{FitR}%
9743                   \ifx\x\@pdfview
9744                     \Hy@Warning{'pdfview=FitR' is not supported}%
9745                   \def\x{XYZ @xpos @ypos null}%

```

```

9746         \else
9747         \@onelevel@sanitize\@pdfview
9748         \Hy@Warning{%
9749             Unknown value '\@pdfview' for pdfview%
9750         }%
9751         \def\x{XYZ @xpos @ypos null}%
9752     \fi
9753 \fi
9754 \fi
9755 \fi
9756 \fi
9757 \fi
9758 \fi
9759 \fi
9760 \@pdfm@mark{dest (\Hy@pstringDest) [@thispage /\x]}%
9761 \endgroup
9762 \Hy@RestoreLastskip
9763 }
9764 \providecommand*\@pdfview{XYZ}
9765 \providecommand*\@pdfborder{0 0 1}
9766 \providecommand*\@pdfborderstyle{}
9767 \def\hyper@anchor#1{%
9768     \@pdfm@dest{#1}%
9769 }
9770 \def\hyper@anchorstart#1{%
9771     \Hy@activeanchortrue
9772     \@pdfm@dest{#1}%
9773 }
9774 \def\hyper@anchorend{%
9775     \Hy@activeanchorfalse
9776 }
9777 \newcounter{Hy@AnnotLevel}
9778 \ifHy@ocgcolorlinks
9779     \def\OBJ@OCG@view{@OCG@view}%
9780     \@pdfm@mark{%
9781         obj \OBJ@OCG@view <<%
9782         /Type/OCG%
9783         /Name(View)%
9784         /Usage<<%
9785         /Print<<%
9786         /PrintState/OFF%
9787         >>%
9788         /View<<%
9789         /ViewState/ON%
9790         >>%
9791         >>%
9792     }%
9793     \@pdfm@mark{close \OBJ@OCG@view}%
9794     \def\OBJ@OCG@print{@OCG@print}%
9795     \@pdfm@mark{%
9796         obj \OBJ@OCG@print <<%
9797         /Type/OCG%
9798         /Name(Print)%
9799         /Usage<<%
9800         /Print<<%
9801         /PrintState/ON%

```



```

9803     >>%
9804     /View<<%
9805     /ViewState/OFF%
9806     >>%
9807     >>%
9808     >>%
9809     }%
9810     \@pdfm@mark{close \OBJ@OCG@print}%
9811     \def\OBJ@OCGs{@OCGs}%
9812     \@pdfm@mark{%
9813     obj \OBJ@OCGs [%
9814     \OBJ@OCG@view\space\OBJ@OCG@print
9815     ]%
9816     }%
9817     \@pdfm@mark{close \OBJ@OCGs}%
9818     \@pdfm@mark{%
9819     put @catalog <<%
9820     /OCProperties<<%
9821     /OCGs \OBJ@OCGs
9822     /D<<%
9823     /OFF[\OBJ@OCG@print]%
9824     /AS[%
9825     <<%
9826     /Event/View%
9827     /OCGs \OBJ@OCGs
9828     /Category[/View]%
9829     >>%
9830     <<%
9831     /Event/Print%
9832     /OCGs \OBJ@OCGs
9833     /Category[/Print]%
9834     >>%
9835     <<%
9836     /Event/Export%
9837     /OCGs \OBJ@OCGs
9838     /Category[/Print]%
9839     >>%
9840     ]%
9841     >>%
9842     >>%
9843     >>%
9844     }%
9845     \AtBeginShipout{%
9846     \setbox\AtBeginShipoutBox=\hbox{%
9847     \copy\AtBeginShipoutBox
9848     \@pdfm@mark{%
9849     put @resources <<%
9850     /Properties<<%
9851     /OCView \OBJ@OCG@view
9852     /OCPrint \OBJ@OCG@print
9853     >>%
9854     >>%
9855     }%
9856     }%
9857     }%
9858     \Hy@AtBeginDocument{%
9859     \def\Hy@colorlink#1{%

```

```

9860 \beginpgroup
9861 \ifHy@ocgcolorlinks
9862 \def\Hy@ocgcolor{#1}%
9863 \setbox0=\hbox\bgroup\color@beginpgroup
9864 \else
9865 \HyColor@UseColor#1%
9866 \fi
9867 }%
9868 \def\Hy@endcolorlink{%
9869 \ifHy@ocgcolorlinks
9870 \color@endgroup\egroup
9871 \mbox{%
9872 \@pdfm@mark{content /OC/OCPrint BDC}%
9873 \rlap{\copy0}%
9874 \@pdfm@mark{content EMC/OC/OCView BDC}%
9875 \beginpgroup
9876 \expandafter\HyColor@UseColor\Hy@ocgcolor
9877 \box0 %
9878 \endgroup
9879 \@pdfm@mark{content EMC}%
9880 }%
9881 \fi
9882 \endgroup
9883 }%
9884 }%
9885 \else
9886 \Hy@DisableOption{ocgcolorlinks}%
9887 \fi

9888 \def\Hy@BeginAnnot#1{%
9889 \stepcounter{Hy@AnnotLevel}%
9890 \ifnum\value{Hy@AnnotLevel}=\@ne
9891 #1%
9892 \fi
9893 }
9894 \def\Hy@endAnnot{%
9895 \ifnum\value{Hy@AnnotLevel}=\@ne
9896 \Hy@endcolorlink
9897 \@pdfm@mark{eann}%
9898 \fi
9899 \addtocounter{Hy@AnnotLevel}\m@ne
9900 }

9901 \def\Hy@undefinedname{UNDEFINED}
9902 \def\hyper@linkstart#1#2{%
9903 \Hy@VerboseLinkStart{#1}{#2}%
9904 \leavevmode
9905 \Hy@BeginAnnot{%
9906 \protected@edef\Hy@testname{#2}%
9907 \ifx\Hy@testname\@empty
9908 \Hy@Warning{%
9909 Empty destination name,\MessageBreak
9910 using '\Hy@undefinedname'%
9911 }%
9912 \let\Hy@testname\Hy@undefinedname
9913 \else
9914 \Hy@pstringdef\Hy@testname{%
9915 \expandafter\HyperDestNameFilter\expandafter{%
9916 \Hy@testname

```

```

9917     }%
9918     }%
9919     \fi
9920     \@pdfm@mark{%
9921         bann<<%
9922         /Type/Annot%
9923         /Subtype/Link%
9924         \ifHy@pdfa /F 4\fi
9925         \Hy@setpdfborder
9926         \expandafter\ifx\csname @#1bordercolor\endcsname\relax
9927         \else
9928             /C[\csname @#1bordercolor\endcsname]%
9929         \fi
9930         /A<<%
9931         /S/GoTo%
9932         /D(\Hy@testname)%
9933         \Hy@href@nextactionraw
9934         >>%
9935         >>%
9936     }%
9937     \expandafter\Hy@colorlink\csname @#1color\endcsname
9938 }%
9939 }
9940 \def\hyper@linkend{\Hy@EndAnnot}%
9941 \def\hyper@link#1#2#3{%
9942     \hyper@linkstart{#1}{#2}#3\Hy@xspace@end\hyper@linkend
9943 }
9944 \def\hyper@linkfile#1#2#3{%
9945     \leavevmode
9946     \Hy@BeginAnnot{%
9947         \def\Hy@pstringF{#2}%
9948         \Hy@CleanupFile\Hy@pstringF
9949         \Hy@pstringdef\Hy@pstringF\Hy@pstringF
9950         \Hy@pstringdef\Hy@pstringD{#3}%
9951         \Hy@MakeRemoteAction
9952         \@pdfm@mark{%
9953             bann<<%
9954             /Type/Annot%
9955             /Subtype/Link%
9956             \ifHy@pdfa /F 4\fi
9957             \Hy@setpdfborder
9958             \ifx\@filebordercolor\relax
9959             \else
9960                 /C[\@filebordercolor]%
9961             \fi
9962             /A<<%
9963             /S/GoToR%
9964             /F(\Hy@pstringF)%
9965             /D%
9966             \ifx\#3\%
9967                 [\Hy@href@page\@pdfremotestartview]%
9968             \else
9969                 (\Hy@pstringD)%
9970             \fi
9971             \Hy@SetNewWindow
9972             \Hy@href@nextactionraw
9973             >>%

```

```

9974    >>%
9975    }%
9976    \Hy@colorlink\@filecolor
9977 }%
9978 #1\Hy@xspace@end
9979 \Hy@endAnnot
9980 }
9981 \def\@hyper@launch run:#1\|#2#3{% filename, anchor text linkname
9982 \leavevmode
9983 \Hy@BeginAnnot{%
9984 \Hy@pstringdef\Hy@pstringF{#1}%
9985 \Hy@pstringdef\Hy@pstringP{#3}%
9986 \@pdfm@mark{%
9987   bann<<%
9988     /Type/Annot%
9989     /Subtype/Link%
9990     \ifHy@pdfa /F 4\fi
9991     \Hy@setpdfborder
9992     \ifx\@runbordercolor\relax
9993     \else
9994       /C[\@runbordercolor]%
9995     \fi
9996     /A<<%
9997       /F(\Hy@pstringF)%
9998       /S/Launch%
9999       \Hy@SetNewWindow
10000     \ifx\|#3\|
10001     \else
10002       /Win<</P(\Hy@pstringP)/F(\Hy@pstringF)>>%
10003     \fi
10004     \Hy@href@nextactionraw
10005     >>%
10006     >>%
10007   }%
10008   \Hy@colorlink\@runcolor
10009 }%
10010 #2\Hy@xspace@end
10011 \Hy@endAnnot
10012 }
10013 \def\hyper@linkurl#1#2{%
10014 \leavevmode
10015 \Hy@BeginAnnot{%
10016 \Hy@pstringdef\Hy@pstringURI{#2}%
10017 \@pdfm@mark{%
10018   bann<<%
10019     /Type/Annot%
10020     /Subtype/Link%
10021     \ifHy@pdfa /F 4\fi
10022     \Hy@setpdfborder
10023     \ifx\@urlbordercolor\relax
10024     \else
10025       /C[\@urlbordercolor]%
10026     \fi
10027     /A<<%
10028       /S/URI%
10029       /URI(\Hy@pstringURI)%
10030     \ifHy@href@ismap

```

```

10031         /IsMap true%
10032     \fi
10033     \Hy@href@nextactionraw
10034     >>%
10035     >>%
10036     }%
10037     \Hy@colorlink\@urlcolor
10038 }%
10039 #1\Hy@xspace@end
10040 \Hy@endAnnot
10041 }
10042 \def\Acrobatmenu#1#2{%
10043     \Hy@Acrobatmenu{#1}{#2}{%
10044         \Hy@BeginAnnot{%
10045             \@pdfm@mark{%
10046                 bann<<%
10047                 /Type/Annot%
10048                 /Subtype/Link%
10049                 \ifHy@pdfa /F 4\fi
10050                 /A<<%
10051                 /S/Named%
10052                 /N/#1%
10053                 \Hy@href@nextactionraw
10054                 >>%
10055                 \Hy@setpdfborder
10056                 \ifx\@menubordercolor\relax
10057                     \relax
10058                     /C[\@menubordercolor]%
10059                 \fi
10060                 >>%
10061                 }%
10062                 \Hy@colorlink\@menucolor
10063                 }%
10064                 #2\Hy@xspace@end
10065                 \Hy@endAnnot
10066                 }%
10067             }
10068             \ifx\@pdfproducer\relax
10069             \def\@pdfproducer{dvipdfm}%

```

Detect Xe<sub>T</sub>E<sub>X</sub>. However, but xdvipdfmx will overwrite it in the final PDF file.

```

10070 \begingroup\expandafter\expandafter\expandafter\endgroup
10071 \expandafter\ifx\csname XeTeXversion\endcsname\relax
10072 \else
10073     \edef\@pdfproducer{XeTeX \the\XeTeXversion\XeTeXrevision}%
10074     \fi
10075 \fi
10076 \def\PDF@FinishDoc{%
10077     \Hy@UseMaketitleInfos
10078     \Hy@Info@GenerateAddons
10079     \@pdfm@mark{%
10080         docinfo<<%
10081         /Title(\@pdftitle)%
10082         /Subject(\@pdfsubject)%
10083         /Creator(\@pdfcreator)%
10084         \ifx\@pdfcreationdate\@empty
10085             \else
10086             /CreationDate(\@pdfcreationdate)%

```

```

10087 \fi
10088 \ifx\@pdfmoddate\@empty
10089 \else
10090 /ModDate(\@pdfmoddate)%
10091 \fi
10092 /Author(\@pdfauthor)%
10093 \ifx\@pdfproducer\relax
10094 \else
10095 /Producer(\@pdfproducer)%
10096 \fi
10097 /Keywords(\@pdfkeywords)%
10098 \ifx\@pdftrapped\@empty
10099 \else
10100 /Trapped/\@pdftrapped
10101 \fi
10102 \HyInfo@Addons
10103 >>%
10104 }%
10105 \Hy@DisableOption{pdfauthor}%
10106 \Hy@DisableOption{pdftitle}%
10107 \Hy@DisableOption{pdfsubject}%
10108 \Hy@DisableOption{pdfcreator}%
10109 \Hy@DisableOption{pdfcreationdate}%
10110 \Hy@DisableOption{pdfmoddate}%
10111 \Hy@DisableOption{pdfproducer}%
10112 \Hy@DisableOption{pdfkeywords}%
10113 \Hy@DisableOption{pdftrapped}%
10114 \Hy@DisableOption{pdfinfo}%
10115 }

10116 \def\PDF@SetupDoc{%
10117 \edef\Hy@temp{%
10118 \ifHy@pdftoolbar\else /HideToolbar true\fi
10119 \ifHy@pdfmenubar\else /HideMenubar true\fi
10120 \ifHy@pdfwindowui\else /HideWindowUI true\fi
10121 \ifHy@pdffitwindow /FitWindow true\fi
10122 \ifHy@pdfcenterwindow /CenterWindow true\fi
10123 \ifHy@pdfdisplaydoctitle /DisplayDocTitle true\fi
10124 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
10125 \Hy@UseNameKey{Direction}\@pdfdirection
10126 \Hy@UseNameKey{ViewArea}\@pdfviewarea
10127 \Hy@UseNameKey{ViewClip}\@pdfviewclip
10128 \Hy@UseNameKey{PrintArea}\@pdfprintarea
10129 \Hy@UseNameKey{PrintClip}\@pdfprintclip
10130 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
10131 \Hy@UseNameKey{Duplex}\@pdfduplex
10132 \ifx\@pdfpicktraybypdfsize\@empty
10133 \else
10134 /PickTrayByPDFSize \@pdfpicktraybypdfsize
10135 \fi
10136 \ifx\@pdfprintpagerange\@empty
10137 \else
10138 /PrintPageRange[\@pdfprintpagerange]%
10139 \fi
10140 \ifx\@pdfnumcopies\@empty
10141 \else
10142 /NumCopies \@pdfnumcopies
10143 \fi

```

```

10144 }%
10145 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
10146 \@pdfm@mark{%
10147   docview<<%
10148     \ifx\@pdfstartpage\@empty
10149     \else
10150     \ifx\@pdfstartview\@empty
10151     \else
10152       /OpenAction[@page\@pdfstartpage\@pdfstartview]%
10153     \fi
10154   \fi
10155   \ifx\@baseurl\@empty
10156   \else
10157     /URI<</Base(\Hy@pstringB)>>%
10158   \fi
10159   /PageMode/\@pdfpagemode
10160   \ifx\Hy@temp\@empty
10161   \else
10162     /ViewerPreferences<<\Hy@temp>>%
10163   \fi
10164   \Hy@UseNameKey{PageLayout}\@pdfpagelayout
10165   \ifx\@pdflang\@empty
10166   \else
10167     /Lang(\@pdflang)%
10168   \fi
10169   >>%
10170 }%
10171 \ifx\@pdfpagescrop\@empty
10172 \else
10173   \@pdfm@mark{put @pages <</CropBox[\@pdfpagescrop]>>}%
10174 \fi
10175 }
10176 </dvi pdfm | xetex>
10177 < *dvi pdfm | xetex>

```

#### \hyper@pagetransition

```

10178 \def\hyper@pagetransition{%
10179   \ifx\@pdfpagetransition\relax
10180   \else
10181     \ifx\@pdfpagetransition\@empty
10182     \else
10183       \special{pdf:put @thispage %
10184         <</Trans<</S/\@pdfpagetransition>>>>%
10185       }%
10186     \fi
10187   \fi
10188 }

```

#### \hyper@pageduration

```

10189 \def\hyper@pageduration{%
10190   \ifx\@pdfpageduration\relax
10191   \else
10192     \ifx\@pdfpageduration\@empty
10193     \else
10194       \special{pdf:put @thispage %
10195         <</Dur \@pdfpageduration>>>>%
10196     }%

```

```

10197 \fi
10198 \fi
10199 }

```

\hyper@pagehidden

```

10200 \def\hyper@pagehidden{%
10201 \ifHy@useHidKey
10202 \special{pdf:put @thispage %
10203 <</Hid \ifHy@pdfpagehidden true\else false\fi>>%
10204 }%
10205 \fi
10206 }

```

```

10207 \g@addto@macro\Hy@EveryPageBoxHook{%
10208 \hyper@pagetransition
10209 \hyper@pageduration
10210 \hyper@pagehidden
10211 }

10212 </dvipdfm | xetex>

```

Xe<sub>TeX</sub> uses pdf<sub>TeX</sub>'s method \pdfpagewidth and \pdfpageheight for setting the paper size.

```

10213 < *dvipdfm>
10214 \AtBeginShipoutFirst{%
10215 \ifHy@setpagesize
10216 \begingroup
10217 \ifundefined{stockwidth}{%
10218 \ifdim\paperwidth>\z@
10219 \ifdim\paperheight>\z@
10220 \special{papersize=\the\paperwidth,\the\paperheight}%
10221 \fi
10222 \fi
10223 }{%
10224 \ifdim\stockwidth>\z@
10225 \ifdim\stockheight>\z@
10226 \special{papersize=\the\stockwidth,\the\stockheight}%
10227 \fi
10228 \fi
10229 }%
10230 \endgroup
10231 \fi
10232 \Hy@DisableOption{setpagesize}%
10233 }
10234 </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.

```

10235 < *vtexhtml>
10236 \providecommand*{\XR@ext}{.htm}
10237 \RequirePackage{vtexhtml}
10238 \newif\if@Localurl
10239 \let\PDF@FinishDoc\ltx@empty
10240 \def\PDF@SetupDoc{%
10241 \ifx\@baseurl\@empty
10242 \else

```



```

10243 \special{!direct <base href="\@baseurl">}%
10244 \fi
10245 }
10246 \def\@urlltype{url}
10247 \def\hyper@link#1#2#3{%
10248 \Hy@VerboseLinkStart{#1}{#2}%
10249 \leavevmode
10250 \special{!direct <a href=%
10251 \hyper@quote\hyper@hash\HyperDestNameFilter{#2}\hyper@quote>}%
10252 #3\Hy@xspace@end
10253 \special{!direct </a>}%
10254 }
10255 \def\hyper@linkurl#1#2{%
10256 \begingroup
10257 \hyper@chars
10258 \leavevmode
10259 \MathBSuppress=1\relax
10260 \special{!direct <a href=%
10261 \hyper@quote\HyperDestNameFilter{#2}\hyper@quote>}%
10262 #1\Hy@xspace@end
10263 \MathBSuppress=0\relax
10264 \special{!direct </a>}%
10265 \endgroup
10266 }
10267 \def\hyper@linkfile#1#2#3{%
10268 \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\else\\#3\fi}%
10269 }
10270 \def\hyper@linkstart#1#2{%
10271 \Hy@VerboseLinkStart{#1}{#2}%
10272 \def\Hy@tempa{#1}\ifx\Hy@tempa\@urlltype
10273 \@Localurltrue
10274 \special{!direct <a href=\hyper@quote#2\hyper@quote>}%
10275 \else
10276 \@Localurlfalse
10277 \begingroup
10278 \hyper@chars
10279 \special{!aref \HyperDestNameFilter{#2}}%
10280 \endgroup
10281 \fi
10282 }
10283 \def\hyper@linkend{%
10284 \if@Localurl
10285 \special{!endaref}%
10286 \else
10287 \special{!direct </a>}%
10288 \fi
10289 }
10290 \Hy@WrapperDef\hyper@anchorstart#1{%
10291 \Hy@SaveLastskip
10292 \Hy@VerboseAnchor{#1}%
10293 \begingroup
10294 \hyper@chars
10295 \special{!aname #1}%
10296 \special{!direct <a name=%
10297 \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
10298 \endgroup
10299 \Hy@activeanchortrue

```

```

10300 }
10301 \def\hyper@anchorend{%
10302   \special{!direct </a>}%
10303   \Hy@activeanchorfalse
10304   \Hy@RestoreLastskip
10305 }
10306 \Hy@WrapperDef\hyper@anchor#1{%
10307   \Hy@SaveLastskip
10308   \Hy@VerboseAnchor{#1}%
10309   \begingroup
10310     \let\protect=\string
10311     \hyper@chars
10312     \leavevmode
10313     \special{!aname #1}%
10314     \special{!direct <a name=%
10315       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
10316   \endgroup
10317   \Hy@activeanchortrue
10318   \bgroup\anchor@spot\egroup
10319   \special{!direct </a>}%
10320   \Hy@activeanchorfalse
10321   \Hy@RestoreLastskip
10322 }
10323 \def\@Form[#1]{%
10324   \Hy@Message{Sorry, TeXpider does not yet support FORMs}%
10325 }
10326 \let\@endForm\ltx@empty
10327 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
10328   \Hy@Message{Sorry, TeXpider does not yet support FORM gauges}%
10329 }
10330 \def\@TextField[#1]#2{% parameters, label
10331   \Hy@Message{Sorry, TeXpider does not yet support FORM text fields}%
10332 }
10333 \def\@CheckBox[#1]#2{% parameters, label
10334   \Hy@Message{Sorry, TeXpider does not yet support FORM checkboxes}%
10335 }
10336 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
10337   \Hy@Message{Sorry, TeXpider does not yet support FORM choice menus}%
10338 }
10339 \def\@PushButton[#1]#2{% parameters, label
10340   \Hy@Message{Sorry, TeXpider does not yet support FORM pushbuttons}%
10341 }
10342 \def\@Reset[#1]#2{%
10343   \Hy@Message{Sorry, TeXpider does not yet support FORMs}%
10344 }
10345 \def\@Submit[#1]#2{%
10346   \Hy@Message{Sorry, TeXpider does not yet support FORMs}%
10347 }
10348 </vtexhtml>
10349 < *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.
10350 \ifx\mediaheight\@undefined
10351 \else
10352   \ifx\mediaheight\relax

```

```

10353 \else
10354   \ifHy@setpagesize
10355     \providecommand*\VTeXInitMediaSize{%
10356       \ltx@ifundefined{stockwidth}{%
10357         \ifdim\paperheight>0pt %
10358           \setlength\mediaheight\paperheight
10359         \fi
10360         \ifdim\paperheight>0pt %
10361           \setlength\mediawidth\paperwidth
10362         \fi
10363       }{%
10364         \ifdim\stockheight>0pt %
10365           \setlength\mediaheight\stockheight
10366         \fi
10367         \ifdim\stockwidth>0pt %
10368           \setlength\mediawidth\stockwidth
10369         \fi
10370       }%
10371     }%
10372   \Hy@AtBeginDocument{\VTeXInitMediaSize}%
10373 \fi
10374 \Hy@DisableOption{setpagesize}%
10375 \fi
10376 \fi

```

Older versions of VTeX require xyz in lower case.

```

10377 \providecommand*\@pdfview{xyz}
10378 \providecommand*\@pdfborder{0 0 1}
10379 \providecommand*\@pdfborderstyle{}
10380 \let\CurrentBorderColor\@linkbordercolor
10381 \Hy@WrapperDef\hyper@anchor#1{%
10382   \Hy@SaveLastskip
10383   \Hy@VerboseAnchor{#1}%
10384   \begingroup
10385     \let\protect=\string
10386     \hyper@chars
10387     \special{!aname \HyperDestNameFilter{#1};\@pdfview}%
10388   \endgroup
10389   \Hy@activeanchortrue
10390   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
10391   \Hy@activeanchorfalse
10392   \Hy@RestoreLastskip
10393 }
10394 \Hy@WrapperDef\hyper@anchorstart#1{%
10395   \Hy@SaveLastskip
10396   \Hy@VerboseAnchor{#1}%
10397   \begingroup
10398     \hyper@chars
10399     \special{!aname \HyperDestNameFilter{#1};\@pdfview}%
10400   \endgroup
10401   \Hy@activeanchortrue
10402 }
10403 \def\hyper@anchorend{%
10404   \Hy@activeanchorfalse
10405   \Hy@RestoreLastskip
10406 }
10407 \def\@urltype{url}
10408 \def\Hy@undefinedname{UNDEFINED}

```

```

10409 \def\hyper@linkstart#1#2{%
10410   \Hy@VerboseLinkStart{#1}{#2}%
10411   \Hy@pstringdef\Hy@colorlink\csname @#1color\endcsname
10412   \expandafter\Hy@colorlink\csname @#1color\endcsname
10413   \ltx@ifundefined{@#1bordercolor}{%
10414     \let\CurrentBorderColor\relax
10415   }{%
10416     \edef\CurrentBorderColor{%
10417       \csname @#1bordercolor\endcsname
10418     }%
10419   }%
10420   \def\Hy@tempa{#1}%
10421   \ifx\Hy@tempa \@uratype
10422     \special{!%
10423       aref <u=/Type/Action/S/URI/URI(\Hy@pstringURI)%
10424       \ifHy@href@ismap
10425         /IsMap true%
10426       \fi
10427       \Hy@href@nextactionraw
10428       >;%
10429       a=<%
10430       \ifHy@pdfa /F 4\fi
10431       \Hy@setpdfborder
10432       \ifx\CurrentBorderColor\relax
10433         \else
10434           /C [\CurrentBorderColor]%
10435         \fi
10436       >%
10437     }%
10438   \else
10439     \protected@edef\Hy@testname{#2}%
10440     \ifx\Hy@testname \@empty
10441       \Hy@Warning{%
10442         Empty destination name,\MessageBreak
10443         using '\Hy@undefinedname'%
10444       }%
10445       \let\Hy@testname\Hy@undefinedname
10446     \fi
10447     \special{!%
10448       aref \expandafter\HyperDestNameFilter
10449       \expandafter{\Hy@testname};%
10450       a=<%
10451       \ifHy@pdfa /F 4\fi
10452       \Hy@setpdfborder
10453       \ifx\CurrentBorderColor\relax
10454         \else
10455           /C [\CurrentBorderColor]%
10456         \fi
10457       >%
10458     }%
10459   \fi
10460 }
10461 \def\hyper@linkend{%
10462   \special{!endaref}%
10463   \Hy@endcolorlink
10464 }
10465 \def\hyper@linkfile#1#2#3{%

```

```

10466 \leavevmode
10467 \def\Hy@pstringF{#2}%
10468 \Hy@CleanupFile\Hy@pstringF
10469 \special{!%
10470   aref <%
10471   \ifnum\Hy@VTeXversion>753 \ifHy@pdfnewwindow n\fi\fi
10472   f=\Hy@pstringF>#3;%
10473   a=<%
10474     \ifHy@pdfa /F 4\fi
10475     \Hy@setpdfborder
10476     \ifx\@filebordercolor\relax
10477       \else
10478         /C [\@filebordercolor]%
10479       \fi
10480     >%
10481   }%
10482 \Hy@colorlink\@filecolor
10483   #1\Hy@xspace@end
10484 \Hy@endcolorlink
10485 \special{!endaref}%
10486 }
10487 \def\hyper@linkurl#1#2{%
10488 \begingroup
10489 \Hy@pstringdef\Hy@pstringURI{#2}%
10490 \hyper@chars
10491 \leavevmode
10492 \special{!%
10493   aref <u=/Type/Action/S/URI/URI(\Hy@pstringURI)%
10494     \ifHy@href@ismap
10495       /IsMap true%
10496     \fi
10497     \Hy@href@nextactionraw
10498   >;%
10499   a=<%
10500     \ifHy@pdfa /F 4\fi
10501     \Hy@setpdfborder
10502     \ifx\@urlbordercolor\relax
10503       \else
10504         /C [\@urlbordercolor]%
10505       \fi
10506     >%
10507   }%
10508 \Hy@colorlink\@urlcolor
10509   #1\Hy@xspace@end
10510 \Hy@endcolorlink
10511 \special{!endaref}%
10512 \endgroup
10513 }
10514 \def\hyper@link#1#2#3{%
10515 \Hy@VerboseLinkStart{#1}{#2}%
10516 \ltx@ifundefined{@#1bordercolor}{%
10517   \let\CurrentBorderColor\relax
10518 }{%
10519   \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
10520 }%
10521 \leavevmode
10522 \protected@edef\Hy@testname{#2}%

```

```

10523 \ifx\Hy@testname\@empty
10524   \Hy@Warning{%
10525     Empty destination name,\MessageBreak
10526     using '\Hy@undefinedname'%
10527   }%
10528   \let\Hy@testname\Hy@undefinedname
10529 \fi
10530 \special{!%
10531   aref \expandafter\HyperDestNameFilter
10532   \expandafter{\Hy@testname};%
10533   a=<%
10534     \ifHy@pdfa /F 4\fi
10535     \Hy@setpdfborder
10536     \ifx\CurrentBorderColor\relax
10537       \else
10538         /C [\CurrentBorderColor]%
10539       \fi
10540     >%
10541   }%
10542 \expandafter
10543 \Hy@colorlink\csname @#1color\endcsname
10544   #3\Hy@xspace@end
10545 \Hy@endcolorlink
10546 \special{!endaref}%
10547 }
10548 \def\hyper@image#1#2{%
10549   \hyper@linkurl{#2}{#1}%
10550 }
10551 \def\@hyper@launch run:#1\#2#3{%
10552   \Hy@pstringdef\Hy@pstringF{#1}%
10553   \Hy@pstringdef\Hy@pstringP{#3}%
10554   \leavevmode
10555   \special{!aref %
10556     <u=%
10557       /Type/Action%
10558       /S/Launch%
10559       /F(\Hy@pstringF)%
10560       \Hy@SetNewWindow
10561       \ifx\#3\%
10562         \else
10563           /Win<</F(\Hy@pstringF)/P(\Hy@pstringP)>>%
10564         \fi
10565       \Hy@href@nextactionraw
10566     >,%
10567     a=<%
10568       \ifHy@pdfa /F 4\fi
10569       \Hy@setpdfborder
10570       \ifx\@runbordercolor\relax
10571         \else
10572           /C[\@runbordercolor]%
10573         \fi
10574       >%
10575     }%
10576   \Hy@colorlink\@runcolor
10577   #2\Hy@xspace@end
10578 \Hy@endcolorlink
10579 \special{!endaref}%

```

```

10580 }
10581 \def\Acrobatmenu#1#2{%
10582   \Hy@Acrobatmenu{#1}{#2}{%
10583     \special{!%
10584       aref <u=/S /Named /N /#1>;%
10585       a=<%
10586         \ifHy@pdfa /F 4\fi
10587         \Hy@setpdfborder
10588         \ifx\@menubordercolor\relax
10589         \else
10590         /C[\@menubordercolor]%
10591         \fi
10592       >%
10593     }%
10594     \Hy@colorlink\@menucolor
10595     #2\Hy@xspace@end
10596     \Hy@endcolorlink
10597     \special{!endaref}%
10598   }%
10599 }

```

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

The code below makes sense for VTeX 7.02 or later.

Please never use `\ifundefined{VTeXversion}{...}{...}` globally.

```

10600 \ifnum\Hy@VTeXversion<702 %
10601 \else
10602   \def\hyper@pagetransition{%
10603     \ifx\@pdfpagetransition\relax
10604     \else
10605     \ifx\@pdfpagetransition\@empty

```

Standard incantation.

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

```

10606   \else
10607     \hvtex@parse@trans\@pdfpagetransition
10608   \fi
10609 \fi
10610 }%

```

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

Syntax of VTeX `\special{!trans <transition_effect>}`:

```

<transition_effect> ::= <transition_style>[,<transition_duration>]
<transition_style> ::= <Blinds_effect> | <Box_effect> |
                      <Dissolve_effect> | <Glitter_effect> |
                      <Split_effect> | <Wipe_effect>
<Blinds_effect> ::= B[<effect_dimension>]
<Box_effect> ::= X[<effect_motion>]
<Dissolve_effect> ::= D
<Glitter_effect> ::= G[<effect_direction>]
<Split_effect> ::= S[<effect_motion>][<effect_dimension>]
<Wipe_effect> ::= W[<effect_direction>]
<Replace_effect> ::= R
<effect_direction> ::= <number>
<effect_dimension> ::= H | V
<effect_motion> ::= I | O
<transition_duration> ::= <number>

```

Transition codes:

```
10611 \def\hvtex@trans@effect@Blinds{\def\hvtex@trans@code{B}}%
10612 \def\hvtex@trans@effect@Box{\def\hvtex@trans@code{X}}%
10613 \def\hvtex@trans@effect@Dissolve{\def\hvtex@trans@code{D}}%
10614 \def\hvtex@trans@effect@Glitter{\def\hvtex@trans@code{G}}%
10615 \def\hvtex@trans@effect@Split{\def\hvtex@trans@code{S}}%
10616 \def\hvtex@trans@effect@Wipe{\def\hvtex@trans@code{W}}%
10617 \def\hvtex@trans@effect@R{\def\hvtex@trans@code{R}}%
```

Optional parameters:

```
10618 \def\hvtex@par@dimension{/Dm}%
10619 \def\hvtex@par@direction{/Di}%
10620 \def\hvtex@par@duration{/D}%
10621 \def\hvtex@par@motion{/M}%
```

Tokenizer:

```
10622 \def\hvtex@gettoken{%
10623   \expandafter\hvtex@gettoken@\hvtex@buffer\@nil
10624 }%
```

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

```
10625 \def\hvtex@gettoken@#1 #2\@nil{%
10626   \edef\hvtex@token{#1}%
10627   \edef\hvtex@buffer{#2}%
10628 }%
10629 \def\hvtex@parse@trans#1{%
```

Initializing code:

```
10630 \let\hvtex@trans@code\@empty
10631 \let\hvtex@param@dimension\@empty
10632 \let\hvtex@param@direction\@empty
10633 \let\hvtex@param@duration\@empty
10634 \let\hvtex@param@motion\@empty
10635 \edef\hvtex@buffer{#1\space}%
```

First token is the PDF transition name without escape.

```
10636 \hvtex@gettoken
10637 \ifx\hvtex@token\@empty
```

Leading space(s)?

```
10638   \ifx\hvtex@buffer\@empty
```

The buffer is empty, nothing to do.

```
10639   \else
10640     \hvtex@gettoken
10641   \fi
10642 \fi
10643 \csname hvtex@trans@effect@\hvtex@token\endcsname
```

Now is time to parse optional parameters.

```
10644 \hvtex@trans@params
10645 }%
```

Reentrant macro to parse optional parameters.

```
10646 \def\hvtex@trans@params{%
10647   \ifx\hvtex@buffer\@empty
10648   \else
10649     \hvtex@gettoken
10650     \let\hvtex@trans@par\hvtex@token
10651     \ifx\hvtex@buffer\@empty
10652     \else
```



```

10653 \hvtex@gettoken
10654 \ifx\hvtex@trans@par\hvtex@par@duration
/D is the effect duration in seconds. VTEX special takes it in milliseconds.

```

```

10655 \let\hvtex@param@duration\hvtex@token
10656 \else \ifx\hvtex@trans@par\hvtex@par@motion

```

/M can be either /I or /O

```

10657 \expandafter\edef\expandafter\hvtex@param@motion
10658 \expandafter{\expandafter\@gobble\hvtex@token}%
10659 \else \ifx\hvtex@trans@par\hvtex@par@dimension

```

/Dm can be either /H or /V

```

10660 \expandafter\edef\expandafter\hvtex@param@dimension
10661 \expandafter{\expandafter\@gobble\hvtex@token}%
10662 \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).

```

10663 \let\hvtex@param@direction\hvtex@token
10664 \fi\fi\fi
10665 \fi
10666 \fi
10667 \ifx\hvtex@buffer\@empty
10668 \let\next\hvtex@produce@trans
10669 \else
10670 \let\next\hvtex@trans@params
10671 \fi
10672 \next
10673 }%

```

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

```

10674 \def\hvtex@produce@trans{%
10675 \let\vtex@trans@special\@empty
10676 \if S\hvtex@trans@code
10677 \edef\vtex@trans@special{\hvtex@trans@code
10678 \hvtex@param@dimension\hvtex@param@motion}%
10679 \else\if B\hvtex@trans@code
10680 \edef\vtex@trans@special{%
10681 \hvtex@trans@code\hvtex@param@dimension
10682 }%
10683 \else\if X\hvtex@trans@code
10684 \edef\vtex@trans@special{%
10685 \hvtex@trans@code\hvtex@param@motion
10686 }%
10687 \else\if W\hvtex@trans@code
10688 \edef\vtex@trans@special{%
10689 \hvtex@trans@code\hvtex@param@direction
10690 }%
10691 \else\if D\hvtex@trans@code
10692 \let\vtex@trans@special\hvtex@trans@code
10693 \else\if R\hvtex@trans@code
10694 \let\vtex@trans@special\hvtex@trans@code
10695 \else\if G\hvtex@trans@code
10696 \edef\vtex@trans@special{%
10697 \hvtex@trans@code\hvtex@param@direction
10698 }%
10699 \fi\fi\fi\fi\fi\fi

```

```

10700 \ifx\vtex@trans@special\@empty
10701 \else
10702 \ifx\hvtex@param@duration\@empty
10703 \else
10704 \setlength{\dimen@}{\hvtex@param@duration\p@}%

```

I'm not guilty of possible overflow.

```

10705 \multiply\dimen@\@m
10706 \edef\vtex@trans@special{%
10707 \vtex@trans@special,\strip@pt\dimen@
10708 }%
10709 \fi

```

And all the mess is just for this.

```

10710 \special{!trans \vtex@trans@special}%
10711 \fi
10712 }%

10713 \def\hyper@pageduration{%
10714 \ifx\@pdfpageduration\relax
10715 \else
10716 \ifx\@pdfpageduration\@empty
10717 \special{!duration-}%
10718 \else
10719 \special{!duration \@pdfpageduration}%
10720 \fi
10721 \fi
10722 }%

10723 \def\hyper@pagehidden{%
10724 \ifHy@useHidKey
10725 \special{!hidden\ifHy@pdfpagehidden +\else -\fi}%
10726 \fi
10727 }%

10728 \g@addto@macro\Hy@EveryPageBoxHook{%
10729 \hyper@pagetransition
10730 \hyper@pageduration
10731 \hyper@pagehidden
10732 }%
10733 \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

```

10734 \ifx\@pdfproducer\relax
10735 \def\@pdfproducer{VTeX}%
10736 \ifnum\Hy@VTeXversion>\z@
10737 \count@\VTeXversion
10738 \divide\count@ 100 %
10739 \edef\@pdfproducer{\@pdfproducer\space v\the\count@}%
10740 \multiply\count@ -100 %
10741 \advance\count@\VTeXversion
10742 \edef\@pdfproducer{%

```

```

10743 \pdfproducer
10744 .\ifnum\count@<10 0\fi\the\count@
10745 \ifx\VTexOS\@undefined\else
10746 \ifnum\VTexOS>0 %
10747 \ifnum\VTexOS<6 %
10748 \space(%
10749 \ifcase\VTexOS
10750 \or Windows\or Linux\or OS/2\or MacOS\or MacOS/X%
10751 \fi
10752 )%
10753 \fi
10754 \fi
10755 \fi
10756 ,\space
10757 \ifnum\OpMode=\@one PDF\else PS\fi
10758 \space backend%
10759 \ifx\gexmode\@undefined\else
10760 \ifnum\gexmode>z@\space with GeX\fi
10761 \fi
10762 }%
10763 \fi
10764 \fi

```

Current !pdfinfo key syntax:

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

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

```

10765 \def\PDF@SetupDoc{%
10766 \ifx\@pdfpagescrop\@empty
10767 \else
10768 \special{!pdfinfo b=<\@pdfpagescrop>}%
10769 \fi
10770 \ifx\@pdfstartpage\@empty
10771 \else
10772 \ifx\@pdfstartview\@empty
10773 \else
10774 \special{!onopen Page\@pdfstartpage}%
10775 \fi
10776 \fi
10777 \special{!pdfinfo p=</\@pdfpagemode>}%
10778 \ifx\@baseurl\@empty
10779 \else
10780 \special{!pdfinfo u=<<</Base (\@baseurl)>>>}%
10781 \fi
10782 \special{!pdfinfo v=<<<%
10783 \ifHy@pdftoolbar\else /HideToolbar true\fi
10784 \ifHy@pdfmenubar\else /HideMenubar true\fi

```

```

10785 \ifHy@pdfwindowui\else /HideWindowUI true\fi
10786 \ifHy@pdfwindow /FitWindow true\fi
10787 \ifHy@pdfcenterwindow /CenterWindow true\fi
10788 \ifHy@pdfdisplaydoctitle /DisplayDocTitle true\fi
10789 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
10790 \Hy@UseNameKey{Direction}\@pdfdirection
10791 \Hy@UseNameKey{ViewArea}\@pdfviewarea
10792 \Hy@UseNameKey{ViewClip}\@pdfviewclip
10793 \Hy@UseNameKey{PrintArea}\@pdfprintarea
10794 \Hy@UseNameKey{PrintClip}\@pdfprintclip
10795 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
10796 \Hy@UseNameKey{Duplex}\@pdfduplex
10797 \ifx\@pdfpicktraybypdfsize\@empty
10798 \else
10799 /PickTrayByPDFSize \@pdfpicktraybypdfsize
10800 \fi
10801 \ifx\@pdfprintpagerange\@empty
10802 \else
10803 /PrintPageRange[\@pdfprintpagerange]%
10804 \fi
10805 \ifx\@pdfnumcopies\@empty
10806 \else
10807 /NumCopies \@pdfnumcopies
10808 \fi
10809 >>>}%
10810 \ifx\@pdfpagelayout\@empty
10811 \else
10812 \special{!pdfinfo l=</\@pdfpagelayout\space>}%
10813 \fi
10814 }%
10815 \HyInfo@AddonUnsupportedtrue
10816 \def\PDF@FinishDoc{%
10817 \Hy@UseMaketitleInfos
10818 \HyInfo@TrappedUnsupported
10819 \special{!pdfinfo a=<\@pdfauthor>}%
10820 \special{!pdfinfo t=<\@pdftitle>}%
10821 \special{!pdfinfo s=<\@pdfsubject>}%
10822 \special{!pdfinfo c=<\@pdfcreator>}%
10823 \ifx\@pdfproducer\relax
10824 \else
10825 \special{!pdfinfo r=<\@pdfproducer>}%
10826 \fi
10827 \special{!pdfinfo k=<\@pdfkeywords>}%
10828 \Hy@DisableOption{pdfauthor}%
10829 \Hy@DisableOption{pdftitle}%
10830 \Hy@DisableOption{pdfsubject}%
10831 \Hy@DisableOption{pdfcreator}%
10832 \Hy@DisableOption{pdfcreationdate}%
10833 \Hy@DisableOption{pdfmoddate}%
10834 \Hy@DisableOption{pdfproducer}%
10835 \Hy@DisableOption{pdfkeywords}%
10836 \Hy@DisableOption{pdftrapped}%
10837 \Hy@DisableOption{pdfinfo}%
10838 }
10839 </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.

```
10840 <dviwindo>\def\literalps@out#1{\special{ps:#1}}%  
10841 <package>\providecommand*{\Hy@DistillerDestFix}{%  
10842 <*pdfmark | dviwindo>  
10843 \def\Hy@DistillerDestFix{%  
10844   \begingroup  
10845   \let\x\literalps@out
```

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

```
10846   \ifnum \@ifundefined{OpMode}{0}{%  
10847     \@ifundefined{gexmode}{0}{%  
10848       \ifnum\gexmode>0 \OpMode\else 0\fi  
10849     }>1 %  
10850   \def\x##1{%  
10851     \immediate\special{!=##1}%  
10852   }%  
10853   \fi  
10854   \x{%  
10855     /product where{%  
10856       pop %  
10857       product(Distiller)search{%  
10858         pop pop pop %  
10859         version(.)search{%  
10860           exch pop exch pop%  
10861           (3011)eq{%  
10862             gsave %  
10863             newpath 0 0 moveto closepath clip%  
10864             /Courier findfont 10 scalefont setfont %  
10865             72 72 moveto(.)show %  
10866             grestore%  
10867           }if%  
10868         }{pop}ifelse%  
10869       }{pop}ifelse%  
10870     }if%  
10871   }%  
10872   \endgroup  
10873 }  
10874 </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

```

10875 <*pdfmark>
10876 \Hy@breaklinks@unsupported
10877 \def\HyPat@ObjRef{%
10878   \[{}]+\}%
10879 }
10880 \Hy@WrapperDef\hyper@anchor#1{%
10881   \Hy@SaveLastskip
10882   \Hy@VerboseAnchor{#1}%
10883   \begingroup
10884     \pdfmark[\anchor@spot]{%
10885       pdfmark=/DEST,%
10886       linktype=anchor,%
10887       View=/\@pdfview \@pdfviewparams,%
10888       DestAnchor={#1}%
10889     }%
10890   \endgroup
10891   \Hy@RestoreLastskip
10892 }
10893 \ltx@ifundefined{hyper@anchorstart}{\endinput}
10894 \Hy@WrapperDef\hyper@anchorstart#1{%
10895   \Hy@SaveLastskip
10896   \Hy@VerboseAnchor{#1}%
10897   \literalps@out{H.S}%
10898   \Hy@AllowHyphens
10899   \xdef\hyper@currentanchor{#1}%
10900   \Hy@activeanchortrue
10901 }
10902 \def\hyper@anchorend{%
10903   \literalps@out{\strip@pt@and@otherjunk\baselineskip\space H.A}%
10904   \pdfmark{%
10905     pdfmark=/DEST,%
10906     linktype=anchor,%
10907     View=/\@pdfview \@pdfviewparams,%
10908     DestAnchor=\hyper@currentanchor,%
10909   }%
10910   \Hy@activeanchorfalse
10911   \Hy@RestoreLastskip
10912 }
10913 \def\hyper@linkstart#1#2{%
10914   \Hy@VerboseLinkStart{#1}{#2}%
10915   \ifHy@breaklinks
10916     \else
10917       \leavevmode
10918       \ifmmode
10919         \def\Hy@LinkMath{$}%
10920       \else
10921         \let\Hy@LinkMath\ltx@empty
10922       \fi
10923       \Hy@SaveSpaceFactor
10924       \hbox\bgroup

```

```

10925 \Hy@RestoreSpaceFactor
10926 \Hy@LinkMath
10927 \fi
10928 \expandafter\Hy@colorlink\csname @#1color\endcsname
10929 \literalps@out{H.S}%
10930 \Hy@AllowHyphens
10931 \xdef\hyper@currentanchor{#2}%
10932 \gdef\hyper@currentlinktype{#1}%
10933 }
10934 \def\hyper@linkend{%
10935 \literalps@out{\strip@pt@and@otherjunk\baselineskip\space H.L}%
10936 \ltx@ifundefined{@\hyper@currentlinktype bordercolor}{%
10937 \let\Hy@tempcolor\relax
10938 }{%
10939 \edef\Hy@tempcolor{%
10940 \csname @\hyper@currentlinktype bordercolor\endcsname
10941 }%
10942 }%
10943 \pdfmark{%
10944 pdfmark=/ANN,%
10945 linktype=link,%
10946 Subtype=/Link,%
10947 PDFAFlags=4,%
10948 Dest=\hyper@currentanchor,%
10949 AcroHighlight=\@pdfhighlight,%
10950 Border=\@pdfborder,%
10951 BorderStyle=\@pdfborderstyle,%
10952 Color=\Hy@tempcolor,%
10953 Raw=H.B%
10954 }%
10955 \Hy@endcolorlink
10956 \ifHy@breaklinks
10957 \else
10958 \Hy@LinkMath
10959 \Hy@SaveSpaceFactor
10960 \egroup
10961 \Hy@RestoreSpaceFactor
10962 \fi
10963 }

```

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.

```

10964 \begingroup
10965 \catcode'P=12 %
10966 \catcode'T=12 %
10967 \lowercase{\endgroup
10968 \gdef\rem@ptetc#1.#2PT#3!{#1\ifnum#2>\z@.#2\fi}%
10969 }
10970 \def\strip@pt@and@otherjunk#1{\expandafter\rem@ptetc\the#1!}

```

`\hyper@pagetransition`

```

10971 \def\hyper@pagetransition{%
10972 \ifx\@pdfpagetransition\relax
10973 \else
10974 \ifx\@pdfpagetransition\@empty
10975 % 1. Does an old entry have to be deleted?

```

```

10976 % 2. If 1=yes, how to delete?
10977 \else
10978 \pdfmark{%
10979 pdfmark=/PUT,%
10980 Raw={%
10981 \string{ThisPage\string}%
10982 <</Trans << /S /\@pdfpagetransition\space >> >>%
10983 }%
10984 }%
10985 \fi
10986 \fi
10987 }

```

\hyper@pageduration

```

10988 \def\hyper@pageduration{%
10989 \ifx\@pdfpageduration\relax
10990 \else
10991 \ifx\@pdfpageduration\@empty
10992 % 1. Does an old entry have to be deleted?
10993 % 2. If 1=yes, how to delete?
10994 \else
10995 \pdfmark{%
10996 pdfmark=/PUT,%
10997 Raw={%
10998 \string{ThisPage\string}%
10999 <</Dur \@pdfpageduration>>%
11000 }%
11001 }%
11002 \fi
11003 \fi
11004 }

```

\hyper@pagehidden

```

11005 \def\hyper@pagehidden{%
11006 \ifHy@useHidKey
11007 \pdfmark{%
11008 pdfmark=/PUT,%
11009 Raw={%
11010 \string{ThisPage\string}%
11011 <</Hid \ifHy@pdfpagehidden true\else false\fi>>%
11012 }%
11013 }%
11014 \fi
11015 }

11016 \g@addto@macro\Hy@EveryPageBoxHook{%
11017 \hyper@pagetransition
11018 \hyper@pageduration
11019 \hyper@pagehidden
11020 }

11021 \def\hyper@image#1#2{%
11022 \hyper@linkurl{#2}{#1}%
11023 }
11024 \def\Hy@undefinedname{UNDEFINED}
11025 \def\hyper@link#1#2#3{%
11026 \Hy@VerboseLinkStart{#1}{#2}%
11027 \ltx@ifundefined{@#1bordercolor}{%

```



```

11028 \let\Hy@tempcolor\relax
11029 }{%
11030 \edef\Hy@tempcolor{\csname @#1bordercolor\endcsname}%
11031 }%
11032 \begingroup
11033 \protected@edef\Hy@testname{#2}%
11034 \ifx\Hy@testname\@empty
11035 \Hy@Warning{%
11036 Empty destination name,\MessageBreak
11037 using '\Hy@undefinedname'%
11038 }%
11039 \let\Hy@testname\Hy@undefinedname
11040 \fi
11041 \pdfmark[{#3}]{%
11042 Color=\Hy@tempcolor,%
11043 linktype={#1},%
11044 AcroHighlight=\@pdfhighlight,%
11045 Border=\@pdfborder,%
11046 BorderStyle=\@pdfborderstyle,%
11047 pdfmark=/ANN,%
11048 Subtype=/Link,%
11049 PDFAFlags=4,%
11050 Dest=\Hy@testname
11051 }%
11052 \endgroup
11053 }
11054 \newtoks\pdf@docset
11055 \def\PDF@FinishDoc{%
11056 \Hy@UseMaketitleInfos
11057 \Hy@Info@GenerateAddons
11058 \let\Hy@temp\@empty
11059 \ifx\@pdfcreationdate\@empty
11060 \else
11061 \def\Hy@temp{CreationDate=\@pdfcreationdate,}%
11062 \fi
11063 \ifx\@pdfmoddate\@empty
11064 \else
11065 \expandafter\def\expandafter\Hy@temp\expandafter{%
11066 \Hy@temp
11067 ModDate=\@pdfmoddate,%
11068 }%
11069 \fi
11070 \ifx\@pdfproducer\relax
11071 \else
11072 \expandafter\def\expandafter\Hy@temp\expandafter{%
11073 \Hy@temp
11074 Producer=\@pdfproducer,%
11075 }%
11076 \fi
11077 \expandafter
11078 \pdfmark\expandafter{%
11079 \Hy@temp
11080 pdfmark=/DOCINFO,%
11081 Title=\@pdftitle,%
11082 Subject=\@pdfsubject,%
11083 Creator=\@pdfcreator,%
11084 Author=\@pdfauthor,%

```

```

11085 Keywords=\@pdfkeywords,%
11086 Trapped=\@pdftrapped
11087 }%
11088 \ifx\HyInfo@Addons\@empty
11089 \else
11090 \pdfmark{%
11091 pdfmark=/DOCINFO,%
11092 Raw={\HyInfo@Addons}%
11093 }%
11094 \fi
11095 \Hy@DisableOption{pdfauthor}%
11096 \Hy@DisableOption{pdftitle}%
11097 \Hy@DisableOption{pdfsubject}%
11098 \Hy@DisableOption{pdfcreator}%
11099 \Hy@DisableOption{pdfcreationdate}%
11100 \Hy@DisableOption{pdfmoddate}%
11101 \Hy@DisableOption{pdfproducer}%
11102 \Hy@DisableOption{pdfkeywords}%
11103 \Hy@DisableOption{pdftrapped}%
11104 \Hy@DisableOption{pdfinfo}%
11105 }
11106 \def\PDF@SetupDoc{%
11107 \def\Hy@temp{}%
11108 \ifx\@pdfstartpage\@empty
11109 \else
11110 \ifx\@pdfstartview\@empty
11111 \else
11112 \edef\Hy@temp{%
11113 ,Page=\@pdfstartpage
11114 ,View=\@pdfstartview
11115 }%
11116 \fi
11117 \fi
11118 \edef\Hy@temp{%
11119 \noexpand\pdfmark{%
11120 pdfmark=/DOCVIEW,%
11121 PageMode=\/\@pdfpagemode
11122 \Hy@temp
11123 }%
11124 }%
11125 \Hy@temp
11126 \ifx\@pdfpagescrop\@empty
11127 \else
11128 \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
11129 \fi
11130 \edef\Hy@temp{%
11131 \ifHy@pdftoolbar\else /HideToolbar true\fi
11132 \ifHy@pdfmenubar\else /HideMenubar true\fi
11133 \ifHy@pdfwindowui\else /HideWindowUI true\fi
11134 \ifHy@pdffitwindow /FitWindow true\fi
11135 \ifHy@pdfcenterwindow /CenterWindow true\fi
11136 \ifHy@pdfdisplaydoctitle /DisplayDocTitle true\fi
11137 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
11138 \Hy@UseNameKey{Direction}\@pdfdirection
11139 \Hy@UseNameKey{ViewArea}\@pdfviewarea
11140 \Hy@UseNameKey{ViewClip}\@pdfviewclip
11141 \Hy@UseNameKey{PrintArea}\@pdfprintarea

```

```

11142 \Hy@UseNameKey{PrintClip}\@pdfprintclip
11143 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
11144 \Hy@UseNameKey{Duplex}\@pdfduplex
11145 \ifx\@pdfpicktraybypdfsize\@empty
11146 \else
11147 /PickTrayByPDFSize \@pdfpicktraybypdfsize
11148 \fi
11149 \ifx\@pdfprintpagerange\@empty
11150 \else
11151 /PrintPageRange[\@pdfprintpagerange]%
11152 \fi
11153 \ifx\@pdfnumcopies\@empty
11154 \else
11155 /NumCopies \@pdfnumcopies
11156 \fi
11157 }%
11158 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
11159 \pdfmark{%
11160 pdfmark=/PUT,%
11161 Raw={%
11162 \string{Catalog\string}<<%
11163 \ifx\Hy@temp\@empty
11164 \else
11165 /ViewerPreferences<<\Hy@temp>>%
11166 \fi
11167 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
11168 \ifx\@pdflang\@empty
11169 \else
11170 /Lang(\@pdflang)%
11171 \fi
11172 \ifx\@baseurl\@empty
11173 \else
11174 /URI<</Base(\Hy@pstringB)>>%
11175 \fi
11176 >>%
11177 }%
11178 }%
11179 }
11180 </pdfmark>
11181 <*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.

```

11182 \newif\ifHy@pdfmarkerror
11183 \def\pdfmark{\@ifnextchar{\pdfmark@}{\pdfmark@[]}}
11184 \def\pdfmark@[#1]#2{%
11185 \Hy@pdfmarkerrorfalse
11186 \edef\@processme{\noexpand\pdf@toks={\the\pdf@defaulttoks}}%
11187 \@processme
11188 \let\pdf@type\relax
11189 \kvsetkeys{PDF}{#2}%
11190 \ifHy@pdfmarkerror
11191 \else
11192 \ifx\pdf@type\relax

```

```

11193 \Hy@WarningNoLine{no pdfmark type specified in #2!!}%
11194 \ifx\#1\%
11195 \else
11196 \pdf@rect{#1}%
11197 \fi
11198 \else
11199 \ifx\#1\%
11200 \literalps@out{%
11201 \the\pdf@toks\space\pdf@type\space pdfmark%
11202 }%
11203 \else
11204 \ltx@ifundefined{@\pdf@linktype color}{%
11205 \Hy@colorlink\@linkcolor
11206 }{%
11207 \expandafter\Hy@colorlink
11208 \csname @\pdf@linktype color\endcsname
11209 }%
11210 \pdf@rect{#1}%
11211 \literalps@out{%
11212 \the\pdf@toks\space\pdf@type\space pdfmark%
11213 }%
11214 \Hy@endcolorlink
11215 \fi
11216 \fi
11217 \fi
11218 }

```

The complicated bit is working out the right enclosing rectangle of some piece of TeX text, needed by the /Rect key. This solution originates with Toby Thain (tobyth@netspace.net.au).

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

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

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

```

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

```

```

11219 \newsavebox{\pdf@box}
11220 \providecommand*{\Hy@setouterhbox}{\sbox}
11221 \providecommand*{\Hy@breaklinksunhbox}{\unhbox}
11222 \def\Hy@DEST{/DEST}
11223 \def\pdf@rect#1{%
11224 \begingroup
11225 \chardef\x=1 %
11226 \def\Hy@temp{#1}%
11227 \ifx\Hy@temp\ltx@empty
11228 \chardef\x=0 %
11229 \else
11230 \def\y{\anchor@spot}%
11231 \ifx\Hy@temp\y
11232 \def\y{\relax}%
11233 \ifx\anchor@spot\y
11234 \chardef\x=0 %
11235 \fi
11236 \fi
11237 \fi
11238 \expandafter\endgroup

```

```

11239 \ifcase\x
11240 \literalps@out{H.S}%
11241 \literalps@out{H.R}%
11242 \else
11243 \leavevmode
11244 \Hy@SaveSpaceFactor
11245 \ifmmode
11246 \def\Hy@LinkMath{$}%
11247 \else
11248 \let\Hy@LinkMath\ltx@empty
11249 \fi
11250 \ifHy@breaklinks
11251 \Hy@setouterhbox\pdf@box{%
11252 \Hy@RestoreSpaceFactor
11253 \Hy@LinkMath
11254 \Hy@AllowHyphens#1\Hy@xspace@end
11255 \Hy@LinkMath
11256 \Hy@SaveSpaceFactor
11257 }%
11258 \else
11259 \sbox\pdf@box{%
11260 \Hy@RestoreSpaceFactor
11261 \Hy@LinkMath
11262 #1\Hy@xspace@end
11263 \Hy@LinkMath
11264 \Hy@SaveSpaceFactor
11265 }%
11266 \fi
11267 \dimen@ \ht\pdf@box
11268 \ifdim\dp\pdf@box=\z@
11269 \literalps@out{H.S}%
11270 \else
11271 \lower\dp\pdf@box\hbox{\literalps@out{H.S}}%
11272 \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...).

```

11273 \ifHy@breaklinks
11274 \ifhmode
11275 \Hy@breaklinksunhbox\pdf@box
11276 \else
11277 \box\pdf@box
11278 \fi
11279 \else
11280 \expandafter\box\pdf@box
11281 \fi

```

but if it can have multiple paragraphs you'd need one of these, but in that case the measured box size would be wrong anyway.

```

\ifHy@breaklinks#1\else\box\pdf@box\fi
\ifHy@breaklinks{#1}\else\box\pdf@box\fi

11282 \ifdim\dimen@=\z@
11283 \literalps@out{H.R}%
11284 \else
11285 \raise\dimen@\hbox{\literalps@out{H.R}}%
11286 \fi
11287 \Hy@RestoreSpaceFactor

```

```

11288 \fi
11289 \ifx\pdf@type\Hy@DEST
11290 \else
11291 \pdf@addtoksx{H.B}%
11292 \fi
11293 }

```

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.

```

11294 \newtoks\pdf@toks
11295 \newtoks\pdf@defaulttoks
11296 \pdf@defaulttoks={}%
11297 \def\pdf@addtoks#1#2{%
11298 \edef\@processme{\pdf@toks{\the\pdf@toks/#2 #1}}%
11299 \@processme
11300 }
11301 \def\pdf@addtoksx#1{%
11302 \edef\@processme{\pdf@toks{\the\pdf@toks\space #1}}%
11303 \@processme
11304 }
11305 \def\PDFdefaults#1{%
11306 \pdf@defaulttoks={#1}%
11307 }

```

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

```

11308 % what is the type of pdfmark?
11309 \define@key{PDF}{pdfmark}{\def\pdf@type{#1}}
11310 % what is the link type?
11311 \define@key{PDF}{linktype}{\def\pdf@linktype{#1}}
11312 \def\pdf@linktype{link}
11313 % parameter is a stream of PDF
11314 \define@key{PDF}{Raw}{\pdf@addtoksx{#1}}
11315 % parameter is a name
11316 \define@key{PDF}{Action}{\pdf@addtoks{#1}{Action}}
11317 % parameter is a array
11318 \define@key{PDF}{Border}{%
11319 \edef\Hy@temp{#1}%
11320 \ifx\Hy@temp\@empty
11321 \else
11322 \pdf@addtoks{[#1]\Hy@BorderArrayPatch}{Border}% hash-ok
11323 \fi
11324 }
11325 \let\Hy@BorderArrayPatch\@empty
11326 % parameter is a dictionary
11327 \define@key{PDF}{BorderStyle}{%
11328 \edef\Hy@temp{#1}%
11329 \ifx\Hy@temp\@empty
11330 \else
11331 \pdf@addtoks{<<#1>>}{BS}%
11332 \fi
11333 }
11334 % parameter is a array
11335 \define@key{PDF}{Color}{%
11336 \ifx\relax#1\relax
11337 \else
11338 \pdf@addtoks{[#1]}{Color}% hash-ok
11339 \fi
11340 }

```

```

11341 % parameter is a string
11342 \define@key{PDF}{Contents}{\pdf@addtoks{(#1)}{Contents}}
11343 % parameter is a integer
11344 \define@key{PDF}{Count}{\pdf@addtoks{#1}{Count}}
11345 % parameter is a array
11346 \define@key{PDF}{CropBox}{\pdf@addtoks{[#1]}{CropBox}}% hash-ok
11347 % parameter is a string
11348 \define@key{PDF}{DOSFile}{\pdf@addtoks{(#1)}{DOSFile}}
11349 % parameter is a string or file
11350 \define@key{PDF}{DataSource}{\pdf@addtoks{(#1)}{DataSource}}
11351 % parameter is a destination
11352 \define@key{PDF}{Dest}{%
11353   \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
11354   \ifx\Hy@pstringDest\@empty
11355     \Hy@pdfmarkerrortrue
11356     \Hy@Warning{Destination with empty name ignored}%
11357   \else
11358     \pdf@addtoks{(\Hy@pstringDest) cvn}{Dest}%
11359   \fi
11360 }
11361 \define@key{PDF}{DestAnchor}{%
11362   \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
11363   \ifx\Hy@pstringDest\@empty
11364     \Hy@pdfmarkerrortrue
11365     \Hy@Warning{Destination with empty name ignored}%
11366   \else
11367     \pdf@addtoks{(\Hy@pstringDest) cvn}{Dest}%
11368   \fi
11369 }
11370 % parameter is a string
11371 \define@key{PDF}{Dir}{\pdf@addtoks{(#1)}{Dir}}
11372 % parameter is a string
11373 \define@key{PDF}{File}{\pdf@addtoks{(#1)}{File}}
11374 % parameter is a int
11375 \define@key{PDF}{Flags}{\pdf@addtoks{#1}{Flags}}
11376 \define@key{PDF}{PDFAFlags}{%
11377   \ifHy@pdfa
11378     \pdf@addtoks{#1}{F}%
11379   \fi
11380 }
11381 % parameter is a name
11382 \define@key{PDF}{AcroHighlight}{%
11383   \begingroup
11384     \edef\x{#1}%
11385     \expandafter\endgroup\ifx\x\@empty
11386     \else
11387       \pdf@addtoks{#1}{H}%
11388     \fi
11389 }
11390 % parameter is a string
11391 \define@key{PDF}{ID}{\pdf@addtoks{[#1]}{ID}}% hash-ok
11392 % parameter is a string
11393 \define@key{PDF}{MacFile}{\pdf@addtoks{(#1)}{MacFile}}
11394 % parameter is a string
11395 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
11396 % parameter is a string
11397 \define@key{PDF}{Op}{\pdf@addtoks{(#1)}{Op}}

```

```

11398 % parameter is a Boolean
11399 \define@key{PDF}{Open}{\pdf@addtoks{#1}{Open}}
11400 % parameter is a integer or name
11401 \define@key{PDF}{Page}{\pdf@addtoks{#1}{Page}}
11402 % parameter is a name
11403 \define@key{PDF}{PageMode}{\pdf@addtoks{#1}{PageMode}}
11404 % parameter is a string
11405 \define@key{PDF}{Params}{\pdf@addtoks{(#1)}{Params}}
11406 % parameter is a array
11407 \define@key{PDF}{Rect}{\pdf@addtoks{[#1]}{Rect}}% hash-ok
11408 % parameter is a integer
11409 \define@key{PDF}{SrcPg}{\pdf@addtoks{#1}{SrcPg}}
11410 % parameter is a name
11411 \define@key{PDF}{Subtype}{\pdf@addtoks{#1}{Subtype}}
11412 % parameter is a string
11413 \define@key{PDF}{Title}{\pdf@addtoks{(#1)}{Title}}
11414 % parameter is a string
11415 \define@key{PDF}{Unix}{\pdf@addtoks{(#1)}{Unix}}
11416 % parameter is a string
11417 \define@key{PDF}{UnixFile}{\pdf@addtoks{(#1)}{UnixFile}}
11418 % parameter is an array
11419 \define@key{PDF}{View}{\pdf@addtoks{[#1]}{View}}% hash-ok
11420 % parameter is a string
11421 \define@key{PDF}{WinFile}{\pdf@addtoks{(#1)}{WinFile}}

```

These are the keys used in the DOCINFO section.

```

11422 \define@key{PDF}{Author}{\pdf@addtoks{(#1)}{Author}}
11423 \define@key{PDF}{Creator}{\pdf@addtoks{(#1)}{Creator}}
11424 \define@key{PDF}{CreationDate}{\pdf@addtoks{(#1)}{CreationDate}}
11425 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
11426 \define@key{PDF}{Producer}{\pdf@addtoks{(#1)}{Producer}}
11427 \define@key{PDF}{Subject}{\pdf@addtoks{(#1)}{Subject}}
11428 \define@key{PDF}{Keywords}{\pdf@addtoks{(#1)}{Keywords}}
11429 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
11430 \define@key{PDF}{Base}{\pdf@addtoks{(#1)}{Base}}
11431 \define@key{PDF}{URI}{\pdf@addtoks{#1}{URI}}
11432 \define@key{PDF}{Trapped}{%
11433   \edef\Hy@temp{#1}%
11434   \ifx\Hy@temp\@empty
11435     \else
11436       \pdf@addtoks{/#1}{Trapped}%
11437     \fi
11438 }
11439
11440 </pdfmarkbase>
11441 <*pdfmark>
11442 \def\Acrobatmenu#1#2{%
11443   \Hy@Acrobatmenu{#1}{#2}{%
11444     \pdfmark[{#2}]{%
11445       linktype=menu,%
11446       pdfmark=/ANN,%
11447       AcroHighlight=\@pdfhighlight,%
11448       Border=\@pdfborder,%
11449       BorderStyle=\@pdfborderstyle,%
11450       Action={<< /Subtype /Named /N /#1 >>},%
11451       Subtype=/Link,%
11452       PDFAFlags=4%
11453     }%

```



```
11454 }%
11455 }
```

And now for some useful examples:

```
11456 \def\PDFNextPage{\@ifnextchar{\PDFNextPage@}{\PDFNextPage@[]}}
11457 \def\PDFNextPage@[#1]#2{%
11458   \pdfmark[{#2}]{%
11459     #1,%
11460     Border=\@pdfborder,%
11461     BorderStyle=\@pdfborderstyle,%
11462     Color=.2 .1 .5,%
11463     pdfmark=/ANN,%
11464     Subtype=/Link,%
11465     PDFAFlags=4,%
11466     Page=/Next%
11467   }%
11468 }
11469 \def\PDFPreviousPage{%
11470   \@ifnextchar{\PDFPreviousPage@}{\PDFPreviousPage@[]}%
11471 }
11472 \def\PDFPreviousPage@[#1]#2{%
11473   \pdfmark[{#2}]{%
11474     #1,%
11475     Border=\@pdfborder,%
11476     BorderStyle=\@pdfborderstyle,%
11477     Color=.4 .4 .1,%
11478     pdfmark=/ANN,%
11479     Subtype=/Link,%
11480     PDFAFlags=4,%
11481     Page=/Prev%
11482   }%
11483 }
11484 \def\PDFOpen#1{%
11485   \pdfmark{#1,pdfmark=/DOCVIEW}%
11486 }
```

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

```
11487 \def\hyper@linkurl#1#2{%
11488   \begingroup
11489     \Hy@pstringdef\Hy@pstringURI{#2}%
11490     \hyper@chars
11491     \leavevmode
11492     \pdfmark[{#1}]{%
11493       pdfmark=/ANN,%
11494       linktype=url,%
11495       AcroHighlight=\@pdfhighlight,%
11496       Border=\@pdfborder,%
11497       BorderStyle=\@pdfborderstyle,%
11498       Color=\@urlbordercolor,%
11499       Action={<<%
11500         /Subtype/URI%
11501         /URI(\Hy@pstringURI)%
11502         \ifHy@href@ismap
11503           /IsMap true%
11504         \fi
11505       >>},%
11506       Subtype=/Link,%
11507       PDFAFlags=4%
```

```

11508 }%
11509 \endgroup
11510 }
11511 \def\hyper@linkfile#1#2#3{%
11512 \begingroup
11513 \def\Hy@pstringF{#2}%
11514 \Hy@CleanupFile\Hy@pstringF
11515 \Hy@pstringdef\Hy@pstringF\Hy@pstringF
11516 \Hy@pstringdef\Hy@pstringD{#3}%
11517 \Hy@MakeRemoteAction
11518 \leavevmode
11519 \pdfmark[{#1}]{%
11520 pdfmark=/ANN,%
11521 Subtype=/Link,%
11522 PDFAFlags=4,%
11523 AcroHighlight=\@pdfhighlight,%
11524 Border=\@pdfborder,%
11525 BorderStyle=\@pdfborderstyle,%
11526 linktype=file,%
11527 Color=\@filebordercolor,%
11528 Action={%
11529 <<%
11530 /S/GoToR%
11531 \Hy@SetNewWindow
11532 /F(\Hy@pstringF)%
11533 /D%
11534 \ifx\#3\%
11535 [\Hy@href@page\@pdfremotestartview]%
11536 \else
11537 (\Hy@pstringD)cvn%
11538 \fi
11539 \Hy@href@nextactionraw
11540 >>%
11541 }%
11542 }%
11543 \endgroup
11544 }
11545 \def\@hyper@launch run:#1\#2#3{%
11546 \begingroup
11547 \Hy@pstringdef\Hy@pstringF{#1}%
11548 \Hy@pstringdef\Hy@pstringP{#3}%
11549 \leavevmode
11550 \pdfmark[{#2}]{%
11551 pdfmark=/ANN,%
11552 Subtype=/Link,%
11553 PDFAFlags=4,%
11554 AcroHighlight=\@pdfhighlight,%
11555 Border=\@pdfborder,%
11556 BorderStyle=\@pdfborderstyle,%
11557 linktype=run,%
11558 Color=\@runbordercolor,%
11559 Action={%
11560 <<%
11561 /S/Launch%
11562 \Hy@SetNewWindow
11563 /F(\Hy@pstringF)%
11564 \ifx\#3\%

```

```

11565      \else
11566      /Win<</P(\Hy@pstringP)/F(\Hy@pstringF)>>%
11567      \fi
11568      \Hy@href@nextactionraw
11569      >>%
11570    }%
11571  }%
11572 \endgroup
11573 }
11574 </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.

```

11575 <*dvips>
11576 \providecommand*{\XR@ext}{pdf}
11577 \let\Hy@raisedlink\ltx@empty
11578 \def\literalps@out#1{\special{ps:SDict begin #1 end}}%
11579 \def\headerps@out#1{\special{! #1}}%
11580 \input{pdfmark.def}%
11581 \ifx\@pdfproducer\relax
11582   \def\@pdfproducer{dvips + Distiller}%
11583 \fi
11584 \providecommand*\@pdfborder{0 0 1}
11585 \providecommand*\@pdfborderstyle{}
11586 \providecommand*\@pdfview{XYZ}
11587 \providecommand*\@pdfviewparams{ H.V}
11588 \def\Hy@BorderArrayPatch{BorderArrayPatch}
11589 \g@addto@macro\Hy@FirstPageHook{%
11590   \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.

```

11591 /DvipsToPDF{72.27 mul Resolution div} def%
11592 /PDFToDvips{72.27 div Resolution mul} def%
11593 /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.

```

11594   /BorderArrayPatch{%

```

```

11595    [exch{%
11596      dup dup type/integertype eq exch type/realtype eq or%
11597      {BPToDvips}if%
11598    }forall]%
11599  }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.

```

11600  /HyperBorder {1 PDFToDvips} def%
11601  /H.V {pdf@hoff pdf@voff null} def%
11602  /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

```

11603  /H.S {%
11604    currentpoint %
11605    HyperBorder add /pdf@lly exch def %
11606    dup DvipsToPDF 72 add /pdf@hoff exch def %
11607    HyperBorder sub /pdf@llx exch def%
11608  } def%

```

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

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

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

```

11609  /H.L {%
11610    2 sub dup%
11611    /HyperBasePt exch def %
11612    PDFToDvips /HyperBaseDvips exch def %
11613    currentpoint %
11614    HyperBaseDvips sub /pdf@ury exch def%
11615    /pdf@urx exch def%
11616  } def%
11617  /H.A {%
11618    H.L %
11619    % |pdf@voff| = the distance from the top of the page to a point
11620    % |\baselineskip| above the current point in PDF coordinates
11621    currentpoint exch pop %
11622    vsize 72 sub exch DvipsToPDF %
11623    HyperBasePt sub % baseline skip
11624    sub /pdf@voff exch def%
11625  } def%
11626  /H.R {%
11627    currentpoint %
11628    HyperBorder sub /pdf@ury exch def %
11629    HyperBorder add /pdf@urx exch def %
11630    % |pdf@voff| = the distance from the top of the page to the current point, in
11631    % PDF coordinates
11632    currentpoint exch pop vsize 72 sub %
11633    exch DvipsToPDF sub /pdf@voff exch def%
11634  } def%
11635 }%
11636 }
11637 \AtBeginShipoutFirst{%
11638   \ifHy@setpagesize

```

```

11639 \begingroup
11640 \ifundefined{stockwidth}{%
11641 \ifdim\paperwidth>\z@
11642 \ifdim\paperheight>\z@
11643 \special{papersize=\the\paperwidth,\the\paperheight}%
11644 \fi
11645 \fi
11646 }{%
11647 \ifdim\stockwidth>\z@
11648 \ifdim\stockheight>\z@
11649 \special{papersize=\the\stockwidth,\the\stockheight}%
11650 \fi
11651 \fi
11652 }%
11653 \endgroup
11654 \fi
11655 \Hy@DisableOption{setpagesize}%
11656 }
11657 </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.

```

11658 <*vtexpdfmark>
11659 \providecommand*{\XR@ext}{pdf}
11660 \let\Hy@raisedlink\ltx@empty
11661 \def\literalps@out#1{\special{pS:#1}}%
11662 \def\headerps@out#1{\immediate\special{pS:#1}}%
11663 \input{pdfmark.def}%
11664 \ifx\@pdfproducer\relax
11665 \ifnum\OpMode=\@ne
11666 \def\@pdfproducer{VTeX}%
11667 \else
11668 \def\@pdfproducer{VTeX + Distiller}%
11669 \fi
11670 \fi
11671 \providecommand*\@pdfborder{0 0 1}
11672 \providecommand*\@pdfborderstyle{}
11673 \providecommand*\@pdfview{XYZ}
11674 \providecommand*\@pdfviewparams{ H.V}

11675 \g@addto@macro\Hy@FirstPageHook{%
11676 \headerps@out{%
11677 /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.

```

11678 /HyperBorder {1} def%
11679 /H.V {pdf@hoff pdf@voff null} def%
11680 /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:  $\text{pdf@lly} = Y_c - \text{HyperBorder}$ ,  $\text{pdf@hoff} = X_c + 72$ ,  $\text{pdf@llx} = X_c - \text{HyperBorder}$

```

11681 /H.S {%
11682   currentpoint %
11683   HyperBorder sub%
11684   /pdf@lly exch def %
11685   dup 72 add /pdf@hoff exch def %
11686   HyperBorder sub%
11687   /pdf@llx exch def%
11688 } def%

```

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

```

11689 /H.L {%
11690   2 sub%
11691   /HyperBasePt exch def %
11692   currentpoint %
11693   HyperBasePt add HyperBorder add%
11694   /pdf@ury exch def %
11695   HyperBorder add%
11696   /pdf@urx exch def%
11697 } def%
11698 /H.A {%
11699   H.L %
11700   currentpoint exch pop %
11701   vsize 72 sub exch %
11702   HyperBasePt add add%
11703   /pdf@voff exch def%
11704 } def%

```

$\text{pdf@ury} = Y_c + \text{HyperBorder}$ ,  $\text{pdf@urx} = X_c + \text{HyperBorder}$

```

11705 /H.R {%
11706   currentpoint %
11707   HyperBorder add%
11708   /pdf@ury exch def %
11709   HyperBorder add%
11710   /pdf@urx exch def %
11711   currentpoint exch pop vsize 72 sub add%
11712   /pdf@voff exch def%
11713 } def%
11714 }%
11715 }
11716 </vtexpdfmark>

```

## 46.11 Textures

```

11717 <*textures>
11718 \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.

```

11719 \begingroup
11720 \obeylines %
11721 \gdef\Hy@ps@CR{\noexpand

```

```

11722 }%
11723 \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`.

```

11724 \def\literalps@out#1{%
11725   \special{postscript 0 0 transform}%
11726   \special{rawpostscript itransform moveto\Hy@ps@CR #1}%
11727 }%
11728 %

```

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.

```

11729 \def\headerps@out#1{%
11730   \special{%
11731     prepostscript TeXdict begin\Hy@ps@CR
11732       #1\Hy@ps@CR
11733     end%
11734   }%
11735 }%
11736 %

```

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.

```

11737 \g@addto@macro\Hy@FirstPageHook{%
11738   \headerps@out{%
11739     /betterpdfmark {%
11740       systemdict begin %
11741         dup /BP eq%
11742         {cleartomark gsave nulldevice []}%
11743         {dup /EP eq%
11744           {cleartomark cleartomark grestore}%
11745           {cleartomark}%
11746         ifelse%
11747       }ifelse %
11748     end%
11749   }def\Hy@ps@CR
11750   ___pdfmark___ not{/pdfmark /betterpdfmark load def}if%
11751 }% end of \headerps@out
11752 }% end of \AtBeginShipoutFirst
11753 %
11754 \input{pdfmark.def}%
11755 %
11756 \ifx\@pdfproducer\relax
11757   \def\@pdfproducer{Textures + Distiller}%
11758 \fi
11759 \providecommand*\@pdfborder{0 0 1}
11760 \providecommand*\@pdfborderstyle{}

```

```

11761 \providecommand*\@pdfview{XYZ}
11762 \providecommand*\@pdfviewparams{ H.V}
11763 %

```

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  $\TeX$ .

```

11764 \Hy@AtBeginDocument{%
11765   \headerps@out{%

```

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

```

11766   /vsize {\Hy@pageheight} def%
11767   /DvipsToPDF {} def%
11768   /PDFToDvips {} def%
11769   /BPTToDvips {} def%
11770   /HyperBorder { 1 PDFToDvips } def\Hy@ps@CR
11771   /H.V {pdf@hoff pdf@voff null} def\Hy@ps@CR
11772   /H.B {/Rect[pdf@llx pdf@lly pdf@urx pdf@ury]} def\Hy@ps@CR
11773   /H.S {%
11774     currentpoint %
11775     HyperBorder add /pdf@lly exch def %
11776     dup DvipsToPDF 72 add /pdf@hoff exch def %
11777     HyperBorder sub /pdf@llx exch def%
11778   } def\Hy@ps@CR
11779   /H.L {%
11780     2 sub %
11781     PDFToDvips /HyperBase exch def %
11782     currentpoint %
11783     HyperBase sub /pdf@ury exch def%
11784     /pdf@urx exch def%
11785   } def\Hy@ps@CR
11786   /H.A {%
11787     H.L %
11788     currentpoint exch pop %
11789     vsize 72 sub exch DvipsToPDF %
11790     HyperBase sub % baseline skip
11791     sub /pdf@voff exch def%
11792   } def\Hy@ps@CR
11793   /H.R {%
11794     currentpoint %
11795     HyperBorder sub /pdf@ury exch def %
11796     HyperBorder add /pdf@urx exch def %
11797     currentpoint exch pop vsize 72 sub %
11798     exch DvipsToPDF sub /pdf@voff exch def%
11799   } def\Hy@ps@CR
11800   }%
11801 }

11802 \Hy@AtBeginDocument{%
11803   \ifHy@colorlinks
11804     \headerps@out{/PDFBorder{/Border [0 0 0]}def}%
11805   \fi
11806 }

```

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.



```

11807 \expandafter\let\expandafter\keepPDF@SetupDoc
11808 \csname PDF@SetupDoc\endcsname
11809 \def\PDF@SetupDoc{%
11810 \ifx\@baseurl\@empty
11811 \else
11812 \special{html:<base href="\@baseurl">}%
11813 \fi
11814 \keepPDF@SetupDoc
11815 }
11816 \Hy@WrapperDef\hyper@anchor#1{%
11817 \Hy@SaveLastskip
11818 \Hy@VerboseAnchor{#1}%
11819 \begingroup
11820 \let\protect=\string
11821 \special{html:<a name=%
11822 \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
11823 \endgroup
11824 \Hy@activeanchortrue
11825 \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
11826 \special{html:</a>}%
11827 \Hy@activeanchorfalse
11828 \Hy@RestoreLastskip
11829 }
11830 \Hy@WrapperDef\hyper@anchorstart#1{%
11831 \Hy@SaveLastskip
11832 \Hy@VerboseAnchor{#1}%
11833 \begingroup
11834 \hyper@chars
11835 \special{html:<a name=%
11836 \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
11837 \endgroup
11838 \Hy@activeanchortrue
11839 }
11840 \def\hyper@anchorend{%
11841 \special{html:</a>}%
11842 \Hy@activeanchorfalse
11843 \Hy@RestoreLastskip
11844 }
11845 \def\@urltype{url}
11846 \def\hyper@linkstart#1#2{%
11847 \Hy@VerboseLinkStart{#1}{#2}%
11848 \expandafter\Hy@colorlink\csname @#1color\endcsname
11849 \def\Hy@tempa{#1}%
11850 \ifx\Hy@tempa\@urltype
11851 \special{html:<a href=\hyper@quote#2\hyper@quote>}%
11852 \else
11853 \begingroup
11854 \hyper@chars
11855 \special{%
11856 html:<a href=%
11857 \hyper@quote\# \HyperDestNameFilter{#2}\hyper@quote>%
11858 }%
11859 \endgroup
11860 \fi
11861 }
11862 \def\hyper@linkend{%
11863 \special{html:</a>}%

```

```

11864 \Hy@endcolorlink
11865 }
11866 \def\hyper@linkfile#1#2#3{%
11867 \hyper@linkurl{#1}{%
11868 \Hy@linkfileprefix#2\ifx\\#3\\\else\##3\fi
11869 }%
11870 }
11871 \def\hyper@linkurl#1#2{%
11872 \leavevmode
11873 \ifHy@raiselinks
11874 \Hy@SaveSpaceFactor
11875 \Hy@SaveSavedSpaceFactor
11876 \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
11877 \Hy@RestoreSavedSpaceFactor
11878 \@linkdim\dp\@tempboxa
11879 \lower\@linkdim\hbox{%
11880 \hyper@chars
11881 \special{html:<a href=\hyper@quote#2\hyper@quote>}%
11882 }%
11883 \Hy@colorlink\@urlcolor
11884 \Hy@RestoreSpaceFactor
11885 #1\Hy@xspace@end
11886 \Hy@SaveSpaceFactor
11887 \@linkdim\ht\@tempboxa
11888 \advance\@linkdim by -6.5\p@
11889 \raise\@linkdim\hbox{\special{html:</a>}}%
11890 \Hy@endcolorlink
11891 \Hy@RestoreSpaceFactor
11892 \else
11893 \begingroup
11894 \hyper@chars
11895 \special{html:<a href=\hyper@quote#2\hyper@quote>}%
11896 \Hy@colorlink\@urlcolor#1\Hy@xspace@end
11897 \special{html:</a>}%
11898 \Hy@endcolorlink
11899 \endgroup
11900 \fi
11901 }

```

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

```

11902 \def\hyper@link#1#2#3{%
11903 \Hy@VerboseLinkStart{#1}{#2}%
11904 \hyper@linkurl{#3}{\# \Hy@HyperDestNameFilter{#2}}%
11905 }
11906 \def\hyper@image#1#2{%
11907 \begingroup
11908 \hyper@chars
11909 \special{html:<img src=\hyper@quote#1\hyper@quote>}%
11910 \endgroup
11911 }
11912 </textures>

```

## 46.12 dvipsone

```

11913 % \subsection{dvipsone driver}
11914 % Over-ride the default setup macro in pdfmark driver to use Y\&Y
11915 % |\special| commands.
11916 <*dvipsone>

```

```

11917 \providecommand*{\XR@ext}{pdf}
11918 \let\Hy@raisedlink\ltx@empty
11919 \providecommand*\@pdfborder{0 0 1}
11920 \providecommand*\@pdfborderstyle{}
11921 \def\literalps@out#1{\special{ps:#1}}%
11922 \def\headerps@out#1{\special{headertext=#1}}%
11923 \input{pdfmark.def}%
11924 \ifx\@pdfproducer\relax
11925   \def\@pdfproducer{dvipsone + Distiller}%
11926 \fi
11927 \HyInfo@AddonUnsupportedtrue
11928 \def\PDF@FinishDoc{%
11929   \Hy@UseMaketitleInfos
11930   \HyInfo@TrappedUnsupported
11931   \special{PDF: Keywords \@pdfkeywords}%
11932   \special{PDF: Title \@pdftitle}%
11933   \special{PDF: Creator \@pdfcreator}%
11934   \ifx\@pdfcreationdate\@empty
11935     \else
11936       \special{PDF: CreationDate \@pdfcreationdate}%
11937     \fi
11938   \ifx\@pdfmoddate\@empty
11939     \else
11940       \special{PDF: ModDate \@pdfmoddate}%
11941     \fi
11942   \special{PDF: Author \@pdfauthor}%
11943   \ifx\@pdfproducer\relax
11944     \else
11945       \special{PDF: Producer \@pdfproducer}%
11946     \fi
11947   \special{PDF: Subject \@pdfsubject}%
11948   \Hy@DisableOption{pdfauthor}%
11949   \Hy@DisableOption{pdftitle}%
11950   \Hy@DisableOption{pdfsubject}%
11951   \Hy@DisableOption{pdfcreator}%
11952   \Hy@DisableOption{pdfcreationdate}%
11953   \Hy@DisableOption{pdfmoddate}%
11954   \Hy@DisableOption{pdfproducer}%
11955   \Hy@DisableOption{pdfkeywords}%
11956   \Hy@DisableOption{pdftrapped}%
11957   \Hy@DisableOption{pdfinfo}%
11958 }
11959 \def\PDF@SetupDoc{%
11960   \def\Hy@temp{}%
11961   \ifx\@pdfstartpage\@empty
11962     \else
11963       \ifx\@pdfstartview\@empty
11964         \else
11965           \edef\Hy@temp{%
11966             ,Page=\@pdfstartpage
11967             ,View=\@pdfstartview
11968           }%
11969         \fi
11970       \fi
11971   \edef\Hy@temp{%
11972     \noexpand\pdfmark{%
11973       pdfmark=/DOCVIEW,%

```

```

11974     PageMode=/\@pdfpagemode
11975     \Hy@temp
11976 }%
11977 }%
11978 \Hy@temp
11979 \ifx\@pdfpagescrop\@empty
11980 \else
11981   \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
11982 \fi
11983 \edef\Hy@temp{%
11984   \ifHy@pdftoolbar\else /HideToolbar true\fi
11985   \ifHy@pdfmenubar\else /HideMenubar true\fi
11986   \ifHy@pdfwindowui\else /HideWindowUI true\fi
11987   \ifHy@pdffitwindow /FitWindow true\fi
11988   \ifHy@pdfcenterwindow /CenterWindow true\fi
11989   \ifHy@pdfdisplaydoctitle /DisplayDocTitle true\fi
11990   \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
11991   \Hy@UseNameKey{Direction}\@pdfdirection
11992   \Hy@UseNameKey{ViewArea}\@pdfviewarea
11993   \Hy@UseNameKey{ViewClip}\@pdfviewclip
11994   \Hy@UseNameKey{PrintArea}\@pdfprintarea
11995   \Hy@UseNameKey{PrintClip}\@pdfprintclip
11996   \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
11997   \Hy@UseNameKey{Duplex}\@pdfduplex
11998   \ifx\@pdfpicktraybypdfsize\@empty
11999   \else
12000     /PickTrayByPDFSize \@pdfpicktraybypdfsize
12001   \fi
12002   \ifx\@pdfprintpagerange\@empty
12003   \else
12004     /PrintPageRange[\@pdfprintpagerange]%
12005   \fi
12006   \ifx\@pdfnumcopies\@empty
12007   \else
12008     /NumCopies \@pdfnumcopies
12009   \fi
12010 }%
12011 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
12012 \pdfmark{%
12013   pdfmark=/PUT,%
12014   Raw={%
12015     \string{Catalog\string}<<%
12016     \ifx\Hy@temp\@empty
12017     \else
12018       /ViewerPreferences<<\Hy@temp>>%
12019     \fi
12020     \Hy@UseNameKey{PageLayout}\@pdfpagelayout
12021     \ifx\@pdflang\@empty
12022     \else
12023       /Lang(\@pdflang)%
12024     \fi
12025     \ifx\@baseurl\@empty
12026     \else
12027       /URI<</Base(\Hy@pstringB)>>%
12028     \fi
12029     >>%
12030   }%

```

```

12031 }%
12032 }
12033 \providecommand*\@pdfview{XYZ}
12034 \providecommand*\@pdfviewparams{ %
12035   gsave revscl currentpoint grestore %
12036   72 add exch pop null exch null%
12037 }
12038 \def\Hy@BorderArrayPatch{BorderArrayPatch}

```

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

```

12039 \g@addto@macro\Hy@FirstPageHook{%
12040   \headerps@out{%

```

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

```

12041   /DvipsToPDF { 65781 div } def%
12042   /PDFToDvips { 65781 mul } def%
12043   /BPToDvips{65781 mul}def%
12044   /HyperBorder { 1 PDFToDvips } def%
12045   /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.

```

12046   /BorderArrayPatch{%
12047     [exch{%
12048       dup dup type/integertype eq exch type/realtype eq or%
12049       {BPToDvips}if%
12050     }forall]%
12051   }def%
12052   /H.S {%
12053     currentpoint %
12054     HyperBorder add /pdf@lly exch def %
12055     dup DvipsToPDF 72 add /pdf@hoff exch def %
12056     HyperBorder sub /pdf@llx exch def%
12057   } def%
12058   /H.L {%
12059     2 sub %
12060     PDFToDvips /HyperBase exch def %
12061     currentpoint %
12062     HyperBase sub /pdf@ury exch def%
12063     /pdf@urx exch def%
12064   } def%
12065   /H.A {%
12066     H.L %
12067     currentpoint exch pop %
12068     HyperBase sub % baseline skip
12069     DvipsToPDF /pdf@voff exch def%
12070   } def%
12071   /H.R {%
12072     currentpoint %
12073     HyperBorder sub /pdf@ury exch def %
12074     HyperBorder add /pdf@urx exch def %
12075     currentpoint exch pop DvipsToPDF /pdf@voff exch def%
12076   } def%
12077 }%

```

```

12078 }
12079 </dvipsone>

```

## 46.13 TeX4ht

```

12080 <*tex4ht>
12081 \providecommand*{\XR@ext}{html}
12082 \let\Hy@raisedlink\ltx@empty
12083 \@ifpackageloaded{tex4ht}{%
12084   \Hy@InfoNoLine{tex4ht is already loaded}%
12085 }{%
12086   \RequirePackage[hTeX4ht]{tex4ht}%
12087 }
12088 \hyperlinkfileprefix{}
12089 \let\PDF@FinishDoc\ltx@empty
12090 \def\PDF@SetupDoc{%
12091   \ifx\@baseurl\@empty
12092     \else
12093       \special{t4ht=<base href="\@baseurl">}%
12094     \fi
12095 }
12096 \Hy@WrapperDef\hyper@anchor#1{%
12097   \Hy@SaveLastskip
12098   \Hy@VerboseAnchor{#1}%
12099   \begingroup
12100     \let\protect=\string
12101     \special{t4ht=<a name=%
12102       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
12103   \endgroup
12104   \Hy@Activeanchortrue
12105   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
12106   \special{t4ht=</a>}%
12107   \Hy@activeanchorfalse
12108   \Hy@RestoreLastskip
12109 }
12110 \Hy@WrapperDef\hyper@anchorstart#1{%
12111   \Hy@SaveLastskip
12112   \Hy@VerboseAnchor{#1}%
12113   \begingroup
12114     \hyper@chars\special{t4ht=<a name=%
12115       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
12116   \endgroup
12117   \Hy@Activeanchortrue
12118 }
12119 \def\hyper@anchorend{%
12120   \special{t4ht=</a>}%
12121   \Hy@activeanchorfalse
12122   \Hy@RestoreLastskip
12123 }
12124 \def\@urlltype{url}
12125 \def\hyper@linkstart#1#2{%
12126   \Hy@VerboseLinkStart{#1}{#2}%
12127   \expandafter\Hy@colorlink\csname @#1color\endcsname
12128   \def\Hy@tempa{#1}%
12129   \ifx\Hy@tempa\@urlltype
12130     \special{t4ht=<a href=\hyper@quote#2\hyper@quote>}%
12131   \else
12132     \begingroup

```

```

12133 \hyper@chars
12134 \special{t4ht=<a href=%
12135 \hyper@quote\#\HyperDestNameFilter{#2}\hyper@quote>}%
12136 \endgroup
12137 \fi
12138 }
12139 \def\hyper@linkend{%
12140 \special{t4ht=</a>}%
12141 \Hy@endcolorlink
12142 }
12143 \def\hyper@linkfile#1#2#3{%
12144 \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\\else\##3\fi}%
12145 }
12146 \def\hyper@linkurl#1#2{%
12147 \leavevmode
12148 \ifHy@raiselinks
12149 \Hy@SaveSpaceFactor
12150 \Hy@SaveSavedSpaceFactor
12151 \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
12152 \Hy@RestoreSavedSpaceFactor
12153 \@linkdim\dp\@tempboxa
12154 \lower\@linkdim\hbox{%
12155 \begingroup
12156 \hyper@chars
12157 \special{%
12158 t4ht=<a href=\hyper@quote#2\hyper@quote>%
12159 }%
12160 \endgroup
12161 }%
12162 \Hy@colorlink\@urlcolor
12163 \Hy@RestoreSpaceFactor
12164 #1\Hy@xspace@end
12165 \Hy@SaveSpaceFactor
12166 \Hy@endcolorlink
12167 \@linkdim\ht\@tempboxa
12168 \advance\@linkdim by -6.5\p@
12169 \raise\@linkdim\hbox{\special{t4ht=</a>}}%
12170 \Hy@RestoreSpaceFactor
12171 \else
12172 \begingroup
12173 \hyper@chars
12174 \special{t4ht=<a href=\hyper@quote#2\hyper@quote>}%
12175 \Hy@colorlink\@urlcolor
12176 #1\Hy@xspace@end
12177 \Hy@endcolorlink
12178 \special{t4ht=</a>}%
12179 \endgroup
12180 \fi
12181 }

```

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

```

12182 \def\hyper@link#1#2#3{%
12183 \Hy@VerboseLinkStart{#1}{#2}%
12184 \hyper@linkurl{#3}{\#\HyperDestNameFilter{#2}}%
12185 }
12186 \def\hyper@image#1#2{%
12187 \begingroup
12188 \hyper@chars

```

```

12189 \special{t4ht=<img src=\hyper@quote#1\hyper@quote>}%
12190 \endgroup
12191 }
12192 \let\autoref\ref
12193 \ifx \rEfLiNK \UnDef
12194 \def\rEfLiNK #1#2{#2}%
12195 \fi
12196 \let\backref\ltx@gobble

Fix for tex4ht.
12197 \AtBeginDocument{%
12198 \expandafter\let\expandafter\Hy@OrgMakeLabel\csname Make:Label\endcsname
12199 \expandafter\def\csname Make:Label\endcsname#1#2{%
12200 \ifhmode
12201 \Hy@SaveSpaceFactor
12202 \else
12203 \global\Hy@SavedSpaceFactor=1000 %
12204 \fi
12205 \Hy@OrgMakeLabel{#1}{%
12206 \Hy@RestoreSpaceFactor
12207 #2\Hy@xspace@end%
12208 \Hy@SaveSpaceFactor
12209 }%
12210 \Hy@RestoreSpaceFactor
12211 }%
12212 }
12213 </tex4ht>
12214 <*tex4htcfg>
12215 \IfFileExists{\jobname.cfg}{\endinput}{}
12216 \Preamble{html}
12217 \begin{document}%
12218 \EndPreamble
12219 \def\TeX{\TeX}
12220 \def\OMEGA{\Omega}
12221 \def\LaTeX{\LaTeX}
12222 \def\LaTeXe{\LaTeX2e}
12223 \def\eTeX{e-TeX}
12224 \def\MF{Metafont}
12225 \def\MP{MetaPost}
12226 </tex4htcfg>

```

## 47 Driver-specific form support

### 47.1 pdfmarks

```

12227 <*pdfmark>
12228 \long\def\@Form[#1]{%
12229 \g@addto@macro\Hy@FirstPageHook{%
12230 \headerps@out{%
12231 [%
12232 /_objdef{pdfDocEncoding}%
12233 /type/dict%
12234 /OBJ pdfmark%
12235 [%
12236 {pdfDocEncoding}%
12237 <<%
12238 /Type/Encoding%
12239 /Differences[%

```



12240 24/breve/caron/circumflex/dotaccent/hungarumlaut/ogonek/ring%  
12241 /tilde %  
12242 39/quotesingle %  
12243 96/grave %  
12244 128/bullet/dagger/daggerdbl/ellipsis/emdash/endash/florin%  
12245 /fraction/guilsinglleft/guilsinglright/minus/perthousand%  
12246 /quotedblbase/quotedblleft/quotedblright/quoteleft%  
12247 /quoteright/quotesinglbase/trademark/fi/fl/Lslash/OE/Scaron%  
12248 /Ydieresis/Zcaron/dotlessi/lslash/oe/scaron/zcaron %  
12249 164/currency %  
12250 166/brokenbar %  
12251 168/dieresis/copyright/ordfeminine %  
12252 172/logicalnot/.notdef/registered/macron/degree/plusminus%  
12253 /twosuperior/threesuperior/acute/mu %  
12254 183/periodcentered/cedilla/onesuperior/ordmasculine %  
12255 188/onequarter/onehalf/threequarters %  
12256 192/Agrave/Aacute/Acircumflex/Atilde/Adieresis/Aring/AE%  
12257 /Ccedilla/Egrave/Eacute/Ecircumflex/Edieresis/Igrave%  
12258 /Iacute/Icircumflex/Idieresis/Eth/Ntilde/Ograve/Oacute%  
12259 /Ocircumflex/Otilde/Odieresis/multiply/Oslash/Ugrave%  
12260 /Uacute/Ucircumflex/Udieresis/Yacute/Thorn/germandbls%  
12261 /agrave/aacute/acircumflex/atilde/adieresis/aring/ae%  
12262 /ccedilla/egrave/eacute/ecircumflex/edieresis/igrave%  
12263 /iacute/icircumflex/idieresis/eth/ntilde/ograde/oacute%  
12264 /ocircumflex/otilde/odieresis/divide/oslash/ugrave/uacute%  
12265 /ucircumflex/udieresis/yacute/thorn/ydieresis%  
12266 ]%  
12267 >>%  
12268 /PUT pdfmark%  
12269 [%  
12270 /\_\_objdef{ZaDb}%  
12271 /type/dict%  
12272 /OBJ pdfmark%  
12273 [%  
12274 {ZaDb}%  
12275 <<%  
12276 /Type/Font%  
12277 /Subtype/Type1%  
12278 /Name/ZaDb%  
12279 /BaseFont/ZapfDingbats%  
12280 >>%  
12281 /PUT pdfmark%  
12282 [%  
12283 /\_\_objdef{Helv}%  
12284 /type/dict%  
12285 /OBJ pdfmark%  
12286 [%  
12287 {Helv}%  
12288 <<%  
12289 /Type/Font%  
12290 /Subtype/Type1%  
12291 /Name/Helv%  
12292 /BaseFont/Helvetica%  
12293 /Encoding{pdfDocEncoding}%  
12294 >>%  
12295 /PUT pdfmark%  
12296 [%

```

12297  /__objdef{aform}%
12298  /type/dict%
12299  /OBJ pdfmark%
12300  [%
12301  /__objdef{afields}%
12302  /type/array%
12303  /OBJ pdfmark%
12304  {%
12305  [%
12306    /BBox[0 0 100 100]%
12307    /__objdef{Check}%
12308    /BP pdfmark %
12309    1 0 0 setrgbcolor%
12310    /ZapfDingbats 80 selectfont %
12311    20 20 moveto%
12312    (4)show%
12313    [/EP pdfmark%
12314    [%
12315      /BBox[0 0 100 100]%
12316      /__objdef{Cross}%
12317      /BP pdfmark %
12318      1 0 0 setrgbcolor%
12319      /ZapfDingbats 80 selectfont %
12320      20 20 moveto%
12321      (8)show%
12322      [/EP pdfmark%
12323      [%
12324        /BBox[0 0 250 100]%
12325        /__objdef{Submit}%
12326        /BP pdfmark %
12327        0.6 setgray %
12328        0 0 250 100 rectfill %
12329        1 setgray %
12330        2 2 moveto %
12331        2 98 lineto %
12332        248 98 lineto %
12333        246 96 lineto %
12334        4 96 lineto %
12335        4 4 lineto %
12336        fill %
12337        0.34 setgray %
12338        248 98 moveto %
12339        248 2 lineto %
12340        2 2 lineto %
12341        4 4 lineto %
12342        246 4 lineto %
12343        246 96 lineto %
12344        fill%
12345        /Helvetica 76 selectfont %
12346        0 setgray %
12347        8 22.5 moveto%
12348        (Submit)show%
12349        [/EP pdfmark%
12350        [%
12351          /BBox[0 0 250 100]%
12352          /__objdef{SubmitP}%
12353          /BP pdfmark %

```

```

12354 0.6 setgray %
12355 0 0 250 100 rectfill %
12356 0.34 setgray %
12357 2 2 moveto %
12358 2 98 lineto %
12359 248 98 lineto %
12360 246 96 lineto %
12361 4 96 lineto %
12362 4 4 lineto %
12363 fill %
12364 1 setgray %
12365 248 98 moveto %
12366 248 2 lineto %
12367 2 2 lineto %
12368 4 4 lineto %
12369 246 4 lineto %
12370 246 96 lineto %
12371 fill%
12372 /Helvetica 76 selectfont %
12373 0 setgray %
12374 10 20.5 moveto%
12375 (Submit)show%
12376 [/EP pdfmark%
12377 } ?pdfmark%
12378 [%
12379 {aform}%
12380 <<%
12381 /Fields{afields}%
12382 /DR<<%
12383 /Font<<%
12384 /ZaDb{ZaDb}%
12385 /Helv{Helv}%
12386 >>%
12387 >>%
12388 /DA(/Helv 10 Tf 0 g)%
12389 /CO{corder}%
12390 \ifHy@pdfa
12391 \else
12392 \ifHyField@NeedAppearances
12393 /NeedAppearances true%
12394 \fi
12395 \fi
12396 >>%
12397 /PUT pdfmark%
12398 [%
12399 {Catalog}%
12400 <<%
12401 /AcroForm{aform}%
12402 >>%
12403 /PUT pdfmark%
12404 [%
12405 /__objdef{corder}%
12406 /type/array%
12407 /OBJ pdfmark% dps
12408 }}%
12409 \kvsetkeys{Form}{#1}%
12410 }

```

```

12411 \let\@endForm\ltx@empty
12412 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
12413   \Hy@Message{Sorry, pdfmark drivers do not support FORM gauges}%
12414 }
12415 \def\@TextField[#1]#2{% parameters, label
12416   \def\Fld@name{#2}%
12417   \let\Fld@default\ltx@empty
12418   \let\Fld@value\@empty
12419   \def\Fld@width{\DefaultWidthofText}%
12420   \def\Fld@height{%
12421     \ifFld@multiline
12422       \DefaultHeightofTextMultiline
12423     \else
12424       \DefaultHeightofText
12425     \fi
12426   }%
12427   \begingroup
12428     \expandafter\HyField@SetKeys\expandafter{%
12429       \DefaultOptionsofText,#1%
12430     }%
12431     \HyField@FlagsText
12432     \ifFld@hidden\def\Fld@width{1sp}\fi
12433     \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
12434     \LayoutTextField{#2}{%
12435       \Hy@escapeform\PDFForm@Text
12436       \pdfmark[\MakeTextField{\Fld@width}{\Fld@height}]{%
12437         pdfmark=/ANN,Raw={\PDFForm@Text}%
12438       }%
12439     }%
12440   \endgroup
12441 }
12442 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
12443   \def\Fld@name{#2}%
12444   \let\Fld@default\relax
12445   \let\Fld@value\relax
12446   \def\Fld@width{\DefaultWidthofChoiceMenu}%
12447   \def\Fld@height{\DefaultHeightofChoiceMenu}%
12448   \begingroup
12449     \Fld@menulength=0 %
12450     \@tempdima\z@
12451     \@for\@curropt:=#3\do{%
12452       \expandafter\Fld@checkequals\@curropt==\%
12453       \Hy@StepCount\Fld@menulength
12454       \settowidth{\@tempdimb}{\@currDisplay}%
12455       \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
12456     }%
12457     \advance\@tempdima by 15\p@
12458     \begingroup
12459       \HyField@SetKeys{#1}%
12460     \edef\x{\endgroup
12461       \noexpand\expandafter
12462       \noexpand\HyField@SetKeys
12463       \noexpand\expandafter{%
12464         \expandafter\noexpand\csname DefaultOptionsof%
12465           \ifFld@radio
12466             Radio%
12467           \else

```

```

12468         \ifFld@combo
12469         \ifFld@popdown
12470             PopdownBox%
12471         \else
12472             ComboBox%
12473         \fi
12474     \else
12475         ListBox%
12476     \fi
12477 \fi
12478 \endcsname
12479 }%
12480 } \x
12481 \HyField@SetKeys{#1}%
12482 \ifFld@hidden\def\Fld@width{1sp}\fi
12483 \ifx\Fld@value\relax
12484     \let\Fld@value\Fld@default
12485 \fi
12486 \LayoutChoiceField{#2}{%
12487     \ifFld@radio
12488         \HyField@FlagsRadioButton
12489         \@@Radio{#3}%
12490     \else
12491         \begingroup
12492         \HyField@FlagsChoice
12493         \ifdim\Fld@width<\@tempdima
12494             \ifdim\@tempdima<1cm\@tempdima1cm\fi
12495             \edef\Fld@width{\the\@tempdima}%
12496         \fi
12497         \ifFld@combo
12498         \else
12499             \@tempdima=\the\Fld@menulength\Fld@charsize
12500             \advance\@tempdima by \Fld@borderwidth bp %
12501             \advance\@tempdima by \Fld@borderwidth bp %
12502             \edef\Fld@height{\the\@tempdima}%
12503         \fi
12504         \@@ListBox{#3}%
12505     \endgroup
12506 \fi
12507 }%
12508 \endgroup
12509 }
12510 \def\@@Radio#1{%
12511     \Fld@listcount=0 %
12512     \EdefEscapeName\Fld@default{\Fld@default}%
12513     \@for\@curropt:=#1\do{%
12514         \expandafter\Fld@checkequals\@curropt==\%
12515         \EdefEscapeName\@currValue{\@currValue}%
12516         \Hy@StepCount\Fld@listcount
12517         \@currDisplay\space
12518         \Hy@escapeform\PDFForm@Radio
12519         \pdfmark[\MakeRadioField{\Fld@width}{\Fld@height}]{%
12520             pdfmark=/ANN,%
12521             Raw={%
12522                 \PDFForm@Radio /AP <</N <</\@currValue\space {Check}>> >>%
12523             }%
12524         } % deliberate space between radio buttons

```

```

12525 }%
12526 }
12527 \newcount\Fld@listcount
12528 \def\@@ListBox#1{%
12529 \HyField@PDFChoices{#1}%
12530 \Hy@escapeform\PDFForm@List
12531 \pdfmark[\MakeChoiceField{\Fld@width}{\Fld@height}]{%
12532 pdfmark=/ANN,Raw={\PDFForm@List}%
12533 }%
12534 }
12535 \def\@PushButton[#1]#2{% parameters, label
12536 \def\Fld@name{#2}%
12537 \begingroup
12538 \expandafter\HyField@SetKeys\expandafter{%
12539 \DefaultOptionsofPushButton,#1%
12540 }%
12541 \ifHy@pdfa
12542 \Hy@Error{%
12543 PDF/A: Push button with JavaScript is prohibited%
12544 }\@ehc
12545 \LayoutPushButtonField{%
12546 \leavevmode
12547 \MakeButtonField{#2}%
12548 }%
12549 \else
12550 \HyField@FlagsPushButton
12551 \ifFld@hidden\def\Fld@width{1sp}\fi
12552 \LayoutPushButtonField{%
12553 \leavevmode
12554 \Hy@escapeform\PDFForm@Push
12555 \pdfmark[\MakeButtonField{#2}]{%
12556 pdfmark=/ANN,Raw={\PDFForm@Push}%
12557 }%
12558 }%
12559 \fi
12560 \endgroup
12561 }
12562 \def\@Submit[#1]#2{%
12563 \def\Fld@width{\DefaultWidthofSubmit}%
12564 \def\Fld@height{\DefaultHeightofSubmit}%
12565 \begingroup
12566 \expandafter\HyField@SetKeys\expandafter{%
12567 \DefaultOptionsofSubmit,#1%
12568 }%
12569 \HyField@FlagsPushButton
12570 \HyField@FlagsSubmit
12571 \ifFld@hidden\def\Fld@width{1sp}\fi
12572 \Hy@escapeform\PDFForm@Submit
12573 \pdfmark[\MakeButtonField{#2}]{%
12574 pdfmark=/ANN,%
12575 Raw={\PDFForm@Submit /AP << /N {Submit} /D {SubmitP} >>}%
12576 }%
12577 \endgroup
12578 }
12579 \def\@Reset[#1]#2{%
12580 \def\Fld@width{\DefaultWidthofReset}%
12581 \def\Fld@height{\DefaultHeightofReset}%

```

```

12582 \begingroup
12583 \expandafter\HyField@SetKeys\expandafter{%
12584   \DefaultOptionsofReset,#1%
12585 }%
12586 \leavevmode
12587 \ifHy@pdfa
12588   \Hy@Error{%
12589     PDF/A: Reset action is prohibited%
12590   }\@ehc
12591   \MakeButtonField{#2}%
12592 \else
12593   \HyField@FlagsPushButton
12594   \ifFld@hidden\def\Fld@width{1sp}\fi
12595   \Hy@escapeform\PDFForm@Reset
12596   \pdfmark[\MakeButtonField{#2}]{%
12597     pdfmark=/ANN,Raw={\PDFForm@Reset}%
12598   }%
12599   \fi
12600 \endgroup
12601 }%
12602 \def\@CheckBox[#1]#2{% parameters, label
12603   \def\Fld@name{#2}%
12604   \def\Fld@default{0}%
12605   \begingroup
12606     \def\Fld@width{\DefaultWidthofCheckBox}%
12607     \def\Fld@height{\DefaultHeightofCheckBox}%
12608     \expandafter\HyField@SetKeys\expandafter{%
12609       \DefaultOptionsofCheckBox,#1%
12610     }%
12611     \HyField@FlagsCheckBox
12612     \ifFld@hidden\def\Fld@width{1sp}\fi
12613     \LayoutCheckField{#2}{%
12614       \Hy@escapeform\PDFForm@Check
12615       \pdfmark[\MakeCheckField{Fld@width}{Fld@height}]{%
12616         pdfmark=/ANN,Raw={\PDFForm@Check}%
12617       }%
12618     }%
12619   \endgroup
12620 }
12621 \pdfmark

```

## 47.2 HyperTeX

```

12622 \hypertex
12623 \def\@Form[#1]{\Hy@Message{Sorry, HyperTeX does not support FORMs}}
12624 \let\@endForm\ltx@empty
12625 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
12626   \Hy@Message{Sorry, HyperTeX does not support FORM gauges}%
12627 }
12628 \def\@TextField[#1]#2{% parameters, label
12629   \Hy@Message{Sorry, HyperTeX does not support FORM text fields}%
12630 }
12631 \def\@CheckBox[#1]#2{% parameters, label
12632   \Hy@Message{Sorry, HyperTeX does not support FORM checkboxes}%
12633 }
12634 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
12635   \Hy@Message{Sorry, HyperTeX does not support FORM choice menus}%
12636 }

```

```

12637 \def\@PushButton[#1]#2{% parameters, label
12638   \Hy@Message{Sorry, HyperTeX does not support FORM pushbuttons}%
12639 }
12640 \def\@Reset[#1]#2{\Hy@Message{Sorry, HyperTeX does not support FORMs}}
12641 \def\@Submit[#1]#2{\Hy@Message{Sorry, HyperTeX does not support FORMs}}
12642 \hypertex

```

### 47.3 TeX4ht

```

12643 \def\*tex4ht
12644 \def\@Form[#1]{%
12645   \kvsetkeys{Form}{#1}%
12646   \HCode{<form action="\Form@action" method="\Form@method">}%
12647 }
12648 \def\@endForm{\HCode{</form>}}
12649 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
12650   \Hy@Message{Sorry, TeX4ht does not support gauges}%
12651 }
12652 \def\@TextField[#1]#2{% parameters, label
12653   \let\Hy@reserved@a\@empty
12654   \def\Fld@name{#2}%
12655   \let\Fld@default\ltx@empty
12656   \bgroup
12657     \Field@toks={ }%
12658     \kvsetkeys{Field}{#1}%
12659     \HCode{<label for="\Fld@name">#2</label>}%
12660     \ifFld@password
12661       \@@PasswordField
12662     \else
12663       \@@TextField
12664     \fi
12665   \egroup
12666 }
12667 \def\@@PasswordField{%
12668   \HCode{%
12669     <input type="password" %
12670       id="\Fld@name" %
12671       name="\Fld@name" %
12672       \ifFld@hidden type="hidden" \fi
12673       value="\Fld@default" %
12674       \the\Field@toks
12675     >%
12676   }%
12677 }
12678 \def\@@TextField{%
12679   \ifFld@multiline
12680     \HCode{<textarea %
12681       \ifFld@readonly readonly \fi
12682       id="\Fld@name" %
12683       name="\Fld@name" %
12684       \ifFld@hidden type="hidden" \fi
12685       \the\Field@toks>%
12686     }%
12687     \Fld@default
12688     \HCode{</textarea>}%
12689   \else
12690     \HCode{<input type="text" %
12691       \ifFld@readonly readonly \fi

```



```

12692     id="\Fld@name" %
12693     name="\Fld@name" %
12694     \ifFld@hidden type="hidden" \fi
12695     value="\Fld@default" %
12696     \the\Field@toks>%
12697 }%
12698 \fi
12699 }
12700 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
12701 \def\Fld@name{#2}%
12702 \let\Fld@default\ltx@empty
12703 \let\Hy@reserved@a\relax
12704 \begingroup
12705 \expandafter\Fld@findlength#3\\%
12706 \Field@toks={ }%
12707 \kvsetkeys{Field}{#1}%
12708 #2%
12709 \ifFld@radio
12710 \expandafter\@@Radio#3\\%
12711 \else
12712 \expandafter\@@Menu#3\\%
12713 \fi
12714 \endgroup
12715 }
12716 \def\Fld@findlength#1\\{%
12717 \Fld@menulength=0 %
12718 \@for\@curropt:=#1\do{\Hy@StepCount\Fld@menulength}%
12719 }
12720 \def\@@Menu#1\\{%
12721 \HCode{<select size="\the\Fld@menulength" %
12722 name="\Fld@name" %
12723 \the\Field@toks>%
12724 }%
12725 \@for\@curropt:=#1\do{%
12726 \expandafter\Fld@checkequals\@curropt==\\%
12727 \HCode{<option %
12728 \ifx\@curropt\Fld@default selected \fi
12729 value="\@currValue">\@currDisplay</option>%
12730 }%
12731 }%
12732 \HCode{</select>}%
12733 }
12734 \def\@@Radio#1\\{%
12735 \@for\@curropt:=#1\do{%
12736 \expandafter\Fld@checkequals\@curropt==\\%
12737 \HCode{<input type="radio" %
12738 \ifx\@curropt\Fld@default checked \fi
12739 name="\Fld@name" %
12740 value="\@currValue" %
12741 \the\Field@toks>%
12742 }%
12743 \@currDisplay
12744 }%
12745 }
12746 \def\@PushButton[#1]#2{% parameters, label
12747 \def\Fld@name{#2}%
12748 \bgroup

```

```

12749 \Field@toks={ }%
12750 \kvsetkeys{Field}{#1}%
12751 \HCode{<input type="button" %
12752   name="\Fld@name" %
12753   value="#2" %
12754   \the\Field@toks>%
12755 }%
12756 \HCode{</button>}%
12757 \egroup
12758 }
12759 \def\@Submit[#1]#2{%
12760 \HCode{<button type="submit">#2</button>}%
12761 }
12762 \def\@Reset[#1]#2{%
12763 \HCode{<button type="reset">#2</button>}%
12764 }
12765 \def\@CheckBox[#1]#2{% parameters, label
12766 \let\Hy@reserved@a\@empty
12767 \def\Fld@name{#2}%
12768 \def\Fld@default{0}%
12769 \bgroup
12770 \Field@toks={ }%
12771 \kvsetkeys{Field}{#1}%
12772 \HCode{<input type="checkbox" %
12773   \ifFld@checked checked \fi
12774   \ifFld@disabled disabled \fi
12775   \ifFld@readonly readonly \fi
12776   name="\Fld@name" %
12777   \ifFld@hidden type="hidden" \fi
12778   value="\Fld@default" %
12779   \the\Field@toks>%
12780   #2%
12781 }%
12782 \egroup
12783 }
12784 </tex4ht>

```

## 47.4 pdfTeX

```

12785 <*pdfTeX>
12786 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
12787 \Hy@Message{Sorry, pdfTeX does not support FORM gauges}%
12788 }
12789 \def\MakeFieldObject#1#2{\sbox0{#1}%
12790 \immediate\pdfxform0 %
12791 \expandafter\edef\csname #2Object\endcsname{%
12792 \the\pdfastxform\space 0 R%
12793 }%
12794 % \hbox to 0pt{\hskip-\maxdimen{\pdfrefxform \the\pdfastxform}}%
12795 }%
12796 \let\HyField@afields\ltx@empty
12797 \begingroup\expandafter\expandafter\expandafter\endgroup
12798 \expandafter\ifx\csname pdfastlink\endcsname\relax
12799 \let\HyField@AddToFields\relax
12800 \PackageInfo{hyperref}{%
12801   You need pdfTeX 1.40.0 for setting the /Fields entry.%
12802   \MessageBreak
12803   Adobe Reader/Acrobat accepts an empty /Field array,%

```

```

12804 \MessageBreak
12805 but other PDF viewers might complain%
12806 }%
12807 \else
12808 \let\HyField@AuxAddToFields\ltx@gobble
12809 \def\HyField@AfterAuxOpen{\Hy@AtBeginDocument}%
12810 \Hy@AtBeginDocument{%
12811 \if@filesw
12812 \immediate\write\@mainaux{%
12813 \string\providecommand\string\HyField@AuxAddToFields[1]{}%
12814 }%
12815 \fi
12816 \let\HyField@AfterAuxOpen\@firstofone
12817 \def\HyField@AuxAddToFields#1{%
12818 \xdef\HyField@afields{%
12819 \ifx\HyField@afields\@empty
12820 \else
12821 \HyField@afields
12822 \space
12823 \fi
12824 #1 0 R%
12825 }%
12826 }%
12827 }%
12828 \def\HyField@AddToFields{%
12829 \expandafter\HyField@@AddToFields\expandafter{%
12830 \the\pdfastlink
12831 }%
12832 }%
12833 \def\HyField@@AddToFields#1{%
12834 \HyField@AfterAuxOpen{%
12835 \if@filesw
12836 \write\@mainaux{%
12837 \string\HyField@AuxAddToFields{#1}%
12838 }%
12839 \fi
12840 }%
12841 }%
12842 \fi
12843 \def\@Form[#1]{%
12844 \@ifundefined{textcolor}{\let\textcolor\@gobble}{}%
12845 \kvsetkeys{Form}{#1}%
12846 \pdf@ifdraftmode{}{%
12847 \Hy@FormObjects
12848 \ifnum\pdfTeXversion>13 %
12849 \pdfrefobj\OBJ@pdfdocencoding
12850 \pdfrefobj\OBJ@ZaDb
12851 \pdfrefobj\OBJ@Helv
12852 \fi
12853 \AtVeryEndDocument{%
12854 \immediate\pdfobj{%
12855 <<%
12856 /Fields[\HyField@afields]%
12857 /DR<<%
12858 /Font<<%
12859 /ZaDb \OBJ@ZaDb\space 0 R%
12860 /Helv \OBJ@Helv\space 0 R%

```

```

12861      >>%
12862      >>%
12863      /DA(/Helv 10 Tf 0 g)%
12864      \ifHy@pdfa
12865      \else
12866      \ifHyField@NeedAppearances
12867      /NeedAppearances true%
12868      \fi
12869      \fi
12870      >>%
12871      }%
12872      \edef\OBJ@acroform{\the\pdfastobj}%
12873      \pdfcatalog{/AcroForm \OBJ@acroform\space 0 R}%
12874      }%
12875      }%
12876      \MakeFieldObject{%

```

Same as \ding{123} of package pifont.

```

12877      \begingroup
12878      \fontfamily{pzd}%
12879      \fontencoding{U}%
12880      \fontseries{m}%
12881      \fontshape{n}%
12882      \selectfont
12883      \char123 %
12884      \endgroup
12885      }{Ding}%
12886      \MakeFieldObject{%
12887      \fbox{\textcolor{yellow}{\textsf{Submit}}}%
12888      }{Submit}%
12889      \MakeFieldObject{%
12890      \fbox{\textcolor{yellow}{\textsf{SubmitP}}}%
12891      }{SubmitP}%
12892      }
12893      \let\@endForm\ltx@empty
12894      \def\@TextField[#1]#2{% parameters, label
12895      \def\Fld@name{#2}%
12896      \let\Fld@default\ltx@empty
12897      \let\Fld@value\@empty
12898      \def\Fld@width{\DefaultWidthofText}%
12899      \def\Fld@height{%
12900      \ifFld@multiline
12901      \DefaultHeightofTextMultiline
12902      \else
12903      \DefaultHeightofText
12904      \fi
12905      }%
12906      \begingroup
12907      \expandafter\HyField@SetKeys\expandafter{%
12908      \DefaultOptionsofText,#1%
12909      }%
12910      \PDFForm@Name
12911      \HyField@FlagsText
12912      \ifFld@hidden\def\Fld@width{1sp}\fi
12913      \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
12914      \LayoutTextField{#2}{%
12915      \Hy@escapeform\PDFForm@Text
12916      \pdfstartlink user {\PDFForm@Text}\relax

```

```

12917 \MakeTextField{\Fld@width}{\Fld@height}\pdfendlink
12918 \HyField@AddToFields
12919 }%
12920 \endgroup
12921 }
12922 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
12923 \def\Fld@name{#2}%
12924 \let\Fld@default\relax
12925 \let\Fld@value\relax
12926 \def\Fld@width{\DefaultWidthofChoiceMenu}%
12927 \def\Fld@height{\DefaultHeightofChoiceMenu}%
12928 \begingroup
12929 \Fld@menulength=0 %
12930 \@tempdima\z@
12931 \@for\@curropt:=#3\do{%
12932 \expandafter\Fld@checkequals\@curropt==\%
12933 \Hy@StepCount\Fld@menulength
12934 \settowidth{\@tempdimb}{\@currDisplay}%
12935 \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
12936 }%
12937 \advance\@tempdima by 15\p@
12938 \begingroup
12939 \HyField@SetKeys{#1}%
12940 \edef\x{\endgroup
12941 \noexpand\expandafter
12942 \noexpand\HyField@SetKeys
12943 \noexpand\expandafter{%
12944 \expandafter\noexpand\csname DefaultOptionsof%
12945 \ifFld@radio
12946 Radio%
12947 \else
12948 \ifFld@combo
12949 \ifFld@popdown
12950 PopdownBox%
12951 \else
12952 ComboBox%
12953 \fi
12954 \else
12955 ListBox%
12956 \fi
12957 \fi
12958 \endcsname
12959 }%
12960 }\x
12961 \HyField@SetKeys{#1}%
12962 \PDFForm@Name
12963 \ifFld@hidden\def\Fld@width{1sp}\fi
12964 \ifx\Fld@value\relax
12965 \let\Fld@value\Fld@default
12966 \fi
12967 \LayoutChoiceField{#2}{%
12968 \ifFld@radio
12969 \HyField@FlagsRadioButton
12970 \@@Radio{#3}%
12971 \else
12972 \begingroup
12973 \HyField@FlagsChoice

```

```

12974      \ifdim\Fld@width<\@tempdima
12975      \ifdim\@tempdima<1cm\@tempdima1cm\fi
12976      \edef\Fld@width{\the\@tempdima}%
12977      \fi
12978      \ifFld@combo
12979      \else
12980      \@tempdima=\the\Fld@menulength\Fld@charsize
12981      \advance\@tempdima by \Fld@borderwidth bp %
12982      \advance\@tempdima by \Fld@borderwidth bp %
12983      \edef\Fld@height{\the\@tempdima}%
12984      \fi
12985      \@@ListBox{#3}%
12986      \endgroup
12987      \fi
12988      }%
12989      \endgroup
12990      }
12991      \def\@@Radio#1{%
12992      \Fld@listcount=0 %
12993      \EdefEscapeName\Fld@default{\Fld@default}%
12994      \@for\@curropt:=#1\do{%
12995      \expandafter\Fld@checkequals\@curropt==\\%
12996      \EdefEscapeName\@currValue{\@currValue}%
12997      \Hy@StepCount\Fld@listcount
12998      \@currDisplay\space
12999      \leavevmode
13000      \Hy@escapeform\PDFForm@Radio
13001      \pdfstartlink user {%
13002      \PDFForm@Radio
13003      /AP<<%
13004      /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.

```

13005      /\@currValue\space \DingObject
13006      >>%
13007      >>%
13008      }%
13009      \relax
13010      \MakeRadioField{\Fld@width}{\Fld@height}\pdfendlink
13011      \ifnum\Fld@listcount=1 %
13012      \HyField@AddToFields
13013      \fi
13014      \space % deliberate space between radio buttons
13015      }%
13016      }
13017      \newcount\Fld@listcount
13018      \def\@@ListBox#1{%
13019      \HyField@PDFChoices{#1}%
13020      \leavevmode
13021      \Hy@escapeform\PDFForm@List
13022      \pdfstartlink user {\PDFForm@List}\relax
13023      \MakeChoiceField{\Fld@width}{\Fld@height}%
13024      \pdfendlink
13025      \HyField@AddToFields
13026      }
13027      \def\@PushButton[#1]#2{% parameters, label

```

```

13028 \def\Fld@name{#2}%
13029 \begingroup
13030 \expandafter\HyField@SetKeys\expandafter{%
13031   \DefaultOptionsofPushButton,#1%
13032 }%
13033 \PDFForm@Name
13034 \ifHy@pdfa
13035   \Hy@Error{%
13036     PDF/A: Push button with JavaScript is prohibited%
13037   }\@ehc
13038   \LayoutPushButtonField{%
13039     \leavevmode
13040     \MakeButtonField{#2}%
13041   }%
13042 \else
13043   \HyField@FlagsPushButton
13044   \ifFld@hidden\def\Fld@width{1sp}\fi
13045   \LayoutPushButtonField{%
13046     \leavevmode
13047     \Hy@escapeform\PDFForm@Push
13048     \pdfstartlink user {\PDFForm@Push}\relax
13049     \MakeButtonField{#2}%
13050     \pdfendlink
13051     \HyField@AddToFields
13052   }%
13053 \fi
13054 \endgroup
13055 }
13056 \def\@Submit[#1]#2{%
13057   \def\Fld@width{\DefaultWidthofSubmit}%
13058   \def\Fld@height{\DefaultHeightofSubmit}%
13059   \begingroup
13060   \expandafter\HyField@SetKeys\expandafter{%
13061     \DefaultOptionsofSubmit,#1%
13062   }%
13063   \HyField@FlagsPushButton
13064   \HyField@FlagsSubmit
13065   \ifFld@hidden\def\Fld@width{1sp}\fi
13066   \leavevmode
13067   \Hy@escapeform\PDFForm@Submit
13068   \pdfstartlink user {%
13069     \PDFForm@Submit
13070     /AP<</N \SubmitObject/D \SubmitPObject>>%
13071   }%
13072   \relax
13073   \MakeButtonField{#2}%
13074   \pdfendlink
13075   \HyField@AddToFields
13076 \endgroup
13077 }
13078 \def\@Reset[#1]#2{%
13079   \def\Fld@width{\DefaultWidthofReset}%
13080   \def\Fld@height{\DefaultHeightofReset}%
13081   \begingroup
13082   \expandafter\HyField@SetKeys\expandafter{%
13083     \DefaultOptionsofReset,#1%
13084   }%

```

```

13085 \leavevmode
13086 \ifHy@pdfa
13087 \Hy@Error{%
13088     PDF/A: Reset action is prohibited%
13089 } \@ehc
13090 \MakeButtonField{#2}%
13091 \else
13092 \HyField@FlagsPushButton
13093 \ifFld@hidden\def\Fld@width{1sp}\fi
13094 \Hy@escapeform\PDFForm@Reset
13095 \pdfstartlink user {\PDFForm@Reset}\relax
13096 \MakeButtonField{#2}%
13097 \pdfendlink
13098 \HyField@AddToFields
13099 \fi
13100 \endgroup
13101 }
13102 \def\@CheckBox[#1]#2{% parameters, label
13103 \def\Fld@name{#2}%
13104 \def\Fld@default{0}%
13105 \begingroup
13106 \def\Fld@width{\DefaultWidthofCheckBox}%
13107 \def\Fld@height{\DefaultHeightofCheckBox}%
13108 \expandafter\HyField@SetKeys\expandafter{%
13109 \DefaultOptionsofCheckBox,#1%
13110 }%
13111 \PDFForm@Name
13112 \HyField@FlagsCheckBox
13113 \ifFld@hidden\def\Fld@width{1sp}\fi
13114 \LayoutCheckField{#2}{%
13115 \Hy@escapeform\PDFForm@Check
13116 \pdfstartlink user {\PDFForm@Check}\relax
13117 \MakeCheckField{\Fld@width}{\Fld@height}%
13118 \pdfendlink
13119 \HyField@AddToFields
13120 }%
13121 \endgroup
13122 }
13123 \def\Hy@FormObjects{%
13124 \pdfobj {%
13125 <<%
13126 /Type/Encoding%
13127 /Differences%
13128 24/breve/caron/circumflex/dotaccent/hungarumlaut/ogonek%
13129 /ring/tilde %
13130 39/quotesingle %
13131 96/grave %
13132 128/bullet/dagger/daggerdbl/ellipsis/emdash/endash/florin%
13133 /fraction/guilsinglleft/guilsinglright/minus/perthousand%
13134 /quotedblbase/quotedblleft/quotedblright/quoteleft%
13135 /quoteright/quotesinglbase/trademark/fi/fl/Lslash/OE%
13136 /Scaron/Ydieresis/Zcaron/dotlessi/lslash/oe/scaron/zcaron %
13137 164/currency %
13138 166/brokenbar %
13139 168/dieresis/copyright/ordfeminine %
13140 172/logicalnot/.notdef/registered/macron/degree/plusminus%
13141 /twosuperior/threesuperior/acute/mu %

```



```

13142      183/periodcentered/cedilla/onesuperior/ordmasculine %
13143      188/onequarter/onehalf/threequarters %
13144      192/Agrave/Aacute/Acircumflex/Atilde/Adieresis/Aring/AE%
13145      /Ccedilla/Egrave/Eacute/Ecircumflex/Edieresis/Igrave%
13146      /Iacute/Icircumflex/Idieresis/Eth/Ntilde/Ograve/Oacute%
13147      /Ocircumflex/Otilde/Odieresis/multiply/Oslash/Ugrave%
13148      /Uacute/Ucircumflex/Udieresis/Yacute/Thorn/germandbls%
13149      /agrave/aacute/acircumflex/atilde/adieresis/aring/ae%
13150      /ccedilla/egrave/eacute/ecircumflex/edieresis/igrave%
13151      /iacute/icircumflex/idieresis/eth/ntilde/ograde/oacute%
13152      /ocircumflex/otilde/odieresis/divide/oslash/ugrave%
13153      /uacute/ucircumflex/udieresis/yacute/thorn/ydieresis%
13154      ]%
13155      >>%
13156    }%
13157    \xdef\OBJ@pdfdocencoding{\the\pdflastobj}%
13158    \pdfobj{%
13159      <<%
13160        /Type/Font%
13161        /Subtype/Type1%
13162        /Name/ZaDb%
13163        /BaseFont/ZapfDingbats%
13164        >>%
13165      }%
13166      \xdef\OBJ@ZaDb{\the\pdflastobj}%
13167      \pdfobj{%
13168        <<%
13169          /Type/Font%
13170          /Subtype/Type1%
13171          /Name/Helv%
13172          /BaseFont/Helvetica%
13173          /Encoding \OBJ@pdfdocencoding\space 0 R%
13174          >>%
13175        }%
13176        \xdef\OBJ@Helv{\the\pdflastobj}%
13177        \global\let\Hy@FormObjects\relax
13178      }
13179    </pdftex>

```

## 47.5 dvipdfm, xetex

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

```
13180 (*dvipdfm | xetex)
```

\@Gauge

```

13181 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
13182   \Hy@Message{Sorry, dvipdfm/XeTeX does not support FORM gauges}%
13183 }

```

\@Form

```

13184 \def\@Form[#1]{%
13185   \ifundefined{textcolor}{\let\textcolor\@gobble}{}%
13186   \kvsetkeys{Form}{#1}%
13187   \Hy@FormObjects
13188   \@pdfm@mark{obj @afields []}%
13189   \@pdfm@mark{obj @corder []}%
13190   \@pdfm@mark{%

```

```

13191 obj @aform <<%
13192 /Fields @afields%
13193 /DR<<%
13194 /Font<<%
13195 /ZaDb @OBJZaDb%
13196 /Helv @OBJHelv%
13197 >>%
13198 >>%
13199 /DA(/Helv 10 Tf 0 g)%
13200 /CO @corder%
13201 \ifHy@pdfa
13202 \else
13203 \ifHyField@NeedAppearances
13204 /NeedAppearances true%
13205 \fi
13206 \fi
13207 >>%
13208 }%
13209 \@pdfm@mark{put @catalog <</AcroForm @aform>>}%
13210 }

```

\@endForm

```

13211 \let \@endForm \ltx@empty

```

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

```

13212 \def \dvipdfm@setdim{%
13213 height \the\ht\pdfm@box\space
13214 width \the\wd\pdfm@box\space
13215 depth \the\dp\pdfm@box\space
13216 }

```

\HyField@AnnotCount

```

13217 \newcount \HyField@AnnotCount
13218 \HyField@AnnotCount=\z@

```

\HyField@AdvanceAnnotCount

```

13219 \def \HyField@AdvanceAnnotCount{%
13220 \global\advance \HyField@AnnotCount\@ne
13221 }

```

\HyField@TheAnnotCount

```

13222 \def \HyField@TheAnnotCount{%
13223 \the \HyField@AnnotCount
13224 }

```

\@TextField

```

13225 \def \@TextField[#1]#2{% parameters, label
13226 \def \Fld@name{#2}%
13227 \let \Fld@default \ltx@empty
13228 \let \Fld@value \@empty
13229 \def \Fld@width{\DefaultWidthofText}%
13230 \def \Fld@height{%
13231 \ifFld@multiline
13232 \DefaultHeightofTextMultiline
13233 \else
13234 \DefaultHeightofText
13235 \fi

```

```

13236 }%
13237 \begingroup
13238 \expandafter\HyField@SetKeys\expandafter{%
13239 \DefaultOptionsofText,#1%
13240 }%
13241 \PDFForm@Name
13242 \HyField@FlagsText
13243 \ifFld@hidden\def\Fld@width{1sp}\fi
13244 \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
13245 \setbox\pdfm@box=\hbox{%
13246 \MakeTextField{\Fld@width}{\Fld@height}%
13247 }%
13248 \HyField@AdvanceAnnotCount
13249 \LayoutTextField{#2}{%
13250 \Hy@escapeform\PDFForm@Text
13251 \@pdfm@mark{%
13252 ann @text\HyField@TheAnnotCount\space
13253 \dvipdfm@setdim << \PDFForm@Text >>%
13254 }%
13255 }%
13256 \unhbox\pdfm@box
13257 \@pdfm@mark{put @afields @text\HyField@TheAnnotCount}%
13258 % record in @afields array
13259 \endgroup
13260 }

```

#### \@ChoiceMenu

```

13261 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
13262 \def\Fld@name{#2}%
13263 \let\Fld@default\relax
13264 \let\Fld@value\relax
13265 \def\Fld@width{\DefaultWidthofChoiceMenu}%
13266 \def\Fld@height{\DefaultHeightofChoiceMenu}%
13267 \begingroup
13268 \Fld@menulength=0 %
13269 \@tempdima\z@
13270 \@for\@curropt:=#3\do{%
13271 \expandafter\Fld@checkequals\@curropt==\%
13272 \Hy@StepCount\Fld@menulength
13273 \settowidth{\@tempdimb}{\@currDisplay}%
13274 \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
13275 }%
13276 \advance\@tempdima by 15\p@
13277 \begingroup
13278 \HyField@SetKeys{#1}%
13279 \edef\x{\endgroup
13280 \noexpand\expandafter
13281 \noexpand\HyField@SetKeys
13282 \noexpand\expandafter{%
13283 \expandafter\noexpand\csname DefaultOptionsof%
13284 \ifFld@radio
13285 Radio%
13286 \else
13287 \ifFld@combo
13288 \ifFld@popdown
13289 PopdownBox%
13290 \else
13291 ComboBox%

```

```

13292         \fi
13293     \else
13294         ListBox%
13295     \fi
13296 \fi
13297 \endcsname
13298 }%
13299 }\x
13300 \HyField@SetKeys{#1}%
13301 \PDFForm@Name
13302 \ifFld@hidden\def\Fld@width{1sp}\fi
13303 \ifx\Fld@value\relax
13304     \let\Fld@value\Fld@default
13305 \fi
13306 \LayoutChoiceField{#2}{%
13307     \ifFld@radio
13308         \HyField@FlagsRadioButton
13309         \@@Radio{#3}%
13310     \else
13311         \begingroup
13312             \HyField@FlagsChoice
13313             \ifdim\Fld@width<\@tempdima
13314                 \ifdim\@tempdima<1cm\@tempdima1cm\fi
13315                 \edef\Fld@width{\the\@tempdima}%
13316             \fi
13317             \ifFld@combo
13318             \else
13319                 \@tempdima=\the\Fld@menulength\Fld@charsize
13320                 \advance\@tempdima by \Fld@borderwidth bp %
13321                 \advance\@tempdima by \Fld@borderwidth bp %
13322                 \edef\Fld@height{\the\@tempdima}%
13323             \fi
13324             \@@ListBox{#3}%
13325         \endgroup
13326     \fi
13327 }%
13328 \endgroup
13329 }

\@@Radio
13330 \def\@@Radio#1{%
13331     \Fld@listcount=0 %
13332     \EdefEscapeName\Fld@default{\Fld@default}%
13333     \setbox\pdfm@box=\hbox{%
13334         \MakeRadioField{\Fld@width}{\Fld@height}%
13335     }%
13336     \@for\@curropt:=#1\do{%
13337         \expandafter\Fld@checkequals\@curropt==\%
13338         \EdefEscapeName\@currValue{\@currValue}%
13339         \Hy@StepCount\Fld@listcount
13340         \@currDisplay\space
13341         \leavevmode
13342         \Hy@escapeform\PDFForm@Radio
13343         \ifnum\Fld@listcount=1 %
13344             \HyField@AdvanceAnnotCount
13345         \fi
13346         \@pdfm@mark{%
13347             ann %

```

```

13348     \ifnum\Fld@listcount=1 %
13349         @radio\HyField@TheAnnotCount%
13350     \space
13351 \fi
13352 \dvi pdfm@setdim
13353 <<%
13354     \PDFForm@Radio
13355     /AP<</N<</\@currValue /null>>>>%
13356 >>%
13357 }%
13358 \unhcopy\pdfm@box\space% deliberate space between radio buttons
13359 \ifnum\Fld@listcount=1 %
13360     \@pdfm@mark{%
13361         put @afields @radio\HyField@TheAnnotCount
13362     }%
13363 \fi
13364 }%
13365 }

\Fld@listcount
13366 \newcount\Fld@listcount

@@@Listbox
13367 \def\@@Listbox#1{%
13368     \HyField@PDFChoices{#1}%
13369     \setbox\pdfm@box=\hbox{%
13370         \MakeChoiceField{\Fld@width}{\Fld@height}%
13371     }%
13372     \leavevmode
13373     \Hy@escapeform\PDFForm@List
13374     \HyField@AdvanceAnnotCount
13375     \@pdfm@mark{%
13376         ann @list\HyField@TheAnnotCount\space
13377         \dvi pdfm@setdim
13378         <<\PDFForm@List>>%
13379     }%
13380     \unhbox\pdfm@box
13381     \@pdfm@mark{put @afields @list\HyField@TheAnnotCount}%
13382 }

\@PushButton
13383 \def\@PushButton[#1]#2{% parameters, label
13384     \def\Fld@name{#2}%
13385     \begingroup
13386     \expandafter\HyField@SetKeys\expandafter{%
13387         \DefaultOptionsofPushButton,#1%
13388     }%
13389     \PDFForm@Name
13390     \ifHy@pdfa
13391         \Hy@Error{%
13392             PDF/A: Push button with JavaScript is prohibited%
13393         }\@ehc
13394     \LayoutPushButtonField{%
13395         \leavevmode
13396         \MakeButtonField{#2}%
13397     }%
13398     \else

```

```

13399 \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
13400 \HyField@FlagsPushButton
13401 \ifFld@hidden\def\Fld@width{1sp}\fi
13402 \HyField@AdvanceAnnotCount
13403 \LayoutPushButtonField{%
13404 \leavevmode
13405 \Hy@escapeform\PDFForm@Push
13406 \@pdfm@mark{%
13407 ann @push\HyField@TheAnnotCount\space
13408 \dvipdfm@setdim
13409 <<\PDFForm@Push>>%
13410 }%
13411 }%
13412 \unhbox\pdfm@box
13413 \@pdfm@mark{put @afields @push\HyField@TheAnnotCount}%
13414 \fi
13415 \endgroup
13416 }

\@Submit
13417 \def\@Submit[#1]#2{%
13418 \def\Fld@width{\DefaultWidthofSubmit}%
13419 \def\Fld@height{\DefaultHeightofSubmit}%
13420 \begingroup
13421 \expandafter\HyField@SetKeys\expandafter{%
13422 \DefaultOptionsofSubmit,#1%
13423 }%
13424 \HyField@FlagsPushButton
13425 \HyField@FlagsSubmit
13426 \ifFld@hidden\def\Fld@width{1sp}\fi
13427 \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
13428 \leavevmode
13429 \Hy@escapeform\PDFForm@Submit
13430 \HyField@AdvanceAnnotCount
13431 \@pdfm@mark{%
13432 ann @submit\HyField@TheAnnotCount\space
13433 \dvipdfm@setdim
13434 <<\PDFForm@Submit>>%
13435 }%
13436 \unhbox\pdfm@box%
13437 \@pdfm@mark{put @afields @submit\HyField@TheAnnotCount}%
13438 \endgroup
13439 }

\@Reset
13440 \def\@Reset[#1]#2{%
13441 \def\Fld@width{\DefaultWidthofReset}%
13442 \def\Fld@height{\DefaultHeightofReset}%
13443 \begingroup
13444 \expandafter\HyField@SetKeys\expandafter{%
13445 \DefaultOptionsofReset,#1%
13446 }%
13447 \leavevmode
13448 \ifHy@pdfa
13449 \Hy@Error{%
13450 PDF/A: Reset action is prohibited%
13451 }\@ehc

```

```

13452 \MakeButtonField{#2}%
13453 \else
13454 \HyField@FlagsPushButton
13455 \ifFld@hidden\def\Fld@width{1sp}\fi
13456 \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
13457 \Hy@escapeform\PDFForm@Reset
13458 \HyField@AdvanceAnnotCount
13459 \@pdfm@mark{%
13460 ann @reset\HyField@TheAnnotCount\space
13461 \dvipdfm@setdim
13462 <<\PDFForm@Reset>>%
13463 }%
13464 \unhbox\pdfm@box
13465 \@pdfm@mark{put @afields @reset\HyField@TheAnnotCount}%
13466 \fi
13467 \endgroup
13468 }

```

\@CheckBox

```

13469 \def\@CheckBox[#1]#2{% parameters, label
13470 \def\Fld@name{#2}%
13471 \def\Fld@default{0}%
13472 \begingroup
13473 \def\Fld@width{\DefaultWidthofCheckBox}%
13474 \def\Fld@height{\DefaultHeightofCheckBox}%
13475 \expandafter\HyField@SetKeys\expandafter{%
13476 \DefaultOptionsofCheckBox,#1%
13477 }%
13478 \PDFForm@Name
13479 \HyField@FlagsCheckBox
13480 \ifFld@hidden\def\Fld@width{1sp}\fi
13481 \setbox\pdfm@box=\hbox{%
13482 \MakeCheckField{\Fld@width}{\Fld@height}%
13483 }%
13484 \HyField@AdvanceAnnotCount
13485 \LayoutCheckField{#2}{%
13486 \Hy@escapeform\PDFForm@Check
13487 \@pdfm@mark{%
13488 ann @check\HyField@TheAnnotCount\space
13489 \dvipdfm@setdim
13490 <<\PDFForm@Check>>%
13491 }%
13492 \unhbox\pdfm@box
13493 \@pdfm@mark{put @afields @check\HyField@TheAnnotCount}%
13494 }%
13495 \endgroup
13496 }

13497 \def\Hy@FormObjects{%
13498 \@pdfm@mark{obj @OBJpdfdocencoding%
13499 <<%
13500 /Type/Encoding%
13501 /Differences[%
13502 24/breve/caron/circumflex/dotaccent/hungarumlaut/ogonek/ring/tilde %
13503 39/quotesingle %
13504 96/grave %
13505 128/bullet/dagger/daggerdbl/ellipsis/emdash/endash/florin%
13506 /fraction/guilsinglleft/guilsinglright/minus/perthousand%

```

```

13507 /quotedblbase/quotedblleft/quotedblright/quoteleft/quoteright%
13508 /quotesinglbase/trademark/fi/fl/Lslash/OE/Scaron/Ydieresis%
13509 /Zcaron/dotlessi/lslash/oe/scaron/zcaron %
13510 164/currency %
13511 166/brokenbar %
13512 168/dieresis/copyright/ordfeminine %
13513 172/logicalnot/.notdef/registered/macron/degree/plusminus%
13514 /twosuperior/threesuperior/acute/mu %
13515 183/periodcentered/cedilla/onesuperior/ordmasculine %
13516 188/onequarter/onehalf/threequarters %
13517 192/Agrave/Aacute/Acircumflex/Atilde/Adieresis/Aring/AE%
13518 /Ccedilla/Egrave/Eacute/Ecircumflex/Edieresis/Igrave/Iacute%
13519 /Icircumflex/Idieresis/Eth/Ntilde/Ograve/Oacute/Ocircumflex%
13520 /Otilde/Odieresis/multiply/Oslash/Ugrave/Uacute/Ucircumflex%
13521 /Udieresis/Yacute/Thorn/germandbls/agrave/aacute/acircumflex%
13522 /atilde/adieresis/aring/ae/ccedilla/egrave/eacute%
13523 /ecircumflex/edieresis/igrave/iacute/icircumflex/idieresis%
13524 /eth/ntilde/ograde/oacute/ocircumflex/otilde/odieresis%
13525 /divide/oslash/ugrave/uacute/ucircumflex/udieresis/yacute%
13526 /thorn/ydieresis%
13527 ]%
13528 >>%
13529 }%
13530 \@pdfm@mark{obj @OBJZaDb%
13531 <<%
13532 /Type/Font%
13533 /Subtype/Type1%
13534 /Name/ZaDb%
13535 /BaseFont/ZapfDingbats%
13536 >>%
13537 }%
13538 \@pdfm@mark{obj @OBJHelv%
13539 <<%
13540 /Type/Font%
13541 /Subtype/Type1%
13542 /Name/Helv%
13543 /BaseFont/Helvetica%
13544 /Encoding @OBJpdfdocencoding%
13545 >>%
13546 }%
13547 \global\let\Hy@FormObjects\relax
13548 }
13549 </dvipdfm | xetex>

```

## 47.6 Common forms part

```
13550 <*pdfform>
```

\Hy@escapestring

```

13551 \begingroup\expandafter\expandafter\expandafter\endgroup
13552 \expandafter\ifx\csname pdfescapestring\endcsname\relax
13553 \let\Hy@escapestring\@firstofone
13554 \def\Hy@escapeform#1{%
13555 \ifHy@pdfescapeform
13556 \def\Hy@escapestring##1{%
13557 \noexpand\Hy@escapestring{\noexpand##1}%
13558 }%
13559 \edef\Hy@temp{#1}%

```



```

13560 \expandafter\Hy@@escapeform\Hy@temp\Hy@escapestring{}}\@nil
13561 \def\Hy@escapestring##1{%
13562 \@ifundefined{Hy@esc@\string##1}{%
13563 ##1%
13564 \ThisShouldNotHappen
13565 }{%
13566 \csname Hy@esc@\string##1\endcsname
13567 }%
13568 }%
13569 \else
13570 \let\Hy@escapestring\@firstofone
13571 \fi
13572 }%
13573 \def\Hy@@escapeform#1\Hy@escapestring#2#3\@nil{%
13574 \ifx\#3\%
13575 \else
13576 \expandafter
13577 \Hy@pstringdef\csname Hy@esc@\string#2\endcsname{#2}%
13578 \ltx@ReturnAfterFi{%
13579 \Hy@@escapeform#3\@nil
13580 }%
13581 \fi
13582 }%
13583 \else
13584 \def\Hy@escapeform#1{%
13585 \ifHy@pdfescapeform
13586 \let\Hy@escapestring\pdfescapestring
13587 \else
13588 \let\Hy@escapestring\@firstofone
13589 \fi
13590 }%
13591 \Hy@escapeform{}}%
13592 \fi

```

#### \PDFForm@Name

```

13593 \def\PDFForm@Name{%
13594 \PDFForm@@Name\Fld@name
13595 \ifx\Fld@altname\relax
13596 \else
13597 \PDFForm@@Name\Fld@altname
13598 \fi
13599 \ifx\Fld@mappingname\relax
13600 \else
13601 \PDFForm@@Name\Fld@mappingname
13602 \fi
13603 }

```

#### \PDFForm@@Name

```

13604 \def\PDFForm@@Name#1{%
13605 \begingroup
13606 \ifnum\Hy@pdfversion<5 % implementation note 117, PDF spec 1.7
13607 \ifHy@unicode
13608 \Hy@unicodetfalse
13609 \fi
13610 \fi
13611 \HyPsd@XeTeXBigCharstrue
13612 \pdfstringdef\Hy@gtemp#1%

```

```

13613 \endgroup
13614 \let#1\Hy@gtemp
13615 }

```

\Fld@additionalactions

```
13616 \def\Fld@@additionalactions{%
```

**K input (keystroke) format**

```

13617 \ifx\Fld@keystroke@code\@empty
13618 \else
13619 /K<</S/JavaScript/JS(\Hy@escapestring{\Fld@keystroke@code})>>%
13620 \fi

```

**F display format**

```

13621 \ifx\Fld@format@code\@empty
13622 \else
13623 /F<</S/JavaScript/JS(\Hy@escapestring{\Fld@format@code})>>%
13624 \fi

```

**V validation**

```

13625 \ifx\Fld@validate@code\@empty
13626 \else
13627 /V<</S/JavaScript/JS(\Hy@escapestring{\Fld@validate@code})>>%
13628 \fi

```

**C calculation**

```

13629 \ifx\Fld@calculate@code\@empty
13630 \else
13631 /C<</S/JavaScript/JS(\Hy@escapestring{\Fld@calculate@code})>>%
13632 \fi

```

**Fo receiving the input focus**

```

13633 \ifx\Fld@onfocus@code\@empty
13634 \else
13635 /Fo<</S/JavaScript/JS(\Hy@escapestring{\Fld@onfocus@code})>>%
13636 \fi

```

**Bl loosing the input focus (blurred)**

```

13637 \ifx\Fld@onblur@code\@empty
13638 \else
13639 /Bl<</S/JavaScript/JS(\Hy@escapestring{\Fld@onblur@code})>>%
13640 \fi

```

**D pressing the mouse button (down)**

```

13641 \ifx\Fld@onmousedown@code\@empty
13642 \else
13643 /D<</S/JavaScript/JS(\Hy@escapestring{\Fld@onmousedown@code})>>%
13644 \fi

```

**U releasing the mouse button (up)**

```

13645 \ifx\Fld@onmouseup@code\@empty
13646 \else
13647 /U<</S/JavaScript/JS(\Hy@escapestring{\Fld@onmouseup@code})>>%
13648 \fi

```

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

```

13649 \ifx\Fld@onenter@code\@empty
13650 \else
13651 /E<</S/JavaScript/JS(\Hy@escapestring{\Fld@onenter@code})>>%
13652 \fi

```

X cursor exits the annotation's active area.

```
13653 \ifx\Fld@onexit@code\@empty
13654 \else
13655 /X<</S/JavaScript/JS(\Hy@escapestring{\Fld@onexit@code})>>%
13656 \fi
13657 }
13658 \def\Fld@additionalactions{%
13659 \if\Fld@@additionalactions-%
13660 \else
13661 \ifHy@pdfa
13662 \else
13663 /AA<<\Fld@@additionalactions>>%
13664 \fi
13665 \fi
13666 }
```

\Fld@annotnames

```
13667 \def\Fld@annotnames{%
13668 /T(\Fld@name)%
13669 \ifx\Fld@altname\relax
13670 \else
13671 /TU(\Fld@altname)%
13672 \fi
13673 \ifx\Fld@mappingname\relax
13674 \else
13675 /TM(\Fld@mappingname)%
13676 \fi
13677 }
```

\PDFForm@Check

```
13678 \def\PDFForm@Check{%
13679 /Subtype/Widget%
13680 \Fld@annotflags
13681 \Fld@annotnames
13682 /FT/Btn%
13683 \Fld@flags
13684 /Q \Fld@align
13685 /BS<</W \Fld@borderwidth /S/\Fld@borderstyle>>%
13686 /MK<<%
13687 \ifnum\Fld@rotation=\z@
13688 \else
13689 /R \Fld@rotation
13690 \fi
13691 \ifx\Fld@bordercolor\relax
13692 \else
13693 /BC[\Fld@bordercolor]%
13694 \fi
13695 \ifx\Fld@bcolor\relax
13696 \else
13697 /BG[\Fld@bcolor]%
13698 \fi
13699 /CA(\Hy@escapestring{\Fld@cbsymbol})%
13700 >>%
13701 /DA(/ZaDb \strip@pt\Fld@charsize\space Tf%
13702 \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
13703 /H/P%
13704 \ifFld@checked /V/Yes\else /V/Off\fi
```

```
13705 \Fld@additionalactions
13706 }
```

#### \PDFForm@Push

```
13707 \ifHy@pdfa
13708 \else
13709 \def\PDFForm@Push{%
13710 /Subtype/Widget%
13711 \Fld@annotflags
13712 \Fld@annotnames
13713 /FT/Btn%
13714 \Fld@flags
13715 /H/P%
13716 /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
13717 \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
13718 \ifx\Fld@bordercolor\relax\else 1\fi
13719 \space
13720 \else
13721 /MK<<%
13722 \ifnum\Fld@rotation=\z@
13723 \else
13724 /R \Fld@rotation
13725 \fi
13726 \ifx\Fld@bordercolor\relax
13727 \else
13728 /BC[\Fld@bordercolor]%
13729 \fi
13730 >>%
13731 \fi
13732 /A<</S/JavaScript/JS(\Hy@escapestring{\Fld@onclick@code})>>%
13733 \Fld@additionalactions
13734 }%
13735 \fi
```

#### \PDFForm@List

```
13736 \def\PDFForm@List{%
13737 /Subtype/Widget%
13738 \Fld@annotflags
13739 \Fld@annotnames
13740 /FT/Ch%
13741 \Fld@flags
13742 /Q \Fld@align
13743 /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
13744 \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
13745 \ifx\Fld@bordercolor\relax\else 1\fi
13746 \ifx\Fld@bcolor\relax \else 1\fi
13747 \space
13748 \else
13749 /MK<<%
13750 \ifnum\Fld@rotation=\z@
13751 \else
13752 /R \Fld@rotation
13753 \fi
13754 \ifx\Fld@bordercolor\relax
13755 \else
13756 /BC[\Fld@bordercolor]%
13757 \fi
```

```

13758     \ifx\Fld@bcolor\relax
13759     \else
13760         /BG[\Fld@bcolor]%
13761     \fi
13762     >>%
13763 \fi
13764 /DA(/Helv \strip@pt\Fld@charsize\space Tf%
13765     \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
13766 \Fld@choices
13767 \Fld@additionalactions
13768 }

```

#### \PDFForm@Radio

```

13769 \def\PDFForm@Radio{%
13770 /Subtype/Widget%
13771 \Fld@annotflags
13772 \Fld@annotnames
13773 /FT/Btn%
13774 \Fld@flags
13775 /H/P%
13776 /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
13777 /MK<<%
13778     \ifnum\Fld@rotation=\z@
13779     \else
13780         /R \Fld@rotation
13781     \fi
13782     \ifx\Fld@bordercolor\relax
13783     \else
13784         /BC[\Fld@bordercolor]%
13785     \fi
13786     \ifx\Fld@bcolor\relax
13787     \else
13788         /BG[\Fld@bcolor]%
13789     \fi
13790     /CA(\Fld@radiosymbol)%
13791     >>%
13792 /DA(/ZaDb \strip@pt\Fld@charsize\space Tf%
13793     \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
13794 \ifx\@currValue\Fld@default
13795     /V/\Fld@default
13796 /DV/\Fld@default
13797 \else
13798     /V/Off%
13799     /DV/Off%
13800 \fi
13801 \Fld@additionalactions
13802 }

```

#### \PDFForm@Text

```

13803 \def\PDFForm@Text{%
13804 /Subtype/Widget%
13805 \Fld@annotflags
13806 \Fld@annotnames
13807 /FT/Tx%
13808 \Fld@flags
13809 /Q \Fld@align
13810 /BS<</W \Fld@borderwidth\space /S /\Fld@borderstyle>>%

```

```

13811 \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
13812     \ifx\Fld@bordercolor\relax\else 1\fi
13813     \ifx\Fld@bcolor\relax \else 1\fi
13814     \space
13815 \else
13816     /MK<<%
13817     \ifnum\Fld@rotation=\z@
13818     \else
13819     /R \Fld@rotation
13820     \fi
13821     \ifx\Fld@bordercolor\relax
13822     \else
13823     /BC[\Fld@bordercolor]%
13824     \fi
13825     \ifx\Fld@bcolor\relax
13826     \else
13827     /BG[\Fld@bcolor]%
13828     \fi
13829     >>%
13830 \fi
13831 /DA(/Helv \strip@pt\Fld@charsize\space Tf%
13832     \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
13833 /DV(\Hy@escapestring{\Fld@default})%
13834 /V(\Hy@escapestring{\Fld@value})%
13835 \Fld@additionalactions
13836 \ifnum\Fld@maxlen>\z@/MaxLen \Fld@maxlen \fi
13837 }

```

\PDFForm@Submit

```

13838 \def\PDFForm@Submit{%
13839 /Subtype/Widget%
13840 \Fld@annotflags
13841 \Fld@annotnames
13842 /FT/Btn%
13843 \Fld@flags
13844 /H/P%
13845 /BS<</W \Fld@borderwidth/S\Fld@borderstyle>>%
13846 \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
13847     \ifx\Fld@bordercolor\relax\else 1\fi
13848     \space
13849 \else
13850     /MK<<%
13851     \ifnum\Fld@rotation=\z@
13852     \else
13853     /R \Fld@rotation
13854     \fi
13855     \ifx\Fld@bordercolor\relax
13856     \else
13857     /BC[\Fld@bordercolor]%
13858     \fi
13859     >>%
13860 \fi
13861 /A<<%
13862 /S/SubmitForm%
13863 /F<<%
13864 /FS/URL%
13865 /F(\Hy@escapestring{\Form@action})%
13866 >>%

```

```

13867 \Fld@submitflags
13868 >>%
13869 \Fld@additionalactions
13870 }

```

\PDFForm@Reset

```

13871 \ifHy@pdfa
13872 \else
13873 \def\PDFForm@Reset{%
13874 /Subtype/Widget%
13875 \Fld@annotflags
13876 \Fld@annotnames
13877 /FT/Btn%
13878 \Fld@flags
13879 /H/P%
13880 /DA(/Helv \strip@pt\Fld@charsize\space Tf 0 0 1 rg)%
13881 \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
13882 \ifx\Fld@bordercolor\relax\else 1\fi
13883 \space
13884 \else
13885 /MK<<%
13886 \ifnum\Fld@rotation=\z@
13887 \else
13888 /R \Fld@rotation
13889 \fi
13890 \ifx\Fld@bordercolor\relax
13891 \else
13892 /BC[\Fld@bordercolor]%
13893 \fi
13894 % /CA (Clear)
13895 % /AC (Done)
13896 >>%
13897 \fi
13898 /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
13899 /A<</S/ResetForm>>%
13900 \Fld@additionalactions
13901 }%
13902 \fi

13903 \end{pdfform}
13904 \end{package}

```

## 48 Bookmarks in the PDF file

This was originally developed by Yannis Haralambous (it was the separate `repere.sty`); it needed the `repere` or `makebook.pl` post-processor to work properly. Now redundant, as it is done entirely in  $\LaTeX$  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`

```

13905 \def\phantomsection{%
13906 \Hy@MakeCurrentHrefAuto{section*}%
13907 \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
13908 }
13909 \end{package}

```

## 48.1 Bookmarks

13910  $\langle$ \*outlines $\rangle$

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

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

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

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

```
13911 \def\Hy@writebookmark#1#2#3#4#5{%
13912   % section number, text, label, level, file
13913   \ifx\WriteBookmarks\relax%
13914   \else
13915     \ifnum#4>\Hy@bookmarksdepth\relax
13916     \else
13917       \@@writetorep{#1}{#2}{#3}{#4}{#5}%
13918     \fi
13919   \fi
13920 }
13921 \def\Hy@currentbookmarklevel{0}
13922 \def\Hy@numberline#1{#1 }
13923 \def\@@writetorep#1#2#3#4#5{%
13924   \begingroup
13925     \edef\Hy@tempa{#5}%
13926     \ifx\Hy@tempa\Hy@bookmarkstype
13927       \edef\Hy@level{#4}%
13928       \ifx\Hy@levelcheck Y%
13929         \@tempcnta\Hy@level\relax
13930         \advance\@tempcnta by -1 %
13931         \ifnum\Hy@currentbookmarklevel<\@tempcnta
13932           \advance\@tempcnta by -\Hy@currentbookmarklevel\relax
13933           \advance\@tempcnta by 1 %
13934           \Hy@Warning{%
13935             Difference (\the\@tempcnta) between bookmark levels is %
13936             greater \MessageBreak than one, level fixed%
13937           }%
13938           \@tempcnta\Hy@currentbookmarklevel
13939           \advance\@tempcnta by 1 %
13940           \edef\Hy@level{\the\@tempcnta}%
13941         \fi
13942       \else
13943         \global\let\Hy@levelcheck Y%
13944       \fi
13945       \global\let\Hy@currentbookmarklevel\Hy@level
13946       \@tempcnta\Hy@level\relax
13947       \expandafter\xdef\csname Parent\Hy@level\endcsname{#3}%
13948       \advance\@tempcnta by -1 %
13949       \edef\Hy@tempa{#3}%
```



```

13950 \edef\Hy@tempb{\csname Parent\the\@tempcnta\endcsname}%
13951 \ifx\Hy@tempa\Hy@tempb
13952 \Hy@Warning{%
13953 The anchor of a bookmark and its parent's must not%
13954 \MessageBreak be the same. Added a new anchor%
13955 }%
13956 \phantomsection
13957 \fi
13958 \ifHy@bookmarksnumbered
13959 \let\numberline\Hy@numberline
13960 \let\booknumberline\Hy@numberline
13961 \let\partnumberline\Hy@numberline
13962 \let\chapternumberline\Hy@numberline
13963 \else
13964 \let\numberline\@gobble
13965 \let\booknumberline\@gobble
13966 \let\partnumberline\@gobble
13967 \let\chapternumberline\@gobble
13968 \fi
13969 \HyPsd@XeTeXBigCharstrue
13970 \pdfstringdef\Hy@tempa{#2}%
13971 \HyPsd@SanitizeForOutFile\Hy@tempa
13972 \if@filesw
13973 \stepcounter{bookmark@seq@number}%
13974 \@ifundefined{@outlinefile}{%
13975 }{%
13976 \protected@write{@outlinefile}{}{%
13977 \protect\BOOKMARK
13978 [\Hy@level][@bookmarkopenstatus{\Hy@level}]{#3}%
13979 {\Hy@tempa}{\Hy@tempb}%
13980 \@percentchar\space\thebookmark@seq@number
13981 }%
13982 }%
13983 \fi
13984 \fi
13985 \endgroup
13986 }
13987 \newcounter{bookmark@seq@number}

13988 \begingroup
13989 \lccode'('= '{%
13990 \lccode')='}%
13991 \lccode'1=\z@
13992 \lccode'2=\z@
13993 \lccode'3=\z@
13994 \lccode'5=\z@
13995 \lccode'7=\z@
13996 \lccode'\#=\z@
13997 \lccode'\='=\z@
13998 \lccode'\{=\z@
13999 \lccode'\}=\z@
14000 \lowercase{%
14001 \endgroup
14002 \def\HyPsd@SanitizeForOutFile#1{%
14003 \@onelevel@sanitize\Hy@tempa
14004 \escapechar'\%
14005 \edef\Hy@tempa{%
14006 \expandafter\HyPsd@SanitizeOut@BraceLeft\Hy@tempa(\@nil

```

```

14007 }%
14008 \edef\Hy@tempa{%
14009   \expandafter\HyPsd@SanitizeOut@BraceRight\Hy@tempa)\@nil
14010 }%
14011 }%
14012 \def\HyPsd@SanitizeOut@BraceLeft#1(#2\@nil{%
14013   #1%
14014   \ifx\#2\%
14015     \expandafter\ltx@gobble
14016   \else
14017     \expandafter\ltx@firstofone
14018   \fi
14019   {%
14020     \string\173%
14021     \HyPsd@SanitizeOut@BraceLeft#2\@nil
14022   }%
14023 }%
14024 \def\HyPsd@SanitizeOut@BraceRight#1)#2\@nil{%
14025   #1%
14026   \ifx\#2\%
14027     \expandafter\ltx@gobble
14028   \else
14029     \expandafter\ltx@firstofone
14030   \fi
14031   {%
14032     \string\175%
14033     \HyPsd@SanitizeOut@BraceRight#2\@nil
14034   }%
14035 }%
14036 }

```

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

```

14037 \newcommand{\currentpdfbookmark}{%
14038   \pdfbookmark[\Hy@currentbookmarklevel]%
14039 }
14040 \newcommand{\subpdfbookmark}{%
14041   \@tempcnta\Hy@currentbookmarklevel
14042   \Hy@StepCount\@tempcnta
14043   \expandafter\pdfbookmark\expandafter[\the\@tempcnta]%
14044 }
14045 \newcommand{\belowpdfbookmark}[2]{%
14046   \@tempcnta\Hy@currentbookmarklevel
14047   \Hy@StepCount\@tempcnta
14048   \expandafter\pdfbookmark\expandafter[\the\@tempcnta]{#1}{#2}%
14049   \advance\@tempcnta by -1 %
14050   \xdef\Hy@currentbookmarklevel{\the\@tempcnta}%
14051 }

```

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.

```

14052 \renewcommand\pdfbookmark[3][0]{%
14053   \Hy@writebookmark}{#2}{#3.#1}{#1}{toc}%
14054   \hyper@anchorstart{#3.#1}\hyper@anchorend
14055 }
14056 \def\BOOKMARK{%
14057   \ifnextchar[\@BOOKMARK}{\@@BOOKMARK[1][-]}%

```

```

14058 }
14059 \def\@BOOKMARK[#1]{%
14060   \ifnextchar[{\@BOOKMARK[{#1}]}{\@BOOKMARK[{#1}][-]}%
14061 }

```

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

#### 48.1.1 Rerun warning

\Hy@OutlineRerunCheck

```

14062 \RequirePackage{rerunfilecheck}[2009/12/10]
14063 \def\Hy@OutlineRerunCheck{%
14064   \RerunFileCheck{\jobname.out}{%
14065     \immediate\closeout\@outlinefile
14066   }{%
14067     Rerun to get outlines right\MessageBreak
14068     or use package 'bookmark'%
14069   }%
14070 }

```

#### 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 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.

```

14071 <*vtex>
14072 \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.

```

14073 \begingroup
14074   \catcode'\'=12 %
14075   \ifnum\Hy@VTeXversion<650 %
14076     \catcode'\=12 %
14077     \gdef\hv@pdf@char#1#2#3{%
14078       \char
14079       \ifcase'#1#2#3 %
14080         "00\or"01\or"02\or"03\or"04\or"05\or"06\or"07%
14081         \or"08\or"09\or"0A\or"0B\or"0C\or"0D\or"0E\or"0F%
14082         \or"10\or"11\or"12\or"13\or"14\or"15\or"16\or"17%
14083         \or"18\or"19\or"1A\or"1B\or"1C\or"1D\or"1E\or"1F%
14084         \or"20\or"21\or"22\or"23\or"24\or"25\or"26\or"27%
14085         \or"28\or"29\or"2A\or"2B\or"2C\or"2D\or"2E\or"2F%
14086         \or"30\or"31\or"32\or"33\or"34\or"35\or"36\or"37%
14087         \or"38\or"39\or"3A\or"3B\or"3C\or"3D\or"3E\or"3F%
14088         \or"40\or"41\or"42\or"43\or"44\or"45\or"46\or"47%
14089         \or"48\or"49\or"4A\or"4B\or"4C\or"4D\or"4E\or"4F%
14090         \or"50\or"51\or"52\or"53\or"54\or"55\or"56\or"57%
14091         \or"58\or"59\or"5A\or"5B\or"5C\or"5D\or"5E\or"5F%
14092         \or"60\or"61\or"62\or"63\or"64\or"65\or"66\or"67%
14093         \or"68\or"69\or"6A\or"6B\or"6C\or"6D\or"6E\or"6F%
14094         \or"70\or"71\or"72\or"73\or"74\or"75\or"76\or"77%
14095         \or"78\or"79\or"7A\or"7B\or"7C\or"7D\or"7E\or"7F%
14096         \or"80\or"81\or"82\or"83\or"84\or"85\or"86\or"87%
14097         \or"88\or"89\or"8A\or"8B\or"8C\or"8D\or"8E\or"8F%

```

```

14098 \or"90\or"91\or"92\or"93\or"94\or"95\or"96\or"97%
14099 \or"98\or"99\or"9A\or"9B\or"9C\or"9D\or"9E\or"9F%
14100 \or"A0\or"A1\or"A2\or"A3\or"A4\or"A5\or"A6\or"A7%
14101 \or"A8\or"A9\or"AA\or"AB\or"AC\or"AD\or"AE\or"AF%
14102 \or"B0\or"B1\or"B2\or"B3\or"B4\or"B5\or"B6\or"B7%
14103 \or"B8\or"B9\or"BA\or"BB\or"BC\or"BD\or"BE\or"BF%
14104 \or"C0\or"C1\or"C2\or"C3\or"C4\or"C5\or"C6\or"C7%
14105 \or"C8\or"C9\or"CA\or"CB\or"CC\or"CD\or"CE\or"CF%
14106 \or"D0\or"D1\or"D2\or"D3\or"D4\or"D5\or"D6\or"D7%
14107 \or"D8\or"D9\or"DA\or"DB\or"DC\or"DD\or"DE\or"DF%
14108 \or"E0\or"E1\or"E2\or"E3\or"E4\or"E5\or"E6\or"E7%
14109 \or"E8\or"E9\or"EA\or"EB\or"EC\or"ED\or"EE\or"EF%
14110 \or"F0\or"F1\or"F2\or"F3\or"F4\or"F5\or"F6\or"F7%
14111 \or"F8\or"F9\or"FA\or"FB\or"FC\or"FD\or"FE\or"FF%
14112 \fi
14113 }%
14114 \else
14115 \gdef\hv@pdf@char{\char'}%
14116 \fi
14117 \endgroup

```

\@@BOOKMARK

```

14118 \def\@@BOOKMARK[#1][#2]#3#4#5{%
14119 \expandafter\edef\csname @count@#3\endcsname{%
14120 \the\@serial@counter
14121 }%
14122 \edef\@mycount{\the\@serial@counter}%
14123 \Hy@StepCount\@serial@counter
14124 \edef\@parcount{%
14125 \expandafter\ifx\csname @count@#5\endcsname\relax
14126 0%
14127 \else
14128 \csname @count@#5\endcsname
14129 \fi
14130 }%
14131 \immediate\special{%
14132 !outline \HyperDestNameFilter{#3};p=\@parcount,i=\@mycount,%
14133 s=\ifx#2-c\else o\fi,t=#4%
14134 }%
14135 }%

```

\ReadBookmarks

```

14136 \def\ReadBookmarks{%
14137 \begingroup
14138 \def\0{\hv@pdf@char 0}%
14139 \def\1{\hv@pdf@char 1}%
14140 \def\2{\hv@pdf@char 2}%
14141 \def\3{\hv@pdf@char 3}%
14142 \def\({}%
14143 \def\)}%
14144 \def\do##1{%
14145 \ifnum\catcode'##1=\active
14146 \@makeother##1%
14147 \else
14148 \ifnum\catcode'##1=6 %
14149 \@makeother##1%
14150 \fi

```

```

14151 \fi
14152 }%
14153 \dospecials
14154 \Hy@safe@activetrue
14155 \InputIfFileExists{\jobname.out}{-}{-}%
14156 \endgroup
14157 \ifx\WriteBookmarks\relax
14158 \else
14159 \if@filesw
14160 \newwrite\@outlinefile
14161 \Hy@OutlineRerunCheck
14162 \immediate\openout\@outlinefile=\jobname.out\relax
14163 \ifHy@typexml
14164 \immediate\write\@outlinefile{<relaxxml>\relax}%
14165 \fi
14166 \fi
14167 \fi
14168 }

14169 </vtex>
14170 <!*vtex>
14171 \def\ReadBookmarks{%
14172 \pdf@ifdraftmode{-}{-}%
14173 \begingroup
14174 \def\do##1{%
14175 \ifnum\catcode'##1=\active
14176 \@makeother##1%
14177 \else
14178 \ifnum\catcode'##1=6 %
14179 \@makeother##1%
14180 \fi
14181 \fi
14182 }%
14183 \dospecials
14184 \Hy@safe@activetrue
14185 \escapechar='\'%
14186 \def\@@BOOKMARK[##1][##2]##3##4##5{%
14187 \calc@bm@number{##5}%
14188 }%
14189 \InputIfFileExists{\jobname.out}{-}{-}%
14190 \ifx\WriteBookmarks\relax
14191 \global\let\WriteBookmarks\relax
14192 \fi
14193 \def\@@BOOKMARK[##1][##2]##3##4##5{%
14194 \def\Hy@temp{##4}%
14195 <*pdftex>
14196 \Hy@pstringdef\Hy@pstringName{\HyperDestNameFilter{##3}}%
14197 \Hy@OutlineName{\Hy@pstringName{
14198 ##2\check@bm@number{##3}}%
14199 }{-}%
14200 \expandafter\strip@prefix\meaning\Hy@temp
14201 }%
14202 </pdftex>
14203 <*pdfmark>
14204 \pdfmark{%
14205 pdfmark=/OUT,%
14206 Count={##2\check@bm@number{##3}},%
14207 Dest={##3},%

```

```

14208      Title=\expandafter\strip@prefix\meaning\Hy@temp
14209    }%
14210  \</pdfmark>
14211  \< *dvipdfm | xetex>
14212    \Hy@pstringdef\Hy@pstringName{\HyperDestNameFilter{###3}}%
14213    \@pdfm@mark{%
14214      outline \ifHy@DvipdfmxOutlineOpen
14215        [%
14216          \ifnum##21>\z@
14217          \else
14218            -%
14219            \fi
14220          ] %
14221        \fi
14222      ##1<<%
14223      /Title(\expandafter\strip@prefix\meaning\Hy@temp)%
14224      /A<<%
14225      /S/GoTo%
14226      /D(\Hy@pstringName)%
14227      >>%
14228    >>%
14229  }%
14230  \</dvipdfm | xetex>
14231  }%
14232  \begingroup
14233    \def\WriteBookmarks{0}%
14234    \InputIfFileExists{\jobname.out}{-}{-}%
14235  \endgroup
14236  %{\escapechar\m@ne\InputIfFileExists{\jobname.out}{-}{-}}%
14237  \endgroup
14238  }%
14239  \ifx\WriteBookmarks\relax
14240  \else
14241    \if@filesw
14242      \newwrite\@outlinefile
14243      \Hy@OutlineRerunCheck
14244      \immediate\openout\@outlinefile=\jobname.out\relax
14245      \ifHy@typexml
14246        \immediate\write\@outlinefile{<relaxxml>\relax}%
14247      \fi
14248    \fi
14249  \fi
14250  }
14251  \< *pdftex>
14252  \def\Hy@OutlineName#1#2#3#4{%
14253    \pdfoutline goto name{#2}count#3{#4}%
14254  }
14255  \</pdftex>
14256  \def\check@bm@number#1{%
14257    \expandafter\ifx\csname B_#1\endcsname\relax
14258      0%
14259    \else
14260      \csname B_#1\endcsname
14261    \fi
14262  }
14263  \def\calc@bm@number#1{%
14264    \@tempcnta=\check@bm@number{#1}\relax

```

```

14265 \advance\@tempcnta by 1 %
14266 \expandafter\xdef\csname B_#1\endcsname{\the\@tempcnta}%
14267 }
14268 \!/vtex>

14269 \ifHy@implicit
14270 \else
14271 \expandafter\endinput
14272 \fi

14273 </outlines>
14274 <*outlines | hypertex>

14275 \newlength\Hy@SectionHShift
14276 \def\Hy@SectionAnchorHref#1{%
14277 \ifx\protect\@typeset@protect
14278 \Hy@@@SectionAnchor{#1}%
14279 \fi
14280 }
14281 \DeclareRobustCommand*\Hy@@@SectionAnchor}[1]{%
14282 \leavevmode
14283 \hbox to 0pt{%
14284 \kern-\Hy@SectionHShift
14285 \Hy@raisedlink{%
14286 \hyper@anchorstart{#1}\hyper@anchorend
14287 }%
14288 \hss
14289 }%
14290 }
14291 \let\H@old@ssect\@ssect
14292 \def\@ssect#1#2#3#4#5{%
14293 \Hy@MakeCurrentHrefAuto{section*}%
14294 \setlength{\Hy@SectionHShift}{#1}%
14295 \begingroup
14296 \toks@{\H@old@ssect{#1}{#2}{#3}{#4}}%
14297 \toks\tw@\expandafter{%
14298 \expandafter\Hy@SectionAnchorHref\expandafter{\@currentHref}%
14299 #5%
14300 }%
14301 \edef\x{\endgroup
14302 \the\toks@{\the\toks\tw@}}%
14303 }\x
14304 }
14305 \let\H@old@schapter\@schapter
14306 \def\@schapter#1{%
14307 \begingroup
14308 \let\@mkboth\@gobbletwo
14309 \Hy@MakeCurrentHrefAuto{\Hy@chapapp*}%
14310 \Hy@raisedlink{%
14311 \hyper@anchorstart{\@currentHref}\hyper@anchorend
14312 }%
14313 \endgroup
14314 \H@old@schapter{#1}%
14315 }

```

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:

```

14316 \ltx@ifundefined{@chapter}{-}{%

```

```

14317 \let\Hy@org@chapter\@chapter
14318 \def\@chapter{%
14319   \def\Hy@next{%
14320     \Hy@MakeCurrentHrefAuto{\Hy@chapapp*}%
14321     \Hy@raisedlink{%
14322       \hyper@anchorstart{\@currentHref}\hyper@anchorend
14323     }%
14324   }%
14325   \ifnum\c@secnumdepth>\m@ne
14326     \ltx@ifundefined{if@mainmatter}%
14327     \iftrue{\csname if@mainmatter\endcsname}%
14328     \let\Hy@next\relax
14329   \fi
14330 \fi
14331 \Hy@next
14332 \Hy@org@chapter
14333 }%
14334 }

14335 \let\H@old@part\@part
14336 \begingroup\expandafter\expandafter\expandafter\endgroup
14337 \expandafter\ifx\csname chapter\endcsname\relax
14338   \let\Hy@secnum@part\z@
14339 \else
14340   \let\Hy@secnum@part\m@ne
14341 \fi
14342 \def\@part{%
14343   \ifnum\Hy@secnum@part>\c@secnumdepth
14344     \phantomsection
14345   \fi
14346   \H@old@part
14347 }

14348 \let\H@old@spart\@spart
14349 \def\@spart#1{%
14350   \Hy@MakeCurrentHrefAuto{part*}%
14351   \Hy@raisedlink{%
14352     \hyper@anchorstart{\@currentHref}\hyper@anchorend
14353   }%
14354   \H@old@spart{#1}%
14355 }

14356 \let\H@old@sect\@sect
14357 \def\@sect#1#2#3#4#5#6[#7]#8{%
14358   \ifnum #2>\c@secnumdepth
14359     \expandafter\@firstoftwo
14360   \else
14361     \expandafter\@secondoftwo
14362   \fi
14363   {%
14364     \Hy@MakeCurrentHrefAuto{section*}%
14365     \setlength{\Hy@SectionHShift}{#3}%
14366     \begingroup
14367       \toks@{\H@old@sect{#1}{#2}{#3}{#4}{#5}{#6}{#7}}%
14368       \toks\tw@\expandafter{%
14369         \expandafter\Hy@SectionAnchorHref\expandafter{\@currentHref}%
14370         #8%
14371       }%
14372     \edef\x{\endgroup
14373       \the\toks@{\the\toks\tw@}}%

```



```

14374   }\x
14375   }\{%
14376   \H@old@sect{#1}{#2}{#3}{#4}{#5}{#6}{#7}{#8}%
14377   }\%
14378 }

14379 </outlines | hypertex>
14380 <*outlines>

14381 \expandafter\def\csname Parent-4\endcsname{}
14382 \expandafter\def\csname Parent-3\endcsname{}
14383 \expandafter\def\csname Parent-2\endcsname{}
14384 \expandafter\def\csname Parent-1\endcsname{}
14385 \expandafter\def\csname Parent0\endcsname{}
14386 \expandafter\def\csname Parent1\endcsname{}
14387 \expandafter\def\csname Parent2\endcsname{}
14388 \expandafter\def\csname Parent3\endcsname{}
14389 \expandafter\def\csname Parent4\endcsname{}

14390 </outlines>

```

## 49 Compatibility with koma-script classes

```

14391 <*outlines | hypertex>

```

Hard-wire in an unpleasant over-ride of komascript ‘scrbook’ class for Tobias Isenberg (Tobias.Isenberg@gmx.de). With version 6.71b the hack is also applied to ‘scrreprt’ class and is removed for koma-script versions since 2001/01/01, because Markus Kohm supports hyperref in komascript.

```

14392 \def\Hy@tempa{%
14393   \def\@addchap{##1}##2{%
14394     \typeout{##2}%
14395     \if@twoside
14396       \@mkboth{##1}{}%
14397     \else
14398       \@mkboth{}{##1}%
14399     \fi
14400     \addtocontents{lof}{\protect\addvspace{10\p@}}%
14401     \addtocontents{lot}{\protect\addvspace{10\p@}}%
14402     \Hy@MakeCurrentHrefAuto{\Hy@chapapp}%
14403     \Hy@raisedlink{%
14404       \hyper@anchorstart{\@currentHref}\hyper@anchorend
14405     }%
14406     \if@twocolumn
14407       \@topnewpage[\@makeschapterhead{##2}]%
14408     \else
14409       \@makeschapterhead{##2}%
14410       \@afterheading
14411     \fi
14412     \addcontentsline{toc}{chapter}{##1}%
14413   }%
14414 }

14415 \ifclassloaded{scrbook}{%
14416   \ifclasslater{scrbook}{2001/01/01}{%
14417     \let\Hy@tempa\@empty
14418   }{}%
14419 }{%
14420   \ifclassloaded{scrreprt}{%

```

```

14421 \@ifclasslater{scrreprt}{2001/01/01}{%
14422 \let\Hy@tempa\@empty
14423 }{}%
14424 }{}%
14425 \let\Hy@tempa\@empty
14426 }%
14427 }%
14428 \Hy@tempa
14429 </outlines | hypertex>

```

## 50 Encoding definition files for encodings of PDF strings

This was contributed by Heiko Oberdiek.

### 50.1 PD1 encoding

```

14430 <*pd1enc>
14431 \DeclareFontEncoding{PD1}{}{}

```

#### Accents

```

14432 \DeclareTextAccent{\`}{PD1}{\textasciigrave}
14433 \DeclareTextAccent{\'}{PD1}{\textacute}
14434 \DeclareTextAccent{\^}{PD1}{\textasciicircum}
14435 \DeclareTextAccent{\~}{PD1}{\texttilde}
14436 \DeclareTextAccent{\"}{PD1}{\textasciidieresis}
14437 \DeclareTextAccent{\r}{PD1}{\textring}
14438 \DeclareTextAccent{\v}{PD1}{\textasciicaron}
14439 \DeclareTextAccent{\.}{PD1}{\textdotaccent}
14440 \DeclareTextAccent{\c}{PD1}{\textcedilla}
14441 \DeclareTextAccent{\=}{PD1}{\textasciimacron}
14442 \DeclareTextAccent{\b}{PD1}{\textmacronbelow}
14443 \DeclareTextAccent{\d}{PD1}{\textdotbelow}
14444 \DeclareTextCompositeCommand{\`}{PD1}{\@empty}{\textasciigrave}
14445 \DeclareTextCompositeCommand{\'}{PD1}{\@empty}{\textacute}
14446 \DeclareTextCompositeCommand{\^}{PD1}{\@empty}{\textasciicircum}
14447 \DeclareTextCompositeCommand{\~}{PD1}{\@empty}{\texttilde}
14448 \DeclareTextCompositeCommand{\"}{PD1}{\@empty}{\textasciidieresis}
14449 \DeclareTextCompositeCommand{\r}{PD1}{\@empty}{\textring}
14450 \DeclareTextCompositeCommand{\v}{PD1}{\@empty}{\textasciicaron}
14451 \DeclareTextCompositeCommand{\.}{PD1}{\@empty}{\textdotaccent}
14452 \DeclareTextCompositeCommand{\c}{PD1}{\@empty}{\textcedilla}
14453 \DeclareTextCompositeCommand{\=}{PD1}{\@empty}{\textasciimacron}
14454 \DeclareTextCompositeCommand{\b}{PD1}{\@empty}{\textmacronbelow}
14455 \DeclareTextCompositeCommand{\d}{PD1}{\@empty}{\textdotbelow}
14456 \DeclareTextCompositeCommand{\`}{PD1}{\ }{\textasciigrave}
14457 \DeclareTextCompositeCommand{\'}{PD1}{\ }{\textacute}
14458 \DeclareTextCompositeCommand{\^}{PD1}{\ }{\textasciicircum}
14459 \DeclareTextCompositeCommand{\~}{PD1}{\ }{\texttilde}
14460 \DeclareTextCompositeCommand{\"}{PD1}{\ }{\textasciidieresis}
14461 \DeclareTextCompositeCommand{\r}{PD1}{\ }{\textring}
14462 \DeclareTextCompositeCommand{\v}{PD1}{\ }{\textasciicaron}
14463 \DeclareTextCompositeCommand{\.}{PD1}{\ }{\textdotaccent}
14464 \DeclareTextCompositeCommand{\c}{PD1}{\ }{\textcedilla}
14465 \DeclareTextCompositeCommand{\=}{PD1}{\ }{\textasciimacron}
14466 \DeclareTextCompositeCommand{\b}{PD1}{\ }{\textmacronbelow}
14467 \DeclareTextCompositeCommand{\d}{PD1}{\ }{\textdotbelow}
14468 \DeclareTextCommand{\k}{PD1}[1]{\TextSymbolUnavailable{\k{#1}}{#1}}

```

```

14469 \DeclareTextCommand{\t}{PD1}[1]{\TextSymbolUnavailable{\t{#1}}#1}
14470 \DeclareTextCommand{\newtie}{PD1}[1]{%
14471 \TextSymbolUnavailable{\newtie{#1}}#1%
14472 }

```

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

```

14473 % U+0009 (CHARACTER TABULATION)
14474 \DeclareTextCommand{\textHT}{PD1}{\011}% U+0009
14475 % U+000A (LINE FEED)
14476 \DeclareTextCommand{\textLF}{PD1}{\012}% U+000A
14477 % U+000D (CARRIAGE RETURN)
14478 \DeclareTextCommand{\textCR}{PD1}{\015}% U+000D

```

Accent glyph names

```

14479 % U+02D8 BREVE; breve
14480 \DeclareTextCommand{\textasciibreve}{PD1}{\030}% U+02D8
14481 % U+02C7 CARON; caron
14482 \DeclareTextCommand{\textasciicaron}{PD1}{\031}% U+02C7
14483 % U+02C6 MODIFIER LETTER CIRCUMFLEX ACCENT; circumflex
14484 \DeclareTextCommand{\textcircumflex}{PD1}{\032}% U+02C6
14485 % U+02D9 DOT ABOVE; dotaccent
14486 \DeclareTextCommand{\textdotaccent}{PD1}{\033}% U+02D9
14487 % U+02DD DOUBLE ACUTE ACCENT; hungarumlaut
14488 \DeclareTextCommand{\texthungarumlaut}{PD1}{\034}% U+02DD
14489 % U+02DB OGONEK; ogonek
14490 \DeclareTextCommand{\textogonek}{PD1}{\035}% U+02DB
14491 % U+02DA RING ABOVE; ring
14492 \DeclareTextCommand{\textring}{PD1}{\036}% U+02DA
14493 % U+02DC SMALL TILDE; ilde, *tilde
14494 \DeclareTextCommand{\texttilde}{PD1}{\037}% U+02DC

```

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

\041: U+0021 EXCLAMATION MARK; exclam

```

14495 % U+0022 QUOTATION MARK; quotedbl
14496 \DeclareTextCommand{\textquotedbl}{PD1}{\string"}% \042 U+0022
14497 % U+0023 NUMBER SIGN; numbersign
14498 \DeclareTextCommand{\textnumbersign}{PD1}{\043}% U+0023
14499 % U+0024 DOLLAR SIGN; dollar
14500 \DeclareTextCommand{\textdollar}{PD1}{\044}% U+0024
14501 % U+0025 PERCENT SIGN; percent
14502 \DeclareTextCommand{\textpercent}{PD1}{\045}% U+0025
14503 % U+0026 AMPERSAND; ampersand
14504 \DeclareTextCommand{\textampersand}{PD1}{\046}% U+0026

```

\047: U+0027 APOSTROPHE; quotesingle

```

14505 % U+0028 LEFT PARENTHESIS; parenleft
14506 \DeclareTextCommand{\textparenleft}{PD1}{\string\(% \050 U+0028
14507 % U+0029 RIGHT PARENTHESIS; parenright
14508 \DeclareTextCommand{\textparenright}{PD1}{\string\)% \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

```

14509 % U+002E FULL STOP; period
14510 \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

14511 % U+003C LESS-THAN SIGN; less

14512 \DeclareTextCommand{\textless}{PD1}{<}% \074 U+003C

\075: U+003D EQUALS SIGN; equal

14513 % U+003E GREATER-THAN SIGN; greater

14514 \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

14515 % U+005C REVERSE SOLIDUS; backslash

14516 \DeclareTextCommand{\textbackslash}{PD1}{\134}% U+005C

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

14517 % U+005E CIRCUMFLEX ACCENT; asciicircum

14518 \DeclareTextCommand{\textasciicircum}{PD1}{\136}% U+005E

14519 % U+005F LOW LINE; underscore

14520 \DeclareTextCommand{\textunderscore}{PD1}{\137}% U+005F

14521 \DeclareTextCommand{\textmacronbelow}{PD1}{\137}% U+005F

14522 % U+0060 GRAVE ACCENT; grave

14523 \DeclareTextCommand{\textasciigrave}{PD1}{\140}% U+0060

\141: U+0061 LATIN SMALL LETTER A; a

...

\150: U+0068 LATIN SMALL LETTER H; h

14524 % U+0069 LATIN SMALL LETTER I; i

14525 \DeclareTextCompositeCommand{\.}{PD1}{i}{i}% \151 U+0069

\152: U+006A LATIN SMALL LETTER J; j

...

\172: U+007A LATIN SMALL LETTER Z; z

14526 % U+007B LEFT CURLY BRACKET; braceleft

14527 \DeclareTextCommand{\textbraceleft}{PD1}{\173}% U+007B

14528 % U+007C VERTICAL LINE; \*bar, verticalbar

14529 \DeclareTextCommand{\textbar}{PD1}{|}% U+007C

14530 % U+007D RIGHT CURLY BRACKET; braceright

14531 \DeclareTextCommand{\textbraceright}{PD1}{\175}% U+007D

14532 % U+007E TILDE; asciitilde

14533 \DeclareTextCommand{\textasciitilde}{PD1}{\176}% U+007E

Slot \177 (0x7F) is undefined in PDFDocEncoding.

14534 % U+2022 BULLET; bullet

14535 \DeclareTextCommand{\textbullet}{PD1}{\200}% U+2022

14536 % U+2020 DAGGER; dagger

14537 \DeclareTextCommand{\textdagger}{PD1}{\201}% U+2020

14538 % U+2021 DOUBLE DAGGER; daggerdbl

14539 \DeclareTextCommand{\textdaggerdbl}{PD1}{\202}% U+2021

14540 % U+2026 HORIZONTAL ELLIPSIS; ellipsis

14541 \DeclareTextCommand{\textellipsis}{PD1}{\203}% U+2026

14542 % U+2014 EM DASH; emdash

14543 \DeclareTextCommand{\textemdash}{PD1}{\204}% U+2014

14544 % U+2013 EN DASH; endash

14545 \DeclareTextCommand{\textendash}{PD1}{\205}% U+2013

14546 % U+0192 LATIN SMALL LETTER F WITH HOOK; florin  
14547 \DeclareTextCommand{\textflorin}{PD1}{\206}% U+0192  
14548 % U+2044 FRACTION SLASH; fraction  
14549 \DeclareTextCommand{\textfractionsolidus}{PD1}{\207}% U+2044  
14550 % U+2039 SINGLE LEFT-POINTING ANGLE QUOTATION MARK; guil-  
ingleft  
14551 \DeclareTextCommand{\guilsinglleft}{PD1}{\210}% U+2039  
14552 % U+203A SINGLE RIGHT-POINTING ANGLE QUOTATION MARK; guil-  
ingright  
14553 \DeclareTextCommand{\guilsinglright}{PD1}{\211}% U+203A  
14554 % U+2212 MINUS SIGN; minus  
14555 \DeclareTextCommand{\textminus}{PD1}{\212}% U+2212  
14556 % U+2030 PER MILLE SIGN; perthousand  
14557 \DeclareTextCommand{\textperthousand}{PD1}{\213}% U+2030  
14558 % U+201E DOUBLE LOW-9 QUOTATION MARK; quotedblbase  
14559 \DeclareTextCommand{\quotedblbase}{PD1}{\214}% U+201E  
14560 % U+201C LEFT DOUBLE QUOTATION MARK; quotedblleft  
14561 \DeclareTextCommand{\textquotedblleft}{PD1}{\215}% U+201C  
14562 % U+201D RIGHT DOUBLE QUOTATION MARK; quotedblright  
14563 \DeclareTextCommand{\textquotedblright}{PD1}{\216}% U+201D  
14564 % U+2018 LEFT SINGLE QUOTATION MARK; quoteleft  
14565 \DeclareTextCommand{\textquoteleft}{PD1}{\217}% U+2018  
14566 % U+2019 RIGHT SINGLE QUOTATION MARK; quoteright  
14567 \DeclareTextCommand{\textquoteright}{PD1}{\220}% U+2019  
14568 % U+201A SINGLE LOW-9 QUOTATION MARK; quotesinglbase  
14569 \DeclareTextCommand{\quotesinglbase}{PD1}{\221}% U+201A  
14570 % U+2122 TRADE MARK SIGN; trademark  
14571 \DeclareTextCommand{\texttrademark}{PD1}{\222}% U+2122  
14572 % U+FB01 LATIN SMALL LIGATURE FI; fi  
14573 \DeclareTextCommand{\textfi}{PD1}{\223}% U+FB01  
14574 % U+FB02 LATIN SMALL LIGATURE FL; fl  
14575 \DeclareTextCommand{\textfl}{PD1}{\224}% U+FB02  
14576 % U+0141 LATIN CAPITAL LETTER L WITH STROKE; Lslash  
14577 \DeclareTextCommand{\L}{PD1}{\225}% U+0141  
14578 % U+0152 LATIN CAPITAL LIGATURE OE; OE  
14579 \DeclareTextCommand{\OE}{PD1}{\226}% U+0152  
14580 % U+0160 LATIN CAPITAL LETTER S WITH CARON; Scaron  
14581 \DeclareTextCompositeCommand{\v}{PD1}{S}{\227}% U+0160  
14582 % U+0178 LATIN CAPITAL LETTER Y WITH DIAERESIS; Ydieresis  
14583 \DeclareTextCompositeCommand{"}{PD1}{Y}{\230}% U+0178  
14584 \DeclareTextCommand{\IJ}{PD1}{\230}  
14585 % U+017D LATIN CAPITAL LETTER Z WITH CARON; Zcaron  
14586 \DeclareTextCompositeCommand{\v}{PD1}{Z}{\231}% U+017D  
14587 % U+0131 LATIN SMALL LETTER DOTLESS I; dotlessi  
14588 \DeclareTextCommand{\i}{PD1}{\232}% U+0131  
14589 % U+0142 LATIN SMALL LETTER L WITH STROKE; lslash  
14590 \DeclareTextCommand{\l}{PD1}{\233}% U+0142  
14591 % U+0153 LATIN SMALL LIGATURE OE; oe  
14592 \DeclareTextCommand{\oe}{PD1}{\234}% U+0153  
14593 % U+0161 LATIN SMALL LETTER S WITH CARON; scaron  
14594 \DeclareTextCompositeCommand{\v}{PD1}{s}{\235}% U+0161  
14595 % U+017E LATIN SMALL LETTER Z WITH CARON; zcaron  
14596 \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.  
14597 % U+20AC EURO SIGN; \*Euro, euro  
14598 \DeclareTextCommand{\texteuro}{PD1}{\240}% U+20AC

14599 % U+00A1 INVERTED EXCLAMATION MARK; exclamdown  
 14600 \DeclareTextCommand{\textexclamdown}{PD1}{\241}% U+00A1  
 14601 % U+00A2 CENT SIGN; cent  
 14602 \DeclareTextCommand{\textcent}{PD1}{\242}% U+00A2  
 14603 % U+00A3 POUND SIGN; sterling  
 14604 \DeclareTextCommand{\textsterling}{PD1}{\243}% U+00A3  
 14605 % U+00A4 CURRENCY SIGN; currency  
 14606 \DeclareTextCommand{\textcurrency}{PD1}{\244}% U+00A4  
 14607 % U+00A5 YEN SIGN; yen  
 14608 \DeclareTextCommand{\textyen}{PD1}{\245}% U+00A5  
 14609 % U+00A6 BROKEN BAR; brokenbar  
 14610 \DeclareTextCommand{\textbrokenbar}{PD1}{\246}% U+00A6  
 14611 % U+00A7 SECTION SIGN; section  
 14612 \DeclareTextCommand{\textsection}{PD1}{\247}% U+00A7  
 14613 % U+00A8 DIAERESIS; dieresis  
 14614 \DeclareTextCommand{\textasciidieresis}{PD1}{\250}% U+00A8  
 14615 % U+00A9 COPYRIGHT SIGN; copyright  
 14616 \DeclareTextCommand{\textcopyright}{PD1}{\251}% U+00A9  
 14617 % U+00AA FEMININE ORDINAL INDICATOR; ordfeminine  
 14618 \DeclareTextCommand{\textordfeminine}{PD1}{\252}% U+00AA  
 14619 % U+00AB LEFT-POINTING DOUBLE ANGLE QUOTATION MARK; guillemotleft  
 14620 \DeclareTextCommand{\guillemotleft}{PD1}{\253}% U+00AB  
 14621 % U+00AC NOT SIGN; logicalnot  
 14622 \DeclareTextCommand{\textlogicalnot}{PD1}{\254}% U+00AC  
 14623 \DeclareTextCommand{\textlnot}{PD1}{\254}% logical not  
 No glyph \255 in PDFDocEncoding.  
 14624 % U+00AE REGISTERED SIGN; registered  
 14625 \DeclareTextCommand{\textregistered}{PD1}{\256}% U+00AE  
 14626 % U+00AF MACRON; \*macron, overscore  
 14627 \DeclareTextCommand{\textasciimacron}{PD1}{\257}% U+00AF  
 14628 % U+00B0 DEGREE SIGN; degree  
 14629 \DeclareTextCommand{\textdegree}{PD1}{\260}% U+00B0  
 14630 % U+00B1 PLUS-MINUS SIGN; plusminus  
 14631 \DeclareTextCommand{\textplusminus}{PD1}{\261}% U+00B1  
 14632 % U+00B2 SUPERSCRIFT TWO; twosuperior  
 14633 \DeclareTextCommand{\texttwosuperior}{PD1}{\262}% U+00B2  
 14634 % U+00B3 SUPERSCRIFT THREE; threesuperior  
 14635 \DeclareTextCommand{\textthreesuperior}{PD1}{\263}% U+00B3  
 14636 % U+00B4 ACUTE ACCENT; acute  
 14637 \DeclareTextCommand{\textacute}{PD1}{\264}% U+00B4  
 14638 % U+00B5 MICRO SIGN; mu, mu1  
 14639 \DeclareTextCommand{\textmu}{PD1}{\265}% U+00B5  
 14640 % U+00B6 PILCROW SIGN; paragraph  
 14641 \DeclareTextCommand{\textparagraph}{PD1}{\266}% U+00B6  
 14642 % U+00B7 MIDDLE DOT; middot, \*periodcentered  
 14643 \DeclareTextCommand{\textperiodcentered}{PD1}{\267}% U+00B7  
 14644 % U+00B8 CEDILLA; cedilla  
 14645 \DeclareTextCommand{\textcedilla}{PD1}{\270}% U+00B8  
 14646 % U+00B9 SUPERSCRIFT ONE; onesuperior  
 14647 \DeclareTextCommand{\textonesuperior}{PD1}{\271}% U+00B9  
 14648 % U+00BA MASCULINE ORDINAL INDICATOR; ordmasculine  
 14649 \DeclareTextCommand{\textordmasculine}{PD1}{\272}% U+00BA  
 14650 % U+00BB RIGHT-POINTING DOUBLE ANGLE QUOTATION MARK; guillemotright  
 14651 \DeclareTextCommand{\guillemotright}{PD1}{\273}% U+00BB  
 14652 % U+00BC VULGAR FRACTION ONE QUARTER; onequarter

14653 \DeclareTextCommand{\textonequarter}{PD1}{\274}% U+00BC  
14654 % U+00BD VULGAR FRACTION ONE HALF; onehalf  
14655 \DeclareTextCommand{\textonehalf}{PD1}{\275}% U+00BD  
14656 % U+00BE VULGAR FRACTION THREE QUARTERS; threequarters  
14657 \DeclareTextCommand{\textthreequarters}{PD1}{\276}% U+00BE  
14658 % U+00BF INVERTED QUESTION MARK; questiondown  
14659 \DeclareTextCommand{\textquestiondown}{PD1}{\277}% U+00BF  
14660 % U+00C0 LATIN CAPITAL LETTER A WITH GRAVE; Agrave  
14661 \DeclareTextCompositeCommand{\`}{PD1}{A}{\300}% U+00C0  
14662 % U+00C1 LATIN CAPITAL LETTER A WITH ACUTE; Aacute  
14663 \DeclareTextCompositeCommand{\'}{PD1}{A}{\301}% U+00C1  
14664 % U+00C2 LATIN CAPITAL LETTER A WITH CIRCUMFLEX; Acircumflex  
14665 \DeclareTextCompositeCommand{\^}{PD1}{A}{\302}% U+00C2  
14666 % U+00C3 LATIN CAPITAL LETTER A WITH TILDE; Atilde  
14667 \DeclareTextCompositeCommand{\~}{PD1}{A}{\303}% U+00C3  
14668 % U+00C4 LATIN CAPITAL LETTER A WITH DIAERESIS; Adieresis  
14669 \DeclareTextCompositeCommand{\"}{PD1}{A}{\304}% U+00C4  
14670 % U+00C5 LATIN CAPITAL LETTER A WITH RING ABOVE; Aring  
14671 \DeclareTextCompositeCommand{\r}{PD1}{A}{\305}% U+00C5  
14672 % U+00C6 LATIN CAPITAL LETTER AE; AE  
14673 \DeclareTextCommand{\AE}{PD1}{\306}% U+00C6  
14674 % U+00C7 LATIN CAPITAL LETTER C WITH CEDILLA; Ccedilla  
14675 \DeclareTextCompositeCommand{\c}{PD1}{C}{\307}% U+00C7  
14676 % U+00C8 LATIN CAPITAL LETTER E WITH GRAVE; Egrave  
14677 \DeclareTextCompositeCommand{\`}{PD1}{E}{\310}% U+00C8  
14678 % U+00C9 LATIN CAPITAL LETTER E WITH ACUTE; Eacute  
14679 \DeclareTextCompositeCommand{\'}{PD1}{E}{\311}% U+00C9  
14680 % U+00CA LATIN CAPITAL LETTER E WITH CIRCUMFLEX; Ecircumflex  
14681 \DeclareTextCompositeCommand{\^}{PD1}{E}{\312}% U+00CA  
14682 % U+00CB LATIN CAPITAL LETTER E WITH DIAERESIS; Edieresis  
14683 \DeclareTextCompositeCommand{\"}{PD1}{E}{\313}% U+00CB  
14684 % U+00CC LATIN CAPITAL LETTER I WITH GRAVE; Igrave  
14685 \DeclareTextCompositeCommand{\`}{PD1}{I}{\314}% U+00CC  
14686 % U+00CD LATIN CAPITAL LETTER I WITH ACUTE; Iacute  
14687 \DeclareTextCompositeCommand{\'}{PD1}{I}{\315}% U+00CD  
14688 % U+00CE LATIN CAPITAL LETTER I WITH CIRCUMFLEX; Icircumflex  
14689 \DeclareTextCompositeCommand{\^}{PD1}{I}{\316}% U+00CE  
14690 % U+00CF LATIN CAPITAL LETTER I WITH DIAERESIS; Idieresis  
14691 \DeclareTextCompositeCommand{\"}{PD1}{I}{\317}% U+00CF  
14692 % U+00D0 LATIN CAPITAL LETTER ETH; Eth  
14693 \DeclareTextCommand{\DH}{PD1}{\320}% U+00D0  
14694 \DeclareTextCommand{\DJ}{PD1}{\320}% U+00D0  
14695 % U+00D1 LATIN CAPITAL LETTER N WITH TILDE; Ntilde  
14696 \DeclareTextCompositeCommand{\~}{PD1}{N}{\321}% U+00D1  
14697 % U+00D2 LATIN CAPITAL LETTER O WITH GRAVE; Ograve  
14698 \DeclareTextCompositeCommand{\`}{PD1}{O}{\322}% U+00D2  
14699 % U+00D3 LATIN CAPITAL LETTER O WITH ACUTE; Oacute  
14700 \DeclareTextCompositeCommand{\'}{PD1}{O}{\323}% U+00D3  
14701 % U+00D4 LATIN CAPITAL LETTER O WITH CIRCUMFLEX; Ocircumflex  
14702 \DeclareTextCompositeCommand{\^}{PD1}{O}{\324}% U+00D4  
14703 % U+00D5 LATIN CAPITAL LETTER O WITH TILDE; Otilde  
14704 \DeclareTextCompositeCommand{\~}{PD1}{O}{\325}% U+00D5  
14705 % U+00D6 LATIN CAPITAL LETTER O WITH DIAERESIS; Odieresis  
14706 \DeclareTextCompositeCommand{\"}{PD1}{O}{\326}% U+00D6  
14707 % U+00D7 MULTIPLICATION SIGN; multiply  
14708 \DeclareTextCommand{\textmultiply}{PD1}{\327}% U+00D7  
14709 % U+00D8 LATIN CAPITAL LETTER O WITH STROKE; Oslash

14710 \DeclareTextCommand{\O}{PD1}{\330}% U+00D8  
14711 % U+00D9 LATIN CAPITAL LETTER U WITH GRAVE; Ugrave  
14712 \DeclareTextCompositeCommand{\'}{PD1}{U}{\331}% U+00D9  
14713 % U+00DA LATIN CAPITAL LETTER U WITH ACUTE; Uacute  
14714 \DeclareTextCompositeCommand{\'}{PD1}{U}{\332}% U+00DA  
14715 % U+00DB LATIN CAPITAL LETTER U WITH CIRCUMFLEX; Ucircumflex  
14716 \DeclareTextCompositeCommand{\^}{PD1}{U}{\333}% U+00DB  
14717 % U+00DC LATIN CAPITAL LETTER U WITH DIAERESIS; Udieresis  
14718 \DeclareTextCompositeCommand{\"}{PD1}{U}{\334}% U+00DC  
14719 % U+00DD LATIN CAPITAL LETTER Y WITH ACUTE; Yacute  
14720 \DeclareTextCompositeCommand{\'}{PD1}{Y}{\335}% U+00DD  
14721 % U+00DE LATIN CAPITAL LETTER THORN; Thorn  
14722 \DeclareTextCommand{\TH}{PD1}{\336}% U+00DE  
14723 % U+00DF LATIN SMALL LETTER SHARP S; germandbls  
14724 \DeclareTextCommand{\ss}{PD1}{\337}% U+00DF  
14725 % U+00E0 LATIN SMALL LETTER A WITH GRAVE; agrave  
14726 \DeclareTextCompositeCommand{\'}{PD1}{a}{\340}% U+00E0  
14727 % U+00E1 LATIN SMALL LETTER A WITH ACUTE; aacute  
14728 \DeclareTextCompositeCommand{\'}{PD1}{a}{\341}% U+00E1  
14729 % U+00E2 LATIN SMALL LETTER A WITH CIRCUMFLEX; acircumflex  
14730 \DeclareTextCompositeCommand{\^}{PD1}{a}{\342}% U+00E2  
14731 % U+00E3 LATIN SMALL LETTER A WITH TILDE; atilde  
14732 \DeclareTextCompositeCommand{\~}{PD1}{a}{\343}% U+00E3  
14733 % U+00E4 LATIN SMALL LETTER A WITH DIAERESIS; adieresis  
14734 \DeclareTextCompositeCommand{\"}{PD1}{a}{\344}% U+00E4  
14735 % U+00E5 LATIN SMALL LETTER A WITH RING ABOVE; aring  
14736 \DeclareTextCompositeCommand{\r}{PD1}{a}{\345}% U+00E5  
14737 % U+00E6 LATIN SMALL LETTER AE; ae  
14738 \DeclareTextCommand{\ae}{PD1}{\346}% U+00E6  
14739 % U+00E7 LATIN SMALL LETTER C WITH CEDILLA; ccedilla  
14740 \DeclareTextCompositeCommand{\c}{PD1}{c}{\347}% U+00E7  
14741 % U+00E8 LATIN SMALL LETTER E WITH GRAVE; egrave  
14742 \DeclareTextCompositeCommand{\'}{PD1}{e}{\350}% U+00E8  
14743 % U+00E9 LATIN SMALL LETTER E WITH ACUTE; eacute  
14744 \DeclareTextCompositeCommand{\'}{PD1}{e}{\351}% U+00E9  
14745 % U+00EA LATIN SMALL LETTER E WITH CIRCUMFLEX; ecircumflex  
14746 \DeclareTextCompositeCommand{\^}{PD1}{e}{\352}% U+00EA  
14747 % U+00EB LATIN SMALL LETTER E WITH DIAERESIS; edieresis  
14748 \DeclareTextCompositeCommand{\"}{PD1}{e}{\353}% U+00EB  
14749 % U+00EC LATIN SMALL LETTER I WITH GRAVE; igrave  
14750 \DeclareTextCompositeCommand{\'}{PD1}{i}{\354}% U+00EC  
14751 \DeclareTextCompositeCommand{\'}{PD1}{i}{\354}% U+00EC  
14752 % U+00ED LATIN SMALL LETTER I WITH ACUTE; iacute  
14753 \DeclareTextCompositeCommand{\'}{PD1}{i}{\355}% U+00ED  
14754 \DeclareTextCompositeCommand{\'}{PD1}{i}{\355}% U+00ED  
14755 % U+00EE LATIN SMALL LETTER I WITH CIRCUMFLEX; icircumflex  
14756 \DeclareTextCompositeCommand{\^}{PD1}{i}{\356}% U+00EE  
14757 \DeclareTextCompositeCommand{\^}{PD1}{i}{\356}% U+00EE  
14758 % U+00EF LATIN SMALL LETTER I WITH DIAERESIS; idieresis  
14759 \DeclareTextCompositeCommand{\"}{PD1}{i}{\357}% U+00EF  
14760 \DeclareTextCompositeCommand{\"}{PD1}{i}{\357}% U+00EF  
14761 % U+00F0 LATIN SMALL LETTER ETH; eth  
14762 \DeclareTextCommand{\dh}{PD1}{\360}% U+00F0  
14763 % U+00F1 LATIN SMALL LETTER N WITH TILDE; ntilde  
14764 \DeclareTextCompositeCommand{\~}{PD1}{n}{\361}% U+00F1  
14765 % U+00F2 LATIN SMALL LETTER O WITH GRAVE; ograve  
14766 \DeclareTextCompositeCommand{\'}{PD1}{o}{\362}% U+00F2



14767 % U+00F3 LATIN SMALL LETTER O WITH ACUTE; oacute  
 14768 \DeclareTextCompositeCommand{\'}{PD1}{o}{\363}% U+00F3  
 14769 % U+00F4 LATIN SMALL LETTER O WITH CIRCUMFLEX; ocircumflex  
 14770 \DeclareTextCompositeCommand{\~}{PD1}{o}{\364}% U+00F4  
 14771 % U+00F5 LATIN SMALL LETTER O WITH TILDE; otilde  
 14772 \DeclareTextCompositeCommand{\-}{PD1}{o}{\365}% U+00F5  
 14773 % U+00F6 LATIN SMALL LETTER O WITH DIAERESIS; odieresis  
 14774 \DeclareTextCompositeCommand{\"}{PD1}{o}{\366}% U+00F6  
 14775 % U+00F7 DIVISION SIGN; divide  
 14776 \DeclareTextCommand{\textdivide}{PD1}{\367}% U+00F7  
 14777 % U+00F8 LATIN SMALL LETTER O WITH STROKE; oslash  
 14778 \DeclareTextCommand{\o}{PD1}{\370}% U+00F8  
 14779 % U+00F9 LATIN SMALL LETTER U WITH GRAVE; ugrave  
 14780 \DeclareTextCompositeCommand{\'}{PD1}{u}{\371}% U+00F9  
 14781 % U+00FA LATIN SMALL LETTER U WITH ACUTE; uacute  
 14782 \DeclareTextCompositeCommand{\'}{PD1}{u}{\372}% U+00FA  
 14783 % U+00FB LATIN SMALL LETTER U WITH CIRCUMFLEX; ucircumflex  
 14784 \DeclareTextCompositeCommand{\~}{PD1}{u}{\373}% U+00FB  
 14785 % U+00FC LATIN SMALL LETTER U WITH DIAERESIS; udieresis  
 14786 \DeclareTextCompositeCommand{\"}{PD1}{u}{\374}% U+00FC  
 14787 % U+00FD LATIN SMALL LETTER Y WITH ACUTE; yacute  
 14788 \DeclareTextCompositeCommand{\'}{PD1}{y}{\375}% U+00FD  
 14789 % U+00FE LATIN SMALL LETTER THORN; thorn  
 14790 \DeclareTextCommand{\th}{PD1}{\376}% U+00FE  
 14791 % U+00FF LATIN SMALL LETTER Y WITH DIAERESIS; ydieresis  
 14792 \DeclareTextCompositeCommand{\"}{PD1}{y}{\377}% U+00FF  
 14793 \DeclareTextCommand{\ij}{PD1}{\377}% U+00FF

Glyphs that consist of several characters.

14794 \DeclareTextCommand{\SS}{PD1}{SS}  
 14795 \DeclareTextCommand{\textcelsius}{PD1}{\textdegree C}

Aliases (german.sty)

14796 \DeclareTextCommand{\textglqq}{PD1}{\quotedblbase}  
 14797 \DeclareTextCommand{\textgrqq}{PD1}{\textquotedblleft}  
 14798 \DeclareTextCommand{\textglq}{PD1}{\quotesinglbase}  
 14799 \DeclareTextCommand{\textgrq}{PD1}{\textquoteleft}  
 14800 \DeclareTextCommand{\textflqq}{PD1}{\guillemotleft}  
 14801 \DeclareTextCommand{\textfrqq}{PD1}{\guillemotright}  
 14802 \DeclareTextCommand{\textflq}{PD1}{\guilsinglleft}  
 14803 \DeclareTextCommand{\textfrq}{PD1}{\guilsinglright}

Aliases (math names)

14804 \DeclareTextCommand{\textneg}{PD1}{\textlogicalnot}  
 14805 \DeclareTextCommand{\texttimes}{PD1}{\textmultiply}  
 14806 \DeclareTextCommand{\textdiv}{PD1}{\textdivide}  
 14807 \DeclareTextCommand{\textpm}{PD1}{\textplusminus}  
 14808 \DeclareTextCommand{\textcdot}{PD1}{\textperiodcentered}  
 14809 \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).

14810 \DeclareTextCompositeCommand{\k}{PD1}{a}{a}% aogonek  
 14811 \DeclareTextCompositeCommand{\'}{PD1}{c}{c}% cacute  
 14812 \DeclareTextCompositeCommand{\k}{PD1}{e}{e}% eogonek  
 14813 \DeclareTextCompositeCommand{\'}{PD1}{n}{n}% nacute  
 14814 \DeclareTextCompositeCommand{\'}{PD1}{s}{s}% sacute  
 14815 \DeclareTextCompositeCommand{\'}{PD1}{z}{z}% zacute  
 14816 \DeclareTextCompositeCommand{\.}{PD1}{z}{z}% zdot

```

14817 \DeclareTextCompositeCommand{\k}{PD1}{A}{A}% Aogonek
14818 \DeclareTextCompositeCommand{\'}{PD1}{C}{C}% Cacute
14819 \DeclareTextCompositeCommand{\k}{PD1}{E}{E}% Eogonek
14820 \DeclareTextCompositeCommand{\'}{PD1}{N}{N}% Nacute
14821 \DeclareTextCompositeCommand{\'}{PD1}{S}{S}% Sacute
14822 \DeclareTextCompositeCommand{\'}{PD1}{Z}{Z}% Zacute
14823 \DeclareTextCompositeCommand{\.}{PD1}{Z}{Z}% Zdot
14824 </pd1enc>

```

## 50.2 PU encoding

```

14825 <*puenc>
14826 \DeclareFontEncoding{PU}{-}{}

```

### 50.2.1 NFSS2 accents

```

14827 % U+0300 COMBINING GRAVE ACCENT; gravecmb, *gravecomb
14828 \DeclareTextCommand{\'}{PU}[1]{#1\83\000}% U+0300
14829 % U+0301 COMBINING ACUTE ACCENT; acutecmb, *acutecomb
14830 \DeclareTextCommand{\'}{PU}[1]{#1\83\001}% U+0301
14831 % U+0302 COMBINING CIRCUMFLEX ACCENT; circumflexcmb
14832 \DeclareTextCommand{\^}{PU}[1]{#1\83\002}% U+0302
14833 % U+0303 COMBINING TILDE; tildecmb, *tildecmb
14834 \DeclareTextCommand{\~}{PU}[1]{#1\83\003}% U+0303
14835 % U+0304 COMBINING MACRON; macroncmb
14836 \DeclareTextCommand{\=}{PU}[1]{#1\83\004}% U+0304
14837 % U+0306 COMBINING BREVE; brevecmb
14838 \DeclareTextCommand{\u}{PU}[1]{#1\83\006}% U+0306
14839 \DeclareTextCommand{\U}{PU}[1]{#1\83\006}% U+0306
14840 % U+0307 COMBINING DOT ABOVE; dotaccentcmb
14841 \DeclareTextCommand{\.}{PU}[1]{#1\83\007}% U+0307
14842 % U+0308 COMBINING DIAERESIS; dieresiscmb
14843 \DeclareTextCommand{\"}{PU}[1]{#1\83\010}% U+0308
14844 % U+030A COMBINING RING ABOVE; ringcmb
14845 \DeclareTextCommand{\r}{PU}[1]{#1\83\012}% U+030A
14846 % U+030B COMBINING DOUBLE ACUTE ACCENT; hungarumlautcmb
14847 \DeclareTextCommand{\H}{PU}[1]{#1\83\013}% U+030B
14848 % U+030C COMBINING CARON; caroncmb
14849 \DeclareTextCommand{\v}{PU}[1]{#1\83\014}% U+030C
14850 % U+030F COMBINING DOUBLE GRAVE ACCENT; dblgravecmb
14851 \DeclareTextCommand{\G}{PU}[1]{#1\83\017}% U+030F
14852 \DeclareTextCommand{\C}{PU}[1]{#1\83\017}% U+030F
14853 % U+0311 COMBINING INVERTED BREVE; breveinvertedcmb
14854 \DeclareTextCommand{\newtie}{PU}[1]{#1\83\021}% U+0311
14855 % U+0323 COMBINING DOT BELOW; dotbelowcmb, *dotbelowcomb
14856 \DeclareTextCommand{\d}{PU}[1]{#1\83\043}% U+0323
14857 % U+0331 COMBINING MACRON BELOW; macronbelowcmb
14858 \DeclareTextCommand{\b}{PU}[1]{#1\83\061}% U+0331
14859 % U+0327 COMBINING CEDILLA; cedillacmb
14860 \DeclareTextCommand{\c}{PU}[1]{#1\83\047}% U+0327
14861 % U+0328 COMBINING OGONEK; ogonekcmb
14862 \DeclareTextCommand{\k}{PU}[1]{#1\83\050}% U+0328
14863 % U+0361 COMBINING DOUBLE INVERTED BREVE; breveinverteddoublecmb
14864 \DeclareTextCommand{\t}{PU}[1]{#1\83\141}% U+0361
14865 % U+20DD COMBINING ENCLOSING CIRCLE
14866 \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.

14867 \DeclareTextCompositeCommand{\`}{PU}{\@empty}{\textasciigrave}  
14868 \DeclareTextCompositeCommand{\' }{PU}{\@empty}{\textacute}  
14869 \DeclareTextCompositeCommand{\~}{PU}{\@empty}{\textasciicircum}  
14870 \DeclareTextCompositeCommand{\-}{PU}{\@empty}{\texttilde}  
14871 \DeclareTextCompositeCommand{\"}{PU}{\@empty}{\textasciidieresis}  
14872 \DeclareTextCompositeCommand{\r}{PU}{\@empty}{\textring}  
14873 \DeclareTextCompositeCommand{\v}{PU}{\@empty}{\textasciicaron}  
14874 \DeclareTextCompositeCommand{\.}{PU}{\@empty}{\textdotaccent}  
14875 \DeclareTextCompositeCommand{\c}{PU}{\@empty}{\textcedilla}  
14876 \DeclareTextCompositeCommand{\u}{PU}{\@empty}{\textasciibreve}  
14877 \DeclareTextCompositeCommand{\G}{PU}{\@empty}{\textdoublegrave}  
14878 \DeclareTextCompositeCommand{\=}{PU}{\@empty}{\textasciimacron}  
14879 \DeclareTextCompositeCommand{\H}{PU}{\@empty}{\texthungarumlaut}  
14880 \DeclareTextCompositeCommand{\k}{PU}{\@empty}{\textogonek}  
14881 \DeclareTextCompositeCommand{\b}{PU}{\@empty}{\textmacronbelow}  
14882 \DeclareTextCompositeCommand{\d}{PU}{\@empty}{\textdotbelow}  
14883 \DeclareTextCompositeCommand{\t}{PU}{\@empty}{\texttie}  
14884 \DeclareTextCompositeCommand{\newtie}{PU}{\@empty}{\textnewtie}  
14885 \DeclareTextCompositeCommand{\textcircled}{PU}{\@empty}{\textbigcircle}  
  
14886 \DeclareTextCompositeCommand{\`}{PU}{\ }{\textasciigrave}  
14887 \DeclareTextCompositeCommand{\' }{PU}{\ }{\textacute}  
14888 \DeclareTextCompositeCommand{\~}{PU}{\ }{\textasciicircum}  
14889 \DeclareTextCompositeCommand{\-}{PU}{\ }{\texttilde}  
14890 \DeclareTextCompositeCommand{\"}{PU}{\ }{\textasciidieresis}  
14891 \DeclareTextCompositeCommand{\r}{PU}{\ }{\textring}  
14892 \DeclareTextCompositeCommand{\v}{PU}{\ }{\textasciicaron}  
14893 \DeclareTextCompositeCommand{\.}{PU}{\ }{\textdotaccent}  
14894 \DeclareTextCompositeCommand{\c}{PU}{\ }{\textcedilla}  
14895 \DeclareTextCompositeCommand{\u}{PU}{\ }{\textasciibreve}  
14896 \DeclareTextCompositeCommand{\G}{PU}{\ }{\textdoublegrave}  
14897 \DeclareTextCompositeCommand{\=}{PU}{\ }{\textasciimacron}  
14898 \DeclareTextCompositeCommand{\H}{PU}{\ }{\texthungarumlaut}  
14899 \DeclareTextCompositeCommand{\k}{PU}{\ }{\textogonek}  
14900 \DeclareTextCompositeCommand{\b}{PU}{\ }{\textmacronbelow}  
14901 \DeclareTextCompositeCommand{\d}{PU}{\ }{\textdotbelow}  
14902 \DeclareTextCompositeCommand{\t}{PU}{\ }{\texttie}  
14903 \DeclareTextCompositeCommand{\newtie}{PU}{\ }{\textnewtie}  
14904 \DeclareTextCompositeCommand{\textcircled}{PU}{\ }{\textbigcircle}

#### Accents for capitals (see encoding TS1)

14905 \DeclareTextCommand{\capitalcedilla}{PU}[1]{\c{#1}}  
14906 \DeclareTextCommand{\capitalogonek}{PU}[1]{\k{#1}}  
14907 \DeclareTextCommand{\capitalgrave}{PU}[1]{\`{#1}}  
14908 \DeclareTextCommand{\capitalacute}{PU}[1]{\\'{#1}}  
14909 \DeclareTextCommand{\capitalcircumflex}{PU}[1]{\~{#1}}  
14910 \DeclareTextCommand{\capitaltilde}{PU}[1]{\~{#1}}  
14911 \DeclareTextCommand{\capitaldieresis}{PU}[1]{\"{#1}}  
14912 \DeclareTextCommand{\capitalhungarumlaut}{PU}[1]{\H{#1}}  
14913 \DeclareTextCommand{\capitalring}{PU}[1]{\r{#1}}  
14914 \DeclareTextCommand{\capitalcaron}{PU}[1]{\v{#1}}  
14915 \DeclareTextCommand{\capitalbreve}{PU}[1]{\u{#1}}  
14916 \DeclareTextCommand{\capitalmacron}{PU}[1]{\={#1}}  
14917 \DeclareTextCommand{\capitaldotaccent}{PU}[1]{\.{#1}}  
14918 \DeclareTextCommand{\capitaltie}{PU}[1]{\t{#1}}  
14919 \DeclareTextCommand{\capitalnewtie}{PU}[1]{\newtie{#1}}

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

Special white space escape characters.

```
14920 % U+0009 (CHARACTER TABULATION)
14921 \DeclareTextCommand{\textHT}{PU}{\80\011}% U+0009
14922 % U+000A (LINE FEED)
14923 \DeclareTextCommand{\textLF}{PU}{\80\012}% U+000A
14924 % U+000D (CARRIAGE RETURN)
14925 \DeclareTextCommand{\textCR}{PU}{\80\015}% U+000D

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

14926 % U+0022 QUOTATION MARK; quotedbl
14927 \DeclareTextCommand{\textquotedbl}{PU}{\string"}% \80\042 U+0022
14928 % U+0023 NUMBER SIGN; numbersign
14929 \DeclareTextCommand{\textnumbersign}{PU}{\80\043}% U+0023
14930 % U+0024 DOLLAR SIGN; dollar
14931 \DeclareTextCommand{\textdollar}{PU}{\80\044}% U+0024
14932 % U+0025 PERCENT SIGN; percent
14933 \DeclareTextCommand{\textpercent}{PU}{\80\045}% U+0025
14934 % U+0026 AMPERSAND; ampersand
14935 \DeclareTextCommand{\textampersand}{PU}{\80\046}% U+0026
14936 % U+0027 APOSTROPHE; quotesingle
14937 \DeclareTextCommand{\textquotesingle}{PU}{\80\047}% U+0027
14938 % U+0028 LEFT PARENTHESIS; parenleft
14939 \DeclareTextCommand{\textparenleft}{PU}{\80\050}% U+0028
14940 % U+0029 RIGHT PARENTHESIS; parenright
14941 \DeclareTextCommand{\textparenright}{PU}{\80\051}% U+0029
14942 % U+002A ASTERISK; asterisk
14943 \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

14944 % U+003C LESS-THAN SIGN; less
14945 \DeclareTextCommand{\textless}{PU}{<}% \80\074 U+003C

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

14946 % U+003E GREATER-THAN SIGN; greater
14947 \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

14948 % U+005C REVERSE SOLIDUS; backslash
14949 \DeclareTextCommand{\textbackslash}{PU}{\80\134}% U+005C

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

14950 % U+005E CIRCUMFLEX ACCENT; asciicircum  
 14951 \DeclareTextCommand{\textasciicircum}{PU}{\80\136}% U+005E  
 14952 % U+005F LOW LINE; underscore  
 14953 \DeclareTextCommand{\textunderscore}{PU}{\80\137}% U+005F  
 14954 % U+0060 GRAVE ACCENT; grave  
 14955 \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  
 14956 % U+0069 LATIN SMALL LETTER I; i  
 14957 \DeclareTextCompositeCommand{\.}{PU}{\i}{i} % \80\151 U+0069  
 14958 \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  
 14959 % U+007B LEFT CURLY BRACKET; braceleft  
 14960 \DeclareTextCommand{\textbraceleft}{PU}{\80\173}% U+007B  
 14961 % U+007C VERTICAL LINE; \*bar, verticalbar  
 14962 \DeclareTextCommand{\textbar}{PU}{|}% \80\174 U+007C  
 14963 % U+007D RIGHT CURLY BRACKET; braceright  
 14964 \DeclareTextCommand{\textbraceright}{PU}{\80\175}% U+007D  
 14965 % U+007E TILDE; asciitilde  
 14966 \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  
 14967 % U+00A1 INVERTED EXCLAMATION MARK; exclamdown  
 14968 \DeclareTextCommand{\textexclamdown}{PU}{\80\241}% U+00A1  
 14969 % U+00A2 CENT SIGN; cent  
 14970 \DeclareTextCommand{\textcent}{PU}{\80\242}% U+00A2  
 14971 % U+00A3 POUND SIGN; sterling  
 14972 \DeclareTextCommand{\textsterling}{PU}{\80\243}% U+00A3  
 14973 % U+00A4 CURRENCY SIGN; currency  
 14974 \DeclareTextCommand{\textcurrency}{PU}{\80\244}% U+00A4  
 14975 % U+00A5 YEN SIGN; yen  
 14976 \DeclareTextCommand{\textyen}{PU}{\80\245}% U+00A5  
 14977 % U+00A6 BROKEN BAR; brokenbar  
 14978 \DeclareTextCommand{\textbrokenbar}{PU}{\80\246}% U+00A6  
 14979 % U+00A7 SECTION SIGN; section  
 14980 \DeclareTextCommand{\textsection}{PU}{\80\247}% U+00A7  
 14981 % U+00A8 DIAERESIS; dieresis  
 14982 \DeclareTextCommand{\textasciidieresis}{PU}{\80\250}% U+00A8  
 14983 % U+00A9 COPYRIGHT SIGN; copyright  
 14984 \DeclareTextCommand{\textcopyright}{PU}{\80\251}% U+00A9  
 14985 % U+00AA FEMININE ORDINAL INDICATOR; ordfeminine  
 14986 \DeclareTextCommand{\textordfeminine}{PU}{\80\252}% U+00AA  
 14987 % U+00AB LEFT-POINTING DOUBLE ANGLE QUOTATION MARK; guille-  
 motleft  
 14988 \DeclareTextCommand{\guillemotleft}{PU}{\80\253}% U+00AB  
 14989 % U+00AC NOT SIGN; logicalnot  
 14990 \DeclareTextCommand{\textlogicalnot}{PU}{\80\254}% U+00AC  
 14991 \DeclareTextCommand{\textlnot}{PU}{\80\254}% U+00AC  
 \80\255: U+00AD SOFT HYPHEN; sfthyphen, softthyphen  
 14992 % U+00AE REGISTERED SIGN; registered

14993 \DeclareTextCommand{\textregistered}{PU}{\80\256}% U+00AE  
14994 % U+00AF MACRON; \*macron, overscore  
14995 \DeclareTextCommand{\textasciimacron}{PU}{\80\257}% U+00AF  
14996 % U+00B0 DEGREE SIGN; degree  
14997 \DeclareTextCommand{\textdegree}{PU}{\80\260}% U+00B0  
14998 % U+00B1 PLUS-MINUS SIGN; plusminus  
14999 \DeclareTextCommand{\textplusminus}{PU}{\80\261}% U+00B1  
15000 % U+00B2 SUPERSCRIPT TWO; twosuperior  
15001 \DeclareTextCommand{\texttwosuperior}{PU}{\80\262}% U+00B2  
15002 % U+00B3 SUPERSCRIPT THREE; threesuperior  
15003 \DeclareTextCommand{\textthreesuperior}{PU}{\80\263}% U+00B3  
15004 % U+00B4 ACUTE ACCENT; acute  
15005 \DeclareTextCommand{\textacute}{PU}{\80\264}% U+00B4  
15006 \DeclareTextCommand{\textasciiacute}{PU}{\80\264}% U+00B4  
15007 % U+00B5 MICRO SIGN; mu, mu1  
15008 \DeclareTextCommand{\textmu}{PU}{\80\265}% U+00B5  
15009 % U+00B6 PILCROW SIGN; paragraph  
15010 \DeclareTextCommand{\textparagraph}{PU}{\80\266}% U+00B6  
15011 % U+00B7 MIDDLE DOT; middot, \*periodcentered  
15012 \DeclareTextCommand{\textperiodcentered}{PU}{\80\267}% U+00B7  
15013 % U+00B8 CEDILLA; cedilla  
15014 \DeclareTextCommand{\textcedilla}{PU}{\80\270}% U+00B8  
15015 % U+00B9 SUPERSCRIPT ONE; onesuperior  
15016 \DeclareTextCommand{\textonesuperior}{PU}{\80\271}% U+00B9  
15017 % U+00BA MASCULINE ORDINAL INDICATOR; ordmasculine  
15018 \DeclareTextCommand{\textordmasculine}{PU}{\80\272}% U+00BA  
15019 % U+00BB RIGHT-POINTING DOUBLE ANGLE QUOTATION MARK; guille-  
motright  
15020 \DeclareTextCommand{\guillemotright}{PU}{\80\273}% U+00BB  
15021 % U+00BC VULGAR FRACTION ONE QUARTER; onequarter  
15022 \DeclareTextCommand{\textonequarter}{PU}{\80\274}% U+00BC  
15023 % U+00BD VULGAR FRACTION ONE HALF; onehalf  
15024 \DeclareTextCommand{\textonehalf}{PU}{\80\275}% U+00BD  
15025 % U+00BE VULGAR FRACTION THREE QUARTERS; threequarters  
15026 \DeclareTextCommand{\textthreequarters}{PU}{\80\276}% U+00BE  
15027 % U+00BF INVERTED QUESTION MARK; questiondown  
15028 \DeclareTextCommand{\textquestiondown}{PU}{\80\277}% U+00BF  
15029 % U+00C0 LATIN CAPITAL LETTER A WITH GRAVE; Agrave  
15030 \DeclareTextCompositeCommand{\`}{PU}{A}{\80\300}% U+00C0  
15031 % U+00C1 LATIN CAPITAL LETTER A WITH ACUTE; Aacute  
15032 \DeclareTextCompositeCommand{\'}{PU}{A}{\80\301}% U+00C1  
15033 % U+00C2 LATIN CAPITAL LETTER A WITH CIRCUMFLEX; Acircumflex  
15034 \DeclareTextCompositeCommand{\^}{PU}{A}{\80\302}% U+00C2  
15035 % U+00C3 LATIN CAPITAL LETTER A WITH TILDE; Atilde  
15036 \DeclareTextCompositeCommand{\~}{PU}{A}{\80\303}% U+00C3  
15037 % U+00C4 LATIN CAPITAL LETTER A WITH DIAERESIS; Adieresis  
15038 \DeclareTextCompositeCommand{\\"}{PU}{A}{\80\304}% U+00C4  
15039 % U+00C5 LATIN CAPITAL LETTER A WITH RING ABOVE; Aring  
15040 \DeclareTextCompositeCommand{\r}{PU}{A}{\80\305}% U+00C5  
15041 % U+00C6 LATIN CAPITAL LETTER AE; AE  
15042 \DeclareTextCommand{\AE}{PU}{\80\306}% U+00C6  
15043 % U+00C7 LATIN CAPITAL LETTER C WITH CEDILLA; Ccedilla  
15044 \DeclareTextCompositeCommand{\c}{PU}{C}{\80\307}% U+00C7  
15045 % U+00C8 LATIN CAPITAL LETTER E WITH GRAVE; Egrave  
15046 \DeclareTextCompositeCommand{\`}{PU}{E}{\80\310}% U+00C8  
15047 % U+00C9 LATIN CAPITAL LETTER E WITH ACUTE; Eacute  
15048 \DeclareTextCompositeCommand{\'}{PU}{E}{\80\311}% U+00C9

15049 % U+00CA LATIN CAPITAL LETTER E WITH CIRCUMFLEX; Ecircumflex  
 15050 \DeclareTextCompositeCommand{\^}{PU}{E}{\80\312}% U+00CA  
 15051 % U+00CB LATIN CAPITAL LETTER E WITH DIAERESIS; Edieresis  
 15052 \DeclareTextCompositeCommand{\"}{PU}{E}{\80\313}% U+00CB  
 15053 % U+00CC LATIN CAPITAL LETTER I WITH GRAVE; Igrave  
 15054 \DeclareTextCompositeCommand{\`}{PU}{I}{\80\314}% U+00CC  
 15055 % U+00CD LATIN CAPITAL LETTER I WITH ACUTE; Iacute  
 15056 \DeclareTextCompositeCommand{\'}{PU}{I}{\80\315}% U+00CD  
 15057 % U+00CE LATIN CAPITAL LETTER I WITH CIRCUMFLEX; Icircumflex  
 15058 \DeclareTextCompositeCommand{\^}{PU}{I}{\80\316}% U+00CE  
 15059 % U+00CF LATIN CAPITAL LETTER I WITH DIAERESIS; Idieresis  
 15060 \DeclareTextCompositeCommand{\"}{PU}{I}{\80\317}% U+00CF  
 15061 % U+00D0 LATIN CAPITAL LETTER ETH; Eth  
 15062 \DeclareTextCompositeCommand{\DH}{PU}{\80\320}% U+00D0  
 15063 % U+00D1 LATIN CAPITAL LETTER N WITH TILDE; Ntilde  
 15064 \DeclareTextCompositeCommand{\~}{PU}{N}{\80\321}% U+00D1  
 15065 % U+00D2 LATIN CAPITAL LETTER O WITH GRAVE; Ograve  
 15066 \DeclareTextCompositeCommand{\`}{PU}{O}{\80\322}% U+00D2  
 15067 % U+00D3 LATIN CAPITAL LETTER O WITH ACUTE; Oacute  
 15068 \DeclareTextCompositeCommand{\'}{PU}{O}{\80\323}% U+00D3  
 15069 % U+00D4 LATIN CAPITAL LETTER O WITH CIRCUMFLEX; Ocircumflex  
 15070 \DeclareTextCompositeCommand{\^}{PU}{O}{\80\324}% U+00D4  
 15071 % U+00D5 LATIN CAPITAL LETTER O WITH TILDE; Otilde  
 15072 \DeclareTextCompositeCommand{\~}{PU}{O}{\80\325}% U+00D5  
 15073 % U+00D6 LATIN CAPITAL LETTER O WITH DIAERESIS; Odieresis  
 15074 \DeclareTextCompositeCommand{\"}{PU}{O}{\80\326}% U+00D6  
 15075 % U+00D7 MULTIPLICATION SIGN; multiply  
 15076 \DeclareTextCommand{\textmultiply}{PU}{\80\327}% U+00D7  
 15077 % U+00D8 LATIN CAPITAL LETTER O WITH STROKE; Oslash  
 15078 \DeclareTextCommand{\O}{PU}{\80\330}% U+00D8  
 15079 % U+00D9 LATIN CAPITAL LETTER U WITH GRAVE; Ugrave  
 15080 \DeclareTextCompositeCommand{\`}{PU}{U}{\80\331}% U+00D9  
 15081 % U+00DA LATIN CAPITAL LETTER U WITH ACUTE; Uacute  
 15082 \DeclareTextCompositeCommand{\'}{PU}{U}{\80\332}% U+00DA  
 15083 % U+00DB LATIN CAPITAL LETTER U WITH CIRCUMFLEX; Ucircumflex  
 15084 \DeclareTextCompositeCommand{\^}{PU}{U}{\80\333}% U+00DB  
 15085 % U+00DC LATIN CAPITAL LETTER U WITH DIAERESIS; Udieresis  
 15086 \DeclareTextCompositeCommand{\"}{PU}{U}{\80\334}% U+00DC  
 15087 % U+00DD LATIN CAPITAL LETTER Y WITH ACUTE; Yacute  
 15088 \DeclareTextCompositeCommand{\'}{PU}{Y}{\80\335}% U+00DD  
 15089 % U+00DE LATIN CAPITAL LETTER THORN; Thorn  
 15090 \DeclareTextCommand{\TH}{PU}{\80\336}% U+00DE  
 15091 % U+00DF LATIN SMALL LETTER SHARP S; germandbls  
 15092 \DeclareTextCommand{\ss}{PU}{\80\337}% U+00DF  
 15093 % U+00E0 LATIN SMALL LETTER A WITH GRAVE; agrave  
 15094 \DeclareTextCompositeCommand{\`}{PU}{a}{\80\340}% U+00E0  
 15095 % U+00E1 LATIN SMALL LETTER A WITH ACUTE; aacute  
 15096 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\341}% U+00E1  
 15097 % U+00E2 LATIN SMALL LETTER A WITH CIRCUMFLEX; acircumflex  
 15098 \DeclareTextCompositeCommand{\^}{PU}{a}{\80\342}% U+00E2  
 15099 % U+00E3 LATIN SMALL LETTER A WITH TILDE; atilde  
 15100 \DeclareTextCompositeCommand{\~}{PU}{a}{\80\343}% U+00E3  
 15101 % U+00E4 LATIN SMALL LETTER A WITH DIAERESIS; adieresis  
 15102 \DeclareTextCompositeCommand{\"}{PU}{a}{\80\344}% U+00E4  
 15103 % U+00E5 LATIN SMALL LETTER A WITH RING ABOVE; aring  
 15104 \DeclareTextCompositeCommand{\r}{PU}{a}{\80\345}% U+00E5  
 15105 % U+00E6 LATIN SMALL LETTER AE; ae

15106 \DeclareTextCommand{\ae}{PU}{\80\346}% U+00E6  
15107 % U+00E7 LATIN SMALL LETTER C WITH CEDILLA; ccedilla  
15108 \DeclareTextCompositeCommand{\c}{PU}{c}{\80\347}% U+00E7  
15109 % U+00E8 LATIN SMALL LETTER E WITH GRAVE; egrave  
15110 \DeclareTextCompositeCommand{\`}{PU}{e}{\80\350}% U+00E8  
15111 % U+00E9 LATIN SMALL LETTER E WITH ACUTE; eacute  
15112 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\351}% U+00E9  
15113 % U+00EA LATIN SMALL LETTER E WITH CIRCUMFLEX; ecircumflex  
15114 \DeclareTextCompositeCommand{\^}{PU}{e}{\80\352}% U+00EA  
15115 % U+00EB LATIN SMALL LETTER E WITH DIAERESIS; edieresis  
15116 \DeclareTextCompositeCommand{\\"}{PU}{e}{\80\353}% U+00EB  
15117 % U+00EC LATIN SMALL LETTER I WITH GRAVE; igrave  
15118 \DeclareTextCompositeCommand{\`}{PU}{i}{\80\354}% U+00EC  
15119 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\354}% U+00EC  
15120 % U+00ED LATIN SMALL LETTER I WITH ACUTE; iacute  
15121 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\355}% U+00ED  
15122 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\355}% U+00ED  
15123 % U+00EE LATIN SMALL LETTER I WITH CIRCUMFLEX; icircumflex  
15124 \DeclareTextCompositeCommand{\^}{PU}{i}{\80\356}% U+00EE  
15125 \DeclareTextCompositeCommand{\^}{PU}{i}{\80\356}% U+00EE  
15126 % U+00EF LATIN SMALL LETTER I WITH DIAERESIS; idieresis  
15127 \DeclareTextCompositeCommand{\\"}{PU}{i}{\80\357}% U+00EF  
15128 \DeclareTextCompositeCommand{\\"}{PU}{i}{\80\357}% U+00EF  
15129 % U+00F0 LATIN SMALL LETTER ETH; eth  
15130 \DeclareTextCommand{\dh}{PU}{\80\360}% U+00F0  
15131 % U+00F1 LATIN SMALL LETTER N WITH TILDE; ntilde  
15132 \DeclareTextCompositeCommand{\~}{PU}{n}{\80\361}% U+00F1  
15133 % U+00F2 LATIN SMALL LETTER O WITH GRAVE; ograve  
15134 \DeclareTextCompositeCommand{\`}{PU}{o}{\80\362}% U+00F2  
15135 % U+00F3 LATIN SMALL LETTER O WITH ACUTE; oacute  
15136 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\363}% U+00F3  
15137 % U+00F4 LATIN SMALL LETTER O WITH CIRCUMFLEX; ocircumflex  
15138 \DeclareTextCompositeCommand{\^}{PU}{o}{\80\364}% U+00F4  
15139 % U+00F5 LATIN SMALL LETTER O WITH TILDE; otilde  
15140 \DeclareTextCompositeCommand{\~}{PU}{o}{\80\365}% U+00F5  
15141 % U+00F6 LATIN SMALL LETTER O WITH DIAERESIS; odieresis  
15142 \DeclareTextCompositeCommand{\\"}{PU}{o}{\80\366}% U+00F6  
15143 % U+00F7 DIVISION SIGN; divide  
15144 \DeclareTextCommand{\textdivide}{PU}{\80\367}% U+00F7  
15145 % U+00F8 LATIN SMALL LETTER O WITH STROKE; oslash  
15146 \DeclareTextCommand{\o}{PU}{\80\370}% U+00F8  
15147 % U+00F9 LATIN SMALL LETTER U WITH GRAVE; ugrave  
15148 \DeclareTextCompositeCommand{\`}{PU}{u}{\80\371}% U+00F9  
15149 % U+00FA LATIN SMALL LETTER U WITH ACUTE; uacute  
15150 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\372}% U+00FA  
15151 % U+00FB LATIN SMALL LETTER U WITH CIRCUMFLEX; ucircumflex  
15152 \DeclareTextCompositeCommand{\^}{PU}{u}{\80\373}% U+00FB  
15153 % U+00FC LATIN SMALL LETTER U WITH DIAERESIS; udieresis  
15154 \DeclareTextCompositeCommand{\\"}{PU}{u}{\80\374}% U+00FC  
15155 % U+00FD LATIN SMALL LETTER Y WITH ACUTE; yacute  
15156 \DeclareTextCompositeCommand{\'}{PU}{y}{\80\375}% U+00FD  
15157 % U+00FE LATIN SMALL LETTER THORN; thorn  
15158 \DeclareTextCommand{\th}{PU}{\80\376}% U+00FE  
15159 % U+00FF LATIN SMALL LETTER Y WITH DIAERESIS; ydieresis  
15160 \DeclareTextCompositeCommand{\\"}{PU}{y}{\80\377}% U+00FF



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

15161 % U+0100 LATIN CAPITAL LETTER A WITH MACRON; Amacron  
15162 \DeclareTextCompositeCommand{\=}{PU}{A}{\81\000}% U+0100  
15163 % U+0101 LATIN SMALL LETTER A WITH MACRON; amacron  
15164 \DeclareTextCompositeCommand{\=}{PU}{a}{\81\001}% U+0101  
15165 % U+0102 LATIN CAPITAL LETTER A WITH BREVE; Abreve  
15166 \DeclareTextCompositeCommand{\u}{PU}{A}{\81\002}% U+0102  
15167 % U+0103 LATIN SMALL LETTER A WITH BREVE; abreve  
15168 \DeclareTextCompositeCommand{\u}{PU}{a}{\81\003}% U+0103  
15169 % U+0104 LATIN CAPITAL LETTER A WITH OGONEK; Aogonek  
15170 \DeclareTextCompositeCommand{\k}{PU}{A}{\81\004}% U+0104  
15171 % U+0105 LATIN SMALL LETTER A WITH OGONEK; aogonek  
15172 \DeclareTextCompositeCommand{\k}{PU}{a}{\81\005}% U+0105  
15173 % U+0106 LATIN CAPITAL LETTER C WITH ACUTE; Cacute  
15174 \DeclareTextCompositeCommand{\'}{PU}{C}{\81\006}% U+0106  
15175 % U+0107 LATIN SMALL LETTER C WITH ACUTE; cacute  
15176 \DeclareTextCompositeCommand{\'}{PU}{c}{\81\007}% U+0107  
15177 % U+0108 LATIN CAPITAL LETTER C WITH CIRCUMFLEX; Ccircumflex  
15178 \DeclareTextCompositeCommand{\^}{PU}{C}{\81\010}% U+0108  
15179 % U+0109 LATIN SMALL LETTER C WITH CIRCUMFLEX; ccircumflex  
15180 \DeclareTextCompositeCommand{\^}{PU}{c}{\81\011}% U+0109  
15181 % U+010A LATIN CAPITAL LETTER C WITH DOT ABOVE; Cdot, Cdotaccent  
15182 \DeclareTextCompositeCommand{\.}{PU}{C}{\81\012}% U+010A  
15183 % U+010B LATIN SMALL LETTER C WITH DOT ABOVE; cdot, cdotaccent  
15184 \DeclareTextCompositeCommand{\.}{PU}{c}{\81\013}% U+010B  
15185 % U+010C LATIN CAPITAL LETTER C WITH CARON; Ccaron  
15186 \DeclareTextCompositeCommand{\v}{PU}{C}{\81\014}% U+010C  
15187 % U+010D LATIN SMALL LETTER C WITH CARON; ccaron  
15188 \DeclareTextCompositeCommand{\v}{PU}{c}{\81\015}% U+010D  
15189 % U+010E LATIN CAPITAL LETTER D WITH CARON; Dcaron  
15190 \DeclareTextCompositeCommand{\v}{PU}{D}{\81\016}% U+010E  
15191 % U+010F LATIN SMALL LETTER D WITH CARON; dcaron  
15192 \DeclareTextCompositeCommand{\v}{PU}{d}{\81\017}% U+010F  
15193 % U+0110 LATIN CAPITAL LETTER D WITH STROKE; Dcroat, Dslash  
15194 \DeclareTextCommand{\DJ}{PU}{\81\020}% U+0110  
15195 % U+0111 LATIN SMALL LETTER D WITH STROKE; dcroat, dmacron  
15196 \DeclareTextCommand{\dj}{PU}{\81\021}% U+0111  
15197 % U+0112 LATIN CAPITAL LETTER E WITH MACRON; Emacron  
15198 \DeclareTextCompositeCommand{\=}{PU}{E}{\81\022}% U+0112  
15199 % U+0113 LATIN SMALL LETTER E WITH MACRON; emacron  
15200 \DeclareTextCompositeCommand{\=}{PU}{e}{\81\023}% U+0113  
15201 % U+0114 LATIN CAPITAL LETTER E WITH BREVE; Ebreve  
15202 \DeclareTextCompositeCommand{\u}{PU}{E}{\81\024}% U+0114  
15203 % U+0115 LATIN SMALL LETTER E WITH BREVE; ebreve  
15204 \DeclareTextCompositeCommand{\u}{PU}{e}{\81\025}% U+0115  
15205 % U+0116 LATIN CAPITAL LETTER E WITH DOT ABOVE; Edot, Edotaccent  
15206 \DeclareTextCompositeCommand{\.}{PU}{E}{\81\026}% U+0116  
15207 % U+0117 LATIN SMALL LETTER E WITH DOT ABOVE; edot, edotaccent  
15208 \DeclareTextCompositeCommand{\.}{PU}{e}{\81\027}% U+0117  
15209 % U+0118 LATIN CAPITAL LETTER E WITH OGONEK; Eogonek  
15210 \DeclareTextCompositeCommand{\k}{PU}{E}{\81\030}% U+0118  
15211 % U+0119 LATIN SMALL LETTER E WITH OGONEK; eogonek  
15212 \DeclareTextCompositeCommand{\k}{PU}{e}{\81\031}% U+0119  
15213 % U+011A LATIN CAPITAL LETTER E WITH CARON; Ecaron  
15214 \DeclareTextCompositeCommand{\v}{PU}{E}{\81\032}% U+011A  
15215 % U+011B LATIN SMALL LETTER E WITH CARON; ecaron  
15216 \DeclareTextCompositeCommand{\v}{PU}{e}{\81\033}% U+011B

15217 % U+011C LATIN CAPITAL LETTER G WITH CIRCUMFLEX; Gcircumflex  
15218 \DeclareTextCompositeCommand{\~}{PU}{G}{\81\034}% U+011C  
15219 % U+011D LATIN SMALL LETTER G WITH CIRCUMFLEX; gcircumflex  
15220 \DeclareTextCompositeCommand{\~}{PU}{g}{\81\035}% U+011D  
15221 % U+011E LATIN CAPITAL LETTER G WITH BREVE; Gbreve  
15222 \DeclareTextCompositeCommand{\u}{PU}{G}{\81\036}% U+011E  
15223 % U+011F LATIN SMALL LETTER G WITH BREVE; gbreve  
15224 \DeclareTextCompositeCommand{\u}{PU}{g}{\81\037}% U+011F  
15225 % U+0120 LATIN CAPITAL LETTER G WITH DOT ABOVE; Gdot, Gdotaccent  
15226 \DeclareTextCompositeCommand{\.}{PU}{G}{\81\040}% U+0120  
15227 % U+0121 LATIN SMALL LETTER G WITH DOT ABOVE; gdot, gdotaccent  
15228 \DeclareTextCompositeCommand{\.}{PU}{g}{\81\041}% U+0121  
15229 % U+0122 LATIN CAPITAL LETTER G WITH CEDILLA; Gcedilla, Gcommaac-  
cent  
15230 \DeclareTextCompositeCommand{\c}{PU}{G}{\81\042}% U+0122  
15231 % U+0123 LATIN SMALL LETTER G WITH CEDILLA; gcedilla, gcommaaccent  
15232 \DeclareTextCompositeCommand{\c}{PU}{g}{\81\043}% U+0123  
15233 % U+0124 LATIN CAPITAL LETTER H WITH CIRCUMFLEX; Hcircumflex  
15234 \DeclareTextCompositeCommand{\^}{PU}{H}{\81\044}% U+0124  
15235 % U+0125 LATIN SMALL LETTER H WITH CIRCUMFLEX; hcircumflex  
15236 \DeclareTextCompositeCommand{\^}{PU}{h}{\81\045}% U+0125  
15237 % U+0126 LATIN CAPITAL LETTER H WITH STROKE; Hbar  
15238 \DeclareTextCommand{\textHslash}{PU}{\81\046}% U+0126  
15239 % U+0127 LATIN SMALL LETTER H WITH STROKE; hbar  
15240 \DeclareTextCommand{\texthslash}{PU}{\81\047}% U+0127  
15241 % U+0128 LATIN CAPITAL LETTER I WITH TILDE; Itilde  
15242 \DeclareTextCompositeCommand{\~}{PU}{I}{\81\050}% U+0128  
15243 % U+0129 LATIN SMALL LETTER I WITH TILDE; itilde  
15244 \DeclareTextCompositeCommand{\~}{PU}{i}{\81\051}% U+0129  
15245 \DeclareTextCompositeCommand{\~}{PU}{i}{\81\051}% U+0129  
15246 % U+012A LATIN CAPITAL LETTER I WITH MACRON; Imacron  
15247 \DeclareTextCompositeCommand{\=}{PU}{I}{\81\052}% U+012A  
15248 % U+012B LATIN SMALL LETTER I WITH MACRON; imacron  
15249 \DeclareTextCompositeCommand{\=}{PU}{i}{\81\053}% U+012B  
15250 \DeclareTextCompositeCommand{\=}{PU}{i}{\81\053}% U+012B  
15251 % U+012C LATIN CAPITAL LETTER I WITH BREVE; Ibreve  
15252 \DeclareTextCompositeCommand{\u}{PU}{I}{\81\054}% U+012C  
15253 % U+012D LATIN SMALL LETTER I WITH BREVE; ibreve  
15254 \DeclareTextCompositeCommand{\u}{PU}{i}{\81\055}% U+012D  
15255 \DeclareTextCompositeCommand{\u}{PU}{i}{\81\055}% U+012D  
15256 % U+012E LATIN CAPITAL LETTER I WITH OGONEK; Iogonek  
15257 \DeclareTextCompositeCommand{\k}{PU}{I}{\81\056}% U+012E  
15258 % U+012F LATIN SMALL LETTER I WITH OGONEK; iogonek  
15259 \DeclareTextCompositeCommand{\k}{PU}{i}{\81\057}% U+012F  
15260 \DeclareTextCompositeCommand{\k}{PU}{i}{\81\057}% U+012F  
15261 % U+0130 LATIN CAPITAL LETTER I WITH DOT ABOVE; Idot, Idotaccent  
15262 \DeclareTextCompositeCommand{\.}{PU}{I}{\81\060}% U+0130  
15263 % U+0131 LATIN SMALL LETTER DOTLESS I; dotlessi  
15264 \DeclareTextCommand{\i}{PU}{\81\061}% U+0131  
15265 % U+0132 LATIN CAPITAL LIGATURE IJ; IJ  
15266 \DeclareTextCommand{\IJ}{PU}{\81\062}% U+0132  
15267 % U+0133 LATIN SMALL LIGATURE IJ; ij  
15268 \DeclareTextCommand{\ij}{PU}{\81\063}% U+0133  
15269 % U+0134 LATIN CAPITAL LETTER J WITH CIRCUMFLEX; Jcircumflex  
15270 \DeclareTextCompositeCommand{\^}{PU}{J}{\81\064}% U+0134  
15271 % U+0135 LATIN SMALL LETTER J WITH CIRCUMFLEX; jcircumflex  
15272 \DeclareTextCompositeCommand{\^}{PU}{j}{\81\065}% U+0135

15273 \DeclareTextCompositeCommand{\~}{PU}{\j}{\81\065}% U+0135  
 15274 % U+0136 LATIN CAPITAL LETTER K WITH CEDILLA; Kcedilla, Kcommaaccent  
 15275 \DeclareTextCompositeCommand{\c}{PU}{K}{\81\066}% U+0136  
 15276 % U+0137 LATIN SMALL LETTER K WITH CEDILLA; kcedilla, kcommaaccent  
 15277 \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.

15278 % U+0138 LATIN SMALL LETTER KRA; kgreenlandic  
 15279 \DeclareTextCommand{\textkra}{PU}{\81\070}% U+0138  
 15280 % U+0139 LATIN CAPITAL LETTER L WITH ACUTE; Lacute  
 15281 \DeclareTextCompositeCommand{\'}{PU}{L}{\81\071}% U+0139  
 15282 % U+013A LATIN SMALL LETTER L WITH ACUTE; lacute  
 15283 \DeclareTextCompositeCommand{\'}{PU}{l}{\81\072}% U+013A  
 15284 % U+013B LATIN CAPITAL LETTER L WITH CEDILLA; Lcedilla, Lcommaaccent  
 15285 \DeclareTextCompositeCommand{\c}{PU}{L}{\81\073}% U+013B  
 15286 % U+013C LATIN SMALL LETTER L WITH CEDILLA; lcedilla, lcommaaccent  
 15287 \DeclareTextCompositeCommand{\c}{PU}{l}{\81\074}% U+013C  
 15288 % U+013D LATIN CAPITAL LETTER L WITH CARON; Lcaron  
 15289 \DeclareTextCompositeCommand{\v}{PU}{L}{\81\075}% U+013D  
 15290 % U+013E LATIN SMALL LETTER L WITH CARON; lcaron  
 15291 \DeclareTextCompositeCommand{\v}{PU}{l}{\81\076}% U+013E

There seems to be no variants of letters 'L' and 'l' with a dot above (reasonable). Therefore the \. accent is reused instead of making a separate accent macro \textmiddledot.

15292 % U+013F LATIN CAPITAL LETTER L WITH MIDDLE DOT; Ldot, Ldotaccent  
 15293 \DeclareTextCompositeCommand{\.}{PU}{L}{\81\077}% U+013F  
 15294 % U+0140 LATIN SMALL LETTER L WITH MIDDLE DOT; ldot, ldotaccent  
 15295 \DeclareTextCompositeCommand{\.}{PU}{l}{\81\100}% U+0140  
 15296 % U+0141 LATIN CAPITAL LETTER L WITH STROKE; Lslash  
 15297 \DeclareTextCommand{\L}{PU}{\81\101}% U+0141  
 15298 % U+0142 LATIN SMALL LETTER L WITH STROKE; lslash  
 15299 \DeclareTextCommand{\l}{PU}{\81\102}% U+0142  
 15300 % U+0143 LATIN CAPITAL LETTER N WITH ACUTE; Nacute  
 15301 \DeclareTextCompositeCommand{\'}{PU}{N}{\81\103}% U+0143  
 15302 % U+0144 LATIN SMALL LETTER N WITH ACUTE; nacute  
 15303 \DeclareTextCompositeCommand{\'}{PU}{n}{\81\104}% U+0144  
 15304 % U+0145 LATIN CAPITAL LETTER N WITH CEDILLA; Ncedilla, Ncommaaccent  
 15305 \DeclareTextCompositeCommand{\c}{PU}{N}{\81\105}% U+0145  
 15306 % U+0146 LATIN SMALL LETTER N WITH CEDILLA; ncedilla, ncommaaccent  
 15307 \DeclareTextCompositeCommand{\c}{PU}{n}{\81\106}% U+0146  
 15308 % U+0147 LATIN CAPITAL LETTER N WITH CARON; Ncaron  
 15309 \DeclareTextCompositeCommand{\v}{PU}{N}{\81\107}% U+0147  
 15310 % U+0148 LATIN SMALL LETTER N WITH CARON; ncaron  
 15311 \DeclareTextCompositeCommand{\v}{PU}{n}{\81\110}% U+0148  
 15312 % U+0149 LATIN SMALL LETTER N PRECEDED BY APOSTROPHE; napostrophe, quoterightn  
 15313 \DeclareTextCommand{\textnapostrophe}{PU}{\81\111}% U+0149  
 15314 % U+014A LATIN CAPITAL LETTER ENG; Eng  
 15315 \DeclareTextCommand{\NG}{PU}{\81\112}% U+014A  
 15316 % U+014B LATIN SMALL LETTER ENG; eng  
 15317 \DeclareTextCommand{\ng}{PU}{\81\113}% U+014B  
 15318 % U+014C LATIN CAPITAL LETTER O WITH MACRON; Omacron  
 15319 \DeclareTextCompositeCommand{\=}{PU}{O}{\81\114}% U+014C

15320 % U+014D LATIN SMALL LETTER O WITH MACRON; omacron  
 15321 \DeclareTextCompositeCommand{\=}{PU}{o}{\81\115}% U+014D  
 15322 % U+014E LATIN CAPITAL LETTER O WITH BREVE; Obreve  
 15323 \DeclareTextCompositeCommand{\u}{PU}{O}{\81\116}% U+014E  
 15324 % U+014F LATIN SMALL LETTER O WITH BREVE; obreve  
 15325 \DeclareTextCompositeCommand{\u}{PU}{o}{\81\117}% U+014F  
 15326 % U+0150 LATIN CAPITAL LETTER O WITH DOUBLE ACUTE; Odblacute, Ohungarumlaut  
 15327 \DeclareTextCompositeCommand{\H}{PU}{O}{\81\120}% U+0150  
 15328 % U+0151 LATIN SMALL LETTER O WITH DOUBLE ACUTE; odblacute, ohungarumlaut  
 15329 \DeclareTextCompositeCommand{\H}{PU}{o}{\81\121}% U+0151  
 15330 % U+0152 LATIN CAPITAL LIGATURE OE; OE  
 15331 \DeclareTextCompositeCommand{\OE}{PU}{\81\122}% U+0152  
 15332 % U+0153 LATIN SMALL LIGATURE OE; oe  
 15333 \DeclareTextCommand{\oe}{PU}{\81\123}% U+0153  
 15334 % U+0154 LATIN CAPITAL LETTER R WITH ACUTE; Racute  
 15335 \DeclareTextCompositeCommand{\'}{PU}{R}{\81\124}% U+0154  
 15336 % U+0155 LATIN SMALL LETTER R WITH ACUTE; racute  
 15337 \DeclareTextCompositeCommand{\'}{PU}{r}{\81\125}% U+0155  
 15338 % U+0156 LATIN CAPITAL LETTER R WITH CEDILLA; Rcedilla, Rcommaaccent  
 15339 \DeclareTextCompositeCommand{\c}{PU}{R}{\81\126}% U+0156  
 15340 % U+0157 LATIN SMALL LETTER R WITH CEDILLA; rcedilla, rcommaaccent  
 15341 \DeclareTextCompositeCommand{\c}{PU}{r}{\81\127}% U+0157  
 15342 % U+0158 LATIN CAPITAL LETTER R WITH CARON; Rcaron  
 15343 \DeclareTextCompositeCommand{\v}{PU}{R}{\81\130}% U+0158  
 15344 % U+0159 LATIN SMALL LETTER R WITH CARON; rcaron  
 15345 \DeclareTextCompositeCommand{\v}{PU}{r}{\81\131}% U+0159  
 15346 % U+015A LATIN CAPITAL LETTER S WITH ACUTE; Sacute  
 15347 \DeclareTextCompositeCommand{\'}{PU}{S}{\81\132}% U+015A  
 15348 % U+015B LATIN SMALL LETTER S WITH ACUTE; sacute  
 15349 \DeclareTextCompositeCommand{\'}{PU}{s}{\81\133}% U+015B  
 15350 % U+015C LATIN CAPITAL LETTER S WITH CIRCUMFLEX; Scircumflex  
 15351 \DeclareTextCompositeCommand{\^}{PU}{S}{\81\134}% U+015C  
 15352 % U+015D LATIN SMALL LETTER S WITH CIRCUMFLEX; scircumflex  
 15353 \DeclareTextCompositeCommand{\^}{PU}{s}{\81\135}% U+015D  
 15354 % U+015E LATIN CAPITAL LETTER S WITH CEDILLA; Scedilla  
 15355 \DeclareTextCompositeCommand{\c}{PU}{S}{\81\136}% U+015E  
 15356 % U+015F LATIN SMALL LETTER S WITH CEDILLA; scedilla  
 15357 \DeclareTextCompositeCommand{\c}{PU}{s}{\81\137}% U+015F  
 15358 % U+0160 LATIN CAPITAL LETTER S WITH CARON; Scaron  
 15359 \DeclareTextCompositeCommand{\v}{PU}{S}{\81\140}% U+0160  
 15360 % U+0161 LATIN SMALL LETTER S WITH CARON; scaron  
 15361 \DeclareTextCompositeCommand{\v}{PU}{s}{\81\141}% U+0161  
 15362 % U+0162 LATIN CAPITAL LETTER T WITH CEDILLA; Tcedilla, Tcommaaccent  
 15363 \DeclareTextCompositeCommand{\c}{PU}{T}{\81\142}% U+0162  
 15364 % U+0163 LATIN SMALL LETTER T WITH CEDILLA; tcedilla, tcommaaccent  
 15365 \DeclareTextCompositeCommand{\c}{PU}{t}{\81\143}% U+0163  
 15366 % U+0164 LATIN CAPITAL LETTER T WITH CARON; Tcaron  
 15367 \DeclareTextCompositeCommand{\v}{PU}{T}{\81\144}% U+0164  
 15368 % U+0165 LATIN SMALL LETTER T WITH CARON; tcaron  
 15369 \DeclareTextCompositeCommand{\v}{PU}{t}{\81\145}% U+0165  
 15370 % U+0166 LATIN CAPITAL LETTER T WITH STROKE; Tbar  
 15371 \DeclareTextCommand{\textTslash}{PU}{\81\146}% U+0166  
 15372 % U+0167 LATIN SMALL LETTER T WITH STROKE; tbar

15373 \DeclareTextCommand{\textslash}{PU}{\81\147}% U+0167  
15374 % U+0168 LATIN CAPITAL LETTER U WITH TILDE; Utilde  
15375 \DeclareTextCompositeCommand{\~}{PU}{U}{\81\150}% U+0168  
15376 % U+0169 LATIN SMALL LETTER U WITH TILDE; utilde  
15377 \DeclareTextCompositeCommand{\~}{PU}{u}{\81\151}% U+0169  
15378 % U+016A LATIN CAPITAL LETTER U WITH MACRON; Umacron  
15379 \DeclareTextCompositeCommand{\=}{PU}{U}{\81\152}% U+016A  
15380 % U+016B LATIN SMALL LETTER U WITH MACRON; umacron  
15381 \DeclareTextCompositeCommand{\=}{PU}{u}{\81\153}% U+016B  
15382 % U+016C LATIN CAPITAL LETTER U WITH BREVE; Ubreve  
15383 \DeclareTextCompositeCommand{\u}{PU}{U}{\81\154}% U+016C  
15384 % U+016D LATIN SMALL LETTER U WITH BREVE; ubreve  
15385 \DeclareTextCompositeCommand{\u}{PU}{u}{\81\155}% U+016D  
15386 % U+016E LATIN CAPITAL LETTER U WITH RING ABOVE; Uring  
15387 \DeclareTextCompositeCommand{\r}{PU}{U}{\81\156}% U+016E  
15388 % U+016F LATIN SMALL LETTER U WITH RING ABOVE; uring  
15389 \DeclareTextCompositeCommand{\r}{PU}{u}{\81\157}% U+016F  
15390 % U+0170 LATIN CAPITAL LETTER U WITH DOUBLE ACUTE; Udblacute, Uhungarumlaut  
15391 \DeclareTextCompositeCommand{\H}{PU}{U}{\81\160}% U+0170  
15392 % U+0171 LATIN SMALL LETTER U WITH DOUBLE ACUTE; udblacute, uhungarumlaut  
15393 \DeclareTextCompositeCommand{\H}{PU}{u}{\81\161}% U+0171  
15394 % U+0172 LATIN CAPITAL LETTER U WITH OGONEK; Uogonek  
15395 \DeclareTextCompositeCommand{\k}{PU}{U}{\81\162}% U+0172  
15396 % U+0173 LATIN SMALL LETTER U WITH OGONEK; uogonek  
15397 \DeclareTextCompositeCommand{\k}{PU}{u}{\81\163}% U+0173  
15398 % U+0174 LATIN CAPITAL LETTER W WITH CIRCUMFLEX; Wcircumflex  
15399 \DeclareTextCompositeCommand{\^}{PU}{W}{\81\164}% U+0174  
15400 % U+0175 LATIN SMALL LETTER W WITH CIRCUMFLEX; wcircumflex  
15401 \DeclareTextCompositeCommand{\^}{PU}{w}{\81\165}% U+0175  
15402 % U+0176 LATIN CAPITAL LETTER Y WITH CIRCUMFLEX; Ycircumflex  
15403 \DeclareTextCompositeCommand{\^}{PU}{Y}{\81\166}% U+0176  
15404 % U+0177 LATIN SMALL LETTER Y WITH CIRCUMFLEX; ycircumflex  
15405 \DeclareTextCompositeCommand{\^}{PU}{y}{\81\167}% U+0177  
15406 % U+0178 LATIN CAPITAL LETTER Y WITH DIAERESIS; Ydieresis  
15407 \DeclareTextCompositeCommand{\"}{PU}{Y}{\81\170}% U+0178  
15408 % U+0179 LATIN CAPITAL LETTER Z WITH ACUTE; Zacute  
15409 \DeclareTextCompositeCommand{\'}{PU}{Z}{\81\171}% U+0179  
15410 % U+017A LATIN SMALL LETTER Z WITH ACUTE; zacute  
15411 \DeclareTextCompositeCommand{\'}{PU}{z}{\81\172}% U+017A  
15412 % U+017B LATIN CAPITAL LETTER Z WITH DOT ABOVE; Zdot, Zdotaccent  
15413 \DeclareTextCompositeCommand{\.}{PU}{Z}{\81\173}% U+017B  
15414 % U+017C LATIN SMALL LETTER Z WITH DOT ABOVE; zdot, zdotaccent  
15415 \DeclareTextCompositeCommand{\.}{PU}{z}{\81\174}% U+017C  
15416 % U+017D LATIN CAPITAL LETTER Z WITH CARON; Zcaron  
15417 \DeclareTextCompositeCommand{\v}{PU}{Z}{\81\175}% U+017D  
15418 % U+017E LATIN SMALL LETTER Z WITH CARON; zcaron  
15419 \DeclareTextCompositeCommand{\v}{PU}{z}{\81\176}% U+017E  
15420 % U+017F LATIN SMALL LETTER LONG S; longs, slong  
15421 \DeclareTextCommand{\textlong}{PU}{\81\177}% U+017F

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

15422 % U+0192 LATIN SMALL LETTER F WITH HOOK; florin  
15423 \DeclareTextCommand{\textflorin}{PU}{\81\222}% U+0192  
15424 % U+01CD LATIN CAPITAL LETTER A WITH CARON; Acaron  
15425 \DeclareTextCompositeCommand{\v}{PU}{A}{\81\315}% U+01CD

15426 % U+01CE LATIN SMALL LETTER A WITH CARON; acaron  
 15427 \DeclareTextCompositeCommand{\v}{PU}{a}{\81\316}% U+01CE  
 15428 % U+01CF LATIN CAPITAL LETTER I WITH CARON; Icaron  
 15429 \DeclareTextCompositeCommand{\v}{PU}{I}{\81\317}% U+01CF  
 15430 % U+01D0 LATIN SMALL LETTER I WITH CARON; icaron  
 15431 \DeclareTextCompositeCommand{\v}{PU}{i}{\81\320}% U+01D0  
 15432 \DeclareTextCompositeCommand{\v}{PU}{i}{\81\320}% U+01D0  
 15433 % U+01D1 LATIN CAPITAL LETTER O WITH CARON; Ocaron  
 15434 \DeclareTextCompositeCommand{\v}{PU}{O}{\81\321}% U+01D1  
 15435 % U+01D2 LATIN SMALL LETTER O WITH CARON; ocaron  
 15436 \DeclareTextCompositeCommand{\v}{PU}{o}{\81\322}% U+01D2  
 15437 % U+01D3 LATIN CAPITAL LETTER U WITH CARON; Ucaron  
 15438 \DeclareTextCompositeCommand{\v}{PU}{U}{\81\323}% U+01D3  
 15439 % U+01D4 LATIN SMALL LETTER U WITH CARON; ucaron  
 15440 \DeclareTextCompositeCommand{\v}{PU}{u}{\81\324}% U+01D4  
 15441 % U+01E4 LATIN CAPITAL LETTER G WITH STROKE; Gstroke  
 15442 \DeclareTextCommand{\textGslash}{PU}{\81\344}% U+01E4  
 15443 % U+01E5 LATIN SMALL LETTER G WITH STROKE; gstroke  
 15444 \DeclareTextCommand{\textgslash}{PU}{\81\345}% U+01E5  
 15445 % U+01E6 LATIN CAPITAL LETTER G WITH CARON; Gcaron  
 15446 \DeclareTextCompositeCommand{\v}{PU}{G}{\81\346}% U+01E6  
 15447 % U+01E7 LATIN SMALL LETTER G WITH CARON; gcaron  
 15448 \DeclareTextCompositeCommand{\v}{PU}{g}{\81\347}% U+01E7  
 15449 % U+01E8 LATIN CAPITAL LETTER K WITH CARON; Kcaron  
 15450 \DeclareTextCompositeCommand{\v}{PU}{K}{\81\350}% U+01E8  
 15451 % U+01E9 LATIN SMALL LETTER K WITH CARON; kcaron  
 15452 \DeclareTextCompositeCommand{\v}{PU}{k}{\81\351}% U+01E9  
 15453 % U+01EA LATIN CAPITAL LETTER O WITH OGONEK; Oogonek  
 15454 \DeclareTextCompositeCommand{\k}{PU}{O}{\81\352}% U+01EA  
 15455 % U+01EB LATIN SMALL LETTER O WITH OGONEK; oogonek  
 15456 \DeclareTextCompositeCommand{\k}{PU}{o}{\81\353}% U+01EB  
 15457 % U+01F0 LATIN SMALL LETTER J WITH CARON; jcaron  
 15458 \DeclareTextCompositeCommand{\v}{PU}{j}{\81\360}% U+01F0  
 15459 \DeclareTextCompositeCommand{\v}{PU}{j}{\81\360}% U+01F0  
 15460 % U+01F4 LATIN CAPITAL LETTER G WITH ACUTE; Gacute  
 15461 \DeclareTextCompositeCommand{\'}{PU}{G}{\81\364}% U+01F4  
 15462 % U+01F5 LATIN SMALL LETTER G WITH ACUTE; gacute  
 15463 \DeclareTextCompositeCommand{\'}{PU}{g}{\81\365}% U+01F5  
 15464 % U+01F8 LATIN CAPITAL LETTER N WITH GRAVE  
 15465 \DeclareTextCompositeCommand{\'}{PU}{N}{\81\370}% U+01F8  
 15466 % U+01F9 LATIN SMALL LETTER N WITH GRAVE  
 15467 \DeclareTextCompositeCommand{\'}{PU}{n}{\81\371}% U+01F9  
 15468 % U+01FC LATIN CAPITAL LETTER AE WITH ACUTE; AEacute  
 15469 \DeclareTextCompositeCommand{\'}{PU}{\AE}{\81\374}% U+01FC  
 15470 % U+01FD LATIN SMALL LETTER AE WITH ACUTE; aeacute  
 15471 \DeclareTextCompositeCommand{\'}{PU}{\ae}{\81\375}% U+01FD  
 15472 % U+01FE LATIN CAPITAL LETTER O WITH STROKE AND ACUTE; \*Oslashacute, Ostrokeacute  
 15473 \DeclareTextCompositeCommand{\'}{PU}{\O}{\81\376}% U+01FE  
 15474 % U+01FF LATIN SMALL LETTER O WITH STROKE AND ACUTE; \*oslashacute, ostrokeacute  
 15475 \DeclareTextCompositeCommand{\'}{PU}{\o}{\81\377}% U+01FF  
 15476 % U+0200 LATIN CAPITAL LETTER A WITH DOUBLE GRAVE; Adblgrave  
 15477 \DeclareTextCompositeCommand{\G}{PU}{A}{\82\000}% U+0200  
 15478 % U+0201 LATIN SMALL LETTER A WITH DOUBLE GRAVE; adblgrave  
 15479 \DeclareTextCompositeCommand{\G}{PU}{a}{\82\001}% U+0201  
 15480 % U+0204 LATIN CAPITAL LETTER E WITH DOUBLE GRAVE; Edblgrave

15481 \DeclareTextCompositeCommand{\G}{PU}{E}{\82\004}% U+0204  
 15482 % U+0205 LATIN SMALL LETTER E WITH DOUBLE GRAVE; edblgrave  
 15483 \DeclareTextCompositeCommand{\G}{PU}{e}{\82\005}% U+0205  
 15484 % U+0208 LATIN CAPITAL LETTER I WITH DOUBLE GRAVE; Idblgrave  
 15485 \DeclareTextCompositeCommand{\G}{PU}{I}{\82\010}% U+0208  
 15486 % U+0209 LATIN SMALL LETTER I WITH DOUBLE GRAVE; idblgrave  
 15487 \DeclareTextCompositeCommand{\G}{PU}{i}{\82\011}% U+0209  
 15488 \DeclareTextCompositeCommand{\G}{PU}{i}{\82\011}% U+0209  
 15489 % U+020C LATIN CAPITAL LETTER O WITH DOUBLE GRAVE; Odblgrave  
 15490 \DeclareTextCompositeCommand{\G}{PU}{O}{\82\014}% U+020C  
 15491 % U+020D LATIN SMALL LETTER O WITH DOUBLE GRAVE; odblgrave  
 15492 \DeclareTextCompositeCommand{\G}{PU}{o}{\82\015}% U+020D  
 15493 % U+0210 LATIN CAPITAL LETTER R WITH DOUBLE GRAVE; Rdblgrave  
 15494 \DeclareTextCompositeCommand{\G}{PU}{R}{\82\020}% U+0210  
 15495 % U+0211 LATIN SMALL LETTER R WITH DOUBLE GRAVE; rdblgrave  
 15496 \DeclareTextCompositeCommand{\G}{PU}{r}{\82\021}% U+0211  
 15497 % U+0214 LATIN CAPITAL LETTER U WITH DOUBLE GRAVE; Udblgrave  
 15498 \DeclareTextCompositeCommand{\G}{PU}{U}{\82\024}% U+0214  
 15499 % U+0215 LATIN SMALL LETTER U WITH DOUBLE GRAVE; udblgrave  
 15500 \DeclareTextCompositeCommand{\G}{PU}{u}{\82\025}% U+0215  
 15501 % U+021E LATIN CAPITAL LETTER H WITH CARON  
 15502 \DeclareTextCompositeCommand{\v}{PU}{H}{\82\036}% U+021E  
 15503 % U+021F LATIN SMALL LETTER H WITH CARON  
 15504 \DeclareTextCompositeCommand{\v}{PU}{h}{\82\037}% U+021F  
 15505 % U+0226 LATIN CAPITAL LETTER A WITH DOT ABOVE  
 15506 \DeclareTextCompositeCommand{\.}{PU}{A}{\82\046}% U+0226  
 15507 % U+0227 LATIN SMALL LETTER A WITH DOT ABOVE  
 15508 \DeclareTextCompositeCommand{\.}{PU}{a}{\82\047}% U+0227  
 15509 % U+0228 LATIN CAPITAL LETTER E WITH CEDILLA  
 15510 \DeclareTextCompositeCommand{\c}{PU}{E}{\82\050}% U+0228  
 15511 % U+0229 LATIN SMALL LETTER E WITH CEDILLA  
 15512 \DeclareTextCompositeCommand{\c}{PU}{e}{\82\051}% U+0229  
 15513 % U+022E LATIN CAPITAL LETTER O WITH DOT ABOVE  
 15514 \DeclareTextCompositeCommand{\.}{PU}{O}{\82\056}% U+022E  
 15515 % U+022F LATIN SMALL LETTER O WITH DOT ABOVE  
 15516 \DeclareTextCompositeCommand{\.}{PU}{o}{\82\057}% U+022F  
 15517 % U+0232 LATIN CAPITAL LETTER Y WITH MACRON  
 15518 \DeclareTextCompositeCommand{\=}{PU}{Y}{\82\062}% U+0232  
 15519 % U+0233 LATIN SMALL LETTER Y WITH MACRON  
 15520 \DeclareTextCompositeCommand{\=}{PU}{y}{\82\063}% U+0233  
 15521 % U+0237 LATIN SMALL LETTER DOTLESS J  
 15522 \DeclareTextCommand{\j}{PU}{\82\067}% U+0237

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

15523 % U+02C7 CARON; caron  
 15524 \DeclareTextCommand{\textasciicaron}{PU}{\82\307}% U+02C7  
 15525 % U+02D8 BREVE; breve  
 15526 \DeclareTextCommand{\textasciibreve}{PU}{\82\330}% U+02D8  
 15527 % U+02D9 DOT ABOVE; dotaccent  
 15528 \DeclareTextCommand{\textdotaccent}{PU}{\82\331}% U+02D9  
 15529 % U+02DA RING ABOVE; ring  
 15530 \DeclareTextCommand{\textring}{PU}{\82\332}% U+02DA  
 15531 % U+02DB OGONEK; ogonek  
 15532 \DeclareTextCommand{\textogonek}{PU}{\82\333}% U+02DB  
 15533 % U+02DC SMALL TILDE; ilde, \*tilde  
 15534 \DeclareTextCommand{\texttilde}{PU}{\82\334}% U+02DC  
 15535 % U+02DD DOUBLE ACUTE ACCENT; hungarumlaut

15536 \DeclareTextCommand{\texthungarumlaut}{PU}{\82\335}% U+02DD  
 15537 \DeclareTextCommand{\textacutedbl}{PU}{\texthungarumlaut}% U+02DD  
 15538 % U+02F5 MODIFIER LETTER MIDDLE DOUBLE GRAVE ACCENT  
 15539 \DeclareTextCommand{\textgravedbl}{PU}{\82\365}% U+02F5  
 15540 % U+02F7 MODIFIER LETTER LOW TILDE  
 15541 \DeclareTextCommand{\texttildelow}{PU}{\82\367}% U+02F7

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

15542 % U+030F COMBINING DOUBLE GRAVE ACCENT; dblgravecmb  
 15543 \DeclareTextCommand{\textdoublegrave}{PU}{\83\017}% U+030F  
 15544 % U+0311 COMBINING INVERTED BREVE; breveinvertedcmb  
 15545 \DeclareTextCommand{\textnewtie}{PU}{\83\021}% U+0311  
 15546 % U+0323 COMBINING DOT BELOW; dotbelowcmb, \*dotbelowcomb  
 15547 \DeclareTextCommand{\textdotbelow}{PU}{\83\043}% U+0323  
 15548 % U+0331 COMBINING MACRON BELOW; macronbelowcmb  
 15549 \DeclareTextCommand{\textmacronbelow}{PU}{\83\061}% U+0331  
 15550 % U+0361 COMBINING DOUBLE INVERTED BREVE; breveinverteddoublecmb  
 15551 \DeclareTextCommand{\texttie}{PU}{\83\141}% U+0361

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

15552 % U+0374 GREEK NUMERAL SIGN; numeralsigngreek  
 15553 \DeclareTextCommand{\textnumeralsigngreek}{PU}{\83\164}% U+0374  
 15554 % U+0375 GREEK LOWER NUMERAL SIGN; numeralsignlowergreek  
 15555 \DeclareTextCommand{\textnumeralsignlowergreek}{PU}{\83\165}% U+0375  
 15556 % U+0386 GREEK CAPITAL LETTER ALPHA WITH TONOS; Alphatonos  
 15557 \DeclareTextCompositeCommand{\'}{PU}{\textAlpha}{\83\206}% U+0386  
 15558 % U+0388 GREEK CAPITAL LETTER EPSILON WITH TONOS; Epsilontonos  
 15559 \DeclareTextCompositeCommand{\'}{PU}{\textEpsilon}{\83\210}% U+0388  
 15560 % U+0389 GREEK CAPITAL LETTER ETA WITH TONOS; Etatonos  
 15561 \DeclareTextCompositeCommand{\'}{PU}{\textEta}{\83\211}% U+0389  
 15562 % U+038A GREEK CAPITAL LETTER IOTA WITH TONOS; Iotatonos  
 15563 \DeclareTextCompositeCommand{\'}{PU}{\textIota}{\83\212}% U+038A  
 15564 % U+038C GREEK CAPITAL LETTER OMICRON WITH TONOS; Omi-  
 cronos  
 15565 \DeclareTextCompositeCommand{\'}{PU}{\textOmicron}{\83\214}% U+038C  
 15566 % U+038E GREEK CAPITAL LETTER UPSILON WITH TONOS; Upsilononos  
 15567 \DeclareTextCompositeCommand{\'}{PU}{\textUpsilon}{\83\216}% U+038E  
 15568 % U+038F GREEK CAPITAL LETTER OMEGA WITH TONOS; Omegatonos  
 15569 \DeclareTextCompositeCommand{\'}{PU}{\textOmega}{\83\217}% U+038F  
 15570 % U+0390 GREEK SMALL LETTER IOTA WITH DIALYTIKA AND TONOS; io-  
 tadiesistonos  
 15571 \DeclareTextCompositeCommand{\'}{PU}{\textIotadiesis}{\83\220}% U+0390  
 15572 % U+0391 GREEK CAPITAL LETTER ALPHA; Alpha  
 15573 \DeclareTextCommand{\textAlpha}{PU}{\83\221}% U+0391  
 15574 % U+0392 GREEK CAPITAL LETTER BETA; Beta  
 15575 \DeclareTextCommand{\textBeta}{PU}{\83\222}% U+0392  
 15576 % U+0393 GREEK CAPITAL LETTER GAMMA; Gamma  
 15577 \DeclareTextCommand{\textGamma}{PU}{\83\223}% U+0393  
 15578 % U+0394 GREEK CAPITAL LETTER DELTA; Deltagreek, \*Delta  
 15579 \DeclareTextCommand{\textDelta}{PU}{\83\224}% U+0394  
 15580 % U+0395 GREEK CAPITAL LETTER EPSILON; Epsilon  
 15581 \DeclareTextCommand{\textEpsilon}{PU}{\83\225}% U+0395  
 15582 % U+0396 GREEK CAPITAL LETTER ZETA; Zeta  
 15583 \DeclareTextCommand{\textZeta}{PU}{\83\226}% U+0396  
 15584 % U+0397 GREEK CAPITAL LETTER ETA; Eta  
 15585 \DeclareTextCommand{\textEta}{PU}{\83\227}% U+0397  
 15586 % U+0398 GREEK CAPITAL LETTER THETA; Theta



15587 \DeclareTextCommand{\textTheta}{PU}{\83\230}% U+0398  
 15588 % U+0399 GREEK CAPITAL LETTER IOTA; Iota  
 15589 \DeclareTextCommand{\textIota}{PU}{\83\231}% U+0399  
 15590 % U+039A GREEK CAPITAL LETTER KAPPA; Kappa  
 15591 \DeclareTextCommand{\textKappa}{PU}{\83\232}% U+039A  
 15592 % U+039B GREEK CAPITAL LETTER LAMDA; Lambda  
 15593 \DeclareTextCommand{\textLambda}{PU}{\83\233}% U+039B  
 15594 % U+039C GREEK CAPITAL LETTER MU; Mu  
 15595 \DeclareTextCommand{\textMu}{PU}{\83\234}% U+039C  
 15596 % U+039D GREEK CAPITAL LETTER NU; Nu  
 15597 \DeclareTextCommand{\textNu}{PU}{\83\235}% U+039D  
 15598 % U+039E GREEK CAPITAL LETTER XI; Xi  
 15599 \DeclareTextCommand{\textXi}{PU}{\83\236}% U+039E  
 15600 % U+039F GREEK CAPITAL LETTER OMICRON; Omicron  
 15601 \DeclareTextCommand{\textOmicron}{PU}{\83\237}% U+039F  
 15602 % U+03A0 GREEK CAPITAL LETTER PI; Pi  
 15603 \DeclareTextCommand{\textPi}{PU}{\83\240}% U+03A0  
 15604 % U+03A1 GREEK CAPITAL LETTER RHO; Rho  
 15605 \DeclareTextCommand{\textRho}{PU}{\83\241}% U+03A1  
 15606 % U+03A3 GREEK CAPITAL LETTER SIGMA; Sigma  
 15607 \DeclareTextCommand{\textSigma}{PU}{\83\243}% U+03A3  
 15608 % U+03A4 GREEK CAPITAL LETTER TAU; Tau  
 15609 \DeclareTextCommand{\textTau}{PU}{\83\244}% U+03A4  
 15610 % U+03A5 GREEK CAPITAL LETTER UPSILON; Upsilon  
 15611 \DeclareTextCommand{\textUpsilon}{PU}{\83\245}% U+03A5  
 15612 % U+03A6 GREEK CAPITAL LETTER PHI; Phi  
 15613 \DeclareTextCommand{\textPhi}{PU}{\83\246}% U+03A6  
 15614 % U+03A7 GREEK CAPITAL LETTER CHI; Chi  
 15615 \DeclareTextCommand{\textChi}{PU}{\83\247}% U+03A7  
 15616 % U+03A8 GREEK CAPITAL LETTER PSI; Psi  
 15617 \DeclareTextCommand{\textPsi}{PU}{\83\250}% U+03A8  
 15618 % U+03A9 GREEK CAPITAL LETTER OMEGA; Omegagreek, \*Omega  
 15619 \DeclareTextCommand{\textOmega}{PU}{\83\251}% U+03A9  
 15620 % U+03AA GREEK CAPITAL LETTER IOTA WITH DIALYTIKA; Iotadieresis  
 15621 \DeclareTextCommand{\textIotadieresis}{PU}{\83\252}% U+03AA  
 15622 \DeclareTextCompositeCommand{"}{PU}{\textIota}{\83\252}% U+03AA  
 15623 % U+03AB GREEK CAPITAL LETTER UPSILON WITH DIALYTIKA; Upsilon  
 15624 \DeclareTextCompositeCommand{"}{PU}{\textUpsilon}{\83\253}% U+03AB  
 15625 % U+03AC GREEK SMALL LETTER ALPHA WITH TONOS; alphanos  
 15626 \DeclareTextCompositeCommand{'}{PU}{\textalpha}{\83\254}% U+03AC  
 15627 % U+03AD GREEK SMALL LETTER EPSILON WITH TONOS; epsilon  
 15628 \DeclareTextCompositeCommand{'}{PU}{\textepsilon}{\83\255}% U+03AD  
 15629 % U+03AE GREEK SMALL LETTER ETA WITH TONOS; etanos  
 15630 \DeclareTextCompositeCommand{'}{PU}{\texteta}{\83\256}% U+03AE  
 15631 % U+03AF GREEK SMALL LETTER IOTA WITH TONOS; iotanos  
 15632 \DeclareTextCompositeCommand{'}{PU}{\textiota}{\83\257}% U+03AF  
 15633 % U+03B0 GREEK SMALL LETTER UPSILON WITH DIALYTIKA AND TONOS; up-  
 15634 \DeclareTextCompositeCommand{"}{PU}{\textupsilon}{\83\260}% U+03B0  
 15635 % U+03B1 GREEK SMALL LETTER ALPHA; alpha  
 15636 \DeclareTextCommand{\textalpha}{PU}{\83\261}% U+03B1  
 15637 % U+03B2 GREEK SMALL LETTER BETA; beta  
 15638 \DeclareTextCommand{\textbeta}{PU}{\83\262}% U+03B2  
 15639 % U+03B3 GREEK SMALL LETTER GAMMA; gamma  
 15640 \DeclareTextCommand{\textgamma}{PU}{\83\263}% U+03B3  
 15641 % U+03B4 GREEK SMALL LETTER DELTA; delta

15642 \DeclareTextCommand{\textdelta}{PU}{\83\264}% U+03B4  
15643 % U+03B5 GREEK SMALL LETTER EPSILON; epsilon  
15644 \DeclareTextCommand{\textepsilon}{PU}{\83\265}% U+03B5  
15645 % U+03B6 GREEK SMALL LETTER ZETA; zeta  
15646 \DeclareTextCommand{\textzeta}{PU}{\83\266}% U+03B6  
15647 % U+03B7 GREEK SMALL LETTER ETA; eta  
15648 \DeclareTextCommand{\texteta}{PU}{\83\267}% U+03B7  
15649 % U+03B8 GREEK SMALL LETTER THETA; theta  
15650 \DeclareTextCommand{\texttheta}{PU}{\83\270}% U+03B8  
15651 % U+03B9 GREEK SMALL LETTER IOTA; iota  
15652 \DeclareTextCommand{\textiota}{PU}{\83\271}% U+03B9  
15653 % U+03BA GREEK SMALL LETTER KAPPA; kappa  
15654 \DeclareTextCommand{\textkappa}{PU}{\83\272}% U+03BA  
15655 % U+03BB GREEK SMALL LETTER LAMDA; lambda  
15656 \DeclareTextCommand{\textlambda}{PU}{\83\273}% U+03BB  
15657 % U+03BC GREEK SMALL LETTER MU; mugreek, \*mu  
15658 \DeclareTextCommand{\textmugreek}{PU}{\83\274}% U+03BC  
15659 % U+03BD GREEK SMALL LETTER NU; nu  
15660 \DeclareTextCommand{\textnu}{PU}{\83\275}% U+03BD  
15661 % U+03BE GREEK SMALL LETTER XI; xi  
15662 \DeclareTextCommand{\textxi}{PU}{\83\276}% U+03BE  
15663 % U+03BF GREEK SMALL LETTER OMICRON; omicron  
15664 \DeclareTextCommand{\textomicron}{PU}{\83\277}% U+03BF  
15665 % U+03C0 GREEK SMALL LETTER PI; pi  
15666 \DeclareTextCommand{\textpi}{PU}{\83\300}% U+03C0  
15667 % U+03C1 GREEK SMALL LETTER RHO; rho  
15668 \DeclareTextCommand{\textrho}{PU}{\83\301}% U+03C1  
15669 % U+03C2 GREEK SMALL LETTER FINAL SIGMA; \*sigma1, sigmafinal  
15670 \DeclareTextCommand{\textvarsigma}{PU}{\83\302}% U+03C2  
15671 % U+03C3 GREEK SMALL LETTER SIGMA; sigma  
15672 \DeclareTextCommand{\textsigma}{PU}{\83\303}% U+03C3  
15673 % U+03C4 GREEK SMALL LETTER TAU; tau  
15674 \DeclareTextCommand{\texttau}{PU}{\83\304}% U+03C4  
15675 % U+03C5 GREEK SMALL LETTER UPSILON; upsilon  
15676 \DeclareTextCommand{\textupsilon}{PU}{\83\305}% U+03C5  
15677 % U+03C6 GREEK SMALL LETTER PHI; phi  
15678 \DeclareTextCommand{\textphi}{PU}{\83\306}% U+03C6  
15679 % U+03C7 GREEK SMALL LETTER CHI; chi  
15680 \DeclareTextCommand{\textchi}{PU}{\83\307}% U+03C7  
15681 % U+03C8 GREEK SMALL LETTER PSI; psi  
15682 \DeclareTextCommand{\textpsi}{PU}{\83\310}% U+03C8  
15683 % U+03C9 GREEK SMALL LETTER OMEGA; omega  
15684 \DeclareTextCommand{\textomega}{PU}{\83\311}% U+03C9  
15685 % U+03CA GREEK SMALL LETTER IOTA WITH DIALYTIKA; iotadieresis  
15686 \DeclareTextCompositeCommand{"}{PU}{\textiota}{\83\312}% U+03CA  
15687 % U+03CB GREEK SMALL LETTER UPSILON WITH DIALYTIKA; up-  
silondieresis  
15688 \DeclareTextCompositeCommand{"}{PU}{\textupsilon}{\83\313}% U+03CB  
15689 % U+03CC GREEK SMALL LETTER OMICRON WITH TONOS; omicrontonos  
15690 \DeclareTextCompositeCommand{'}{PU}{\textomicron}{\83\314}% U+03CC  
15691 % U+03CD GREEK SMALL LETTER UPSILON WITH TONOS; upsilontonos  
15692 \DeclareTextCommand{\textupsilonacute}{PU}{\83\315}% U+03CD  
15693 \DeclareTextCompositeCommand{'}{PU}{\textupsilon}{\83\315}% U+03CD  
15694 % U+03CE GREEK SMALL LETTER OMEGA WITH TONOS; omegatonos  
15695 \DeclareTextCompositeCommand{'}{PU}{\textomega}{\83\316}% U+03CE  
15696 % U+03DA GREEK LETTER STIGMA; Stigmagreek  
15697 \DeclareTextCommand{\textStigmagreek}{PU}{\83\332}% U+03DA

15698 % U+03DB GREEK SMALL LETTER STIGMA  
 15699 \DeclareTextCommand{\textstigmagreek}{PU}{\83\333}% U+03DB  
 15700 % U+03DC GREEK LETTER DIGAMMA; Digammagreek  
 15701 \DeclareTextCommand{\textDigammagreek}{PU}{\83\334}% U+03DC  
 15702 % U+03DD GREEK SMALL LETTER DIGAMMA  
 15703 \DeclareTextCommand{\textdigammagreek}{PU}{\83\335}% U+03DD  
 15704 % U+03DE GREEK LETTER KOPPA; Koppagreek  
 15705 \DeclareTextCommand{\textKoppagreek}{PU}{\83\336}% U+03DE  
 15706 % U+03DF GREEK SMALL LETTER KOPPA  
 15707 \DeclareTextCommand{\textkoppagreek}{PU}{\83\337}% U+03DF  
 15708 % U+03E0 GREEK LETTER SAMPI; Sampigreek  
 15709 \DeclareTextCommand{\textSampigreek}{PU}{\83\340}% U+03E0  
 15710 % U+03E1 GREEK SMALL LETTER SAMPI  
 15711 \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.

15712 % U+0400 CYRILLIC CAPITAL LETTER IE WITH GRAVE  
 15713 \DeclareTextCompositeCommand{\'}{PU}{\CYRE}{\84\000}% U+0400  
 15714 % U+0401 CYRILLIC CAPITAL LETTER IO; Iocyrillic, \*afii10023  
 15715 \DeclareTextCommand{\CYRYO}{PU}{\84\001}% U+0401  
 15716 \DeclareTextCompositeCommand{\"}{PU}{\CYRE}{\84\001}% ???  
 15717 % U+0402 CYRILLIC CAPITAL LETTER DJE; Djecyrillic, \*afii10051  
 15718 \DeclareTextCommand{\CYRDJE}{PU}{\84\002}% U+0402  
 15719 % U+0403 CYRILLIC CAPITAL LETTER GJE; Gjecyrillic, \*afii10052  
 15720 \DeclareTextCompositeCommand{\'}{PU}{\CYRG}{\84\003}% U+0403  
 15721 % U+0404 CYRILLIC CAPITAL LETTER UKRAINIAN IE; Ecyrillic, \*afii10053  
 15722 \DeclareTextCommand{\CYRIE}{PU}{\84\004}% U+0404  
 15723 % U+0405 CYRILLIC CAPITAL LETTER DZE; Dzecyrillic, \*afii10054  
 15724 \DeclareTextCommand{\CYRDZE}{PU}{\84\005}% U+0405  
 15725 % U+0406 CYRILLIC CAPITAL LETTER BYELORUSSIAN-UKRAINIAN I; Icyril-  
 lic, \*afii10055  
 15726 \DeclareTextCommand{\CYRII}{PU}{\84\006}% U+0406  
 15727 % U+0407 CYRILLIC CAPITAL LETTER YI; Yicyrillic, \*afii10056  
 15728 \DeclareTextCommand{\CYRYI}{PU}{\84\007}% U+0407  
 15729 \DeclareTextCompositeCommand{\"}{PU}{\CYRII}{\84\007}% U+0407  
 15730 % U+0408 CYRILLIC CAPITAL LETTER JE; Jecyrillic, \*afii10057  
 15731 \DeclareTextCommand{\CYRJE}{PU}{\84\010}% U+0408  
 15732 % U+0409 CYRILLIC CAPITAL LETTER LJE; Ljecyrillic, \*afii10058  
 15733 \DeclareTextCommand{\CYRLJE}{PU}{\84\011}% U+0409  
 15734 % U+040A CYRILLIC CAPITAL LETTER NJE; Njecyrillic, \*afii10059  
 15735 \DeclareTextCommand{\CYRNJE}{PU}{\84\012}% U+040A  
 15736 % U+040B CYRILLIC CAPITAL LETTER TSHE; Tshecyrillic, \*afii10060  
 15737 \DeclareTextCommand{\CYRTSHE}{PU}{\84\013}% U+040B  
 15738 % U+040C CYRILLIC CAPITAL LETTER KJE; Kjecyrillic, \*afii10061  
 15739 \DeclareTextCompositeCommand{\'}{PU}{\CYRK}{\84\014}% U+040C  
 15740 % U+040D CYRILLIC CAPITAL LETTER I WITH GRAVE  
 15741 \DeclareTextCompositeCommand{\'}{PU}{\CYRI}{\84\015}% U+040D  
 15742 % U+040E CYRILLIC CAPITAL LETTER SHORT U; Ushortcyrillic, \*afii10062  
 15743 \DeclareTextCommand{\CYRUSHRT}{PU}{\84\016}% U+040E  
 15744 \DeclareTextCompositeCommand{\U}{PU}{\CYRU}{\84\016}% U+040E  
 15745 % U+040F CYRILLIC CAPITAL LETTER DZHE; Dzhecyrillic, \*afii10145  
 15746 \DeclareTextCommand{\CYRDZHE}{PU}{\84\017}% U+040F  
 15747 % U+0410 CYRILLIC CAPITAL LETTER A; Acyrillic, \*afii10017  
 15748 \DeclareTextCommand{\CYRA}{PU}{\84\020}% U+0410  
 15749 % U+0411 CYRILLIC CAPITAL LETTER BE; Becyrillic, \*afii10018

15750 \DeclareTextCommand{\CYRB}{PU}{\84\021}% U+0411  
15751 % U+0412 CYRILLIC CAPITAL LETTER VE; Vecyrillic, \*afii10019  
15752 \DeclareTextCommand{\CYRV}{PU}{\84\022}% U+0412  
15753 % U+0413 CYRILLIC CAPITAL LETTER GHE; Gecyrillic, \*afii10020  
15754 \DeclareTextCommand{\CYRG}{PU}{\84\023}% U+0413  
15755 % U+0414 CYRILLIC CAPITAL LETTER DE; Decyrillic, \*afii10021  
15756 \DeclareTextCommand{\CYRD}{PU}{\84\024}% U+0414  
15757 % U+0415 CYRILLIC CAPITAL LETTER IE; Iecyrillic, \*afii10022  
15758 \DeclareTextCommand{\CYRE}{PU}{\84\025}% U+0415  
15759 % U+0416 CYRILLIC CAPITAL LETTER ZHE; Zhecyrillic, \*afii10024  
15760 \DeclareTextCommand{\CYRZH}{PU}{\84\026}% U+0416  
15761 % U+0417 CYRILLIC CAPITAL LETTER ZE; Zecyrillic, \*afii10025  
15762 \DeclareTextCommand{\CYRZ}{PU}{\84\027}% U+0417  
15763 % U+0418 CYRILLIC CAPITAL LETTER I; Iicyrillic, \*afii10026  
15764 \DeclareTextCommand{\CYRI}{PU}{\84\030}% U+0418  
15765 % U+0419 CYRILLIC CAPITAL LETTER SHORT I; Iishortcyrillic, \*afii10027  
15766 \DeclareTextCommand{\CYRISHRT}{PU}{\84\031}% U+0419  
15767 \DeclareTextCompositeCommand{\U}{PU}{\CYRI}{\84\031}% U+0419  
15768 % U+041A CYRILLIC CAPITAL LETTER KA; Kacyrillic, \*afii10028  
15769 \DeclareTextCommand{\CYRK}{PU}{\84\032}% U+041A  
15770 % U+041B CYRILLIC CAPITAL LETTER EL; Elcyrillic, \*afii10029  
15771 \DeclareTextCommand{\CYRL}{PU}{\84\033}% U+041B  
15772 % U+041C CYRILLIC CAPITAL LETTER EM; Emcyrillic, \*afii10030  
15773 \DeclareTextCommand{\CYRM}{PU}{\84\034}% U+041C  
15774 % U+041D CYRILLIC CAPITAL LETTER EN; Encyrillic, \*afii10031  
15775 \DeclareTextCommand{\CYRN}{PU}{\84\035}% U+041D  
15776 % U+041E CYRILLIC CAPITAL LETTER O; Ocyrillic, \*afii10032  
15777 \DeclareTextCommand{\CYRO}{PU}{\84\036}% U+041E  
15778 % U+041F CYRILLIC CAPITAL LETTER PE; Pecyrillic, \*afii10033  
15779 \DeclareTextCommand{\CYRP}{PU}{\84\037}% U+041F  
15780 % U+0420 CYRILLIC CAPITAL LETTER ER; Ercyrillic, \*afii10034  
15781 \DeclareTextCommand{\CYRR}{PU}{\84\040}% U+0420  
15782 % U+0421 CYRILLIC CAPITAL LETTER ES; Escyrillic, \*afii10035  
15783 \DeclareTextCommand{\CYRS}{PU}{\84\041}% U+0421  
15784 % U+0422 CYRILLIC CAPITAL LETTER TE; Tecyrillic, \*afii10036  
15785 \DeclareTextCommand{\CYRT}{PU}{\84\042}% U+0422  
15786 % U+0423 CYRILLIC CAPITAL LETTER U; Ucyrillic, \*afii10037  
15787 \DeclareTextCommand{\CYRU}{PU}{\84\043}% U+0423  
15788 % U+0424 CYRILLIC CAPITAL LETTER EF; Efcyrillic, \*afii10038  
15789 \DeclareTextCommand{\CYRF}{PU}{\84\044}% U+0424  
15790 % U+0425 CYRILLIC CAPITAL LETTER HA; Khacyrillic, \*afii10039  
15791 \DeclareTextCommand{\CYRH}{PU}{\84\045}% U+0425  
15792 % U+0426 CYRILLIC CAPITAL LETTER TSE; Tsecyrillic, \*afii10040  
15793 \DeclareTextCommand{\CYRC}{PU}{\84\046}% U+0426  
15794 % U+0427 CYRILLIC CAPITAL LETTER CHE; Checyrillic, \*afii10041  
15795 \DeclareTextCommand{\CYRCH}{PU}{\84\047}% U+0427  
15796 % U+0428 CYRILLIC CAPITAL LETTER SHA; Shacyrillic, \*afii10042  
15797 \DeclareTextCommand{\CYRSH}{PU}{\84\050}% U+0428  
15798 % U+0429 CYRILLIC CAPITAL LETTER SHCHA; Shchacyrillic, \*afii10043  
15799 \DeclareTextCommand{\CYRSHCH}{PU}{\84\051}% U+0429  
15800 % U+042A CYRILLIC CAPITAL LETTER HARD SIGN; Hardsigncyrillic, \*afii10044  
15801 \DeclareTextCommand{\CYRHRDSN}{PU}{\84\052}% U+042A  
15802 % U+042B CYRILLIC CAPITAL LETTER YERU; Yericyrillic, \*afii10045  
15803 \DeclareTextCommand{\CYRERY}{PU}{\84\053}% U+042B  
15804 % U+042C CYRILLIC CAPITAL LETTER SOFT SIGN; Softsigncyrillic, \*afii10046  
15805 \DeclareTextCommand{\CYRSFTSN}{PU}{\84\054}% U+042C  
15806 % U+042D CYRILLIC CAPITAL LETTER E; Ereversedcyrillic, \*afii10047

15807 \DeclareTextCommand{\CYREREV}{PU}{\84\055}% U+042D  
15808 % U+042E CYRILLIC CAPITAL LETTER YU; IUcyrillic, \*afii10048  
15809 \DeclareTextCommand{\CYRYU}{PU}{\84\056}% U+042E  
15810 % U+042F CYRILLIC CAPITAL LETTER YA; IAcyrillic, \*afii10049  
15811 \DeclareTextCommand{\CYRYA}{PU}{\84\057}% U+042F  
15812 % U+0430 CYRILLIC SMALL LETTER A; acyrillic, \*afii10065  
15813 \DeclareTextCommand{\cyr a}{PU}{\84\060}% U+0430  
15814 % U+0431 CYRILLIC SMALL LETTER BE; \*afii10066, becyrillic  
15815 \DeclareTextCommand{\cyr b}{PU}{\84\061}% U+0431  
15816 % U+0432 CYRILLIC SMALL LETTER VE; \*afii10067, vecyrillic  
15817 \DeclareTextCommand{\cyr v}{PU}{\84\062}% U+0432  
15818 % U+0433 CYRILLIC SMALL LETTER GHE; \*afii10068, gecyrillic  
15819 \DeclareTextCommand{\cyr g}{PU}{\84\063}% U+0433  
15820 % U+0434 CYRILLIC SMALL LETTER DE; \*afii10069, decyrillic  
15821 \DeclareTextCommand{\cyr d}{PU}{\84\064}% U+0434  
15822 % U+0435 CYRILLIC SMALL LETTER IE; \*afii10070, iecyrillic  
15823 \DeclareTextCommand{\cyr e}{PU}{\84\065}% U+0435  
15824 % U+0436 CYRILLIC SMALL LETTER ZHE; \*afii10072, zhecyrillic  
15825 \DeclareTextCommand{\cyr zh}{PU}{\84\066}% U+0436  
15826 % U+0437 CYRILLIC SMALL LETTER ZE; \*afii10073, zecyrillic  
15827 \DeclareTextCommand{\cyr z}{PU}{\84\067}% U+0437  
15828 % U+0438 CYRILLIC SMALL LETTER I; \*afii10074, iicyrillic  
15829 \DeclareTextCommand{\cyr i}{PU}{\84\070}% U+0438  
15830 % U+0439 CYRILLIC SMALL LETTER SHORT I; \*afii10075, iishortcyrillic  
15831 \DeclareTextCommand{\cyr ishrt}{PU}{\84\071}% U+0439  
15832 \DeclareTextCompositeCommand{\U}{PU}{\cyr i}{\84\071}% U+0439  
15833 % U+043A CYRILLIC SMALL LETTER KA; \*afii10076, kacyrillic  
15834 \DeclareTextCommand{\cyr k}{PU}{\84\072}% U+043A  
15835 % U+043B CYRILLIC SMALL LETTER EL; \*afii10077, elcyrillic  
15836 \DeclareTextCommand{\cyr l}{PU}{\84\073}% U+043B  
15837 % U+043C CYRILLIC SMALL LETTER EM; \*afii10078, emcyrillic  
15838 \DeclareTextCommand{\cyr m}{PU}{\84\074}% U+043C  
15839 % U+043D CYRILLIC SMALL LETTER EN; \*afii10079, encyrillic  
15840 \DeclareTextCommand{\cyr n}{PU}{\84\075}% U+043D  
15841 % U+043E CYRILLIC SMALL LETTER O; \*afii10080, ocyrillic  
15842 \DeclareTextCommand{\cyr o}{PU}{\84\076}% U+043E  
15843 % U+043F CYRILLIC SMALL LETTER PE; \*afii10081, pecyrillic  
15844 \DeclareTextCommand{\cyr p}{PU}{\84\077}% U+043F  
15845 % U+0440 CYRILLIC SMALL LETTER ER; \*afii10082, ercyrillic  
15846 \DeclareTextCommand{\cyr r}{PU}{\84\100}% U+0440  
15847 % U+0441 CYRILLIC SMALL LETTER ES; \*afii10083, escyrillic  
15848 \DeclareTextCommand{\cyr s}{PU}{\84\101}% U+0441  
15849 % U+0442 CYRILLIC SMALL LETTER TE; \*afii10084, tecyrillic  
15850 \DeclareTextCommand{\cyr t}{PU}{\84\102}% U+0442  
15851 % U+0443 CYRILLIC SMALL LETTER U; \*afii10085, ucyrillic  
15852 \DeclareTextCommand{\cyr u}{PU}{\84\103}% U+0443  
15853 % U+0444 CYRILLIC SMALL LETTER EF; \*afii10086, efcyrillic  
15854 \DeclareTextCommand{\cyr f}{PU}{\84\104}% U+0444  
15855 % U+0445 CYRILLIC SMALL LETTER HA; \*afii10087, khacyrillic  
15856 \DeclareTextCommand{\cyr h}{PU}{\84\105}% U+0445  
15857 % U+0446 CYRILLIC SMALL LETTER TSE; \*afii10088, tsecyrillic  
15858 \DeclareTextCommand{\cyr c}{PU}{\84\106}% U+0446  
15859 % U+0447 CYRILLIC SMALL LETTER CHE; \*afii10089, checyrillic  
15860 \DeclareTextCommand{\cyr ch}{PU}{\84\107}% U+0447  
15861 % U+0448 CYRILLIC SMALL LETTER SHA; \*afii10090, shacyrillic  
15862 \DeclareTextCommand{\cyr sh}{PU}{\84\110}% U+0448  
15863 % U+0449 CYRILLIC SMALL LETTER SHCHA; \*afii10091, shchacyrillic

15864 \DeclareTextCommand{\cyrshch}{PU}{\84\111}% U+0449  
15865 % U+044A CYRILLIC SMALL LETTER HARD SIGN; \*afii10092, hardsigncyrillic  
15866 \DeclareTextCommand{\cyrhrdsn}{PU}{\84\112}% U+044A  
15867 % U+044B CYRILLIC SMALL LETTER YERU; \*afii10093, yericyrillic  
15868 \DeclareTextCommand{\cyrery}{PU}{\84\113}% U+044B  
15869 % U+044C CYRILLIC SMALL LETTER SOFT SIGN; \*afii10094, softsigncyrillic  
15870 \DeclareTextCommand{\cyrstfn}{PU}{\84\114}% U+044C  
15871 % U+044D CYRILLIC SMALL LETTER E; \*afii10095, ereversedcyrillic  
15872 \DeclareTextCommand{\cyrerev}{PU}{\84\115}% U+044D  
15873 % U+044E CYRILLIC SMALL LETTER YU; \*afii10096, iucyrillic  
15874 \DeclareTextCommand{\cyrYu}{PU}{\84\116}% U+044E  
15875 % U+044F CYRILLIC SMALL LETTER YA; \*afii10097, iacyrillic  
15876 \DeclareTextCommand{\cyrYa}{PU}{\84\117}% U+044F  
15877 % U+0450 CYRILLIC SMALL LETTER IE WITH GRAVE  
15878 \DeclareTextCompositeCommand{\'}{PU}{\cyrre}{\84\120}% U+0450  
15879 % U+0451 CYRILLIC SMALL LETTER IO; \*afii10071, iocyrillic  
15880 \DeclareTextCommand{\cyrIo}{PU}{\84\121}% U+0451  
15881 \DeclareTextCompositeCommand{\"}{PU}{\cyrre}{\84\121}% U+0451  
15882 % U+0452 CYRILLIC SMALL LETTER DJE; \*afii10099, djecyrillic  
15883 \DeclareTextCommand{\cyrDje}{PU}{\84\122}% U+0452  
15884 % U+0453 CYRILLIC SMALL LETTER GJE; \*afii10100, gjecyrillic  
15885 \DeclareTextCompositeCommand{\'}{PU}{\cyrG}{\84\123}% U+0453  
15886 % U+0454 CYRILLIC SMALL LETTER UKRAINIAN IE; \*afii10101, ecyrillic  
15887 \DeclareTextCommand{\cyrIe}{PU}{\84\124}% U+0454  
15888 % U+0455 CYRILLIC SMALL LETTER DZE; \*afii10102, dzecyrillic  
15889 \DeclareTextCommand{\cyrDze}{PU}{\84\125}% U+0455  
15890 % U+0456 CYRILLIC SMALL LETTER BYELORUSSIAN-UKRAINIAN I; \*afii10103, icyrillic  
15891 \DeclareTextCommand{\cyrIi}{PU}{\84\126}% U+0456  
15892 % U+0457 CYRILLIC SMALL LETTER YI; \*afii10104, yicyrillic  
15893 \DeclareTextCommand{\cyrYi}{PU}{\84\127}% U+0457  
15894 \DeclareTextCompositeCommand{\"}{PU}{\cyrIi}{\84\127}% U+0457  
15895 % U+0458 CYRILLIC SMALL LETTER JE; \*afii10105, jecyrillic  
15896 \DeclareTextCommand{\cyrJe}{PU}{\84\130}% U+0458  
15897 % U+0459 CYRILLIC SMALL LETTER LJE; \*afii10106, ljecyrillic  
15898 \DeclareTextCommand{\cyrLje}{PU}{\84\131}% U+0459  
15899 % U+045A CYRILLIC SMALL LETTER NJE; \*afii10107, njecyrillic  
15900 \DeclareTextCommand{\cyrNje}{PU}{\84\132}% U+045A  
15901 % U+045B CYRILLIC SMALL LETTER TSHE; \*afii10108, tshecyrillic  
15902 \DeclareTextCommand{\cyrTshe}{PU}{\84\133}% U+045B  
15903 % U+045C CYRILLIC SMALL LETTER KJE; \*afii10109, kjecyrillic  
15904 \DeclareTextCompositeCommand{\'}{PU}{\cyrK}{\84\134}% U+045C  
15905 % U+045D CYRILLIC SMALL LETTER I WITH GRAVE  
15906 \DeclareTextCompositeCommand{\'}{PU}{\cyrI}{\84\135}% U+045D  
15907 % U+045E CYRILLIC SMALL LETTER SHORT U; \*afii10110, ushortcyrillic  
15908 \DeclareTextCommand{\cyrushrt}{PU}{\84\136}% U+045E  
15909 \DeclareTextCompositeCommand{\U}{PU}{\cyrU}{\84\136}% U+045E  
15910 % U+045F CYRILLIC SMALL LETTER DZHE; \*afii10193, dzhecyrillic  
15911 \DeclareTextCommand{\cyrDzhe}{PU}{\84\137}% U+045F  
15912 % U+0460 CYRILLIC CAPITAL LETTER OMEGA; Omegacyrillic  
15913 \DeclareTextCommand{\CYROMEGA}{PU}{\84\140}% U+0460  
15914 % U+0461 CYRILLIC SMALL LETTER OMEGA; omegacyrillic  
15915 \DeclareTextCommand{\cyrOmega}{PU}{\84\141}% U+0461  
15916 % U+0462 CYRILLIC CAPITAL LETTER YAT; Yatcyrillic, \*afii10146  
15917 \DeclareTextCommand{\CYRYAT}{PU}{\84\142}% U+0462  
15918 % U+0463 CYRILLIC SMALL LETTER YAT; \*afii10194, yatcyrillic  
15919 \DeclareTextCommand{\cyrYat}{PU}{\84\143}% U+0463

15920 % U+0464 CYRILLIC CAPITAL LETTER IOTIFIED E; Eiotifiedcyrillic  
 15921 \DeclareTextCommand{\CYRIOTE}{PU}{\84\144}% U+0464  
 15922 % U+0465 CYRILLIC SMALL LETTER IOTIFIED E; eiotifiedcyrillic  
 15923 \DeclareTextCommand{\cyriote}{PU}{\84\145}% U+0465  
 15924 % U+0466 CYRILLIC CAPITAL LETTER LITTLE YUS; Yuslittlecyrillic  
 15925 \DeclareTextCommand{\CYRLYUS}{PU}{\84\146}% U+0466  
 15926 % U+0467 CYRILLIC SMALL LETTER LITTLE YUS; yuslittlecyrillic  
 15927 \DeclareTextCommand{\cyrlyus}{PU}{\84\147}% U+0467  
 15928 % U+0468 CYRILLIC CAPITAL LETTER IOTIFIED LITTLE YUS; Yuslittleio-  
 tifiedcyrillic  
 15929 \DeclareTextCommand{\CYRIOTLYUS}{PU}{\84\150}% U+0468  
 15930 % U+0469 CYRILLIC SMALL LETTER IOTIFIED LITTLE YUS; yuslittleioti-  
 fiedcyrillic  
 15931 \DeclareTextCommand{\cyriotlyus}{PU}{\84\151}% U+0469  
 15932 % U+046A CYRILLIC CAPITAL LETTER BIG YUS; Yusbigncyrillic  
 15933 \DeclareTextCommand{\CYRBYUS}{PU}{\84\152}% U+046A  
 15934 % U+046B CYRILLIC SMALL LETTER BIG YUS; yusbigncyrillic  
 15935 \DeclareTextCommand{\cyrbyus}{PU}{\84\153}% U+046B  
 15936 % U+046C CYRILLIC CAPITAL LETTER IOTIFIED BIG YUS; Yusbignotified-  
 cyrillic  
 15937 \DeclareTextCommand{\CYRIOTBYUS}{PU}{\84\154}% U+046C  
 15938 % U+046D CYRILLIC SMALL LETTER IOTIFIED BIG YUS; yusbignotifiedcyril-  
 lic  
 15939 \DeclareTextCommand{\cyriotbyus}{PU}{\84\155}% U+046D  
 15940 % U+046E CYRILLIC CAPITAL LETTER KSI; Ksicyrillic  
 15941 \DeclareTextCommand{\CYRKSI}{PU}{\84\156}% U+046E  
 15942 % U+046F CYRILLIC SMALL LETTER KSI; ksicyrillic  
 15943 \DeclareTextCommand{\cyrksi}{PU}{\84\157}% U+046F  
 15944 % U+0470 CYRILLIC CAPITAL LETTER PSI; Psicyrillic  
 15945 \DeclareTextCommand{\CYRPSI}{PU}{\84\160}% U+0470  
 15946 % U+0471 CYRILLIC SMALL LETTER PSI; psicyrillic  
 15947 \DeclareTextCommand{\cyrpsi}{PU}{\84\161}% U+0471  
 15948 % U+0472 CYRILLIC CAPITAL LETTER FITA; Fitacyrillic, \*afii10147  
 15949 \DeclareTextCommand{\CYRFITA}{PU}{\84\162}% U+0472  
 15950 % U+0473 CYRILLIC SMALL LETTER FITA; \*afii10195, fitacyrillic  
 15951 \DeclareTextCommand{\cyrfita}{PU}{\84\163}% U+0473  
 15952 % U+0474 CYRILLIC CAPITAL LETTER IZHITSA; Izhitsacyrillic, \*afii10148  
 15953 \DeclareTextCommand{\CYRIZH}{PU}{\84\164}% U+0474  
 15954 % U+0475 CYRILLIC SMALL LETTER IZHITSA; \*afii10196, izhitsacyrillic  
 15955 \DeclareTextCommand{\cyrizh}{PU}{\84\165}% U+0475  
 15956 % U+0476 CYRILLIC CAPITAL LETTER IZHITSA WITH DOUBLE GRAVE AC-  
 CENT; Izhitsadblgravecyrillic  
 15957 \DeclareTextCompositeCommand{\C}{PU}{\CYRIZH}{\84\166}% U+0476  
 15958 % U+0477 CYRILLIC SMALL LETTER IZHITSA WITH DOUBLE GRAVE AC-  
 CENT; izhitsadblgravecyrillic  
 15959 \DeclareTextCompositeCommand{\C}{PU}{\cyrizh}{\84\167}% U+0477  
 15960 % U+0478 CYRILLIC CAPITAL LETTER UK; Ukcyrillic  
 15961 \DeclareTextCommand{\CYRUK}{PU}{\84\170}% U+0478  
 15962 % U+0479 CYRILLIC SMALL LETTER UK; ukcyrillic  
 15963 \DeclareTextCommand{\cyruk}{PU}{\84\171}% U+0479  
 15964 % U+047A CYRILLIC CAPITAL LETTER ROUND OMEGA; Omegaroundcyril-  
 lic  
 15965 \DeclareTextCommand{\CYROMEGARND}{PU}{\84\172}% U+047A  
 15966 % U+047B CYRILLIC SMALL LETTER ROUND OMEGA; omegaroundcyrillic  
 15967 \DeclareTextCommand{\cyromegarnd}{PU}{\84\173}% U+047B  
 15968 % U+047C CYRILLIC CAPITAL LETTER OMEGA WITH TITLO; Omegatitlo-  
 cyrillic

15969 \DeclareTextCommand{\CYROMEGATITLO}{PU}{\84\174}% U+047C  
 15970 % U+047D CYRILLIC SMALL LETTER OMEGA WITH TITLO; omegatitlo-cyrillic  
 15971 \DeclareTextCommand{\cyromegatitlo}{PU}{\84\175}% U+047D  
 15972 % U+047E CYRILLIC CAPITAL LETTER OT; Otcyrillic  
 15973 \DeclareTextCommand{\CYROT}{PU}{\84\176}% U+047E  
 15974 % U+047F CYRILLIC SMALL LETTER OT; otcyrillic  
 15975 \DeclareTextCommand{\cyrot}{PU}{\84\177}% U+047F  
 15976 % U+0480 CYRILLIC CAPITAL LETTER KOPPA; Koppacyrillic  
 15977 \DeclareTextCommand{\CYRKOPPA}{PU}{\84\200}% U+0480  
 15978 % U+0481 CYRILLIC SMALL LETTER KOPPA; koppacyrillic  
 15979 \DeclareTextCommand{\cyrkoppa}{PU}{\84\201}% U+0481  
 15980 % U+0482 CYRILLIC THOUSANDS SIGN; thousandcyrillic  
 15981 \DeclareTextCommand{\cyrthousands}{PU}{\84\202}% U+0482  
 \84\203: U+0483 COMBINING CYRILLIC TITLO; titlocyrillicmb  
 \84\204: U+0484 COMBINING CYRILLIC PALATALIZATION; palatalizationcyrillicmb  
 \84\205: U+0485 COMBINING CYRILLIC DASIA PNEUMATA; dasiapneumatacyrillicmb  
 \84\206: U+0486 COMBINING CYRILLIC PSILI PNEUMATA; psilipneumatacyrillicmb  
 \84\207: U+0487 COMBINING CYRILLIC POKRYTIE  
 \84\210: U+0488 COMBINING CYRILLIC HUNDRED THOUSANDS SIGN  
 \84\211: U+0489 COMBINING CYRILLIC MILLIONS SIGN  
 15982 % U+048A CYRILLIC CAPITAL LETTER SHORT I WITH TAIL  
 15983 \DeclareTextCommand{\CYRISHRTDSC}{PU}{\84\212}% U+048A  
 15984 % U+048B CYRILLIC SMALL LETTER SHORT I WITH TAIL  
 15985 \DeclareTextCommand{\cyrishrtdsc}{PU}{\84\213}% U+048B  
 15986 % U+048C CYRILLIC CAPITAL LETTER SEMISOFT SIGN  
 15987 \DeclareTextCommand{\CYRSEMISFTSN}{PU}{\84\214}% U+048C  
 15988 % U+048D CYRILLIC SMALL LETTER SEMISOFT SIGN  
 15989 \DeclareTextCommand{\cyrsemisftsn}{PU}{\84\215}% U+048D  
 15990 % U+048E CYRILLIC CAPITAL LETTER ER WITH TICK  
 15991 \DeclareTextCommand{\CYRRTICK}{PU}{\84\216}% U+048E  
 15992 % U+048F CYRILLIC SMALL LETTER ER WITH TICK  
 15993 \DeclareTextCommand{\cyrrtick}{PU}{\84\217}% U+048F  
 15994 % U+0490 CYRILLIC CAPITAL LETTER GHE WITH UPTURN; Gheupturncyrillic, \*afii10050  
 15995 \DeclareTextCommand{\CYRGUP}{PU}{\84\220}% U+0490  
 15996 % U+0491 CYRILLIC SMALL LETTER GHE WITH UPTURN; \*afii10098, gheupturncyrillic  
 15997 \DeclareTextCommand{\cyrgup}{PU}{\84\221}% U+0491  
 15998 % U+0492 CYRILLIC CAPITAL LETTER GHE WITH STROKE; Ghestrokecyrillic  
 15999 \DeclareTextCommand{\CYRGHCRS}{PU}{\84\222}% U+0492  
 16000 % U+0493 CYRILLIC SMALL LETTER GHE WITH STROKE; ghestrokecyrillic  
 16001 \DeclareTextCommand{\cyrghcrs}{PU}{\84\223}% U+0493  
 16002 % U+0494 CYRILLIC CAPITAL LETTER GHE WITH MIDDLE HOOK; Ghemiddlehookcyrillic  
 16003 \DeclareTextCommand{\CYRGHK}{PU}{\84\224}% U+0494  
 16004 % U+0495 CYRILLIC SMALL LETTER GHE WITH MIDDLE HOOK; ghemiddlehookcyrillic  
 16005 \DeclareTextCommand{\cyrghk}{PU}{\84\225}% U+0495  
 16006 % U+0496 CYRILLIC CAPITAL LETTER ZHE WITH DESCENDER; Zhedescendercyrillic  
 16007 \DeclareTextCommand{\CYRZHDSC}{PU}{\84\226}% U+0496



16008 % U+0497 CYRILLIC SMALL LETTER ZHE WITH DESCENDER; zhedescendercyrillic  
 16009 \DeclareTextCommand{\cyrzhdsc}{PU}{\84\227}% U+0497  
 16010 % U+0498 CYRILLIC CAPITAL LETTER ZE WITH DESCENDER; Zedescendercyrillic  
 16011 \DeclareTextCommand{\CYRZDSC}{PU}{\84\230}% U+0498  
 16012 \DeclareTextCompositeCommand{\c}{PU}{\CYRZ}{\84\230}% U+0498  
 16013 % U+0499 CYRILLIC SMALL LETTER ZE WITH DESCENDER; zedescendercyrillic  
 16014 \DeclareTextCommand{\cyrzdesc}{PU}{\84\231}% U+0499  
 16015 \DeclareTextCompositeCommand{\c}{PU}{\cyrz}{\84\231}% U+0499  
 16016 % U+049A CYRILLIC CAPITAL LETTER KA WITH DESCENDER; Kadescendercyrillic  
 16017 \DeclareTextCommand{\CYRKDSC}{PU}{\84\232}% U+049A  
 16018 % U+049B CYRILLIC SMALL LETTER KA WITH DESCENDER; kadescendercyrillic  
 16019 \DeclareTextCommand{\cyrkdsc}{PU}{\84\233}% U+049B  
 16020 % U+049C CYRILLIC CAPITAL LETTER KA WITH VERTICAL STROKE; Kavericalstrokecyrillic  
 16021 \DeclareTextCommand{\CYRKVCRS}{PU}{\84\234}% U+049C  
 16022 % U+049D CYRILLIC SMALL LETTER KA WITH VERTICAL STROKE; kavericalstrokecyrillic  
 16023 \DeclareTextCommand{\cyrkvcrs}{PU}{\84\235}% U+049D  
 16024 % U+049E CYRILLIC CAPITAL LETTER KA WITH STROKE; Kastrokecyrillic  
 16025 \DeclareTextCommand{\CYRKHCRS}{PU}{\84\236}% U+049E  
 16026 % U+049F CYRILLIC SMALL LETTER KA WITH STROKE; kastrokecyrillic  
 16027 \DeclareTextCommand{\cyrkhcrs}{PU}{\84\237}% U+049F  
 16028 % U+04A0 CYRILLIC CAPITAL LETTER BASHKIR KA; Kabashkircyrillic  
 16029 \DeclareTextCommand{\CYRKBEAK}{PU}{\84\240}% U+04A0  
 16030 % U+04A1 CYRILLIC SMALL LETTER BASHKIR KA; kabashkircyrillic  
 16031 \DeclareTextCommand{\cyrkbeak}{PU}{\84\241}% U+04A1  
 16032 % U+04A2 CYRILLIC CAPITAL LETTER EN WITH DESCENDER; Endescendercyrillic  
 16033 \DeclareTextCommand{\CYRNDSC}{PU}{\84\242}% U+04A2  
 16034 % U+04A3 CYRILLIC SMALL LETTER EN WITH DESCENDER; endescendercyrillic  
 16035 \DeclareTextCommand{\cyrndsc}{PU}{\84\243}% U+04A3  
 16036 % U+04A4 CYRILLIC CAPITAL LIGATURE EN GHE; Enghecyrillic  
 16037 \DeclareTextCommand{\CYRNG}{PU}{\84\244}% U+04A4  
 16038 % U+04A5 CYRILLIC SMALL LIGATURE EN GHE; enghecyrillic  
 16039 \DeclareTextCommand{\cyrng}{PU}{\84\245}% U+04A5  
 16040 % U+04A6 CYRILLIC CAPITAL LETTER PE WITH MIDDLE HOOK; Pemiddlehookcyrillic  
 16041 \DeclareTextCommand{\CYRPHK}{PU}{\84\246}% U+04A6  
 16042 % U+04A7 CYRILLIC SMALL LETTER PE WITH MIDDLE HOOK; pemiddlehookcyrillic  
 16043 \DeclareTextCommand{\cyrphk}{PU}{\84\247}% U+04A7  
 16044 % U+04A8 CYRILLIC CAPITAL LETTER ABKHASIAN HA; Haabkhasiancyrillic  
 16045 \DeclareTextCommand{\CYRABHHA}{PU}{\84\250}% U+04A8  
 16046 % U+04A9 CYRILLIC SMALL LETTER ABKHASIAN HA; haabkhasiancyrillic  
 16047 \DeclareTextCommand{\cyrabhha}{PU}{\84\251}% U+04A9  
 16048 % U+04AA CYRILLIC CAPITAL LETTER ES WITH DESCENDER; Esdescendercyrillic  
 16049 \DeclareTextCommand{\CYRSDSC}{PU}{\84\252}% U+04AA  
 16050 \DeclareTextCompositeCommand{\CYRSDSC}{PU}{\CYRS}{\84\252}% U+04AA

16051 % U+04AB CYRILLIC SMALL LETTER ES WITH DESCENDER; esdescender-cyrillic  
 16052 \DeclareTextCommand{\cyrtdsc}{PU}{\84\253}% U+04AB  
 16053 \DeclareTextCompositeCommand{\k}{PU}{\cyr}{\84\253}% U+04AB  
 16054 % U+04AC CYRILLIC CAPITAL LETTER TE WITH DESCENDER; Tedescendercyrillic  
 16055 \DeclareTextCommand{\CYRTDSC}{PU}{\84\254}% U+04AC  
 16056 % U+04AD CYRILLIC SMALL LETTER TE WITH DESCENDER; tedescender-cyrillic  
 16057 \DeclareTextCommand{\cyrtdsc}{PU}{\84\255}% U+04AD  
 16058 % U+04AE CYRILLIC CAPITAL LETTER STRAIGHT U; Ustraightcyrillic  
 16059 \DeclareTextCommand{\CYRY}{PU}{\84\256}% U+04AE  
 16060 % U+04AF CYRILLIC SMALL LETTER STRAIGHT U; ustraightcyrillic  
 16061 \DeclareTextCommand{\cyr}{PU}{\84\257}% U+04AF  
 16062 % U+04B0 CYRILLIC CAPITAL LETTER STRAIGHT U WITH STROKE; Ustraightstrokecyrillic  
 16063 \DeclareTextCommand{\CYRYHCRS}{PU}{\84\260}% U+04B0  
 16064 % U+04B1 CYRILLIC SMALL LETTER STRAIGHT U WITH STROKE; ustraightstrokecyrillic  
 16065 \DeclareTextCommand{\cyryhcrs}{PU}{\84\261}% U+04B1  
 16066 % U+04B2 CYRILLIC CAPITAL LETTER HA WITH DESCENDER; Hdescendercyrillic  
 16067 \DeclareTextCommand{\CYRHDSC}{PU}{\84\262}% U+04B2  
 16068 % U+04B3 CYRILLIC SMALL LETTER HA WITH DESCENDER; hadescender-cyrillic  
 16069 \DeclareTextCommand{\cyrhdsc}{PU}{\84\263}% U+04B3  
 16070 % U+04B4 CYRILLIC CAPITAL LIGATURE TE TSE; Tetsecyrillic  
 16071 \DeclareTextCommand{\CYRTETSE}{PU}{\84\264}% U+04B4  
 16072 % U+04B5 CYRILLIC SMALL LIGATURE TE TSE; tetsecyrillic  
 16073 \DeclareTextCommand{\cyr tetse}{PU}{\84\265}% U+04B5  
 16074 % U+04B6 CYRILLIC CAPITAL LETTER CHE WITH DESCENDER; Chedescendercyrillic  
 16075 \DeclareTextCommand{\CYRCHRDSC}{PU}{\84\266}% U+04B6  
 16076 % U+04B7 CYRILLIC SMALL LETTER CHE WITH DESCENDER; chedescendercyrillic  
 16077 \DeclareTextCommand{\cyrchrds}{PU}{\84\267}% U+04B7  
 16078 % U+04B8 CYRILLIC CAPITAL LETTER CHE WITH VERTICAL STROKE; Chev-  
 erticalstrokecyrillic  
 16079 \DeclareTextCommand{\CYRCHVCRS}{PU}{\84\270}% U+04B8  
 16080 % U+04B9 CYRILLIC SMALL LETTER CHE WITH VERTICAL STROKE; chev-  
 erticalstrokecyrillic  
 16081 \DeclareTextCommand{\cyrchvcrs}{PU}{\84\271}% U+04B9  
 16082 % U+04BA CYRILLIC CAPITAL LETTER SHHA; Shhacyrillic  
 16083 \DeclareTextCommand{\CYRSHHA}{PU}{\84\272}% U+04BA  
 16084 % U+04BB CYRILLIC SMALL LETTER SHHA; shhacyrillic  
 16085 \DeclareTextCommand{\cyrshha}{PU}{\84\273}% U+04BB  
 16086 % U+04BC CYRILLIC CAPITAL LETTER ABKHASIAN CHE; Cheabkhasian-cyrillic  
 16087 \DeclareTextCommand{\CYRABHCH}{PU}{\84\274}% U+04BC  
 16088 % U+04BD CYRILLIC SMALL LETTER ABKHASIAN CHE; cheabkhasiancyrillic  
 16089 \DeclareTextCommand{\cyrabhch}{PU}{\84\275}% U+04BD  
 16090 % U+04BE CYRILLIC CAPITAL LETTER ABKHASIAN CHE WITH DESCENDER; Chedescenderabkhasiancyrillic  
 16091 \DeclareTextCommand{\CYRABHCHDSC}{PU}{\84\276}% U+04BE  
 16092 \DeclareTextCompositeCommand{\k}{PU}{\CYRABHCH}{\84\276}% U+04BE

16093 % U+04BF CYRILLIC SMALL LETTER ABKHASIAN CHE WITH DESCENDER; chedescenderabkhasiancyrillic  
16094 \DeclareTextCommand{\cyrabhchdsc}{PU}{\84\277}% U+04BF  
16095 \DeclareTextCompositeCommand{\k}{PU}{\cyrabhch}{\84\277}% U+04BF  
16096 % U+04C0 CYRILLIC LETTER PALOCHKA; palochkacyrillic  
16097 \DeclareTextCommand{\CYRpalochka}{PU}{\84\300}% U+04C0  
16098 % U+04C1 CYRILLIC CAPITAL LETTER ZHE WITH BREVE; Zhebrevecyrillic  
16099 \DeclareTextCompositeCommand{\U}{PU}{\CYRZH}{\84\301}% U+04C1  
16100 % U+04C2 CYRILLIC SMALL LETTER ZHE WITH BREVE; zhebrevecyrillic  
16101 \DeclareTextCompositeCommand{\U}{PU}{\cyrzh}{\84\302}% U+04C2  
16102 % U+04C3 CYRILLIC CAPITAL LETTER KA WITH HOOK; Kahookcyrillic  
16103 \DeclareTextCommand{\CYRKHK}{PU}{\84\303}% U+04C3  
16104 % U+04C4 CYRILLIC SMALL LETTER KA WITH HOOK; kahookcyrillic  
16105 \DeclareTextCommand{\cyrkhk}{PU}{\84\304}% U+04C4  
16106 % U+04C5 CYRILLIC CAPITAL LETTER EL WITH TAIL  
16107 \DeclareTextCommand{\CYRLDSC}{PU}{\84\305}% U+04C5  
16108 % U+04C6 CYRILLIC SMALL LETTER EL WITH TAIL  
16109 \DeclareTextCommand{\cyrldsc}{PU}{\84\306}% U+04C6  
16110 % U+04C7 CYRILLIC CAPITAL LETTER EN WITH HOOK; Enhookcyrillic  
16111 \DeclareTextCommand{\CYRNHK}{PU}{\84\307}% U+04C7  
16112 % U+04C8 CYRILLIC SMALL LETTER EN WITH HOOK; enhookcyrillic  
16113 \DeclareTextCommand{\cyrnhk}{PU}{\84\310}% U+04C8  
16114 % U+04CB CYRILLIC CAPITAL LETTER KHAKASSIAN CHE; Chekhakassiancyrillic  
16115 \DeclareTextCommand{\CYRCHLDSC}{PU}{\84\313}% U+04CB  
16116 % U+04CC CYRILLIC SMALL LETTER KHAKASSIAN CHE; chekhakassiancyrillic  
16117 \DeclareTextCommand{\cyrchldsc}{PU}{\84\314}% U+04CC  
16118 % U+04CD CYRILLIC CAPITAL LETTER EM WITH TAIL  
16119 \DeclareTextCommand{\CYRMDSC}{PU}{\84\315}% U+04CD  
16120 % U+04CE CYRILLIC SMALL LETTER EM WITH TAIL  
16121 \DeclareTextCommand{\cyrmdsc}{PU}{\84\316}% U+04CE  
\84\317: U+04CF CYRILLIC SMALL LETTER PALOCHKA  
16122 % U+04D0 CYRILLIC CAPITAL LETTER A WITH BREVE; Abrevecyrillic  
16123 \DeclareTextCompositeCommand{\U}{PU}{\CYRA}{\84\320}% U+04D0  
16124 % U+04D1 CYRILLIC SMALL LETTER A WITH BREVE; abrevecyrillic  
16125 \DeclareTextCompositeCommand{\U}{PU}{\cyra}{\84\321}% U+04D1  
16126 % U+04D2 CYRILLIC CAPITAL LETTER A WITH DIAERESIS; Adieresiscyrillic  
16127 \DeclareTextCompositeCommand{"}{PU}{\CYRA}{\84\322}% U+04D2  
16128 % U+04D3 CYRILLIC SMALL LETTER A WITH DIAERESIS; adieresiscyrillic  
16129 \DeclareTextCompositeCommand{"}{PU}{\cyra}{\84\323}% U+04D3  
16130 % U+04D4 CYRILLIC CAPITAL LIGATURE A IE; Aiecyrillic  
16131 \DeclareTextCommand{\CYRAE}{PU}{\84\324}% U+04D4  
16132 % U+04D5 CYRILLIC SMALL LIGATURE A IE; aiecyrillic  
16133 \DeclareTextCommand{\cyrae}{PU}{\84\325}% U+04D5  
16134 % U+04D6 CYRILLIC CAPITAL LETTER IE WITH BREVE; Iebrevecyrillic  
16135 \DeclareTextCompositeCommand{\U}{PU}{\CYRE}{\84\326}% U+04D6  
16136 % U+04D7 CYRILLIC SMALL LETTER IE WITH BREVE; iebrevecyrillic  
16137 \DeclareTextCompositeCommand{\U}{PU}{\cyre}{\84\327}% U+04D7  
16138 % U+04D8 CYRILLIC CAPITAL LETTER SCHWA; Schwacyrillic  
16139 \DeclareTextCommand{\CYRSCHWA}{PU}{\84\330}% U+04D8  
16140 % U+04D9 CYRILLIC SMALL LETTER SCHWA; \*afii10846, schwacyrillic  
16141 \DeclareTextCommand{\cyrschwa}{PU}{\84\331}% U+04D9  
16142 % U+04DA CYRILLIC CAPITAL LETTER SCHWA WITH DIAERESIS; Schwadiere-siscyrillic  
16143 \DeclareTextCompositeCommand{"}{PU}{\CYRSCHWA}{\84\332}% U+04DA

16144 % U+04DB CYRILLIC SMALL LETTER SCHWA WITH DIAERESIS; schwadiere-  
siscyrillic  
16145 \DeclareTextCompositeCommand{"}{PU}{\cyrswa}{\84\333}% U+04DB  
16146 % U+04DC CYRILLIC CAPITAL LETTER ZHE WITH DIAERESIS; Zhediere-  
siscyrillic  
16147 \DeclareTextCompositeCommand{"}{PU}{\CYRZH}{\84\334}% U+04DC  
16148 % U+04DD CYRILLIC SMALL LETTER ZHE WITH DIAERESIS; zhedieresis-  
cyrillic  
16149 \DeclareTextCompositeCommand{"}{PU}{\cyrzh}{\84\335}% U+04DD  
16150 % U+04DE CYRILLIC CAPITAL LETTER ZE WITH DIAERESIS; Zedieresis-  
cyrillic  
16151 \DeclareTextCompositeCommand{"}{PU}{\CYRZ}{\84\336}% U+04DE  
16152 % U+04DF CYRILLIC SMALL LETTER ZE WITH DIAERESIS; zedieresiscyrillic  
16153 \DeclareTextCompositeCommand{"}{PU}{\cyrz}{\84\337}% U+04DF  
16154 % U+04E0 CYRILLIC CAPITAL LETTER ABKHASIAN DZE; Dzeabkhasian-  
cyrillic  
16155 \DeclareTextCommand{\CYRABHDZE}{PU}{\84\340}% U+04E0  
16156 % U+04E1 CYRILLIC SMALL LETTER ABKHASIAN DZE; dzeabkhasiancyrillic  
16157 \DeclareTextCommand{\cyrabhdze}{PU}{\84\341}% U+04E1  
16158 % U+04E2 CYRILLIC CAPITAL LETTER I WITH MACRON; Imacroncyrillic  
16159 \DeclareTextCompositeCommand{=}{PU}{\CYRI}{\84\342}% U+04E2  
16160 % U+04E3 CYRILLIC SMALL LETTER I WITH MACRON; imacroncyrillic  
16161 \DeclareTextCompositeCommand{=}{PU}{\cyri}{\84\343}% U+04E3  
16162 % U+04E4 CYRILLIC CAPITAL LETTER I WITH DIAERESIS; Idieresiscyrillic  
16163 \DeclareTextCompositeCommand{"}{PU}{\CYRI}{\84\344}% U+04E4  
16164 % U+04E5 CYRILLIC SMALL LETTER I WITH DIAERESIS; idieresiscyrillic  
16165 \DeclareTextCompositeCommand{"}{PU}{\cyri}{\84\345}% U+04E5  
16166 % U+04E6 CYRILLIC CAPITAL LETTER O WITH DIAERESIS; Odieresiscyril-  
lic  
16167 \DeclareTextCompositeCommand{"}{PU}{\CYRO}{\84\346}% U+04E6  
16168 % U+04E7 CYRILLIC SMALL LETTER O WITH DIAERESIS; odieresiscyrillic  
16169 \DeclareTextCompositeCommand{"}{PU}{\cyro}{\84\347}% U+04E7  
16170 % U+04E8 CYRILLIC CAPITAL LETTER BARRED O; Obarredcyrillic  
16171 \DeclareTextCommand{\CYROTLD}{PU}{\84\350}% U+04E8  
16172 % U+04E9 CYRILLIC SMALL LETTER BARRED O; obarredcyrillic  
16173 \DeclareTextCommand{\cyrotld}{PU}{\84\351}% U+04E9  
16174 % U+04EA CYRILLIC CAPITAL LETTER BARRED O WITH DIAERE-  
SIS; Obarreddieresiscyrillic  
16175 \DeclareTextCompositeCommand{"}{PU}{\CYROTLD}{\84\352}% U+04EA  
16176 % U+04EB CYRILLIC SMALL LETTER BARRED O WITH DIAERESIS; obarred-  
dieresiscyrillic  
16177 \DeclareTextCompositeCommand{"}{PU}{\cyrotld}{\84\353}% U+04EB  
16178 % U+04EC CYRILLIC CAPITAL LETTER E WITH DIAERESIS  
16179 \DeclareTextCompositeCommand{"}{PU}{\CYREREV}{\84\354}% U+04EC  
16180 % U+04ED CYRILLIC SMALL LETTER E WITH DIAERESIS  
16181 \DeclareTextCompositeCommand{"}{PU}{\cyreref}{\84\355}% U+04ED  
16182 % U+04EE CYRILLIC CAPITAL LETTER U WITH MACRON; Umacroncyrillic  
16183 \DeclareTextCompositeCommand{=}{PU}{\CYRU}{\84\356}% U+04EE  
16184 % U+04EF CYRILLIC SMALL LETTER U WITH MACRON; umacroncyrillic  
16185 \DeclareTextCompositeCommand{=}{PU}{\cyru}{\84\357}% U+04EF  
16186 % U+04F0 CYRILLIC CAPITAL LETTER U WITH DIAERESIS; Udieresiscyrillic  
16187 \DeclareTextCompositeCommand{"}{PU}{\CYRU}{\84\360}% U+04F0  
16188 % U+04F1 CYRILLIC SMALL LETTER U WITH DIAERESIS; udieresiscyrillic  
16189 \DeclareTextCompositeCommand{"}{PU}{\cyru}{\84\361}% U+04F1  
16190 % U+04F2 CYRILLIC CAPITAL LETTER U WITH DOUBLE ACUTE; Uhun-  
garumlautcyrillic  
16191 \DeclareTextCompositeCommand{\H}{PU}{\CYRU}{\84\362}% U+04F2

16192 % U+04F3 CYRILLIC SMALL LETTER U WITH DOUBLE ACUTE; uhungarumlautcyrillic  
 16193 \DeclareTextCompositeCommand{\H}{PU}{\cyru}{\84\363}% U+04F3  
 16194 % U+04F4 CYRILLIC CAPITAL LETTER CHE WITH DIAERESIS; Chedieresiscyrillic  
 16195 \DeclareTextCompositeCommand{\"}{PU}{\CYRCH}{\84\364}% U+04F4  
 16196 % U+04F5 CYRILLIC SMALL LETTER CHE WITH DIAERESIS; chedieresiscyrillic  
 16197 \DeclareTextCompositeCommand{\"}{PU}{\cyrch}{\84\365}% U+04F5  
 16198 % U+04F6 CYRILLIC CAPITAL LETTER GHE WITH DESCENDER  
 16199 \DeclareTextCommand{\CYRGDSC}{PU}{\84\366}% U+04F6  
 16200 % U+04F7 CYRILLIC SMALL LETTER GHE WITH DESCENDER  
 16201 \DeclareTextCommand{\cyrgdsc}{PU}{\84\367}% U+04F7  
 16202 % U+04F8 CYRILLIC CAPITAL LETTER YERU WITH DIAERESIS; Yerudieresiscyrillic  
 16203 \DeclareTextCompositeCommand{\"}{PU}{\CYRERY}{\84\370}% U+04F8  
 16204 % U+04F9 CYRILLIC SMALL LETTER YERU WITH DIAERESIS; yerudieresiscyrillic  
 16205 \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  
 16206 % U+04FC CYRILLIC CAPITAL LETTER HA WITH HOOK  
 16207 \DeclareTextCommand{\CYRHHK}{PU}{\84\374}% U+04FC  
 16208 % U+04FD CYRILLIC SMALL LETTER HA WITH HOOK  
 16209 \DeclareTextCommand{\cyrhkh}{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

16210 % U+0E3F THAI CURRENCY SYMBOL BAHT; bahtthai  
 16211 \DeclareTextCommand{\textbaht}{PU}{\9016\077}% U+0E3F

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

16212 % U+1E02 LATIN CAPITAL LETTER B WITH DOT ABOVE; Bdotaccent  
 16213 \DeclareTextCompositeCommand{\.}{PU}{B}{\9036\002}% U+1E02  
 16214 % U+1E03 LATIN SMALL LETTER B WITH DOT ABOVE; bdotaccent  
 16215 \DeclareTextCompositeCommand{\.}{PU}{b}{\9036\003}% U+1E03  
 16216 % U+1E06 LATIN CAPITAL LETTER B WITH LINE BELOW; Blinebelow  
 16217 \DeclareTextCompositeCommand{\b}{PU}{B}{\9036\006}% U+1E06  
 16218 % U+1E07 LATIN SMALL LETTER B WITH LINE BELOW; blinebelow  
 16219 \DeclareTextCompositeCommand{\b}{PU}{b}{\9036\007}% U+1E07  
 16220 % U+1E0A LATIN CAPITAL LETTER D WITH DOT ABOVE; Ddotaccent  
 16221 \DeclareTextCompositeCommand{\.}{PU}{D}{\9036\012}% U+1E0A  
 16222 % U+1E0B LATIN SMALL LETTER D WITH DOT ABOVE; ddotaccent  
 16223 \DeclareTextCompositeCommand{\.}{PU}{d}{\9036\013}% U+1E0B  
 16224 % U+1E0E LATIN CAPITAL LETTER D WITH LINE BELOW; Dlinebelow  
 16225 \DeclareTextCompositeCommand{\b}{PU}{D}{\9036\016}% U+1E0E  
 16226 % U+1E0F LATIN SMALL LETTER D WITH LINE BELOW; dlinebelow  
 16227 \DeclareTextCompositeCommand{\b}{PU}{d}{\9036\017}% U+1E0F  
 16228 % U+1E10 LATIN CAPITAL LETTER D WITH CEDILLA; Dcedilla  
 16229 \DeclareTextCompositeCommand{\c}{PU}{D}{\9036\020}% U+1E10  
 16230 % U+1E11 LATIN SMALL LETTER D WITH CEDILLA; dcedilla  
 16231 \DeclareTextCompositeCommand{\c}{PU}{d}{\9036\021}% U+1E11  
 16232 % U+1E1E LATIN CAPITAL LETTER F WITH DOT ABOVE; Fdotaccent  
 16233 \DeclareTextCompositeCommand{\.}{PU}{F}{\9036\036}% U+1E1E

16234 % U+1E1F LATIN SMALL LETTER F WITH DOT ABOVE; fdotaccent  
16235 \DeclareTextCompositeCommand{\.}{PU}{f}{\9036\037}% U+1E1F  
16236 % U+1E20 LATIN CAPITAL LETTER G WITH MACRON; Gmacron  
16237 \DeclareTextCompositeCommand{\=}{PU}{G}{\9036\040}% U+1E20  
16238 % U+1E21 LATIN SMALL LETTER G WITH MACRON; gmacron  
16239 \DeclareTextCompositeCommand{\=}{PU}{g}{\9036\041}% U+1E21  
16240 % U+1E22 LATIN CAPITAL LETTER H WITH DOT ABOVE; Hdotaccent  
16241 \DeclareTextCompositeCommand{\.}{PU}{H}{\9036\042}% U+1E22  
16242 % U+1E23 LATIN SMALL LETTER H WITH DOT ABOVE; hdotaccent  
16243 \DeclareTextCompositeCommand{\.}{PU}{h}{\9036\043}% U+1E23  
16244 % U+1E26 LATIN CAPITAL LETTER H WITH DIAERESIS; Hdieresis  
16245 \DeclareTextCompositeCommand{\"}{PU}{H}{\9036\046}% U+1E26  
16246 % U+1E27 LATIN SMALL LETTER H WITH DIAERESIS; hdieresis  
16247 \DeclareTextCompositeCommand{\"}{PU}{h}{\9036\047}% U+1E27  
16248 % U+1E28 LATIN CAPITAL LETTER H WITH CEDILLA; Hcedilla  
16249 \DeclareTextCompositeCommand{\c}{PU}{H}{\9036\050}% U+1E28  
16250 % U+1E29 LATIN SMALL LETTER H WITH CEDILLA; hcedilla  
16251 \DeclareTextCompositeCommand{\c}{PU}{h}{\9036\051}% U+1E29  
16252 % U+1E30 LATIN CAPITAL LETTER K WITH ACUTE; Kacute  
16253 \DeclareTextCompositeCommand{\'}{PU}{K}{\9036\060}% U+1E30  
16254 % U+1E31 LATIN SMALL LETTER K WITH ACUTE; kacute  
16255 \DeclareTextCompositeCommand{\'}{PU}{k}{\9036\061}% U+1E31  
16256 % U+1E34 LATIN CAPITAL LETTER K WITH LINE BELOW; Klinebelow  
16257 \DeclareTextCompositeCommand{\b}{PU}{K}{\9036\064}% U+1E34  
16258 % U+1E35 LATIN SMALL LETTER K WITH LINE BELOW; klinebelow  
16259 \DeclareTextCompositeCommand{\b}{PU}{k}{\9036\065}% U+1E35  
16260 % U+1E3A LATIN CAPITAL LETTER L WITH LINE BELOW; Llinebelow  
16261 \DeclareTextCompositeCommand{\b}{PU}{L}{\9036\072}% U+1E3A  
16262 % U+1E3B LATIN SMALL LETTER L WITH LINE BELOW; llinebelow  
16263 \DeclareTextCompositeCommand{\b}{PU}{l}{\9036\073}% U+1E3B  
16264 % U+1E3E LATIN CAPITAL LETTER M WITH ACUTE; Macute  
16265 \DeclareTextCompositeCommand{\'}{PU}{M}{\9036\076}% U+1E3E  
16266 % U+1E3F LATIN SMALL LETTER M WITH ACUTE; macute  
16267 \DeclareTextCompositeCommand{\'}{PU}{m}{\9036\077}% U+1E3F  
16268 % U+1E40 LATIN CAPITAL LETTER M WITH DOT ABOVE; Mdotaccent  
16269 \DeclareTextCompositeCommand{\.}{PU}{M}{\9036\100}% U+1E40  
16270 % U+1E41 LATIN SMALL LETTER M WITH DOT ABOVE; mdotaccent  
16271 \DeclareTextCompositeCommand{\.}{PU}{m}{\9036\101}% U+1E41  
16272 % U+1E44 LATIN CAPITAL LETTER N WITH DOT ABOVE; Ndotaccent  
16273 \DeclareTextCompositeCommand{\.}{PU}{N}{\9036\104}% U+1E44  
16274 % U+1E45 LATIN SMALL LETTER N WITH DOT ABOVE; ndotaccent  
16275 \DeclareTextCompositeCommand{\.}{PU}{n}{\9036\105}% U+1E45  
16276 % U+1E48 LATIN CAPITAL LETTER N WITH LINE BELOW; Nlinebelow  
16277 \DeclareTextCompositeCommand{\b}{PU}{N}{\9036\110}% U+1E48  
16278 % U+1E49 LATIN SMALL LETTER N WITH LINE BELOW; nlinebelow  
16279 \DeclareTextCompositeCommand{\b}{PU}{n}{\9036\111}% U+1E49  
16280 % U+1E54 LATIN CAPITAL LETTER P WITH ACUTE; Pacute  
16281 \DeclareTextCompositeCommand{\'}{PU}{P}{\9036\124}% U+1E54  
16282 % U+1E55 LATIN SMALL LETTER P WITH ACUTE; pacute  
16283 \DeclareTextCompositeCommand{\'}{PU}{p}{\9036\125}% U+1E55  
16284 % U+1E56 LATIN CAPITAL LETTER P WITH DOT ABOVE; Pdotaccent  
16285 \DeclareTextCompositeCommand{\.}{PU}{P}{\9036\126}% U+1E56  
16286 % U+1E57 LATIN SMALL LETTER P WITH DOT ABOVE; pdotaccent  
16287 \DeclareTextCompositeCommand{\.}{PU}{p}{\9036\127}% U+1E57  
16288 % U+1E58 LATIN CAPITAL LETTER R WITH DOT ABOVE; Rdotaccent  
16289 \DeclareTextCompositeCommand{\.}{PU}{R}{\9036\130}% U+1E58  
16290 % U+1E59 LATIN SMALL LETTER R WITH DOT ABOVE; rdotaccent

16291 \DeclareTextCompositeCommand{\.}{PU}{r}{\9036\131}% U+1E59  
16292 % U+1E5E LATIN CAPITAL LETTER R WITH LINE BELOW; Rlinebelow  
16293 \DeclareTextCompositeCommand{\b}{PU}{R}{\9036\136}% U+1E5E  
16294 % U+1E5F LATIN SMALL LETTER R WITH LINE BELOW; rlinebelow  
16295 \DeclareTextCompositeCommand{\b}{PU}{r}{\9036\137}% U+1E5F  
16296 % U+1E60 LATIN CAPITAL LETTER S WITH DOT ABOVE; Sdotaccent  
16297 \DeclareTextCompositeCommand{\.}{PU}{S}{\9036\140}% U+1E60  
16298 % U+1E61 LATIN SMALL LETTER S WITH DOT ABOVE; sdotaccent  
16299 \DeclareTextCompositeCommand{\.}{PU}{s}{\9036\141}% U+1E61  
16300 % U+1E6E LATIN CAPITAL LETTER T WITH LINE BELOW; Tlinebelow  
16301 \DeclareTextCompositeCommand{\b}{PU}{T}{\9036\156}% U+1E6E  
16302 % U+1E6F LATIN SMALL LETTER T WITH LINE BELOW; tlinebelow  
16303 \DeclareTextCompositeCommand{\b}{PU}{t}{\9036\157}% U+1E6F  
16304 % U+1E7C LATIN CAPITAL LETTER V WITH TILDE; Vtilde  
16305 \DeclareTextCompositeCommand{\~}{PU}{V}{\9036\174}% U+1E7C  
16306 % U+1E7D LATIN SMALL LETTER V WITH TILDE; vtilde  
16307 \DeclareTextCompositeCommand{\~}{PU}{v}{\9036\175}% U+1E7D  
16308 % U+1E80 LATIN CAPITAL LETTER W WITH GRAVE; Wgrave  
16309 \DeclareTextCompositeCommand{\`}{PU}{W}{\9036\200}% U+1E80  
16310 % U+1E81 LATIN SMALL LETTER W WITH GRAVE; wgrave  
16311 \DeclareTextCompositeCommand{\`}{PU}{w}{\9036\201}% U+1E81  
16312 % U+1E82 LATIN CAPITAL LETTER W WITH ACUTE; Wacute  
16313 \DeclareTextCompositeCommand{\`}{PU}{W}{\9036\202}% U+1E82  
16314 % U+1E83 LATIN SMALL LETTER W WITH ACUTE; wacute  
16315 \DeclareTextCompositeCommand{\`}{PU}{w}{\9036\203}% U+1E83  
16316 % U+1E84 LATIN CAPITAL LETTER W WITH DIAERESIS; Wdieresis  
16317 \DeclareTextCompositeCommand{\"}{PU}{W}{\9036\204}% U+1E84  
16318 % U+1E85 LATIN SMALL LETTER W WITH DIAERESIS; wdieresis  
16319 \DeclareTextCompositeCommand{\"}{PU}{w}{\9036\205}% U+1E85  
16320 % U+1E86 LATIN CAPITAL LETTER W WITH DOT ABOVE; Wdotaccent  
16321 \DeclareTextCompositeCommand{\.}{PU}{W}{\9036\206}% U+1E86  
16322 % U+1E87 LATIN SMALL LETTER W WITH DOT ABOVE; wdotaccent  
16323 \DeclareTextCompositeCommand{\.}{PU}{w}{\9036\207}% U+1E87  
16324 % U+1E8A LATIN CAPITAL LETTER X WITH DOT ABOVE; Xdotaccent  
16325 \DeclareTextCompositeCommand{\.}{PU}{X}{\9036\212}% U+1E8A  
16326 % U+1E8B LATIN SMALL LETTER X WITH DOT ABOVE; xdotaccent  
16327 \DeclareTextCompositeCommand{\.}{PU}{x}{\9036\213}% U+1E8B  
16328 % U+1E8C LATIN CAPITAL LETTER X WITH DIAERESIS; Xdieresis  
16329 \DeclareTextCompositeCommand{\"}{PU}{X}{\9036\214}% U+1E8C  
16330 % U+1E8D LATIN SMALL LETTER X WITH DIAERESIS; xdieresis  
16331 \DeclareTextCompositeCommand{\"}{PU}{x}{\9036\215}% U+1E8D  
16332 % U+1E8E LATIN CAPITAL LETTER Y WITH DOT ABOVE; Ydotaccent  
16333 \DeclareTextCompositeCommand{\.}{PU}{Y}{\9036\216}% U+1E8E  
16334 % U+1E8F LATIN SMALL LETTER Y WITH DOT ABOVE; ydotaccent  
16335 \DeclareTextCompositeCommand{\.}{PU}{y}{\9036\217}% U+1E8F  
16336 % U+1E90 LATIN CAPITAL LETTER Z WITH CIRCUMFLEX; Zcircumflex  
16337 \DeclareTextCompositeCommand{\^}{PU}{Z}{\9036\220}% U+1E90  
16338 % U+1E91 LATIN SMALL LETTER Z WITH CIRCUMFLEX; zcircumflex  
16339 \DeclareTextCompositeCommand{\^}{PU}{z}{\9036\221}% U+1E91  
16340 % U+1E94 LATIN CAPITAL LETTER Z WITH LINE BELOW; Zlinebelow  
16341 \DeclareTextCompositeCommand{\b}{PU}{Z}{\9036\224}% U+1E94  
16342 % U+1E95 LATIN SMALL LETTER Z WITH LINE BELOW; zlinebelow  
16343 \DeclareTextCompositeCommand{\b}{PU}{z}{\9036\225}% U+1E95  
16344 % U+1E96 LATIN SMALL LETTER H WITH LINE BELOW; hlinebelow  
16345 \DeclareTextCompositeCommand{\b}{PU}{h}{\9036\226}% U+1E96  
16346 % U+1E97 LATIN SMALL LETTER T WITH DIAERESIS; tdieresis  
16347 \DeclareTextCompositeCommand{\"}{PU}{t}{\9036\227}% U+1E97

16348 % U+1E98 LATIN SMALL LETTER W WITH RING ABOVE; wring  
16349 \DeclareTextCompositeCommand{\r}{PU}{w}{\9036\230}% U+1E98  
16350 % U+1E99 LATIN SMALL LETTER Y WITH RING ABOVE; yring  
16351 \DeclareTextCompositeCommand{\r}{PU}{y}{\9036\231}% U+1E99  
16352 % U+1E9B LATIN SMALL LETTER LONG S WITH DOT ABOVE; slongdotac-  
cent  
16353 \DeclareTextCompositeCommand{\.}{PU}{\textlongs}{\9036\233}% U+1E9B  
16354 % U+1EBC LATIN CAPITAL LETTER E WITH TILDE; Etilde  
16355 \DeclareTextCompositeCommand{\~}{PU}{E}{\9036\274}% U+1EBC  
16356 % U+1EBD LATIN SMALL LETTER E WITH TILDE; etilde  
16357 \DeclareTextCompositeCommand{\~}{PU}{e}{\9036\275}% U+1EBD  
16358 % U+1EF2 LATIN CAPITAL LETTER Y WITH GRAVE; Ygrave  
16359 \DeclareTextCompositeCommand{\`}{PU}{Y}{\9036\362}% U+1EF2  
16360 % U+1EF3 LATIN SMALL LETTER Y WITH GRAVE; ygrave  
16361 \DeclareTextCompositeCommand{\`}{PU}{y}{\9036\363}% U+1EF3  
16362 % U+1EF8 LATIN CAPITAL LETTER Y WITH TILDE; Ytilde  
16363 \DeclareTextCompositeCommand{\~}{PU}{Y}{\9036\370}% U+1EF8  
16364 % U+1EF9 LATIN SMALL LETTER Y WITH TILDE; ytilde  
16365 \DeclareTextCompositeCommand{\~}{PU}{y}{\9036\371}% U+1EF9

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

16366 % U+200C ZERO WIDTH NON-JOINER; \*afi61664, zerowidthnonjoiner  
16367 \DeclareTextCommand{\textcompwordmark}{PU}{\9040\014}% U+200C  
16368 % U+2013 EN DASH; endash  
16369 \DeclareTextCommand{\textendash}{PU}{\9040\023}% U+2013  
16370 % U+2014 EM DASH; emdash  
16371 \DeclareTextCommand{\textemdash}{PU}{\9040\024}% U+2014  
16372 % U+2016 DOUBLE VERTICAL LINE; dblverticalbar  
16373 \DeclareTextCommand{\textbardbl}{PU}{\9040\026}% U+2016  
16374 % U+2018 LEFT SINGLE QUOTATION MARK; quoteleft  
16375 \DeclareTextCommand{\textquoteleft}{PU}{\9040\030}% U+2018  
16376 % U+2019 RIGHT SINGLE QUOTATION MARK; quoteright  
16377 \DeclareTextCommand{\textquoteright}{PU}{\9040\031}% U+2019  
16378 % U+201A SINGLE LOW-9 QUOTATION MARK; quotesinglbase  
16379 \DeclareTextCommand{\quotesinglbase}{PU}{\9040\032}% U+201A  
16380 % U+201C LEFT DOUBLE QUOTATION MARK; quotedbleft  
16381 \DeclareTextCommand{\textquotedbleft}{PU}{\9040\034}% U+201C  
16382 % U+201D RIGHT DOUBLE QUOTATION MARK; quotedblright  
16383 \DeclareTextCommand{\textquotedblright}{PU}{\9040\035}% U+201D  
16384 % U+201E DOUBLE LOW-9 QUOTATION MARK; quotedblbase  
16385 \DeclareTextCommand{\quotedblbase}{PU}{\9040\036}% U+201E  
16386 % U+2020 DAGGER; dagger  
16387 \DeclareTextCommand{\textdagger}{PU}{\9040\040}% U+2020  
16388 % U+2021 DOUBLE DAGGER; daggerdbl  
16389 \DeclareTextCommand{\textdaggerdbl}{PU}{\9040\041}% U+2021  
16390 % U+2022 BULLET; bullet  
16391 \DeclareTextCommand{\textbullet}{PU}{\9040\042}% U+2022  
16392 % U+2026 HORIZONTAL ELLIPSIS; ellipsis  
16393 \DeclareTextCommand{\textellipsis}{PU}{\9040\046}% U+2026  
16394 % U+2030 PER MILLE SIGN; perthousand  
16395 \DeclareTextCommand{\textperthousand}{PU}{\9040\060}% U+2030  
16396 % U+2031 PER TEN THOUSAND SIGN  
16397 \DeclareTextCommand{\textpertenthousand}{PU}{\9040\061}% U+2031  
16398 % U+2039 SINGLE LEFT-POINTING ANGLE QUOTATION MARK; guil-  
lingleft  
16399 \DeclareTextCommand{\guilsinglleft}{PU}{\9040\071}% U+2039



16400 % U+203A SINGLE RIGHT-POINTING ANGLE QUOTATION MARK; guiltingright  
16401 \DeclareTextCommand{\guiltingright}{PU}{\9040\072}% U+203A  
16402 % U+203B REFERENCE MARK; referencemark  
16403 \DeclareTextCommand{\textreferencemark}{PU}{\9040\073}% U+203B  
16404 % U+203D INTERROBANG  
16405 \DeclareTextCommand{\textinterrobang}{PU}{\9040\075}% U+203D  
16406 % U+2044 FRACTION SLASH; fraction  
16407 \DeclareTextCommand{\textfractionsolidus}{PU}{\9040\104}% U+2044  
16408 % U+2045 LEFT SQUARE BRACKET WITH QUILL  
16409 \DeclareTextCommand{\textlquill}{PU}{\9040\105}% U+2045  
16410 % U+2046 RIGHT SQUARE BRACKET WITH QUILL  
16411 \DeclareTextCommand{\textrquill}{PU}{\9040\106}% U+2046  
16412 % U+2052 COMMERCIAL MINUS SIGN  
16413 \DeclareTextCommand{\textdiscount}{PU}{\9040\122}% U+2052

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

16414 % U+2070 SUPERSCRIPT ZERO; zerosuperior  
16415 \DeclareTextCommand{\textzerosuperior}{PU}{\9040\160}% U+2070  
16416 % U+2074 SUPERSCRIPT FOUR; foursuperior  
16417 \DeclareTextCommand{\textfoursuperior}{PU}{\9040\164}% U+2074  
16418 % U+2075 SUPERSCRIPT FIVE; fivesuperior  
16419 \DeclareTextCommand{\textfivesuperior}{PU}{\9040\165}% U+2075  
16420 % U+2076 SUPERSCRIPT SIX; sixsuperior  
16421 \DeclareTextCommand{\textsixsuperior}{PU}{\9040\166}% U+2076  
16422 % U+2077 SUPERSCRIPT SEVEN; sevensuperior  
16423 \DeclareTextCommand{\textsevensuperior}{PU}{\9040\167}% U+2077  
16424 % U+2078 SUPERSCRIPT EIGHT; eightsuperior  
16425 \DeclareTextCommand{\texteightsuperior}{PU}{\9040\170}% U+2078  
16426 % U+2079 SUPERSCRIPT NINE; ninesuperior  
16427 \DeclareTextCommand{\textninesuperior}{PU}{\9040\171}% U+2079  
16428 % U+207A SUPERSCRIPT PLUS SIGN; plussuperior  
16429 \DeclareTextCommand{\textplussuperior}{PU}{\9040\172}% U+207A  
16430 % U+207B SUPERSCRIPT MINUS  
16431 \DeclareTextCommand{\textminussuperior}{PU}{\9040\173}  
16432 % U+207C SUPERSCRIPT EQUALS SIGN; equalsuperior  
16433 \DeclareTextCommand{\textequalssuperior}{PU}{\9040\174}  
16434 % U+207D SUPERSCRIPT LEFT PARENTHESIS; parenleftsuperior  
16435 \DeclareTextCommand{\textparenleftsuperior}{PU}{\9040\175}  
16436 % U+207E SUPERSCRIPT RIGHT PARENTHESIS; parenrightsuperior  
16437 \DeclareTextCommand{\textparenrightsuperior}{PU}{\9040\176}  
16438 % U+207F SUPERSCRIPT LATIN SMALL LETTER N; nsuperior  
16439 \DeclareTextCommand{\textnsuperior}{PU}{\9040\177}  
16440 % U+2080 SUBSCRIPT ZERO; zeroinferior  
16441 \DeclareTextCommand{\textzeroinferior}{PU}{\9040\200}% U+2080  
16442 % U+2081 SUBSCRIPT ONE; oneinferior  
16443 \DeclareTextCommand{\textoneinferior}{PU}{\9040\201}% U+2081  
16444 % U+2082 SUBSCRIPT TWO; twoinferior  
16445 \DeclareTextCommand{\texttwoinferior}{PU}{\9040\202}% U+2082  
16446 % U+2083 SUBSCRIPT THREE; threeinferior  
16447 \DeclareTextCommand{\textthreeinferior}{PU}{\9040\203}% U+2083  
16448 % U+2084 SUBSCRIPT FOUR; fourinferior  
16449 \DeclareTextCommand{\textfourinferior}{PU}{\9040\204}% U+2084  
16450 % U+2085 SUBSCRIPT FIVE; fiveinferior  
16451 \DeclareTextCommand{\textfiveinferior}{PU}{\9040\205}% U+2085  
16452 % U+2086 SUBSCRIPT SIX; sixinferior  
16453 \DeclareTextCommand{\textsixinferior}{PU}{\9040\206}% U+2086

16454 % U+2087 SUBSCRIPT SEVEN; seveninferior  
16455 \DeclareTextCommand{\textseveninferior}{PU}{\9040\207}% U+2087  
16456 % U+2088 SUBSCRIPT EIGHT; eightinferior  
16457 \DeclareTextCommand{\texteightinferior}{PU}{\9040\210}% U+2088  
16458 % U+2089 SUBSCRIPT NINE; nineinferior  
16459 \DeclareTextCommand{\textnineinferior}{PU}{\9040\211}% U+2089  
16460 % U+208D SUBSCRIPT LEFT PARENTHESIS; parenleftinferior  
16461 \DeclareTextCommand{\textparenleftinferior}{PU}{\9040\215}% U+208D  
16462 % U+208E SUBSCRIPT RIGHT PARENTHESIS; parenrightinferior  
16463 \DeclareTextCommand{\textparenrightinferior}{PU}{\9040\216}% U+208E

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

16464 % U+20A1 COLON SIGN; \*colonmonetary, colonsign  
16465 \DeclareTextCommand{\textcolonmonetary}{PU}{\9040\241}% U+20A1  
16466 % U+20A4 LIRA SIGN; afii08941, \*lira  
16467 \DeclareTextCommand{\textlira}{PU}{\9040\244}% U+20A4  
16468 % U+20A6 NAIRA SIGN  
16469 \DeclareTextCommand{\textnaira}{PU}{\9040\246}% U+20A6  
16470 % U+20A7 PESETA SIGN; peseta  
16471 \DeclareTextCommand{\textpeseta}{PU}{\9040\247}% U+20A7  
16472 % U+20A9 WON SIGN; won  
16473 \DeclareTextCommand{\textwon}{PU}{\9040\251}% U+20A9  
16474 % U+20AB DONG SIGN; dong  
16475 \DeclareTextCommand{\textdong}{PU}{\9040\253}% U+20AB  
16476 % U+20AC EURO SIGN; \*Euro, euro  
16477 \DeclareTextCommand{\texteuro}{PU}{\9040\254}% U+20AC  
16478 % U+20B1 PESO SIGN  
16479 \DeclareTextCommand{\textpeso}{PU}{\9040\261}% U+20B1  
16480 % U+20B2 GUARANI SIGN  
16481 \DeclareTextCommand{\textguarani}{PU}{\9040\262}% U+20B2

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

16482 % U+2103 DEGREE CELSIUS; centigrade  
16483 \DeclareTextCommand{\textcelsius}{PU}{\9041\003}% U+2103  
16484 % U+2116 NUMERO SIGN; \*afii61352, numero  
16485 \DeclareTextCommand{\textnumero}{PU}{\9041\026}% U+2116  
16486 % U+2117 SOUND RECORDING COPYRIGHT  
16487 \DeclareTextCommand{\textcircledP}{PU}{\9041\027}% U+2117  
16488 % U+211E PRESCRIPTION TAKE; prescription  
16489 \DeclareTextCommand{\textrecipe}{PU}{\9041\036}% U+211E  
16490 % U+2120 SERVICE MARK  
16491 \DeclareTextCommand{\textservicemark}{PU}{\9041\040}% U+2120  
16492 % U+2122 TRADE MARK SIGN; trademark  
16493 \DeclareTextCommand{\texttrademark}{PU}{\9041\042}% U+2122  
16494 % U+2126 OHM SIGN; Ohm, Omega  
16495 \DeclareTextCommand{\textohm}{PU}{\9041\046}% U+2126  
16496 % U+2127 INVERTED OHM SIGN  
16497 \DeclareTextCommand{\textmho}{PU}{\9041\047}% U+2127  
16498 % U+212B ANGSTROM SIGN; angstrom  
16499 \DeclareTextCommand{\textangstrom}{PU}{\9041\053}% U+212B  
16500 % U+212E ESTIMATED SYMBOL; estimated  
16501 \DeclareTextCommand{\textestimated}{PU}{\9041\056}% U+212E  
16502 % U+2135 ALEF SYMBOL; aleph  
16503 \DeclareTextCommand{\textaleph}{PU}{\9041\065}% U+2135

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

16504 % U+2190 LEFTWARDS ARROW; arrowleft

16505 \DeclareTextCommand{\textleftarrow}{PU}{\9041\220}% U+2190  
 16506 % U+2191 UPWARDS ARROW; arrowup  
 16507 \DeclareTextCommand{\textuparrow}{PU}{\9041\221}% U+2191  
 16508 % U+2192 RIGHTWARDS ARROW; arrowright  
 16509 \DeclareTextCommand{\textrightarrow}{PU}{\9041\222}% U+2192  
 16510 % U+2193 DOWNWARDS ARROW; arrowdown  
 16511 \DeclareTextCommand{\textdownarrow}{PU}{\9041\223}% U+2193

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

16512 % U+2212 MINUS SIGN; minus  
 16513 \DeclareTextCommand{\textminus}{PU}{\9042\022}% U+2212  
 16514 % U+221A SQUARE ROOT; radical  
 16515 \DeclareTextCommand{\textsurd}{PU}{\9042\032}% U+221A

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

16516 % U+2329 LEFT-POINTING ANGLE BRACKET; angleleft  
 16517 \DeclareTextCommand{\textlangle}{PU}{\9043\051}% U+2329  
 16518 % U+232A RIGHT-POINTING ANGLE BRACKET; angleright  
 16519 \DeclareTextCommand{\textrangle}{PU}{\9043\052}% U+232A

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

16520 % U+2422 BLANK SYMBOL  
 16521 \DeclareTextCommand{\textblank}{PU}{\9044\042}% U+2422  
 16522 % U+2423 OPEN BOX; blank  
 16523 \DeclareTextCommand{\textvisiblespace}{PU}{\9044\043}% U+2423

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

16524 % U+2460 CIRCLED DIGIT ONE; onecircle  
 16525 \DeclareTextCompositeCommand{\textcircled}{PU}{1}{\9044\140}% U+2460  
 16526 % U+2461 CIRCLED DIGIT TWO; twocircle  
 16527 \DeclareTextCompositeCommand{\textcircled}{PU}{2}{\9044\141}% U+2461  
 16528 % U+2462 CIRCLED DIGIT THREE; threecircle  
 16529 \DeclareTextCompositeCommand{\textcircled}{PU}{3}{\9044\142}% U+2462  
 16530 % U+2463 CIRCLED DIGIT FOUR; fourcircle  
 16531 \DeclareTextCompositeCommand{\textcircled}{PU}{4}{\9044\143}% U+2463  
 16532 % U+2464 CIRCLED DIGIT FIVE; fivecircle  
 16533 \DeclareTextCompositeCommand{\textcircled}{PU}{5}{\9044\144}% U+2464  
 16534 % U+2465 CIRCLED DIGIT SIX; sixcircle  
 16535 \DeclareTextCompositeCommand{\textcircled}{PU}{6}{\9044\145}% U+2465  
 16536 % U+2466 CIRCLED DIGIT SEVEN; sevencircle  
 16537 \DeclareTextCompositeCommand{\textcircled}{PU}{7}{\9044\146}% U+2466  
 16538 % U+2467 CIRCLED DIGIT EIGHT; eightcircle  
 16539 \DeclareTextCompositeCommand{\textcircled}{PU}{8}{\9044\147}% U+2467  
 16540 % U+2468 CIRCLED DIGIT NINE; ninecircle  
 16541 \DeclareTextCompositeCommand{\textcircled}{PU}{9}{\9044\150}% U+2468  
 16542 % U+2469 CIRCLED NUMBER TEN; tencircle  
 16543 \DeclareTextCompositeCommand{\textcircled}{PU}{10}{\9044\151}% U+2469  
 16544 % U+246A CIRCLED NUMBER ELEVEN; elevencircle  
 16545 \DeclareTextCompositeCommand{\textcircled}{PU}{11}{\9044\152}% U+246A  
 16546 % U+246B CIRCLED NUMBER TWELVE; twelvecircle  
 16547 \DeclareTextCompositeCommand{\textcircled}{PU}{12}{\9044\153}% U+246B  
 16548 % U+246C CIRCLED NUMBER THIRTEEN; thirteencircle  
 16549 \DeclareTextCompositeCommand{\textcircled}{PU}{13}{\9044\154}% U+246C  
 16550 % U+246D CIRCLED NUMBER FOURTEEN; fourteencircle  
 16551 \DeclareTextCompositeCommand{\textcircled}{PU}{14}{\9044\155}% U+246D  
 16552 % U+246E CIRCLED NUMBER FIFTEEN; fifteencircle  
 16553 \DeclareTextCompositeCommand{\textcircled}{PU}{15}{\9044\156}% U+246E

16554 % U+246F CIRCLED NUMBER SIXTEEN; sixteencircle  
 16555 \DeclareTextCompositeCommand{\textcircled}{PU}{16}{\9044\157}% U+246F  
 16556 % U+2470 CIRCLED NUMBER SEVENTEEN; seventeencircle  
 16557 \DeclareTextCompositeCommand{\textcircled}{PU}{17}{\9044\160}% U+2470  
 16558 % U+2471 CIRCLED NUMBER EIGHTEEN; eighteencircle  
 16559 \DeclareTextCompositeCommand{\textcircled}{PU}{18}{\9044\161}% U+2471  
 16560 % U+2472 CIRCLED NUMBER NINETEEN; nineteencircle  
 16561 \DeclareTextCompositeCommand{\textcircled}{PU}{19}{\9044\162}% U+2472  
 16562 % U+2473 CIRCLED NUMBER TWENTY; twentycircle  
 16563 \DeclareTextCompositeCommand{\textcircled}{PU}{20}{\9044\163}% U+2473  
 16564 % U+24B6 CIRCLED LATIN CAPITAL LETTER A; Acircle  
 16565 \DeclareTextCompositeCommand{\textcircled}{PU}{A}{\9044\266}% U+24B6  
 16566 % U+24B7 CIRCLED LATIN CAPITAL LETTER B; Bcircle  
 16567 \DeclareTextCompositeCommand{\textcircled}{PU}{B}{\9044\267}% U+24B7  
 16568 % U+24B8 CIRCLED LATIN CAPITAL LETTER C; Ccircle  
 16569 \DeclareTextCompositeCommand{\textcircled}{PU}{C}{\9044\270}% U+24B8  
 16570 % U+24B9 CIRCLED LATIN CAPITAL LETTER D; Dcircle  
 16571 \DeclareTextCompositeCommand{\textcircled}{PU}{D}{\9044\271}% U+24B9  
 16572 % U+24BA CIRCLED LATIN CAPITAL LETTER E; Ecircle  
 16573 \DeclareTextCompositeCommand{\textcircled}{PU}{E}{\9044\272}% U+24BA  
 16574 % U+24BB CIRCLED LATIN CAPITAL LETTER F; Fcircle  
 16575 \DeclareTextCompositeCommand{\textcircled}{PU}{F}{\9044\273}% U+24BB  
 16576 % U+24BC CIRCLED LATIN CAPITAL LETTER G; Gcircle  
 16577 \DeclareTextCompositeCommand{\textcircled}{PU}{G}{\9044\274}% U+24BC  
 16578 % U+24BD CIRCLED LATIN CAPITAL LETTER H; Hcircle  
 16579 \DeclareTextCompositeCommand{\textcircled}{PU}{H}{\9044\275}% U+24BD  
 16580 % U+24BE CIRCLED LATIN CAPITAL LETTER I; Icircle  
 16581 \DeclareTextCompositeCommand{\textcircled}{PU}{I}{\9044\276}% U+24BE  
 16582 % U+24BF CIRCLED LATIN CAPITAL LETTER J; Jcircle  
 16583 \DeclareTextCompositeCommand{\textcircled}{PU}{J}{\9044\277}% U+24BF  
 16584 % U+24C0 CIRCLED LATIN CAPITAL LETTER K; Kcircle  
 16585 \DeclareTextCompositeCommand{\textcircled}{PU}{K}{\9044\300}% U+24C0  
 16586 % U+24C1 CIRCLED LATIN CAPITAL LETTER L; Lcircle  
 16587 \DeclareTextCompositeCommand{\textcircled}{PU}{L}{\9044\301}% U+24C1  
 16588 % U+24C2 CIRCLED LATIN CAPITAL LETTER M; Mcircle  
 16589 \DeclareTextCompositeCommand{\textcircled}{PU}{M}{\9044\302}% U+24C2  
 16590 % U+24C3 CIRCLED LATIN CAPITAL LETTER N; Ncircle  
 16591 \DeclareTextCompositeCommand{\textcircled}{PU}{N}{\9044\303}% U+24C3  
 16592 % U+24C4 CIRCLED LATIN CAPITAL LETTER O; Ocircle  
 16593 \DeclareTextCompositeCommand{\textcircled}{PU}{O}{\9044\304}% U+24C4  
 16594 % U+24C5 CIRCLED LATIN CAPITAL LETTER P; Pcircle  
 16595 \DeclareTextCompositeCommand{\textcircled}{PU}{P}{\9044\305}% U+24C5  
 16596 % U+24C6 CIRCLED LATIN CAPITAL LETTER Q; Qcircle  
 16597 \DeclareTextCompositeCommand{\textcircled}{PU}{Q}{\9044\306}% U+24C6  
 16598 % U+24C7 CIRCLED LATIN CAPITAL LETTER R; Rcircle  
 16599 \DeclareTextCompositeCommand{\textcircled}{PU}{R}{\9044\307}% U+24C7  
 16600 % U+24C8 CIRCLED LATIN CAPITAL LETTER S; Scircle  
 16601 \DeclareTextCompositeCommand{\textcircled}{PU}{S}{\9044\310}% U+24C8  
 16602 % U+24C9 CIRCLED LATIN CAPITAL LETTER T; Tcircle  
 16603 \DeclareTextCompositeCommand{\textcircled}{PU}{T}{\9044\311}% U+24C9  
 16604 % U+24CA CIRCLED LATIN CAPITAL LETTER U; Ucircle  
 16605 \DeclareTextCompositeCommand{\textcircled}{PU}{U}{\9044\312}% U+24CA  
 16606 % U+24CB CIRCLED LATIN CAPITAL LETTER V; Vcircle  
 16607 \DeclareTextCompositeCommand{\textcircled}{PU}{V}{\9044\313}% U+24CB  
 16608 % U+24CC CIRCLED LATIN CAPITAL LETTER W; Wcircle  
 16609 \DeclareTextCompositeCommand{\textcircled}{PU}{W}{\9044\314}% U+24CC  
 16610 % U+24CD CIRCLED LATIN CAPITAL LETTER X; Xcircle

16611 \DeclareTextCompositeCommand{\textcircled}{PU}{X}{\9044\315}% U+24CD  
16612 % U+24CE CIRCLED LATIN CAPITAL LETTER Y; Ycircle  
16613 \DeclareTextCompositeCommand{\textcircled}{PU}{Y}{\9044\316}% U+24CE  
16614 % U+24CF CIRCLED LATIN CAPITAL LETTER Z; Zcircle  
16615 \DeclareTextCompositeCommand{\textcircled}{PU}{Z}{\9044\317}% U+24CF  
16616 % U+24D0 CIRCLED LATIN SMALL LETTER A; acircle  
16617 \DeclareTextCompositeCommand{\textcircled}{PU}{a}{\9044\320}% U+24D0  
16618 % U+24D1 CIRCLED LATIN SMALL LETTER B; bcircle  
16619 \DeclareTextCompositeCommand{\textcircled}{PU}{b}{\9044\321}% U+24D1  
16620 % U+24D2 CIRCLED LATIN SMALL LETTER C; ccircle  
16621 \DeclareTextCompositeCommand{\textcircled}{PU}{c}{\9044\322}% U+24D2  
16622 % U+24D3 CIRCLED LATIN SMALL LETTER D; dcircle  
16623 \DeclareTextCompositeCommand{\textcircled}{PU}{d}{\9044\323}% U+24D3  
16624 % U+24D4 CIRCLED LATIN SMALL LETTER E; ecircle  
16625 \DeclareTextCompositeCommand{\textcircled}{PU}{e}{\9044\324}% U+24D4  
16626 % U+24D5 CIRCLED LATIN SMALL LETTER F; fcircle  
16627 \DeclareTextCompositeCommand{\textcircled}{PU}{f}{\9044\325}% U+24D5  
16628 % U+24D6 CIRCLED LATIN SMALL LETTER G; gcircle  
16629 \DeclareTextCompositeCommand{\textcircled}{PU}{g}{\9044\326}% U+24D6  
16630 % U+24D7 CIRCLED LATIN SMALL LETTER H; hcircle  
16631 \DeclareTextCompositeCommand{\textcircled}{PU}{h}{\9044\327}% U+24D7  
16632 % U+24D8 CIRCLED LATIN SMALL LETTER I; icircle  
16633 \DeclareTextCompositeCommand{\textcircled}{PU}{i}{\9044\330}% U+24D8  
16634 % U+24D9 CIRCLED LATIN SMALL LETTER J; jcircle  
16635 \DeclareTextCompositeCommand{\textcircled}{PU}{j}{\9044\331}% U+24D9  
16636 % U+24DA CIRCLED LATIN SMALL LETTER K; kcircle  
16637 \DeclareTextCompositeCommand{\textcircled}{PU}{k}{\9044\332}% U+24DA  
16638 % U+24DB CIRCLED LATIN SMALL LETTER L; lcircle  
16639 \DeclareTextCompositeCommand{\textcircled}{PU}{l}{\9044\333}% U+24DB  
16640 % U+24DC CIRCLED LATIN SMALL LETTER M; mcircle  
16641 \DeclareTextCompositeCommand{\textcircled}{PU}{m}{\9044\334}% U+24DC  
16642 % U+24DD CIRCLED LATIN SMALL LETTER N; ncircle  
16643 \DeclareTextCompositeCommand{\textcircled}{PU}{n}{\9044\335}% U+24DD  
16644 % U+24DE CIRCLED LATIN SMALL LETTER O; ocircle  
16645 \DeclareTextCompositeCommand{\textcircled}{PU}{o}{\9044\336}% U+24DE  
16646 % U+24DF CIRCLED LATIN SMALL LETTER P; pcircle  
16647 \DeclareTextCompositeCommand{\textcircled}{PU}{p}{\9044\337}% U+24DF  
16648 % U+24E0 CIRCLED LATIN SMALL LETTER Q; qcircle  
16649 \DeclareTextCompositeCommand{\textcircled}{PU}{q}{\9044\340}% U+24E0  
16650 % U+24E1 CIRCLED LATIN SMALL LETTER R; rcircle  
16651 \DeclareTextCompositeCommand{\textcircled}{PU}{r}{\9044\341}% U+24E1  
16652 % U+24E2 CIRCLED LATIN SMALL LETTER S; scircle  
16653 \DeclareTextCompositeCommand{\textcircled}{PU}{s}{\9044\342}% U+24E2  
16654 % U+24E3 CIRCLED LATIN SMALL LETTER T; tcircle  
16655 \DeclareTextCompositeCommand{\textcircled}{PU}{t}{\9044\343}% U+24E3  
16656 % U+24E4 CIRCLED LATIN SMALL LETTER U; ucircle  
16657 \DeclareTextCompositeCommand{\textcircled}{PU}{u}{\9044\344}% U+24E4  
16658 % U+24E5 CIRCLED LATIN SMALL LETTER V; vcircle  
16659 \DeclareTextCompositeCommand{\textcircled}{PU}{v}{\9044\345}% U+24E5  
16660 % U+24E6 CIRCLED LATIN SMALL LETTER W; wcircle  
16661 \DeclareTextCompositeCommand{\textcircled}{PU}{w}{\9044\346}% U+24E6  
16662 % U+24E7 CIRCLED LATIN SMALL LETTER X; xcircle  
16663 \DeclareTextCompositeCommand{\textcircled}{PU}{x}{\9044\347}% U+24E7  
16664 % U+24E8 CIRCLED LATIN SMALL LETTER Y; ycircle  
16665 \DeclareTextCompositeCommand{\textcircled}{PU}{y}{\9044\350}% U+24E8  
16666 % U+24E9 CIRCLED LATIN SMALL LETTER Z; zcircle  
16667 \DeclareTextCompositeCommand{\textcircled}{PU}{z}{\9044\351}% U+24E9

16668 % U+24EA CIRCLED DIGIT ZERO  
 16669 \DeclareTextCompositeCommand{\textcircled}{PU}{0}{\9044\352}% U+24EA

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

16670 % U+25E6 WHITE BULLET; \*openbullet, whitebullet  
 16671 \DeclareTextCommand{\textopenbullet}{PU}{\9045\346}% U+25E6  
 16672 % U+25EF LARGE CIRCLE; largecircle  
 16673 \DeclareTextCommand{\textbigcircle}{PU}{\9045\357}% U+25EF

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

16674 % U+266A EIGHTH NOTE; musicalnote  
 16675 \DeclareTextCommand{\textmusicalnote}{PU}{\9046\152}% U+266A  
 16676 % U+26AD MARRIAGE SYMBOL  
 16677 \DeclareTextCommand{\textmarried}{PU}{\9046\255}% U+26AD  
 16678 % U+26AE DIVORCE SYMBOL  
 16679 \DeclareTextCommand{\textdivorced}{PU}{\9046\256}% U+26AE

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

16680 % U+27E6 MATHEMATICAL LEFT WHITE SQUARE BRACKET  
 16681 \DeclareTextCommand{\textlbrackdbl}{PU}{\9047\346}% U+27E6  
 16682 % U+27E7 MATHEMATICAL RIGHT WHITE SQUARE BRACKET  
 16683 \DeclareTextCommand{\textrbrackdbl}{PU}{\9047\347}% U+27E7

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

16684 % U+FB01 LATIN SMALL LIGATURE FI; fi  
 16685 \DeclareTextCommand{\textfi}{PU}{\9373\001}% U+FB01  
 16686 % U+FB02 LATIN SMALL LIGATURE FL; fl  
 16687 \DeclareTextCommand{\textfl}{PU}{\9373\002}% U+FB02

### 50.2.25 Miscellaneous

16688 \DeclareTextCommand{\SS}{PU}{SS}

### 50.2.26 Aliases

Aliases (german.sty)

16689 \DeclareTextCommand{\textglqq}{PU}{\quotedblbase}  
 16690 \DeclareTextCommand{\textgrqq}{PU}{\textquotedblleft}  
 16691 \DeclareTextCommand{\textglq}{PU}{\quotesinglbase}  
 16692 \DeclareTextCommand{\textgrq}{PU}{\textquoteleft}  
 16693 \DeclareTextCommand{\textflqq}{PU}{\guillemotleft}  
 16694 \DeclareTextCommand{\textfrqq}{PU}{\guillemotright}  
 16695 \DeclareTextCommand{\textflq}{PU}{\guilsinglleft}  
 16696 \DeclareTextCommand{\textfrq}{PU}{\guilsinglright}

Aliases (math names)

16697 \DeclareTextCommand{\textneg}{PU}{\textlogicalnot}  
 16698 \DeclareTextCommand{\texttimes}{PU}{\textmultiply}  
 16699 \DeclareTextCommand{\textdiv}{PU}{\textdivide}  
 16700 \DeclareTextCommand{\textpm}{PU}{\textplusminus}  
 16701 \DeclareTextCommand{\textcdot}{PU}{\textperiodcentered}  
 16702 </puenc>

## 50.3 PU encoding, additions for VnTeX

This file is provided by Han The Thanh.

16703 <\*puvnenc>

16704 \DeclareTextCommand{\abreve}{PU}{\81\003}  
16705 \DeclareTextCommand{\acircumflex}{PU}{\80\342}  
16706 \DeclareTextCommand{\dj}{PU}{\81\021}  
16707 \DeclareTextCommand{\ecircumflex}{PU}{\80\352}  
16708 \DeclareTextCommand{\ocircumflex}{PU}{\80\364}  
16709 \DeclareTextCommand{\ohorn}{PU}{\81\241}  
16710 \DeclareTextCommand{\uhorn}{PU}{\81\260}  
16711 \DeclareTextCommand{\ABREVE}{PU}{\81\002}  
16712 \DeclareTextCommand{\ACIRCUMFLEX}{PU}{\80\302}  
16713 \DeclareTextCommand{\DJ}{PU}{\81\020}  
16714 \DeclareTextCommand{\ECIRCUMFLEX}{PU}{\80\312}  
16715 \DeclareTextCommand{\OCIRCUMFLEX}{PU}{\80\324}  
16716 \DeclareTextCommand{\OHORN}{PU}{\81\240}  
16717 \DeclareTextCommand{\UHORN}{PU}{\81\257}  
  
16718 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\341}  
16719 \DeclareTextCompositeCommand{\d}{PU}{a}{\9036\241}  
16720 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\340}  
16721 \DeclareTextCompositeCommand{\h}{PU}{a}{\9036\243}  
16722 \DeclareTextCompositeCommand{\~}{PU}{a}{\80\343}  
16723 \DeclareTextCompositeCommand{\'}{PU}{\abreve}{\9036\257}  
16724 \DeclareTextCompositeCommand{\d}{PU}{\abreve}{\9036\267}  
16725 \DeclareTextCompositeCommand{\'}{PU}{\abreve}{\9036\261}  
16726 \DeclareTextCompositeCommand{\h}{PU}{\abreve}{\9036\263}  
16727 \DeclareTextCompositeCommand{\~}{PU}{\abreve}{\9036\265}  
16728 \DeclareTextCompositeCommand{\'}{PU}{\acircumflex}{\9036\245}  
16729 \DeclareTextCompositeCommand{\d}{PU}{\acircumflex}{\9036\255}  
16730 \DeclareTextCompositeCommand{\'}{PU}{\acircumflex}{\9036\247}  
16731 \DeclareTextCompositeCommand{\h}{PU}{\acircumflex}{\9036\251}  
16732 \DeclareTextCompositeCommand{\~}{PU}{\acircumflex}{\9036\253}  
16733 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\351}  
16734 \DeclareTextCompositeCommand{\d}{PU}{e}{\9036\271}  
16735 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\350}  
16736 \DeclareTextCompositeCommand{\h}{PU}{e}{\9036\273}  
16737 \DeclareTextCompositeCommand{\~}{PU}{e}{\9036\275}  
16738 \DeclareTextCompositeCommand{\'}{PU}{\ecircumflex}{\9036\277}  
16739 \DeclareTextCompositeCommand{\d}{PU}{\ecircumflex}{\9036\307}  
16740 \DeclareTextCompositeCommand{\'}{PU}{\ecircumflex}{\9036\301}  
16741 \DeclareTextCompositeCommand{\h}{PU}{\ecircumflex}{\9036\303}  
16742 \DeclareTextCompositeCommand{\~}{PU}{\ecircumflex}{\9036\305}  
16743 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\355}  
16744 \DeclareTextCompositeCommand{\d}{PU}{i}{\9036\313}  
16745 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\354}  
16746 \DeclareTextCompositeCommand{\h}{PU}{i}{\9036\311}  
16747 \DeclareTextCompositeCommand{\~}{PU}{i}{\81\051}  
16748 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\363}  
16749 \DeclareTextCompositeCommand{\d}{PU}{o}{\9036\315}  
16750 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\362}  
16751 \DeclareTextCompositeCommand{\h}{PU}{o}{\9036\317}  
16752 \DeclareTextCompositeCommand{\~}{PU}{o}{\80\365}  
16753 \DeclareTextCompositeCommand{\'}{PU}{\ocircumflex}{\9036\321}  
16754 \DeclareTextCompositeCommand{\d}{PU}{\ocircumflex}{\9036\331}  
16755 \DeclareTextCompositeCommand{\'}{PU}{\ocircumflex}{\9036\323}  
16756 \DeclareTextCompositeCommand{\h}{PU}{\ocircumflex}{\9036\325}  
16757 \DeclareTextCompositeCommand{\~}{PU}{\ocircumflex}{\9036\327}  
16758 \DeclareTextCompositeCommand{\'}{PU}{\ohorn}{\9036\333}  
16759 \DeclareTextCompositeCommand{\d}{PU}{\ohorn}{\9036\343}  
16760 \DeclareTextCompositeCommand{\'}{PU}{\ohorn}{\9036\335}

16761 \DeclareTextCompositeCommand{\h}{PU}{\ohorn}{\9036\337}  
16762 \DeclareTextCompositeCommand{\~}{PU}{\ohorn}{\9036\341}  
16763 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\372}  
16764 \DeclareTextCompositeCommand{\d}{PU}{u}{\9036\345}  
16765 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\371}  
16766 \DeclareTextCompositeCommand{\h}{PU}{u}{\9036\347}  
16767 \DeclareTextCompositeCommand{\~}{PU}{u}{\81\151}  
16768 \DeclareTextCompositeCommand{\'}{PU}{\uhorn}{\9036\351}  
16769 \DeclareTextCompositeCommand{\d}{PU}{\uhorn}{\9036\361}  
16770 \DeclareTextCompositeCommand{\'}{PU}{\uhorn}{\9036\353}  
16771 \DeclareTextCompositeCommand{\h}{PU}{\uhorn}{\9036\355}  
16772 \DeclareTextCompositeCommand{\~}{PU}{\uhorn}{\9036\357}  
16773 \DeclareTextCompositeCommand{\'}{PU}{y}{\80\375}  
16774 \DeclareTextCompositeCommand{\d}{PU}{y}{\9036\365}  
16775 \DeclareTextCompositeCommand{\'}{PU}{y}{\9036\363}  
16776 \DeclareTextCompositeCommand{\h}{PU}{y}{\9036\367}  
16777 \DeclareTextCompositeCommand{\~}{PU}{y}{\9036\371}  
16778 \DeclareTextCompositeCommand{\'}{PU}{A}{\80\301}  
16779 \DeclareTextCompositeCommand{\d}{PU}{A}{\9036\240}  
16780 \DeclareTextCompositeCommand{\'}{PU}{A}{\80\300}  
16781 \DeclareTextCompositeCommand{\h}{PU}{A}{\9036\242}  
16782 \DeclareTextCompositeCommand{\~}{PU}{A}{\80\303}  
16783 \DeclareTextCompositeCommand{\'}{PU}{\ABREVE}{\9036\256}  
16784 \DeclareTextCompositeCommand{\d}{PU}{\ABREVE}{\9036\266}  
16785 \DeclareTextCompositeCommand{\'}{PU}{\ABREVE}{\9036\260}  
16786 \DeclareTextCompositeCommand{\h}{PU}{\ABREVE}{\9036\262}  
16787 \DeclareTextCompositeCommand{\~}{PU}{\ABREVE}{\9036\264}  
16788 \DeclareTextCompositeCommand{\'}{PU}{\ACIRCUMFLEX}{\9036\244}  
16789 \DeclareTextCompositeCommand{\d}{PU}{\ACIRCUMFLEX}{\9036\254}  
16790 \DeclareTextCompositeCommand{\'}{PU}{\ACIRCUMFLEX}{\9036\246}  
16791 \DeclareTextCompositeCommand{\h}{PU}{\ACIRCUMFLEX}{\9036\250}  
16792 \DeclareTextCompositeCommand{\~}{PU}{\ACIRCUMFLEX}{\9036\252}  
16793 \DeclareTextCompositeCommand{\'}{PU}{E}{\80\311}  
16794 \DeclareTextCompositeCommand{\d}{PU}{E}{\9036\270}  
16795 \DeclareTextCompositeCommand{\'}{PU}{E}{\80\310}  
16796 \DeclareTextCompositeCommand{\h}{PU}{E}{\9036\272}  
16797 \DeclareTextCompositeCommand{\~}{PU}{E}{\9036\274}  
16798 \DeclareTextCompositeCommand{\'}{PU}{\ECIRCUMFLEX}{\9036\276}  
16799 \DeclareTextCompositeCommand{\d}{PU}{\ECIRCUMFLEX}{\9036\306}  
16800 \DeclareTextCompositeCommand{\'}{PU}{\ECIRCUMFLEX}{\9036\300}  
16801 \DeclareTextCompositeCommand{\h}{PU}{\ECIRCUMFLEX}{\9036\302}  
16802 \DeclareTextCompositeCommand{\~}{PU}{\ECIRCUMFLEX}{\9036\304}  
16803 \DeclareTextCompositeCommand{\'}{PU}{I}{\80\315}  
16804 \DeclareTextCompositeCommand{\d}{PU}{I}{\9036\312}  
16805 \DeclareTextCompositeCommand{\'}{PU}{I}{\80\314}  
16806 \DeclareTextCompositeCommand{\h}{PU}{I}{\9036\310}  
16807 \DeclareTextCompositeCommand{\~}{PU}{I}{\81\050}  
16808 \DeclareTextCompositeCommand{\'}{PU}{O}{\80\323}  
16809 \DeclareTextCompositeCommand{\d}{PU}{O}{\9036\314}  
16810 \DeclareTextCompositeCommand{\'}{PU}{O}{\80\322}  
16811 \DeclareTextCompositeCommand{\h}{PU}{O}{\9036\316}  
16812 \DeclareTextCompositeCommand{\~}{PU}{O}{\80\325}  
16813 \DeclareTextCompositeCommand{\'}{PU}{\OCIRCUMFLEX}{\9036\320}  
16814 \DeclareTextCompositeCommand{\d}{PU}{\OCIRCUMFLEX}{\9036\330}  
16815 \DeclareTextCompositeCommand{\'}{PU}{\OCIRCUMFLEX}{\9036\322}  
16816 \DeclareTextCompositeCommand{\h}{PU}{\OCIRCUMFLEX}{\9036\324}  
16817 \DeclareTextCompositeCommand{\~}{PU}{\OCIRCUMFLEX}{\9036\326}



```

16818 \DeclareTextCompositeCommand{\'}{PU}{\OHORN}{\9036\332}
16819 \DeclareTextCompositeCommand{\d}{PU}{\OHORN}{\9036\342}
16820 \DeclareTextCompositeCommand{\'}{PU}{\OHORN}{\9036\334}
16821 \DeclareTextCompositeCommand{\h}{PU}{\OHORN}{\9036\336}
16822 \DeclareTextCompositeCommand{\~}{PU}{\OHORN}{\9036\340}
16823 \DeclareTextCompositeCommand{\'}{PU}{U}{\80\332}
16824 \DeclareTextCompositeCommand{\d}{PU}{U}{\9036\344}
16825 \DeclareTextCompositeCommand{\'}{PU}{U}{\80\331}
16826 \DeclareTextCompositeCommand{\h}{PU}{U}{\9036\346}
16827 \DeclareTextCompositeCommand{\~}{PU}{U}{\81\150}
16828 \DeclareTextCompositeCommand{\'}{PU}{\UHORN}{\9036\350}
16829 \DeclareTextCompositeCommand{\d}{PU}{\UHORN}{\9036\360}
16830 \DeclareTextCompositeCommand{\'}{PU}{\UHORN}{\9036\352}
16831 \DeclareTextCompositeCommand{\h}{PU}{\UHORN}{\9036\354}
16832 \DeclareTextCompositeCommand{\~}{PU}{\UHORN}{\9036\356}
16833 \DeclareTextCompositeCommand{\'}{PU}{Y}{\80\335}
16834 \DeclareTextCompositeCommand{\d}{PU}{Y}{\9036\364}
16835 \DeclareTextCompositeCommand{\'}{PU}{Y}{\9036\362}
16836 \DeclareTextCompositeCommand{\h}{PU}{Y}{\9036\366}
16837 \DeclareTextCompositeCommand{\~}{PU}{Y}{\9036\370}
16838 </puvnc>

```

## 50.4 PU encoding, additions for Arabi

This file is provided and maintained by Youssef Jabri.

```

16839 <*puarenc>
16840 \DeclareTextCommand{\hamza}{PU}{\86\041}% 0621;afi57409;ARABIC LET-
TER HAMZA
16841 \DeclareTextCommand{\alefmadda}{PU}{\86\042}% 0622;afi57410;ARABIC LET-
TER ALEF WITH MADDA ABOVE
16842 \DeclareTextCommand{\alefhamza}{PU}{\86\043}% 0623;afi57411;ARABIC LET-
TER ALEF WITH HAMZA ABOVE
16843 \DeclareTextCommand{\wawhamza}{PU}{\86\044}% 0624;afi57412;ARABIC LET-
TER WAW WITH HAMZA ABOVE
16844 \DeclareTextCommand{\aleflowerhamza}{PU}{\86\045}% 0625;afi57413;ARABIC LET-
TER ALEF WITH HAMZA BELOW
16845 \DeclareTextCommand{\yahamza}{PU}{\86\046}% 0626;afi57414;ARABIC LET-
TER YEH WITH HAMZA ABOVE
16846 \DeclareTextCommand{\alef}{PU}{\86\047}% 0627;afi57415;ARABIC LETTER ALEF
16847 \DeclareTextCommand{\baa}{PU}{\86\050}% 0628;afi57416;ARABIC LETTER BEH
16848 \DeclareTextCommand{\T}{PU}{\86\051}% 0629;afi57417;ARABIC LETTER TEH MARBUTA
16849 \DeclareTextCommand{\taa}{PU}{\86\052}% 062A;afi57418;ARABIC LETTER TEH
16850 \DeclareTextCommand{\thaa}{PU}{\86\053}% 062B;afi57419;ARABIC LET-
TER THEH
16851 \DeclareTextCommand{\jeem}{PU}{\86\054}% 062C;afi57420;ARABIC LET-
TER JEEM
16852 \DeclareTextCommand{\Haa}{PU}{\86\055}% 062D;afi57421;ARABIC LETTER HAH
16853 \DeclareTextCommand{\kha}{PU}{\86\056}% 062E;afi57422;ARABIC LETTER KHAH
16854 \DeclareTextCommand{\dal}{PU}{\86\057}% 062F;afi57423;ARABIC LETTER DAL
16855 \DeclareTextCommand{\dhal}{PU}{\86\060}% 0630;afi57424;ARABIC LETTER THAL
16856 \DeclareTextCommand{\ra}{PU}{\86\061}% 0631;afi57425;ARABIC LETTER REH
16857 \DeclareTextCommand{\zay}{PU}{\86\062}% 0632;afi57426;ARABIC LETTER ZAIN
16858 \DeclareTextCommand{\seen}{PU}{\86\063}% 0633;afi57427;ARABIC LETTER SEEN
16859 \DeclareTextCommand{\sheen}{PU}{\86\064}% 0634;afi57428;ARABIC LET-
TER SHEEN
16860 \DeclareTextCommand{\sad}{PU}{\86\065}% 0635;afi57429;ARABIC LETTER SAD

```

```

16861 \DeclareTextCommand{\dad}{PU}{\86\066}% 0636;afi57430;ARABIC LETTER DAD
16862 \DeclareTextCommand{\Ta}{PU}{\86\067}% 0637;afi57431;ARABIC LETTER TAH
16863 \DeclareTextCommand{\za}{PU}{\86\070}% 0638;afi57432;ARABIC LETTER ZAH
16864 \DeclareTextCommand{\ayn}{PU}{\86\071}% 0639;afi57433;ARABIC LETTER AIN
16865 \DeclareTextCommand{\ghayn}{PU}{\86\072}% 063A;afi57434;ARABIC LET-
TER GHAIN
16866 \DeclareTextCommand{\tatweel}{PU}{\86\100}% 0640;afi57440;ARABIC TATWEEL
16867 \DeclareTextCommand{\fa}{PU}{\86\101}% 0641;afi57441;ARABIC LETTER FEH
16868 \DeclareTextCommand{\qaf}{PU}{\86\102}% 0642;afi57442;ARABIC LETTER QAF
16869 \DeclareTextCommand{\kaf}{PU}{\86\103}% 0643;afi57443;ARABIC LETTER KAF
16870 \DeclareTextCommand{\lam}{PU}{\86\104}% 0644;afi57444;ARABIC LETTER LAM
16871 \DeclareTextCommand{\meem}{PU}{\86\105}% 0645;afi57445;ARABIC LET-
TER MEEM
16872 \DeclareTextCommand{\nun}{PU}{\86\106}% 0646;afi57446;ARABIC LETTER NOON
16873 \DeclareTextCommand{\ha}{PU}{\86\107}% 0647;afi57470;ARABIC LETTER HEH
16874 \DeclareTextCommand{\waw}{PU}{\86\110}% 0648;afi57448;ARABIC LETTER WAW
16875 \DeclareTextCommand{\alefmaqsura}{PU}{\86\111}% 0649;afi57449;ARABIC LET-
TER ALEF MAKSURA
16876 \DeclareTextCommand{\ya}{PU}{\86\112}% 064A;afi57450;ARABIC LETTER YEH
16877 \DeclareTextCommand{\nasb}{PU}{\86\113}% 064B;afi57451;ARABIC FATHATAN
16878 \DeclareTextCommand{\raff}{PU}{\86\114}% 064C;afi57452;ARABIC DAMMATAN
16879 \DeclareTextCommand{\jarr}{PU}{\86\115}% 064D;afi57453;ARABIC KASRATAN
16880 \DeclareTextCommand{\fatha}{PU}{\86\116}% 064E;afi57454;ARABIC FATHA
16881 \DeclareTextCommand{\damma}{PU}{\86\117}% 064F;afi57455;ARABIC DAMMA
16882 \DeclareTextCommand{\kasra}{PU}{\86\120}% 0650;afi57456;ARABIC KASRA
16883 \DeclareTextCommand{\shadda}{PU}{\86\121}% 0651;afi57457;ARABIC SHADDA
16884 \DeclareTextCommand{\sukun}{PU}{\86\122}% 0652;afi57458;ARABIC SUKUN

Farsi
16885 \DeclareTextCommand{\peh}{PU}{\86\176}% 067E;afi57506;ARABIC LETTER PEH
16886 \DeclareTextCommand{\tcheh}{PU}{\86\206}% 0686;afi57507;ARABIC LET-
TER TCHEH
16887 \DeclareTextCommand{\jeh}{PU}{\86\230}% 0698;afi57508;ARABIC LETTER JEH
16888 \DeclareTextCommand{\farsikaf}{PU}{\86\251}% 06A9???;afi????;FARSI LET-
TER KAF
16889 \DeclareTextCommand{\gaf}{PU}{\86\257}% 06AF;afi57509;ARABIC LETTER GAF
16890 \DeclareTextCommand{\farsiya}{PU}{\86\314}% 06CC;afi????;FARSI LET-
TER YEH

16891 \DeclareTextCommand{\ZWNJ}{PU}{\9040\014}% 200C;ZWNJ%
16892 \DeclareTextCommand{\noboundary}{PU}{\86\325}% 200D;ZWJ
16893 \</puarenc>

```

## 51 End of file hycheck.tex

```

16894 \< *check>
16895 \typeout{}
16896 \begin{document}
16897 \end{document}
16898 \< /check>

```

## 52 Index

Numbers written in *italic* refer to the page where the corresponding entry is described; numbers underlined refer to the code line of the definition; numbers in *roman* refer to the code lines where the entry is used.

Symbols		
\!	195, 220, 2061	
\"	202, 227, 3173, 14076, 14436, 14448, 14460, 14583, 14669, 14683, 14691, 14706, 14718, 14734, 14748, 14759, 14760, 14774, 14786, 14792, 14843, 14871, 14890, 14911, 15038, 15052, 15060, 15074, 15086, 15102, 15116, 15127, 15128, 15142, 15154, 15160, 15407, 15622, 15624, 15634, 15686, 15688, 15716, 15729, 15881, 15894, 16127, 16129, 16143, 16145, 16147, 16149, 16151, 16153, 16163, 16165, 16167, 16169, 16175, 16177, 16179, 16181, 16187, 16189, 16195, 16197, 16203, 16205, 16245, 16247, 16317, 16319, 16329, 16331, 16347	15557, 15559, 15561, 15563, 15565, 15567, 15569, 15571, 15626, 15628, 15630, 15632, 15690, 15693, 15695, 15720, 15739, 15885, 15904, 16253, 16255, 16265, 16267, 16281, 16283, 16313, 16315, 16718, 16723, 16728, 16733, 16738, 16743, 16748, 16753, 16758, 16763, 16768, 16773, 16778, 16783, 16788, 16793, 16798, 16803, 16808, 16813, 16818, 16823, 16828, 16833
\#	547, 2146, 2147, 4602, 4613, 4615, 4631, 4663, 4723, 8603, 8605, 9384, 9393, 9428, 10268, 11857, 11868, 11904, 12135, 12144, 12184, 13996	\( 190, 215, 322, 756, 759, 761, 2063, 14142, 14506
\\$	184, 209, 321, 548, 4604, 4722	\) 191, 216, 323, 728, 734, 737, 2064, 14143, 14508
\%	549, 2061, 2121, 2122, 4601, 4610, 4612, 4664, 8605	\* ..... 325
\&	185, 210, 550, 4605, 4616, 4618, 11914	\+ ..... 200, 225, 326
\'	203, 228, 3113, 3127, 3168, 3170, 3171, 3172, 3173, 3178, 3179, 3181, 3186, 3192, 3196, 3197, 3200, 3243, 3244, 3249, 3250, 3251, 3252, 3253, 3254, 3255, 3256, 3258, 3262, 3275, 14074, 14433, 14445, 14457, 14663, 14679, 14687, 14700, 14714, 14720, 14728, 14744, 14753, 14754, 14768, 14782, 14788, 14811, 14813, 14814, 14815, 14818, 14820, 14821, 14822, 14830, 14868, 14887, 14908, 15032, 15048, 15056, 15068, 15082, 15088, 15096, 15112, 15121, 15122, 15136, 15150, 15156, 15174, 15176, 15281, 15283, 15301, 15303, 15335, 15337, 15347, 15349, 15409, 15411, 15461, 15463, 15469, 15471, 15473, 15475,	\- ..... 201, 226
		\. . 198, 223, 319, 1222, 3515, 3926, 14439, 14451, 14463, 14525, 14816, 14823, 14841, 14874, 14893, 14917, 14957, 14958, 15182, 15184, 15206, 15208, 15226, 15228, 15262, 15293, 15295, 15413, 15415, 15506, 15508, 15514, 15516, 16213, 16215, 16221, 16223, 16233, 16235, 16241, 16243, 16269, 16271, 16273, 16275, 16285, 16287, 16289, 16291, 16297, 16299, 16321, 16323, 16325, 16327, 16333, 16335, 16353
		\/ 194, 219, 670, 671, 672, 739, 1846, 8003
		\: ..... 189, 214
		\; ..... 199, 224, 8298
		\< ..... 196, 221
		\= 167, 173, 180, 183, 14441, 14453, 14465, 14836, 14878, 14897, 14916, 15162, 15164, 15198, 15200, 15247, 15249, 15250, 15319, 15321, 15379, 15381, 15518, 15520, 16159, 16161, 16183, 16185, 16237, 16239
		\> ..... 197, 222
		\? ..... 327
		\@ ..... 3164
		\@@@ ..... 2377
		\@@@BOOKMARK . 14057, 14060, 14118, 14186, 14193
		\@@ListBox . 12504, 12528, 12985, 13018, 13324, 13367
		\@@Menu ..... 12712, 12720
		\@@PasswordField . 12661, 12667
		\@@Radio . 12489, 12510, 12710, 12734, 12970, 12991, 13309, 13330
		\@@TextField ..... 12663, 12678
		\@@commahyperpage . 8110, 8111
		\@@hyper@readexternallink . . . . . 4914, 4916
		\@@hyperref ..... 4825, 4826
		\@@latextohtmlX . . . . . 2992, 5062
		\@@wrindex ..... 8038, 8039
		\@@writetorep . . . . . 13917, 13923
		\@Alph ..... 6658, 6660
		\@BIBLABEL . . 7475, 7481, 7487
		\@BOOKMARK . . 14057, 14059
		\@CITE ..... 7552, 7560
		\@CITEX ..... 7554
		\@CheckBox . 5825, 10333, 12602, 12631, 12765, 13102, 13469
		\@ChoiceMenu 5822, 10336, 12442, 12634, 12700, 12922, 13261
		\@Form 5520, 10323, 12228, 12623, 12644, 12843, 13184
		\@Gauge . . . . . 5831, 10327, 12412, 12625, 12649, 12786, 13181
		\@Localurfalse ..... 10276
		\@Localurtrue ..... 10273
		\@M . . . . . 1128, 2434, 4709, 7098
		\@MM ..... 7238
		\@PackageError ..... 263
		\@PackageInfo ..... 266
		\@PackageInfoNoLine . . . . . 267
		\@PackageWarning . . . . . 264
		\@PackageWarningNoLine . . 265
		\@PushButton 5828, 10339, 12535, 12637, 12746, 13027, 13383
		\@Refstar . . . . . 8413, 8420
		\@Reset 5837, 10342, 12579, 12640, 12762, 13078, 13440
		\@Roman . . . . . 632
		\@SCTR . . . . . 8157, 8209
		\@SetMaxRnhefLabel . . . . . 7549
		\@Submit . . . . . 5834, 10345, 12562, 12641, 12759, 13056, 13417
		\@TextField . . 5819, 10330, 12415, 12628, 12652, 12894, 13225
		\@addchap . . . . . 14393
		\@addtoreset . . 7932, 7933, 7947, 8154

<code>\@afterheading</code> . . . . .	14410	<code>\@currDisplay</code> 5608, 12454, 12517,	<code>\@firstofone</code> . . . . .	578, 579, 580,
<code>\@alph</code> . . . . .	6654, 6656	12729, 12743, 12934, 12998,		581, 582, 583, 584, 585, 586,
<code>\@anchorcolor</code> . . . . .	3494, 9353, 9448,	13273, 13340		587, 588, 621, 812, 964, 975,
	10390, 11825, 12105	<code>\@currValue</code> . . . . .		1208, 1212, 1216, 1554, 3904,
<code>\@arabic</code> . . . . .	1098, 1103, 1107, 6653	12522, 12729, 12740, 12996,		4428, 5486, 5492, 5724, 6518,
<code>\@auxout</code> . . . . .	2371, 4872, 6045, 6047,	13005, 13338, 13355, 13794		6651, 6663, 6730, 7342, 7423,
	6743, 6771, 7495, 7510, 7526,	<code>\@currentHlabel</code> . . . . .		7564, 7587, 7769, 7993, 9246,
	7536, 7566, 7589, 7615, 7621,	<code>\@currentHref</code> . . . . .		12816, 13553, 13570, 13588
	7645	5927, 6603, 6684, 6686, 6695,	<code>\@firstoftwo</code> . . . . .	641, 922, 1090, 1762,
<code>\@backslashchar</code> . . . . .	852, 855, 858,	6697, 6704, 6785, 6787, 6797,		6015, 14359
	1352, 2023, 2027, 2030, 2168,	6848, 6859, 6861, 6899, 6910,	<code>\@fnsymbol</code> . . . . .	6652
	2185, 2191, 2195, 2203, 4626,	6914, 6921, 6945, 7035, 7066,	<code>\@footnotemark</code> 7107, 7160, 7178,	
	8618, 8628	7091, 7154, 7164, 7166, 7167,		7260, 7272, 7274, 7286, 7287,
<code>\@baseurl</code> . . . . .	3501, 3503, 4972, 9070,	7223, 7251, 7349, 7375, 7379,	<code>\@footnotetext</code> . . . . .	7317, 7319
	9073, 9338, 9340, 9626, 9628,	7394, 7396, 7624, 7808, 7831,		7106, 7113, 7142,
	10145, 10155, 10241, 10243,	7844, 7851, 7902, 7926, 7928,		7177, 7273, 7275, 7289, 7290,
	10778, 10780, 11158, 11172,	13907, 14298, 14311, 14322,		7310
	11810, 11812, 12011, 12025,	14352, 14369, 14404	<code>\@for</code> 3534, 5128, 7561, 7584, 12451,	
	12091, 12093	<code>\@currentlabel</code> . . . . .		12513, 12718, 12725, 12735,
<code>\@begintheorem</code> 7002, 7005, 7030,		7624, 7907, 7914, 8163, 8215		12931, 12994, 13270, 13336
	7037, 7061, 7068	<code>\@currentlabelname</code> . . . . .	<code>\@fourthoffive</code> . . . . .	4540, 4860, 8477,
<code>\@bibitem</code> . . . . .	7502, 7533	7224, 7252, 7354		8484
<code>\@biblabel</code> . . . . .	7475, 7522	<code>\@currentlabstr</code> . . . . .	<code>\@gobble</code> . . . . .	49, 56,
<code>\@bookmarkopenstatus</code> . . . . .	4426,	<code>\@curropt</code> . . . . .		117, 571, 572, 573, 574, 611,
	4443, 13978	12451, 12452, 12513,		612, 613, 614, 644, 645, 646,
<code>\@bookmarksopenlevel</code> 3455, 3457,		12514, 12718, 12725, 12726,		655, 657, 816, 929, 962, 973,
	4429	12728, 12735, 12736, 12738,		1114, 1118, 1121, 1491, 1552,
<code>\@bsphack</code> . . . . .	2364, 4865, 7619	12931, 12932, 12994, 12995,		1571, 1584, 1588, 1651, 1714,
<code>\@capstartfalse</code> . . . . .	7369	13270, 13271, 13336, 13337		1715, 1722, 1727, 1741, 1746,
<code>\@caption</code> 7334, 7346, 7389, 7425,		<code>\@dblarg</code> . . . . .		2349, 2406, 2679, 2691, 3892,
	7427	7344, 7425		4099, 4153, 4592, 5471, 5714,
<code>\@capytype</code> 2373, 7329, 7333, 7337,		<code>\@ehc</code> . . . . .		5980, 5984, 6001, 6003, 6019,
	7344, 7351, 7393, 7418, 7422,	2875, 2908, 2946, 2953, 2964,		6020, 6023, 6024, 6026, 6492,
	7425	2970, 4151, 4771, 4936, 5232,		6512, 6516, 6991, 7017, 7050,
<code>\@car</code> 1634, 1650, 1668, 1688, 3434,		5356, 5552, 5585, 5761, 5810,		7331, 7420, 7807, 8542, 9248,
	5138, 9022, 9033	12544, 12590, 13037, 13089,		10658, 10661, 12844, 13185,
<code>\@cdr</code> . . . . .	9023, 9034	13393, 13451		13964, 13965, 13966, 13967
<code>\@chapter</code> . . . . .	14317, 14318	<code>\@ehd</code> 63, 282, 288, 303, 7330, 7419	<code>\@gobblefour</code> 577, 680, 1248, 1249,	
<code>\@cite</code> . . . . .	7552, 7583, 7680, 7686	<code>\@endForm</code> . . . . .		1250, 3711, 8278
<code>\@cite@opt</code> . . . . .	7681, 7687, 7691, 7701	5521, 10326, 12411,	<code>\@gobbleopt</code> . . . . .	6026, 6028
<code>\@citea</code> . . . . .	7555, 7562, 7563, 7582,	12624, 12648, 12893, 13211	<code>\@gobbletwo</code> . . . . .	575,
	7585, 7586	<code>\@endparyenv</code> . . . . .		648, 673, 681, 682, 829, 1247,
<code>\@citeb</code> . . . . .	7561, 7564, 7566, 7568,	7000, 7026, 7057		1669, 1746, 1750, 2564, 3709,
	7572, 7575, 7584, 7587, 7589,	<code>\@eqnqr</code> . . . . .		3710, 4103, 5417, 6005, 6014,
	7591, 7595, 7598	6929		6022, 6026, 8465, 14308
<code>\@citebordercolor</code> . . . . .	3557, 4017	<code>\@eqnstarfalse</code> . . . . .	<code>\@harvarditem</code> . . . . .	7634, 7636
<code>\@citecolor</code> . . . . .	3495	6905, 6932	<code>\@hyper@Canchor</code> . . . . .	5022, 5023
<code>\@citedata@opt</code> . . . . .	7682, 7688, 7690	<code>\@eqnstartrue</code> . . . . .	<code>\@hyper@itemfalse</code> . . . . .	6548, 6564,
<code>\@citedatax</code> . . . . .	7697, 7702	6929		6578
<code>\@citedatax@opt</code> . . . . .	7694, 7700	<code>\@eqnswtrue</code> . . . . .	<code>\@hyper@itemtrue</code> . . . . .	6549
<code>\@citeseppen</code> . . . . .	7679, 7685	6875, 6884	<code>\@hyper@launch</code> 4942, 4951, 8962,	
<code>\@citex</code> . . . . .	7581	<code>\@esphack</code> . . . . .		9981, 10551, 11545
<code>\@clubpenalty</code> . . . . .	7100	2385, 4876, 7629, 8050	<code>\@hyper@linkfile</code> 4923, 4926, 4930,	
<code>\@commahyperpage</code> . . . . .	8105, 8110	<code>\@extra@b@citeb</code> 7460, 7463, 7480,		4962
<code>\@ctrerr</code> . . . . .	6632, 6641	7485, 7505, 7553, 7575, 7591,	<code>\@hyper@readexternallink</code> . . . . .	4917,
		7598		4921
		<code>\@extra@binfo</code> . . . . .	<code>\@hyperdef</code> . . . . .	4833, 4834
		7459, 7462, 7466		
		<code>\@fifthoffive</code> 4111, 4541, 4859, 8364,		
		8482		
		<code>\@filebordercolor</code> . . . . .		
		3558,		
		4015, 8937, 8939, 9958, 9960,		
		10476, 10478, 11527		
		<code>\@filecolor</code> 3484, 3496, 8958, 9567,		
		9584, 9976, 10482		
		<code>\@firstoffive</code> 4537, 4546, 8403, 8487		

\@hyperpage . . . . .	8102, 8103	11878, 11879, 11887, 11888,	8346, 8501, 8532, 8614, 8620,
\@hyperref . . . . .	4814, 4825	11889, 12153, 12154, 12167,	8624, 8630, 9022, 9023, 9033,
\@ifclasslater . . . . .	14416, 14421	12168, 12169	9034, 10623, 10625, 13560,
\@ifclassloaded . . . . .	2356, 4568, 6715,	\@listctr . . . . .	13573, 13579, 14006, 14009,
6752, 7544, 8138, 8142, 9251,		7511, 7537	14012, 14021, 14024, 14033
14415, 14420		\@m . . . . .	\@nobreakfalse . . . . .
\@ifnextchar . . . . .	12, 88, 103, 123,	1111, 7563, 7586, 10705	6089, 7098
674, 4716, 4814, 4833, 4884,		\@mainaux 6043, 6044, 6475, 6483,	\@nocnterr . . . . .
5520, 5819, 5822, 5825, 5828,		12812, 12836	7946, 7960
5831, 5834, 5837, 6026, 6098,		\@makecaption . 7370, 7372, 7438	\@nocounterr . . . . .
6107, 7276, 7294, 7634, 7692,		\@makefnmark . . . . .	7945, 7959
11183, 11456, 11470, 14057,		7169, 7322	\@noparitemfalse . . . . .
14060		\@makefntext . . . . .	7077
\@ifpackagelater . . . . .	238, 984, 2387,	\@makeoother . . . . .	\@number . . . . .
6706, 7957		166, 167,	6651, 6730, 7769
\@ifpackageloaded . . . . .	500, 882, 983,	179, 180, 182, 183, 188, 189,	\@nx . . . . .
2359, 2791, 3411, 3415, 4073,		190, 191, 192, 193, 194, 195,	7949, 7963, 7966, 7968
4256, 6587, 6705, 6718, 6780,		196, 197, 198, 199, 200, 201,	\@onelevel@sanitize . . . . .
6813, 6817, 6837, 6871, 6985,		202, 203, 4616, 8590, 14146,	2557, 2561,
7174, 7190, 7230, 7390, 7604,		14149, 14176, 14179	2773, 3433, 4128, 4158, 4179,
7677, 7899, 7956, 7998, 7999,		\@makeschapterhead 14407, 14409	4682, 4984, 4987, 5000, 5014,
8000, 8147, 8412, 8555, 8559,		\@mem@titleref . . . . .	5228, 5464, 5548, 6336, 6338,
12083		4575	6691, 7837, 8389, 9747, 14003
\@ifpackagewith . . . . .	3293, 4074, 7922	\@mem@titleref@nolink . . . . .	\@oparg . . . . .
\@ifstar 66, 4563, 4566, 4575, 4579,		3560, 4014, 9306, 9308,	7002, 7005, 7030, 7037,
5962, 5966, 6032, 6036, 8420,		10056, 10058, 10588, 10590	7061, 7068
8446, 8465		\@menucolor . . . . .	\@outlinefile . . . . .
\@ifundefined . . . . .	34,	3498, 9321, 10062,	13976, 14065, 14160,
361, 901, 909, 925, 928, 2653,		10594	14162, 14164, 14242, 14244,
2721, 2805, 3311, 3347, 3355,		\@minipagefalse . . . . .	14246
3362, 3384, 3432, 4041, 5227,		7075	\@pagerefstar . . . . .
5547, 6445, 6591, 6596, 6819,		\@mkboth 648, 8260, 14308, 14396,	4566, 8405, 8436
6840, 6841, 6894, 6916, 6940,		14398	\@pagesetref . . . . .
6977, 7335, 7353, 7469, 7552,		\@mpfn . . . . .	8355
7568, 7591, 7896, 7937, 7945,		7110, 7295, 7307	\@parboxrestore . . . . .
7946, 7959, 7960, 7967, 8661,		\@mpfootnotetext . . . . .	7240, 7362, 7433
10217, 10846, 10847, 11640,		7113, 7126,	\@parcount . . . . .
12844, 13185, 13562, 13974		7127, 7179	14124, 14132
\@indexfile 8042, 8057, 8065, 8069,		\@mycount . . . . .	\@part . . . . .
8074		14122, 14132	14335, 14342
\@inlabelfalse . . . . .	7079	\@namedef 1228, 2501, 2815, 2816,	\@pdfauthor 3727, 4020, 9130, 9608,
\@inmathwarn . . . . .	541, 542	2817, 2818, 2819, 2820, 2821,	10092, 10819, 11084, 11942
\@inpenc@undefined@ . . . . .	2223	2822, 3302, 3314, 5238, 5239,	\@pdfborder . . . . .
\@labels . . . . .	7095	5240, 5241, 5563, 5564, 6716,	3376,
\@latex@ . . . . .	6129, 6130	6928, 6931, 7609, 7610, 7611,	3572, 3573, 3574, 3581, 3585,
\@latex@error . . . . .	7330, 7419	7612	3608, 3610, 4509, 8816, 9765,
\@latex@warning 4852, 7571, 7594,		\@namerefstar . . . . .	10378, 10950, 11045, 11448,
8339, 8359, 8376, 8493		4579, 8408	11460, 11475, 11496, 11524,
\@lbibitem . . . . .	7476, 7521	\@nameuse . . . . .	11555, 11584, 11671, 11759,
\@linkbordercolor . . . . .	3559, 4012,	\@ne . . . . .	11919
8886, 10380		1097, 2758,	\@pdfborderstyle . . . . .
\@linkcolor . . . . .	3493, 11205	2896, 4414, 4741, 9890, 9895,	3377, 3589,
\@linkdim . . . . .	469,	10757, 11665, 13220	3590, 3591, 3600, 3604, 3612,
9402, 9403, 9411, 9412, 9413,		\@newctr . . . . .	3614, 4510, 5676, 8817, 9766,
9482, 9483, 9495, 9496, 9497,		7892, 7893	10379, 10951, 11046, 11449,
9519, 9520, 9533, 9534, 9535,		\@newl@bel . . . . .	11461, 11476, 11497, 11525,
9559, 9560, 9573, 9574, 9575,		6092, 7462	11556, 11585, 11672, 11760,
		\@newlistfalse . . . . .	11920
		7076	\@pdfcreationdate . . . . .
		\@nil . . . . .	3744,
		293, 310,	4023, 9134, 9136, 9600, 9602,
		486, 490, 495, 499, 514, 1546,	10084, 10086, 11059, 11061,
		1549, 1557, 1634, 1652, 1670,	11934, 11936
		1686, 1688, 1691, 1694, 1697,	\@pdfcreator . . . . .
		2232, 2234, 2250, 2252, 3434,	3739, 4022, 9133, 9599,
		4648, 4652, 4657, 4989, 4997,	10083, 10822, 11083, 11933
		5003, 5005, 5138, 5705, 5708,	\@pdfdirection . . . . .
		5727, 6117, 6120, 6127, 6129,	9093, 9664, 10125,
		6130, 6235, 6283, 6284, 6286,	10790, 11138, 11991
		6309, 6326, 6380, 6382, 6843,	\@pdfduplex . . . . .
		6852, 6854, 6866, 8089, 8091,	9099, 9670, 10131,
		8098, 8121, 8124, 8134, 8343,	10796, 11144, 11997
			\@pdfhighlight . . . . .
			3564,
			4018, 8836, 8838, 8897, 8933,
			8935, 8970, 8972, 9302, 9304,

10949, 11044, 11447, 11495,  
 11523, 11554  
 \@pdfhighlight . . . . . 8895  
 \@pdfkeywords . . . . .  
 . . . . . 3763, 4026, 9146, 9597,  
 10097, 10827, 11085, 11931  
 \@pdflang . . . . . 4004,  
 4033, 9119, 9121, 9692, 9694,  
 10165, 10167, 11168, 11170,  
 12021, 12023  
 \@pdfm@dest . . . 9709, 9768, 9772  
 \@pdfm@mark . . 6463, 9708, 9760,  
 9780, 9794, 9796, 9810, 9812,  
 9817, 9818, 9848, 9872, 9874,  
 9879, 9897, 9920, 9952, 9986,  
 10017, 10045, 10079, 10146,  
 10173, 13188, 13189, 13190,  
 13209, 13251, 13257, 13346,  
 13360, 13375, 13381, 13406,  
 13413, 13431, 13437, 13459,  
 13465, 13487, 13493, 13498,  
 13530, 13538, 14213  
 \@pdfmoddate . . . . . 3750,  
 4024, 9138, 9140, 9604, 9606,  
 10088, 10090, 11063, 11067,  
 11938, 11940  
 \@pdfnonfullscreenpagemode . . .  
 . . 9092, 9663, 10124, 10789,  
 11137, 11990  
 \@pdfnumcopies . . . . .  
 . . . . . 9108, 9110, 9679, 9681,  
 10140, 10142, 10805, 10807,  
 11153, 11155, 12006, 12008  
 \@pdfpageduration . . . . .  
 . . . . . 3511, 9190, 9194, 9199,  
 10190, 10192, 10195, 10714,  
 10716, 10719, 10989, 10991,  
 10999  
 \@pdfpagelayout 9118, 9691, 10164,  
 10810, 10812, 11167, 12020  
 \@pdfpagemode 4244, 4245, 4439,  
 4440, 4449, 4450, 9072, 9647,  
 10159, 10777, 11121, 11974  
 \@pdfpagescrop 3958, 4028, 9057,  
 9061, 9630, 9631, 9652, 9654,  
 10171, 10173, 10766, 10768,  
 11126, 11128, 11979, 11981  
 \@pdfpagetransition . . . . .  
 . . . . . 3507, 9166, 9170, 9175,  
 10179, 10181, 10184, 10603,  
 10605, 10607, 10972, 10974,  
 10982  
 \@pdfpicktraybypdfsize . . . . .  
 . . . . . 9100, 9102, 9671, 9673,  
 10132, 10134, 10797, 10799,  
 11145, 11147, 11998, 12000  
 \@pdfprintarea . 9096, 9667, 10128,  
 10793, 11141, 11994  
 \@pdfprintclip . 9097, 9668, 10129,  
 10794, 11142, 11995  
 \@pdfprintpagerange . . . . . 3679,  
 4032, 9104, 9106, 9675, 9677,  
 10136, 10138, 10801, 10803,  
 11149, 11151, 12002, 12004  
 \@pdfprintscaling . . . . 9098, 9669,  
 10130, 10795, 11143, 11996  
 \@pdfproducer . . . . .  
 . . . . . 3733, 4021, 8998, 9142,  
 9144, 9590, 9591, 9609, 9611,  
 10068, 10069, 10073, 10093,  
 10095, 10734, 10735, 10739,  
 10742, 10743, 10823, 10825,  
 11070, 11074, 11581, 11582,  
 11664, 11666, 11668, 11756,  
 11757, 11924, 11925, 11943,  
 11945  
 \@pdfremotestartview 3930, 3932,  
 3933, 3934, 3945, 3949, 3951,  
 3952, 3954, 4030, 8950, 9967,  
 11535  
 \@pdfstartpage . . . . . 3913, 3915,  
 4031, 9078, 9082, 9634, 9639,  
 10148, 10152, 10770, 10774,  
 11108, 11113, 11961, 11966  
 \@pdfstartview . . . . . 3920, 3922,  
 4029, 9080, 9082, 9636, 9640,  
 10150, 10152, 10772, 11110,  
 11114, 11963, 11967  
 \@pdfsubject . . . . .  
 . . . . . 3757, 4025, 9132, 9613,  
 10082, 10821, 11082, 11947  
 \@pdftempa . . . . 4928, 4929, 4932  
 \@pdftempwordfile . . . 4919, 4929  
 \@pdftempwordrun . . 4920, 4932  
 \@pdftitle 3721, 4019, 9131, 9598,  
 10081, 10820, 11081, 11932  
 \@pdftrapped . . 3768, 3771, 3774,  
 3783, 3792, 4027, 9147, 9149,  
 10098, 10100, 11086  
 \@pdfview . . . . . 3894,  
 8798, 8806, 9715, 9719, 9723,  
 9727, 9731, 9735, 9736, 9739,  
 9740, 9743, 9747, 9749, 9764,  
 10377, 10387, 10399, 10887,  
 10907, 11586, 11673, 11761,  
 12033  
 \@pdfviewarea . 9094, 9665, 10126,  
 10791, 11139, 11992  
 \@pdfviewclip . 9095, 9666, 10127,  
 10792, 11140, 11993  
 \@pdfviewparams . . . . 3896, 3898,  
 10887, 10907, 11587, 11674,  
 11762, 12034  
 \@percentchar . 4611, 4612, 4664,  
 13980  
 \@processme . . 5596, 5597, 9172,  
 9178, 9196, 9202, 9218, 9224,  
 11186, 11187, 11298, 11299,  
 11302, 11303  
 \@protected@testopt . . . . . 677  
 \@protected@testopt@xargs . 678  
 \@refstar . . . . . 4563, 8402  
 \@runbordercolor . . . . . 3561,  
 4016, 8974, 8976, 9992, 9994,  
 10570, 10572, 11558  
 \@runcolor . . . . 3499, 8994, 10008,  
 10576  
 \@safe@activesfalse . . . . 630, 4543  
 \@safe@activestrue . . . . 629, 4542  
 \@savsf . . . . . 8801, 8809  
 \@schapter . . . . . 14305, 14306  
 \@secondoffive . 4112, 4538, 4551,  
 8365, 8366, 8406  
 \@secondoftwo 617, 620, 920, 1093,  
 1620, 1760, 4111, 4112, 14361  
 \@sect . . . . . 14356, 14357  
 \@seqncr . . . . . 6929  
 \@serial@counter . . 14072, 14120,  
 14122, 14123  
 \@seteqlabel . . . . . 7923, 7924  
 \@setminipage . . . . . 7364, 7435  
 \@setref . . 4546, 4551, 8334, 8335,  
 8372  
 \@sharp . . . . . 6843, 6849  
 \@skiphyperrfalse . . 6565, 7491,  
 7503  
 \@skiphyperrtrue . . 7477, 7503  
 \@spaces . . . . . 270  
 \@spart . . . . . 14348, 14349  
 \@ssect . . . . . 14291, 14292  
 \@startlos . . . . . 8272, 8279, 8328  
 \@starttoc . . . . . 6077  
 \@tempa . 7001, 7002, 7005, 7007,  
 7029, 7036, 7040, 7060, 7067,  
 7071, 7192, 7196, 7199, 7211  
 \@tempb . . . . . 6957, 6961  
 \@tempboxa 9400, 9402, 9411, 9480,  
 9482, 9485, 9486, 9495, 9501,  
 9502, 9517, 9519, 9522, 9523,  
 9533, 9539, 9540, 9557, 9559,  
 9562, 9563, 9573, 9579, 9580,  
 11876, 11878, 11887, 12151,  
 12153, 12167  
 \@tempcnta . 13929, 13930, 13931,  
 13932, 13933, 13935, 13938,  
 13939, 13940, 13946, 13948,  
 13950, 14041, 14042, 14043,  
 14046, 14047, 14048, 14049,  
 14050, 14264, 14265, 14266



\@tempdima .....  
     2437, 5859, 5860, 5861, 5862,  
     5863, 5864, 5865, 5866, 8791,  
     12450, 12455, 12457, 12493,  
     12494, 12495, 12499, 12500,  
     12501, 12502, 12930, 12935,  
     12937, 12974, 12975, 12976,  
     12980, 12981, 12982, 12983,  
     13269, 13274, 13276, 13313,  
     13314, 13315, 13319, 13320,  
     13321, 13322  
 \@tempdimb 12454, 12455, 12934,  
     12935, 13273, 13274  
 \@tempswafalse ..... 7696  
 \@tempswatruer 7666, 7669, 7672,  
     7693  
 \@temptokena . 3280, 3285, 3288,  
     3290  
 \@tfor ..... 6958  
 \@the@H@page . 7736, 7772, 7774,  
     7775  
 \@thefnmark . . 7111, 7122, 7203,  
     7241, 7258, 7265, 7296, 7308,  
     7315  
 \@thirdoffive ..... 4539, 8409  
 \@thm ..... 7009, 7010, 7043  
 \@topnewpage ..... 14407  
 \@topsep ..... 6999, 7025, 7056  
 \@topsepadd . . . 7000, 7026, 7057  
 \@typeset@protect ..... 14277  
 \@undefined . . 374, 377, 683, 3284,  
     6016, 6051, 6064, 6076, 6298,  
     6316, 6361, 7329, 7392, 7404,  
     7409, 7418, 8397, 8789, 9002,  
     9011, 10350, 10745, 10759  
 \@undottedtocline ..... 8324  
 \@unprocessedoptions . . . 4389  
 \@urlbordercolor .....  
     . . . . 3562, 4013, 8899, 8901,  
     10023, 10025, 10502, 10504,  
     11498  
 \@urlcolor ..... 3497,  
     8918, 9407, 9420, 9527, 9544,  
     10037, 10508, 11883, 11896,  
     12162, 12175  
 \@urltype 9373, 9378, 10246, 10272,  
     10407, 10421, 11845, 11850,  
     12124, 12129  
 \@vpageref ..... 8430  
 \@whilenum ..... 1264  
 \@wrindex . . . . 8006, 8007, 8038  
 \@writefile ..... 7622  
 \@x@sf . . . . 7162, 7171, 7321, 7323  
 \@xfootnote ..... 7294  
 \@xfootnotemark . . . . 7119, 7312  
 \@xfootnotenext . . . . 7108, 7305

\@xp 7913, 7948, 7949, 7962, 7963,  
     7965, 7966  
 \[ . . 192, 217, 320, 3578, 3596, 4783  
 \{ 328, 350, 544, 2063, 10878, 13998  
 \} 329, 355, 545, 2064, 10878, 13999  
 \] ..... 193, 218  
 ^ ..... 186, 211, 318, 2161,  
     2162, 3191, 4599, 4600, 4608,  
     14434, 14446, 14458, 14665,  
     14681, 14689, 14702, 14716,  
     14730, 14746, 14756, 14757,  
     14770, 14784, 14832, 14869,  
     14888, 14909, 15034, 15050,  
     15058, 15070, 15084, 15098,  
     15114, 15124, 15125, 15138,  
     15152, 15178, 15180, 15218,  
     15220, 15234, 15236, 15270,  
     15272, 15273, 15351, 15353,  
     15399, 15401, 15403, 15405,  
     16337, 16339  
 \_ . 187, 212, 552, 4603, 4620, 4621  
 ' ..... 166, 172, 179, 182,  
     3127, 3261, 3264, 3266, 3274,  
     13997, 14432, 14444, 14456,  
     14661, 14677, 14685, 14698,  
     14712, 14726, 14742, 14750,  
     14751, 14766, 14780, 14828,  
     14867, 14886, 14907, 15030,  
     15046, 15054, 15066, 15080,  
     15094, 15110, 15118, 15119,  
     15134, 15148, 15465, 15467,  
     15713, 15741, 15878, 15906,  
     16309, 16311, 16359, 16361,  
     16720, 16725, 16730, 16735,  
     16740, 16745, 16750, 16755,  
     16760, 16765, 16770, 16775,  
     16780, 16785, 16790, 16795,  
     16800, 16805, 16810, 16815,  
     16820, 16825, 16830, 16835  
 | 188, 213, 324, 1969, 2062, 2103,  
     3073, 4056, 8002, 8589, 8599  
 ~ ..... 551, 1266, 2211, 3185,  
     3193, 3194, 3195, 4172, 4624,  
     14435, 14447, 14459, 14667,  
     14696, 14704, 14732, 14764,  
     14772, 14834, 14870, 14889,  
     14910, 15036, 15064, 15072,  
     15100, 15132, 15140, 15242,  
     15244, 15245, 15375, 15377,  
     16305, 16307, 16355, 16357,  
     16363, 16365, 16722, 16727,  
     16732, 16737, 16742, 16747,  
     16752, 16757, 16762, 16767,  
     16772, 16777, 16782, 16787,  
     16792, 16797, 16802, 16807,  
     16812, 16817, 16822, 16827,  
     16832, 16837

## Numbers

\3 ..... 528, 1310, 1311,  
     1312, 1313, 1314, 1315, 1316,  
     1317, 1426, 1427, 1428, 1429,  
     1430, 1431, 1432, 1433, 2325,  
     14141, 14661, 14663, 14665,  
     14667, 14669, 14671, 14673,  
     14675, 14677, 14679, 14681,  
     14683, 14685, 14687, 14689,  
     14691, 14693, 14694, 14696,  
     14698, 14700, 14702, 14704,  
     14706, 14708, 14710, 14712,  
     14714, 14716, 14718, 14720,  
     14722, 14724, 14726, 14728,  
     14730, 14732, 14734, 14736,  
     14738, 14740, 14742, 14744,  
     14746, 14748, 14750, 14751,  
     14753, 14754, 14756, 14757,  
     14759, 14760, 14762, 14764,  
     14766, 14768, 14770, 14772,  
     14774, 14776, 14778, 14780,  
     14782, 14784, 14786, 14788,  
     14790, 14792, 14793, 14866,  
     15030, 15032, 15034, 15036,  
     15038, 15040, 15042, 15044,  
     15046, 15048, 15050, 15052,  
     15054, 15056, 15058, 15060,  
     15062, 15064, 15066, 15068,  
     15070, 15072, 15074, 15076,  
     15078, 15080, 15082, 15084,  
     15086, 15088, 15090, 15092,  
     15094, 15096, 15098, 15100,  
     15102, 15104, 15106, 15108,  
     15110, 15112, 15114, 15116,  
     15118, 15119, 15121, 15122,  
     15124, 15125, 15127, 15128,  
     15130, 15132, 15134, 15136,  
     15138, 15140, 15142, 15144,  
     15146, 15148, 15150, 15152,  
     15154, 15156, 15158, 15160,  
     15425, 15427, 15429, 15431,  
     15432, 15434, 15436, 15438,  
     15440, 15442, 15444, 15446,  
     15448, 15450, 15452, 15454,  
     15456, 15458, 15459, 15461,  
     15463, 15465, 15467, 15469,  
     15471, 15473, 15475, 15524,  
     15526, 15528, 15530, 15532,  
     15534, 15536, 15539, 15541,  
     15666, 15668, 15670, 15672,  
     15674, 15676, 15678, 15680,  
     15682, 15684, 15686, 15688,  
     15690, 15692, 15693, 15695,  
     15697, 15699, 15701, 15703,  
     15705, 15707, 15709, 15711,  
     16097, 16099, 16101, 16103,  
     16105, 16107, 16109, 16111,

16113, 16115, 16117, 16119,  
 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, 16359, 16361, 16363,  
 16365, 16585, 16587, 16589,  
 16591, 16593, 16595, 16597,  
 16599, 16601, 16603, 16605,  
 16607, 16609, 16611, 16613,  
 16615, 16617, 16619, 16621,  
 16623, 16625, 16627, 16629,  
 16631, 16633, 16635, 16637,  
 16639, 16641, 16643, 16645,  
 16647, 16649, 16651, 16653,  
 16655, 16657, 16659, 16661,  
 16663, 16665, 16667, 16669,  
 16671, 16673, 16681, 16683,  
 16705, 16707, 16708, 16712,  
 16714, 16715, 16718, 16720,  
 16722, 16733, 16735, 16739,  
 16740, 16741, 16742, 16743,  
 16744, 16745, 16746, 16748,  
 16749, 16750, 16751, 16752,  
 16753, 16754, 16755, 16756,  
 16757, 16758, 16759, 16760,  
 16761, 16762, 16763, 16764,  
 16765, 16766, 16768, 16769,  
 16770, 16771, 16772, 16773,  
 16774, 16775, 16776, 16777,  
 16778, 16780, 16782, 16793,  
 16795, 16799, 16800, 16801,  
 16802, 16803, 16804, 16805,  
 16806, 16808, 16809, 16810,  
 16811, 16812, 16813, 16814,  
 16815, 16816, 16817, 16818,  
 16819, 16820, 16821, 16822,  
 16823, 16824, 16825, 16826,  
 16828, 16829, 16830, 16831,  
 16832, 16833, 16834, 16835,  
 16836, 16837, 16890, 16892

\9 . . . . . 531, 1330, 1333, 1364,  
 2253, 2268, 2277, 2305, 2325,  
 14866, 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,  
 16449, 16451, 16453, 16455,  
 16457, 16459, 16461, 16463,  
 16465, 16467, 16469, 16471,  
 16473, 16475, 16477, 16479,  
 16481, 16483, 16485, 16487,  
 16489, 16491, 16493, 16495,  
 16497, 16499, 16501, 16503,  
 16505, 16507, 16509, 16511,  
 16513, 16515, 16517, 16519,  
 16521, 16523, 16525, 16527,  
 16529, 16531, 16533, 16535,  
 16537, 16539, 16541, 16543,  
 16545, 16547, 16549, 16551,  
 16553, 16555, 16557, 16559,  
 16561, 16563, 16565, 16567,  
 16569, 16571, 16573, 16575,  
 16577, 16579, 16581, 16583,  
 16585, 16587, 16589, 16591,  
 16593, 16595, 16597, 16599,  
 16601, 16603, 16605, 16607,  
 16609, 16611, 16613, 16615,  
 16617, 16619, 16621, 16623,  
 16625, 16627, 16629, 16631,  
 16633, 16635, 16637, 16639,  
 16641, 16643, 16645, 16647,  
 16649, 16651, 16653, 16655,  
 16657, 16659, 16661, 16663,  
 16665, 16667, 16669, 16671,  
 16673, 16675, 16677, 16679,  
 16681, 16683, 16685, 16687,  
 16719, 16721, 16723, 16724,  
 16725, 16726, 16727, 16728,  
 16729, 16730, 16731, 16732,  
 16734, 16736, 16737, 16738,

16739, 16740, 16741, 16742,  
 16744, 16746, 16749, 16751,  
 16753, 16754, 16755, 16756,  
 16757, 16758, 16759, 16760,  
 16761, 16762, 16764, 16766,  
 16768, 16769, 16770, 16771,  
 16772, 16774, 16775, 16776,  
 16777, 16779, 16781, 16783,  
 16784, 16785, 16786, 16787,  
 16788, 16789, 16790, 16791,  
 16792, 16794, 16796, 16797,  
 16798, 16799, 16800, 16801,  
 16802, 16804, 16806, 16809,  
 16811, 16813, 16814, 16815,  
 16816, 16817, 16818, 16819,  
 16820, 16821, 16822, 16824,  
 16826, 16828, 16829, 16830,  
 16831, 16832, 16834, 16835,  
 16836, 16837, 16891

\\_ . . . . . 331, 662,  
 3208, 3211, 3926, 7563, 7586,  
 14456, 14457, 14458, 14459,  
 14460, 14461, 14462, 14463,  
 14464, 14465, 14466, 14467,  
 14886, 14887, 14888, 14889,  
 14890, 14891, 14892, 14893,  
 14894, 14895, 14896, 14897,  
 14898, 14899, 14900, 14901,  
 14902, 14903, 14904

## A

\ABREVE . . 16711, 16783, 16784,  
 16785, 16786, 16787  
 \abreve 16704, 16723, 16724, 16725,  
 16726, 16727  
 \AccFancyVerbLineautorefname .  
 . . . . . 3235  
 \Accfootnoteautorefname . . 3215  
 \Acctheoremautorefname . . 3239  
 \ACIRCUMFLEX . 16712, 16788,  
 16789, 16790, 16791, 16792  
 \acircumflex . . 3266, 16705, 16728,  
 16729, 16730, 16731, 16732  
 \Acrobatmenu . 2408, 4108, 6013,  
 9297, 10042, 10581, 11442  
 \active . . . . . 1244, 1251,  
 4600, 4601, 4602, 4603, 4604,  
 4605, 4608, 4610, 4613, 4621,  
 14145, 14175  
 \add@accent . . . . . 543  
 \addcontentsline 7358, 7429, 7805,  
 7810, 7881, 14412  
 \addtocontents 7850, 7882, 8155,  
 8207, 14400, 14401  
 \addtocounter . 6727, 6750, 6759,  
 6770, 6774, 6979, 9899



\addvspace . . . . .	14400, 14401	
\adl@LT@array . . . . .	6841	
\advance . . . . .	467, 468, 1265, 4749, 5088, 5416, 5462, 5860, 5861, 5864, 5865, 6208, 6216, 6253, 7708, 7718, 7721, 7735, 9047, 9412, 9496, 9534, 9574, 10741, 11888, 12168, 12457, 12500, 12501, 12937, 12981, 12982, 13220, 13276, 13320, 13321, 13930, 13932, 13933, 13939, 13948, 14049, 14265	16217, 16219, 16225, 16227, 16257, 16259, 16261, 16263, 16277, 16279, 16293, 16295, 16301, 16303, 16341, 16343, 16345
\AE . . . . .	14673, 15042, 15469	\baa . . . . . 16847
\ae . . . . .	14738, 15106, 15471	\back@none . . . . 3018, 3028, 3041
\afterassignment . . . . .	1858, 1864, 1870	\back@page . . . . . 3020, 3033
\AfterBeginDocument . . . . .	361, 375	\back@section . . . 3019, 3025, 3031, 3037
\aftergroup . . . . .	7245	\back@slide . . . . . 3021, 3030
\alef . . . . .	16846	\backcite . . . . . 7623
\alefhamza . . . . .	16842	\backref . . . . . 7654, 12196
\aleflowerhamza . . . . .	16844	\baselineskip . . . 2411, 5873, 5874, 5875, 5876, 5877, 5878, 9467, 10903, 10935, 11620
\alefmadda . . . . .	16841	\bbl@cite@choice . . . . . 7470
\alefmaqura . . . . .	16875	\BeforeTeXIVht . . . . . 2857
\Alph . . . . .	6302, 6620, 6621	\begin . . . . . 615, 12217, 16896
\alph . . . . .	6303, 6950, 6981	\belowpdfbookmark . . . . . 14045
\AMSautorefname . . . . .	8564	\bfseries . . . . . 593, 7569, 7592, 8338, 8358, 8375, 8492
\anchor@spot . . . . .	5027, 5040, 5047, 5053, 5055, 8856, 9353, 9448, 10318, 10390, 10884, 11230, 11233, 11825, 12105	\bgroup . . . . . 671, 4716, 7232, 7244, 8763, 9863, 10318, 10924, 12656, 12748, 12769
\appendix . . . . .	6617, 6618	\bible . . . . . 7461, 7467, 7471, 7496, 7511, 7527, 7537
\appendixautorefname . . . . .	3083, 3101, 3119, 3137, 3155, 3173, 3191, 3223, 3224, 3249, 3267, 8574	\bitsetGetDec . . . 5140, 5273, 5291, 5305, 5318, 5334, 5366, 5391
\arabic . . . . .	6299, 6523, 6526, 6529, 6530, 6531, 6533, 6534, 6535, 6536, 6538, 6539, 6540, 6541, 6542, 6543, 6546, 6556, 6557, 6597, 6734, 7890, 7896, 7944, 7958, 8143, 8148, 8150	\bitsetGetHex . . . . . 5141
\AtBeginDocument . . . . .	362, 6049, 6831, 12197	\bitsetGetSetBitList . . . . . 5129
\AtBeginShipout . . . . .	6161, 9332, 9845	\bitsetIsEmpty . . . 5270, 5288, 5302, 5315, 5331, 5363, 5388
\AtBeginShipoutBox . . . . .	6165, 6168, 9327, 9328, 9846, 9847	\bitsetReset . . . . 5243, 5277, 5296, 5310, 5323, 5339, 5371
\AtBeginShipoutFirst . . . . .	6172, 10214, 11637, 11752	\bitsetSetValue . . . . . 5109, 5119
\AtEndDocument . . . . .	6063	\BOOKMARK . . . . 13977, 14056
\AtEndOfPackage . . . . .	372	\booknumberline . . . 13960, 13965
\AtVeryEndDocument . . . . .	6401, 12853	\box . . . . . 5867, 6168, 8777, 9877, 11277, 11280
\author . . . . .	6097, 6107	\bullet . . . . . 8290, 8298, 8308, 8316
\autopageref . . . . .	4243, 8445	
\autoref . . . . .	652, 4242, 8464, 12192	
\ayn . . . . .	16864	
		<b>C</b>
		\C . . . . . 14852, 15957, 15959
		\c . . . . . 884, 888, 894, 3185, 3193, 3194, 3195, 6120, 6127, 14440, 14452, 14464, 14675, 14740, 14860, 14875, 14894, 14905, 15044, 15108, 15230, 15232, 15275, 15277, 15285, 15287, 15305, 15307, 15339, 15341, 15355, 15357, 15363, 15365, 15510, 15512, 16012, 16015, 16229, 16231, 16249, 16251
<b>B</b>		\c@footnote . . . . 7121, 7194, 7202, 7314
\b . . . . .	883, 887, 893, 14442, 14454, 14466, 14858, 14881, 14900,	
		\c@Hy@tempcnt . . . 4734, 4735, 4741, 4749
		\c@note . . . . . 7711
		\c@overlay . . . . . 7711
		\c@page . . . . . 6208, 6216, 6233, 6253, 6254, 6258, 6270, 6272, 6277, 6284, 6286, 6288, 6317, 7708, 7712, 7714, 7718, 7721, 7722, 7735, 7765
		\c@secnumdepth . . . 14325, 14343, 14358
		\c@slide . . . . . 7711
		\c@slidesection . . . 8156, 8284, 8285
		\c@slidesubsection . . . . . 8208
		\c@tocdepth . . . . . 3425, 3430
		\calc@bm@number . . . 14187, 14263
		\calculate@pdfview . . . 3890, 3893
		\capitalacute . . . . . 14908
		\capitalbreve . . . . . 14915
		\capitalcaron . . . . . 14914
		\capitalcedilla . . . . . 14905
		\capitalcircumflex . . . . . 14909
		\capitaldieresis . . . . . 14911
		\capitaldotaccent . . . . . 14917
		\capitalgrave . . . . . 14907
		\capitalhungarumlaut . . . . . 14912
		\capitalmacron . . . . . 14916
		\capitalnewtie . . . . . 14919
		\capitalogonek . . . . . 14906
		\capitalring . . . . . 14913
		\capitaltie . . . . . 14918
		\capitaltilde . . . . . 14910
		\caption . . . . . 7328, 7330, 7417, 7419
		\catcode . . . . . 172, 173, 184, 185, 186, 187, 206, 809, 810, 944, 1244, 1251, 1969, 1970, 2103, 2104, 2160, 2161, 2162, 4459, 4461, 4599, 4600, 4601, 4602, 4603, 4604, 4605, 4608, 4610, 4613, 4621, 4631, 4722, 4723, 8589, 10965, 10966, 14074, 14076, 14145, 14148, 14175, 14178
		\cf@encoding . . . . . 1569
		\chapterautorefname . . . 3084, 3102, 3120, 3138, 3156, 3174, 3192, 3221, 3250, 3268, 8575
		\chapternumberline . . . 13962, 13967
		\char . . . . . 12883, 14078, 14115
		\chardef . . . . . 275, 308, 2643, 2644, 2645, 2646, 2896, 2898, 4384, 4414, 11225, 11228, 11234
		\check@bm@number . . . 14198, 14206, 14256, 14264
		\CheckBox . . . . . 5824
		\CheckCommand . . . . . 7191

<code>\checkcommand</code> . . . . .	42, 6769, 7305, 7312, 7319, 7417, 7427, 7521, 7533, 7881, 7884, 7944, 8372		
<code>\checklatex</code> . . . . .	4, 7304, 7416, 7520, 7880, 8371		
<code>\checkpackage</code> . . . . .	9, 6768, 7943		
<code>\ChoiceBox</code> . . . . .	5466		
<code>\ChoiceMenu</code> . . . . .	5821		
<code>\citation</code> . . . . .	7566, 7589, 7615		
<code>\citeauthoryear</code> . . . . .	7681, 7687		
<code>\citeN</code> . . . . .	7678		
<code>\CJK@char</code> . . . . .	1247		
<code>\CJK@charx</code> . . . . .	1248		
<code>\CJK@CJK</code> . . . . .	1236		
<code>\CJK@eight</code> . . . . .	1447, 1450, 1564		
<code>\CJK@five</code> . . . . .	1447, 1449, 1564		
<code>\CJK@four</code> . . . . .	1446, 1449, 1563		
<code>\CJK@hundred</code> . . . . .	1513		
<code>\CJK@hundredmillion</code> . . . . .	1476		
<code>\CJK@ignorespaces</code> . . . . .	1246		
<code>\CJK@kern</code> . . . . .	1234		
<code>\CJK@minus</code> . . . . .	1438		
<code>\CJK@nine</code> . . . . .	1447, 1451, 1564		
<code>\CJK@null</code> . . . . .	1540		
<code>\CJK@one</code> . . . . .	1446, 1448, 1563		
<code>\CJK@punctchar</code> . . . . .	1249		
<code>\CJK@punctcharx</code> . . . . .	1250		
<code>\CJK@seven</code> . . . . .	1447, 1450, 1564		
<code>\CJK@six</code> . . . . .	1447, 1450, 1564		
<code>\CJK@ten</code> . . . . .	1448, 1449, 1450, 1451, 1528		
<code>\CJK@tenthousand</code> . . . . .	1461, 1482		
<code>\CJK@thousand</code> . . . . .	1498		
<code>\CJK@three</code> . . . . .	1446, 1449, 1563		
<code>\CJK@two</code> . . . . .	1446, 1448, 1563		
<code>\CJK@zero</code> . . . . .	1446, 1464, 1481, 1485, 1501, 1516, 1538		
<code>\CJKdigits</code> . . . . .	1323		
<code>\CJKkern</code> . . . . .	1235		
<code>\CJKnumber</code> . . . . .	1322		
<code>\close@pdfink</code> . . . . .	8850, 8875, 8884, 8919, 8959, 8995, 9322		
<code>\closeout</code> . . . . .	6043, 14065		
<code>\clubpenalty</code> . . . . .	7098, 7100		
<code>\codeof</code> . . . . .	7645		
<code>\color@begingroup</code> . . . . .	8763, 9863		
<code>\color@endgroup</code> . . . . .	8770, 9870		
<code>\columnwidth</code> . . . . .	7239		
<code>\comma@entry</code> . . . . .	5457, 5464, 5466		
<code>\comma@parse</code> . . . . .	5456		
<code>\contentsline</code> . . . . .	6052, 6053, 6065, 7851, 7855, 7882, 7884		
<code>\copy</code> . . . . .	8773, 9328, 9847, 9873		
<code>\count@</code> . . . . .	848, 850, 851, 854, 857, 860, 863, 1263, 1264, 1265, 1266, 1859, 3441, 3442, 3447, 3448, 5087,	5088, 5103, 5399, 5414, 5416, 5440, 5462, 5478, 9042, 9043, 9044, 9045, 9046, 9047, 9050, 10737, 10738, 10739, 10740, 10741, 10744	
<code>\CurrentBorderColor</code> . . . . .	8840, 8842, 8869, 8871, 8879, 8881, 8886, 10380, 10414, 10416, 10432, 10434, 10453, 10455, 10517, 10519, 10536, 10538		
<code>\currentpdfbookmark</code> . . . . .	14037		
<code>\curu</code> . . . . .	15909		
<code>\cyr</code> . . . . .	631, 3203, 3205, 3208, 3211, 3214, 3215, 3216, 3217, 3218, 3219, 3220, 3221, 3222, 3223, 3225, 3227, 3228, 3229, 3230, 3231, 3232, 3233, 3234, 3235, 3236, 3237, 3238, 3239, 3240		
<code>\CYRA</code> . . . . .	15748, 16123, 16127		
<code>\cyra</code> . . . . .	3205, 3212, 3214, 3219, 3222, 3227, 3228, 3234, 3238, 15813, 16125, 16129		
<code>\CYRABHCH</code> . . . . .	16087, 16092		
<code>\cyrabhch</code> . . . . .	16089, 16095		
<code>\CYRABHCHDSC</code> . . . . .	16091		
<code>\cyrabhchdsc</code> . . . . .	16094		
<code>\CYRABHDZE</code> . . . . .	16155		
<code>\cyrabhdze</code> . . . . .	16157		
<code>\CYRABHHA</code> . . . . .	16045		
<code>\cyrabhha</code> . . . . .	16047		
<code>\CYRAE</code> . . . . .	16131		
<code>\cyrae</code> . . . . .	16133		
<code>\CYRB</code> . . . . .	15750		
<code>\cyrb</code> . . . . .	3219, 15815		
<code>\CYRBYUS</code> . . . . .	15933		
<code>\cyrbyus</code> . . . . .	15935		
<code>\CYRC</code> . . . . .	15793		
<code>\cyrc</code> . . . . .	15858		
<code>\CYRCH</code> . . . . .	15795, 16195		
<code>\cyrch</code> . . . . .	3211, 3212, 3220, 15860, 16197		
<code>\CYRCHLDSC</code> . . . . .	16115		
<code>\cyrchldsc</code> . . . . .	16117		
<code>\CYRCHRDSC</code> . . . . .	16075		
<code>\cyrchrdsc</code> . . . . .	16077		
<code>\CYRCHVCRS</code> . . . . .	16079		
<code>\cyrchvcrs</code> . . . . .	16081		
<code>\CYRD</code> . . . . .	15756		
<code>\cyrd</code> . . . . .	3208, 3211, 3222, 3227, 3228, 15821		
<code>\CYRDJE</code> . . . . .	15718		
<code>\cyrdje</code> . . . . .	15883		
<code>\CYRDZE</code> . . . . .	15724		
<code>\cyrdze</code> . . . . .	15889		
<code>\CYRDZHE</code> . . . . .	15746		
<code>\cyrdzhe</code> . . . . .	15911		
<code>\CYRE</code> . . . . .	15713, 15716, 15758, 16135		
<code>\cyre</code> . . . . .	3205, 3211, 3212, 3225, 3237, 3238, 3239, 15823, 15878, 15881, 16137		
<code>\cyreref</code> . . . . .	16181		
<code>\CYREREV</code> . . . . .	15807, 16179		
<code>\cyrerev</code> . . . . .	15872		
<code>\CYRERY</code> . . . . .	15803, 16203		
<code>\cyrery</code> . . . . .	3203, 3205, 15868, 16205		
<code>\CYRF</code> . . . . .	15789		
<code>\cyrf</code> . . . . .	15854		
<code>\CYRFITA</code> . . . . .	15949		
<code>\cyrfita</code> . . . . .	15951		
<code>\CYRG</code> . . . . .	15720, 15754		
<code>\cyrg</code> . . . . .	3221, 15819, 15885		
<code>\CYRGDSC</code> . . . . .	16199		
<code>\cyrgdsc</code> . . . . .	16201		
<code>\CYRGHCRS</code> . . . . .	15999		
<code>\cyrghcrs</code> . . . . .	16001		
<code>\CYRGHK</code> . . . . .	16003		
<code>\cyrghk</code> . . . . .	16005		
<code>\CYRGUP</code> . . . . .	15995		
<code>\cyrgup</code> . . . . .	15997		
<code>\CYRH</code> . . . . .	15791		
<code>\cyrh</code> . . . . .	15856		
<code>\CYRHDSC</code> . . . . .	16067		
<code>\cyrhdsc</code> . . . . .	16069		
<code>\CYRHHK</code> . . . . .	16207		
<code>\cyrrhk</code> . . . . .	16209		
<code>\CYRHRDSN</code> . . . . .	15801		
<code>\cyrhrdsn</code> . . . . .	15866		
<code>\CYRI</code> . . . . .	15741, 15764, 15767, 16159, 16163		
<code>\cyri</code> . . . . .	3205, 3208, 3212, 3218, 3223, 3225, 15829, 15832, 15906, 16161, 16165		
<code>\CYRIE</code> . . . . .	15722		
<code>\cyrie</code> . . . . .	15887		
<code>\CYRII</code> . . . . .	15726, 15729		
<code>\cyrii</code> . . . . .	15891, 15894		
<code>\CYRIOTBYUS</code> . . . . .	15937		
<code>\cyriotbyus</code> . . . . .	15939		
<code>\CYRIOTE</code> . . . . .	15921		
<code>\cyriote</code> . . . . .	15923		
<code>\CYRIOTLYUS</code> . . . . .	15929		
<code>\cyriotlyus</code> . . . . .	15931		
<code>\CYRISHRT</code> . . . . .	15766		
<code>\cyrishrt</code> . . . . .	15831		
<code>\CYRISHRTDSC</code> . . . . .	15983		
<code>\cyrishrtdsc</code> . . . . .	15985		
<code>\CYRIZH</code> . . . . .	15953, 15957		
<code>\cyrizh</code> . . . . .	15955, 15959		
<code>\CYRJE</code> . . . . .	15731		
<code>\cyrje</code> . . . . .	15896		
<code>\CYRK</code> . . . . .	15739, 15769		



14438, 14439, 14440, 14441, 14442, 14443	3723, 3729, 3735, 3741, 3747, 3753, 3759, 3765, 3798, 3805, 3839, 3890, 3891, 3911, 3918, 3928, 3958, 3959, 3962, 3965, 3968, 3971, 3974, 3977, 3980, 4003, 4006, 4009, 4730, 4759, 4765, 4777, 5081, 5169, 5225, 5527, 5532, 5545, 5573, 5615, 5618, 5621, 5625, 5628, 5632, 5635, 5639, 5643, 5647, 5650, 5654, 5657, 5660, 5663, 5666, 5669, 5685, 5688, 5691, 5694, 5697, 5700, 5730, 5733, 5736, 5739, 5758, 5764, 5779, 5785, 5802, 5807, 5813, 6414, 6425, 11309, 11311, 11314, 11316, 11318, 11327, 11335, 11342, 11344, 11346, 11348, 11350, 11352, 11361, 11371, 11373, 11375, 11376, 11382, 11391, 11393, 11395, 11397, 11399, 11401, 11403, 11405, 11407, 11409, 11411, 11413, 11415, 11417, 11419, 11421, 11422, 11423, 11424, 11425, 11426, 11427, 11428, 11429, 11430, 11431, 11432	3667, 3670, 3671, 3672, 3675, 3676, 3682, 3683, 3684, 3685, 3996, 3997, 3998, 3999, 4000, 4001, 5129, 6961, 7561, 7584, 12451, 12513, 12718, 12725, 12735, 12931, 12994, 13270, 13336, 14144, 14174
\DeclareVoidOption . . 2854, 2868, 2878, 2883, 2888, 2901, 2911, 2916, 2921, 2927, 2956, 2973, 2980, 2985, 2990, 2995, 3344, 3352, 3360, 3370	\documentclass . . . . . 2	\dospecials . . . . . 14153, 14183
\DefaultHeightofCheckBox . 5873, 12607, 13107, 13474	\dots . . . . . 555	\dp . . . . . 5863, 5866, 7237, 9402, 9482, 9519, 9559, 11268, 11271, 11878, 12153, 13215
\DefaultHeightofChoiceMenu . . . . 5875, 12447, 12927, 13266	\dth@counter . . 7027, 7028, 7058, 7059, 7086	\dth@everypar . . . . . 7074
\DefaultHeightofReset . . . . 5871, 12581, 13080, 13442	\dvipdfm@setdim . . 13212, 13253, 13352, 13377, 13408, 13433, 13461, 13489	
\DefaultHeightofSubmit . . . 5869, 12564, 13058, 13419		
\DefaultHeightofText 5877, 12424, 12903, 13234		
\DefaultHeightofTextMultiline . . . 5878, 12422, 12901, 13232		
\DefaultOptionsofCheckBox 5883, 12609, 13109, 13476		
\DefaultOptionsofComboBox 5886		
\DefaultOptionsofListBox . 5885		
\DefaultOptionsofPopdownBox . . . . . . 5887		
\DefaultOptionsofPushButton . . . 5882, 12539, 13031, 13387		
\DefaultOptionsofRadio . . . 5888		
\DefaultOptionsofReset . . . 5881, 12584, 13083, 13445		
\DefaultOptionsofSubmit . . 5880, 12567, 13061, 13422		
\DefaultOptionsofText . . . . 5884, 12429, 12908, 13239		
\DefaultWidthofCheckBox . 5874, 12606, 13106, 13473		
\DefaultWidthofChoiceMenu . . . . 5876, 12446, 12926, 13265		
\DefaultWidthofReset . . . . 5872, 12580, 13079, 13441		
\DefaultWidthofSubmit . . . 5870, 12563, 13057, 13418		
\DefaultWidthofText 5879, 12419, 12898, 13229		
\define@key . . . . . 2542, 2544, 2587, 2602, 2605, 2608, 2616, 2619, 2629, 2632, 2635, 2652, 2664, 2666, 2669, 2672, 2689, 2693, 2696, 2699, 2702, 2705, 2708, 2711, 2746, 2804, 2893, 3001, 3012, 3015, 3022, 3051, 3070, 3073, 3310, 3367, 3379, 3394, 3419, 3422, 3426, 3454, 3459, 3463, 3466, 3473, 3485, 3492, 3502, 3505, 3508, 3512, 3527, 3536, 3546, 3553, 3564, 3571, 3588, 3678, 3687, 3717,	\df@tag . . . . . 7905, 7911	
	\DH . . . . . 14693, 15062	
	\dh . . . . . 14762, 15130	
	\dhal . . . . . 16855	
	\dimen@ . . . . . 506, 507, 511, 1865, 1933, 1934, 1937, 1939, 4042, 4043, 4045, 4052, 4053, 10704, 10705, 10707, 11267, 11282, 11285	
	\dimexpr . . 518, 2229, 2231, 2239, 2244, 2247, 2249, 2263, 2265, 2268, 2269, 2276, 2279, 2282, 2283, 2284, 2285, 2295, 2300, 2308, 2312, 2317, 2327, 2330, 2335, 2338, 2343, 2344	
	\ding . . . . . 5705, 5708	
	\DingObject . . . . . 13005	
	\discretionary . . . . . 673	
	\divide . . . . . 9043, 10738	
	\DJ . . . 3275, 14694, 15194, 16713	
	\dj . . . . 3272, 3273, 15196, 16706	
	\do . . . . 1264, 2559, 2564, 2569, 3534, 3566, 3567, 3568, 3569, 3618, 3619, 3620, 3621, 3622, 3623, 3626, 3627, 3628, 3629, 3630, 3631, 3634, 3635, 3638, 3639, 3640, 3641, 3642, 3645, 3646, 3647, 3648, 3649, 3652, 3653, 3654, 3655, 3656, 3659, 3660, 3661, 3662, 3663, 3666,	
	\end . . . . . 616, 16897	
	\endeqnarray . . . 6907, 6925, 6932	
	\endequation . . . . . 6870, 6902	
	\endForm . . . . . 5521	
	\endinput . . . . . 64, 2865, 2940, 4239, 4344, 8332, 10893, 12215, 14271	
	\endlinechar . . . . . 4598	
	\endNoHyper . . . . . 5995	
	\EndPreamble . . . . . 12218	
	\endsubeqnarray . . . . 6936, 6947	
	\eqnarray . . . . . 6906, 6908, 6929	

<code>\equal</code> . . . . .	7642	<code>\Fld@align</code> . . . .	5510, 5692, 13684, 13742, 13809	<code>\Fld@disabledfalse</code> . . . . .	5504
<code>\equation</code> . .	6869, 6878, 6882, 6891	<code>\Fld@altname</code> . .	5642, 5644, 13595, 13597, 13669, 13671	<code>\Fld@export</code> 5234, 5237, 5244, 5536	
<code>\equationautorefname</code>	3077, 3095, 3113, 3131, 3149, 3167, 3185, 3203, 3204, 3243, 3261, 8564, 8568	<code>\Fld@annotflags</code>	5289, 5291, 13680, 13711, 13738, 13771, 13805, 13840, 13875	<code>\Fld@findlength</code> . . .	12705, 12716
<code>\errmessage</code> . . . . .	3307	<code>\Fld@annotnames</code> .	13667, 13681, 13712, 13739, 13772, 13806, 13841, 13876	<code>\Fld@flags</code> . . . . .	5303, 5305, 5316, 5318, 5332, 5334, 5364, 5366, 5389, 5391, 13683, 13714, 13741, 13774, 13808, 13843, 13878
<code>\es@roman</code> . . . . .	632	<code>\Fld@bcolor</code> . . .	5512, 5734, 13695, 13697, 13758, 13760, 13786, 13788, 13813, 13825, 13827	<code>\Fld@format@code</code> . .	5743, 13621, 13623
<code>\es@save@dot</code> . . . . .	1222	<code>\fid@bcolor</code> . . . . .	13746	<code>\Fld@getmethodfalse</code> . . . . .	5556
<code>\escapechar</code> . .	524, 833, 4186, 6954, 14004, 14185, 14236	<code>\Fld@bordercolor</code> . . . .	5513, 5737, 13691, 13693, 13718, 13726, 13728, 13745, 13754, 13756, 13782, 13784, 13812, 13821, 13823, 13847, 13855, 13857, 13882, 13890, 13892	<code>\Fld@getmethodtrue</code> . . . . .	5558
<code>\eTeX</code> . . . . .	564, 12223	<code>\Fld@bordersep</code> . . . .	5514, 5686	<code>\Fld@height</code> . .	5661, 12420, 12436, 12447, 12502, 12519, 12531, 12564, 12581, 12607, 12615, 12899, 12917, 12927, 12983, 13010, 13023, 13058, 13080, 13107, 13117, 13230, 13246, 13266, 13322, 13334, 13370, 13419, 13442, 13474, 13482
<code>\etex@unexpanded</code> . . .	1797, 1804	<code>\Fld@borderstyle</code> . . . . .	5516, 5670, 5671, 5672, 5682, 13685, 13716, 13743, 13776, 13810, 13845, 13898	<code>\Fld@hiddenfalse</code> . . . . .	5192
<code>\eTeXversion</code> . . .	9002, 9004, 9006	<code>\Fld@borderwidth</code> . . .	5515, 5667, 5857, 5860, 5861, 5864, 5865, 12500, 12501, 12981, 12982, 13320, 13321, 13685, 13716, 13743, 13776, 13810, 13845, 13898	<code>\Fld@hiddenttrue</code> . . . . .	5193
<code>\evensidemargin</code> . . . . .	7792	<code>\Fld@calculate@code</code>	5745, 13629, 13631	<code>\Fld@invisiblefalse</code> . . . . .	5188
<code>\everypar</code> . . . . .	7100	<code>\Fld@cbsymbol</code>	5517, 5698, 13699	<code>\Fld@invisibletrue</code> . . . . .	5189
<code>\ExecuteOptions</code>	4057, 4058, 4062	<code>\Fld@charsize</code> . .	5507, 5508, 5664, 12499, 12980, 13319, 13701, 13764, 13792, 13831, 13880	<code>\Fld@keystroke@code</code>	5746, 13617, 13619
<code>\ext@figure</code> . . . . .	8140	<code>\Fld@checkedfalse</code> . . . . .	5503	<code>\Fld@listcount</code> . . . .	12511, 12516, 12527, 12992, 12997, 13011, 13017, 13331, 13339, 13343, 13348, 13359, 13366
<code>\ext@table</code> . . . . .	8139	<code>\Fld@checkequals</code> . . .	5607, 12452, 12514, 12726, 12736, 12932, 12995, 13271, 13337	<code>\Fld@loc</code> . . . . .	5616
<code>\extra@b@citeb</code> . . . . .	7568	<code>\Fld@choices</code> . .	5396, 5404, 5406, 5410, 5419, 5427, 5432, 5480, 5482, 5490, 5491, 13766	<code>\Fld@mappingname</code> . .	5646, 5648, 13599, 13601, 13673, 13675
<code>\extrasvietnam</code> . . . . .	3353	<code>\Fld@color</code> . . . .	5511, 5740, 13702, 13765, 13793, 13832	<code>\Fld@maxlen</code> . .	5509, 5655, 13836
<code>\extrasvietnamese</code> . . . . .	3345	<code>\Fld@default</code> . . . . .	5421, 5424, 5426, 5689, 12417, 12433, 12444, 12484, 12512, 12604, 12655, 12673, 12687, 12695, 12702, 12728, 12738, 12768, 12778, 12896, 12913, 12924, 12965, 12993, 13104, 13227, 13244, 13263, 13304, 13332, 13471, 13794, 13795, 13796, 13833	<code>\Fld@menulength</code> . . . .	5505, 5658, 12449, 12453, 12499, 12717, 12718, 12721, 12929, 12933, 12980, 13268, 13272, 13319
		<code>\Fld@DingDef</code> . .	5698, 5701, 5703	<code>\Fld@name</code> . .	5640, 12416, 12443, 12536, 12603, 12654, 12659, 12670, 12671, 12682, 12683, 12692, 12693, 12701, 12722, 12739, 12747, 12752, 12767, 12776, 12895, 12923, 13028, 13103, 13226, 13262, 13384, 13470, 13594, 13668
<b>F</b>				<code>\Fld@norotatefalse</code> . . . . .	5205
<code>\fa</code> . . . . .	16867			<code>\Fld@norotatetrue</code> . . . . .	5204
<code>\FancyVerbLineautorefname</code>	3090, 3108, 3126, 3144, 3162, 3180, 3198, 3233, 3236, 3256, 3274, 8581			<code>\Fld@noviewfalse</code> . . . . .	5208
<code>\farsikaf</code> . . . . .	16888			<code>\Fld@noviewtrue</code> . . . . .	5209
<code>\farsiya</code> . . . . .	16890			<code>\Fld@nozoomfalse</code> . . . . .	5201
<code>\fatha</code> . . . . .	16880			<code>\Fld@nozoomtrue</code> . . . . .	5200
<code>\fbox</code> . . . . .	12887, 12890			<code>\Fld@onblur@code</code> . .	5748, 13637, 13639
<code>\Field@addtoks</code>	5595, 5626, 5629, 5780, 5803			<code>\Fld@onclick@code</code> . .	5742, 5814, 13732
<code>\Field@boolkey</code>	5082, 5170, 5589, 5619, 5622				
<code>\Field@toks</code> . .	5593, 5594, 5596, 12657, 12674, 12685, 12696, 12706, 12723, 12741, 12749, 12754, 12770, 12779				
<code>\Field@Width</code> . . . . .	5506, 5652				
<code>\figureautorefname</code> . . .	3080, 3098, 3116, 3134, 3152, 3170, 3188, 3218, 3246, 3264, 8571				
<code>\filename@area</code> . . . . .	4968				
<code>\filename@base</code> . . . . .	4968				
<code>\filename@ext</code> . .	4965, 4966, 4968, 4969				
<code>\filename@parse</code> . . . . .	4964				
<code>\find@pdfink</code> . . .	8819, 8873, 8883				
<code>\Fld@@@additionalactions</code> .	13616, 13659, 13663				
<code>\Fld@@@DingDef</code> .	5705, 5708, 5727				
<code>\Fld@additionalactions</code> . . .	13616, 13705, 13733, 13767, 13801, 13835, 13869, 13900				



`\Fld@onenter@code` . 5751, 13649, 13651  
`\Fld@onexit@code` . 5752, 13653, 13655  
`\Fld@onfocus@code` . 5747, 13633, 13635  
`\Fld@onmousedown@code` . 5749, 13641, 13643  
`\Fld@onmouseup@code` . 5750, 13645, 13647  
`\Fld@printfalse` . 5197  
`\Fld@printtrue` . 5196  
`\Fld@radiosymbol` . 5518, 5701, 13790  
`\Fld@rotation` . 5519, 5731, 13687, 13689, 13717, 13722, 13724, 13744, 13750, 13752, 13778, 13780, 13811, 13817, 13819, 13846, 13851, 13853, 13881, 13886, 13888  
`\Fld@submitflags` . 5271, 5273, 13867  
`\Fld@temp` 5704, 5706, 5709, 5710, 5719, 5720  
`\Fld@validate@code` . 5744, 13625, 13627  
`\Fld@value` 5422, 5429, 5431, 5695, 12418, 12433, 12445, 12483, 12484, 12897, 12913, 12925, 12964, 12965, 13228, 13244, 13264, 13303, 13304, 13834  
`\Fld@width` . 5651, 12419, 12432, 12436, 12446, 12482, 12493, 12495, 12519, 12531, 12551, 12563, 12571, 12580, 12594, 12606, 12612, 12615, 12898, 12912, 12917, 12926, 12963, 12974, 12976, 13010, 13023, 13044, 13057, 13065, 13079, 13093, 13106, 13113, 13117, 13229, 13243, 13246, 13265, 13302, 13313, 13315, 13334, 13370, 13401, 13418, 13426, 13441, 13455, 13473, 13480, 13482  
`\float@caption` . 7338, 7398  
`\float@makebox` . 7400, 7401  
`\floatingpenalty` . 7238  
`\fiq` . 639  
`\fiqq` . 637  
`\fmtname` . 7  
`\fmtversion` . 7  
`\fontencoding` 532, 536, 571, 12879  
`\fontfamily` . 572, 12878  
`\fontseries` . 573, 6994, 7020, 7051, 12880  
`\fontshape` . 574, 4525, 12881

`\fontsize` . 575  
`\footins` . 7232  
`\footnote` . 5058  
`\footnoteautorefname` 3078, 3096, 3114, 3132, 3150, 3168, 3186, 3207, 3210, 3244, 3262, 8565, 8569  
`\footnotesep` . 7236, 7243  
`\footnotesize` . 604, 7234  
`\footnotetext` . 7194  
`\footref` . 7262, 7263  
`\foreignlanguage` . 620  
`\Form` . 5520  
`\Form@action` 5530, 12646, 13865  
`\Form@boolkey` . 5524  
`\Form@htmlfalse` . 5523, 5542  
`\Form@htmltrue` . 5535  
`\Form@method` 5554, 5562, 12646  
`\frq` . 640  
`\frqq` . 638  
`\futurelet` . 692, 1588  
`\FV@SetLineNo` . 6708  
`\FV@StepLineNo` 6707, 6709, 6710

## G

`\G` . 14851, 14877, 14896, 15477, 15479, 15481, 15483, 15485, 15487, 15488, 15490, 15492, 15494, 15496, 15498, 15500  
`\g@addto@macro` 6175, 6347, 7470, 7747, 7750, 7753, 7802, 9236, 10207, 10728, 11016, 11589, 11675, 11737, 12039, 12229  
`\G@refundefinedtrue` . 4851, 7570, 7593, 8337, 8357, 8374, 8491  
`\gaf` . 16889  
`\Gauge` . 5830  
`\GenericError` . 680, 3711  
`\GenericInfo` . 682, 3709  
`\GenericWarning` . 269, 681, 3710  
`\getpagerefnumber` . 6822  
`\getrefbykeydefault` . 6778, 6779  
`\gexmode` . 10759, 10760, 10848  
`\ghayn` . 16865  
`\Gin@setfile` . 7982, 7983  
`\glossary` . 646  
`\glq` . 635  
`\glqq` . 633  
`\Greeknumeral` . 1086  
`\greeknumeral` . 1085  
`\grq` . 636  
`\grqq` . 634  
`\guill@spacing` . 1015  
`\guillemotleft` . 1055, 14620, 14800, 14988, 16693  
`\guillemotright` 1056, 14651, 14801, 15020, 16694

`\guilsinglleft` 14551, 14802, 16399, 16695  
`\guilsinglright` 14553, 14803, 16401, 16696

## H

`\H` . 14847, 14879, 14898, 14912, 15327, 15329, 15391, 15393, 16191, 16193  
`\h` 3265, 16721, 16726, 16731, 16736, 16741, 16746, 16751, 16756, 16761, 16766, 16771, 16776, 16781, 16786, 16791, 16796, 16801, 16806, 16811, 16816, 16821, 16826, 16831, 16836  
`\H@@footnotemark` . 7107, 7124, 7178, 7267, 7274, 7286, 7297  
`\H@@footnotetext` . 7106, 7116, 7143, 7177, 7216, 7275, 7289, 7297  
`\H@@mpfootnotetext` . 7114, 7126, 7128, 7179  
`\H@definecounter` . 7887, 7889  
`\H@endeqnarray` . 6907, 6926  
`\H@endequation` . 6870, 6902  
`\H@endsubeqnarray` . 6936, 6948  
`\H@eqnarray` . 6906, 6911  
`\H@equation` . 6869, 6893  
`\H@item` . 6544, 6550, 7478, 7503  
`\H@newctr` . 7892, 7894  
`\H@old@part` . 14335, 14346  
`\H@old@chapter` . 14305, 14314  
`\H@old@sect` 14356, 14367, 14376  
`\H@old@spart` . 14348, 14354  
`\H@old@ssect` . 14291, 14296  
`\H@refstepcounter` . 6559, 6569, 6709, 6833, 6846, 6892, 7033, 7064, 7333, 8153, 8206  
`\H@seteqlabel` . 7923, 7925  
`\H@subeqnarray` . 6935, 6939  
`\ha` . 16873  
`\Haa` . 16852  
`\halign` . 655  
`\hamza` . 16840  
`\HAR@checkcitations` . 7658  
`\HAR@citetoaux` . 7614  
`\HAR@tempa` . 7659, 7660, 7661, 7662, 7663, 7664  
`\harvardcite` . 7608, 7645  
`\harvarditem` . 7633  
`\hbox` . 1857, 1863, 1869, 2441, 3440, 3446, 5003, 5005, 5652, 5851, 5852, 5853, 5854, 7598, 7787, 8763, 9327, 9403, 9413, 9483, 9497, 9520, 9535, 9560, 9575, 9846, 9863, 10924, 11271, 11285, 11879,

11889, 12154, 12169, 12794, 13245, 13333, 13369, 13399, 13427, 13456, 13481, 14283	\hvtex@param@motion . . . 10634, 10657, 10678, 10685	\Hy@AtBeginDocument . . . . 364, 994, 2730, 2790, 2861, 2936, 2992, 3382, 4039, 4082, 4097, 4235, 4241, 4340, 4493, 4583, 5929, 6040, 6481, 6714, 7605, 8411, 8558, 8758, 9244, 9858, 10372, 11764, 11802, 12809, 12810
\hc@currentHref . . . . . 7349	\hvtex@parse@trans 10607, 10629	\Hy@AtBeginDocumentHook 365, 370, 376, 377
\HCode 12646, 12648, 12659, 12668, 12680, 12688, 12690, 12721, 12727, 12732, 12737, 12751, 12756, 12760, 12763, 12772	\hvtex@produce@trans . . . 10668, 10674	\Hy@AtEndOfPackage . 367, 891, 2357, 3346, 3354, 3361, 4223, 4249, 4255, 4445
\headerps@out 6448, 11579, 11590, 11662, 11676, 11729, 11738, 11751, 11765, 11804, 11922, 12040, 12230	\hvtex@token 10626, 10637, 10643, 10650, 10655, 10658, 10661, 10663	\Hy@AtEndOfPackageHook . 368, 371, 373, 374
\hfill 5851, 5852, 5853, 5854, 7489, 7522	\hvtex@trans@code 10611, 10612, 10613, 10614, 10615, 10616, 10617, 10630, 10676, 10677, 10679, 10681, 10683, 10685, 10687, 10689, 10691, 10692, 10693, 10694, 10695, 10697	\Hy@author . . . . . 6109, 6113
\Hfootnoteautorefname . . . 8565	\hvtex@trans@effect@Blinds 10611	\Hy@babelnormalise . 4814, 4816
\hhyperref . . . . . 5063	\hvtex@trans@effect@Box . 10612	\Hy@backout . . 4592, 5980, 5984, 7444
\hoffset . . . . . 7788	\hvtex@trans@effect@Dissolve . . . . . . . 10613	\Hy@backreffalse 430, 3042, 3064, 4247
\hphantom . . . . . 614	\hvtex@trans@effect@Glitter . . . . . . . . 10614	\Hy@backreftrue 3035, 3039, 3061
\href . 647, 4713, 5057, 5058, 6021	\hvtex@trans@effect@R . . 10617	\Hy@BeginAnnot 9888, 9905, 9946, 9983, 10015, 10044
\href@ . . . . . 4716, 4719, 4724	\hvtex@trans@effect@Split 10615	\Hy@bibcite . . . . . 7467, 7471
\href@split . . . . . 4724, 4725	\hvtex@trans@effect@Wipe 10616	\Hy@bookmarksdepth 3425, 3430, 3442, 3448, 13915
\hsize . . . . . 7239	\hvtex@trans@par . 10650, 10654, 10656, 10659, 10662	\Hy@bookmarksnumberedfalse . . . . . . . 431
\hskip 1868, 1946, 2482, 2483, 4710, 5857, 12794	\hvtex@trans@params . . . 10644, 10646, 10670	\Hy@bookmarksopenfalse . . . 432
\hspace . . . . . 643, 7648, 7649	\Hy@@CleanupFile . . . 5003, 5005	\Hy@bookmarkstrue . . . . . 433
\hss . . . . . 7796, 14288	\Hy@@DefNameKey . . 2584, 2586	\Hy@bookmarkstype . 3460, 3462, 7818, 13926
\ht . . . . . 5859, 5862, 9411, 9486, 9495, 9502, 9523, 9533, 9540, 9563, 9573, 9580, 11267, 11887, 12167, 13213	\Hy@@Escapeform . 13560, 13573, 13579	\Hy@boolkey . . 2511, 2603, 2606, 2609, 2630, 2633, 2636, 2667, 2670, 2673, 2690, 2694, 2697, 2700, 2703, 2706, 2709, 2712, 3013, 3016, 3071, 3368, 3380, 3395, 3420, 3423, 3464, 3467, 3528, 3688, 3960, 3963, 3966, 3969, 3972, 3975, 3978, 3986, 4007, 4010, 6415
\htmladdimg . . . . . 5056	\Hy@@SectionAnchor 14278, 14281	\Hy@BorderArrayPatch . . 11322, 11325, 11588, 12038
\htmladdnormallink . . . . . 5057	\Hy@@temp 3470, 3472, 5754, 5756	\Hy@breaklinks@unsupported . . . . . . . 2678, 10876
\htmladdnormallinkfoot . . . 5058	\Hy@@VersionCheck . . . 291, 310	\Hy@breaklinksfalse . . . . . 434
\htmlref . . . . . 5059	\Hy@abspage . . 6195, 6281, 6397, 6474	\Hy@breaklinksunhbox . . 11221, 11275
\Huge . . . . . 601	\Hy@Acrobatmenu . . . 4124, 4165, 9298, 10043, 10582, 11443	\Hy@CatcodeWrapper 4454, 4513, 4557, 4586
\huge . . . . . 605	\Hy@activeanchorfalse 4596, 8864, 9355, 9370, 9449, 9459, 9775, 10303, 10320, 10391, 10404, 10910, 11827, 11842, 12107, 12121	\Hy@chapapp . . 6614, 6622, 6648, 14309, 14320, 14402
\Hurl . . . . . 4799, 4801, 4803	\Hy@activeanchortrue . . . . 8860, 9352, 9366, 9447, 9456, 9771, 10299, 10317, 10389, 10401, 10900, 11824, 11838, 12104, 12117	\Hy@chapterstring . . . 6609, 6611, 6614, 6647
\hv@pdf@char 14073, 14138, 14139, 14140, 14141	\Hy@ActiveCarriageReturn 4632, 4635	\Hy@CheckOptionValue . . . 2554, 2591
\hvtex@buffer 10623, 10627, 10635, 10638, 10647, 10651, 10667	\Hy@AllowHyphens . 4706, 10898, 10930, 11254	
\hvtex@gettoken . . 10622, 10636, 10640, 10649, 10653	\Hy@AnchorName . . . 4836, 4838, 4841, 4843, 4867, 4869, 4873, 4878, 4880	
\hvtex@gettoken@ . 10623, 10625	\Hy@appendixstring . 6613, 6622	
\hvtex@par@dimension . . 10618, 10659		
\hvtex@par@direction . . . 10619, 10662		
\hvtex@par@duration 10620, 10654		
\hvtex@par@motion 10621, 10656		
\hvtex@param@dimension 10631, 10660, 10678, 10681		
\hvtex@param@direction . 10632, 10663, 10689, 10697		
\hvtex@param@duration . 10633, 10655, 10702, 10704		

\Hy@CJKbookmarksfalse . . .	436		
\Hy@cjkpu . . . . .	1257, 1259, 1280		
\Hy@CleanupFile 5001, 8925, 9948,			
10468, 11514			
\Hy@colorlink . . . . .			
3374, 4517, 4525, 4529, 8759,			
8845, 8918, 8958, 8994, 9321,			
9353, 9376, 9407, 9420, 9448,			
9464, 9489, 9505, 9527, 9544,			
9567, 9584, 9859, 9937, 9976,			
10008, 10037, 10062, 10390,			
10412, 10482, 10508, 10543,			
10576, 10594, 10928, 11205,			
11207, 11825, 11848, 11883,			
11896, 12105, 12127, 12162,			
12175			
\Hy@colorlinksfalse . . . . .	3371		
\Hy@ColorList . . . . .	3533, 3534		
\Hy@CounterExists . .	6509, 6522,		
6525			
\Hy@currentbookmarklevel	13921,		
13931, 13932, 13938, 13945,			
14038, 14041, 14046, 14050			
\Hy@debugfalse . . . . .	426		
\Hy@debugtrue . . . . .	425		
\Hy@defaultdriver . . .	4329, 4354,		
4364, 4375			
\Hy@DefFormAction .	5528, 5530		
\Hy@DefNameKey . . .	2583, 3565,		
3617, 3625, 3633, 3637, 3644,			
3651, 3658, 3665, 3669, 3674,			
3681, 3995			
\Hy@DEST . . . . .	11222, 11289		
\Hy@DestName . . . . .	8806, 8813		
\Hy@DisableOption . . . . .			
2540, 4117, 4118, 4119, 4121,			
4228, 4254, 4391, 4392, 4393,			
4394, 4395, 4396, 4397, 4398,			
4399, 4400, 4401, 4402, 4403,			
4404, 4405, 4406, 4407, 4408,			
4453, 4506, 4534, 4535, 4594,			
4595, 5933, 5934, 5935, 5936,			
5937, 5938, 5939, 5940, 5941,			
5942, 5943, 5944, 5945, 5946,			
5947, 5948, 5949, 5950, 5951,			
5952, 5953, 5954, 5955, 5956,			
6133, 6349, 7301, 7987, 8085,			
8086, 8683, 8786, 9154, 9155,			
9156, 9157, 9158, 9159, 9160,			
9161, 9162, 9163, 9293, 9614,			
9615, 9616, 9617, 9618, 9619,			
9620, 9621, 9622, 9623, 9886,			
10105, 10106, 10107, 10108,			
10109, 10110, 10111, 10112,			
10113, 10114, 10232, 10374,			
10828, 10829, 10830, 10831,			
10832, 10833, 10834, 10835,			
10836, 10837, 11095, 11096,			
11097, 11098, 11099, 11100,			
11101, 11102, 11103, 11104,			
11655, 11948, 11949, 11950,			
11951, 11952, 11953, 11954,			
11955, 11956, 11957			
\Hy@DistillerDestFix 7761, 10841,			
10843			
\Hy@draftfalse . . . . .	393		
\Hy@drafttrue . . . . .	394		
\Hy@driver 470, 2683, 2858, 2870,			
2880, 2885, 2890, 2903, 2913,			
2918, 2923, 2930, 2933, 2959,			
2975, 2982, 2987, 2997, 4257,			
4260, 4264, 4267, 4271, 4274,			
4276, 4280, 4286, 4290, 4293,			
4297, 4302, 4306, 4309, 4313,			
4316, 4318, 4322, 4327, 4331,			
4334, 4337, 4348, 4351, 4354,			
4363, 4364, 4375, 4377, 4383,			
4385, 4387			
\Hy@dth@currentHref 7035, 7066,			
7091			
\Hy@DviErrMsg 2825, 2827, 2830,			
2836, 2849			
\Hy@DviModetrue . . .	2834, 2839		
\Hy@DvipdfmxOutlineOpentru			
. . . . .	4415, 4422		
\Hy@endAnnot 9894, 9940, 9979,			
10011, 10040, 10065			
\Hy@endcolorlink . . . . .			
3375, 4521, 4526, 4530, 8768,			
8851, 9353, 9390, 9414, 9422,			
9448, 9472, 9493, 9507, 9531,			
9546, 9571, 9586, 9868, 9896,			
10390, 10463, 10484, 10510,			
10545, 10578, 10596, 10955,			
11214, 11825, 11864, 11890,			
11898, 12105, 12141, 12166,			
12177			
\Hy@endWrap .	4455, 4457, 4458,		
4491			
\Hy@Error 263, 279, 285, 299, 2734,			
2847, 2872, 2905, 2943, 2950,			
2961, 2967, 4149, 4767, 4934,			
5229, 5353, 5549, 5581, 5759,			
5808, 12542, 12588, 13035,			
13087, 13391, 13449			
\Hy@escapeform . .	12435, 12518,		
12530, 12554, 12572, 12595,			
12614, 12915, 13000, 13021,			
13047, 13067, 13094, 13115,			
13250, 13342, 13373, 13405,			
13429, 13457, 13486, 13554,			
13584, 13591			
\Hy@escapestring . .	13551, 13619,		
13623, 13627, 13631, 13635,			
13639, 13643, 13647, 13651,			
13655, 13699, 13732, 13833,			
13834, 13865			
\Hy@EveryPageAnchor 7760, 7803			
\Hy@EveryPageBoxHook . . . . .			
. . . . .	6159, 6163, 6167, 7802,		
10207, 10728, 11016			
\Hy@EveryPageHook .	6158, 6162,		
6347, 9236			
\Hy@ExchangeLeftParenthesis . .			
. . . . .	8614, 8620		
\Hy@ExchangeRightParenthesis .			
. . . . .	8624, 8630		
\Hy@false .	2405, 2521, 3027, 3063,		
5578			
\Hy@finalfalse . . . . .	394		
\Hy@finaltrue . . . . .	393		
\Hy@FirstPage . . . . .	4135		
\Hy@FirstPageHook . . . . .			
6160, 6173, 6175, 6446, 6447,			
11589, 11675, 11737, 12039,			
12229			
\Hy@FixNotFirstPage 9325, 9326,			
9332			
\Hy@float@caption . . .	7339, 7389,		
7391			
\Hy@float@currentHref 7392, 7394,			
7396, 7404, 7407, 7409			
\Hy@footnote@currentHref .	5928,		
7131, 7136, 7146, 7151, 7154,			
7166, 7168, 7207, 7248, 7251			
\Hy@FormObjects .	12847, 13123,		
13177, 13187, 13497, 13547			
\Hy@frenchlinksfalse . . . . .	3373		
\Hy@Gin@setfile . . . .	7982, 7984		
\Hy@GlobalStepCount 468, 6281,			
6678, 6701, 7778, 8195, 8246			
\Hy@gtemp .	806, 807, 4187, 4193,		
4195, 5426, 5427, 5431, 5432,			
5443, 5457, 7183, 7188, 8638,			
8640, 13612, 13614			
\Hy@href . . . . .	4716, 4718		
\Hy@href@nextactionraw . . . . .			
. . . . .	4753, 4776, 4778, 4779,		
4781, 4786, 4790, 4792, 8914,			
8954, 8990, 9317, 9933, 9972,			
10004, 10033, 10053, 10427,			
10497, 10565, 11539, 11568			
\Hy@href@page 4731, 4733, 4737,			
4738, 4740, 4747, 4750, 8950,			
9967, 11535			
\Hy@hyperfiguresfalse . . . . .	438		
\Hy@hyperfootnotetrue . . .	440		
\Hy@hyperindextrue . . . . .	441		
\Hy@hypertexnamesfalse . .	2361		
\Hy@hypertexnametrue . . .	442		
\Hy@IfStringEndsWith 4969, 4981			



\Hy@imPLICITtrue . . . . .	443				
\Hy@Info . . . . .	266, 2529, 4198, 4200, 4203, 4205, 4208, 4210, 4213, 4215, 4218, 4220, 4438, 4444, 4522, 4527, 4531, 4675, 4702, 5136, 5890, 5892, 5895, 5897, 5900, 5902, 5905, 5907, 5910, 5912, 5915, 5917, 5920, 5922, 7545, 7606, 7823, 7840				
\Hy@InfoNoLine . . . . .	267, 4230, 4232, 12084				
\Hy@LastPage . . . . .	4138				
\Hy@level . . . . .	13927, 13929, 13940, 13945, 13946, 13947, 13978				
\Hy@levelcheck . . . . .	13928, 13943				
\Hy@linkcounter . . . . .	472, 474, 6678, 6679, 6701, 6702, 7926, 8195, 8196, 8200, 8246, 8247, 8251				
\Hy@linkfileprefix . . . . .	3504, 4953, 9393, 10268, 11868, 12144				
\Hy@LinkMath . . . . .	10919, 10921, 10926, 10958, 11246, 11248, 11253, 11255, 11261, 11263				
\Hy@linktoc . . . . .	2638, 2640, 2648, 2650, 2660, 7859				
\Hy@linktoc@all . . . . .	2646				
\Hy@linktoc@none . . . . .	2643				
\Hy@linktoc@page . . . . .	2638, 2645, 2648				
\Hy@linktoc@section . . . . .	2640, 2644, 2650				
\Hy@linktocpagefalse . . . . .	444				
\Hy@localanchornamefalse . . . . .	445				
\Hy@LT@currentHref . . . . .	6848, 6859				
\Hy@LT@footnotetext . . . . .	7206, 7215				
\Hy@make@anchor . . . . .	7900, 7906, 7912				
\Hy@make@df@tag@@ . . . . .	7904, 7919				
\Hy@make@df@tag@@@ . . . . .	7910, 7920				
\Hy@MakeCurrentHref . . . . .	6689, 6702				
\Hy@MakeCurrentHrefAuto . . . . .	6700, 6782, 7901, 13906, 14293, 14309, 14320, 14350, 14364, 14402				
\Hy@MakeRemoteAction . . . . .	4736, 8928, 9951, 11517				
\Hy@maketitle@end . . . . .	7278, 7283, 7285				
\Hy@maketitle@optarg . . . . .	7276, 7281				
\Hy@Match . . . . .	314, 316, 3004, 3514, 3574, 3591, 3934, 4781, 5672				
\Hy@MaybeStopNow . . . . .	2926, 4063, 4066				
\Hy@Message . . . . .	268, 2860, 2935, 4234, 4339, 4383, 10324, 10328, 10331, 10334, 10337, 10340, 10343, 10346,	12413, 12623, 12626, 12629, 12632, 12635, 12638, 12640, 12641, 12650, 12787, 13182			
		\Hy@naturalnamesfalse . . . . .	447		
		\Hy@nestingfalse . . . . .	448		
		\Hy@newline@author . . . . .	6152		
		\Hy@newline@title . . . . .	6151		
		\Hy@next . . . . .	6297, 6307, 6312, 14319, 14328, 14331		
		\Hy@nextfalse . . . . .	4167, 7997		
		\Hy@NextPage . . . . .	4129		
		\Hy@nexttrue . . . . .	4168, 4169, 4170, 7998, 7999, 8000		
		\Hy@number . . . . .	3903, 3907, 3915		
		\Hy@numberline . . . . .	13922, 13959, 13960, 13961, 13962		
		\Hy@ObsoletePaperOption . . . . .	2612, 2620		
		\Hy@ocgcolor . . . . .	8762, 8776, 9862, 9876		
		\Hy@ocgcolorlinksfalse . . . . .	3372, 4501		
		\Hy@Org@chapter . . . . .	14317, 14332		
		\Hy@OrgMakeLabel . . . . .	12198, 12205		
		\Hy@OutlineName . . . . .	14197, 14252		
		\Hy@OutlineRerunCheck . . . . .	14062, 14161, 14243		
		\Hy@PageAnchorSlide . . . . .	7720, 7758, 7771		
		\Hy@PageAnchorSlidesPlain . . . . .	7707, 7757, 7766		
		\Hy@pageanchortrue . . . . .	451		
		\Hy@pagecounter . . . . .	473, 475, 6740, 7778, 7780		
		\Hy@pageheight . . . . .	4053, 11677, 11766		
		\Hy@param . . . . .	6646, 6647, 6648, 6675, 6679		
		\Hy@pdfafalse . . . . .	466		
		\Hy@pdfcenterwindowfalse . . . . .	435		
		\Hy@pdfdisplaydoctitlefalse . . . . .	465		
		\Hy@pdfencoding@pdfdoc . . . . .	2785		
		\Hy@pdfescapeformfalse . . . . .	437		
		\Hy@pdfffitwindowfalse . . . . .	439		
		\Hy@pdfmarkerrorfalse . . . . .	11185		
		\Hy@pdfmarkerrortrue . . . . .	11355, 11364		
		\Hy@pdfmenubartrue . . . . .	446		
		\Hy@pdfminorversion . . . . .	8650, 8656, 8659, 8667, 8672, 8674, 8677, 8681		
		\Hy@pdfnewwindowfalse . . . . .	450		
		\Hy@pdfnewwindowsetfalse . . . . .	449, 3983		
		\Hy@pdfnewwindowsettrue . . . . .	3985, 4755		
		\Hy@pdfnewwindowtrue . . . . .	4756		
		\Hy@pdfpagehiddenfalse . . . . .	453		
		\Hy@pdfpagelabelsfalse . . . . .	6182		
		\Hy@pdfpagelabelstrue . . . . .	452		
		\Hy@pdfstringdef . . . . .	805, 5401, 5409		
		\Hy@pdfstringfalse . . . . .	454, 5958		
		\Hy@pdfstringtrue . . . . .	659, 5930		
		\Hy@pdftoolbartrue . . . . .	459		
		\Hy@pdfusetitlefalse . . . . .	462		
		\Hy@pdfversion . . . . .	2812, 2823, 5403, 8672, 8674, 8678, 8681, 13606		
		\Hy@pdfwindowuitrue . . . . .	464		
		\Hy@plainpagesfalse . . . . .	455		
		\Hy@PrevPage . . . . .	4132		
		\Hy@ps@CR . . . . .	11719, 11726, 11731, 11732, 11749, 11770, 11771, 11772, 11778, 11785, 11792, 11799		
		\Hy@pstringB . . . . .	9070, 9075, 10145, 10157, 11158, 11174, 12011, 12027		
		\Hy@pstringD . . . . .	8927, 8952, 9950, 9969, 11516, 11537		
		\Hy@pstringdef . . . . .	8585, 8805, 8829, 8889, 8926, 8927, 8964, 8965, 9070, 9713, 9914, 9949, 9950, 9984, 9985, 10016, 10145, 10411, 10489, 10552, 10553, 11158, 11353, 11362, 11489, 11515, 11516, 11547, 11548, 12011, 13577, 14196, 14212		
		\Hy@pstringDest . . . . .	8805, 8806, 9713, 9760, 11353, 11354, 11358, 11362, 11363, 11367		
		\Hy@pstringF . . . . .	8924, 8925, 8926, 8946, 8964, 8983, 8988, 9947, 9948, 9949, 9964, 9984, 9997, 10002, 10467, 10468, 10472, 10552, 10559, 10563, 11513, 11514, 11515, 11532, 11547, 11563, 11566		
		\Hy@pstringName . . . . .	14196, 14197, 14212, 14226		
		\Hy@pstringP . . . . .	8965, 8988, 9985, 10002, 10553, 10563, 11548, 11566		
		\Hy@pstringURI . . . . .	8889, 8910, 10016, 10029, 10411, 10423, 10489, 10493, 11489, 11501		
		\Hy@PutCatalog . . . . .	6343, 6351, 6463		
		\Hy@raisedlink . . . . .	2429, 6602, 6784, 6805, 6806, 6807, 6810, 6860, 6899, 6902, 7088, 7134, 7149, 7220, 7246, 7377, 7455, 7479, 7484, 7504, 7902, 7927, 11577, 11660, 11918, 12082,		

13907, 14285, 14310, 14321, 14351, 14403	10881, 10895, 11817, 11831, 12097, 12111	\Hy@temp . . . . . 687, 694, 809, 881, 982, 985, 993, 994, 2618, 2623, 2624, 2625, 2626, 2627, 2628, 3469, 3478, 3479, 3480, 3481, 3482, 3483, 3484, 3534, 3535, 3536, 3539, 3541, 3544, 3554, 3557, 3558, 3559, 3560, 3561, 3562, 3572, 3585, 3589, 3604, 3766, 3767, 3770, 3773, 3776, 3801, 3809, 3810, 3811, 3812, 3813, 3814, 3815, 3816, 3817, 3981, 3982, 4156, 4160, 4161, 4162, 4163, 4262, 4264, 4269, 4271, 4274, 4288, 4290, 4295, 4297, 4304, 4306, 4311, 4313, 4316, 4376, 4377, 5126, 5130, 5131, 5142, 5226, 5227, 5228, 5230, 5234, 5546, 5547, 5548, 5550, 5554, 5555, 5670, 5682, 5753, 5769, 5770, 5771, 5772, 5773, 5774, 5775, 5776, 5778, 5784, 5790, 5791, 5792, 5793, 5794, 5795, 5796, 5797, 5798, 5799, 5800, 6238, 6241, 6250, 6252, 6256, 6260, 6304, 6306, 6734, 6737, 6740, 6746, 6872, 6878, 6986, 7009, 7256, 7262, 8094, 8095, 9085, 9114, 9116, 9633, 9638, 9644, 9648, 9651, 9656, 9687, 9689, 10117, 10160, 10162, 11058, 11061, 11065, 11066, 11072, 11073, 11079, 11107, 11112, 11118, 11122, 11125, 11130, 11163, 11165, 11226, 11227, 11231, 11319, 11320, 11328, 11329, 11433, 11434, 11960, 11965, 11971, 11975, 11978, 11983, 12016, 12018, 13559, 13560, 14194, 14200, 14208, 14223
\Hy@raiselinksfalse . . . 456, 7607	\Hy@SaveSavedSpaceFactor . . . . 2424, 9399, 9479, 9516, 9556, 11875, 12150	\Hy@temp@A 718, 719, 1815, 1817, 1828, 1830, 1835, 1836, 1839, 3802, 3804, 8016, 8017, 8018, 8025, 8053, 8054, 8055, 8064
\Hy@RemoveDurPageAttr . 9193, 9206	\Hy@SaveSpaceFactor . . . . 2413, 2433, 2444, 9398, 9410, 9478, 9492, 9515, 9530, 9555, 9570, 10923, 10959, 11244, 11256, 11264, 11874, 11886, 12149, 12165, 12201, 12208	\Hy@temp@B . . . . . 1816, 1817
\Hy@RemoveHidPageAttr . 9216, 9228	\Hy@scanauthor . . . . . 6107, 6112	\Hy@tempa . . . . 2512, 2514, 2516, 2517, 2519, 2521, 2523, 2526, 2529, 2530, 3023, 3024, 3025, 3027, 3028, 3030, 3031, 3033, 3037, 3041, 3052, 3054, 3056, 3057, 3059, 3063, 4634, 4635, 4646, 4650, 4819, 4823, 4888, 4891, 4900, 4902, 5533, 5534, 5574, 5575, 5578, 5582, 6287, 6289, 6327, 6329, 6474, 6476, 6956, 6958, 6959, 6962, 6963,
\Hy@RemovePercentCr . . . 4648, 4652, 4657	\Hy@scanoptauthor . . 6107, 6108	
\Hy@RemoveTransPageAttr 9168, 9182	\Hy@scanopttitle . . . . 6098, 6099	
\Hy@Reserved@a 4883, 6909, 6938, 12653, 12703, 12766	\Hy@scantitle . . . . . 6098, 6103	
\Hy@RestoreCatcodes 205, 4059, 4390	\Hy@secnum@part . 14338, 14340, 14343	
\Hy@RestoreLastskip . 2450, 8807, 9356, 9371, 9450, 9460, 9762, 10304, 10321, 10392, 10405, 10891, 10911, 11828, 11843, 12108, 12122	\Hy@SectionAnchorHref . . . . 657, 14276, 14298, 14369	
\Hy@RestoreSavedSpaceFactor . . 2425, 9401, 9481, 9518, 9558, 11877, 12152	\Hy@SectionHShift 14275, 14284, 14294, 14365	
\Hy@RestoreSpaceFactor . . . . . 2416, 2442, 2447, 9400, 9408, 9415, 9480, 9490, 9498, 9517, 9528, 9536, 9557, 9568, 9576, 10925, 10961, 11252, 11260, 11287, 11876, 11884, 11891, 12151, 12163, 12170, 12206, 12210	\Hy@seminarslidesfalse . . . 8145	
\Hy@ReturnAfterElseFiFiEnd . . . . . . . 478, 1831	\Hy@seminarslidetrue . . . . 8143	
\Hy@ReturnAfterFiFiEnd . . 477, 1823, 1837, 1915, 1922	\Hy@setbreaklinks . . . 2675, 2679, 2691, 8646, 9703	
\Hy@ReturnEnd . . 476, 477, 478, 1843, 1927	\Hy@SetCatcodes 181, 231, 4061	
\Hy@safe@activesfalse 479, 4547, 4552, 4897, 8480	\Hy@SetNewWindow . . . . . 3989, 8948, 8985, 9971, 9999, 10560, 11531, 11562	
\Hy@safe@activetrue . 479, 4176, 4545, 4550, 4628, 4665, 4673, 4701, 4818, 4889, 8387, 8469, 14154, 14184	\Hy@setouterhbox . 11220, 11251	
\Hy@samed@currentHref . . . 7164, 7167	\Hy@setpagesizetrue . . . . . 457	
\Hy@samed@footnotemark . 7272, 7287	\Hy@setpdfborder . . . . . . . . . 3607, 8835, 8894, 8932, 8969, 9301, 9925, 9957, 9991, 10022, 10055, 10431, 10452, 10475, 10501, 10535, 10569, 10587	
\Hy@samed@footnotetext . . 7273, 7290	\Hy@setpdfversiontrue . . . . 2811	
\Hy@samed@hook . . . . 6137, 6147	\Hy@setref@link . . . . . 8343, 8346	
\Hy@samed@refstepcounter . 6586, 6834	\Hy@SlidesFormatOptionalPage . . . 6211, 7706, 7725, 7729	
\Hy@SavedSpaceFactor . . . 2412, 2414, 2419, 2420, 2426, 12203	\Hy@SlidesPage 6218, 7739, 7740, 7746, 7748, 7751, 7754	
\Hy@SaveLastskip . . . 2450, 8803, 9344, 9359, 9441, 9453, 9710, 10291, 10307, 10382, 10395,	\Hy@slidetitle . 8172, 8174, 8181, 8189, 8199, 8223, 8225, 8232, 8240, 8250	
	\Hy@StartlinkName . . 8833, 8847	
	\Hy@StepCount 467, 6258, 12453, 12516, 12718, 12933, 12997, 13272, 13339, 14042, 14047, 14123	
	\Hy@stoppedeasilyfalse 4068, 6508	
	\Hy@stoppedeasilytrue 4065, 6505	
	\Hy@StringLocalhost . 4999, 5000, 5015	
	\Hy@tabularx@hook . . 7176, 7184	

6964, 7334, 7339, 7344, 7817,  
 7818, 7836, 7837, 7843, 8159,  
 8160, 8211, 8212, 9377, 9378,  
 10272, 10420, 10421, 11849,  
 11850, 12128, 12129, 13925,  
 13926, 13949, 13951, 13970,  
 13971, 13979, 14003, 14005,  
 14006, 14008, 14009, 14392,  
 14417, 14422, 14425, 14428  
 \Hy@tempb 6288, 6289, 6328, 6329,  
 13950, 13951, 13979  
 \Hy@tempcolor . . . 10937, 10939,  
 10952, 11028, 11030, 11042  
 \Hy@TempPageAnchor . . . 7709,  
 7765, 7775, 7779, 7795  
 \Hy@Test@Alph . . . . . 6635, 6658  
 \Hy@Test@alph . . . . . 6626, 6654  
 \Hy@testname . . . . . 8821, 8822,  
 8827, 8829, 8830, 8844, 9906,  
 9907, 9912, 9914, 9916, 9932,  
 10439, 10440, 10445, 10449,  
 10522, 10523, 10528, 10532,  
 11033, 11034, 11039, 11050  
 \Hy@texhtfalse . . . . . 458  
 \Hy@texhttrue . . . . . 2855, 4258  
 \Hy@TheSlideOptionalPage 7724,  
 7728, 7733, 7742  
 \Hy@title . . . . . 6100, 6104  
 \Hy@toclevel . . . 7828, 7832, 7845  
 \Hy@true . 2404, 2517, 2519, 3057,  
 3059, 5575  
 \Hy@typexmlfalse . . . . . 460  
 \Hy@undefinedname . . . . 8818,  
 8825, 8827, 9901, 9910, 9912,  
 10408, 10443, 10445, 10526,  
 10528, 11024, 11037, 11039  
 \Hy@unicodfalse . . 461, 785, 795,  
 2741, 2742, 2750, 3743, 3749,  
 6736, 7770, 13608  
 \Hy@unicodetrue 2742, 6408, 6422  
 \Hy@useHidKeyfalse . . . . 3526  
 \Hy@useHidKeytrue . . . . . 3530  
 \Hy@UseMaketitleInfos . . . . .  
 . . . 6153, 9127, 9595, 10077,  
 10817, 11056, 11929  
 \Hy@UseMaketitleString . . 6134,  
 6154, 6155  
 \Hy@UseNameKey . . . . .  
 . . . . 2596, 9092, 9093, 9094,  
 9095, 9096, 9097, 9098, 9099,  
 9118, 9663, 9664, 9665, 9666,  
 9667, 9668, 9669, 9670, 9691,  
 10124, 10125, 10126, 10127,  
 10128, 10129, 10130, 10131,  
 10164, 10789, 10790, 10791,  
 10792, 10793, 10794, 10795,  
 10796, 11137, 11138, 11139,  
 11140, 11141, 11142, 11143,  
 11144, 11167, 11990, 11991,  
 11992, 11993, 11994, 11995,  
 11996, 11997, 12020  
 \Hy@varioref@refstepcounter 6825,  
 6832  
 \Hy@varioref@undefined . . . 6816,  
 6820, 8475  
 \Hy@VerboseAnchor . 4698, 8804,  
 9345, 9360, 9442, 9454, 9711,  
 10292, 10308, 10383, 10396,  
 10882, 10896, 11818, 11832,  
 12098, 12112  
 \Hy@verbosefalse . . . . . 426, 463  
 \Hy@VerboseGlobalTemp . . 4674,  
 4675, 4676, 4677, 4681  
 \Hy@VerboseLinkInfo 4681, 4682,  
 4685, 4692  
 \Hy@VerboseLinkStart . . . . .  
 . . . . . 4670, 8867, 8877,  
 9375, 9427, 9463, 9475, 9903,  
 10248, 10271, 10410, 10515,  
 10914, 11026, 11847, 11903,  
 12126, 12183  
 \Hy@VerboseLinkStop 4686, 8852  
 \Hy@verbostrue . . . . . 425  
 \Hy@VersionCheck . . . . 276, 4387  
 \Hy@VersionChecked . . 275, 308,  
 4384, 4386  
 \Hy@vt@PutCatalog . 6380, 6382  
 \Hy@VTeXversion . . 6360, 6372,  
 10471, 10600, 10736, 14075  
 \Hy@WarnHTMLFieldOption . .  
 . . 5600, 5633, 5636, 5786  
 \Hy@Warning . . . . . 264, 339,  
 501, 1755, 2534, 2549, 2574,  
 2654, 2769, 2774, 3386, 3438,  
 3517, 3580, 3599, 3778, 3825,  
 3833, 3944, 4497, 4742, 4785,  
 4903, 5025, 5183, 5538, 5601,  
 5675, 6418, 6433, 7809, 8456,  
 8505, 8823, 9744, 9748, 9908,  
 10441, 10524, 11035, 11356,  
 11365, 13934, 13952  
 \Hy@WarningNoLine . 265, 2613,  
 2681, 2795, 3489, 3550, 3694,  
 3794, 4046, 4115, 4266, 4275,  
 4292, 4308, 4317, 6081, 6183,  
 6374, 6488, 6721, 7819, 7974,  
 11193  
 \Hy@WarningPageBorderColor .  
 . . . . 3547, 3549, 3551  
 \Hy@WarningPageColor . . . 3486,  
 3488, 3490  
 \Hy@WarnOptionDisabled . 2546,  
 2548  
 \Hy@WarnOptionValue . . . 2527,  
 2533, 3044, 3066  
 \Hy@wrapper@babel . 4174, 4192  
 \Hy@WrapperDef . . . . 4184, 8799,  
 9343, 9358, 9440, 9452, 9709,  
 10290, 10306, 10381, 10394,  
 10880, 10894, 11816, 11830,  
 12096, 12110  
 \Hy@writebookmark . 2409, 7829,  
 8179, 8187, 8197, 8230, 8238,  
 8248, 13911, 14053  
 \Hy@xspace@end . . . . .  
 . . . . 4080, 4085, 4088, 4092,  
 4095, 4100, 4101, 4102, 4104,  
 4105, 4106, 4107, 4108, 5969,  
 5970, 5972, 5975, 5977, 5978,  
 5979, 5983, 5986, 5989, 5991,  
 5992, 5993, 8883, 8918, 8958,  
 8994, 9420, 9491, 9506, 9529,  
 9545, 9569, 9585, 9942, 9978,  
 10010, 10039, 10064, 10252,  
 10262, 10483, 10509, 10544,  
 10577, 10595, 11254, 11262,  
 11885, 11896, 12164, 12176,  
 12207  
 \HyC@cmd . . . . . 87, 109, 122  
 \HyC@check . . . . . 68, 71, 74  
 \HyC@checkcommand . 50, 57, 59  
 \HyC@checkFailed . . . . 146, 157  
 \HyC@checkItem . . 132, 133, 134,  
 135, 138  
 \HyC@checklong . . . . . 45, 53  
 \HyC@checkOk . . . . . 144, 154  
 \HyC@checkPackage . . 12, 16, 18  
 \HyC@cmd 62, 75, 87, 95, 118, 131  
 \HyC@date . . . . 11, 15, 23, 29, 31  
 \HyC@DeclareRobustCommand .  
 . . . . . 114  
 \HyC@def . . . . . 125  
 \HyC@defcmd . . . . . 47, 54, 93  
 \HyC@doCheck . . . . . 99, 130  
 \HyC@edef . . . . . 125  
 \HyC@getDate . . . . . 12, 14  
 \HyC@meaning . . . . . 152, 160  
 \HyC@nc@default . . . . 103, 105  
 \HyC@nc@noopt 88, 91, 103, 112,  
 123, 127  
 \HyC@nc@opt . . . . . 88, 101, 123  
 \HyC@newcommand . . . . . 86  
 \HyC@next . . . . . 48, 55, 60, 83  
 \HyC@noValue . 80, 81, 82, 85, 139  
 \HyC@optcmd . . . . . 107, 111  
 \HyC@org@cmd . . . . . 76  
 \HyC@org@optcmd . . . . 80, 111  
 \HyC@org@robustcmd . . 81, 120  
 \HyC@org@robustoptcmd . . . 82  
 \HyC@package 10, 22, 28, 34, 37, 38

\HyC@param . . . . .	78, 96, 102	\HyField@NewBitsetFlag . .	5074, 5077, 5085	\HyInd@org@wrindex .	8006, 8010, 8020, 8026, 8028, 8031
\HyC@robustcmd . .	115, 120, 121, 122	\HyField@NewFlag . .	5072, 5148, 5149, 5150, 5151, 5152, 5153, 5154, 5155, 5156, 5157, 5158, 5159, 5160, 5161, 5162, 5163, 5164, 5165, 5166, 5167, 5172, 5173, 5174, 5175, 5176, 5177, 5178, 5179, 5180, 5213, 5215, 5216, 5218, 5219, 5221, 5222, 5223, 5224	\HyInd@pagelink	8107, 8113, 8115, 8118
\HyC@star . . . . .	67, 70, 94	\HyField@NewFlagOnly . . .	5076, 5214, 5217, 5220	\HyInd@ParenLeft . . .	7989, 8017, 8054
\HyC@string . .	131, 152, 155, 158	\HyField@NewOption	5073, 5079	\HyInd@ParenRight . .	7990, 8018, 8025, 8055, 8064
\HyC@Toks . .	79, 90, 96, 106, 126	\HyField@PDFAFlagWarning . . .	5182, 5190, 5194, 5198, 5202, 5206, 5210	\HyInd@removespaces	8121, 8124, 8134
\HyCal@do . . . . .	495, 499	\HyField@PDFChoices . . . .	5394, 12529, 13019, 13368	\HyInfo@AddonHandler . . .	3820, 3823
\HyCal@scan . . . . .	486, 490, 514	\HyField@PrintFlags .	5123, 5269, 5287, 5301, 5314, 5330, 5362, 5387	\HyInfo@AddonList . .	3847, 3848, 3882, 3889
\HyColor@FieldBColor	5734, 5737	\HyField@SetFlag . . .	5115, 5255, 5261, 5266, 5300, 5328	\HyInfo@Addons	3868, 3884, 9151, 10102, 11088, 11092
\HyColor@FieldColor . . . . .	5740	\HyField@SetKeys . .	5498, 12428, 12459, 12462, 12481, 12538, 12566, 12583, 12608, 12907, 12939, 12942, 12961, 13030, 13060, 13082, 13108, 13238, 13278, 13281, 13300, 13386, 13421, 13444, 13475	\HyInfo@AddonUnsupportedtrue . . . .	9593, 10815, 11927
\HyColor@HyperrefBorderColor . . . . .	3537, 3555	\HyField@TheAnnotCount	13222, 13252, 13257, 13349, 13361, 13376, 13381, 13407, 13413, 13432, 13437, 13460, 13465, 13488, 13493	\HyInfo@do . . . .	3822, 3849, 3872
\HyColor@HyperrefColor . .	3474, 3493, 3494, 3495, 3496, 3497, 3498, 3499	\HyField@UseFlag . . .	5105, 5246, 5247, 5248, 5249, 5250, 5251, 5252, 5253, 5256, 5257, 5258, 5259, 5262, 5263, 5264, 5267, 5278, 5279, 5280, 5281, 5282, 5283, 5284, 5285, 5286, 5297, 5298, 5299, 5311, 5312, 5313, 5324, 5325, 5326, 5327, 5329, 5340, 5341, 5342, 5343, 5344, 5345, 5346, 5347, 5358, 5361, 5372, 5373, 5374, 5375, 5377, 5379, 5380, 5383, 5386	\HyInfo@GenerateAddons .	3866, 9128, 10078, 11057
\HyColor@UseColor . .	4519, 8765, 8776, 9865, 9876	\HyInd@@@wrindex . .	8012, 8015, 8046, 8052	\HyInfo@Key . .	3830, 3831, 3839, 3844, 3849, 3852, 3859, 3873, 3877
\HyField@@AddToFields .	12829, 12833	\HyInd@@@hyperpage .	8092, 8102	\HyInfo@KeyEscaped .	3829, 3830
\HyField@@PDFChoices . .	5421, 5422, 5437	\HyInd@@wrindex . . .	8007, 8008	\HyInfo@trapped@false	3770, 3789
\HyField@@SetFlag . .	5116, 5118	\HyInd@EncapChar . .	3074, 4056, 8002	\HyInfo@trapped@true	3767, 3788
\HyField@@UseFlag . .	5106, 5108	\HyInd@hyperpage . . .	8089, 8091, 8098	\HyInfo@trapped@unknown	3773, 3790
\HyField@AddToFields . .	12799, 12828, 12918, 13012, 13025, 13051, 13075, 13098, 13119			\HyInfo@TrappedUnsupported . . . .	3791, 3795, 9596, 10818, 11930
\HyField@AdvanceAnnotCount .	13219, 13248, 13344, 13374, 13402, 13430, 13458, 13484			\HyInfo@Value . . . . .	3843, 3845
\HyField@afields . .	12796, 12818, 12819, 12821, 12856			\HyLang@addto	3278, 3294, 3312, 3345, 3353
\HyField@AfterAuxOpen .	12809, 12816, 12834			\HyLang@afrikaans . . . . .	3076
\HyField@AnnotCount . . .	13217, 13220, 13223			\HyLang@DeclareLang	3292, 3321, 3322, 3323, 3324, 3325, 3326, 3327, 3328, 3329, 3330, 3331, 3332, 3333, 3334, 3335, 3336, 3337, 3338, 3339, 3340, 3341, 3342, 3343
\HyField@AuxAddToFields	12808, 12813, 12817, 12837			\HyLang@english . . . . .	3094
\HyField@FlagsAnnot	5276, 5295, 5309, 5322, 5338, 5370			\HyLang@french . . . . .	3112
\HyField@FlagsCheckBox .	5308, 12611, 13112, 13479			\HyLang@german . . . . .	3130
\HyField@FlagsChoice . . . .	5369, 12492, 12973, 13312			\HyLang@italian . . . . .	3148
\HyField@FlagsPushButton	5294, 12550, 12569, 12593, 13043, 13063, 13092, 13400, 13424, 13454			\HyLang@magyar . . . . .	3166
\HyField@FlagsRadioButton	5321, 12488, 12969, 13308			\HyLang@portuges . . . . .	3184
\HyField@FlagsSubmit . . .	5242, 12570, 13064, 13425			\HyLang@russian . . . . .	3202
\HyField@FlagsText	5337, 12431, 12911, 13242			\HyLang@spanish . . . . .	3242
\HyField@NeedAppearancesfalse . . . . .	5566, 5579			\HyLang@vietnamese .	3260, 3345, 3353
\HyField@NeedAppearancetrue . . . . .	5569, 5572, 5576			\HyLinguex@OrgB . . . . .	883, 887

\HyOpt@CheckDvi . . . 2843, 2879, 2884, 2889, 2912, 2917, 2922, 2974, 2981, 2986, 2991, 2996	12119, 13907, 14054, 14286, 14311, 14322, 14352, 14404	10013, 10255, 10268, 10487, 10549, 11022, 11487, 11867, 11871, 11904, 12144, 12146, 12184
\HyOpt@DriverFallback . . . 3000, 3003, 3004, 3008, 4353, 4358	\hyper@anchorstart . . . . . 4101, 5957, 5974, 5988, 6003, 6603, 6785, 6861, 6899, 6921, 6945, 7089, 7455, 7480, 7485, 7505, 7638, 7902, 7928, 8858, 9358, 9452, 9770, 10290, 10394, 10894, 11830, 12110, 13907, 14054, 14286, 14311, 14322, 14352, 14404	\hyper@livelink . . . . . 5971, 5996 \hyper@makecurrent . . 6599, 6644, 6847, 6898, 6920, 6944, 7034, 7065, 7165, 7351, 7393
\HyOpt@DriverType . . 4326, 4328, 4355, 4365, 4367, 4383	\hyper@chars . . . . . 4662, 8890, 9348, 9362, 9382, 9404, 9418, 9432, 9512, 9552, 10257, 10278, 10294, 10311, 10386, 10398, 10490, 11490, 11834, 11854, 11880, 11894, 11908, 12114, 12133, 12156, 12173, 12188	\hyper@n@malise . . . 4629, 4633 \hyper@nat@current . . . . . 7446 \hyper@nat@anchorend . . . . 7457 \hyper@nat@anchorstart . . . . 7454 \hyper@nat@linkbreak . . . . . 7451 \hyper@nat@linkend . . . . . 7448 \hyper@nat@linkstart . . . . . 7443 \hyper@normalise . . . 4057, 4062, 4606, 4716, 4719, 4800, 4802, 4804, 4825, 5528
\HyOrg@addtoreset . . . 7932, 7934, 7961	\hyper@currentanchor . . . 10899, 10908, 10931, 10948	\hyper@pageduration . . 9189, 9238, 10189, 10209, 10713, 10730, 10988, 11018
\HyOrg@appendix . . . 6617, 6623	\hyper@currentlinktype . . 10932, 10936, 10940	\hyper@pagehidden . . 9213, 9239, 10200, 10210, 10723, 10731, 11005, 11019
\HyOrg@author . . 6097, 6110, 6114	\hyper@qhash . . . 4614, 4615, 4663, 4945, 4957, 4974, 4977, 5924, 10251	\hyper@pagetransition . 9165, 9237, 10178, 10208, 10602, 10729, 10971, 11017
\HyOrg@float@makebox . . . 7400, 7402	\hyper@qimage . . 4804, 4805, 9430, 10548, 11021, 11906, 12186	\hyper@quote . . 5926, 9350, 9364, 9379, 9384, 9405, 9419, 9433, 10251, 10261, 10274, 10297, 10315, 11822, 11836, 11851, 11857, 11881, 11895, 11909, 12102, 12115, 12130, 12135, 12158, 12174, 12189
\HyOrg@hyperpage . . . 7992, 7994, 7995	\hyper@qlast . . . . . 6071, 6076	\hyper@readexternallink . . 4894, 4910
\HyOrg@languageshorthands . 953, 967, 978, 988	\hyper@qlink . . . . . 4100, 4892, 5971, 5972, 5986, 5996, 6002, 8876, 9426, 9474, 9941, 10247, 10514, 11025, 11902, 12182	\hyper@refstepcounter . 6577, 6580, 6588
\HyOrg@make@df@tag@@ . . 7917	\hyper@qlink@ . . 4107, 4884, 4886, 5969, 5983, 6009	\hyper@tilde . 4623, 4624, 4625, 5925
\HyOrg@make@df@tag@@@ . 7918	\hyper@qlinkend . 4088, 4095, 4104, 5977, 5991, 6006, 7170, 7449, 7452, 7863, 7867, 7871, 7873, 8875, 9388, 9471, 9940, 9942, 10283, 10461, 10934, 11862, 12139	\hyperbaseurl . . . 3501, 3502, 6020
\HyOrg@maketitle . . . 7270, 7277, 7282	\hyper@linkfile . . . . . 4106, 4970, 5979, 5993, 6008, 8922, 9392, 9550, 9944, 10267, 10465, 11511, 11866, 12143	\hypercalcbp . . . . . 481, 481
\HyOrg@subequations . 6973, 6980	\hyper@linkstart . . . . . 4103, 5976, 5990, 6005, 7168, 7445, 7452, 7863, 7867, 7871, 7873, 8866, 9374, 9462, 9902, 9942, 10270, 10409, 10913, 11846, 12125	\hypercalcbpdef . . 483, 520, 3922, 3932
\HyOrg@title . . . 6096, 6101, 6105	\hyper@linkurl . . . . . 4105, 4803, 4945, 4952, 4973, 4977, 5978, 5992, 6007, 8887, 9393, 9395, 9428, 9510,	\hyperdef . . . . . 4833, 6022
\HyOrg@TX@endtabularx . . 7175		\HyperDestNameFilter . . . . . 4038, 4702, 8805, 8830, 9350, 9364, 9384, 9428, 9713, 9915, 10251, 10261, 10279, 10297, 10315, 10387, 10399, 10448, 10531, 11353, 11362, 11822, 11836, 11857, 11904, 12102, 12115, 12135, 12184, 14132, 14196, 14212
\HyOrg@url . . . . . 4798		\HyperFirstAtBeginDocument . . . . . 6048, 6050, 6072, 6075
\HyPat@NonNegativeReal . . 3575, 3576, 3577, 3578, 3594, 3596, 3925, 3935, 3936, 3937, 3939, 3940, 3941		\hypergetpageref . . . . . 6779
\HyPat@ObjRef . 4782, 4783, 4796, 8647, 9704, 10877		\hypergetref . . . . . 6778
\hyper@@@anchor . 4099, 4808, 4810, 4841, 4843, 4878, 4880, 5022, 5970, 5985, 6001, 7130, 7135, 7145, 7150, 7218, 7221, 7247, 7375, 7378, 7406, 7710, 7765, 7775, 7780, 8178, 8186, 8196, 8229, 8237, 8247		
\hyper@@@link . . 4668, 4726, 4831, 4859, 4883, 7463, 7609, 7610, 7611, 7659, 7661, 7663, 8348, 8363, 8465		
\hyper@@@normalise . . 4637, 4641, 4645		
\hyper@anchor . . . . . 5049, 5973, 5987, 6051, 6064, 8855, 9343, 9440, 9767, 10306, 10381, 10880, 11816, 12096		
\hyper@anchorend . . . . . 4088, 4095, 4102, 5957, 5975, 5989, 6004, 6603, 6786, 6861, 6902, 6921, 6945, 7092, 7457, 7482, 7485, 7505, 7638, 7902, 7928, 8862, 9368, 9458, 9774, 10301, 10403, 10902, 11840,		



\HyperGlobalCurrentHref . 6664, 6666, 6674, 6675, 6679, 6682, 6686, 6692, 6693, 6697	\HyPL@SlidesOptionalPage 6210, 6214, 6219	\HyPsd@AfterCountRemove 1858, 1929
\hyperimage . . . 4804, 5056, 7984	\HyPL@SlidesSetPage 6205, 6207, 6227	\HyPsd@AfterDimenRemove . . . . . . . . 1864, 1932
\hyperindexformat . . . . . 7991	\HyPL@storePageLabel . . . 6262, 6264, 6334, 6392, 6471	\HyPsd@AfterSkipRemove . 1870, 1944
\hyperlink 4667, 6023, 8130, 8268, 8276, 8291, 8299, 8309, 8317, 8324	\HyPL@thisLabel 6191, 6193, 6225, 6229, 6230	\HyPsd@AMScsfix . 642, 1604, 1606
\hyperlinkfileprefix . . 3504, 3505, 3506, 12088	\HyPL@Type . . 6232, 6239, 6243, 6261, 6269, 6278, 6292, 6330	\HyPsd@AppendItalcorr . . 1829, 1836, 1845
\HyperLocalCurrentHref . . 6682, 6684, 6690, 6691, 6692, 6693, 6695	\HyPL@Useless . . . . . 6335, 6341	\HyPsd@autoref . . . . . 652, 1673
\hyperpage 6029, 7992, 7993, 7995, 8088	\HyPL@SlidesSetPage . . . . . 6234	\HyPsd@autorefname . 1685, 1691
\HyperRaiseLinkDefault . . 2411, 2438	\HyPsd@@@autoref . . 1676, 1678, 1681	\HyPsd@babel@danish . . . . . 997
\HyperRaiseLinkHook 2410, 2439	\HyPsd@@@CJKdigits 1546, 1549, 1557	\HyPsd@babel@dutch . . . . . 1003
\HyperRaiseLinkLength . . . 2437, 2438, 2441	\HyPsd@@@nameref . . 1658, 1660, 1663	\HyPsd@babel@finnish . . . . . 1009
\hyperref . 4813, 5063, 5064, 6025, 8423, 8427, 8437, 8451	\HyPsd@@@pageref . . 1640, 1642, 1645	\HyPsd@babel@frenchb . . . 1014
\hypersetup 2762, 2802, 3330, 3806, 4058, 6019	\HyPsd@@@ref . . 1624, 1626, 1629	\HyPsd@babel@german . . . 1019
\hypertarget . . . . . 4806, 6024	\HyPsd@@@UTFviii@four . . 2278, 2281	\HyPsd@babel@macedonian 1026
\HyPL@@@CheckThePage . 6308, 6326	\HyPsd@@@AppendItalcorr . 1845	\HyPsd@babel@ngerman . . 1032
\HyPL@@@CheckThePage . . 6284, 6286	\HyPsd@@@autoref . . . 1673, 1674	\HyPsd@babel@portuges . . 1038
\HyPL@Alph . . . . . 6203	\HyPsd@@@autorefname 1694, 1697	\HyPsd@babel@russian . . . 1043
\HyPL@alph . . . . . 6204	\HyPsd@@@CJKdigits . 1538, 1540, 1543	\HyPsd@babel@slovene . . . 1049
\HyPL@arabic . . . . . 6200	\HyPsd@@@CJKnumber 1439, 1441, 1444, 1497, 1512, 1525, 1527, 1531	\HyPsd@babel@spanish . . . 1054
\HyPL@CheckThePage 6235, 6283	\HyPsd@@@ConvertToUnicode . . . . . . . . 2157	\HyPsd@babel@swedish . . . 1064
\HyPL@Entry . 6476, 6484, 6492, 6494	\HyPsd@@@GetNextTwoTokens . . . . . . . 2155	\HyPsd@babel@ukrainian . . 1070
\HyPL@EveryPage . . . 6223, 6347	\HyPsd@@@GlypHProcessWarning . . . . . 2015, 2018	\HyPsd@babel@usorbian . . 1076
\HyPL@Format 6299, 6300, 6301, 6302, 6303, 6315	\HyPsd@@@GreekNum . 1101, 1110, 1209, 1213, 1217	\HyPsd@EabelPatch 628, 952, 987
\HyPL@found . 6298, 6305, 6309, 6316, 6326, 6328	\HyPsd@@@hspace . . . . 1594, 1595	\HyPsd@CatcodeWarning . 1874, 1891, 1894, 1897, 1900, 1956
\HyPL@Labels . 6194, 6338, 6339, 6341, 6343, 6394, 6395, 6487, 6495, 6496	\HyPsd@@@LetCommand . . 1718, 1739	\HyPsd@Char . . . . . 2159
\HyPL@LastNumber . 6198, 6254, 6277	\HyPsd@@@nameref . . . 1655, 1656	\HyPsd@CharOctByte 2179, 2181, 2184, 2193, 2198
\HyPL@LastPrefix . . . 6199, 6248, 6279	\HyPsd@@@pageref . . . 1637, 1638	\HyPsd@CharSurrogate . . . 2173, 2190
\HyPL@LastType 6197, 6239, 6278	\HyPsd@@@ProtectSpacesFi . 1767, 1771, 1789, 1795, 1800	\HyPsd@CharTwoByte 2171, 2178
\HyPL@page . . 6217, 6226, 6229, 6235, 6244	\HyPsd@@@ref . . . . . 1621, 1622	\HyPsd@CheckCatcodes 705, 1851
\HyPL@Prefix . 6244, 6246, 6248, 6262, 6265, 6267, 6279, 6293, 6331	\HyPsd@@@RemoveBraces . . 1813	\HyPsd@CJK@Unicode 1321, 1325
\HyPL@Roman . . . . . 6201	\HyPsd@@@RemoveBracesFi 1810, 1813	\HyPsd@CJKActiveChars . 1261, 1276
\HyPL@roman . . . . . 6202	\HyPsd@@@RemoveCmdPrefix . . . . . . . . 1972, 1975	\HyPsd@CJKdigit . . . 1550, 1560
\HyPL@SetPageLabels 6337, 6402, 6490	\HyPsd@@@ReplaceFi . 2042, 2048, 2053	\HyPsd@CJKdigits . . 1323, 1536
	\HyPsd@@@UTFviii@four . . . 2262, 2267	\HyPsd@CJKhook 658, 1232, 1243
	\HyPsd@add@accent . . 543, 1583	\HyPsd@CJKhook@bookmarks . . . . . . 1238, 1272
		\HyPsd@CJKhook@unicode 1240, 1320
		\HyPsd@CJKnumber . 1322, 1436
		\HyPsd@CJKnumberFour . 1454, 1458, 1462, 1475, 1479, 1483, 1489
		\HyPsd@CJKnumberLarge . 1467, 1474
		\HyPsd@CJKnumberThree 1495, 1499, 1505
		\HyPsd@CJKnumberTwo . . 1510, 1514, 1520

\HyPsd@ConvertToUnicode . 773, 2105	\HyPsd@hspacetest . . 1597, 1599, 1602	\HyPsd@SanitizeForOutFile . . . . . . . . . 13971, 14002
\HyPsd@DecimalToOctal . . 1253, 1284	\HyPsd@ifnextchar 674, 675, 676, 1744	\HyPsd@SanitizeOut@BraceLeft . . . 14006, 14012, 14021
\HyPsd@DecimalToOctalFirst . . . . . . . 1327, 1363	\HyPsd@ignorespaces . . . 656, 943	\HyPsd@SanitizeOut@BraceRight . . . 14009, 14024, 14033
\HyPsd@DecimalToOctalSecond . . . . 1328, 1337, 1400	\HyPsd@InitUnicode . . . . . 908	\HyPsd@SPACEOPTI . 702, 717, 718, 720, 722, 724, 725, 764, 766, 1887, 2089
\HyPsd@DefCommand . 688, 689, 690, 691, 1707	\HyPsd@inmathwarn . . 542, 1567	\HyPsd@spaceopti . . . . 766, 2034
\HyPsd@DisableCommands . 934, 936	\HyPsd@ITALCORR . . 666, 670, 1591	\HyPsd@SpanishPatch . 626, 1219
\HyPsd@DoConvert . . 2107, 2117	\HyPsd@langshort@system . . 958, 961	\HyPsd@String . . . . . 699, 701, 704, 706, 711, 713, 1818, 1819, 1829, 1881, 1882, 1886, 1887, 1902, 1903, 1933, 1945, 2004, 2005
\HyPsd@DoEscape . . . . . 2131	\HyPsd@LanguageShorthands . . . . . . . 954, 959, 971	\HyPsd@StringSubst . . 714, 716, 722, 728, 731, 734, 737, 756, 759, 761, 2057
\HyPsd@doxspace . . . . 745, 2078	\HyPsd@LetCommand . 692, 693, 1707	\HyPsd@Subst . 710, 719, 723, 729, 735, 739, 743, 748, 749, 750, 751, 752, 753, 757, 760, 2041, 2058, 2073, 2074, 2075
\HyPsd@empty 730, 732, 736, 737, 739, 747, 754	\HyPsd@LetUnexpandableSpace . . . 661, 662, 663, 664, 1587, 1590	\HyPsd@temp . . . . 777, 779, 780, 782, 783, 790, 792, 793, 2747, 2748, 2749, 2752, 2755, 2761, 2773, 2777, 6426, 6427, 6428, 6430, 6431, 6436
\HyPsd@end 705, 709, 1768, 1771, 1774, 1777, 1780, 1793, 1803, 1810, 1813, 1851, 1859, 1865, 1871, 1916, 1923, 1929, 1932, 1944	\HyPsd@LoadStringEnc . . . 2766, 2786, 2788, 2792, 2794, 6413	\HyPsd@ToBigChar 834, 835, 844
\HyPsd@endWithElse 1573, 1582	\HyPsd@LoadUnicode 2715, 2720, 2728, 2731, 2733, 2740, 6407	\HyPsd@ToBigChars . . . 787, 826
\HyPsd@EscapeTeX 784, 794, 2060	\HyPsd@nameref . . . . . 651, 1655	\HyPsd@tocsection . . 1607, 1608, 1609, 1610, 1611, 1612, 1613, 1615
\HyPsd@fi . 1785, 1791, 1795, 1801	\HyPsd@pageref . . . . . 650, 1637	\HyPsd@UnescapedString . . 779, 828, 829, 835
\HyPsd@GetNextTwoTokens 2155	\HyPsd@pdfencoding . 774, 2714, 2717, 2749, 2761, 2764, 2765, 2770, 2785, 6409, 6411, 6428, 6431	\HyPsd@UnexpandableSpace . . . 1590, 1776, 1800, 1935, 1947
\HyPsd@GetOneByte . . . . . 2150	\HyPsd@pdfencoding@auto . 774, 2755, 2765, 2782, 6411, 6430	\HyPsd@unichar 2220, 2287, 2293, 2298
\HyPsd@GetTwoBytes . . . . 2146	\HyPsd@pdfencoding@pdfdoc . . . . . . . 2748, 2770, 2783	\HyPsd@unichar@first@byte 2306, 2326
\HyPsd@GLYPHERR 710, 1570, 1584, 1591	\HyPsd@pdfencoding@unicode . . . . . 2752, 2784, 6409, 6427	\HyPsd@unichar@octtwo . . 2328, 2336, 2342
\HyPsd@GlyphProcess 712, 2003, 2016	\HyPsd@PrerenderUnicode 3704, 3720, 3726, 3732, 3738, 3756, 3762, 3842	\HyPsd@unichar@second@byte . . . . . . . 2314, 2334
\HyPsd@GlyphProcessWarning . . . . . . 2010, 2014	\HyPsd@protected@testopt . 677, 678, 1748	\HyPsd@UnicodeReplacementCharacter . . . . . 2290, 2325
\HyPsd@GobbleFiFi . 1575, 1581	\HyPsd@ProtectSpaces 698, 1765, 1786, 1835	\HyPsd@utf@viii@undeferr . . 539, 2348
\HyPsd@GreekNum . . 1090, 1093, 1095	\HyPsd@ref . . . . . 649, 1621	\HyPsd@UTFviii . 533, 2208, 2213
\HyPsd@Greeknumeral 1086, 1092	\HyPsd@RemoveBraces 700, 1807, 1824, 1832, 1838	\HyPsd@UTFviii@@three . . 2243, 2252
\HyPsd@greeknumeral 1085, 1089	\HyPsd@RemoveCmdPrefix 1965, 1971	\HyPsd@UTFviii@@two 2228, 2234
\HyPsd@GreekNumI . 1113, 1139, 1182, 1208	\HyPsd@RemoveMask 708, 1774, 1780, 1793, 1803	\HyPsd@UTFviii@ccxliv@def 2218, 2224
\HyPsd@GreekNumII . 1117, 1161, 1205, 1212	\HyPsd@RemoveSpaceWarning . . . . . . 1939, 1951, 1977	\HyPsd@UTFviii@ccxliv@undef . . . . . . 2217, 2223
\HyPsd@GreekNumIII 1120, 1184, 1216	\HyPsd@ReplaceSpaceWarning . . . . . . 1934, 1946, 1990	
\HyPsd@GreekNumIV 1129, 1207	\HyPsd@Rest . . 1852, 1912, 1920, 1923, 1930, 1935, 1941, 1947, 1953	
\HyPsd@GreekNumV . 1132, 1211	\HyPsd@RussianPatch . 627, 1225	
\HyPsd@GreekNumVI 1134, 1215		
\HyPsd@GreekPatch . 625, 1082, 1084		
\HyPsd@HighA . . . . . 1331, 1340		
\HyPsd@HighB . . . . . 1341, 1346		
\HyPsd@HighC . . . . . 1347, 1350		
\HyPsd@HighD . . . . . 1343, 1355		
\HyPsd@href . . . . . 647, 1620		
\HyPsd@hspace . . . . . 643, 1594		

\HyPsd@UTFviii@four	2216, 2261		
\HyPsd@UTFviii@three	2215, 2242		
\HyPsd@UTFviii@two	2214, 2227		
\HyPsd@Warning	1752, 1957, 1978, 1991, 2020, 2026		
\HyPsd@XeTeXBigCharsfalse	801, 815, 820		
\HyPsd@XeTeXBigCharstrue	814, 823, 3719, 3725, 3731, 3737, 3755, 3761, 3841, 13611, 13969		
\HyPsd@XSPACE	668, 744, 1591		
\HyPsd@xspace	742, 744, 745		
\HyRef@StarSetRef	8391, 8396		
\HyRef@autopageref	8448, 8450		
\HyRef@autopagerefname	8447, 8451, 8453		
\HyRef@autoref	8465, 8467		
\HyRef@autosetref	8470, 8473		
\HyRef@CaseStar	8534, 8540		
\HyRef@currentHtag	8486, 8504, 8507, 8513, 8520, 8526, 8541		
\HyRef@MakeUppercaseFirstOfFive	8414, 8416		
\HyRef@name	8502, 8503, 8508, 8515, 8533, 8534, 8535, 8537		
\HyRef@Ref	8420, 8422		
\HyRef@ShowKeysInit	8543, 8556, 8560		
\HyRef@ShowKeysRef	8474, 8542		
\HyRef@StarSetRef	8385, 8403, 8406, 8409, 8414		
\HyRef@StripStar	8501, 8532		
\HyRef@testreftype	8479, 8498		
\HyRef@thisref	8476, 8479		
\HyTmp@found	5448, 5458, 5461		
\HyTmp@key	5442, 5443		
\HyTmp@optitem	5398, 5414, 5441, 5446, 5452, 5473, 5484		
\HyTmp@optlist	5397, 5412, 5413, 5444, 5445, 5450, 5451, 5459, 5460, 5480, 5482, 5489, 5492		
\HyXeTeX@CheckUnicode	3690, 3701, 3718, 3724, 3730, 3736, 3754, 3760, 3840, 6441		
<b>I</b>			
\i	14588, 14751, 14754, 14757, 14760, 14957, 15119, 15122, 15125, 15128, 15245, 15250, 15255, 15260, 15264, 15431, 15487		
\if	1616, 2398, 6252, 6260, 6962, 6963, 10676, 10679, 10683, 10687, 10691, 10693, 10695, 13659		
\if@eqnstar	6904, 6912		
\if@files	2366, 4871, 6041, 6085, 6472, 6482, 6728, 7492, 7507, 7523, 7535, 7565, 7588, 7615, 7620, 7639, 8040, 12811, 12835, 13972, 14159, 14241		
\if@hyper@item	6562, 6575		
\if@inlabel	7078		
\if@Localurl	10238, 10284		
\if@mid@expandable	641		
\if@minipage	7363, 7434		
\if@nmbrrlist	6549		
\if@nobreak	7097		
\if@skiphyperref	6563, 6573		
\if@twocolumn	14406		
\if@twoside	14395		
\ifcase	332, 1146, 1168, 1191, 1285, 1334, 1356, 1359, 1365, 1401, 1445, 1561, 2256, 2752, 3435, 4386, 5244, 5349, 5478, 5555, 6627, 6636, 7859, 8017, 8054, 8283, 8475, 10749, 11239, 13717, 13744, 13811, 13846, 13881, 14079		
\ifcat	1853, 1880, 1885, 1890, 1893, 1896, 1899, 5033, 5035		
\ifdim	1602, 1933, 1937, 1945, 1949, 2453, 2472, 4043, 4412, 9257, 9261, 9266, 9270, 9277, 9280, 9284, 9287, 10218, 10219, 10224, 10225, 10357, 10360, 10364, 10367, 11268, 11282, 11641, 11642, 11647, 11648, 12455, 12493, 12494, 12935, 12974, 12975, 13274, 13313, 13314		
\ifetex@unexpanded	1759		
\iffalse	821, 5567		
\IfFileExists	232, 6080, 12215		
\ifFld@checked	5501, 12773, 13704		
\ifFld@comb	5348		
\ifFld@combo	5376, 5381, 12468, 12497, 12948, 12978, 13287, 13317		
\ifFld@disabled	5502, 12774		
\ifFld@edit	5382		
\ifFld@fileselect	5351		
\ifFld@hidden	12432, 12482, 12551, 12571, 12594, 12612, 12672, 12684, 12694, 12777, 12912, 12963, 13044, 13065, 13093, 13113, 13243, 13302, 13401, 13426, 13455, 13480		
\ifFld@multiline	5349, 12421, 12679, 12900, 13231		
\ifFld@multiselect	5420		
\ifFld@password	5350, 12660		
\ifFld@popdown	5168, 12469, 12949, 13288		
\ifFld@radio	12465, 12487, 12709, 12945, 12968, 13284, 13307		
\ifFld@readonly	12681, 12691, 12775		
\ifForm@html	5522		
\ifhmode	2414, 2418, 2471, 2480, 4708, 6987, 7011, 7044, 7162, 7171, 7321, 7323, 8800, 8808, 11274, 12200		
\ifHy@activeanchor	383, 5046		
\ifHy@backref	384, 4217, 4589, 5904, 7616, 7652		
\ifHy@bookmarks	385, 4437		
\ifHy@bookmarksnumbered	386, 8171, 8222, 13958		
\ifHy@bookmarksopen	387, 4427		
\ifHy@breaklinks	388, 2680, 10915, 10956, 11250, 11273		
\ifHy@CJKbookmarks	390, 1237		
\ifHy@colorlinks	391, 4508, 5909, 11803		
\ifHy@draft	392, 4098		
\ifHy@DviMode	2824, 2844, 3002		
\ifHy@DvipdfmxOutlineOpen	4410, 14214		
\ifHy@frenchlinks	398, 4524		
\ifHy@href@ismap	4764, 8911, 10030, 10424, 10494, 11502		
\ifHy@hyperfigures	396, 4197, 5889, 7981		
\ifHy@hyperfootnotes	399, 7104		
\ifHy@hyperindex	400, 4207, 5899, 7988		
\ifHy@hypertextnames	401, 6650, 6732, 7763, 8176, 8227		
\ifHy@implicit	402, 4229, 14269		
\ifHy@linktocpage	403, 2637, 2647		
\ifHy@localanchorname	404, 6683, 6694		
\ifHy@naturalnames	406, 6662, 8177, 8228		
\ifHy@nesting	407, 4202, 4807, 4840, 4877, 5031, 5894, 7129, 7144, 7217, 7374		
\ifHy@next	995, 4171, 8005		
\ifHy@ocgcolorlinks	410, 3385, 4494, 4504, 5914, 8666, 8684, 8761, 8769, 9778, 9861, 9869		
\ifHy@pageanchor	411, 6719, 6731, 6746, 7762		
\ifHy@pdffa	429, 4122, 4496, 4933, 5181, 5757, 5806, 5919, 8834, 8906, 8944, 8981, 9313, 9924, 9956, 9990, 10021, 10049, 10430, 10451, 10474, 10500, 10534, 10568, 10586, 11377, 12390, 12541,		



12587, 12864, 13034, 13086, 13201, 13390, 13448, 13661, 13707, 13871	12866, 13203	6475, 6483, 6743, 6771, 7495, 7510, 7526, 7536, 7566, 7589, 7615, 7645, 8686, 8701, 8716, 10851, 11662, 12790, 12812, 12854, 14065, 14131, 14162, 14164, 14244, 14246
\ifHy@pdfcenterwindow . . . . .	\ifHyInfo@AddonUnsupported . .	\incr@eqnum . . . . . 6873, 6886
. . . . . 389, 9090, 9661, 10122, 10787, 11135, 11988	. . . . . 3818, 3832, 3867	\indent . . . . . 6992, 7018
\ifHy@pdfdisplaydoctitle . . . . .	\IfHyperBoolean . . . . . 2502	\index . . . . . 645
. . . . . 428, 9091, 9662, 10123, 10788, 11136, 11989	\IfHyperBooleanExists 2496, 2503	\indexentry 8043, 8058, 8066, 8070, 8075
\ifHy@pdfescapeform . 395, 13555, 13585	\ifHyPsd@XeTeXBigChars . . 819, 821, 824, 827	\input . . . . . 902, 910, 2722, 3348, 3356, 3363, 4385, 11580, 11663, 11754, 11923
\ifHy@pdffitwindow . . . . .	\ifmeasuring@ . . . . . 6587, 6600	\InputIfFileExists . . 4060, 14155, 14189, 14234, 14236
. . . . . 397, 9089, 9660, 10121, 10786, 11134, 11987	\ifmmode . . . . . 10918, 11245	\inputlineno . . . . . 4678, 5038
\ifHy@pdfmarkerror 11182, 11190	\ifnum . . . . . 244, 851, 854, 857, 860, 863, 972, 1097, 1100, 1111, 1112, 1116, 1124, 1128, 1131, 1141, 1163, 1186, 1326, 1437, 1453, 1457, 1477, 1490, 1493, 1506, 1508, 1521, 1523, 1529, 2167, 2170, 2246, 2289, 2292, 2304, 2419, 2929, 2932, 2958, 3436, 3437, 4421, 4428, 4741, 5403, 5474, 5485, 6209, 6233, 6254, 6270, 6372, 7712, 7722, 8285, 8323, 8667, 8672, 9006, 9013, 9019, 9027, 9890, 9895, 10471, 10600, 10736, 10744, 10746, 10747, 10757, 10760, 10846, 10848, 10968, 11665, 12848, 13011, 13343, 13348, 13359, 13606, 13687, 13717, 13722, 13744, 13750, 13778, 13811, 13817, 13836, 13846, 13851, 13881, 13886, 13915, 13931, 14075, 14145, 14148, 14175, 14178, 14216, 14325, 14343, 14358	\insert . . . . . 7232
\ifHy@pdfmenubar 405, 9087, 9658, 10119, 10784, 11132, 11985	\ifodd . . . . . 2270, 2275, 7789	\IntCalcAdd . . . . . 2196
\ifHy@pdfnewwindow . 409, 3992, 10471	\ifpdf . 242, 2826, 2869, 4263, 4330	\IntCalcDec . . . . . 1348
\ifHy@pdfnewwindowset 408, 3990	\ifpdfstringunicode . . . . . 534, 537	\IntCalcDiv 1342, 1351, 1356, 1459, 1468, 1480, 1497, 1512, 1527, 2180, 2186, 2192
\ifHy@pdfpagehidden . 413, 3529, 9217, 10203, 10725, 11011	\ifportrait . . . . . 9256	\intcalcDiv . 1332, 2187, 2194, 2197
\ifHy@pdfpagelabels . . 412, 6179, 6392, 6470	\ifthenelse . . . . . 7642	\IntCalcMod . . 1344, 1353, 1359, 1463, 1469, 1484, 1500, 1515, 1529, 1531, 2182, 2187, 2188, 2194, 2197, 2199
\ifHy@pdfstring . . 414, 919, 6567	\iftrue 824, 1766, 1788, 2052, 5570, 14327	\intcalcMod . . . . . 1334
\ifHy@pdftoolbar 421, 9086, 9657, 10118, 10783, 11131, 11984	\ifvmode . . . . . 2430, 2452, 2461	\intcalcSub . . . . . 2174
\ifHy@pdfusetitle . . . . . 423, 6095	\ifvoid . . . . . 6854, 6858, 7082	\interfootnotelinepenalty . . 7235
\ifHy@pdfwindowui . . . . .	\ifvtex . . . . . 2832, 2928, 2957	\interlinepenalty . . . . . 7235
. . . . . 427, 9088, 9659, 10120, 10785, 11133, 11986	\ifvtexdvi . . . . . 2833	\item 6544, 6547, 7522, 7534, 7637
\ifHy@plainpages 415, 4212, 6733, 7764	\ifvtexhtml . . . . . 4305, 4336	\Itemautorefname . . . . . 8566
\ifHy@psize . . . . . 416	\ifvtexpdf . . . . . 4347	\itemautorefname . . . 3079, 3097, 3115, 3133, 3151, 3169, 3187, 3216, 3217, 3245, 3263, 8566, 8567, 8570
\ifHy@raiselinks . 417, 9397, 9477, 9514, 9554, 11873, 12148	\ifvtexps . . . . . 4350	\itemindent . . . . . 7083
\ifHy@seminarslides . . . . . 418	\ifxetex 778, 811, 2829, 2902, 3691, 4289, 4333, 4411	\itshape . . . . . 595
\ifHy@setpagesize . . . 419, 9245, 10215, 10354, 11638	\ignorespaces . . . . . 656, 6814, 6982, 7253, 7359, 7370, 7373, 7430, 7438, 7500, 7515, 7531, 7540, 7650, 8156, 8208	
\ifHy@setpdfversion . . 2803, 8671	\IJ . . . . . 14584, 15266	
\ifHy@stoppedearly . . . . . 381	\ij . . . . . 14793, 15268	
\ifHy@texht 420, 4284, 4536, 4584, 5592, 5624, 5777, 5801, 5957, 8331	\immediate . . . . . 6043, 6044, 6045, 6047, 6087, 6385,	
\ifHy@typexml . . 382, 4222, 4511, 4555, 6042, 14163, 14245		
\ifHy@unicode . 422, 529, 562, 565, 715, 727, 755, 763, 772, 1096, 1256, 1959, 1980, 1993, 2022, 2028, 2288, 2713, 2763, 3692, 6416, 13607		
\ifHy@useHidKey . . . . 3525, 9214, 10201, 10724, 11006		
\ifHy@verbose . . 424, 4671, 4687, 4699, 5124, 7834		
\ifHyField@NeedAppearances . . . .		
. . . . 5565, 5567, 5570, 12392,		

<code>\kasra</code> . . . . .	16882	<code>\LayoutPushButtonField</code> . .	5848, 12545, 12552, 13038, 13045, 13394, 13403	3522, 3889, 3913, 3920, 4019, 4020, 4023, 4024, 4025, 4026, 4027, 4028, 4032, 4033, 4353, 4363, 4455, 5055, 5271, 5289, 5303, 5316, 5332, 5364, 5389, 5396, 5397, 5704, 5742, 5743, 5744, 5745, 5746, 5747, 5748, 5749, 5750, 5751, 5752, 6158, 6159, 6160, 6163, 6177, 6194, 6199, 6205, 6214, 6234, 9336, 10239, 10326, 10921, 11227, 11248, 11577, 11660, 11918, 12082, 12089, 12411, 12417, 12624, 12655, 12702, 12796, 12893, 12896, 13211, 13227	
<code>\keepPDF@SetupDoc</code>	11807, 11814	<code>\LayoutTextField</code> . . .	5839, 12434, 12914, 13249	<code>\ltx@firstofone</code> .	2845, 6075, 14017, 14029
<code>\kern</code> 1862, 1934, 1939, 1951, 7083, 7784, 7785, 7786, 7788, 7789, 7794, 14284		<code>\lccode</code> . . . . .	350, 355, 850, 1266, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2211, 5717, 8002, 8003, 13989, 13990, 13991, 13992, 13993, 13994, 13995, 13996, 13997, 13998, 13999	<code>\ltx@firstoftwo</code> 245, 337, 345, 2498, 2505, 4570, 4994	
<code>\kernel@ifnextchar</code> . . . . .	675	<code>\ldots</code> . . . . .	554	<code>\ltx@GlobalAppendToMacro</code>	937
<code>\kha</code> . . . . .	16853	<code>\leavevmode</code> . . .	653, 2408, 4108, 4125, 4165, 4938, 6013, 7161, 7320, 7556, 8426, 8434, 8820, 8891, 8929, 8966, 9396, 9476, 9513, 9553, 9904, 9945, 9982, 10014, 10249, 10258, 10312, 10466, 10491, 10521, 10554, 10917, 11243, 11491, 11518, 11549, 11872, 12147, 12546, 12553, 12586, 12999, 13020, 13039, 13046, 13066, 13085, 13341, 13372, 13395, 13404, 13428, 13447, 14282	<code>\ltx@gobble</code> . . . . .	272, 2851, 4086, 4093, 4443, 5973, 5974, 5985, 5987, 5988, 6353, 12196, 12808, 14015, 14027
<code>\KV@href@pdfnewwindow</code> .	4762	<code>\LetLtxMacro</code> .	5960, 5964, 6030, 6034	<code>\ltx@gobblefour</code> . . . . .	314
<code>\KV@href@pdfnewwindow@default</code> . . . . .	4763	<code>\limits</code> . . . . .	4654	<code>\ltx@gobblethree</code> . . . . .	7744
<code>\KV@Hyp@draft</code> . . . . .	2611	<code>\listofslides</code> . . . . .	8257	<code>\ltx@gobbletwo</code> . . . . .	5976, 5990
<code>\KV@Hyp@nolinks</code> . . . . .	2611	<code>\listslidenam</code> .	8256, 8259, 8261, 8263	<code>\ltx@ifclassloaded</code> . . . . .	6206, 7705
<code>\KV@Hyp@pdfnewwindow</code> .	4762	<code>\literalps@out</code> 2406, 10840, 10845, 10897, 10903, 10929, 10935, 11200, 11211, 11240, 11241, 11269, 11271, 11283, 11285, 11578, 11661, 11724, 11921		<code>\ltx@ifpackagelater</code> . . . . .	348
<code>\KV@Hyp@pdfnewwindow@default</code> . . . . .	4763	<code>\lower</code> . . .	9403, 9483, 9520, 9560, 11271, 11879, 12154	<code>\ltx@ifpackageloaded</code> . . . . .	1233
<code>\kv@key</code> . .	3826, 3829, 3836, 5401, 5404, 5406, 5410, 5414	<code>\lowercase</code> . . .	351, 356, 870, 1267, 2071, 2212, 2513, 3023, 3053, 3766, 3802, 5073, 5074, 5077, 5082, 5106, 5116, 5170, 5226, 5546, 5619, 5622, 5718, 8004, 10967, 14000	<code>\ltx@ifUndefined</code> . . . . .	239, 278, 284, 313, 622, 665, 740, 775, 893, 894, 895, 996, 1002, 1008, 1013, 1018, 1025, 1031, 1037, 1042, 1048, 1053, 1063, 1069, 1075, 1081, 1220, 1226, 1603, 1698, 1699, 2360, 2393, 4081, 4083, 4168, 4169, 4170, 4569, 4570, 4766, 6135, 6528, 6615, 6619, 6934, 7458, 7723, 8454, 8455, 8499, 8500, 8502, 8503, 8868, 8878, 9276, 10356, 10413, 10516, 10893, 10936, 11027, 11204, 14316, 14326
<code>\kv@parse</code> . . . . .	5400	<code>\lslide@flag</code> 8283, 8286, 8304, 8323, 8327		<code>\ltx@ifundefined</code> 2497, 2498, 2541, 7090, 7739	
<code>\kv@parse@normalized</code>	3851, 3858	<code>\LT@array</code> . . . . .	6839	<code>\ltx@leftbracechar</code> . . . . .	328, 352
<code>\kv@processor@default</code>	3854, 3861	<code>\LT@foot</code> . . . . .	6854, 6858	<code>\ltx@LocalAppendToMacro</code> .	365, 368
<code>\kv@set@family@handler</code> . .	3819	<code>\LT@p@ftn</code> .	7193, 7196, 7200, 7210	<code>\ltx@one</code> . .	244, 6208, 6209, 6216, 7708, 7712, 7718, 7721, 7722, 7735
<code>\kv@value</code> .	3824, 5402, 5409, 5410	<code>\LT@p@ftntext</code> . . . . .	7191, 7198	<code>\ltx@ReturnAfterElseFi</code> . . .	4636
<code>\kvsetkeys</code> . . . . .	2802, 2856, 2976, 3698, 3799, 4123, 4360, 4378, 4495, 5499, 8668, 11189, 12409, 12645, 12658, 12707, 12750, 12771, 12845, 13186	<code>\LT@start</code> . . . . .	6856, 6866	<code>\ltx@ReturnAfterFi</code> . .	494, 2009, 4640, 4656, 8097, 8133, 8619, 8629, 13578
<b>L</b>		<code>\ltx@backslashchar</code> .	318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 330		
<code>\L</code> . . . . .	14577, 15297	<code>\ltx@empty</code> . . . . .	370, 371, 470, 2825, 3000, 3008, 3377,		
<code>\l</code> . . . . .	14590, 15299				
<code>\l@slide</code> . .	8156, 8266, 8271, 8275, 8282				
<code>\l@subslide</code> .	8208, 8271, 8278, 8322				
<code>\label</code> . . . . .	644, 7807				
<code>\label@hyperref</code> . . . .	4847, 4849				
<code>\label@hyperdef</code> . . . .	4833, 4863				
<code>\label@hyperref</code> .	4814, 4846, 5060				
<code>\labelsep</code> . . . . .	7649				
<code>\labelwidth</code> . . . . .	7648				
<code>\lam</code> . . . . .	16870				
<code>\language@group</code> . . . . .	623				
<code>\languageshorthands</code>	953, 954, 988				
<code>\LARGE</code> . . . . .	602				
<code>\Large</code> . . . . .	603				
<code>\large</code> .	606, 8288, 8296, 8306, 8314				
<code>\lastbox</code> . . . . .	7081				
<code>\lastpage@putlabel</code> . . . . .	6714				
<code>\lastskip</code> .	2453, 2457, 2464, 2472, 2476, 2483				
<code>\LaTeX</code> . . .	559, 561, 12221, 12222				
<code>\LaTeXe</code> . . . . .	560, 12222				
<code>\LayoutCheckField</code> .	5845, 12613, 13114, 13485				
<code>\LayoutChoiceField</code> .	5842, 12486, 12967, 13306				

`\ltx@rightbracechar` . . . . 329, 357  
`\ltx@secondoftwo` . . 240, 247, 251,  
334, 2497, 2498, 2507, 2509,  
4569, 4570, 4572, 4992  
`\ltx@space` . . . . . 331, 1754  
`\ltx@zero` . 2065, 2066, 2067, 2068,  
2069, 2070  
`\luatexrevision` . . . . . 9050  
`\luatexversion` . . . . . 9042, 9047

**M**

`\m@ne` . . . . . 4186, 4690,  
4749, 5088, 6759, 6954, 9899,  
14236, 14325, 14340  
`\make@df@tag@@` . . . . 7917, 7919  
`\make@df@tag@@@` . . . 7918, 7920  
`\make@stripped@name` 6592, 6895,  
6917, 6941, 6952  
`\makeatletter` . . . . . 3, 933, 6079  
`\MakeButtonField` . . 5855, 12547,  
12555, 12573, 12591, 12596,  
13040, 13049, 13073, 13090,  
13096, 13396, 13399, 13427,  
13452, 13456  
`\MakeCheckField` . . . 5852, 12615,  
13117, 13482  
`\MakeChoiceField` . . 5854, 12531,  
13023, 13370  
`\MakeFieldObject` . 12789, 12876,  
12886, 12889  
`\MakeLowercase` . . . . . 619  
`\MakeLowercaseUnsupportedInPdfStrings`  
. . . . . 619  
`\MakeRadioField` . . . 5851, 12519,  
13010, 13334  
`\makeslideheading` . . . . . 8166  
`\makeslidesubheading` . . . . 8218  
`\maketag@@@` . . . . . 7906  
`\MakeTextField` . . . . 5853, 12436,  
12917, 13246  
`\maketitle` . . . . . 7270, 7271  
`\MakeUppercase` . 618, 8261, 8263,  
8417  
`\MakeUppercaseUnsupportedInPdfStrings`  
. . . . . 618  
`\MathBSuppress` . . . 10259, 10263  
`\mathdisplay` . . . . . 6876, 6885  
`\mathdisplay@push` . . 6874, 6883  
`\mathversion` . . . . . 611  
`\maxdimen` . . . . . 3457, 12794  
`\MaybeStopEarly` 471, 2859, 2934,  
4233, 4338, 6503, 6506  
`\mbox` . 654, 7569, 7592, 8771, 9871  
`\mddefault` . . . . . 6994, 7020, 7051  
`\mdseries` . . . . . 594  
`\meaning` . . . . . 62, 153,  
159, 2369, 6119, 6675, 6959,  
14200, 14208, 14223

`\measuring@false` . . . . . 6587  
`\mediaheight` 10350, 10352, 10358,  
10365  
`\mediawidth` . . . . . 10361, 10368  
`\meem` . . . . . 16871  
`\message` . . . . . 8284  
`\MessageBreak` . . . . . 280, 286,  
300, 301, 340, 341, 502, 1965,  
1986, 1999, 2022, 2027, 2029,  
2535, 2536, 2550, 2572, 2575,  
2577, 2655, 2656, 2682, 2683,  
2735, 2736, 2737, 2775, 2776,  
2796, 2807, 2848, 2873, 2906,  
2944, 2951, 2962, 2968, 3045,  
3387, 3518, 3519, 3581, 3582,  
3600, 3601, 3695, 3779, 3834,  
3835, 3945, 3946, 4048, 4267,  
4268, 4276, 4277, 4293, 4294,  
4309, 4310, 4318, 4319, 4498,  
4743, 4744, 4768, 4769, 4785,  
4786, 5127, 5132, 5141, 5184,  
5230, 5354, 5467, 5539, 5550,  
5582, 5583, 5602, 5676, 5677,  
5678, 5679, 6184, 6419, 6434,  
6435, 6722, 7811, 7841, 7842,  
7843, 7844, 7845, 7976, 8824,  
9909, 10442, 10525, 11036,  
12802, 12804, 13936, 13954,  
14067  
`\MF` . . . . . 569, 12224  
`\MP` . . . . . 570, 12225  
`\multiply` . . . . . 9046, 10705, 10740

**N**

`\n` . . . . . 861  
`\name@of@eq` . . . . . 6560, 6590  
`\name@of@slide` . . . . 6561, 6571  
`\nameref` . . . . . 651, 4574, 4578  
`\nasb` . . . . . 16877  
`\netscape` . . . . . 9439  
`\new@ifnextchar` . . . . . 676  
`\new@pdfink` . . . 8799, 8856, 8859  
`\new@refstepcounter` . 6868, 6900  
`\newblock` . . . . . 7653  
`\newcommand` . . . . . 4,  
9, 42, 2407, 6017, 6021, 6523,  
6526, 6529, 6530, 6531, 6533,  
6534, 6535, 6536, 6538, 6539,  
6540, 6541, 6542, 6543, 6552,  
6553, 6554, 6555, 6556, 6557,  
6950, 7944, 8143, 8148, 8149,  
14037, 14040, 14045  
`\newcount` . . . . . 472,  
473, 2412, 4734, 5505, 6195,  
12527, 13017, 13217, 13366,  
14072  
`\newcounter` . . . 6545, 7105, 9777,  
13987

`\newdimen` . . . . . 469, 5506, 5507  
`\newif` 381, 382, 383, 384, 385, 386,  
387, 388, 389, 390, 391, 392,  
395, 396, 397, 398, 399, 400,  
401, 402, 403, 404, 405, 406,  
407, 408, 409, 410, 411, 412,  
413, 414, 415, 416, 417, 418,  
419, 420, 421, 422, 423, 424,  
427, 428, 429, 819, 995, 2803,  
2824, 3525, 3818, 4410, 4764,  
5080, 5168, 5501, 5502, 5522,  
5565, 6562, 6563, 6587, 6904,  
10238, 11182  
`\newlabel` . 2372, 4873, 6057, 6058,  
6066, 6092, 6744, 6772  
`\newlabelxx` . . . . . 6059, 6060  
`\newlength` . . . . . 14275  
`\newline` . . . . . 557, 6140  
`\newname` 6593, 6896, 6918, 6942,  
6955, 6964  
`\newsavebox` . . . . . 9707, 11219  
`\newtie` 14470, 14471, 14854, 14884,  
14903, 14919  
`\newtoks` . 90, 5593, 11054, 11294,  
11295  
`\newwrite` . . . 6086, 14160, 14242  
`\next` . . . 7643, 7644, 7645, 10668,  
10670, 10672  
`\nfss@text` . 8338, 8358, 8375, 8492  
`\NG` . . . . . 15315  
`\ng` . . . . . 15317  
`\noboundary` . . . . . 16892  
`\nobreak` . 2454, 2462, 2473, 2481,  
7162, 7321  
`\nobreakspace` . . 664, 8429, 8458,  
8461  
`\noexpand` . . . 22, 93, 95, 108, 116,  
169, 171, 172, 173, 176, 206,  
839, 941, 1280, 1713, 1730,  
1853, 2225, 2460, 2461, 2462,  
2465, 2479, 2480, 2481, 2484,  
3306, 3308, 3310, 3311, 3312,  
3314, 3330, 3536, 3537, 3539,  
3884, 4188, 4192, 4193, 4360,  
4648, 4821, 4903, 5033, 5035,  
5136, 6308, 6309, 6318, 6320,  
6323, 6448, 6756, 6757, 6759,  
6784, 6785, 6786, 6787, 6788,  
6796, 6797, 6798, 6958, 7184,  
7194, 7202, 7203, 7204, 7206,  
7330, 7419, 7494, 7509, 7525,  
7710, 7936, 7938, 8391, 8392,  
8508, 8509, 8514, 8516, 8521,  
8522, 8527, 8528, 9049, 9645,  
11119, 11186, 11721, 11972,  
12461, 12462, 12463, 12464,  
12941, 12942, 12943, 12944,

13280, 13281, 13282, 13283,  
13557  
\nofrenchguillemets . . . . 683, 685  
\NoHy@OrgPageRef . . 5964, 5966,  
6034, 6036  
\NoHy@OrgRef 5960, 5962, 6030,  
6032  
\NoHyper . . . . . 5968  
\nohyperpage . . 6012, 8087, 8089,  
8091  
\nolinkurl . . . . . 4800  
\nolinkurl@ . . . . . 4800, 4801  
\NomFancyVerbLineautorefname  
. . . . . 3234  
\Nomfootnoteautorefname . 3214  
\Nomtheoremautorefname . 3238  
\nonumber . . . . . 6929, 6932  
\normalfont 589, 6988, 7014, 7047  
\normalsize . . . . 607, 7366, 7437  
\note . . . . . 7753  
\NR@getttitle . . . . . 7356  
\null . . . . . 7634, 7642, 8380, 8488  
\number . 1114, 1118, 1121, 1129,  
1132, 1134, 1439, 1441, 1468,  
1469, 2171, 2229, 2230, 2231,  
2232, 2236, 2237, 2238, 2239,  
2240, 2244, 2245, 2246, 2247,  
2248, 2249, 2250, 2254, 2255,  
2256, 2257, 2258, 2259, 2262,  
2264, 2268, 2269, 2271, 2273,  
2275, 2278, 2282, 2283, 2284,  
2285, 2294, 2295, 2299, 2300,  
2307, 2308, 2312, 2315, 2316,  
2317, 2327, 2329, 2330, 2335,  
2337, 2338, 2343, 2344, 3904,  
4412, 4429, 5094, 6652, 6653,  
6656, 6660, 8678, 8681, 9467,  
9485, 9486, 9501, 9502, 9522,  
9523, 9539, 9540, 9562, 9563,  
9579, 9580  
\numberline . . . 7359, 7430, 13959,  
13964  
\numberwithin . . . . . 7941  
\numexpr . 2236, 2237, 2238, 2240,  
2246, 2254, 2255, 2256, 2257,  
2258, 2259, 2263, 2265, 2269,  
2271, 2273, 2275, 2279, 2282,  
2283, 2285, 2294, 2299, 2316,  
2330, 2338, 2344, 3908  
\nun . . . . . 16872

## O

\O . . . . . 14710, 15078, 15473  
\o . . . . . 14778, 15146, 15475  
\obeylines . . . . . 11720  
\OBJ@acroform . . . 12872, 12873  
\OBJ@Helv . 12851, 12860, 13176

\OBJ@OCG@print . . . 8715, 8718,  
8726, 8752, 9795, 9797, 9810,  
9814, 9823, 9852  
\OBJ@OCG@view . . . 8700, 8718,  
8751, 9779, 9781, 9794, 9814,  
9851  
\OBJ@OCGs . . 8721, 8724, 8730,  
8735, 8740, 9811, 9813, 9817,  
9821, 9827, 9832, 9837  
\OBJ@pdfdocencoding . . . 12849,  
13157, 13173  
\OBJ@ZaDb 12850, 12859, 13166  
\OCIRCUMFLEX . 16715, 16813,  
16814, 16815, 16816, 16817  
\ocircumflex 16708, 16753, 16754,  
16755, 16756, 16757  
\oddsidemargin . . . . . 7790  
\OE . . . . . 14579, 15331  
\oe . . . . . 14592, 15333  
\offinterlineskip . . . . . 6166  
\OHORN . . . 16716, 16818, 16819,  
16820, 16821, 16822  
\ohorn . . 3261, 3268, 16709, 16758,  
16759, 16760, 16761, 16762  
\oldb . . . . . 893  
\oldc . . . . . 894  
\oldcontentsline . 6052, 6055, 6065  
\oldd . . . . . 895  
\oldnewlabel . . . 6057, 6062, 6066  
\OMEGA . . . . . 12220  
\on@line . . . . . 7838, 7839  
\openout 6044, 6087, 14162, 14244  
\OpMode . 2929, 2932, 2945, 2958,  
2963, 10757, 10848, 11665  
\or . . . . . 335,  
1148, 1149, 1150, 1151, 1152,  
1153, 1154, 1155, 1156, 1170,  
1171, 1172, 1173, 1174, 1175,  
1176, 1177, 1178, 1193, 1194,  
1195, 1196, 1197, 1198, 1199,  
1200, 1201, 1286, 1287, 1288,  
1289, 1290, 1291, 1292, 1293,  
1294, 1295, 1296, 1297, 1298,  
1299, 1300, 1301, 1302, 1303,  
1304, 1305, 1306, 1307, 1308,  
1309, 1310, 1311, 1312, 1313,  
1314, 1315, 1316, 1317, 1335,  
1357, 1360, 1366, 1367, 1368,  
1369, 1370, 1371, 1372, 1373,  
1374, 1375, 1376, 1377, 1378,  
1379, 1380, 1381, 1382, 1383,  
1384, 1385, 1386, 1387, 1388,  
1389, 1390, 1391, 1392, 1393,  
1394, 1395, 1396, 1397, 1402,  
1403, 1404, 1405, 1406, 1407,  
1408, 1409, 1410, 1411, 1412,  
1413, 1414, 1415, 1416, 1417,

1418, 1419, 1420, 1421, 1422,  
1423, 1424, 1425, 1426, 1427,  
1428, 1429, 1430, 1431, 1432,  
1433, 1446, 1447, 1448, 1449,  
1450, 1562, 1563, 1564, 5254,  
5260, 5265, 5479, 6627, 6628,  
6629, 6630, 6636, 6637, 6638,  
6639, 7861, 7865, 8303, 8312,  
10750, 14080, 14081, 14082,  
14083, 14084, 14085, 14086,  
14087, 14088, 14089, 14090,  
14091, 14092, 14093, 14094,  
14095, 14096, 14097, 14098,  
14099, 14100, 14101, 14102,  
14103, 14104, 14105, 14106,  
14107, 14108, 14109, 14110,  
14111

\overlay . . . . . 7750

## P

\P . . . . . 553  
\p@ . . . . . 2295,  
2300, 5508, 5514, 6996, 7022,  
7053, 9412, 9496, 9534, 9574,  
10704, 11888, 12168, 12457,  
12937, 13276, 14400, 14401  
\p@equation . . . . . 7913  
\PackageError . . . . . 61  
\PackageInfo . . 8662, 8676, 12800  
\PackageWarning . . . . 2806, 5465  
\pageautorefname . . . 3092, 3110,  
3128, 3146, 3164, 3182, 3200,  
3240, 3258, 3276, 8461, 8583  
\pagename . . . . . 8458  
\pageref . . . 650, 4243, 4565, 5964,  
5965, 6034, 6035, 6722, 8447,  
8451  
\paperheight . . . . . 4041, 9261,  
9263, 9266, 9268, 9280, 9281,  
10219, 10220, 10357, 10358,  
10360, 11642, 11643  
\paperwidth . . . . . 9257,  
9259, 9270, 9272, 9277, 9278,  
10218, 10220, 10361, 11641,  
11643  
\par . 6987, 7012, 7045, 7358, 7386,  
7428, 7438, 7636, 7656  
\paragraphautorefname . . . 3088,  
3106, 3124, 3142, 3160, 3178,  
3196, 3229, 3231, 3254, 3272,  
8579  
\partautorefname 3082, 3100, 3118,  
3136, 3154, 3172, 3190, 3220,  
3248, 3266, 8573  
\partnumberline . . . 13961, 13966  
\PassOptionsToPackage . . . 2977,  
3034, 3038, 3060, 4075, 4379

\pdf@addtoks	11297, 11316, 11322, 11331, 11338, 11342, 11344, 11346, 11348, 11350, 11358, 11367, 11371, 11373, 11375, 11378, 11387, 11391, 11393, 11395, 11397, 11399, 11401, 11403, 11405, 11407, 11409, 11411, 11413, 11415, 11417, 11419, 11421, 11422, 11423, 11424, 11425, 11426, 11427, 11428, 11429, 11430, 11431, 11436	\PDFForm@@Name	13594, 13597, 13601, 13604	\pdfoptionpdfminorversion	8656
\pdf@addtoksx	11291, 11301, 11314	\PDFForm@Check	12614, 12616, 13115, 13116, 13486, 13490, 13678	\pdfoutline	14253
\pdf@box	11219, 11251, 11259, 11267, 11268, 11271, 11275, 11277, 11280	\PDFForm@List	12530, 12532, 13021, 13022, 13373, 13378, 13736	\pdfpageattr	9169, 9173, 9174, 9184, 9193, 9197, 9198, 9208, 9216, 9219, 9220, 9230
\pdf@defaulttoks	11186, 11295, 11296, 11306	\PDFForm@Name	12910, 12962, 13033, 13111, 13241, 13301, 13389, 13478, 13593	\pdfpageheight	9263, 9272, 9281, 9288
\pdf@docset	11054	\PDFForm@Push	12554, 12556, 13047, 13048, 13405, 13409, 13707	\pdfpageresources	8749
\pdf@endanchor	8812, 8856, 8863	\PDFForm@Radio	12518, 12522, 13000, 13002, 13342, 13354, 13769	\pdfpagesattr	9060, 9062, 9064
\pdf@escapestring	8638	\PDFForm@Reset	12595, 12597, 13094, 13095, 13457, 13462, 13871	\pdfpagewidth	9259, 9268, 9278, 9285
\PDF@FinishDoc	2862, 2863, 2937, 2938, 4035, 4110, 4236, 4237, 4341, 4342, 6011, 6176, 6177, 9125, 9336, 9594, 10076, 10239, 10816, 11055, 11928, 12089	\PDFForm@Submit	12572, 12575, 13067, 13069, 13429, 13434, 13838	\PDFPreviousPage	11469
\pdf@ifdraftmode	240, 243, 251, 6352, 8685, 9126, 9235, 12846, 14172	\PDFForm@Text	12435, 12437, 12915, 12916, 13250, 13253, 13803	\PDFPreviousPage@	11470, 11472
\pdf@linktype	11204, 11208, 11311, 11312	\pdfhorigin	9253	\pdfrefform	8794
\pdf@rect	11196, 11210, 11223	\pdfinfo	9129	\pdfrefobj	12849, 12850, 12851
\PDF@SetupDoc	4034, 4109, 5931, 5932, 6010, 9056, 9337, 9625, 10116, 10240, 10765, 11106, 11809, 11959, 12090	\pdflastform	8793	\pdfrefxform	8794, 12794
\PDF@SetupDox	9056	\pdflastlink	12830	\pdfstartlink	8789, 8790, 8848, 8892, 8930, 8967, 9299, 12916, 13001, 13022, 13048, 13068, 13095, 13116
\pdf@strcmp	972	\pdflastobj	8700, 8715, 8721, 12872, 13157, 13166, 13176	\pdfstringdef	522, 806, 3721, 3727, 3733, 3739, 3744, 3750, 3757, 3763, 3843, 5426, 5431, 5457, 6143, 6244, 6246, 6737, 7736, 7772, 13612, 13970
\pdf@toks	11186, 11201, 11212, 11294, 11298, 11302	\pdflastxform	8793, 12792, 12794	\pdfstringdefDisableCommands	892, 931, 6014, 6138
\pdf@type	11188, 11192, 11201, 11212, 11289, 11309	\pdfinkmargin	8788, 8791, 8796	\pdfstringdefPostHook	802, 925
\pdfannotlink	8790	\pdfliteral	8772, 8774, 8779	\pdfstringdefPreHook	660, 925, 937, 6137, 6147
\pdfbookmark	2407, 6016, 6017, 14038, 14043, 14048, 14052	\pdfm@box	9707, 13213, 13214, 13215, 13245, 13256, 13333, 13358, 13369, 13380, 13399, 13412, 13427, 13436, 13456, 13464, 13481, 13492	\pdfstringdefWarn	556, 557, 655, 940, 1721, 1726, 1745, 1749
\pdfcatalog	6355, 8722, 9071, 9113, 12873	\pdfmark	6466, 9645, 9654, 9684, 10884, 10904, 10943, 10978, 10995, 11007, 11041, 11078, 11090, 11119, 11128, 11159, 11183, 11444, 11458, 11473, 11485, 11492, 11519, 11550, 11972, 11981, 12012, 12436, 12519, 12531, 12555, 12573, 12596, 12615, 14204	\pdftexrevision	9016, 9024, 9035
\PDFdefaults	11305	\pdfmark@	11183, 11184	\pdftexversion	9011, 9013, 9016, 9019, 9022, 9023, 9027, 9033, 9034, 12848
\pdfdest	8814	\pdfmatch	332	\pdfvorigin	9254
\pdfdraftmode	244	\pdfminorversion	8659	\pdfxform	8792, 12790
\pdfendlink	8853, 12917, 13010, 13024, 13050, 13074, 13097, 13118	\PDFNextPage	11456	\peh	16885
\pdfescapestring	13586	\PDFNextPage@	11456, 11457	\penalty	1856, 2434, 4709, 7563, 7586
\pdfform	8792	\pdfobj	8686, 8701, 8716, 12854, 13124, 13158, 13167	\phantom	612
		\PDFOpen	11484	\phantomsection	4036, 6018, 7813, 13905, 13956, 14344
				\Preamble	12216
				\PrerenderUnicode	3712
				\process@me	6117, 6129, 6130, 9059, 9068
				\ProcessKeyvalOptions	4079
				\protect	1854, 4851, 7359, 7430, 7494, 7509, 7525, 7641, 7648, 7649, 7851, 7882, 8156, 8208, 8337, 8357, 8363, 8374, 8491, 9347, 9444, 10310, 10385, 11820, 12100, 13977, 14277, 14400, 14401



<code>\protected@edef</code> . . . . .	<code>\refstepcounter</code> 6559, 6566, 6586, 4888, 6210, 6304, 6827, 6956, 6976, 7724, 7728, 8821, 9906, 10439, 10522, 11033	<code>\setpdfinkmargin</code> 3891, 3892, 8788
<code>\protected@write</code> 2371, 4872, 7621, 8042, 8057, 8065, 8069, 8074, 13976	<code>\rem@ptetc</code> . . . . . 10968, 10970	<code>\settowidth</code> . 12454, 12934, 13273
<code>\protected@xdef</code> . . . . . 7203, 7296	<code>\renewcommand</code> 2363, 7401, 7958, 14052	<code>\SetupKeyvalOptions</code> . 2492, 4069
<code>\providecommand</code> . . . . .	<code>\RequirePackage</code> . . . . . 22, 233, 235, 236, 237, 255, 256, 257, 258, 259, 260, 261, 262, 380, 1231, 1758, 2357, 2787, 2857, 4224, 4225, 4514, 4558, 4590, 4797, 5071, 6000, 6157, 6400, 10237, 12086, 14062	<code>\sffamily</code> . . . . . 591
. . . . . 2388, 2389, 3412, 3413, 3416, 3417, 4329, 4542, 4543, 4662, 4805, 6048, 6334, 6359, 6484, 7459, 7460, 7475, 7553, 8139, 8140, 8256, 8564, 8565, 8566, 8567, 8568, 8569, 8570, 8571, 8572, 8573, 8574, 8575, 8576, 8577, 8578, 8579, 8580, 8581, 8582, 8583, 8645, 8798, 8816, 8817, 9335, 9438, 9439, 9702, 9764, 9765, 9766, 10236, 10355, 10377, 10378, 10379, 10841, 11220, 11221, 11576, 11584, 11585, 11586, 11587, 11659, 11671, 11672, 11673, 11674, 11718, 11759, 11760, 11761, 11762, 11917, 11919, 11920, 12033, 12034, 12081, 12813	<code>\RerunFileCheck</code> . . . . . 14064	<code>\shadda</code> . . . . . 16883
<code>\PushButton</code> . . . . . 5827	<code>\Reset</code> . . . . . 5836	<code>\sheen</code> . . . . . 16859
<code>\put@me@back</code> . . 5028, 5041, 5051	<code>\reset@font</code> 7569, 7592, 8338, 8358, 8375, 8492	<code>\shortciteN</code> . . . . . 7684
<b>Q</b>	<code>\revtex@checking</code> . . . . . 7546	<code>\SK@</code> . . . . . 8550
<code>\qaf</code> . . . . . 16868	<code>\Rightarrow</code> . . . . . 8290	<code>\SK@@ref</code> . . . . . 8550
<code>\quotedblbase</code> 14559, 14796, 16385, 16689	<code>\rlap</code> . . . . . 8773, 9873	<code>\SK@ref</code> . . . . . 8547
<code>\quotesinglbase</code> . . . 14569, 14798, 16379, 16691	<code>\rm</code> . . . . . 600	<code>\skip@</code> 1871, 1945, 1946, 1949, 1951, 2457, 2463, 2476, 2482
<b>R</b>	<code>\rmfamily</code> . . . . . 590	<code>\slide</code> . . . . . 7747
<code>\r</code> . 864, 14437, 14449, 14461, 14671, 14736, 14845, 14872, 14891, 14913, 15040, 15104, 15387, 15389, 16349, 16351	<code>\Roman</code> . . . . . 6300	<code>\slide@ccline</code> 8276, 8289, 8297, 8307, 8315
<code>\ra</code> . . . . . 16856	<code>\roman</code> . . . . . 6301	<code>\Slide@contents</code> . . . . . 8281
<code>\raff</code> . . . . . 16878	<code>\romannumeral</code> . . . . . 947, 948	<code>\slide@contents</code> . . . . . 8274
<code>\raise</code> 2441, 9413, 9497, 9535, 9575, 11285, 11889, 12169	<code>\rule</code> . . . . . 7243	<code>\slide@heading</code> . . . . . 8152
<code>\ReadBookmarks</code> 4078, 4113, 4250, 4446, 4586, 14136, 14171	<b>S</b>	<code>\slide@subheading</code> . . . . . 8205
<code>\real@setref</code> . . . . . 8334, 8400	<code>\sad</code> . . . . . 16860	<code>\slide@undottedccline</code> . . . . . 8267
<code>\realfootnote</code> . . . . . 7293	<code>\sbox</code> . . . . . 3708, 5856, 9400, 9480, 9517, 9557, 11220, 11259, 11876, 12151, 12789	<code>\slidenumberline</code> 8268, 8276, 8290, 8298, 8308, 8316
<code>\Ref</code> . . . . . 8419, 8423, 8428	<code>\scr@LT@array</code> . . . . . 6842	<code>\SliTeX</code> . . . . . 568
<code>\ref</code> . . 649, 4242, 4562, 5068, 5960, 5961, 6030, 6031, 7258, 7265, 8438, 12192	<code>\scriptsize</code> . . . . . 608	<code>\slshape</code> . . . . . 597
<code>\ref@one</code> . . . . . 4827, 4828	<code>\scriptstyle</code> . . . . . 7559	<code>\small</code> . . . . . 609
<code>\rEfLiNK</code> . . . . . 12193, 12194	<code>\scrollmode</code> 1773, 1798, 1808, 1821, 1913, 2045	<code>\smash</code> . . . . . 2435
	<code>\scshape</code> . . . . . 596, 6993, 7019	<code>\spacefactor</code> 2414, 2420, 7162, 7171, 7321, 7323, 8801, 8809
	<code>\section</code> . . . . . 8258	<code>\special@paper</code> . . . . . 4037
	<code>\sectionautorefname</code> . . 3085, 3103, 3121, 3139, 3157, 3175, 3193, 3222, 3251, 3269, 8576	<code>\SpecialDvipdfmxOutlineOpen</code> . . . 2896, 2898, 4414, 4421
	<code>\seen</code> . . . . . 16858	<code>\splitmaxdepth</code> . . . . . 7237
	<code>\selectfont</code> . . . . . 576, 4525, 12882	<code>\splittopskip</code> . . . . . 7236
	<code>\set@display@protect</code> . . . . . 4177	<code>\SS</code> . . . . . 14794, 16688
	<code>\setbox</code> . . . . . 1857, 1863, 1869, 3440, 3446, 5652, 6165, 7081, 8763, 9327, 9846, 9863, 13245, 13333, 13369, 13399, 13427, 13456, 13481	<code>\ss</code> . . . . 3132, 14724, 14809, 15092
	<code>\setcounter</code> . . . . . 4740	<code>\st@rredfalse</code> . . . . . 6875, 6884
	<code>\setkeys</code> . . . . . 4715, 4760	<code>\stepcounter</code> . . 6576, 6757, 6826, 6975, 7163, 7295, 9889, 13973
	<code>\setlength</code> . . . . . 506, 507, 2438, 9253, 9254, 9259, 9263, 9268, 9272, 9278, 9281, 9285, 9288, 10358, 10361, 10365, 10368, 10704, 14294, 14365	<code>\stockheight</code> . . . 4041, 9287, 9288, 10225, 10226, 10364, 10365, 11648, 11649
		<code>\stockwidth</code> . . . 9284, 9285, 10224, 10226, 10367, 10368, 11647, 11649
		<code>\stop@hyper</code> . . . . . 5982
		<code>\StringEncodingConvertTest</code> 780, 790
		<code>\strip@period</code> . . . . . 2376
		<code>\strip@prefix</code> 62, 2369, 6119, 6675, 6959, 14200, 14208, 14223
		<code>\strip@pt</code> . . . . . 511, 518, 4053, 9259, 9263, 9268, 9272, 10707, 13701, 13764, 13792, 13831, 13880
		<code>\strip@pt@and@otherjunk</code> 10903, 10935, 10970
		<code>\strutbox</code> . . . . . 7237

<code>\sub@label</code> . . . . .	2363	<code>\textasciicircum</code> . . .	14434, 14446, 14458, 14518, 14869, 14888, 14951	<code>\textcircledP</code> . . . . .	16487	
<code>\subeqnarray</code> . . . . .	6935, 6937	<code>\textasciidieresis</code> . .	14436, 14448, 14460, 14614, 14871, 14890, 14982	<code>\textcircumflex</code> . . . . .	14484	
<code>\subequations</code> . . . . .	6973, 6974	<code>\textasciigrave</code> 14432, 14444, 14456, 14523, 14867, 14886, 14955		<code>\textcolonmonetary</code> . . . .	16465	
<code>\subfig@oldlabel</code> . . . . .	2365	<code>\textasciimacron</code> . .	14441, 14453, 14465, 14627, 14878, 14897, 14995	<code>\textcolor</code> 617, 12844, 12887, 12890, 13185		
<code>\Submit</code> . . . . .	5833	<code>\textasciitilde</code> . .	551, 4625, 14533, 14966	<code>\textcompwordmark</code> . . . .	16367	
<code>\SubmitObject</code> . . . . .	13070	<code>\textasteriskcentered</code> . . . .	14943	<code>\textcopyright</code> . . . . .	14616, 14984	
<code>\SubmitPObjct</code> . . . . .	13070	<code>\textbackslash</code> . . . . .	546, 714, 2351, 14516, 14949	<code>\textCR</code> . . . . .	14478, 14925	
<code>\subparagraphautorefname</code> 3089, 3107, 3125, 3143, 3161, 3179, 3197, 3230, 3232, 3255, 3273, 8580		<code>\textbaht</code> . . . . .	16211	<code>\textcurrency</code> . . . . .	14606, 14974	
<code>\subpdfbookmark</code> . . . . .	14040	<code>\textbar</code> . . . . .	14529, 14962	<code>\textdagger</code> . . . . .	14537, 16387	
<code>\subsection</code> . . . . .	11913	<code>\textbardbl</code> . . . . .	16373	<code>\textdaggerdbl</code> . . . . .	14539, 16389	
<code>\subsectionautorefname</code> . . .	3086, 3104, 3122, 3140, 3158, 3176, 3194, 3227, 3252, 3270, 8577	<code>\textBeta</code> . . . . .	1149, 15575	<code>\textdegree</code> . . . . .	14629, 14795, 14997	
<code>\subsubsectionautorefname</code> 3087, 3105, 3123, 3141, 3159, 3177, 3195, 3228, 3253, 3271, 8578		<code>\textbeta</code> . . . . .	1149, 14809, 15638	<code>\textDelta</code> . . . . .	1151, 15579	
<code>\sukun</code> . . . . .	16884	<code>\textbf</code> . . . . .	583	<code>\textdelta</code> . . . . .	1151, 15642	
<code>\surd</code> . . . . .	8298	<code>\textbigcircle</code> 14885, 14904, 16673		<code>\textDigammagreek</code> . . . . .	15701	
<b>T</b>		<code>\textblank</code> . . . . .	16521	<code>\textdigammagreek</code> . . . . .	15703	
<code>\T</code> . . . . .	16848	<code>\textbraceleft</code> . .	544, 2352, 14527, 14960	<code>\textdiscount</code> . . . . .	16413	
<code>\t</code> . . . . .	14469, 14864, 14883, 14902, 14918	<code>\textbraceright</code> 545, 2352, 14531, 14964		<code>\textdiv</code> . . . . .	14806, 16699	
<code>\T@nameref</code> . . . . .	4579	<code>\textbrokenbar</code> . . . .	14610, 14978	<code>\textdivide</code> . . . . .	14776, 14806, 15144, 16699	
<code>\T@pageref</code> . . . . .	4549, 4566, 8436	<code>\textbullet</code> . . . . .	14535, 16391	<code>\textdivorced</code> . . . . .	16679	
<code>\T@ref</code> . . . . .	4544, 4563	<code>\textcdot</code> . . . . .	14808, 16701	<code>\textdollar</code> . . . . .	548, 14500, 14931	
<code>\T@temp</code> . . . . .	7547, 7550	<code>\textcedilla</code> . .	14440, 14452, 14464, 14645, 14875, 14894, 15014	<code>\textdong</code> . . . . .	16475	
<code>\Ta</code> . . . . .	16862	<code>\textcelsius</code> . . . . .	14795, 16483	<code>\textdotaccent</code> 14439, 14451, 14463, 14486, 14874, 14893, 15528		
<code>\taa</code> . . . . .	16849	<code>\textcent</code> . . . . .	14602, 14970	<code>\textdotbelow</code> 14443, 14455, 14467, 14510, 14882, 14901, 15547		
<code>\tableautorefname</code> . . .	3081, 3099, 3117, 3135, 3153, 3171, 3189, 3219, 3247, 3265, 8572	<code>\textChi</code> . . . . .	1198, 15615	<code>\textdoublegrave</code> . .	14877, 14896, 15543	
<code>\tagform@</code> . . . . .	7912	<code>\textchi</code> . . . . .	1198, 15680	<code>\textdownarrow</code> . . . . .	16511	
<code>\tatweel</code> . . . . .	16866	<code>\textcircled</code> . .	14866, 14885, 14904, 16525, 16527, 16529, 16531, 16533, 16535, 16537, 16539, 16541, 16543, 16545, 16547, 16549, 16551, 16553, 16555, 16557, 16559, 16561, 16563, 16565, 16567, 16569, 16571, 16573, 16575, 16577, 16579, 16581, 16583, 16585, 16587, 16589, 16591, 16593, 16595, 16597, 16599, 16601, 16603, 16605, 16607, 16609, 16611, 16613, 16615, 16617, 16619, 16621, 16623, 16625, 16627, 16629, 16631, 16633, 16635, 16637, 16639, 16641, 16643, 16645, 16647, 16649, 16651, 16653, 16655, 16657, 16659, 16661, 16663, 16665, 16667, 16669		<code>\teightsuperior</code> . . . . .	16425
<code>\tcheh</code> . . . . .	16886			<code>\textellipsis</code> 554, 555, 14541, 16393		
<code>\temp@online</code> . . . . .	7838, 7841			<code>\textemdash</code> . .	748, 14543, 16371	
<code>\TeX</code> . . . . .	558, 559, 566, 568, 12219, 12221, 12223			<code>\textendash</code> . .	749, 14545, 16369	
<code>\texorpdfstring</code> . . . . .	918, 6015			<code>\textEpsilon</code> .	1152, 15559, 15581	
<code>\textacute</code> . .	14433, 14445, 14457, 14637, 14868, 14887, 15005			<code>\textepsilon</code> 562, 565, 1152, 15628, 15644		
<code>\textacutedbl</code> . . . . .	15537			<code>\textequalsuperior</code> . . . . .	16433	
<code>\textaleph</code> . . . . .	16503			<code>\textestimated</code> . . . . .	16501	
<code>\textAlpha</code> . . .	1148, 15557, 15573			<code>\textEta</code> . . . . .	1155, 15561, 15585	
<code>\textalpha</code> . . .	1148, 15626, 15636			<code>\texteta</code> . . . . .	1155, 15630, 15648	
<code>\textampersand</code> 550, 14504, 14935				<code>\texteuro</code> . . . . .	14598, 16477	
<code>\textangstrom</code> . . . . .	16499			<code>\textexclamdown</code> 752, 1059, 14600, 14968		
<code>\textasciicircum</code> . . . . .	15006			<code>\textfi</code> . . . . .	750, 14573, 16685	
<code>\textasciibreve</code> . . . .	14480, 14876, 14895, 15526			<code>\TextField</code> . . . . .	5818	
<code>\textasciicaron</code> . . . .	14438, 14450, 14462, 14482, 14873, 14892, 15524			<code>\textfiveinferior</code> . . . . .	16451	

<code>\textfrqq</code> . . . . .	638, 14801, 16694	<code>\textneg</code> . . . . .	14804, 16697	<code>\textquotedblright</code> .	14563, 16383
<code>\textGamma</code> . . . . .	1150, 15577	<code>\textnewtie</code> .	14884, 14903, 15545	<code>\textquoteleft</code> 14565, 14799, 16375,	
<code>\textgamma</code> . . . . .	1150, 15640	<code>\textnineinferior</code> . . . . .	16459	16692	
<code>\textglq</code> . . . . .	635, 14798, 16691	<code>\textninesuperior</code> . . . . .	16427	<code>\textquoteright</code> . . .	14567, 16377
<code>\textglqq</code> . . . . .	633, 14796, 16689	<code>\textnormal</code> . . . . .	579	<code>\textquotesingle</code> . . . . .	14937
<code>\textgravedbl</code> . . . . .	15539	<code>\textnsuperior</code> . . . . .	16439	<code>\texttriangle</code> . . . . .	16519
<code>\textgreater</code> . . . . .	14514, 14947	<code>\textNu</code> . . . . .	1174, 15597	<code>\texttrbrackdbl</code> . . . . .	16683
<code>\textgrq</code> . . . . .	636, 14799, 16692	<code>\textnu</code> . . . . .	1174, 15660	<code>\textrecipe</code> . . . . .	16489
<code>\textgrqq</code> . . . . .	634, 14797, 16690	<code>\textnumbersign</code> 547, 14498, 14929		<code>\textreferencemark</code> . . . . .	16403
<code>\textGslash</code> . . . . .	15442	<code>\textnumeralsigngreek</code> 1125, 15553		<code>\textregistered</code> . . . .	14625, 14993
<code>\textgslash</code> . . . . .	15444	<code>\textnumeralsignlowergreek</code> 1142,		<code>\textRho</code> . . . . .	1193, 15605
<code>\textguarani</code> . . . . .	16481	1164, 1187, 15555		<code>\textrho</code> . . . . .	1193, 15668
<code>\textHslash</code> . . . . .	15238	<code>\textnumero</code> . . . . .	16485	<code>\textrightarrow</code> . . . . .	16509
<code>\texthslash</code> . . . . .	15240	<code>\textogonek</code> . 14490, 14880, 14899,		<code>\textring</code> . . . 14437, 14449, 14461,	
<code>\textHT</code> . . . . .	14474, 14921	15532		14492, 14872, 14891, 15530	
<code>\texthungarumlaut</code> 14488, 14879,		<code>\textohm</code> . . . . .	16495	<code>\textrm</code> . . . . .	580
14898, 15536, 15537		<code>\textOmega</code> . . 1200, 15569, 15619		<code>\textrquill</code> . . . . .	16411
<code>\textinterrobang</code> . . . . .	16405	<code>\textomega</code> . . 1200, 15684, 15695		<code>\textSampigreek</code> . . .	1201, 15709
<code>\textIota</code> 1170, 15563, 15589, 15622		<code>\textOmicron</code> . 1176, 15565, 15601		<code>\textsampigreek</code> . . .	1201, 15711
<code>\textiota</code> 1170, 15632, 15652, 15686		<code>\textomicron</code> . 1176, 15664, 15690		<code>\textsc</code> . . . . .	586
<code>\textIotadieresis</code> . . .	15571, 15621	<code>\textonehalf</code> . . . . .	14655, 15024	<code>\textsection</code> . . . . .	14612, 14980
<code>\textit</code> . . . . .	585	<code>\textoneinferior</code> . . . . .	16443	<code>\textservicemark</code> . . . . .	16491
<code>\textKappa</code> . . . . .	1171, 15591	<code>\textonequarter</code> . . .	14653, 15022	<code>\textseveninferior</code> . . . . .	16455
<code>\textkappa</code> . . . . .	1171, 15654	<code>\textonesuperior</code> . .	14647, 15016	<code>\textsevensuperior</code> . . . . .	16423
<code>\textKoppagreek</code> . . .	1178, 15705	<code>\textopenbullet</code> . . . . .	16671	<code>\textsf</code> . . . . .	581, 12887, 12890
<code>\textkoppagreek</code> . . .	1178, 15707	<code>\textordfeminine</code> . .	14618, 14986	<code>\textSigma</code> . . . . .	1194, 15607
<code>\textkra</code> . . . . .	15279	<code>\textordmasculine</code> .	14649, 15018	<code>\textsigma</code> . . . . .	1194, 15672
<code>\textLambda</code> . . . . .	1172, 15593	<code>\textparagraph</code> 553, 14641, 15010		<code>\textsixinferior</code> . . . . .	16453
<code>\textlambda</code> . . . . .	1172, 15656	<code>\textparenleft</code> . . 756, 757, 14506,		<code>\textsixsuperior</code> . . . . .	16421
<code>\textlangle</code> . . . . .	16517	14939		<code>\textsl</code> . . . . .	587
<code>\textlatin</code> . . . . .	621, 6663	<code>\textparenleftinferior</code> . . . .	16461	<code>\textsterling</code> . . . .	14604, 14972
<code>\textlbrackdbl</code> . . . . .	16681	<code>\textparenleftsuperior</code> . . .	16435	<code>\textStigmagreek</code> . . .	1153, 15697
<code>\textleftarrow</code> . . . . .	16505	<code>\textparenright</code> . . . 14508, 14941		<code>\textstigmagreek</code> . . .	1153, 15699
<code>\textless</code> . . . . .	14512, 14945	<code>\textparenrightinferior</code> . . .	16463	<code>\textsurd</code> . . . . .	16515
<code>\textLF</code> . . . . .	14476, 14923	<code>\textparenrightsuperior</code> . .	16437	<code>\TextSymbolUnavailable</code> .	14468,
<code>\textlira</code> . . . . .	16467	<code>\textpercent</code> . . 549, 14502, 14933		14469, 14471	
<code>\textlnot</code> . . . . .	14623, 14991	<code>\textperiodcentered</code> 14643, 14808,		<code>\textTau</code> . . . . .	1195, 15609
<code>\textlogicalnot</code> . . . .	14622, 14804,	15012, 16701		<code>\texttau</code> . . . . .	1195, 15674
14990, 16697		<code>\textpertenthousand</code> . . . .	16397	<code>\textTheta</code> . . . . .	1156, 15587
<code>\textlongs</code> . . . . .	15421, 16353	<code>\textperthousand</code> . . 14557, 16395		<code>\texttheta</code> . . . . .	1156, 15650
<code>\textlquill</code> . . . . .	16409	<code>\textpeseta</code> . . . . .	16471	<code>\textthreeinferior</code> . . . . .	16447
<code>\textmacronbelow</code> . 14442, 14454,		<code>\textpeso</code> . . . . .	16479	<code>\textthreequarters</code> .	14657, 15026
14466, 14521, 14881, 14900,		<code>\textPhi</code> . . . . .	1197, 15613	<code>\textthreesuperior</code> .	14635, 15003
15549		<code>\textphi</code> . . . . .	1197, 15678	<code>\texttie</code> . . . . 14883, 14902, 15551	
<code>\textmarried</code> . . . . .	16677	<code>\textPi</code> . . . . .	1177, 15603	<code>\texttilde</code> . . . . 4172, 14435, 14447,	
<code>\textmd</code> . . . . .	584	<code>\textpi</code> . . . . .	1177, 15666	14459, 14494, 14870, 14889,	
<code>\textmho</code> . . . . .	16497	<code>\textplusminus</code> . . . 14631, 14807,		15534	
<code>\textminus</code> . . . . .	14555, 16513	14999, 16700		<code>\texttildelow</code> . . . . .	15541
<code>\textminussuperior</code> . . . . .	16431	<code>\textplussuperior</code> . . . . .	16429	<code>\texttimes</code> . . . . .	14805, 16698
<code>\textMu</code> . . . . .	1173, 15595	<code>\textpm</code> . . . . .	14807, 16700	<code>\texttrademark</code> . . .	14571, 16493
<code>\textmu</code> . . . . .	1173, 14639, 15008	<code>\textPsi</code> . . . . .	1199, 15617	<code>\textTslash</code> . . . . .	15371
<code>\textmugreek</code> . . . . .	15658	<code>\textpsi</code> . . . . .	1199, 15682	<code>\texttslash</code> . . . . .	15373
<code>\textmultiply</code> 14708, 14805, 15076,		<code>\textquestiondown</code> . . . 753, 1060,		<code>\texttt</code> . . . . .	582
16698		14659, 15028		<code>\texttwoinferior</code> . . . . .	16445
<code>\textmusicalnote</code> . . . . .	16675	<code>\textquotedbl</code> . . . .	14496, 14927	<code>\texttwosuperior</code> . .	14633, 15001
<code>\textnaira</code> . . . . .	16469	<code>\textquotedblleft</code> . . 14561, 14797,		<code>\textunderscore</code> . 552, 4619, 4620,	
<code>\textnapostrophe</code> . . . . .	15313	16381, 16690		4622, 14520, 14953	



<code>\textup</code> .....	588	<code>\theHthm</code> .....	6543	<code>\toclevel@table</code> .....	3410
<code>\textuparrow</code> .....	16507	<code>\theHy@tempcnt</code> 4735, 4743, 4750		<code>\tocparagraph</code> .....	1613
<code>\textUpsilon</code> . 1196, 15567, 15611, 15624		<code>\thelisting</code> .....	3416	<code>\tocpart</code> .....	1607
<code>\textupsilon</code> . . 1196, 15676, 15688, 15693		<code>\thelstlisting</code> .....	3412	<code>\tocsection</code> .....	1610
<code>\textupsilonacute</code> . . 15634, 15692		<code>\thempfn</code> . 7111, 7204, 7296, 7308		<code>\tocsubsection</code> .....	1611
<code>\textvarsigma</code> .....	15670	<code>\theoremautorefname</code> . 3091, 3109, 3127, 3145, 3163, 3181, 3199, 3237, 3257, 3275, 8582		<code>\tocsubsubsection</code> .....	1612
<code>\textvisiblespace</code> .....	16523	<code>\thepage</code> . 2374, 4853, 6185, 6211, 6226, 6737, 6745, 6772, 7572, 7595, 7624, 7725, 7772, 7851, 7882, 8043, 8060, 8066, 8070, 8077, 8340, 8360, 8377, 8494		<code>\toks</code> .....	4892, 4894, 4896, 4900, 4905, 8348, 8349, 8351, 14297, 14302, 14368, 14373
<code>\textwon</code> .....	16473	<code>\theslideheading</code> .....	8169	<code>\toks@</code> .....	171, 208, 485, 488, 491, 509, 510, 832, 839, 871, 872, 1245, 1268, 1271, 1273, 1781, 1782, 3287, 3288, 3290, 3871, 3875, 3876, 3884, 4180, 4181, 4358, 4360, 5007, 5012, 5016, 5020, 6306, 6308, 6394, 6396, 6446, 6458, 6754, 6758, 6794, 6799, 7182, 7185, 7913, 7914, 8120, 8125, 8127, 8130, 14296, 14302, 14367, 14373
<code>\textXi</code> .....	1175, 15599	<code>\theslidesubsection</code> . 8157, 8164, 8172, 8178, 8180, 8182, 8188, 8198		<code>\topmargin</code> .....	7785
<code>\textxi</code> .....	1175, 15662	<code>\theslidesubheading</code> . . 8170, 8221		<code>\trivlist</code> .....	6989, 7015, 7048
<code>\textyen</code> .....	14608, 14976	<code>\theslidesubsection</code> . 8209, 8216, 8223, 8229, 8231, 8233, 8239, 8249		<code>\tryhyper@link</code> .....	4828, 4830
<code>\textzeroinferior</code> .....	16441	<code>\This@name</code> 6570, 6571, 6589, 6590		<code>\ttfamily</code> .....	592
<code>\textzerosuperior</code> .....	16415	<code>\thispdfpagelabel</code> .....	6190	<code>\ttl@b</code> .....	6805, 6810
<code>\textZeta</code> .....	1154, 15583	<code>\ThisShouldNotHappen</code> . . 13564		<code>\ttl@gobblecontents</code> .....	6814
<code>\textzeta</code> .....	1154, 15646	<code>\thm@headfont</code> .....	6993, 7019	<code>\ttl@Hy@PatchSaveWrite</code> . . 6788, 6792	
<code>\TH</code> .....	14722, 15090	<code>\thm@headpunct</code> 6995, 7021, 7052		<code>\ttl@Hy@crefststepcounter</code> . . . 6804	
<code>\th</code> .....	14790, 15158	<code>\thm@headsep</code> . . 6996, 7022, 7053		<code>\ttl@Hy@savewrite</code> .....	6783, 6807
<code>\thaa</code> .....	16850	<code>\thm@indent</code> .....	6992, 7018	<code>\ttl@Hy@SavedCurrentHref</code> 6787, 6798	
<code>\thebookmark@seq@number</code> 13980		<code>\thm@notefont</code> . . 6994, 7020, 7051		<code>\ttl@Hy@steplink</code> .....	6781
<code>\theequation</code> . . 6592, 6895, 6917, 6941, 6977		<code>\thm@postskip</code> . . 7000, 7026, 7057		<code>\ttl@savewrite</code> .....	6794, 6796
<code>\thefootnote</code> .....	7122, 7315	<code>\thm@preskip</code> . . 6999, 7025, 7056		<code>\tw@</code> . 14297, 14302, 14368, 14373	
<code>\theHchapter</code> . . 6533, 6534, 6535, 6536, 6621		<code>\thm@space@setup</code> . . . 6997, 7023, 7054		<code>\TX@endtabularx</code> 7175, 7182, 7188	
<code>\theHenumi</code> .....	6552	<code>\thm@swap</code> .....	6991, 7017, 7050	<code>\typeout</code> . . . 5, 6, 7, 19, 26, 27, 36, 131, 155, 158, 159, 160, 5037, 14394, 16895	
<code>\theHenumii</code> .....	6553	<code>\thmheadnl</code> .....	6990, 7016, 7049		
<code>\theHenumiii</code> .....	6554	<code>\tiny</code> .....	610		
<code>\theHenumiv</code> .....	6555	<code>\title</code> .....	6096, 6098		
<code>\theHequation</code> . 6523, 6593, 6896, 6918, 6942, 6950, 6977, 6981		<code>\TMP@EnsureCode</code> . . 4456, 4463, 4464, 4465, 4466, 4467, 4468, 4469, 4470, 4471, 4472, 4473, 4474, 4475, 4476, 4477, 4478, 4479, 4480, 4481, 4482, 4483, 4484, 4485, 4486, 4487, 4488, 4489			
<code>\theHfigure</code> .....	6530, 6534	<code>\tocappendix</code> .....	1609		
<code>\theHHfootnote</code> .....	6556, 6558	<code>\tocchapter</code> .....	1608		
<code>\theHHmpfootnote</code> .....	6558	<code>\toclevel@chapter</code> .....	3403		
<code>\theHItem</code> 6546, 6552, 6553, 6554, 6555		<code>\toclevel@figure</code> .....	3409		
<code>\theHlisting</code> .....	3416	<code>\toclevel@listing</code> .....	3417		
<code>\theHlstlisting</code> .....	3412	<code>\toclevel@lstlisting</code> .....	3413		
<code>\theHmpfootnote</code> .....	6557	<code>\toclevel@paragraph</code> .....	3407		
<code>\theHpage</code> .....	7729	<code>\toclevel@part</code> .....	3399, 3401		
<code>\theHparagraph</code> .....	6540, 6541	<code>\toclevel@section</code> .....	3404		
<code>\theHparentequation</code> . 6976, 6981		<code>\toclevel@subfigure</code> .....	2388		
<code>\theHpart</code> .....	6526	<code>\toclevel@subparagraph</code> . . 3408			
<code>\theHsection</code> . . 6523, 6529, 6536, 6538, 6542, 6543, 6620		<code>\toclevel@subsection</code> .....	3405		
<code>\theHslide</code> .....	8143	<code>\toclevel@subsubsection</code> . . 3406			
<code>\theHslidesubsection</code> 8148, 8150, 8186, 8190		<code>\toclevel@subtable</code> .....	2389		
<code>\theHslidesubsection</code> . 8149, 8237, 8241					
<code>\theHsubequation</code> .....	6950				
<code>\theHsubparagraph</code> .....	6541				
<code>\theHsubsection</code> .....	6538, 6539				
<code>\theHsubsubsection</code> . . 6539, 6540					
<code>\theHtable</code> .....	6531, 6535				
<code>\theHtheorem</code> .....	6542				

`\unichar` . . . . . 2220  
`\Unicode` . . . . . 1321  
`\unrestored@protected@xdef` 7111,  
     7122, 7258, 7265, 7308, 7315  
`\unskip` . . . 6987, 7012, 7045, 7557,  
     8426, 8430, 8434, 8439  
`\upshape` . . . 598, 6994, 7020, 7051  
`\Url` . . . . . 4799  
`\url` . . . . . 4798, 4802  
`\url@` . . . . . 4802, 4803  
`\use@file` . . . . . 4968, 4970, 4977  
`\usefont` . . . . . 577  
`\utf@viii@undeferr` . . . . . 539  
`\UTFviii@four@octets` 2216, 2225  
`\UTFviii@three@octets` . . . . 2215  
`\UTFviii@two@octets` . . . . . 2214  
  
**V**  
`\v` . . . 14438, 14450, 14462, 14581,  
     14586, 14594, 14596, 14849,  
     14873, 14892, 14914, 15186,  
     15188, 15190, 15192, 15214,  
     15216, 15289, 15291, 15309,  
     15311, 15343, 15345, 15359,  
     15361, 15367, 15369, 15417,  
     15419, 15425, 15427, 15429,  
     15431, 15432, 15434, 15436,  
     15438, 15440, 15446, 15448,  
     15450, 15452, 15458, 15459,  
     15502, 15504  
`\V@@@footnotetext` . . . . . 7245  
`\V@@footnotetext` . . . . . 7231  
`\value` 6209, 7511, 7537, 7789, 7938,  
     9890, 9895  
`\vbox` 5851, 5852, 5853, 5854, 6165,  
     7783  
`\vfill` . . . . . 5851, 5852, 5853, 5854  
`\voffset` . . . . . 7784  
`\vpageref` . . . . . 8439  
`\vphantom` . . . . . 613  
`\Vr@f` . . . . . 8425  
`\vr@f` . . . . . 8433  
`\vref@pagenum` . . . . . 6818  
`\vref@space` . . . . 8426, 8429, 8434  
`\vskip` . . . . . 2463, 2464  
`\vss` . . . . . 7798  
`\vtex@trans@special` 10675, 10677,  
     10680, 10684, 10688, 10692,  
     10694, 10696, 10700, 10706,  
     10707, 10710  
`\VTeXInitMediaSize` 10355, 10372  
`\VTeXOS` . . . 10745, 10746, 10747,  
     10749

`\VTeXversion` . 6361, 6364, 6367,  
     10737, 10741  
  
**W**  
`\waw` . . . . . 16874  
`\wawhamza` . . . . . 16843  
`\wd` . 9485, 9501, 9522, 9539, 9562,  
     9579, 13214  
`\write` 4690, 6045, 6047, 6475, 6483,  
     6743, 6771, 7495, 7510, 7526,  
     7536, 7566, 7589, 7615, 7645,  
     12812, 12836, 14164, 14246  
`\WriteBookmarks` . . . . .  
     . . . . 4114, 4251, 4425, 4447,  
     13913, 14157, 14190, 14191,  
     14233, 14239  
`\wwwbrowser` . . . 9439, 9524, 9541  
  
**X**  
`\x` . . . . . 21, 25, 92, 98,  
     168, 169, 176, 178, 206, 209,  
     210, 211, 212, 213, 214, 215,  
     216, 217, 218, 219, 220, 221,  
     222, 223, 224, 225, 226, 227,  
     228, 290, 295, 296, 508, 513,  
     834, 837, 841, 846, 878, 945,  
     951, 1708, 1736, 2163, 2165,  
     2458, 2468, 2477, 2487, 2556,  
     2557, 2562, 2578, 3298, 3301,  
     3305, 3318, 3428, 3429, 3432,  
     3433, 3434, 3438, 3441, 3447,  
     3874, 3880, 3883, 3886, 4041,  
     4042, 4047, 4048, 4127, 4128,  
     4129, 4132, 4135, 4138, 4178,  
     4179, 4181, 4182, 4359, 4362,  
     4689, 4695, 4890, 4901, 4905,  
     4908, 4983, 4984, 4985, 4997,  
     5008, 5009, 5010, 5011, 5014,  
     5015, 5089, 5103, 5128, 5132,  
     5135, 5145, 6118, 6119, 6124,  
     6755, 6762, 6795, 6802, 6843,  
     6852, 6854, 6866, 8127, 8128,  
     8350, 8353, 8388, 8389, 8390,  
     8392, 8394, 8748, 8756, 9044,  
     9045, 9048, 9050, 9053, 9714,  
     9715, 9716, 9718, 9719, 9720,  
     9722, 9723, 9724, 9726, 9727,  
     9728, 9730, 9731, 9732, 9734,  
     9735, 9736, 9738, 9739, 9740,  
     9742, 9743, 9745, 9751, 9760,  
     10845, 10850, 10854, 11225,  
     11228, 11234, 11239, 11384,  
     11385, 12460, 12480, 12940,

    12960, 13279, 13299,  
     14303, 14372, 14374  
`\XeTeXrevision` . . . . 4412,  
`\XeTeXversion` . . . . 4412,  
`\XR@CdURL` . . . . . 2395  
`\XR@addURL` . . . . .  
`\XR@ext` . 2664, 2665, 4966,  
     6359, 8645, 9335, 9438,  
     10236, 11576, 11659,  
     11917, 12081  
`\XR@URL` . . . . .  
`\xspace` . . . . . 60  
`\xspaceaddexceptions` 4088  
  
**Y**  
`\y` . . . . . 295, 297, 30,  
     852, 855, 858, 861, 86-  
     2558, 2563, 2568, 3434,  
     3436, 3437, 4130, 4133,  
     4139, 4141, 4147, 4986,  
     4988, 4989, 4997, 6119,  
     6839, 6841, 6842, 6845,  
     11230, 11231, 11232, 11-  
`\ya` . . . . .  
`\yahamza` . . . . .  
  
**Z**  
`\z` 296, 297, 302, 2560, 2561,  
     4989, 4997  
`\z@` . . . . 810, 850, 972, 1124,  
     1163, 1186, 1437, 1477,  
     1506, 1521, 1529, 1602,  
     1863, 1869, 1933, 1937,  
     1949, 2414, 2419, 2453,  
     2753, 2756, 2898, 3440,  
     4043, 4421, 6362, 6365,  
     7082, 7243, 9257, 9261,  
     9270, 9277, 9280, 9284,  
     10218, 10219, 10224,  
     10736, 10760, 10968,  
     11282, 11641, 11642,  
     11648, 12450, 12930,  
     13269, 13687, 13717,  
     13744, 13750, 13778,  
     13817, 13836, 13846,  
     13881, 13886, 13991,  
     13993, 13994, 13995,  
     13997, 13998, 13999,  
     14338  
`\z@skip` . . . . .  
`\za` . . . . .  
`\zay` . . . . .  
`\ZWNJ` . . . . .