

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

Sebastian Rahtz

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

Heiko Oberdiek

Email: [oberdiek@uni-freiburg.de](mailto:oberdiek@uni-freiburg.de)

2010/02/08 v6.80e

## 1 Documentation overview for hyperref

The documentation for package hyperref consists of several files:

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

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


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

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

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

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

Source code documentation:

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

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

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

## 2 Contents

<b>1</b>	<b>Documentation overview for hyperref</b>	<b>1</b>
<b>2</b>	<b>Contents</b>	<b>2</b>
<b>3</b>	<b>File hycheck.tex</b>	<b>7</b>
<b>4</b>	<b>Package options and setup</b>	<b>10</b>
4.1	Save catcodes . . . . .	10
4.2	Compatibility with format dumps . . . . .	12
4.3	Switches . . . . .	12
<b>5</b>	<b>Common help macros</b>	<b>14</b>
5.1	Macros for recursions . . . . .	14
5.2	Babel's protection of shorthand characters . . . . .	14
5.3	Coordinate transformations . . . . .	14
<b>6</b>	<b>Dealing with PDF strings</b>	<b>16</b>
6.1	Description of PDF strings . . . . .	16
6.2	Definition of <code>\pdfstringdef</code> . . . . .	16
6.2.1	Preprocessing . . . . .	17
6.2.2	Expansion . . . . .	22
6.2.3	Postprocessing . . . . .	23
6.3	Encodings . . . . .	27
6.3.1	XeTeX . . . . .	27
6.3.2	Workaround for package linguex . . . . .	28
6.3.3	PD1 encoding . . . . .	29
6.3.4	PU encoding . . . . .	29
6.4	Additional user commands . . . . .	30
6.4.1	<code>\texorpdfstring</code> . . . . .	30
6.4.2	Hooks for <code>\pdfstringdef</code> . . . . .	30
6.5	Help macros for expansion . . . . .	31
6.5.1	<code>\ignorespaces</code> . . . . .	31
6.5.2	Babel languages . . . . .	31
6.5.3	CJK bookmarks . . . . .	36
6.5.4	<code>\@inmathwarn-Patch</code> . . . . .	38
6.5.5	Unexpandable spaces . . . . .	39
6.5.6	Marker for commands . . . . .	39
6.5.7	<code>\hspace fix</code> . . . . .	40
6.5.8	Fix for AMS classes . . . . .	40
6.5.9	Reference commands . . . . .	40
6.5.10	Redefining the defining commands . . . . .	42
6.5.11	<code>\ifnextchar</code> . . . . .	44
6.5.12	<code>\@protected@testoptifnextchar</code> . . . . .	44
6.6	Help macros for postprocessing . . . . .	44
6.6.1	Generic warning. . . . .	44
6.6.2	Protecting spaces . . . . .	44
6.6.3	Remove grouping braces . . . . .	45
6.6.4	Catcode check . . . . .	47
6.6.5	Check for wrong glyphs . . . . .	50
6.6.6	Replacing tokens . . . . .	51
6.6.7	Support for package xspace . . . . .	51
6.6.8	Converting to Unicode . . . . .	52

6.6.9	Support for UTF-8 input encoding . . . . .	54
<b>7</b>	<b>Support of other packages</b>	<b>57</b>
7.1	Class memoir . . . . .	57
7.2	Package subfigure . . . . .	58
7.3	Package xr and xr-hyper . . . . .	58
<b>8</b>	<b>Help macros for links</b>	<b>59</b>
<b>9</b>	<b>Options</b>	<b>60</b>
9.1	Help macros . . . . .	60
9.2	Defining the options . . . . .	62
<b>10</b>	<b>Options for different drivers</b>	<b>66</b>
<b>11</b>	<b>Options to add extra features</b>	<b>68</b>
<b>12</b>	<b>Language options</b>	<b>70</b>
<b>13</b>	<b>Options to change appearance of links</b>	<b>76</b>
<b>14</b>	<b>Bookmarking</b>	<b>76</b>
<b>15</b>	<b>PDF-specific options</b>	<b>79</b>
15.1	PDF/A . . . . .	88
15.2	Patch for babel's \texttilde . . . . .	89
15.2.1	Driver loading . . . . .	90
15.2.2	Bookmarks . . . . .	92
<b>16</b>	<b>User hypertext macros</b>	<b>95</b>
<b>17</b>	<b>Underlying basic hypertext macros</b>	<b>99</b>
<b>18</b>	<b>Compatibility with the <i>ETEX2html</i> package</b>	<b>102</b>
<b>19</b>	<b>Forms creation</b>	<b>102</b>
19.1	Field flags . . . . .	103
19.1.1	Declarations of field flags . . . . .	104
19.1.2	Set submit flags . . . . .	107
19.1.3	Set annot flags in fields . . . . .	107
19.1.4	Pushbutton field . . . . .	108
19.1.5	Check box field . . . . .	108
19.1.6	Radio button field . . . . .	108
19.1.7	Text fields . . . . .	109
19.1.8	Choice fields . . . . .	109
19.2	Choice field . . . . .	110
19.3	Forms . . . . .	112
<b>20</b>	<b>Setup</b>	<b>117</b>
<b>21</b>	<b>Low-level utility macros</b>	<b>118</b>
<b>22</b>	<b>Localized nullifying of package</b>	<b>119</b>
<b>23</b>	<b>Package nohyperref</b>	<b>120</b>

<b>24 The Mangling Of Aux and Toc Files</b>	<b>121</b>
<b>25 Title strings</b>	<b>122</b>
<b>26 Page numbers</b>	<b>123</b>
<b>27 Every page</b>	<b>123</b>
27.1 PDF/PageLabels . . . . .	124
27.1.1 pdfTeX and VTeX . . . . .	127
27.1.2 xetex . . . . .	128
27.1.3 pdfmarkbase, dvipdfm, xetex . . . . .	129
<b>28 Automated L<sup>A</sup>T<sub>E</sub>X hypertext cross-references</b>	<b>130</b>
<b>29 Package lastpage support</b>	<b>134</b>
<b>30 Package ifthen support</b>	<b>135</b>
<b>31 Package titlesec and titletoc support</b>	<b>136</b>
<b>32 Package varioref support</b>	<b>136</b>
<b>33 Package longtable support</b>	<b>137</b>
<b>34 Equations</b>	<b>137</b>
<b>35 Footnotes</b>	<b>141</b>
<b>36 Float captions</b>	<b>145</b>
<b>37 Bibliographic references</b>	<b>147</b>
37.1 Package harvard . . . . .	150
37.2 Package chicago . . . . .	152
<b>38 Page numbers</b>	<b>153</b>
<b>39 Table of contents</b>	<b>154</b>
<b>40 New counters</b>	<b>155</b>
<b>41 AMSL<sup>A</sup>T<sub>E</sub>X compatibility</b>	<b>156</b>
41.1 \@addtoreset and \numberwithin patches . . . . .	157
<b>42 Included figures</b>	<b>158</b>
<b>43 hyperindex entries</b>	<b>158</b>
<b>44 Compatibility with foiltex</b>	<b>161</b>
<b>45 Compatibility with seminar slide package</b>	<b>161</b>
<b>46 Configuration files</b>	<b>169</b>
46.1 PS/PDF strings . . . . .	169
46.2 pdftex . . . . .	170
46.2.1 Fix for problem with different nesting levels . . . . .	183
46.3 hypertex . . . . .	183

46.4	dviwindo	186
46.5	dvipdfm/xetex dvi to PDF converter	190
46.6	VT <sub>E</sub> X typesetting system	198
46.7	Fix for Adobe bug number 466320	209
46.8	Direct pdfmark support	210
46.9	Rokicki's dvips	222
46.10	VT <sub>E</sub> X's vtexpdfmark driver	224
46.11	Textures	226
46.12	dvipsone	230
46.13	TeX4ht	233
<b>47</b>	<b>Driver-specific form support</b>	<b>235</b>
47.1	pdfmarks	235
47.2	HyperTeX	242
47.3	TeX4ht	242
47.4	pdfTeX	245
47.5	dvipdfm, xetex	252
47.6	Common forms part	259
<b>48</b>	<b>Bookmarks in the PDF file</b>	<b>265</b>
48.1	Bookmarks	265
48.1.1	Rerun warning	268
48.1.2	Driver stuff	268
<b>49</b>	<b>Compatibility with koma-script classes</b>	<b>274</b>
<b>50</b>	<b>Encoding definition files for encodings of PDF strings</b>	<b>275</b>
50.1	PD1 encoding	275
50.2	PU encoding	283
50.2.1	NFSS2 accents	283
50.2.2	Basic Latin: U+0000 to U+007F	284
50.2.3	Latin-1 Supplement: U+0080 to U+00FF	286
50.2.4	Latin Extended-A: U+0080 to U+017F	289
50.2.5	Latin Extended-B: U+0180 to U+024F	294
50.2.6	Spacing Modifier Letters: U+02B0 to U+02FF	296
50.2.7	Combining Diacritical Marks: U+0300 to U+036F	296
50.2.8	Greek and Coptic: U+0370 to U+03FF	297
50.2.9	Cyrillic: U+0400 to U+04FF	300
50.2.10	Thai: U+0E00 to U+0E7F	310
50.2.11	Latin Extended Additional: U+1E00 to U+1EFF	310
50.2.12	General Punctuation: U+2000 to U+206F	313
50.2.13	Superscripts and Subscripts: U+2070 to U+209F	314
50.2.14	Currency Symbols: U+20A0 to U+20CF	314
50.2.15	Letterlike Symbols: U+2100 to U+214F	315
50.2.16	Arrows: U+2190 to U+21FF	315
50.2.17	Mathematical Operators: U+2200 to U+22FF	315
50.2.18	Miscellaneous Technical: U+2300 to U+23FF	316
50.2.19	Control Pictures: U+2400 to U+243F	316
50.2.20	Enclosed Alphanumerics: U+2460 to U+24FF	316
50.2.21	Box Drawing: U+2500 to U+257F	318
50.2.22	Miscellaneous Symbols: U+2600 to U+26FF	318
50.2.23	Miscellaneous Mathematical Symbols-A: U+27C0 to U+27EF	319
50.2.24	Alphabetic Presentation Forms: U+FB00 to U+FB4F	319

50.2.25 Miscellaneous . . . . .	319
50.2.26 Aliases . . . . .	319
50.3 PU encoding, additions for VnT <sub>E</sub> X . . . . .	319
50.4 PU encoding, additions for Arabi . . . . .	322
<b>51 End of file hycheck.tex</b>	<b>323</b>
<b>52 Index</b>	<b>324</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 }\%
36 \typeout{\%
37 \space\space Loaded: '\HyC@package' \%
38 \csname ver@\HyC@package.sty\endcsname
39 }\%
40 }\%
41 }
```

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

```

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

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

```

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

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

```

59 \def\HyC@checkcommand{%
60   \ifx\HyC@next\relax
61     \PackageError{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  $\LaTeX$  definition (number of arguments).

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

```

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

```

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

```

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

```

`\HyC@checkItem` A single check.

```

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

```

`\HyC@string` Some shorthands.

```

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

```

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

```

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

```

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

```

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

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

```

## 4 Package options and setup

### 4.1 Save catcodes

There are many packages that change the standard catcodes.

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

```

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

```

\Hy@SetCatcodes

```

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

```

\Hy@RestoreCatcodes

```

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

```

```

216 \x\)%
217 \x\[%
218 \x\l%
219 \x\/%
220 \x\!%
221 \x\<%
222 \x\>%
223 \x\.%
224 \x\;%
225 \x\+%
226 \x\-%
227 \x\"%
228 \x\'%
229 }%
230 \endgroup

```

```

231 \Hy@SetCatcodes

```

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

```

232 \RequirePackage{keyval}[1997/11/10]
233 \RequirePackage{kvsetkeys}[2007/09/29]
234 \RequirePackage{pdfescape}[2007/11/11]
235 \RequirePackage{ifpdf}[2006/02/20]
236 \RequirePackage{ifvtex}
237 \RequirePackage{ifxetex}[2006/08/21]
238 \RequirePackage{hycolor}
239 \RequirePackage{letltxmacro}[2008/06/13]
240 \def\Hy@Warning#1{\PackageWarning{hyperref}{#1}}
241 \def\Hy@WarningNoLine#1{\PackageWarningNoLine{hyperref}{#1}}
242 \def\Hy@Info#1{\PackageInfo{hyperref}{#1}}

```

## 4.2 Compatibility with format dumps

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

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

```

243 \@ifundefined{AfterBeginDocument}{%
244   \def\AfterBeginDocument{\AtBeginDocument}%
245 }{}%

```

## 4.3 Switches

```

246 \newif\ifHy@typexml
247 \newif\ifHy@activeanchor
248 \newif\ifHy@backref
249 \newif\ifHy@bookmarks
250 \newif\ifHy@bookmarksnumbered
251 \newif\ifHy@bookmarksopen
252 \newif\ifHy@breaklinks
253 \newif\ifHy@centerwindow
254 \newif\ifHy@CJKbookmarks
255 \newif\ifHy@colorlinks

```

```

256 \newif\ifHy@draft
257 \let\Hy@finaltrue\Hy@draftfalse
258 \let\Hy@finalfalse\Hy@drafttrue
259 \newif\ifHy@escapeform
260 \newif\ifHy@figures
261 \newif\ifHy@fitwindow
262 \newif\ifHy@frenchlinks
263 \newif\ifHy@hyperfootnotes
264 \newif\ifHy@hyperindex
265 \newif\ifHy@hypertextnames
266 \newif\ifHy@implicit
267 \newif\ifHy@linktopage
268 \newif\ifHy@menubar
269 \newif\ifHy@naturalnames
270 \newif\ifHy@nesting
271 \newif\ifHy@newwindowset
272 \newif\ifHy@newwindow
273 \newif\ifHy@ocgcolorlinks
274 \newif\ifHy@pageanchor
275 \newif\ifHy@pagelabels
276 \newif\ifHy@pdfpagehidden
277 \newif\ifHy@pdfstring
278 \newif\ifHy@plainpages
279 \newif\ifHy@psize
280 \newif\ifHy@raiselinks
281 \newif\ifHy@seminarslides
282 \newif\ifHy@setpagesize
283 \newif\ifHy@texht
284 \newif\ifHy@toolbar
285 \newif\ifHy@unicode
286 \newif\ifHy@usetitle
287 \newif\ifHy@verbose
288 \newif\ifHy@windowui
289 \newif\ifHy@displaydoctitle
290 \newif\ifHy@pdfa

```

Defaults for the switches are now set.

```

291 \Hy@backreffalse
292 \Hy@bookmarksnumberedfalse
293 \Hy@bookmarksopenfalse
294 \Hy@bookmarkstrue
295 \Hy@breaklinksfalse
296 \Hy@centerwindowfalse
297 \Hy@CJKbookmarksfalse
298 \Hy@escapeformfalse
299 \Hy@figuresfalse
300 \Hy@fitwindowfalse
301 \Hy@hyperfootnotetrue
302 \Hy@hyperindextrue
303 \Hy@hypertextnametrue
304 \Hy@implicittrue
305 \Hy@linktopagefalse
306 \Hy@menubartrue
307 \Hy@naturalnamesfalse
308 \Hy@nestingfalse
309 \Hy@newwindowsetfalse
310 \Hy@newwindowfalse
311 \Hy@pageanchortrue

```

```

312 \Hy@pagelabelstrue
313 \Hy@pdfpagehiddenfalse
314 \Hy@pdfstringfalse
315 \Hy@plainpagesfalse
316 \Hy@raiselinksfalse
317 \Hy@setpagesizetrue
318 \Hy@texhtfalse
319 \Hy@toolbartrue
320 \Hy@typexmlfalse
321 \Hy@unicodedefalse
322 \Hy@usetitlefalse
323 \Hy@verbosefalse
324 \Hy>windowuitrue
325 \Hy@displaydoctitlefalse
326 \Hy@pdfafalse

```

## 5 Common help macros

\Hy@StepCount

```

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

```

\Hy@GlobalStepCount

```

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

```

```

329 \newdimen\@linkdim
330 \let\Hy@driver\@empty
331 \let\MaybeStopEarly\relax
332 \newcount\Hy@linkcounter
333 \newcount\Hy@pagecounter
334 \Hy@linkcounter0
335 \Hy@pagecounter0

```

### 5.1 Macros for recursions

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

```

336 \long\def\Hy@ReturnAfterElseFi#1\else#2\fi{\fi#1}
337 \long\def\Hy@ReturnAfterFi#1\fi{\fi#1}

338 \let\Hy@ReturnEnd\@empty
339 \long\def\Hy@ReturnAfterFiFiEnd#1\fi#2\Hy@ReturnEnd{\fi\fi#1}
340 \long\def\Hy@ReturnAfterElseFiFiEnd#1\else#2\Hy@ReturnEnd{\fi\fi#1}

```

### 5.2 Babel's protection of shorthand characters

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

```

341 \def\Hy@safe@activetrue{\csname @safe@activetrue\endcsname}
342 \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 (TeX):

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

`\hypercalsbp`

```
343 \begingroup\expandafter\expandafter\expandafter\endgroup
344 \expandafter\ifx\csname dimexpr\endcsname\relax
345   \def\hypercalsbpdef#1#2{%
346     \begingroup
347       \toks@{}%
348       \HyCal@scan#2\hypercalsbp\@nil
349     \expandafter\endgroup
350     \expandafter\def\expandafter#1\expandafter{\the\toks@}%
351   }%
352 \def\HyCal@scan#1\hypercalsbp#2\@nil{%
353   \toks@\expandafter{\the\toks@ #1}%
354   \ifx\#2\%
355     \else
356       \Hy@ReturnAfterFi{%
357         \HyCal@do#2\@nil
358       }%
359     \fi
360   }%
361 \def\HyCal@do#1#2\@nil{%
362   \ifpackageloaded{calc}{}%
363   \Hy@Warning{%
364     For calculations \string\hypercalsbp\space needs\MessageBreak
365     package calc or e-TeX%
366   }%
367 }%
368 \setlength{\dimen@}{#1}%
369 \setlength{\dimen@}{0.99626401\dimen@}%
370 \edef\x{%
371   \toks@{}%
372   \the\toks@
373   \strip@pt\dimen@
```

```

374   }%
375   }\x
376   \HyCal@scan#2\@nil
377   }%
378 \else
379 \def\hypercalcbp#1{%
380   \strip@pt\dimexpr 0.99626401\dimexpr #1\relax\relax
381   }%
382 \def\hypercalcbpdef{\def}%
383 \fi

```

## 6 Dealing with PDF strings

The PDF string stuff done by Heiko Oberdiek.

Email: oberdiek@uni-freiburg.de.

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

### 6.1 Description of PDF strings

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

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

<code>\\</code>	the backslash itself
<code>\), \((</code>	unbalanced parentheses
<code>\n, \r, \t, \b, \f</code>	special white space escape sequences
<code>\ddd</code>	octal character code <i>ddd</i>
- Strings are stored either in PDFDocEncoding, which is a superset of ISOLatin1 and is compatible with Unicode with character codes below 256, or in Unicode.

### 6.2 Definition of `\pdfstringdef`

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

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

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

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

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

- The result should obey the rules of the PDF specification for strings.

- The string can safely be processed by T<sub>E</sub>X, because the tokens have only catcodes 10 until 12.

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

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

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

```
385 \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 T<sub>E</sub>X escape character indeed prints as a normal backslash. Eventually this line can be removed, because this is standard L<sup>A</sup>T<sub>E</sub>X behaviour.

```
386 \escapechar'\%
```

From the view of T<sub>E</sub>X 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.

```
387 \edef\0{\string\0}%
388 \edef\1{\string\1}%
389 \edef\2{\string\2}%
390 \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.

```
391 \ifHy@unicode
392 \edef\8{\string\8}%
393 \edef\9{\string\9}%
394 \fontencoding{PU}%
395 \HyPsd@UTFviii
396 \def\ifpdfstringunicode##1##2{##1}%
397 \else
398 \fontencoding{PD1}%
399 \def\ifpdfstringunicode##1##2{##2}%
400 \fi
401 \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).

```
402 \@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).

```
403 \let\@inmathwarn\HyPsd@inmathwarn
```

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

```
404 \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.

```
405 \let\{\textbraceleft
406 \let\}\textbraceright
407 \let\\\textbackslash
408 \let\#\textnumbersign
409 \let\$\textdollar
410 \let\%\textpercent
411 \let\&\textampersand
412 % \let\~\textasciitilde
413 \let\_ \textunderscore
414 \let\textP\textparagraph
415 \let\ldots\textellipsis
416 \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.

```
417 \def\{\pdfstringdefWarn\\}%
418 \def\newline{\pdfstringdefWarn\newline}%
```

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

```
419 \def\TeX{\TeX}%
420 \def\LaTeX{\LaTeX}%
421 \def\LaTeXe{\LaTeX2e}%
422 \def\eTeX{e-TeX}%
423 \def\SliTeX{SliTeX}%
424 \def\MF{Metafont}%
425 \def\MP{Metapost}%
```

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

```

426 \let\emph\@firstofone
427 \let\textnormal\@firstofone
428 \let\textrm\@firstofone
429 \let\textsf\@firstofone
430 \let\texttt\@firstofone
431 \let\textbf\@firstofone
432 \let\textmd\@firstofone
433 \let\textit\@firstofone
434 \let\textsc\@firstofone
435 \let\textsl\@firstofone
436 \let\textup\@firstofone
437 \let\normalfont\@empty
438 \let\rmfamily\@empty
439 \let\sffamily\@empty
440 \let\ttfamily\@empty
441 \let\bfseries\@empty
442 \let\mdseries\@empty
443 \let\itshape\@empty
444 \let\scshape\@empty
445 \let\slshape\@empty
446 \let\upshape\@empty
447 \let\em\@empty
448 \let\rm\@empty
449 \let\Huge\@empty
450 \let\LARGE\@empty
451 \let\Large\@empty
452 \let\footnotesize\@empty
453 \let\huge\@empty
454 \let\large\@empty
455 \let\normalsize\@empty
456 \let\scriptsize\@empty
457 \let\small\@empty
458 \let\tiny\@empty
459 \let\mathversion\@gobble
460 \let\phantom\@gobble
461 \let\vphantom\@gobble
462 \let\hphantom\@gobble

```

**Package color.**

```

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

```

**Upper- and lowercase.**

```

464 \def\MakeUppercase{\MakeUppercaseUnsupportedInPdfStrings}%
465 \def\MakeLowercase{\MakeLowercaseUnsupportedInPdfStrings}%

```

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

```

466 \let\textlatin\@firstofone
467 \@ifundefined{language@group}{-}{%
468   \csname HyPsd@babel@\language@group\endcsname
469 }%
470 \HyPsd@GreekPatch
471 \HyPsd@SpanishPatch

```

```

472 \HyPsd@BabelPatch
473 \let\@safe@activestrue\relax
474 \let\@safe@activesfalse\relax

  Disable \cyr, used in russian.ldf.
475 \let\cyr\relax

  Redefine \es@roman, used in spanish.ldf.
476 \let\es@roman\@Roman

```

#### Package german.

```

477 \let\glqq\textglqq
478 \let\grqq\textgrqq
479 \let\glq\textglq
480 \let\grq\textgrq
481 \let\flqq\textflqq
482 \let\frqq\textfrqq
483 \let\flq\textflq
484 \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}

485 \let\if@mid@expandable\@firstoftwo

```

#### AMS classes.

```

486 \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.

```

487 \let\hspace\HyPsd@hspace

```

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

```

488 \let\label\@gobble
489 \let\index\@gobble
490 \let\glossary\@gobble
491 \let\href\@secondoftwo
492 \let\@mkboth\@gobbletwo

```

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

```

493 \let\ref\HyPsd@ref
494 \let\pageref\HyPsd@pageref
495 \let\nameref\HyPsd@nameref
496 \let\autoref\HyPsd@autoref

```

### Miscellaneous commands.

```
497 \let\leavevmode\@empty
498 \let\mbox\@empty
```

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

```
499 \def\halign{\pdfstringdefWarn\halign\@gobble}%
500 \let\ignorespaces\HyPsd@ignorespaces
501 \let\Hy@SectionAnchorHref\@gobble
```

### Patch for cjk bookmarks.

```
502 \ifHy@CJKbookmarks
503   \HyPsd@CJKhook
504 \fi
```

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

```
505 \Hy@pdfstringtrue
506 \pdfstringdefPreHook
```

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

```
507 \HyPsd@LetUnexpandableSpace\space
508 \HyPsd@LetUnexpandableSpace\ %
509 \HyPsd@LetUnexpandableSpace~%
510 \HyPsd@LetUnexpandableSpace\nobreakspace
```

### Package xspace.

```
511 \@ifundefined{xspace}{%
512   \let\xspace\HyPsd@ITALCORR
513 }{%
514   \let\xspace\HyPsd@XSPACE
515 }%
516 \let\/\HyPsd@ITALCORR
517 \let\bgroup\/%
518 \let\egroup\/%
```

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

```
519 \let\discretionary\@gobbletwo
```

`\@ifstar` is defined in  $\mathrm{L}^{\mathrm{A}}\mathrm{T}_{\mathrm{E}}\mathrm{X}$  as follows:

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

`\@ifnextchar` doesn't work, because it uses stomach commands like `\let` and `\futurelet`. But it doesn't break. Whereas `\@firsttwo{#1}` gives an error message because `\@firsttwo` 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:

```
520 \def\@ifnextchar{\HyPsd@ifnextchar\@ifnextchar}%
521 \def\kernel@ifnextchar{\HyPsd@ifnextchar\kernel@ifnextchar}%
522 \def\new@ifnextchar{\HyPsd@ifnextchar\new@ifnextchar}%
523 \let\@protected@testopt\HyPsd@protected@testopt
```

Support for package ‘xargs’:

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

### 6.2.2 Expansion

There are several possibilities to expand tokens within  $\LaTeX$ :

**`\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  $\TeX$  and reported as errors in order to force the user to write correct things. So he get no wrong results by forgetting the proofreading of his text. But the *disadvantage* is that old wrong code cannot processed without errors. Mainly the error message is very cryptic and for the normal user hard to understand.  $\TeX$  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  $\LaTeX$ ’s `\protected@edef`. So the font encoding mechanism works and the glyph commands are converted to the correct tokens for PDF strings with the definitions of the PD1 encoding. Because the protecting mechanism of  $\LaTeX$  doesn’t work within an `\edef`, there are situations thinkable where code can break. For example, assignments and definitions aren’t performed and so undefined command errors or argument parsing errors can occur. But this is only a compatibility problem with old texts. Now there are possibilities to write code that gives correct PDF strings (see `\texorpdfstring`). In the most cases unexpandable commands and tokens (math shift, grouping characters) remains. They don’t cause an error like with `\csname`. However a PDF reader isn’t  $\TeX$ , so these tokens are viewed verbatim. So this version detects them now, and removes them with an descriptive warning for the user. As additional features xspace support is possible and grouping characters can be used without problems, because they are removed silently.

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

```
525 \begingroup
526 \let\GenericError\@gobblefour
527 \let\GenericWarning\@gobbletwo
528 \let\GenericInfo\@gobbletwo
```

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

```
529 \ifx\nofrenchguillemets\@undefined
530 \else
531 \nofrenchguillemets
532 \fi
```

**Definition commands and expansion.** Redefining the defining commands (see sec. 6.5.10). The original meaning of `\xdef` is saved in `\Hy@temp`.

```
533 \let\Hy@temp\xdef
534 \let\def\HyPsd@DefCommand
535 \let\gdef\HyPsd@DefCommand
536 \let\edef\HyPsd@DefCommand
537 \let\xdef\HyPsd@DefCommand
538 \let\futurelet\HyPsd@LetCommand
539 \let\let\HyPsd@LetCommand
540 \Hy@temp#1{#2}%
541 \endgroup
```

### 6.2.3 Postprocessing

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

```
542 \ifx#1\@empty
543 \else
```

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

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

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

```
544 \HyPsd@ProtectSpaces#1%
545 \let\HyPsd@String\@empty
546 \expandafter\HyPsd@RemoveBraces\expandafter{#1|}%
547 \global\let#1\HyPsd@String
```

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

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

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

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

```

548 \let\HyPsd@SPACEOPTI\relax
549 {%
550 \let\HyPsd@String\@empty
551 \expandafter\HyPsd@CheckCatcodes#1\HyPsd@end
552 \global\let#1\HyPsd@String
553 }%
554 \expandafter\HyPsd@RemoveMask\expandafter
555 |\expandafter\@empty#1\HyPsd@end#1%
```

\HyPsd@CheckCatcodes should no have removed the tokens with catcode 3, 4, 7, and 8. Because a parameter token (6) would cause to many errors before, there should now be only tokens with catcodes 11 or 12. So I think there is no need for a safety step like:

```
\xdef#1{\expandafter\strip@prefix\meaning#1}%
```

**Looking for wrong glyphs.** The case that glyphs aren't defined in the PD1 encoding is caught above in such a way, that the glyph name and a marker is inserted into the string. Now we can safely scan the string for this marker and provide a descriptive warning.

```

556 \expandafter\HyPsd@Subst\expandafter{\HyPsd@GLYPHERR}{\relax}#1%
557 \let\HyPsd@String\@empty
558 \expandafter\HyPsd@GlyphProcess#1\relax\@empty
559 \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.

```
560 \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.

```

561 \ifHy@unicode
562 \expandafter\HyPsd@StringSubst\curname 80\040\endcurname
563 \HyPsd@SPACEOPTI#1%
564 \edef\Hy@temp@A{\HyPsd@SPACEOPTI\HyPsd@SPACEOPTI\80\273}%
```

```

565 \expandafter\HyPsd@Subst\expandafter{\Hy@temp@A}%
566 {\HyPsd@SPACEOPTI\80\273}#1%
567 \else
568 \HyPsd@StringSubst{\040}\HyPsd@SPACEOPTI#1%
569 \expandafter\HyPsd@Subst\expandafter{%
570 \expandafter\HyPsd@SPACEOPTI\expandafter\HyPsd@SPACEOPTI
571 \string\273}{\HyPsd@SPACEOPTI\273}#1%
572 \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.

```

573 \ifHy@unicode
574 \HyPsd@StringSubst{\)}{\80\051}#1%
575 \HyPsd@Subst){\80\051}#1%
576 \let\HyPsd@empty\relax
577 \expandafter\HyPsd@StringSubst\csname 80\051\endcsname
578 {\HyPsd@empty\80\051}#1%
579 \else
580 \HyPsd@StringSubst{\)}{\051}#1%
581 \HyPsd@Subst){\051}#1%
582 \let\HyPsd@empty\relax
583 \HyPsd@StringSubst{\051}{\HyPsd@empty\string\)}#1%
584 \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`.

```

585 \expandafter\HyPsd@Subst\expandafter{\}/\HyPsd@empty#1%
586 \@ifundefined{@xspace}{%
587 }{%
588 \let\HyPsd@xspace\relax
589 \expandafter\HyPsd@Subst\expandafter
590 {\HyPsd@XSPACE}\HyPsd@xspace#1%
591 \let\HyPsd@xspace\HyPsd@doxspace
592 }%
593 \xdef#1{#1\HyPsd@empty}%

```

**Ligatures.**  $\TeX$  forms ligatures in its stomach, but the PDF strings are treated only by  $\TeX$ 's mouth. The `PDFDocEncoding` contains some ligatures, but the current version 3 of the `AcrobatReader` lacks the `fi` and `fl` glyphs, and the Linux version lacks the `emdash` and `endash` glyphs. So the necessary code is provided here, but currently disabled, hoping that version 4 of the `AcrobatReader` is better. To break the ligatures the user can use

an empty group, because it leads to an insertion of an `\HyPsd@empty`. If this ligature code will be enabled some day, then the italic correction should also break the ligatures. Currently this occurs only, if package `xspace` is loaded.

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

```
594 \HyPsd@Subst{---}\textemdash#1%
595 \HyPsd@Subst{--}\textendash#1%
596 % \HyPsd@Subst{fi}\textfi#1%
597 % \HyPsd@Subst{fl}\textfl#1%
598 \HyPsd@Subst{!'}\textexclamdown#1%
599 \HyPsd@Subst{?'}\textquestiondown#1%
```

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

```
600 \let\HyPsd@empty\@empty
```

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

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

```
601 \ifHy@unicode
602 \HyPsd@StringSubst{\textparenleft#1%
603 \HyPsd@Subst{\textparenleft#1%
604 \else
605 \HyPsd@StringSubst\({\050}#1%
606 \HyPsd@Subst({\050}#1%
607 \HyPsd@StringSubst{\050}{\string\{ }#1%
608 \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.

```
609 \ifHy@unicode
610 \edef\HyPsd@SPACEOPTI{\80\040}%
611 \else
612 \let\HyPsd@SPACEOPTI\HyPsd@spaceopti
613 \fi
614 \xdef#1{#1\@empty}%
615 \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.

```
616 \endgroup
617 \begingroup
618 \ifHy@unicode
619 \HyPsd@ConvertToUnicode#1%
```

**Try conversion back to PDFDocEncoding.**

```
620 \ifx\HyPsd@pdfencoding\HyPsd@pdfencoding@auto
621 \@ifundefined{StringEncodingConvertTest}{%
622 }{%
623 \EdefUnescapeString\HyPsd@temp#1%
```

```

624 \ifxetex
625 \let\HyPsd@UnescapedString\HyPsd@temp
626 \StringEncodingConvertTest\HyPsd@temp\HyPsd@temp
627 {utf16be}{ascii-print}{-%
628 \EdefEscapeString\HyPsd@temp\HyPsd@temp
629 \global\let#1\HyPsd@temp
630 \Hy@unicodetrue
631 }{-%
632 \HyPsd@ToBigChars#1%
633 }%
634 \else
635 \StringEncodingConvertTest\HyPsd@temp\HyPsd@temp
636 {utf16be}{pdfdoc}{-%
637 \EdefEscapeString\HyPsd@temp\HyPsd@temp
638 \global\let#1\HyPsd@temp
639 \Hy@unicodetrue
640 }{ }%
641 \fi
642 }%
643 \fi
644 \fi
645 \HyPsd@XeTeXBigCharsfalse

```

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

```

646 \pdfstringdefPostHook#1%
647 \endgroup
648 }

```

`\Hy@pdfstringdef`

```

649 \def\Hy@pdfstringdef#1#2{%
650 \pdfstringdef\Hy@gtemp{#2}%
651 \let#1\Hy@gtemp
652 }

```

## 6.3 Encodings

### 6.3.1 XeTeX

```

653 \edef\Hy@temp{\catcode0=\the\catcode0\relax}
654 \catcode\z@=12 %
655 \ifxetex
656 \expandafter\@firstofone
657 \else
658 \let\HyPsd@XeTeXBigCharstrue\@empty
659 \let\HyPsd@XeTeXBigCharsfalse\@empty
660 \expandafter\@gobble
661 \fi
662 {%
663 \newif\ifHyPsd@XeTeXBigChars
664 \def\HyPsd@XeTeXBigCharsfalse{%
665 \global\let\ifHyPsd@XeTeXBigChars\iffalse
666 }%
667 \def\HyPsd@XeTeXBigCharstrue{%
668 \global\let\ifHyPsd@XeTeXBigChars\iffalse
669 }%
670 \def\HyPsd@ToBigChars#1{%

```

```

671 \ifHyPsd@XeTeXBigChars
672 \EdefEscapeHex\HyPsd@UnescapedString{%
673 \expandafter\@gobbletwo\HyPsd@UnescapedString
674 }%
675 \begingroup
676 \toks@{}%
677 \escapechar=92\relax
678 \let\x\HyPsd@ToBigChar
679 \expandafter\HyPsd@ToBigChar\HyPsd@UnescapedString
680 \relax\relax\relax\relax\relax\relax\relax
681 \edef\x{%
682 \endgroup
683 \gdef\noexpand#1{\the\toks@}%
684 }%
685 \x
686 \fi
687 }%
688 \def\HyPsd@ToBigChar#1#2#3#4{%
689 \ifx\relax#1\relax
690 \let\x\relax
691 \else
692 \count@=#1#2#3#4\relax
693 \let\y\@empty
694 \lccode\z@=\count@
695 \ifnum\count@=40 % (
696 \let\y\@backslashchar
697 \else
698 \ifnum\count@=41 % )
699 \let\y\@backslashchar
700 \else
701 \ifnum\count@=92 % backslash
702 \let\y\@backslashchar
703 \else
704 \ifnum\count@=10 % newline
705 \edef\y##1{\string\n}%
706 \else
707 \ifnum\count@=13 % carriage return
708 \edef\y##1{\string\r}%
709 \fi
710 \fi
711 \fi
712 \fi
713 \fi
714 \lowercase{%
715 \toks@\expandafter{%
716 \the\expandafter\toks@
717 \y
718 ~\@%
719 }%
720 }%
721 \fi
722 \x
723 }%
724 }
725 \Hy@temp

```

### 6.3.2 Workaround for package linguex

```

726 \@ifpackageloaded{linguex}{%
727   \let\HyLinguex@OrgB\b
728   \let\HyLinguex@OrgC\c
729   \let\HyLinguex@OrgD\d
730   \def\HyLinguex@Restore{%
731     \let\b\HyLinguex@OrgB
732     \let\c\HyLinguex@OrgC
733     \let\d\HyLinguex@OrgD
734   }%
735   \AtEndOfPackage{%
736     \pdfstringdefDisableCommands{%
737       \@ifundefined{oldb}{\let\b\oldb}%
738       \@ifundefined{oldc}{\let\c\oldc}%
739       \@ifundefined{oldd}{\let\d\oldd}%
740     }%
741   }%
742 }{%
743   \let\HyLinguex@Restore\relax
744 }%

```

### 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.

```

745 \@ifundefined{T@PD1}{%
746   \input{pdlenc.def}%
747   \HyLinguex@Restore
748 }{}
749 \DeclareFontFamily{PD1}{pdf}{}
750 \DeclareFontShape{PD1}{pdf}{m}{n}{<-> cmr10 }{}
751 \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`.

```

752 \def\HyPsd@InitUnicode{%
753   \@ifundefined{T@PU}{%
754     \input{puenc.def}%
755     \HyLinguex@Restore
756   }{}%
757   \DeclareFontFamily{PU}{pdf}{}%
758   \DeclareFontShape{PU}{pdf}{m}{n}{<-> cmr10 }{}%
759   \DeclareFontSubstitution{PU}{pdf}{m}{n}%
760   \let\HyPsd@InitUnicode\relax
761 }

```

## 6.4 Additional user commands

### 6.4.1 `\texorpdfstring`

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

```

762 \def\texorpdfstring{%
763   \ifHy@pdfstring
764     \expandafter\@secondoftwo
765   \else
766     \expandafter\@firstoftwo
767   \fi
768 }
```

### 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`.

```

769 \@ifundefined{pdfstringdefPreHook}{%
770   \let\pdfstringdefPreHook\empty
771 }{}
772 \@ifundefined{pdfstringdefPostHook}{%
773   \let\pdfstringdefPostHook\@gobble
774 }{}
```

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

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

```

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

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

```

775 \def\pdfstringdefDisableCommands{%
776   \begingroup
777     \makeatletter
778     \HyPsd@DisableCommands
779 }
```

`\HyPsd@DisableCommands`

```

780 \long\def\HyPsd@DisableCommands#1{%
781   \toks0=\expandafter{\pdfstringdefPreHook}%
782   \toks1={#1}%
783   \xdef\pdfstringdefPreHook{\the\toks0 \the\toks1}%
784 \endgroup
785 }
```

`\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`.

```
786 \def\pdfstringdefWarn#1{%
787   \expandafter\noexpand\csname<>-string#1\endcsname
788 }
```

## 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.

```
789 \begingroup
790   \catcode0=12 %
791   \def\x{\endgroup
792     \def\HyPsd@ignorespaces{%
793       \romannumeral\expandafter'\expandafter^^@%
794       \romannumeral'^^@%
795     }%
796   }%
797 \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`.

```
798 \def\HyPsd@BabelPatch{%
799   \let\HyOrg@languageshorthands\languageshorthands
800   \let\languageshorthands\HyPsd@LanguageShorthands
801 }
802 \RequirePackage{pdfdoccmds}[2009/04/10]
803 \begingroup\expandafter\expandafter\expandafter\endgroup
804 \expandafter\ifx\csname pdf@strcmp\endcsname\relax
805   \let\HyPsd@langshort@system\@empty
806   \def\HyPsd@LanguageShorthands#1{%
807     \expandafter\ifx\csname HyPsd@langshort@#1\endcsname
808       \HyPsd@langshort@system
809     \expandafter\@gobble
810   \else
```

```

811 \expandafter\@firstofone
812 \fi
813 {%
814 \HyOrg@languageshorthands{#1}%
815 }%
816 }%
817 \else
818 \def\HyPsd@LanguageShorthands#1{%
819 \ifnum\pdf@strcmp{#1}{system}=\z@
820 \expandafter\@gobble
821 \else
822 \expandafter\@firstofone
823 \fi
824 {%
825 \HyOrg@languageshorthands{#1}%
826 }%
827 }%
828 \fi
829 \def\Hy@temp{%
830 \@ifpackageloaded{babel}{%
831 \@ifpackagelater{babel}{2008/03/16}{%
832 \let\Hy@temp\@empty
833 }{%
834 \def\HyPsd@BabelPatch{%
835 \let\HyOrg@languageshorthands\languageshorthands
836 }%
837 }%
838 }{}%
839 }
840 \Hy@temp
841 \expandafter\AtBeginDocument\expandafter{\Hy@temp}
842 \newif\ifHy@next

Nothing to do for english.
843 \@ifundefined{danish@sh@@"@sel}{-}{%
844 \def\HyPsd@babel@danish{%
845 \declare@shorthand{danish}{-}{-}%
846 \declare@shorthand{danish}{-}{-}%
847 }%
848 }
849 \@ifundefined{dutch@sh@@"@sel}{-}{%
850 \def\HyPsd@babel@dutch{%
851 \declare@shorthand{dutch}{-}{-}%
852 \declare@shorthand{dutch}{-}{-}%
853 }%
854 }
855 \@ifundefined{finnish@sh@@"@sel}{-}{%
856 \def\HyPsd@babel@finnish{%
857 \declare@shorthand{finnish}{-}{-}%
858 }%
859 }
860 \@ifundefined{french@sh@:"@sel}{-}{%
861 \def\HyPsd@babel@frenchb{%
862 \def\guill@spacing{ }%
863 }%
864 }
865 \@ifundefined{german@sh@@"@sel}{-}{%

```

```

866 \def\HyPsd@babel@german{%
867   \declare@shorthand{german}{f}{f}%
868   \declare@shorthand{german}{"}{|}%
869   \declare@shorthand{german}{"}{~}{-}%
870 }%
871 }
872 \ifundefined{macedonian@sh@"@sel}{%
873   \def\HyPsd@babel@macedonian{%
874     \declare@shorthand{macedonian}{"}{|}%
875     \declare@shorthand{macedonian}{"}{~}{-}%
876   }%
877 }{}
878 \ifundefined{ngerman@sh@"@sel}{%
879   \def\HyPsd@babel@ngerman{%
880     \declare@shorthand{ngerman}{"}{|}%
881     \declare@shorthand{ngerman}{"}{~}{-}%
882   }%
883 }
884 \ifundefined{portuges@sh@"@sel}{%
885   \def\HyPsd@babel@portuges{%
886     \declare@shorthand{portuges}{"}{|}%
887   }%
888 }
889 \ifundefined{russian@sh@"@sel}{%
890   \def\HyPsd@babel@russian{%
891     \declare@shorthand{russian}{"}{|}%
892     \declare@shorthand{russian}{"}{~}{-}%
893   }%
894 }
895 \ifundefined{slovene@sh@"@sel}{%
896   \def\HyPsd@babel@slovene{%
897     \declare@shorthand{slovene}{"}{|}%
898   }%
899 }

```

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

```

900 \ifundefined{spanish@sh<>@sel}{%
901   \def\HyPsd@babel@spanish{%
902     \declare@shorthand{spanish}{<<}{\guillemotleft}%
903     \declare@shorthand{spanish}{>>}{\guillemotright}%
904     \declare@shorthand{spanish}{=}{-}%
905     \declare@shorthand{spanish}{~}{-}%
906     \declare@shorthand{spanish}{!}{\textexclamdown}%
907     \declare@shorthand{spanish}{?}{\textquestiondown}%
908   }%
909 }
910 \ifundefined{swedish@sh@"@sel}{%
911   \def\HyPsd@babel@swedish{%
912     \declare@shorthand{swedish}{"}{|}%
913     \declare@shorthand{swedish}{"}{~}{-}%
914   }%
915 }
916 \ifundefined{ukrainian@sh@"@sel}{%
917   \def\HyPsd@babel@ukrainian{%
918     \declare@shorthand{ukrainian}{"}{|}%
919     \declare@shorthand{ukrainian}{"}{~}{-}%
920   }%
921 }

```

```

922 \@ifundefined{usorbian@sh@{sel}}{}{}%
923 \def\HyPsd@babel@usorbian{%
924 \declare@shorthand{usorbian}{f}{f}%
925 \declare@shorthand{usorbian}{|}{|}%
926 }%
927 }

928 \@ifundefined{greek@sh@\string~@sel}{}%
929 \let\HyPsd@GreekPatch\@empty
930 {}{}%
931 \def\HyPsd@GreekPatch{%
932 \let\greeknumeral\HyPsd@greeknumeral
933 \let\Greeknatural\HyPsd@Greeknatural
934 }%
935 }

936 \def\HyPsd@greeknumeral#1{%
937 \HyPsd@GreekNum\@firstoftwo{#1}%
938 }

939 \def\HyPsd@Greeknatural#1{%
940 \HyPsd@GreekNum\@secondoftwo{#1}%
941 }

942 \def\HyPsd@GreekNum#1#2{%
943 \ifHy@unicode
944 \ifnum#2<\@ne
945 \@arabic{#2}%
946 \else
947 \ifnum#2<1000000 %
948 \HyPsd@@GreekNum#1{#2}%
949 \else
950 \@arabic{#2}%
951 \fi
952 \fi
953 \else
954 \@arabic{#2}%
955 \fi
956 }

957 \def\HyPsd@@GreekNum#1#2{%
958 \ifnum#2<\@m
959 \ifnum#2<10 %
960 \expandafter\HyPsd@GreekNumI
961 \expandafter\@gobble\expandafter#1\number#2%
962 \else
963 \ifnum#2<100 %
964 \expandafter\HyPsd@GreekNumII
965 \expandafter\@gobble\expandafter#1\number#2%
966 \else
967 \expandafter\HyPsd@GreekNumIII
968 \expandafter\@gobble\expandafter#1\number#2%
969 \fi
970 \fi
971 \ifnum#2>\z@
972 \textnumeralsigngreek
973 \fi
974 \else
975 \ifnum#2<\@M
976 \expandafter\HyPsd@GreekNumIV\expandafter#1\number#2%
977 \else
978 \ifnum#2<100000 %

```

```

979     \expandafter\HyPsd@GreekNumV\expandafter#1\number#2%
980     \else
981     \expandafter\HyPsd@GreekNumVI\expandafter#1\number#2%
982     \fi
983     \fi
984     \fi
985 }
986 \def\HyPsd@GreekNumI#1#2#3{%
987   #1{%
988     \ifnum#3>\z@
989       \textnumeralsignlowergreek
990       \fi
991     }%
992     \expandafter#2%
993     \ifcase#3 %
994       {}{}%
995       \or\textalpha\textAlpha
996       \or\textbeta\textBeta
997       \or\textgamma\textGamma
998       \or\textdelta\textDelta
999       \or\textepsilon\textEpsilon
1000      \or\textstigmagreek\textStigmagreek
1001      \or\textzeta\textZeta
1002      \or\texteta\textEta
1003      \or\texttheta\textTheta
1004      \else
1005        {}{}%
1006      \fi
1007    }
1008 \def\HyPsd@GreekNumII#1#2#3#4{%
1009   #1{%
1010     \ifnum#3>\z@
1011       \textnumeralsignlowergreek
1012       \fi
1013     }%
1014     \expandafter#2%
1015     \ifcase#3 %
1016       {}{}%
1017       \or\textiota\textIota
1018       \or\textkappa\textKappa
1019       \or\textlambda\textLambda
1020       \or\textmu\textMu
1021       \or\textnu\textNu
1022       \or\textxi\textXi
1023       \or\textomicron\textOmicron
1024       \or\textpi\textPi
1025       \or\textkoppagreek\textKoppagreek
1026       \else
1027         {}{}%
1028       \fi
1029     \HyPsd@GreekNumI#1#2#4%
1030   }
1031 \def\HyPsd@GreekNumIII#1#2#3#4#5{%
1032   #1{%
1033     \ifnum#3>\z@
1034       \textnumeralsignlowergreek
1035       \fi

```

```

1036 }%
1037 \expandafter#2%
1038 \ifcase#3 %
1039 {}{}%
1040 \or\textrho\textRho
1041 \or\textsigma\textSigma
1042 \or\texttau\textTau
1043 \or\textupsilon\textUpsilon
1044 \or\textphi\textPhi
1045 \or\textchi\textChi
1046 \or\textpsi\textPsi
1047 \or\textomega\textOmega
1048 \or\textsampigreek\textSampigreek
1049 \else
1050 {}{}%
1051 \fi
1052 \HyPsd@GreekNumII#1#2#4#5%
1053 }
1054 \def\HyPsd@GreekNumIV#1#2#3#4#5{%
1055 \HyPsd@GreekNumI\@firstofone#1#2%
1056 \HyPsd@@GreekNum#1{#3#4#5}%
1057 }
1058 \def\HyPsd@GreekNumV#1#2#3#4#5#6{%
1059 \HyPsd@GreekNumII\@firstofone#1#2#3%
1060 \HyPsd@@GreekNum#1{#4#5#6}%
1061 }
1062 \def\HyPsd@GreekNumVI#1#2#3#4#5#6#7{%
1063 \HyPsd@GreekNumIII\@firstofone#1#2#3#4%
1064 \HyPsd@@GreekNum#1{#5#6#7}%
1065 }
1066 \def\HyPsd@SpanishPatch{%
1067 \begingroup\expandafter\expandafter\expandafter\endgroup
1068 \expandafter\ifx\csname es@save@dot\endcsname\relax
1069 \else
1070 \let\.\es@save@dot
1071 \fi
1072 }

```

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

```

1073 \begingroup
1074 \catcode"7F=\active
1075 \toks@{%
1076 \let\CJK@ignorespaces\empty
1077 \def\CJK@char#1{\@gobbletwo}%
1078 \let\CJK@charx\@gobblefour
1079 \let\CJK@punctchar\@gobblefour

```

```

1080 \def\CJK@punctcharx#1{\@gobblefour}%
1081 \catcode"7F=\active
1082 \def^^7f#1^^7f#2^^7f{%
1083   \string #1\HyPsd@DecimalToOctal{#2}%
1084 }%
1085 % ... ?
1086 \ifHy@unicode
1087   \def\Hy@cjkpu{\80}%
1088   \else
1089     \let\Hy@cjkpu\@empty
1090   \fi
1091   \HyPsd@CJKActiveChars
1092 }%
1093 \count@=127 %
1094 \@whilenum\count@<255 \do{%
1095   \advance\count@ by 1 %
1096   \lccode'\~=\count@
1097   \lowercase{%
1098     \toks@\expandafter{\the\toks@ ~}%
1099   }%
1100 }%
1101 \toks@\expandafter{\the\toks@ !}%
1102 \xdef\HyPsd@CJKhook{\the\toks@}%
1103 \endgroup

```

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

```

1104 \def\HyPsd@CJKActiveChars#1{%
1105   \ifx#1!%
1106     \let\HyPsd@CJKActiveChars\relax
1107   \else
1108     \edef#1{\noexpand\Hy@cjkpu\string#1}%
1109   \fi
1110   \HyPsd@CJKActiveChars
1111 }

```

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

```

1112 \def\HyPsd@DecimalToOctal#1{%
1113   \ifcase #1 %
1114     \000\or \001\or \002\or \003\or \004\or \005\or \006\or \007%
1115     \or \010\or \011\or \012\or \013\or \014\or \015\or \016\or \017%
1116     \or \020\or \021\or \022\or \023\or \024\or \025\or \026\or \027%
1117     \or \030\or \031\or \032\or \033\or \034\or \035\or \036\or \037%
1118     \or \040\or \041\or \042\or \043\or \044\or \045\or \046\or \047%
1119     \or \050\or \051\or \052\or \053\or \054\or \055\or \056\or \057%
1120     \or 0\or 1\or 2\or 3\or 4\or 5\or 6\or 7%
1121     \or 8\or 9\or \072\or \073\or \074\or \075\or \076\or \077%
1122     \or @\or A\or B\or C\or D\or E\or F\or G%
1123     \or H\or I\or J\or K\or L\or M\or N\or O%
1124     \or P\or Q\or R\or S\or T\or U\or V\or W%
1125     \or X\or Y\or Z\or \133\or \134\or \135\or \136\or \137%
1126     \or \140\or a\or b\or c\or d\or e\or f\or g%
1127     \or h\or i\or j\or k\or l\or m\or n\or o%
1128     \or p\or q\or r\or s\or t\or u\or v\or w%
1129     \or x\or y\or z\or \173\or \174\or \175\or \176\or \177%
1130     \or \200\or \201\or \202\or \203\or \204\or \205\or \206\or \207%
1131     \or \210\or \211\or \212\or \213\or \214\or \215\or \216\or \217%

```

```

1132 \or \220\or \221\or \222\or \223\or \224\or \225\or \226\or \227%
1133 \or \230\or \231\or \232\or \233\or \234\or \235\or \236\or \237%
1134 \or \240\or \241\or \242\or \243\or \244\or \245\or \246\or \247%
1135 \or \250\or \251\or \252\or \253\or \254\or \255\or \256\or \257%
1136 \or \260\or \261\or \262\or \263\or \264\or \265\or \266\or \267%
1137 \or \270\or \271\or \272\or \273\or \274\or \275\or \276\or \277%
1138 \or \300\or \301\or \302\or \303\or \304\or \305\or \306\or \307%
1139 \or \310\or \311\or \312\or \313\or \314\or \315\or \316\or \317%
1140 \or \320\or \321\or \322\or \323\or \324\or \325\or \326\or \327%
1141 \or \330\or \331\or \332\or \333\or \334\or \335\or \336\or \337%
1142 \or \340\or \341\or \342\or \343\or \344\or \345\or \346\or \347%
1143 \or \350\or \351\or \352\or \353\or \354\or \355\or \356\or \357%
1144 \or \360\or \361\or \362\or \363\or \364\or \365\or \366\or \367%
1145 \or \370\or \371\or \372\or \373\or \374\or \375\or \376\or \377%
1146 \fi
1147 }

```

#### 6.5.4 \@inmathwarn-Patch

`\HyPsd@inmathwarn` The patch of `\@inmathwarn` is needed to get rid of the infinite error loop with glyphs of other encodings (see the explanation above). Potentially the patch is dangerous, if the code in `ltoutenc.dtx` changes. Checked with  $\text{\LaTeX}$  2<sub>ε</sub> versions [1998/06/01] and [1998/12/01]. I expect that versions below [1995/12/01] don't work.

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

```

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

```

```

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

1148 \def\HyPsd@inmathwarn#1#2{%
1149 \ifx#2\expandafter
1150 \expandafter\ifx\csname\cf@encoding\string#1\endcsname\relax
1151 \HyPsd@GLYPHERR
1152 \expandafter\@gobble\string#1%
1153 >%
1154 \expandafter\expandafter\expandafter\HyPsd@EndWithElse
1155 \else
1156 \expandafter\expandafter\expandafter\HyPsd@GobbleFiFi
1157 \fi
1158 \else
1159 \expandafter#2%
1160 \fi
1161 }
1162 \def\HyPsd@GobbleFiFi#1\fi#2\fi{}
1163 \def\HyPsd@EndWithElse#1\else{\else}

```

\HyPsd@add@accent

```

1164 \def\HyPsd@add@accent#1#2{%
1165 \HyPsd@GLYPHERR\expandafter\@gobble\string#1+\string#2>%
1166 #2%
1167 }%

```

### 6.5.5 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.

```

1168 \def\HyPsd@LetUnexpandableSpace#1{%
1169 \expandafter\futurelet\expandafter#1\expandafter\@gobble\space\relax
1170 }

```

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

```

1171 \HyPsd@LetUnexpandableSpace\HyPsd@UnexpandableSpace

```

### 6.5.6 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.

```

1172 \edef\HyPsd@XSPACE{\string#\string X}
1173 \edef\HyPsd@ITALCORR{\string#\string I}
1174 \edef\HyPsd@GLYPHERR{\string#\string G}

```

### 6.5.7 \hspace fix

\HyPsd@hspace

```
1175 \def\HyPsd@hspace#1{\HyPsd@@hspace#1*\END}
```

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

```
1176 \def\HyPsd@@hspace#1*#2\END{%
1177   \ifx\#2\%
1178     \HyPsd@hspacetest{#1}%
1179   \else
1180     \expandafter\HyPsd@hspacetest
1181   \fi
1182 }
```

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

```
1183 \def\HyPsd@hspacetest#1{\ifdim#1>\z@\space\fi}
```

### 6.5.8 Fix for AMS classes

```
1184 \@ifundefined{tocsection}{%
1185   \let\HyPsd@AMSclassfix\relax
1186 }{%
1187   \def\HyPsd@AMSclassfix{%
1188     \let\tocpart\HyPsd@tocsection
1189     \let\tocchapter\HyPsd@tocsection
1190     \let\tocappendix\HyPsd@tocsection
1191     \let\tocsection\HyPsd@tocsection
1192     \let\tocsubsection\HyPsd@tocsection
1193     \let\tocsubsubsection\HyPsd@tocsection
1194     \let\tocparagraph\HyPsd@tocsection
1195   }%
1196   \def\HyPsd@tocsection#1#2#3{%
1197     \if @#2@ \else \if @#1@ \else #1 \fi #2. \fi
1198     #3%
1199   }%
1200 }
```

### 6.5.9 Reference commands

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

```
1201 \def\HyPsd@ref#1{\HyPsd@@ref#1*\END}%
```

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

```
1202 \def\HyPsd@@ref#1*#2\END{%
1203   \ifx\#2\%
1204     \HyPsd@@@ref{#1}%
1205   \else
1206     \expandafter\HyPsd@@@ref
1207   \fi
1208 }
```

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

```
1209 \def\HyPsd@@@ref#1{%
1210   \expandafter\ifx\csname r@#1\endcsname\relax
1211     ??%
```

```

1212 \else
1213 \expandafter\expandafter\expandafter
1214 \@car\csname r@#1\endcsname\@nil
1215 \fi
1216 }

```

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

```

1217 \def\HyPsd@pageref#1{\HyPsd@@pageref#1*\END}

```

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

```

1218 \def\HyPsd@@pageref#1*#2\END{%
1219 \ifx\#2\%
1220 \HyPsd@@@pageref{#1}%
1221 \else
1222 \expandafter\HyPsd@@@pageref
1223 \fi
1224 }

```

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

```

1225 \def\HyPsd@@@pageref#1{%
1226 \expandafter\ifx\csname r@#1\endcsname\relax
1227 ??%
1228 \else
1229 \expandafter\expandafter\expandafter\expandafter
1230 \expandafter\expandafter\expandafter\@car
1231 \expandafter\expandafter\expandafter\@gobble
1232 \csname r@#1\endcsname{}\@nil
1233 \fi
1234 }

```

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

```

1235 \def\HyPsd@nameref#1{\HyPsd@@nameref#1*\END}

```

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

```

1236 \def\HyPsd@@nameref#1*#2\END{%
1237 \ifx\#2\%
1238 \HyPsd@@@nameref{#1}%
1239 \else
1240 \expandafter\HyPsd@@@nameref
1241 \fi
1242 }

```

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

```

1243 \def\HyPsd@@@nameref#1{%
1244 \expandafter\ifx\csname r@#1\endcsname\relax
1245 ??%
1246 \else
1247 \expandafter\expandafter\expandafter\expandafter
1248 \expandafter\expandafter\expandafter\@car
1249 \expandafter\expandafter\expandafter\@gobbletwo
1250 \csname r@#1\endcsname{}\@nil
1251 \fi
1252 }

```

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

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

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

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

\HyPsd@@autorefname

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
1287 \begingroup
1288   \def\x#1#2{%
1289     \endgroup
1290     \let#1\def
1291     \def\HyPsd@DefCommand##1##2##{%
1292       #1%
1293       \expandafter\noexpand
1294       \csname\expandafter\@gobble\string##1\@empty\endcsname
1295       \@gobble
1296     }%
1297     \let#2\let
1298     \def\HyPsd@@LetCommand##1{%
1299       \expandafter\ifx\csname##1\expandafter\endcsname
1300         \csname iftrue\endcsname
1301         \pdfstringdefWarn\let
1302         \expandafter\@gobble
1303       \else
1304         \expandafter\ifx\csname##1\expandafter\endcsname
1305           \csname iffalse\endcsname
1306           \pdfstringdefWarn\let
1307           \expandafter\expandafter\expandafter\@gobble
1308         \else
1309           #2%
1310           \expandafter\noexpand
1311           \csname##1\expandafter\expandafter\expandafter\endcsname
1312         \fi
1313       \fi
1314     }%
1315   }%
1316   \expandafter\x\csname <def>-command\expandafter\endcsname
1317     \csname <let>-command\endcsname
1318   \def\HyPsd@LetCommand#1{%
1319     \expandafter\expandafter\expandafter\HyPsd@@LetCommand
1320     \expandafter\expandafter\expandafter{%
1321       \expandafter\@gobble\string#1\@empty
1322     }%

```

1323 }

### 6.5.11 \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).

```
1324 \def\HyPsd@ifnextchar#1{%
1325   \pdfstringdefWarn#1%
1326   \expandafter\@gobbletwo\@gobble
1327 }
```

### 6.5.12 \@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.

```
1328 \def\HyPsd@protected@testopt#1{%
1329   \pdfstringdefWarn#1%
1330   \@gobbletwo
1331 }
```

## 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:

```
1332 \def\HyPsd@Warning#1{%
1333   \begingroup
1334   \def\space{ }%
1335   \Hy@Warning{#1}%
1336   \endgroup
1337 }
```

### 6.6.2 Protecting spaces

```
1338 \RequirePackage{etexcmds}[2007/09/09]
1339 \ifetex@unexpanded
1340   \expandafter\@secondoftwo
1341 \else
1342   \expandafter\@firstoftwo
1343 \fi
1344 {%
```

\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`.

```

1345 \def\HyPsd@ProtectSpaces#1{%
1346   \iftrue
1347     \expandafter\HyPsd@@ProtectSpacesFi
1348     \expandafter|\expandafter\@empty#1| \HyPsd@End#1%
1349   \fi
1350 }%
```

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

```

1351 \def\HyPsd@@ProtectSpacesFi#1 #2\HyPsd@End#3\fi{%
1352   \fi
1353   \ifx\scrollmode#2\scrollmode
1354     \HyPsd@RemoveMask#1\HyPsd@End#3%
1355   \else
1356     \gdef#3{#1\HyPsd@UnexpandableSpace#2}%
1357     \expandafter\HyPsd@@ProtectSpacesFi#3\HyPsd@End#3%
1358   \fi
1359 }%
```

### 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.

```

1360 \def\HyPsd@RemoveMask|#1|\HyPsd@End#2{%
1361   \toks@{\expandafter{#1}}%
1362   \xdef#2{\the\toks@}%
1363 }%

1364 }{%
1365   \let\HyPsd@fi\fi
1366   \def\HyPsd@ProtectSpaces#1{%
1367     \xdef#1{%
1368       \iftrue
1369         \expandafter\HyPsd@@ProtectSpacesFi
1370         \expandafter|\expandafter\@empty#1| %
1371       \HyPsd@fi
1372     }%
1373     \expandafter\HyPsd@RemoveMask#1\HyPsd@End#1%
1374   }%
1375   \def\HyPsd@@ProtectSpacesFi#1 #2\HyPsd@fi{%
1376     \fi
1377     \etex@unexpanded{#1}%
1378     \ifx\scrollmode#2\scrollmode
1379     \else
1380       \HyPsd@@ProtectSpacesFi\HyPsd@UnexpandableSpace#2%
1381     \HyPsd@fi
1382   }%
1383   \def\HyPsd@RemoveMask|#1|\HyPsd@End#2{%
1384     \xdef#2{\etex@unexpanded\expandafter{#1}}%
1385   }%
1386 }
```

### 6.6.3 Remove grouping braces

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

```

1387 \def\HyPsd@RemoveBraces#1{%
1388   \ifx\scrollmode#1\scrollmode
1389   \else
1390     \HyPsd@@RemoveBracesFi#1\HyPsd@End{#1}%
1391   \fi
1392 }

```

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

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

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

```

1393 \def\HyPsd@@RemoveBracesFi#1#2\HyPsd@End#3\fi{%
1394   \fi
1395   \def\Hy@temp@A{#1#2}%
1396   \def\Hy@temp@B{#3}%
1397   \ifx\Hy@temp@A\Hy@temp@B
1398     \expandafter\def\expandafter\HyPsd@String\expandafter{%
1399       \HyPsd@String#1%
1400     }%
1401     \ifx\scrollmode#2\scrollmode
1402     \else
1403       \Hy@ReturnAfterFiFiEnd{%
1404         \HyPsd@RemoveBraces{#2}%
1405       }%
1406     \fi
1407   \else
1408     \def\Hy@temp@A{#1}%
1409     \HyPsd@AppendItalcorr\HyPsd@String
1410     \ifx\Hy@temp@A\@empty
1411       \Hy@ReturnAfterElseFiFiEnd{%
1412         \HyPsd@RemoveBraces{#2}%
1413       }%
1414     \else
1415       \HyPsd@ProtectSpaces\Hy@temp@A
1416       \HyPsd@AppendItalcorr\Hy@temp@A
1417       \Hy@ReturnAfterFiFiEnd{%
1418         \expandafter\HyPsd@RemoveBraces\expandafter
1419           {\Hy@temp@A#2}%
1420       }%
1421     \fi
1422   \fi
1423   \Hy@ReturnEnd
1424 }

```

`\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`.

```

1425 \def\HyPsd@AppendItalcorr#1{%
1426   \expandafter\HyPsd@@AppendItalcorr\expandafter{\/#1%
1427 }
1428 \def\HyPsd@@AppendItalcorr#1#2{%
1429   \expandafter\def\expandafter#2\expandafter{#2#1}%
1430 }

```

#### 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`).

```
1431 \def\HyPsd@CheckCatcodes#1#2\HyPsd@end{%
1432   \global\let\HyPsd@Rest\relax
1433   \ifcat\relax\noexpand#1\relax
1434     \ifx#1\protect
1435       \else
1436         \ifx#1\penalty
1437           \setbox\z@=\hbox{%
1438             \afterassignment\HyPsd@AfterCountRemove
1439             \count@=#2\HyPsd@end
1440           }%
1441         \else
1442           \ifx#1\kern
1443             \setbox\z@=\hbox{%
1444               \afterassignment\HyPsd@AfterDimenRemove
1445               \dimen@=#2\HyPsd@end
1446             }%
1447           \else
1448             \ifx#1\hskip
1449               \setbox\z@=\hbox{%
1450                 \afterassignment\HyPsd@AfterSkipRemove
1451                 \skip@=#2\HyPsd@end
1452               }%
1453             \else
1454               \HyPsd@CatcodeWarning{#1}%
1455             \fi
1456           \fi
1457         \fi
1458       \else
1459         \ifcat#1A% letter
1460           \expandafter\def\expandafter\HyPsd@String\expandafter{%
1461             \HyPsd@String#1%
1462           }%
1463         \else
1464           \ifcat#1 % SPACE
1465             \expandafter\def\expandafter\HyPsd@String\expandafter{%
1466               \HyPsd@String\HyPsd@SPACEOPTI
1467             }%
1468           \else
1469             \ifcat$#1%
1470               \HyPsd@CatcodeWarning{math shift}%
1471             \else
1472               \ifcat&#1%
1473               \HyPsd@CatcodeWarning{alignment tab}%
1474             \fi
1475           \fi
1476         \fi
1477       \fi
1478     \fi
1479   \fi
1480 }
```

```

1475     \else
1476     \ifcat^#1%
1477     \HyPsd@CatcodeWarning{superscript}%
1478     \else
1479     \ifcat_#1%
1480     \HyPsd@CatcodeWarning{subscript}%
1481     \else
1482     \expandafter\def\expandafter\HyPsd@String\expandafter{%
1483     \HyPsd@String#1%
1484     }%
1485     \fi
1486     \fi
1487     \fi
1488     \fi
1489     \fi
1490     \fi
1491     \fi
1492     \ifx\HyPsd@Rest\relax
1493     \ifx\scrollmode#2\scrollmode
1494     \else
1495     \Hy@ReturnAfterFiFiEnd{%
1496     \HyPsd@CheckCatcodes#2\HyPsd@End
1497     }%
1498     \fi
1499     \else
1500     \ifx\HyPsd@Rest\@empty
1501     \else
1502     \Hy@ReturnAfterFiFiEnd{%
1503     \expandafter\HyPsd@CheckCatcodes\HyPsd@Rest\HyPsd@End
1504     }%
1505     \fi
1506     \fi
1507     \Hy@ReturnEnd
1508 }

```

### Remove counts, dimens, skips.

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

```

1509 \def\HyPsd@AfterCountRemove#1\HyPsd@End{%
1510 \gdef\HyPsd@Rest{#1}%
1511 }

```

\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.

```

1512 \def\HyPsd@AfterDimenRemove#1\HyPsd@End{%
1513 \ifdim\ifx\HyPsd@String\@empty\z@\else\dimen@<1ex %
1514 \HyPsd@ReplaceSpaceWarning{\string\kern\space\the\dimen@}%
1515 \gdef\HyPsd@Rest{\HyPsd@UnexpandableSpace #1}%
1516 \else
1517 \ifdim\dimen@=\z@
1518 \else
1519 \HyPsd@RemoveSpaceWarning{\string\kern\space\the\dimen@}%
1520 \fi
1521 \gdef\HyPsd@Rest{#1}%
1522 \fi

```

1523 }

\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).

```
1524 \def\HyPsd@AfterSkipRemove#1\HyPsd@end{%
1525   \ifdim\ifx\HyPsd@String\@empty\z@\else\skip@>\fi>1ex %
1526   \HyPsd@ReplaceSpaceWarning{\string\hskip\space\the\skip@}%
1527   \gdef\HyPsd@Rest{\HyPsd@UnexpandableSpace #1}%
1528   \else
1529   \ifdim\skip@=\z@
1530   \else
1531     \HyPsd@RemoveSpaceWarning{\string\kern\space\the\skip@}%
1532   \fi
1533   \gdef\HyPsd@Rest{#1}%
1534 \fi
1535 }
```

### Catcode warnings.

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

```
1536 \def\HyPsd@CatcodeWarning#1{%
1537   \HyPsd@Warning{%
1538     Token not allowed in a PDF string (%
1539     \ifHy@unicode
1540       Unicode%
1541     \else
1542       PDFDocEncoding%
1543     \fi
1544     ):%
1545     \MessageBreak removing '\HyPsd@RemoveCmdPrefix#1'%
1546   }%
1547 }
1548 \begingroup
1549 \catcode'\|=0 %
1550 \catcode'\|=12 %
1551 |gdef|HyPsd@RemoveCmdPrefix#1{%
1552   |expandafter|HyPsd@@RemoveCmdPrefix
1553   |string#1|@empty\<>-|@empty|@empty
1554 }%
1555 |gdef|HyPsd@@RemoveCmdPrefix#1\<>-#2|@empty#3|@empty{#1#2}%
1556 |endgroup
```

\HyPsd@RemoveSpaceWarning

```
1557 \def\HyPsd@RemoveSpaceWarning#1{%
1558   \HyPsd@Warning{%
1559     Token not allowed in a PDF string (%
1560     \ifHy@unicode
1561       Unicode%
1562     \else
1563       PDFDocEncoding%
1564     \fi
1565     ):%
1566     \MessageBreak #1\MessageBreak
1567     removed%
1568   }%
1569 }
```

\HyPsd@ReplaceSpaceWarning

```
1570 \def\HyPsd@ReplaceSpaceWarning#1{%
1571   \HyPsd@Warning{%
1572     Token not allowed in a PDF string (%
1573     \ifHy@unicode
1574       Unicode%
1575     \else
1576       PDFDocEncoding%
1577     \fi
1578   }:%
1579   \MessageBreak #1\MessageBreak
1580   replaced by space%
1581 }%
1582 }
```

### 6.6.5 Check for wrong glyphs

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

```
1583 \def\HyPsd@GlyphProcess#1\relax#2\@empty{%
1584   \expandafter\def\expandafter\HyPsd@String\expandafter{%
1585     \HyPsd@String#1%
1586   }%
1587   \ifx\#2\%
1588   \else
1589     \Hy@ReturnAfterFi{%
1590       \HyPsd@GlyphProcessWarning#2\@empty
1591     }%
1592   \fi
1593 }
1594 \def\HyPsd@GlyphProcessWarning#1>#2\@empty{%
1595   \HyPsd@@@GlyphProcessWarning#1++>%
1596   \HyPsd@GlyphProcess#2\@empty
1597 }
1598 \def\HyPsd@@@GlyphProcessWarning#1+#2+#3>{%
1599   \ifx\#2\%
1600     \HyPsd@Warning{%
1601       Glyph not defined in %
1602       P\ifHy@unicode U\else D1\fi\space encoding,\MessageBreak
1603       removing '@backslashchar#1'%
1604     }%
1605   \else
1606     \HyPsd@Warning{%
1607       Composite letter '@backslashchar#1+#2'\MessageBreak
1608       not defined in P\ifHy@unicode U\else D1\fi\space encoding,%
1609       \MessageBreak
1610       removing '@backslashchar#1'%
1611     }%
1612   \fi
1613 }
```

### 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.

```

1614 \def\HyPsd@spaceopti#1{ % first space
1615   \ifx\HyPsd@spaceopti#1%
1616     \040%
1617   \else
1618     #1%
1619   \fi
1620 }%

```

### 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.

```

1621 \def\HyPsd@Subst#1#2#3{%
1622   \def\HyPsd@@ReplaceFi##1##2\END\fi{%
1623     \fi
1624     ##1%
1625     \ifx\scrollmode##2\scrollmode
1626     \else
1627       #2%
1628     \HyPsd@@ReplaceFi##2\END
1629   \fi
1630 }%
1631 \xdef#3{%
1632   \iftrue
1633     \expandafter\HyPsd@@ReplaceFi#3#1\END
1634   \fi
1635 }%
1636 }

```

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

```

1637 \def\HyPsd@StringSubst#1{%
1638   \expandafter\HyPsd@Subst\expandafter{\string#1}%
1639 }

```

### 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.

```

1640 \def\HyPsd@doxspace#1{%
1641   \ifx#1\relax\else
1642     \ifx#1.\else
1643       \ifx#1:\else
1644         \ifx#1,\else
1645         \ifx#1;\else
1646         \ifx#1!\else
1647         \ifx#1?\else
1648         \ifx#1/\else
1649         \ifx#1-\else
1650         \ifx#1'\else
1651         \HyPsd@SPACEOPTI

```

```

1652      \fi
1653      \fi
1654      \fi
1655      \fi
1656      \fi
1657      \fi
1658      \fi
1659      \fi
1660      \fi
1661      \fi
1662      #1%
1663 }%

```

### 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.

```

1664 \begingroup
1665   \catcode'\|=0 %
1666   \catcode'\|=12 %

```

\HyPsd@ConvertToUnicode

```

1667 |gdef|HyPsd@ConvertToUnicode#1{%
1668 |xdef#1{%
1669   |expandafter|HyPsd@DoConvert#1|@empty|@empty|@empty
1670 }%
1671 |ifx#1|@empty
1672 |else
1673   |xdef#1{%
1674     \376\377%
1675     #1%
1676   }%
1677 |fi
1678 }%

```

\HyPsd@DoConvert

```

1679 |gdef|HyPsd@DoConvert#1{%
1680 |ifx#1|@empty
1681 |else
1682   |Hy@ReturnAfterFi{%
1683     |ifx#1\%%
1684     \%%
1685     |expandafter|HyPsd@DoEscape
1686   |else
1687     |HyPsd@Char{#1}%
1688     |expandafter|HyPsd@DoConvert
1689   |fi
1690 }%
1691 |fi
1692 }%

```

\HyPsd@DoEscape

```

1693 |gdef|HyPsd@DoEscape#1{%
1694 |ifx#19%
1695   |expandafter|HyPsd@GetTwoBytes

```

```

1696 | else
1697 | Hy@ReturnAfterFi{%
1698 | ifx#18%
1699 | 00%
1700 | expandafter HyPsd@GetTwoBytes
1701 | else
1702 | #1%
1703 | expandafter HyPsd@GetOneByte
1704 | fi
1705 }%
1706 | fi
1707 }%

```

\HyPsd@GetTwoBytes

```

1708 | gdef HyPsd@GetTwoBytes#1\#2#3#4{%
1709 | #1\#2#3#4%
1710 | HyPsd@DoConvert
1711 }%

```

\HyPsd@GetOneByte

```

1712 | gdef HyPsd@GetOneByte#1#2{%
1713 | #1#2%
1714 | HyPsd@DoConvert
1715 }%
1716 | endgroup

```

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

```

1717 \def HyPsd@GetNextTwoTokens#1#2#3\END#4{%
1718 \xdef#4{#4#1#2}%
1719 \HyPsd@@ConvertToUnicode#3\END#4%
1720 }

```

\HyPsd@Char

```

1721 \RequirePackage{intcalc}[2007/09/27]
1722 \begingroup
1723 \catcode0=9 %
1724 \catcode'\^=7 %
1725 \catcode'\^^=12 %
1726 \def\x{^^^^0000}%
1727 \expandafter\endgroup
1728 \ifx\x\@empty
1729 \def HyPsd@Char#1{%
1730 \ifnum'#1<128 %
1731 \backslashchar 000#1%
1732 \else
1733 \ifnum'#1<65536 %
1734 \expandafter HyPsd@CharTwoByte\number'#1!%
1735 \else
1736 \expandafter\expandafter\expandafter HyPsd@CharSurrogate
1737 \intcalcSub{'#1}{65536}!%
1738 \fi
1739 \fi
1740 }%
1741 \def HyPsd@CharTwoByte#1!{%
1742 \expandafter\expandafter\expandafter HyPsd@CharOctByte
1743 \IntCalcDiv#1!256!!%
1744 \expandafter\expandafter\expandafter HyPsd@CharOctByte

```

```

1745 \IntCalcMod#1!256!!%
1746 }%
1747 \def\HyPsd@CharOctByte#1!{%
1748 \@backslashchar
1749 \IntCalcDiv#1!64!%
1750 \intcalcDiv{\IntCalcMod#1!64!}{8}%
1751 \IntCalcMod#1!8!%
1752 }%
1753 \def\HyPsd@CharSurrogate#1!{%
1754 \@backslashchar 33%
1755 \IntCalcDiv#1!262144!%
1756 \expandafter\expandafter\expandafter\HyPsd@CharOctByte
1757 \intcalcDiv{\IntCalcMod#1!262144!}{1024}!%
1758 \@backslashchar 33%
1759 \expandafter\expandafter\expandafter\IntCalcAdd
1760 \intcalcDiv{\IntCalcMod#1!1024!}{256}!4!%
1761 \expandafter\expandafter\expandafter\HyPsd@CharOctByte
1762 \IntCalcMod#1!256!!%
1763 }%
1764 \else
1765 \def\HyPsd@Char#1{%
1766 \@backslashchar 000#1%
1767 }%
1768 \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`

```

1769 \begingroup\expandafter\expandafter\expandafter\endgroup
1770 \expandafter\ifx\csname numexpr\endcsname\relax
1771 \let\HyPsd@UTFviii\relax
1772 \else
1773 \begingroup
1774 \lccode'\~='^f4\relax
1775 \lowercase{\endgroup
1776 \def\HyPsd@UTFviii{%
1777 \let\UTFviii@two@octets\HyPsd@UTFviii@two
1778 \let\UTFviii@three@octets\HyPsd@UTFviii@three
1779 \let\UTFviii@four@octets\HyPsd@UTFviii@four
1780 \ifx~\HyPsd@UTFviii@ccxliv@undef
1781 \let~\HyPsd@UTFviii@ccxliv@def
1782 \fi
1783 \let\unichar\HyPsd@unichar
1784 }%
1785 }%
1786 \def\HyPsd@UTFviii@ccxliv@undef{\@inpcnc@undefined@{utf8}}%
1787 \edef\HyPsd@UTFviii@ccxliv@def{%

```

```

1788 \noexpand\UTFviii@four@octets\string ^f4%
1789 }%

```

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.

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

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

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

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

$$(5)$$

```

1790 \def\HyPsd@UTFviii@two#1#2{%
1791 \expandafter\HyPsd@UTFviii@@two
1792 \number\dimexpr.25\dimexpr'#1sp\expandafter\relax\expandafter| %
1793 \number'#1\expandafter| %
1794 \number\dimexpr.125\dimexpr'#2sp\expandafter\relax\expandafter| %
1795 \number'#2 \@nil
1796 }%
1797 \def\HyPsd@UTFviii@@two#1|#2|#3|#4\@nil{%
1798 \expandafter\8%
1799 \number\numexpr #1-48\expandafter\relax
1800 \csname\number\numexpr #2-4*#1\relax\expandafter\endcsname
1801 \number\numexpr #3-8*%
1802 \number\dimexpr.125\dimexpr#3sp\relax\relax\expandafter\relax
1803 \number\numexpr #4-8*#3\relax
1804 }%

```

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

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

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

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

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

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

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

$$(12)$$

```

1805 \def\HyPsd@UTFviii@three#1#2#3{%
1806 \expandafter\HyPsd@UTFviii@@three
1807 \number\dimexpr.25\dimexpr'#1sp\expandafter\relax\expandafter| %
1808 \number'#1\expandafter| %
1809 \number\ifnum\numexpr'#2-128\relax <32 0\else 1\fi\expandafter| %
1810 \number\dimexpr.25\dimexpr'#2sp\expandafter\relax\expandafter| %
1811 \number'#2\expandafter| %
1812 \number\dimexpr.125\dimexpr'#3sp\expandafter\relax\expandafter| %
1813 \number'#3 \@nil
1814 }%
1815 \def\HyPsd@UTFviii@@three#1|#2|#3|#4|#5|#6|#7\@nil{%
1816 \expandafter\9%
1817 \number\numexpr #1-56\expandafter\relax
1818 \number\numexpr 2*(#2-4*#1)+#3\expandafter\relax
1819 \number\numexpr #4 - 32 -\ifcase#3 0\else 8\fi\expandafter\relax

```

```

1820 \csname\number\numexpr #5-4*#4\relax\expandafter\endcsname
1821 \number\numexpr #6-16\expandafter\relax
1822 \number\numexpr #7-8*#6\relax
1823 }%

```

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

```

```

1824 \def\HyPsd@UTFviii@four#1#2{%
1825 \expandafter\HyPsd@@UTFviii@four\number
1826 \numexpr-1+('#1-240)*4+\dimexpr.0625\dimexpr'#2sp-128sp%
1827 \expandafter|\number
1828 \numexpr'#2-16*\dimexpr.0625\dimexpr'#2sp| %
1829 }%
1830 \def\HyPsd@@UTFviii@four#1|#2|#3{%
1831 \933\number\dimexpr.25\dimexpr#1sp\relax\relax
1832 \csname\number\numexpr#1-4*\dimexpr.25\dimexpr#1sp\endcsname
1833 \ifodd#2 %
1834 \number\numexpr(#2-1)/2\relax
1835 \else
1836 \number\numexpr#2/2\relax
1837 \fi
1838 \number\numexpr\ifodd#2 4+\fi
1839 \dimexpr.0625\dimexpr'#3sp-128sp\relax\relax\relax
1840 \933%
1841 \expandafter\HyPsd@@@UTFviii@four\number
1842 \numexpr'#3-16*\dimexpr.0625\dimexpr'#3sp| %
1843 }%
1844 \def\HyPsd@@@UTFviii@four#1|#2{%
1845 \number\numexpr4+\dimexpr.25\dimexpr#1sp\relax\relax\relax
1846 \csname\number\numexpr#1-4*\dimexpr.25\dimexpr#1sp\endcsname
1847 \number\dimexpr.125\dimexpr'#2sp-128sp\relax\relax
1848 \number\numexpr'#2-8*\dimexpr.125\dimexpr'#2sp\relax\relax\relax
1849 }%

```

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

```

1850 \def\HyPsd@unichar#1{%
1851 \ifHy@unicode
1852 \ifnum#1>"10FFFF %
1853 \HyPsd@UnicodeReplacementCharacter % illegal
1854 \else
1855 \ifnum#1>"FFFF %

```

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

```

1856 \expandafter\HyPsd@unichar\expandafter{%
1857 \number\numexpr 55296+%
1858 \dimexpr.0009765625\dimexpr\number#1sp-\p@
1859 \relax\relax\relax
1860 }%

```

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

```

1861 \expandafter\HyPsd@unichar\expandafter{%
1862 \number\numexpr#1-9216%

```

```

1863         -1024*\dimexpr.0009765625\dimexpr\number#1sp-\p@
1864         \relax\relax\relax
1865     }%
1866     \else
1867         \ifnum#1>"7FF %
1868         \9%
1869         \expandafter\HyPsd@unichar@first@byte\expandafter{%
1870         \number
1871         \dimexpr.00390625\dimexpr\number#1sp\relax\relax
1872         }%
1873     \else
1874         \8%
1875         \number\dimexpr.00390625\dimexpr\number#1sp\relax\relax
1876     \fi
1877     \expandafter\HyPsd@unichar@second@byte\expandafter{%
1878     \number
1879     \numexpr#1-256*\number
1880     \dimexpr.00390625\dimexpr\number#1sp\relax\relax\relax
1881     }%
1882     \fi
1883     \fi
1884     \else
1885     .% unsupported (Unicode -> PDF Doc Encoding)
1886     \fi
1887 }%
1888 \def\HyPsd@UnicodeReplacementCharacter{\9377\375}%
1889 \def\HyPsd@unichar@first@byte#1{%
1890     \number\dimexpr.015625\dimexpr#1sp\relax\relax
1891     \expandafter\HyPsd@unichar@octtwo\expandafter{%
1892     \number
1893     \numexpr#1-64*\number\dimexpr.015625\dimexpr#1sp%
1894     \relax\relax\relax
1895     }%
1896 }%
1897 \def\HyPsd@unichar@second@byte#1{%
1898     \csname\number\dimexpr.015625\dimexpr#1sp\relax\relax\endcsname
1899     \expandafter\HyPsd@unichar@octtwo\expandafter{%
1900     \number
1901     \numexpr#1-64*\number\dimexpr.015625\dimexpr#1sp%
1902     \relax\relax\relax
1903     }%
1904 }%
1905 \def\HyPsd@unichar@octtwo#1{%
1906     \number\dimexpr.125\dimexpr#1sp\relax\relax
1907     \number\numexpr#1-8*\number\dimexpr.125\dimexpr#1sp%
1908     \relax\relax\relax
1909     }%
1910 \fi

```

## 7 Support of other packages

### 7.1 Class memoir

```

1911 \@ifclassloaded{memoir}{%
1912     \AtEndOfPackage{\RequirePackage{memhfixc}}}%
1913 }{}

```

## 7.2 Package subfigure

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

```
1914 \@ifpackageloaded{subfigure}{%
1915   \@ifundefined{sub@label}{%
1916     \Hy@hypertexnamesfalse
1917   }{%
1918     \renewcommand*{\sub@label}[1]{%
1919       \@bsphack
1920       \subfig@oldlabel{#1}%
1921       \if@filesw
1922         \begingroup
1923           \edef\@currentlabstr{%
1924             \expandafter\strip@prefix\meaning\@currentlabelname
1925           }%
1926           \protected@write\@auxout{}{%
1927             \string\newlabel{sub@#1}{%
1928               {\@nameuse{\@thesub\@capttype}}%
1929               {\thepage}%
1930             }%
1931             \expandafter\strip@period\@currentlabstr
1932             \relax.\relax\@@@%
1933           }%
1934           {\@currentHref}%
1935           {}%
1936         }%
1937       }%
1938     \endgroup
1939   \fi
1940   \@esphack
1941 }%
1942 \@ifpackagelater{subfigure}{2002/03/26}{%
1943   \providecommand*\@toclevel@subfigure{1}%
1944   \providecommand*\@toclevel@subtable{1}%
1945 }%
1946 }%
1947 }
```

## 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:

```
1948 \@ifundefined{XR@addURL}{%
1949 }
```

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.

```
1950 \def\XR@addURL#1{\XR@dURL#1{}{}{}\\}%
1951 \def\XR@dURL#1#2#3#4#5\\{%
1952   {#1}{#2}%
1953   \if!#4!%
1954     \else
1955       {#3}{#4}{\XR@URL}%
1956     \fi
1957 }%
1958 }
1959 \def\Hy@true{true}
```

```
1960 \def\Hy@false{false}
```

Providing dummy definitions.

```
1961 \let\literalps@out\@gobble
1962 \newcommand\pdfbookmark[3][]{ }
1963 \def\Acrobatmenu#1#2{\leavevmode#2}
1964 \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

```
1965 \let\HyperRaiseLinkHook\@empty
1966 \def\HyperRaiseLinkDefault{\baselineskip}
```

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

```
1967 \def\Hy@raisedlink#1{%
1968   \ifvmode
1969     #1%
1970   \else
1971     \penalty\@M
1972     \smash{%
1973       \begingroup
1974         \let\HyperRaiseLinkLength\@tempdima
1975         \setlength\HyperRaiseLinkLength\HyperRaiseLinkDefault
1976         \HyperRaiseLinkHook
1977         \expandafter\endgroup
1978         \expandafter\raise\the\HyperRaiseLinkLength\hbox{#1}%
1979       }%
1980   \fi
1981 }
```

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

```
1982 \def\Hy@SaveLastskip{%
1983   \let\Hy@RestoreLastskip\relax
1984   \ifvmode
1985     \ifdim\lastskip=\z@
1986       \let\Hy@RestoreLastskip\nobreak
1987     \else
1988       \begingroup
1989         \skip@=-\lastskip
1990         \edef\x{%
1991           \endgroup
1992           \def\noexpand\Hy@RestoreLastskip{%
1993             \noexpand\ifvmode
1994               \noexpand\nobreak
1995               \vskip\the\skip@
```

```

1996         \vskip\the\lastskip\relax
1997         \noexpand\fi
1998     }%
1999 }%
2000 \x
2001 \fi
2002 \else
2003 \ifhmode
2004     \ifdim\lastskip=\z@
2005         \let\Hy@RestoreLastskip\nobreak
2006     \else
2007         \begingroup
2008             \skip@=-\lastskip
2009             \edef\x{%
2010                 \endgroup
2011                 \def\noexpand\Hy@RestoreLastskip{%
2012                     \noexpand\ifhmode
2013                     \noexpand\nobreak
2014                     \hskip\the\skip@
2015                     \hskip\the\lastskip\relax
2016                 \noexpand\fi
2017             }%
2018         }%
2019     \x
2020 \fi
2021 \fi
2022 \fi
2023 }%

```

## 9 Options

### 9.1 Help macros

\Hy@boolkey

```

2024 \def\Hy@boolkey{\@dblarg\Hy@@boolkey}
2025 \def\Hy@@boolkey[#1]#2#3{%
2026     \edef\Hy@tempa{#3}%
2027     \lowercase\expandafter{%
2028         \expandafter\def\expandafter\Hy@tempa\expandafter{\Hy@tempa}%
2029     }%
2030     \ifx\Hy@tempa\@empty
2031         \let\Hy@tempa\Hy@true
2032     \fi
2033     \ifx\Hy@tempa\Hy@true
2034     \else
2035         \ifx\Hy@tempa\Hy@false
2036         \else
2037             \let\Hy@tempa\relax
2038         \fi
2039     \fi
2040     \ifx\Hy@tempa\relax
2041         \Hy@WarnOptionValue{#3}{#1}{‘true’ or ‘false’}%
2042     \else
2043         \Hy@Info{Option ‘#1’ set ‘\Hy@tempa’}%
2044         \csname Hy@#2\Hy@tempa\endcsname
2045     \fi

```

2046 }

\Hy@WarnOptionValue

```
2047 \def\Hy@WarnOptionValue#1#2#3{%
2048   \Hy@Warning{%
2049     Unexpected value '#1'\MessageBreak
2050     of option '#2' instead of\MessageBreak
2051     #3%
2052   }%
2053 }
```

\Hy@DisableOption

```
2054 \def\Hy@DisableOption#1{%
2055   \@ifundefined{KV@Hyp@#1@default}{%
2056     \define@key{Hyp}{#1}%
2057   }{%
2058     \define@key{Hyp}{#1}[]%
2059   }%
2060   {\Hy@WarnOptionDisabled{#1}}%
2061 }
```

\Hy@WarnOptionDisabled

```
2062 \def\Hy@WarnOptionDisabled#1{%
2063   \Hy@Warning{%
2064     Option '#1' has already been used,\MessageBreak
2065     setting the option has no effect%
2066   }%
2067 }
```

\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.

```
2068 \def\Hy@CheckOptionValue#1#2#3{%
2069   \begingroup
2070   \edef\x{#1}%
2071   \@onelevel@sanitize\x
2072   \let\y=y%
2073   \def\do##1##2{%
2074     \def\z{##1}%
2075     \@onelevel@sanitize\z
2076     \ifx\x\z
2077       \let\y=n%
2078     \let\do\@gobbletwo
2079   }%
2080   \y%
2081   #3%
2082   \ifx\y y%
2083     \def\do##1##2{%
2084       * '#1'%
2085       \ifx\##2\\\else\space(##2)\fi
2086     }%
2087   }%
2088   \Hy@Warning{%
2089     Values of option '#2':\MessageBreak
2090     #3%
2091     * An empty value disables the option.\MessageBreak
2092     Unknown value '\x'%
2093   }
```

```

2094 \fi
2095 \endgroup
2096 }

```

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

```

2097 \def\Hy@DefNameKey#1{%
2098 \expandafter\Hy@@@DefNameKey\csname @#1\endcsname{#1}%
2099 }

```

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

```

2100 \def\Hy@@@DefNameKey#1#2#3{%
2101 \define@key{Hyp}{#2}{%
2102 \edef#1{##1}%
2103 \ifx#1\@empty
2104 \else
2105 \Hy@CheckOptionValue{##1}{#2}{#3}%
2106 \fi
2107 }%
2108 \let#1\@empty
2109 }

```

`\Hy@UseNameKey`

```

2110 \def\Hy@UseNameKey#1#2{%
2111 \ifx#2\@empty
2112 \else
2113 /#1/#2%
2114 \fi
2115 }

```

## 9.2 Defining the options

```

2116 \define@key{Hyp}{implicit}[true]{%
2117 \Hy@boolkey{implicit}{#1}%
2118 }
2119 \define@key{Hyp}{draft}[true]{%
2120 \Hy@boolkey{draft}{#1}%
2121 }
2122 \define@key{Hyp}{final}[true]{%
2123 \Hy@boolkey{final}{#1}%
2124 }
2125 \let\KV@Hyp@nolinks\KV@Hyp@draft
2126 \def\Hy@ObsoletePaperOption#1{%
2127 \Hy@WarningNoLine{%
2128 Option ‘#1’ is no longer used%
2129 }%
2130 \define@key{Hyp}{#1}[true]{}%
2131 }
2132 \def\Hy@temp#1{%
2133 \define@key{Hyp}{#1}[true]{%
2134 \Hy@ObsoletePaperOption{#1}%
2135 }%
2136 }

```

```

2137 \Hy@temp{a4paper}
2138 \Hy@temp{a5paper}
2139 \Hy@temp{b5paper}
2140 \Hy@temp{letterpaper}
2141 \Hy@temp{legalpaper}
2142 \Hy@temp{executivepaper}

2143 \define@key{Hyp}{setpagesize}[true]{%
2144   \Hy@boolkey{setpagesize}{#1}%
2145 }
2146 \define@key{Hyp}{debug}[true]{%
2147   \Hy@boolkey{debug}{verbose}{#1}%
2148 }
2149 \define@key{Hyp}{linktocpage}[true]{%
2150   \Hy@boolkey{linktocpage}{#1}%
2151   \ifHy@linktocpage
2152     \let\Hy@linktoc\Hy@linktoc@page
2153   \else
2154     \let\Hy@linktoc\Hy@linktoc@section
2155   \fi
2156 }
2157 \chardef\Hy@linktoc@none=0 %
2158 \chardef\Hy@linktoc@section=1 %
2159 \chardef\Hy@linktoc@page=2 %
2160 \chardef\Hy@linktoc@all=3 %
2161 \ifHy@linktocpage
2162   \let\Hy@linktoc\Hy@linktoc@page
2163 \else
2164   \let\Hy@linktoc\Hy@linktoc@section
2165 \fi
2166 \define@key{Hyp}{linktoc}{%
2167   \@ifundefined{Hy@linktoc@#1}{%
2168     \Hy@Warning{%
2169       Unexpected value ‘#1’ of\MessageBreak
2170       option ‘linktoc’ instead of ‘none’,\MessageBreak
2171       ‘section’, ‘page’ or ‘all’%
2172     }%
2173   }{%
2174     \expandafter\let\expandafter\Hy@linktoc
2175     \csname Hy@linktoc@#1\endcsname
2176   }%
2177 }
2178 \define@key{Hyp}{extension}{\def\XR@ext{#1}}
2179 \let\XR@ext\relax
2180 \define@key{Hyp}{verbose}[true]{%
2181   \Hy@boolkey{verbose}{#1}%
2182 }
2183 \define@key{Hyp}{typexml}[true]{%
2184   \Hy@boolkey{typexml}{#1}%
2185 }

```

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.

```

2186 \define@key{Hyp}{raiselinks}[true]{%
2187   \Hy@boolkey{raiselinks}{#1}%
2188 }

```

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

```
2189 \def\Hy@setbreaklinks#1{%
2190   \csname breaklinks#1\endcsname
2191 }

2192 \def\Hy@breaklinks@unsupported{%
2193   \ifx\Hy@setbreaklinks\@gobble
2194     \ifHy@breaklinks
2195       \Hy@WarningNoLine{%
2196         You have enabled option 'breaklinks'.\MessageBreak
2197         But driver '\Hy@driver.def' does not support this.\MessageBreak
2198         Expect trouble with the link areas of broken links%
2199       }%
2200   \fi
2201   \fi
2202 }

2203 \define@key{Hyp}{breaklinks}[true]{%
2204   \Hy@boolkey{breaklinks}{#1}%
2205   \let\Hy@setbreaklinks\@gobble
2206 }
```

Determines whether an automatic anchor is put on each page

```
2207 \define@key{Hyp}{pageanchor}[true]{%
2208   \Hy@boolkey{pageanchor}{#1}%
2209 }
```

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.

```
2210 \define@key{Hyp}{plainpages}[true]{%
2211   \Hy@boolkey{plainpages}{#1}%
2212 }
```

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

```
2213 \define@key{Hyp}{naturalnames}[true]{%
2214   \Hy@boolkey{naturalnames}{#1}%
2215 }
```

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

```
2216 \define@key{Hyp}{hypertexnames}[true]{%
2217   \Hy@boolkey{hypertexnames}{#1}%
2218 }
```

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

```
2219 \define@key{Hyp}{nesting}[true]{%
2220   \Hy@boolkey{nesting}{#1}%
2221 }

2222 \define@key{Hyp}{unicode}[true]{%
2223   \Hy@boolkey{unicode}{#1}%
2224   \ifHy@unicode
2225     \def\HyPsd@pdfencoding{unicode}%
2226   \else
2227     \def\HyPsd@pdfencoding{pdfdoc}%
2228   \fi
2229   \HyPsd@LoadUnicode
2230 }

2231 \def\HyPsd@LoadUnicode{%
2232   \@ifundefined{T@PU}{%
2233     \input{puenc.def}%
2234   }
```

```

2234 \HyLinguex@Restore
2235 }{}%
2236 \DeclareFontFamily{PU}{pdf}{}%
2237 \DeclareFontShape{PU}{pdf}{m}{n}{ <-> cmr10 }{}%
2238 \DeclareFontSubstitution{PU}{pdf}{m}{n}%
2239 \global\let\HyPsd@LoadUnicode\relax
2240 }
2241 \AtBeginDocument{%
2242 \ifx\HyPsd@LoadUnicode\relax
2243 \else
2244 \def\HyPsd@LoadUnicode{%
2245 \PackageError{hyperref}{}%
2246 Unicode support for bookmarks is not available.\MessageBreak
2247 Activate unicode support by using one of the options\MessageBreak
2248 'unicode', 'pdfencoding=unicode', 'pdfencoding=auto'\MessageBreak
2249 in the preamble%
2250 }\@ehc
2251 \global\let\HyPsd@LoadUnicode\relax
2252 \global\Hy@unicodedefalse
2253 \global\let\Hy@unicodetrue\Hy@unicodedefalse
2254 }%
2255 \fi
2256 }

2257 \define@key{Hyp}{pdfencoding}{%
2258 \edef\HyPsd@temp{#1}%
2259 \ifx\HyPsd@temp\HyPsd@pdfencoding@pdfdoc
2260 \let\HyPsd@pdfencoding\HyPsd@temp
2261 \Hy@unicodedefalse
2262 \else
2263 \ifcase\ifx\HyPsd@temp\HyPsd@pdfencoding@unicode
2264 \z@
2265 \else
2266 \ifx\HyPsd@temp\HyPsd@pdfencoding@auto
2267 \z@
2268 \else
2269 \@ne
2270 \fi
2271 \fi
2272 \let\HyPsd@pdfencoding\HyPsd@temp
2273 \hypersetup{unicode}%
2274 \ifHy@unicode
2275 \def\HyPsd@pdfencoding{#1}%
2276 \ifx\HyPsd@pdfencoding\HyPsd@pdfencoding@auto
2277 \HyPsd@LoadStringEncoding
2278 \fi
2279 \else
2280 \Hy@Warning{Cannot switch to unicode bookmarks}%
2281 \let\HyPsd@pdfencoding\HyPsd@pdfencoding@pdfdoc
2282 \fi
2283 \else
2284 \@onelevel@sanitize\HyPsd@temp
2285 \Hy@Warning{%
2286 Values of option 'pdfencoding':\MessageBreak
2287 'pdfdoc', 'unicode', 'auto'.\MessageBreak
2288 Ignoring unknown value '\HyPsd@temp'%
2289 }%
2290 \fi

```

```

2291 \fi
2292 }
2293 \def\HyPsd@pdfencoding@auto{auto}
2294 \def\HyPsd@pdfencoding@pdfdoc{pdfdoc}
2295 \def\HyPsd@pdfencoding@unicode{unicode}
2296 \let\HyPsd@pdfencoding\Hy@pdfencoding@pdfdoc
2297 \def\HyPsd@LoadStringEnc{%
2298   \RequirePackage{stringenc}[2009/12/15]%
2299   \let\HyPsd@LoadStringEnc\relax
2300 }
2301 \AtBeginDocument{%
2302   \ifpackageloaded{stringenc}{%
2303     \let\HyPsd@LoadStringEnc\relax
2304   }{%
2305     \def\HyPsd@LoadStringEnc{%
2306       \Hy@WarningNoLine{%
2307         Missing package ‘stringenc’. Use ‘pdfencoding=auto’\MessageBreak
2308         in the preamble or load the package there%
2309       }%
2310     }%
2311   }%
2312 }
2313 \newif\ifHy@setpdfversion
2314 \define@key{Hyp}{pdfversion}{%
2315   \ifundefined{Hy@pdfversion@#1}{%
2316     \PackageWarning{hyperref}{%
2317       Unsupported PDF version ‘#1’\MessageBreak
2318       Valid values: 1.2 until 1.9%
2319     }%
2320   }{%
2321     \Hy@setpdfversiontrue
2322     \edef\Hy@pdfversion{\@nameuse{Hy@pdfversion@#1}}%
2323   }%
2324 }
2325 \@namedef{Hy@pdfversion@1.2}{2}%
2326 \@namedef{Hy@pdfversion@1.3}{3}%
2327 \@namedef{Hy@pdfversion@1.4}{4}%
2328 \@namedef{Hy@pdfversion@1.5}{5}%
2329 \@namedef{Hy@pdfversion@1.6}{6}%
2330 \@namedef{Hy@pdfversion@1.7}{7}%
2331 \@namedef{Hy@pdfversion@1.8}{8}%
2332 \@namedef{Hy@pdfversion@1.9}{9}%
2333 \def\Hy@pdfversion{2}

```

## 10 Options for different drivers

```

2334 \define@key{Hyp}{hyperref}[true]{}
2335 \define@key{Hyp}{tex4ht}[true]{%
2336   \Hy@texhttrue
2337   \setkeys{Hyp}{colorlinks=true}%
2338   \def\BeforeTeXIVht{\usepackage{color}}}%
2339 \def\Hy@driver{htex4ht}%
2340 \def\MaybeStopEarly{%
2341   \typeout{Hyperref stopped early}%
2342   \AfterBeginDocument{%
2343     \PDF@FinishDoc
2344     \gdef\PDF@FinishDoc{}%

```

```

2345 }%
2346 \endinput
2347 }%
2348 }
2349 \define@key{Hyp}{pdftex}[true]{%
2350 \def\Hy@driver{hpdftex}%
2351 }
2352 \define@key{Hyp}{nativepdf}[true]{%
2353 \def\Hy@driver{hdvips}%
2354 }
2355 \define@key{Hyp}{dvipdfm}[true]{%
2356 \def\Hy@driver{hdvipdfm}%
2357 }
2358 \define@key{Hyp}{dvipdfmx}[true]{%
2359 \def\Hy@driver{hdvipdfm}%
2360 }
2361 \define@key{Hyp}{dvipdfmx-outline-open}[true]{%
2362 \expandafter\ifx\csname if#1\expandafter\endcsname
2363 \csname iftrue\endcsname
2364 \chardef\SpecialDvipdfmxOutlineOpen\@ne
2365 \else
2366 \chardef\SpecialDvipdfmxOutlineOpen\z@
2367 \fi
2368 }
2369 \define@key{Hyp}{xetex}[true]{%
2370 \def\Hy@driver{hxetex}%
2371 }
2372 \define@key{Hyp}{pdfmark}[true]{%
2373 \def\Hy@driver{hdvips}%
2374 }
2375 \define@key{Hyp}{dvips}[true]{%
2376 \def\Hy@driver{hdvips}%
2377 }
2378 \define@key{Hyp}{hypertex}[true]{%
2379 \def\Hy@driver{hypertex}%
2380 }
2381 \let\Hy@MaybeStopNow\relax
2382 \define@key{Hyp}{vtex}[true]{%
2383 \begingroup\expandafter\expandafter\expandafter\endgroup
2384 \expandafter\ifx\csname OpMode\endcsname\relax
2385 \@latex@error{Non-VTeX processor}{}%
2386 \global\let\Hy@MaybeStopNow\endinput
2387 \endinput
2388 \else
2389 \ifnum 0\ifnum\OpMode<1 1\fi \ifnum\OpMode>3 1\fi =0 %
2390 \def\Hy@driver{hvtex}%
2391 \else
2392 \ifnum\OpMode=10\relax
2393 \def\Hy@driver{hvtexhtm}%
2394 \def\MaybeStopEarly{%
2395 \typeout{Hyperref stopped early}%
2396 \AfterBeginDocument{%
2397 \PDF@FinishDoc
2398 \gdef\PDF@FinishDoc{}}%
2399 }%
2400 \endinput
2401 }%

```

```

2402 \else
2403 \latexerror{Mode (\the\OpMode) has no hyperref driver}{}%
2404 \global\let\Hy@MaybeStopNow\endinput
2405 \endinput
2406 \fi
2407 \fi
2408 \fi
2409 }
2410 \define@key{Hyp}{vtexpdfmark}[true]{%
2411 \begingroup\expandafter\expandafter\expandafter\endgroup
2412 \expandafter\ifx\csname OpMode\endcsname\relax
2413 \latexerror{Non-VTeX processor}{}%
2414 \let\Hy@MaybeStopNow\endinput
2415 \endinput
2416 \else
2417 \ifnum 0\ifnum\OpMode<1 1\fi \ifnum\OpMode>3 1\fi =0 %
2418 \def\Hy@driver{hvtexmrk}%
2419 \else
2420 \latexerror{Mode (\the\OpMode) has no hyperref driver}{}%
2421 \let\Hy@MaybeStopNow\endinput
2422 \endinput
2423 \fi
2424 \fi
2425 }
2426 \define@key{Hyp}{dviwindo}[true]{%
2427 \def\Hy@driver{hdviwind}%
2428 \setkeys{Hyp}{colorlinks}%
2429 \ifpdf
2430 \else
2431 \ifxetex
2432 \else
2433 \PassOptionsToPackage{dviwindo}{color}%
2434 \fi
2435 \fi
2436 }
2437 \define@key{Hyp}{dvipsone}[true]{%
2438 \def\Hy@driver{hdvipson}%
2439 }
2440 \define@key{Hyp}{textures}[true]{%
2441 \def\Hy@driver{htexture}%
2442 }
2443 \define@key{Hyp}{latex2html}[true]{%
2444 \AtBeginDocument{\@@latextohtmlX}%
2445 }

No more special treatment for ps2pdf. Let it sink or swim.
2446 \define@key{Hyp}{ps2pdf}[true]{%
2447 \def\Hy@driver{hdvips}%
2448 \providecommand*\@pdfborder{0 0 1}%
2449 }

```

## 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.

```

2450 \define@key{Hyp}{hyperfigures}[true]{%
2451 \Hy@boolkey[hyperfigures]{figures}{#1}%
2452 }

```

The automatic footnote linking can be disabled by option hyperfootnotes.

```
2453 \define@key{Hyp}{hyperfootnotes}[true]{%
2454   \Hy@boolkey{hyperfootnotes}{#1}%
2455 }
```

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

```
2456 \def\back@none{none}
2457 \def\back@section{section}
2458 \def\back@page{page}
2459 \def\back@slide{slide}
2460 \define@key{Hyp}{backref}[section]{%
2461   \lowercase{\def\Hy@tempa{#1}}%
2462   \ifx\Hy@tempa\@empty
2463     \let\Hy@tempa\back@section
2464   \fi
2465   \ifx\Hy@tempa\Hy@false
2466     \let\Hy@tempa\back@none
2467   \fi
2468   \ifx\Hy@tempa\back@slide
2469     \let\Hy@tempa\back@section
2470   \fi
2471   \ifx\Hy@tempa\back@page
2472     \PassOptionsToPackage{hyperpageref}{backref}%
2473     \Hy@backreftrue
2474   \else
2475     \ifx\Hy@tempa\back@section
2476       \PassOptionsToPackage{hyperref}{backref}%
2477       \Hy@backreftrue
2478     \else
2479       \ifx\Hy@tempa\back@none
2480         \Hy@backreffalse
2481       \else
2482         \Hy@WarnOptionValue{#1}{backref}{%
2483           'section', 'slide', 'page', 'none',\MessageBreak
2484           or 'false'}%
2485       \fi
2486     \fi
2487   \fi
2488 }
2489 \define@key{Hyp}{pagebackref}[true]{%
2490   \edef\Hy@tempa{#1}%
2491   \lowercase\expandafter{%
2492     \expandafter\def\expandafter\Hy@tempa\expandafter{\Hy@tempa}%
2493   }%
2494   \ifx\Hy@tempa\@empty
2495     \let\Hy@tempa\Hy@true
2496   \fi
2497   \ifx\Hy@tempa\Hy@true
2498     \PassOptionsToPackage{hyperpageref}{backref}%
2499     \Hy@backreftrue
2500   \else
2501     \ifx\Hy@tempa\Hy@false
2502       \Hy@backreffalse
2503     \else
2504       \Hy@WarnOptionValue{#1}{pagebackref}{'true' or 'false'}%
2505     \fi
2506   \fi
2507 }
```

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

```
2508 \define@key{Hyp}{hyperindex}[true]{%
2509   \Hy@boolkey{hyperindex}{#1}%
2510 }
```

Configuration of encap char.

```
2511 \define@key{Hyp}{encap}[|]{%
2512   \def\HyInd@EncapChar{#1}%
2513 }
```

## 12 Language options

The \autoref feature depends on the language.

```
2514 \def\HyLang@afrikaans{%
2515   \def\equationautorefname{Vergelyking}%
2516   \def\footnoteautorefname{Voetnota}%
2517   \def\itemautorefname{Item}%
2518   \def\figureautorefname{Figuur}%
2519   \def\tableautorefname{Tabel}%
2520   \def\partautorefname{Deel}%
2521   \def\appendixautorefname{Bylae}%
2522   \def\chapterautorefname{Hoofstuk}%
2523   \def\sectionautorefname{Afdeling}%
2524   \def\subsectionautorefname{Subafdeling}%
2525   \def\subsubsectionautorefname{Subsubafdeling}%
2526   \def\paragraphautorefname{Paragraaf}%
2527   \def\subparagraphautorefname{Subparagraaf}%
2528   \def\FancyVerbLineautorefname{Lyn}%
2529   \def\theoremautorefname{Teorema}%
2530   \def\pageautorefname{Bladsy}%
2531 }
2532 \def\HyLang@english{%
2533   \def\equationautorefname{Equation}%
2534   \def\footnoteautorefname{footnote}%
2535   \def\itemautorefname{item}%
2536   \def\figureautorefname{Figure}%
2537   \def\tableautorefname{Table}%
2538   \def\partautorefname{Part}%
2539   \def\appendixautorefname{Appendix}%
2540   \def\chapterautorefname{chapter}%
2541   \def\sectionautorefname{section}%
2542   \def\subsectionautorefname{subsection}%
2543   \def\subsubsectionautorefname{subsubsection}%
2544   \def\paragraphautorefname{paragraph}%
2545   \def\subparagraphautorefname{subparagraph}%
2546   \def\FancyVerbLineautorefname{line}%
2547   \def\theoremautorefname{Theorem}%
2548   \def\pageautorefname{page}%
2549 }
2550 \def\HyLang@french{%
2551   \def\equationautorefname{'Equation}%
2552   \def\footnoteautorefname{note}%
2553   \def\itemautorefname{item}%
2554   \def\figureautorefname{Figure}%
2555   \def\tableautorefname{Tableau}%

```

```

2556 \def\partautorefname{Partie}%
2557 \def\appendixautorefname{Appendice}%
2558 \def\chapterautorefname{chapitre}%
2559 \def\sectionautorefname{section}%
2560 \def\subsectionautorefname{sous-section}%
2561 \def\subsubsectionautorefname{sous-sous-section}%
2562 \def\paragraphautorefname{paragraphe}%
2563 \def\subparagraphautorefname{sous-paragraphe}%
2564 \def\FancyVerbLineautorefname{ligne}%
2565 \def\theoremautorefname{Th\'eor\'eme}%
2566 \def\pageautorefname{page}%
2567 }
2568 \def\HyLang@german{%
2569 \def\equationautorefname{Gleichung}%
2570 \def\footnoteautorefname{Fu\ss note}%
2571 \def\itemautorefname{Punkt}%
2572 \def\figureautorefname{Abbildung}%
2573 \def\tableautorefname{Tabelle}%
2574 \def\partautorefname{Teil}%
2575 \def\appendixautorefname{Anhang}%
2576 \def\chapterautorefname{Kapitel}%
2577 \def\sectionautorefname{Abschnitt}%
2578 \def\subsectionautorefname{Unterabschnitt}%
2579 \def\subsubsectionautorefname{Unterunterabschnitt}%
2580 \def\paragraphautorefname{Absatz}%
2581 \def\subparagraphautorefname{Unterabsatz}%
2582 \def\FancyVerbLineautorefname{Zeile}%
2583 \def\theoremautorefname{Theorem}%
2584 \def\pageautorefname{Seite}%
2585 }
2586 \def\HyLang@italian{%
2587 \def\equationautorefname{Equazione}%
2588 \def\footnoteautorefname{nota}%
2589 \def\itemautorefname{punto}%
2590 \def\figureautorefname{Figura}%
2591 \def\tableautorefname{Tabella}%
2592 \def\partautorefname{Parte}%
2593 \def\appendixautorefname{Appendice}%
2594 \def\chapterautorefname{Capitolo}%
2595 \def\sectionautorefname{sezione}%
2596 \def\subsectionautorefname{sottosezione}%
2597 \def\subsubsectionautorefname{sottosottosezione}%
2598 \def\paragraphautorefname{paragrafo}%
2599 \def\subparagraphautorefname{sottoparagrafo}%
2600 \def\FancyVerbLineautorefname{linea}%
2601 \def\theoremautorefname{Teorema}%
2602 \def\pageautorefname{Pag.\@}%
2603 }
2604 \def\HyLang@magyar{%
2605 \def\equationautorefname{Egyenlet}%
2606 \def\footnoteautorefname{I\`abjegyzet}%
2607 \def\itemautorefname{Elem}%
2608 \def\figureautorefname{\`Abra}%
2609 \def\tableautorefname{T\`abl\`azat}%
2610 \def\partautorefname{R\`esz}%
2611 \def\appendixautorefname{F\`uggel\`ek}%
2612 \def\chapterautorefname{fejezet}%

```

```

2613 \def\sectionautorefname{szakasz}%
2614 \def\subsectionautorefname{alszakasz}%
2615 \def\subsubsectionautorefname{alalszakasz}%
2616 \def\paragraphautorefname{bekezd'es}%
2617 \def\subparagraphautorefname{albekezd'es}%
2618 \def\FancyVerbLineautorefname{sor}%
2619 \def\theoremautorefname{T'etel}%
2620 \def\pageautorefname{oldal}%
2621 }
2622 \def\HyLang@portuges{%
2623 \def\equationautorefname{Equa\c c~ao}%
2624 \def\footnoteautorefname{Nota de rodap'e}%
2625 \def\itemautorefname{Item}%
2626 \def\figureautorefname{Figura}%
2627 \def\tableautorefname{Tabela}%
2628 \def\partautorefname{Parte}%
2629 \def\appendixautorefname{Ap~endice}%
2630 \def\chapterautorefname{Cap~itulo}%
2631 \def\sectionautorefname{Se\c c~ao}%
2632 \def\subsectionautorefname{Subse\c c~ao}%
2633 \def\subsubsectionautorefname{Subsubse\c c~ao}%
2634 \def\paragraphautorefname{par'agrafo}%
2635 \def\subparagraphautorefname{subpar'agrafo}%
2636 \def\FancyVerbLineautorefname{linha}%
2637 \def\theoremautorefname{Teorema}%
2638 \def\pageautorefname{P~agina}%
2639 }

```

Next commented section for Russian is provided by Olga Lapko.

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

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

```

2640 \def\HyLang@russian{%

```

The abbreviated reference to the equation: it is not for “the good face of the book”, but maybe it will be better to get the company for the `\theoremautorefname`?

```

2641 \def\equationautorefname{\cyr\cyrv\cyrery\cyr.}%

```

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

```

2642 % \def\equationautorefname{%
2643 %   \cyr\cyrv\cyrery\cyr\cyra\cyrzh\cyre\cyrn\cyri\cyre
2644 % }%

```

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

```

2645 \def\footnoteautorefname{%
2646   \cyr\cyrp\cyro\cyrd\cyrs\cyrt\cyr.\ \cyrp\cyr\cyri\cyr.m.%
2647 }%

```

Commented form of the full synonym for “footnote”. It has common form for both nominative and accusative but changes in other forms, like “of `\autoref{auto}`”

```

2648 % \def\footnoteautorefname{%

```

```

2649 % \cyr\cyrp\cyro\cyrd\cyrs\cyrt\cyrr\cyro\cyrch\cyrn\cyro\cyre\ %
2650 % \cyrp\cyrr\cyri\cyrm\cyre\cyrch\cyra\cyrn\cyri\cyre
2651 % }%

```

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

```

2652 % \def\Nomfootnoteautorefname{\cyr\cyrs\cyrn\cyro\cyrs\cyrk\cyra}%
2653 % \def\Accfootnoteautorefname{\cyr\cyrs\cyrn\cyro\cyrs\cyrk\cyru}%

```

Name of the list item, can be confused with the paragraph reference name, but reader could understand meaning from context(?). Commented variant has common form for both nominative and accusative but changes in other forms, like “of \autoref{auto}” etc.

```

2654 \def\itemautorefname{\cyr\cyrp.}%
2655 % \def\itemautorefname{\cyr\cyrp\cyru\cyrn\cyrk\cyrt}%

```

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

```

2656 \def\figureautorefname{\cyr\cyrr\cyri\cyrs.}%
2657 \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.

```

2658 \def\partautorefname{\cyr\cyrch.}%
2659 \def\chapterautorefname{\cyr\cyrg\cyrl.}%
2660 \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.

```

2661 \def\appendixautorefname{\cyr\cyrp\cyrr\cyri\cyrl.}%
2662 % \def\appendixautorefname{%
2663 % \cyr\cyrp\cyrr\cyri\cyrl\cyro\cyrz\cyre\cyrn\cyri\cyre
2664 % }%

```

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.

```

2665 \def\subsectionautorefname{\cyr\cyrr\cyra\cyrz\cyrd.}%
2666 \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.

```

2667 \def\paragraphautorefname{\cyr\cyrp.}%
2668 \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.

```

2669 % \def\paragraphautorefname{\cyr\cyrp\cyru\cyrn\cyrk\cyrt}%
2670 % \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.

```

2671 \def\FancyVerbLineautorefname{\cyr\cyrs\cyrt\cyrr.}%

```

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

```
2672 % \def\NomFancyVerbLineautorefname{\cyr\cyrs\cyrt\cyrr\cyro\cyrk\cyra}%
2673 % \def\AccFancyVerbLineautorefname{\cyr\cyrs\cyrt\cyrr\cyro\cyrk\cyru}%
```

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

```
2674 % \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 ...

```
2675 \def\theoremautorefname{\cyr\cyrt\cyre\cyro\cyrr.}%
```

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

```
2676 % \def\Nomtheoremautorefname{\cyr\cyrt\cyre\cyro\cyrr\cyre\cyrm\cyra}%
2677 % \def\Acctheoremautorefname{\cyr\cyrt\cyre\cyro\cyrr\cyre\cyrm\cyru}%
```

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

```
2678 \def\pageautorefname{\cyr\cyrs.}%
2679 }
```

```
2680 \def\HyLang@spanish{%
2681 \def\equationautorefname{Ecuaci\'on}%
2682 \def\footnoteautorefname{Nota a pie de p\'agina}%
2683 \def\itemautorefname{Elemento}%
2684 \def\figureautorefname{Figura}%
2685 \def\tableautorefname{Tabla}%
2686 \def\partautorefname{Parte}%
2687 \def\appendixautorefname{Ap\'endice}%
2688 \def\chapterautorefname{Cap\'itulo}%
2689 \def\sectionautorefname{Secci\'on}%
2690 \def\subsectionautorefname{Subsecci\'on}%
2691 \def\subsubsectionautorefname{Subsubsecci\'on}%
2692 \def\paragraphautorefname{P\'arrafo}%
2693 \def\subparagraphautorefname{Subp\'arrafo}%
2694 \def\FancyVerbLineautorefname{L\'inea}%
2695 \def\theoremautorefname{Teorema}%
2696 \def\pageautorefname{P\'agina}%
2697 }
2698 \def\HyLang@vietnamese{%
2699 \def\equationautorefname{Ph\uhorn{}\ohorn{}}ng tr\`inh}%
2700 \def\footnoteautorefname{Ch\`u th\`ich}%
2701 \def\itemautorefname{m\`d{u}c}%
2702 \def\figureautorefname{H\`inh}%
2703 \def\tableautorefname{B\`h{a}ng}%
2704 \def\partautorefname{Ph\`acircumflex{}n}%
2705 \def\appendixautorefname{Ph\`d{u} l\`d{u}c}%
2706 \def\chapterautorefname{ch\uhorn{}\ohorn{}}ng}%
2707 \def\sectionautorefname{m\`d{u}c}%
2708 \def\subsectionautorefname{m\`d{u}c}%
2709 \def\subsubsectionautorefname{m\`d{u}c}%
2710 \def\paragraphautorefname{\dj{}}o\`d{a}n}%
2711 \def\subparagraphautorefname{\dj{}}o\`d{a}n}%
2712 \def\FancyVerbLineautorefname{d\`ong}%
2713 \def\theoremautorefname{DJ{}}\`d{i}nh l\`y}%
2714 \def\pageautorefname{Trang}%
2715 }
```

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

```

2716 \def\HyLang@addto#1#2{%
2717   #2%
2718   \@temptokena{#2}%
2719   \ifx#1\relax
2720     \let#1\@empty
2721   \fi
2722   \ifx#1\undefined
2723     \edef#1{\the\@temptokena}%
2724   \else
2725     \toks@\expandafter{#1}%
2726     \edef#1{\the\toks@\the\@temptokena}%
2727   \fi
2728   \@temptokena{}\toks@\@temptokena
2729 }

2730 \def\HyLang@DeclareLang#1#2#3{%
2731   \begingroup
2732   \edef\x##1##2{%
2733     \noexpand\ifx##2\relax
2734       \errmessage{No definitions for language #2' found!}%
2735     \noexpand\fi
2736   \endgroup
2737   \noexpand\define@key{Hyp}{#1}[]{%
2738     \noexpand\HyLang@addto{\noexpand##1}{\noexpand##2}%
2739     #3%
2740   }%
2741   }%
2742   \expandafter\x\csname extras#1\expandafter\endcsname
2743     \csname HyLang@#2\endcsname
2744 }

2745 \HyLang@DeclareLang{english}{english}{}
2746 \HyLang@DeclareLang{UKenglish}{english}{}
2747 \HyLang@DeclareLang{british}{english}{}
2748 \HyLang@DeclareLang{USenglish}{english}{}
2749 \HyLang@DeclareLang{american}{english}{}
2750 \HyLang@DeclareLang{german}{german}{}
2751 \HyLang@DeclareLang{austrian}{german}{}
2752 \HyLang@DeclareLang{ngerman}{german}{}
2753 \HyLang@DeclareLang{naustrian}{german}{}
2754 \HyLang@DeclareLang{russian}{russian}{\noexpand\hypersetup{unicode}}
2755 \HyLang@DeclareLang{brazil}{portuges}{}
2756 \HyLang@DeclareLang{brazilian}{portuges}{}
2757 \HyLang@DeclareLang{portuguese}{portuges}{}
2758 \HyLang@DeclareLang{spanish}{spanish}{}
2759 \HyLang@DeclareLang{afrikaans}{afrikaans}{}
2760 \HyLang@DeclareLang{french}{french}{}
2761 \HyLang@DeclareLang{frenchb}{french}{}
2762 \HyLang@DeclareLang{francais}{french}{}
2763 \HyLang@DeclareLang{acadian}{french}{}
2764 \HyLang@DeclareLang{canadien}{french}{}
2765 \HyLang@DeclareLang{italian}{italian}{}
2766 \HyLang@DeclareLang{magyar}{magyar}{}
2767 \HyLang@DeclareLang{hungarian}{magyar}{}

```

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

```

2768 \define@key{Hyp}{vietnamese}[]{}%

```

```

2769 \HyLang@addto\extrasvietnamese\HyLang@vietnamese
2770 \AtEndOfPackage{%
2771   \@ifundefined{T@PU}{-}{%
2772     \input{puvnenc.def}%
2773   }%
2774 }%
2775 }
2776 \define@key{Hyp}{vietnam}[]{}%
2777 \HyLang@addto\extrasvietnam\HyLang@vietnamese
2778 \AtEndOfPackage{%
2779   \@ifundefined{T@PU}{-}{%
2780     \input{puvnenc.def}%
2781   }%
2782 }%
2783 }

```

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

```

2784 \define@key{Hyp}{arabic}[]{}%
2785 \AtEndOfPackage{%
2786   \@ifundefined{T@PU}{-}{%
2787     \input{puarenc.def}%
2788   }%
2789 }%
2790 }

```

## 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.

```

2791 \define@key{Hyp}{colorlinks}[true]{}%
2792 \Hy@boolkey{colorlinks}{#1}%
2793 }
2794 \define@key{Hyp}{ocgcolorlinks}[true]{}%
2795 \Hy@boolkey{ocgcolorlinks}{#1}%
2796 }
2797 \AtBeginDocument{%
2798   \begingroup
2799   \@ifundefined{OBJ@OCG@view}{-}{%
2800     \ifHy@ocgcolorlinks
2801       \Hy@Warning{%
2802         Driver does not support ‘ocgcolorlinks’,\MessageBreak
2803         using ‘colorlinks’ instead%
2804       }%
2805     \fi
2806   }{}%
2807 \endgroup
2808 }
2809 \define@key{Hyp}{frenchlinks}[true]{}%
2810 \Hy@boolkey{frenchlinks}{#1}%
2811 }

```

## 14 Bookmarking

```

2812 \begingroup\expandafter\expandafter\expandafter\endgroup
2813 \expandafter\ifx\csname chapter\endcsname\relax
2814 \def\toclevel@part{0}%

```

```

2815 \else
2816   \def\toclevel@part{-1}%
2817 \fi
2818 \def\toclevel@chapter{0}
2819 \def\toclevel@section{1}
2820 \def\toclevel@subsection{2}
2821 \def\toclevel@subsubsection{3}
2822 \def\toclevel@paragraph{4}
2823 \def\toclevel@subparagraph{5}
2824 \def\toclevel@figure{0}
2825 \def\toclevel@table{0}
2826 \ifpackageloaded{listings}{%
2827   \providecommand*\theHlstlisting{\thelstlisting}%
2828   \providecommand*\toclevel@lstlisting{0}%
2829 }{}
2830 \ifpackageloaded{listing}{%
2831   \providecommand*\theHlisting{\thelisting}%
2832   \providecommand*\toclevel@listing{0}%
2833 }{}

2834 \define@key{Hyp}{bookmarks}[true]{%
2835   \Hy@boolkey{bookmarks}{#1}%
2836 }

2837 \define@key{Hyp}{bookmarksopen}[true]{%
2838   \Hy@boolkey{bookmarksopen}{#1}%
2839 }

```

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.

```

2840 \let\Hy@bookmarksdepth\c@tocdepth
2841 \define@key{Hyp}{bookmarksdepth}[]{%
2842   \begingroup
2843     \edef\x{#1}%
2844     \ifx\x\empty
2845       \global\let\Hy@bookmarksdepth\c@tocdepth
2846     \else
2847       \ifundefined{toclevel@\x}{%
2848         \@onelevel@sanitize\x
2849         \edef\y{\expandafter\@car\x\@nil}%
2850         \ifcase 0\expandafter\ifx\y-1\fi
2851           \expandafter\ifnum\expandafter\y>47 %
2852             \expandafter\ifnum\expandafter\y<58 1\fi\fi\relax
2853           \Hy@Warning{Unknown document division name (\x)}%
2854         \else
2855           \setbox\z@=\hbox{%
2856             \count@=\x
2857             \xdef\Hy@bookmarksdepth{\the\count@}%
2858           }%
2859         \fi

```

```

2860 }{%
2861   \setbox\z@=\hbox{%
2862     \count@=\csname toplevel@\x\endcsname
2863     \xdef\Hy@bookmarksdepth{\the\count@}%
2864   }%
2865 }%
2866 \fi
2867 \endgroup
2868 }

```

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

```

2869 \define@key{Hyp}{bookmarksopenlevel}{%
2870   \def\@bookmarksopenlevel{#1}%
2871 }
2872 \def\@bookmarksopenlevel{\maxdimen}
2873 % ‘bookmarkstype’ to specify which ‘toc’ file to mimic
2874 \define@key{Hyp}{bookmarkstype}{%
2875   \def\Hy@bookmarkstype{#1}%
2876 }
2877 \def\Hy@bookmarkstype{toc}

```

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

```

2878 \define@key{Hyp}{bookmarksnumbered}[true]{%
2879   \Hy@boolkey{bookmarksnumbered}{#1}%
2880 }

```

Option CJKbookmarks enables the patch for CJK bookmarks.

```

2881 \define@key{Hyp}{CJKbookmarks}[true]{%
2882   \Hy@boolkey{CJKbookmarks}{#1}%
2883 }
2884 \def\Hy@temp#1{%
2885   \expandafter\Hy@@temp\csname @#1color\endcsname{#1}%
2886 }
2887 \def\Hy@@temp#1#2#3{%
2888   \define@key{Hyp}{#2color}{%
2889     \HyColor@HyperrefColor{##1}#1%
2890   }%
2891   \def#1{#3}%
2892 }
2893 \Hy@temp{link}{red}
2894 \Hy@temp{anchor}{black}
2895 \Hy@temp{cite}{green}
2896 \Hy@temp{file}{cyan}
2897 \Hy@temp{url}{magenta}
2898 \Hy@temp{menu}{red}
2899 \Hy@temp{run}{\@filecolor}
2900 \define@key{Hyp}{pagecolor}{%
2901   \Hy@WarningPageColor
2902 }
2903 \def\Hy@WarningPageColor{%
2904   \Hy@WarningNoLine{Option ‘pagecolor’ is not available anymore}%
2905   \global\let\Hy@WarningPageColor\relax
2906 }
2907 \def\hyperbaseurl#1{\def\@baseurl{#1}}
2908 \define@key{Hyp}{baseurl}{\hyperbaseurl{#1}}
2909 \let\@baseurl\@empty
2910 \def\hyperlinkfileprefix#1{\def\Hy@linkfileprefix{#1}}

```

```

2911 \define@key{Hyp}{linkfileprefix}{\hyperlinkfileprefix{#1}}
2912 \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.

```

2913 \let\@pdfpagetransition\relax
2914 \define@key{Hyp}{pdfpagetransition}{\def\@pdfpagetransition{#1}}

```

`\@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.

```

2915 \let\@pdfpageduration\relax
2916 \define@key{Hyp}{pdfpageduration}{\def\@pdfpageduration{#1}}

```

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.

```

2917 \newif\ifHy@useHidKey
2918 \Hy@useHidKeyfalse
2919 \define@key{Hyp}{pdfpagehidden}[true]{%
2920   \Hy@boolkey{pdfpagehidden}{#1}%
2921   \ifHy@pdfpagehidden
2922     \global\Hy@useHidKeytrue
2923   \fi
2924 }

```

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).

```

2925 \def\Hy@ColorList{cite,file,link,menu,run,url}
2926 \@for\Hy@temp:=\Hy@ColorList\do{%
2927   \edef\Hy@temp{%
2928     \noexpand\define@key{Hyp}{\Hy@temp bordercolor}{%
2929       \noexpand\Hy@Color@HyperrefBorderColor
2930       {#1}%
2931       \expandafter\noexpand\csname @\Hy@temp bordercolor\endcsname
2932       {hyperref}%
2933       {\Hy@temp bordercolor}%
2934     }%
2935   }%
2936   \Hy@temp
2937 }
2938 \define@key{Hyp}{pagebordercolor}{%
2939   \Hy@WarningPageBorderColor
2940 }
2941 \def\Hy@WarningPageBorderColor{%
2942   \Hy@WarningNoLine{Option 'pagebordercolor' is not available anymore}%
2943   \global\let\Hy@WarningPageBorderColor\relax
2944 }

```

```

2945 \define@key{Hyp}{pdfhighlight}{\def\pdfhighlight{#1}}
2946 \Hy@DefNameKey{pdfhighlight}{%
2947   \do{/I}{Invert}%
2948   \do{/N}{None}%
2949   \do{/O}{Outline}%
2950   \do{/P}{Push}%
2951 }
2952 \define@key{Hyp}{pdfborder}{\def\pdfborder{#1}}
2953 \define@key{Hyp}{pdfborderstyle}{\def\pdfborderstyle{#1}}
2954 \def\Hy@setpdfborder{%
2955   \ifx\pdfborder\@empty
2956   \else
2957     /Border[\pdfborder]%
2958   \fi
2959   \ifx\pdfborderstyle\@empty
2960   \else
2961     /BS<<\pdfborderstyle>>%
2962   \fi
2963 }
2964 \Hy@DefNameKey{pdfpagemode}{%
2965   \do{UseNone}{}%
2966   \do{UseOutlines}{}%
2967   \do{UseThumbs}{}%
2968   \do{FullScreen}{}%
2969   \do{UseOC}{PDF 1.5}%
2970   \do{UseAttachments}{PDF 1.6}%
2971 }
2972 \Hy@DefNameKey{pdfnonfullscreenpagemode}{%
2973   \do{UseNone}{}%
2974   \do{UseOutlines}{}%
2975   \do{UseThumbs}{}%
2976   \do{FullScreen}{}%
2977   \do{UseOC}{PDF 1.5}%
2978   \do{UseAttachments}{PDF 1.6}%
2979 }
2980 \Hy@DefNameKey{pdfdirection}{%
2981   \do{L2R}{Left to right}%
2982   \do{R2L}{Right to left}%
2983 }
2984 \Hy@DefNameKey{pdfviewarea}{%
2985   \do{MediaBox}{}%
2986   \do{CropBox}{}%
2987   \do{BleedBox}{}%
2988   \do{TrimBox}{}%
2989   \do{ArtBox}{}%
2990 }
2991 \Hy@DefNameKey{pdfviewclip}{%
2992   \do{MediaBox}{}%
2993   \do{CropBox}{}%
2994   \do{BleedBox}{}%
2995   \do{TrimBox}{}%
2996   \do{ArtBox}{}%
2997 }
2998 \Hy@DefNameKey{pdfprintarea}{%
2999   \do{MediaBox}{}%
3000   \do{CropBox}{}%
3001   \do{BleedBox}{}%

```

```

3002 \do{TrimBox}{}%
3003 \do{ArtBox}{}%
3004 }
3005 \Hy@DefNameKey{pdfprintclip}{%
3006 \do{MediaBox}{}%
3007 \do{CropBox}{}%
3008 \do{BleedBox}{}%
3009 \do{TrimBox}{}%
3010 \do{ArtBox}{}%
3011 }
3012 \Hy@DefNameKey{pdfprintscaling}{%
3013 \do{AppDefault}{}%
3014 \do{None}{}%
3015 }
3016 \Hy@DefNameKey{pdfduplex}{%
3017 \do{Simplex}{}%
3018 \do{DuplexFlipShortEdge}{}%
3019 \do{DuplexFlipLongEdge}{}%
3020 }
3021 \Hy@DefNameKey{pdfpicktraybypdfsize}{%
3022 \do{true}{}%
3023 \do{false}{}%
3024 }
3025 \define@key{Hyp}{pdfprintpagerange}{%
3026 \def\@pdfprintpagerange{#1}%
3027 }
3028 \Hy@DefNameKey{pdfnumcopies}{%
3029 \do{2}{two copies}%
3030 \do{3}{three copies}%
3031 \do{4}{four copies}%
3032 \do{5}{five copies}%
3033 }
3034 \define@key{Hyp}{pdfusetitle}[true]{%
3035 \Hy@boolkey[pdfusetitle]{usetitle}{#1}%
3036 }
3037 \def\HyXeTeX@CheckUnicode{%
3038 \ifxetex
3039 \ifHy@unicode
3040 \else
3041 \Hy@WarningNoLine{%
3042 XeTeX driver only supports unicode.\MessageBreak
3043 Enabling option 'unicode'%
3044 }%
3045 \setkeys{Hyp}{unicode}%
3046 \fi
3047 \else
3048 \let\HyXeTeX@CheckUnicode\relax
3049 \fi
3050 }
3051 \define@key{Hyp}{pdftitle}{%
3052 \HyXeTeX@CheckUnicode
3053 \HyPsd@XeTeXBigCharstrue
3054 \pdfstringdef\@pdftitle{#1}%
3055 }
3056 \define@key{Hyp}{pdfauthor}{%
3057 \HyXeTeX@CheckUnicode
3058 \HyPsd@XeTeXBigCharstrue

```

```

3059 \pdfstringdef\@pdfauthor{#1}%
3060 }
3061 \define@key{Hyp}{pdfproducer}{%
3062 \HyXeTeX@CheckUnicode
3063 \HyPsd@XeTeXBigCharstrue
3064 \pdfstringdef\@pdfproducer{#1}%
3065 }
3066 \define@key{Hyp}{pdfcreator}{%
3067 \HyXeTeX@CheckUnicode
3068 \HyPsd@XeTeXBigCharstrue
3069 \pdfstringdef\@pdfcreator{#1}%
3070 }
3071 \define@key{Hyp}{pdfcreationdate}{%
3072 \begingroup
3073 \Hy@unicodedefalse
3074 \pdfstringdef\@pdfcreationdate{#1}%
3075 \endgroup
3076 }
3077 \define@key{Hyp}{pdfmoddate}{%
3078 \begingroup
3079 \Hy@unicodedefalse
3080 \pdfstringdef\@pdfmoddate{#1}%
3081 \endgroup
3082 }
3083 \define@key{Hyp}{pdfsubject}{%
3084 \HyXeTeX@CheckUnicode
3085 \HyPsd@XeTeXBigCharstrue
3086 \pdfstringdef\@pdfsubject{#1}%
3087 }
3088 \define@key{Hyp}{pdfkeywords}{%
3089 \HyXeTeX@CheckUnicode
3090 \HyPsd@XeTeXBigCharstrue
3091 \pdfstringdef\@pdfkeywords{#1}%
3092 }
3093 \define@key{Hyp}{pdftrapped}{%
3094 \lowercase{\edef\Hy@temp{#1}}%
3095 \ifx\Hy@temp\HyInfo@trapped@true
3096 \def\@pdftrapped{True}%
3097 \else
3098 \ifx\Hy@temp\HyInfo@trapped@false
3099 \def\@pdftrapped{False}%
3100 \else
3101 \ifx\Hy@temp\HyInfo@trapped@unknown
3102 \def\@pdftrapped{Unknown}%
3103 \else
3104 \ifx\Hy@temp\@empty
3105 \else
3106 \Hy@Warning{%
3107     Unsupported value '#1'\MessageBreak
3108     for option 'pdftrapped'%
3109 }%
3110 \fi
3111 \def\@pdftrapped{}%
3112 \fi
3113 \fi
3114 \fi
3115 }

```

```

3116 \def\HyInfo@trapped@true{true}
3117 \def\HyInfo@trapped@false{false}
3118 \def\HyInfo@trapped@unknown{unknown}
3119 \def\HyInfo@TrappedUnsupported{%
3120   \ifx\@pdftrapped\empty
3121   \else
3122     \Hy@WarningNoLine{'pdftrapped' is not supported by this driver}%
3123     \gdef\HyInfo@TrappedUnsupported{}%
3124   \fi
3125 }
3126 \define@key{Hyp}{pdfinfo}{%
3127   \kvsetkeys{pdfinfo}{#1}%
3128 }
3129 \def\Hy@temp#1{%
3130   \lowercase{\Hy@temp@A{#1}}{#1}%
3131 }
3132 \def\Hy@temp@A#1#2{%
3133   \define@key{pdfinfo}{#2}{%
3134     \hypersetup{pdf#1={##1}}%
3135   }%
3136 }
3137 \Hy@temp{Title}
3138 \Hy@temp{Author}
3139 \Hy@temp{Keywords}
3140 \Hy@temp{Subject}
3141 \Hy@temp{Creator}
3142 \Hy@temp{Producer}
3143 \Hy@temp{CreationDate}
3144 \Hy@temp{ModDate}
3145 \Hy@temp{Trapped}
3146 \newif\ifHyInfo@AddonUnsupported
3147 \kv@set@family@handler{pdfinfo}{%
3148   \HyInfo@AddonHandler{#1}{#2}%
3149 }
3150 \let\HyInfo@do\relax
3151 \def\HyInfo@AddonHandler#1#2{%
3152   \ifx\kv@value\relax
3153     \Hy@Warning{%
3154       Option 'pdfinfo': ignoring key '\kv@key' without value%
3155     }%
3156   \else
3157     \EdefEscapeName\HyInfo@KeyEscaped{\kv@key}%
3158     \EdefUnescapeName\HyInfo@Key{\HyInfo@KeyEscaped}%
3159     \expandafter\ifx\curname KV@pdfinfo@\HyInfo@Key\endcurname\relax
3160     \ifHyInfo@AddonUnsupported
3161       \Hy@Warning{%
3162         This driver does not support additional\MessageBreak
3163         information entries, therefore\MessageBreak
3164         '\kv@key' is ignored%
3165       }%
3166     \else
3167       \define@key{pdfinfo}{\HyInfo@Key}{%
3168         \HyXeTeX@CheckUnicode
3169         \HyPsd@XeTeXBigChartrue
3170         \pdfstringdef\HyInfo@Value{##1}%
3171         \expandafter\let\curname HyInfo@Value@\HyInfo@Key\endcurname
3172         \HyInfo@Value

```

```

3173 }%
3174 \edef\HyInfo@AddonList{%
3175   \HyInfo@AddonList
3176   \HyInfo@do{\HyInfo@Key}%
3177 }%
3178 \kv@parse@normalized{%
3179   \HyInfo@Key={#2}%
3180 }{%
3181   \kv@processor@default{pdfinfo}%
3182 }%
3183 \fi
3184 \else
3185   \kv@parse@normalized{%
3186     \HyInfo@Key={#2}%
3187   }{%
3188     \kv@processor@default{pdfinfo}%
3189   }%
3190 \fi
3191 \fi
3192 }
3193 \def\HyInfo@GenerateAddons{%
3194   \ifHyInfo@AddonUnsupported
3195     \def\HyInfo@Addons{}%
3196   \else
3197     \begingroup
3198     \toks@{}%
3199     \def\HyInfo@do##1{%
3200       \EdefEscapeName\HyInfo@Key{##1}%
3201       \edef\x{%
3202         \toks@{%
3203           \the\toks@
3204           /\HyInfo@Key(\csname HyInfo@Value@##1\endcsname)%
3205         }%
3206       }%
3207       \x
3208     }%
3209     \HyInfo@AddonList
3210     \edef\x{\endgroup
3211       \def\noexpand\HyInfo@Addons{\the\toks@}%
3212     }%
3213     \x
3214   \fi
3215 }
3216 \def\HyInfo@AddonList{}
3217 \define@key{Hyp}{pdfview}{\calculate@pdfview#1 \}
3218 \define@key{Hyp}{pdfinkmargin}{\setpdfinkmargin{#1}}
3219 \let\setpdfinkmargin\@gobble
3220 \def\calculate@pdfview#1 #2\{%
3221   \def\@pdfview{#1}%
3222   \ifx\#2\%
3223     \def\@pdfviewparams{-32768}%
3224   \else
3225     \def\@pdfviewparams{#2}%
3226   \fi
3227 }
3228 \begingroup\expandafter\expandafter\expandafter\endgroup
3229 \expandafter\ifx\csname numexpr\endcsname\relax

```

```

3230 \def\Hy@number#1{%
3231   \expandafter\@firstofone\expandafter{\number#1}%
3232 }%
3233 \else
3234 \def\Hy@number#1{%
3235   \the\numexpr#1\relax
3236 }%
3237 \fi
3238 \define@key{Hyp}{pdfstartpage}{%
3239   \ifx\#1\%
3240     \def\@pdfstartpage{%
3241       \else
3242         \edef\@pdfstartpage{\Hy@number{#1}}%
3243       \fi
3244     }%
3245 \define@key{Hyp}{pdfstartview}{%
3246   \ifx\#1\%
3247     \def\@pdfstartview{%
3248       \else
3249         \hypercalcbpdef\@pdfstartview{ /#1 }%
3250       \fi
3251     }
3252 \define@key{Hyp}{pdfpagescrop}{\edef\@pdfpagescrop{#1}}
3253 \define@key{Hyp}{pdftoolbar}[true]{%
3254   \Hy@boolkey[pdftoolbar]{toolbar}{#1}%
3255 }
3256 \define@key{Hyp}{pdfmenubar}[true]{%
3257   \Hy@boolkey[pdfmenubar]{menubar}{#1}%
3258 }
3259 \define@key{Hyp}{pdfwindowui}[true]{%
3260   \Hy@boolkey[pdfwindowui]{windowui}{#1}%
3261 }
3262 \define@key{Hyp}{pdffitwindow}[true]{%
3263   \Hy@boolkey[pdffitwindow]{fitwindow}{#1}%
3264 }
3265 \define@key{Hyp}{pdfcenterwindow}[true]{%
3266   \Hy@boolkey[pdfcenterwindow]{centerwindow}{#1}%
3267 }
3268 \define@key{Hyp}{pdfdisplaydoctitle}[true]{%
3269   \Hy@boolkey[pdfdisplaydoctitle]{displaydoctitle}{#1}%
3270 }
3271 \define@key{Hyp}{pdfa}[true]{%
3272   \Hy@boolkey[pdfa]{#1}%
3273 }
3274 \define@key{Hyp}{pdfnewwindow}[true]{%
3275   \def\Hy@temp{#1}%
3276   \ifx\Hy@temp\@empty
3277     \Hy@newwindowsetfalse
3278   \else
3279     \Hy@newwindowsettrue
3280     \Hy@boolkey[pdfnewwindow]{newwindow}{#1}%
3281   \fi
3282 }
3283 \def\Hy@SetNewWindow{%
3284   \ifHy@newwindowset
3285     /NewWindow %
3286   \ifHy@newwindow true\else false\fi

```

```

3287 \fi
3288 }
3289 \Hy@DefNameKey{pdfpagelayout}{}%
3290 \do{SinglePage}{}%
3291 \do{OneColumn}{}%
3292 \do{TwoColumnLeft}{}%
3293 \do{TwoColumnRight}{}%
3294 \do{TwoPageLeft}{PDF 1.5}%
3295 \do{TwoPageRight}{PDF 1.5}%
3296 }
3297 \define@key{Hyp}{pdflang}{}%
3298 \def\@pdflang{#1}%
3299 }
3300 \define@key{Hyp}{pdfpagelabels}[true]{}%
3301 \Hy@boolkey[pdfpagelabels]{pagelabels}{#1}%
3302 }
3303 \define@key{Hyp}{pdfescapeform}[true]{}%
3304 \Hy@boolkey[pdfescapeform]{escapeform}{#1}%
3305 }

```

Default values:

```

3306 \def\@linkbordercolor{1 0 0}
3307 \def\@urlbordercolor{0 1 1}
3308 \def\@menubordercolor{1 0 0}
3309 \def\@filebordercolor{0 .5 .5}
3310 \def\@runbordercolor{0 .7 .7}
3311 \def\@citebordercolor{0 1 0}
3312 \def\@pdfhighlight{/I}
3313 \def\@pdftitle{}
3314 \def\@pdfauthor{}
3315 \let\@pdfproducer\relax
3316 \def\@pdfcreator{LaTeX with hyperref package}
3317 \def\@pdfcreationdate{}
3318 \def\@pdfmoddate{}
3319 \def\@pdfsubject{}
3320 \def\@pdfkeywords{}
3321 \def\@pdftrapped{}
3322 \def\@pdfpagescrop{}
3323 \def\@pdfstartview{/Fit }
3324 \def\@pdfstartpage{1}
3325 \def\@pdfprintpagerange{}
3326 \def\@pdflang{}
3327 \let\PDF@SetupDoc\@empty
3328 \let\PDF@FinishDoc\@empty
3329 \let\phantomsection\@empty
3330 \let\special@paper\@empty
3331 \def\HyperDestNameFilter#1{#1}
3332 \AtBeginDocument{%
3333   \begingroup
3334     \edef\x{\@ifundefined{stockheight}\paperheight\stockheight}%
3335     \dimen@=\x\relax
3336     \ifdim\dimen@>\z@
3337       \else
3338         \dimen@=11in\relax
3339         \Hy@WarningNoLine{%
3340           Height of page (\expandafter\string\x) %
3341           is invalid (\the\x),\MessageBreak
3342           using 11in%

```

```

3343     }%
3344     \fi
3345     \dimen@=0.99626401\dimen@
3346     \xdef\Hy@pageheight{\strip@pt\dimen@}%
3347     \endgroup
3348 }
3349 \def\HyInd@EncapChar{\|}
3350 \def\hypersetup{\setkeys{Hyp}}

```

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.

```

3351 \let\hyper@normalise\ExecuteOptions
3352 \let\ExecuteOptions\hypersetup
3353 \Hy@RestoreCatcodes
3354 \InputIfFileExists{hyperref.cfg}{\{}}{}
3355 \Hy@SetCatcodes
3356 \let\ExecuteOptions\hyper@normalise
3357 \Hy@MaybeStopNow

```

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

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

```

3358 \RequirePackage{kvoptions}[2009/07/21]
3359 \SetupKeyvalOptions{family=Hyp}
3360 \DeclareLocalOptions{%
3361   a4paper,a5paper,b5paper,letterpaper,legalpaper,executivepaper%
3362 }

```

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

```

3363 \@ifpackageloaded{tex4ht}{\%
3364   \ifpackagewith{hyperref}{tex4ht}{\{}}{\%
3365     \PassOptionsToPackage{tex4ht}{hyperref}%
3366   }%
3367 }{}
3368 \let\ReadBookmarks\relax
3369 \ProcessKeyvalOptions{Hyp}

```

After processing options.

```

3370 \AtBeginDocument{%
3371   \ifHy@draft
3372     \let\hyper@@anchor\@gobble
3373     \gdef\hyper@link#1#2#3{#3}%
3374     \let\hyper@anchorstart\@gobble
3375     \let\hyper@anchorend\@empty
3376     \let\hyper@linkstart\@gobbletwo
3377     \let\hyper@linkend\@empty
3378     \def\hyper@linkurl#1#2{#1}%
3379     \def\hyper@linkfile#1#2#3{#1}%
3380     \def\hyper@link@{#1}#2#3{}%
3381     \def\Acrobatmenu#1#2{\leavevmode#2}%
3382     \let\PDF@SetupDoc\@empty
3383     \let\PDF@FinishDoc\@empty
3384     \let\@fifthoffive\@secondoftwo
3385     \let\@secondoffive\@secondoftwo
3386     \let\ReadBookmarks\relax

```

```

3387 \let\WriteBookmarks\relax
3388 \Hy@WarningNoLine{ draft mode on}%
3389 \fi
3390 \Hy@DisableOption{draft}%
3391 \Hy@DisableOption{nolinks}%
3392 \Hy@DisableOption{final}%
3393 }

```

## 15.1 PDF/A

```

3394 \Hy@DisableOption{pdfa}
3395 \ifHy@pdfa
3396 \setkeys{Hyp}{pdfversion=1.4}%
3397 \def\Hy@Acrobatmenu#1#2{%
3398 \leavevmode
3399 \begingroup
3400 \edef\x{#1}%
3401 \@onelevel@sanitize\x
3402 \ifx\x\Hy@NextPage
3403 \let\y=Y%
3404 \else
3405 \ifx\x\Hy@PrevPage
3406 \let\y=Y%
3407 \else
3408 \ifx\x\Hy@FirstPage
3409 \let\y=Y%
3410 \else
3411 \ifx\x\Hy@LastPage
3412 \let\y=Y%
3413 \else
3414 \let\y=N%
3415 \fi
3416 \fi
3417 \fi
3418 \fi
3419 \expandafter\endgroup
3420 \ifx\y Y%
3421 \else
3422 \PackageError{hyperref}{%
3423 PDF/A: Named action ‘#1’ is not permitted%
3424 }\@ehc
3425 {#2}%
3426 \expandafter\@gobble
3427 \fi
3428 }%
3429 \def\Hy@temp#1{%
3430 \expandafter\def\csname Hy@#1\endcsname{#1}%
3431 \expandafter\@onelevel@sanitize\csname Hy@#1\endcsname
3432 }%
3433 \Hy@temp{NextPage}%
3434 \Hy@temp{PrevPage}%
3435 \Hy@temp{FirstPage}%
3436 \Hy@temp{LastPage}%
3437 \else
3438 \def\Hy@Acrobatmenu#1#2{\leavevmode}%
3439 \fi

```

## 15.2 Patch for babel's \texttilde

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

```
3440 \Hy@nextfalse
3441 \ifundefined{spanish@sh@"@sel}{\Hy@nexttrue}
3442 \ifundefined{galician@sh@"@sel}{\Hy@nexttrue}
3443 \ifundefined{estonian@sh@"@sel}{\Hy@nexttrue}
3444 \ifHy@next
3445   \let\texttilde\~%
3446 \fi

3447 \ifHy@figures
3448   \Hy@Info{Hyper figures ON}%
3449 \else
3450   \Hy@Info{Hyper figures OFF}%
3451 \fi

3452 \ifHy@nesting
3453   \Hy@Info{Link nesting ON}%
3454 \else
3455   \Hy@Info{Link nesting OFF}%
3456 \fi

3457 \ifHy@hyperindex
3458   \Hy@Info{Hyper index ON}%
3459 \else
3460   \Hy@Info{Hyper index OFF}%
3461 \fi

3462 \ifHy@plainpages
3463   \Hy@Info{Plain pages ON}%
3464 \else
3465   \Hy@Info{Plain pages OFF}%
3466 \fi

3467 \ifHy@backref
3468   \Hy@Info{Backreferencing ON}%
3469 \else
3470   \Hy@Info{Backreferencing OFF}%
3471 \fi

3472 \ifHy@typexml
3473   \AtEndOfPackage{%
3474     \RequirePackage{color}%
3475     \RequirePackage{nameref}%
3476   }%
3477 \fi

3478 \Hy@DisableOption{typexml}
3479 \ifHy@implicit
3480   \typeout{Implicit mode ON; LaTeX internals redefined}%
3481 \else
3482   \typeout{Implicit mode OFF; no redefinition of LaTeX internals}%
3483   \def\MaybeStopEarly{%
3484     \typeout{Hyperref stopped early}%
3485     \AfterBeginDocument{%
3486       \PDF@FinishDoc
3487       \gdef\PDF@FinishDoc{}%
3488     }%
3489     \endinput
3490   }%
3491   \AtBeginDocument{%
3492     \let\autoref\ref
```

```

3493 \let\autopageref\pageref
3494 \ifx\@pdfpagemode\@empty
3495 \gdef\@pdfpagemode{UseNone}%
3496 \fi
3497 \global\Hy@backreffalse
3498 }%
3499 \AtEndOfPackage{%
3500 \global\let\ReadBookmarks\relax
3501 \global\let\WriteBookmarks\relax
3502 }%
3503 \fi
3504 \Hy@DisableOption{implicit}

```

### 15.2.1 Driver loading

```

3505 \AtEndOfPackage{%
3506 \ifpackageloaded{tex4ht}{%
3507 \def\Hy@driver{htex4ht}%
3508 \Hy@texhttrue
3509 }{}%

```

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.

```

3510 \ifx\Hy@driver\@empty
3511 \else
3512 \def\Hy@temp{hpdfTeX}%
3513 \ifpdf
3514 \ifx\Hy@driver\Hy@temp
3515 \else
3516 \Hy@WarningNoLine{%
3517 Wrong driver ‘\Hy@driver.def’;\MessageBreak
3518 pdfTeX is running in PDF mode.\MessageBreak
3519 Forcing driver ‘\Hy@temp.def’%
3520 }%
3521 \let\Hy@driver\Hy@temp
3522 \fi
3523 \else
3524 \ifx\Hy@driver\Hy@temp
3525 \Hy@WarningNoLine{%
3526 Wrong driver ‘\Hy@driver.def’;\MessageBreak
3527 pdfTeX is not running in PDF mode.\MessageBreak
3528 Using default driver%
3529 }%
3530 \let\Hy@driver\@empty
3531 \fi
3532 \fi
3533 \fi
3534 \ifx\Hy@driver\@empty
3535 \else
3536 \def\Hy@temp{hXeTeX}%
3537 \ifXeTeX
3538 \ifx\Hy@driver\Hy@temp
3539 \else
3540 \Hy@WarningNoLine{%
3541 Wrong driver ‘\Hy@driver.def’;\MessageBreak
3542 XeTeX is running.\MessageBreak
3543 Forcing driver ‘\Hy@temp.def’ for XeTeX%
3544 }%

```

```

3545     \let\Hy@driver\Hy@temp
3546     \fi
3547   \fi
3548 \fi
3549 \ifx\Hy@driver\@empty
3550 \else
3551   \def\Hy@temp{hvtexhtm}%
3552   \ifvtexhtml
3553     \ifx\Hy@driver\Hy@temp
3554     \else
3555       \Hy@WarningNoLine{%
3556         Wrong driver '\Hy@driver.def';\MessageBreak
3557         VTeX is running in HTML mode.\MessageBreak
3558         Forcing driver '\Hy@temp.def'%
3559       }%
3560     \let\Hy@driver\Hy@temp
3561     \fi
3562   \else
3563     \ifx\Hy@driver\Hy@temp
3564     \Hy@WarningNoLine{%
3565       Wrong driver '\Hy@driver.def';\MessageBreak
3566       VTeX is not running in HTML mode.\MessageBreak
3567       Using default driver%
3568     }%
3569     \let\Hy@driver\@empty
3570   \fi
3571 \fi
3572 \fi

```

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

```

3573 \ifx\Hy@driver\@empty
3574   \providecommand*{\Hy@defaultdriver}{hypertex}%
3575   \ifpdf
3576     \def\Hy@driver{hpdfTeX}%
3577   \else
3578     \ifxetex
3579       \def\Hy@driver{hxetex}%
3580     \else
3581       \ifvtexhtml
3582         \def\Hy@driver{hvtexhtm}%
3583         \def\MaybeStopEarly{%
3584           \typeout{Hyperref stopped early}%
3585           \AfterBeginDocument{%
3586             \PDF@FinishDoc
3587             \gdef\PDF@FinishDoc{}%
3588           }%
3589         \endinput
3590       }%
3591     \else
3592       \ifvtexpdf
3593         \def\Hy@driver{hvtex}%
3594       \else
3595         \ifvtexps
3596           \def\Hy@driver{hvtex}%
3597         \else
3598           \let\Hy@driver\Hy@defaultdriver
3599         \fi
3600       \fi

```

```

3601     \fi
3602   \fi
3603 \fi
3604 \ifx\Hy@driver\Hy@defaultdriver
3605   \def\Hy@temp{hdvwind}%
3606   \ifx\Hy@temp\Hy@driver
3607     \setkeys{Hyp}{colorlinks}%
3608     \PassOptionsToPackage{dviwindo}{color}%
3609   \fi
3610 \fi
3611 \typeout{*hyperref using default driver \Hy@driver*}%
3612 \else
3613 \typeout{*hyperref using driver \Hy@driver*}%
3614 \fi
3615 \input{\Hy@driver.def}%
3616 \let\@unprocessedoptions\relax
3617 \Hy@RestoreCatcodes
3618 }

```

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

```

3619 \newif\ifHy@DvipdfmxOutlineOpen
3620 \ifxetex
3621   \ifdim\number\XeTeXversion\XeTeXrevision in<0.9995in %
3622   \else
3623     \Hy@DvipdfmxOutlineOpenttrue
3624   \fi
3625 \fi
3626 \begingroup\expandafter\expandafter\expandafter\endgroup
3627 \expandafter\ifx\csname SpecialDvipdfmxOutlineOpen\endcsname\relax
3628 \else
3629   \ifnum\SpecialDvipdfmxOutlineOpen>\z@
3630     \Hy@DvipdfmxOutlineOpenttrue
3631   \fi
3632 \fi
3633 \Hy@DisableOption{tex4ht}
3634 \Hy@DisableOption{pdftex}
3635 \Hy@DisableOption{nativepdf}
3636 \Hy@DisableOption{dvipdfm}
3637 \Hy@DisableOption{dvipdfmx}
3638 \Hy@DisableOption{dvipdfmx-outline-open}
3639 \Hy@DisableOption{pdfmark}
3640 \Hy@DisableOption{dvips}
3641 \Hy@DisableOption{hypertex}
3642 \Hy@DisableOption{vtex}
3643 \Hy@DisableOption{vtxpdfmark}
3644 \Hy@DisableOption{dviwindo}
3645 \Hy@DisableOption{dvipsone}
3646 \Hy@DisableOption{textures}
3647 \Hy@DisableOption{latex2html}
3648 \Hy@DisableOption{ps2pdf}
3649 \Hy@DisableOption{xetex}
3650 \AtEndOfPackage{%
3651   \Hy@DisableOption{pdfversion}%
3652 }

```

### 15.2.2 Bookmarks

```

3653 \def\WriteBookmarks{0}
3654 \def\@bookmarkopenstatus#1{%
3655   \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:

```

3656   \ifnum#1<\expandafter\@firstofone\expandafter
3657     {\number\@bookmarksopenlevel} % explicit space
3658   \else
3659     -%
3660   \fi
3661 \else
3662   -%
3663 \fi
3664 }
3665 \ifHy@bookmarks
3666   \Hy@Info{Bookmarks ON}%
3667   \ifx\@pdfpagemode\@empty
3668     \def\@pdfpagemode{UseOutlines}%
3669   \fi
3670 \else
3671   \def\@bookmarkopenstatus#1{%
3672     \Hy@Info{Bookmarks OFF}%
3673     \AtEndOfPackage{%
3674       \global\let\ReadBookmarks\relax
3675       \global\let\WriteBookmarks\relax
3676     }%
3677     \ifx\@pdfpagemode\@empty
3678       \def\@pdfpagemode{UseNone}%
3679     \fi
3680 \fi
3681 \Hy@DisableOption{bookmarks}

```

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

```

3682 \def\Hy@CatcodeWrapper#1{%
3683   \def\Hy@EndWrap{}%
3684   \def\TMP@EnsureCode##1##2{%
3685     \edef\Hy@EndWrap{%
3686       \Hy@EndWrap
3687       \catcode##1 \the\catcode##1\relax
3688     }%
3689     \catcode##1 ##2\relax
3690   }%
3691   \TMP@EnsureCode{10}{12}% ^^J
3692   \TMP@EnsureCode{33}{12}% !
3693   \TMP@EnsureCode{34}{12}% "
3694   \TMP@EnsureCode{36}{3}% $ (math)
3695   \TMP@EnsureCode{38}{4}% & (alignment)
3696   \TMP@EnsureCode{39}{12}% '
3697   \TMP@EnsureCode{40}{12}% (
3698   \TMP@EnsureCode{41}{12}% )
3699   \TMP@EnsureCode{42}{12}% *
3700   \TMP@EnsureCode{43}{12}% +
3701   \TMP@EnsureCode{44}{12}% ,
3702   \TMP@EnsureCode{45}{12}% -
3703   \TMP@EnsureCode{46}{12}% .
3704   \TMP@EnsureCode{47}{12}% /
3705   \TMP@EnsureCode{58}{12}% :
3706   \TMP@EnsureCode{59}{12}% ;

```

```

3707 \TMP@EnsureCode{60}{12}% <
3708 \TMP@EnsureCode{61}{12}% =
3709 \TMP@EnsureCode{62}{12}% >
3710 \TMP@EnsureCode{63}{12}% ?
3711 \TMP@EnsureCode{91}{12}% [
3712 \TMP@EnsureCode{93}{12}% ]
3713 \TMP@EnsureCode{94}{7}% ^ (superscript)
3714 \TMP@EnsureCode{95}{8}% _ (subscript)
3715 \TMP@EnsureCode{96}{12}% '
3716 \TMP@EnsureCode{124}{12}% |
3717 \TMP@EnsureCode{126}{13}% ~ (active)
3718 #1\relax
3719 \Hy@endWrap
3720 }

```

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

```

3721 \AtBeginDocument{%
3722   \ifHy@ocgcolorlinks
3723     \setkeys{Hyp}{colorlinks}%
3724   \ifHy@pdfa
3725     \Hy@Warning{%
3726       PDF/A: Optional Content Groups are prohibited,\MessageBreak
3727       using 'colorlinks' instead of 'ocgcolorlinks'%
3728     }%
3729     \Hy@ocgcolorlinksfalse
3730   \fi
3731 \fi
3732 \ifHy@ocgcolorlinks
3733 \else
3734   \Hy@DisableOption{ocgcolorlinks}%
3735 \fi
3736 \ifHy@colorlinks
3737   \def\@pdfborder{0 0 0}%
3738   \let\@pdfborderstyle\@empty
3739   \ifHy@typexml
3740   \else
3741     \Hy@CatcodeWrapper{%
3742       \RequirePackage{color}%
3743     }%
3744   \fi
3745   \def\Hy@colorlink#1{%
3746     \begingroup
3747     \HyColor@UseColor#1%
3748   }%
3749   \def\Hy@endcolorlink{\endgroup}%
3750   \Hy@Info{Link coloring ON}%
3751 \else
3752   \ifHy@frenchlinks
3753     \def\Hy@colorlink#1{\begingroup\fontshape{sc}\selectfont}%
3754     \def\Hy@endcolorlink{\endgroup}%
3755     \Hy@Info{French linking ON}%
3756   \else

```

for grouping consistency:

```

3757   \def\Hy@colorlink#1{\begingroup}%
3758   \def\Hy@endcolorlink{\endgroup}%
3759   \Hy@Info{Link coloring OFF}%
3760 \fi

```

```

3761 \fi
3762 \Hy@DisableOption{colorlinks}%
3763 \Hy@DisableOption{frenchlinks}%
3764 \ifHy@texht
3765 \long\def\@firstoffive#1#2#3#4#5{#1}%
3766 \long\def\@secondoffive#1#2#3#4#5{#2}%
3767 \long\def\@thirdoffive#1#2#3#4#5{#3}%
3768 \long\def\@fourthoffive#1#2#3#4#5{#4}%
3769 \long\def\@fifthoffive#1#2#3#4#5{#5}%
3770 \providecommand*\@safe@activestruet{}%
3771 \providecommand*\@safe@activesfalse{}%
3772 \def\T@ref#1{%
3773   \Hy@safe@activestruet
3774   \expandafter\@setref\csname r@#1\endcsname\@firstoffive{#1}%
3775   \Hy@safe@activesfalse
3776 }%
3777 \def\T@pageref#1{%
3778   \Hy@safe@activestruet
3779   \expandafter\@setref\csname r@#1\endcsname\@secondoffive{#1}%
3780   \Hy@safe@activesfalse
3781 }%
3782 \else
3783 \ifHy@typexml
3784 \else
3785   \Hy@CatcodeWrapper{%
3786     \RequirePackage{nameref}%
3787   }%
3788 \fi
3789 \fi
3790 \DeclareRobustCommand\ref{\@ifstar\@refstar\T@ref}%
3791 \DeclareRobustCommand\pageref{%
3792   \@ifstar\@pagerefstar\T@pageref
3793 }%
3794 }
3795 \AfterBeginDocument{%
3796   \ifHy@texht
3797   \else
3798     \Hy@CatcodeWrapper{%
3799       \ReadBookmarks
3800     }%
3801   \fi
3802 }
3803 \ifHy@backref
3804   \RequirePackage{backref}%
3805 \else
3806   \let\Hy@backout\@gobble
3807 \fi
3808 \Hy@DisableOption{backref}
3809 \Hy@DisableOption{pagebackref}
3810 \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`.

```

3811 \begingroup
3812 \endlinechar=-1 %
3813 \catcode'\^^A=14 %
3814 \catcode'\^^M\active
3815 \catcode'\%\active
3816 \catcode'\#\active
3817 \catcode'\_\active
3818 \catcode'\$\active
3819 \catcode'\&\active
3820 \gdef\hyper@normalise{^^A
3821 \begingroup
3822 \catcode'\^^M\active
3823 \def^^M{ }^^A
3824 \catcode'\%\active
3825 \let%\@percentchar
3826 \let%\@percentchar
3827 \catcode'\#\active
3828 \def#{\hyper@hash}^^A
3829 \def\#{\hyper@hash}^^A
3830 \@makeother\&^^A
3831 \edef&{\string&}^^A
3832 \edef&{\string&}^^A
3833 \edef\textunderscore{\string_}^^A
3834 \let_\textunderscore
3835 \catcode'\_\active
3836 \let_\textunderscore
3837 \let~\hyper@tilde
3838 \let~\hyper@tilde
3839 \let\textasciitilde\hyper@tilde
3840 \let\\ \@backslashchar
3841 \edef${\string$}^^A
3842 \Hy@safe@activetrue
3843 \hyper@n@rmalise
3844 }^^A
3845 \catcode'\#=6 ^^A
3846 \gdef\Hy@ActiveCarriageReturn{^^M}^^A
3847 \gdef\hyper@n@rmalise#1#2{^^A
3848 \def\Hy@tempa{#2}^^A
3849 \ifx\Hy@tempa\Hy@ActiveCarriageReturn
3850 \Hy@ReturnAfterElseFi{^^A
3851 \hyper@@normalise{#1}^^A
3852 }^^A
3853 \else
3854 \Hy@ReturnAfterFi{^^A
3855 \hyper@@normalise{#1}{#2}^^A
3856 }^^A
3857 \fi
3858 }^^A
3859 \gdef\hyper@@normalise#1#2{^^A
3860 \edef\Hy@tempa{^^A
3861 \endgroup
3862 \noexpand#1{\Hy@RemovePercentCr#2%\^^M\@nil}^^A
3863 }^^A
3864 \Hy@tempa
3865 }^^A

```

```

3866 \gdef\Hy@RemovePercentCr#1%^^M#2\@nil{^^A
3867   #1^^A
3868   \ifx\limits#2\limits
3869   \else
3870     \Hy@ReturnAfterFi{^^A
3871     \Hy@RemovePercentCr #2\@nil
3872   }^^A
3873   \fi
3874 }^^A
3875 \endgroup
3876 \providecommand*{\hyper@chars{%
3877   \let\#\hyper@hash
3878   \let\%\@percentchar
3879   \Hy@safe@activetrue
3880 }

3881 \def\hyperlink#1#2{%
3882   \hyper@@link{}{#1}{#2}%
3883 }

3884 \DeclareRobustCommand*{\href}{%
3885   \@ifnextchar\bgrouph\Hy@href{\hyper@normalise\href@}%
3886 }
3887 \def\Hy@href#{%
3888   \hyper@normalise\href@
3889 }
3890 \begingroup
3891   \catcode'\$=6 %
3892   \catcode'\#=12 %
3893   \gdef\href$1{\expandafter\href@split$1##\}%
3894   \gdef\href@split$1#$2#$3\{%
3895     \hyper@@link{$1}{$2}%
3896   }%
3897 \endgroup

```

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

```

3898 \RequirePackage{url}
3899 \let\HyOrg@url\url
3900 \def\Hurl{\begingroup \Url}
3901 \DeclareRobustCommand*{\nolinkurl}{\hyper@normalise\nolinkurl@}
3902 \def\nolinkurl@#1{\Hurl{#1}}
3903 \DeclareRobustCommand*{\url}{\hyper@normalise\url@}
3904 \def\url@#1{\hyper@linkurl{\Hurl{#1}}{#1}}

3905 \DeclareRobustCommand*{\hyperimage}{\hyper@normalise\hyper@image}
3906 \providecommand\hyper@image[2]{#2}

3907 \def\hypertarget#1#2{%
3908   \ifHy@nesting
3909     \hyper@@anchor{#1}{#2}%
3910   \else
3911     \hyper@@anchor{#1}{\relax}#2%
3912   \fi
3913 }

```

\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  $\text{\LaTeX}$  label which can be used in a short form of `\hyperref` later, to avoid remembering the name and category.

```

3914 \DeclareRobustCommand*{\hyperref}{%
3915   \@ifnextchar[{\Hy@babelnormalise\label@hyperref}\@hyperref
3916 }
3917 \def\Hy@babelnormalise#1[#2]{%
3918   \begingroup
3919   \Hy@safe@activetrue
3920   \edef\Hy@tempa{%
3921     \endgroup
3922     \noexpand#1[#2]}%
3923   }%
3924   \Hy@tempa
3925 }
3926 \def\@hyperref{\hyper@normalise\@hyperref}
3927 \def\@hyperref#1#2#3{%
3928   \edef\ref@one{\ifx\#2\\\else#2.\fi#3}%
3929   \expandafter\tryhyper@link\ref@one\{#1}%
3930 }
3931 \def\tryhyper@link#1\#2{%
3932   \hyper@@link{#2}{#1}%
3933 }
3934 \def\hyperdef{\@ifnextchar[{\label@hyperdef}\@hyperdef}}
3935 \def\@hyperdef#1#2#3{%, category, name, text
3936   \ifx\#1\%
3937     \def\Hy@AnchorName{#2}%
3938   \else
3939     \def\Hy@AnchorName{#1.#2}%
3940   \fi
3941   \ifHy@nesting
3942     \expandafter\hyper@@anchor\expandafter{\Hy@AnchorName}{#3}%
3943   \else
3944     \expandafter\hyper@@anchor\expandafter{\Hy@AnchorName}{\relax}#3%
3945   \fi
3946 }

```

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

```

3947 \def\label@hyperref[#1]{%
3948   \expandafter\label@@hyperref\csname r@#1\endcsname{#1}%
3949 }%
3950 \def\label@@hyperref#1#2#3{%
3951   \ifx#1\relax
3952     \protect\G@refundefinedtrue
3953     \@latex@warning{%
3954       Hyper reference ‘#2’ on page \thepage \space undefined%
3955     }%
3956     \hyper@@link{}{??}{#3}%
3957   \else
3958     \hyper@@link{\expandafter\@fifthoffive#1}%
3959     {\expandafter\@fourthoffive#1\@empty\@empty}{#3}%
3960   \fi
3961 }
3962 \def\label@hyperdef[#1]#2#3#4{% label name, category, name,
3963                               % anchor text
3964   \@bsphack
3965   \ifx\#2\%

```

```

3966 \def\Hy@AnchorName{#3}%
3967 \else
3968 \def\Hy@AnchorName{#2.#3}%
3969 \fi
3970 \if@filesw
3971 \protected@write\@auxout{}\{
3972 \string\newlabel{#1}\{\}\}\{\Hy@AnchorName\}\}%
3973 \}%
3974 \fi
3975 \@esphack
3976 \ifHy@nesting
3977 \expandafter\hyper@@anchor\expandafter{\Hy@AnchorName}{#4}%
3978 \else
3979 \expandafter\hyper@@anchor\expandafter{\Hy@AnchorName}{\relax}#4%
3980 \fi
3981 }

```

## 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.

```

3982 \def\hyper@@link{\let\Hy@reserved@a\relax
3983 \ifnextchar{\hyper@link@}{\hyper@link@[link]}}%
3984 }
3985 \def\hyper@link@[#1]#2#3#4{%
3986 \begingroup
3987 \protected@edef\Hy@tempa{#2}%
3988 \Hy@safe@activetrue
3989 \edef\x{#3}%
3990 \ifx\Hy@tempa\@empty
3991 \toks0{\hyper@link{#1}}%
3992 \else
3993 \toks0{\expandafter\hyper@readexternallink#2\{#1}}%
3994 \fi
3995 \toks2{%
3996 \Hy@safe@activesfalse
3997 #4%
3998 }%
3999 \edef\Hy@tempa{\the\toks2}%
4000 \edef\x{\endgroup
4001 \ifx\Hy@tempa\@empty
4002 \noexpand\Hy@Warning{Suppressing empty link}%
4003 \else
4004 \the\toks0 {\x}{\the\toks2}}%
4005 \fi
4006 }%
4007 \x
4008 }

```

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.

```

4009 \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.

```
4010 \expandafter\@hyper@readexternallink{#2}{#3}{#4}#1::\{#1}%  
4011 }
```

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

```
4012 \def\@pdftempwordfile{file}%  
4013 \def\@pdftempwordrun{run}%  
4014 \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:

```
4015 \ifx\{#6\}%  
4016 \expandafter\@hyper@linkfile file:#7\{#3}{#2}%  
4017 \else  
4018 \ifx\{#4\}%  
4019 \expandafter\@hyper@linkfile file:#7\{#3}{#2}%  
4020 \else
```

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

```
4021 \def\@pdftempa{#4}%  
4022 \ifx\@pdftempa\@pdftempwordfile  
4023 \expandafter\@hyper@linkfile#7\{#3}{#2}%  
4024 \else
```

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

```
4025 \ifx\@pdftempa\@pdftempwordrun  
4026 \ifHy@pdfa  
4027 \PackageError{hyperref}{%  
4028 PDF/A: Launch action is prohibited%  
4029 }\@ehc  
4030 \begingroup  
4031 \leavevmode  
4032 #2%  
4033 \endgroup  
4034 \else  
4035 \expandafter\@hyper@launch#7\{#3}{#2}%  
4036 \fi  
4037 \else
```

otherwise its a URL

```
4038 \hyper@linkurl{#3}{#7\ifx\{#2\}\else\hyper@hash#2\fi}%  
4039 \fi  
4040 \fi  
4041 \fi  
4042 \fi  
4043 }
```

By default, turn run: into file:

```

4044 \def\@hyper@launch run:#1\|#2#3{% filename, anchor text, linkname
4045 \hyper@linkurl{#2}{%
4046 \Hy@linkfileprefix
4047 #1%
4048 \ifx\|#3\|%
4049 \else
4050 \hyper@hash
4051 #3%
4052 \fi
4053 }%
4054 }

```

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

```

4055 \def\@hyper@linkfile file:#1\|#2#3{%
4056 %file url,link string, name
4057 \filename@parse{#1}%
4058 \ifx\filename@ext\relax
4059 \edef\filename@ext{\XR@ext}%
4060 \fi
4061 \def\use@file{\filename@area\filename@base.\filename@ext}%
4062 \ifx\filename@ext\XR@ext
4063 \hyper@linkfile{#2}{\use@file}{#3}%
4064 \else
4065 \ifx\@baseurl\@empty
4066 \hyper@linkurl{#2}{%
4067 \Hy@linkfileprefix\use@file\ifx\|#3\| \else\hyper@hash#3\fi
4068 }%
4069 \else
4070 \hyper@linkurl{#2}{\use@file\ifx\|#3\| \else\hyper@hash#3\fi}%
4071 \fi
4072 \fi
4073 }

```

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.

```

4074 \long\def\hyper@@anchor#1#2{\@hyper@@anchor#1\relax#2\relax}
4075 \long\def\@hyper@@anchor#1\relax#2#3\relax{%
4076 \ifx\|#1\|%
4077 #2\Hy@WarningNoLine{empty link? #1: #2#3}%
4078 \else
4079 \def\anchor@spot{#2#3}%
4080 \let\put@me@back\@empty
4081 \ifx\relax#2\relax
4082 \else
4083 \ifHy@nesting
4084 \else
4085 \ifcat a\noexpand#2\relax
4086 \else
4087 \ifcat 0\noexpand#2 \relax
4088 \else

```

```

4089 %          \typeout{Anchor start is not alphanumeric %
4090 %          on input line\the\inputlineno%
4091 %          }%
4092          \let\anchor@spot\@empty
4093          \def\put@me@back{##2##3}%
4094          \fi
4095          \fi
4096          \fi
4097          \fi
4098          \ifHy@activeanchor
4099          \anchor@spot
4100          \else
4101          \hyper@anchor{##1}%
4102          \fi
4103          \expandafter\put@me@back
4104          \fi
4105          \let\anchor@spot\@empty
4106 }

```

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

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

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

```

4107 \let\htmladdimg\hyperimage
4108 \def\htmladdnormallink#1#2{\href{#2}{#1}}
4109 \def\htmladdnormallinkfoot#1#2{\href{#2}{#1}\footnote{#2}}
4110 \def\htmlref#1#2{% anchor text, label
4111   \label@hyperref[{#2}]{#1}%
4112 }

```

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

```

4113 \def\@@latextohtmlX{%
4114   \let\hyperref\hyperref
4115   \def\hyperref##1##2##3##4{% anchor text for HTML
4116     % text to print before label in print
4117     % label
4118     % post-label text in print
4119     ##2\ref{##4}##3%
4120   }%
4121 }

```

## 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.

```
4122 \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

```
4123 \def\HyField@NewFlag#1#2{%
4124   \lowercase{\HyField@NewOption{#2}}%
4125   \lowercase{\HyField@NewBitsetFlag{#2}}{#2}{#1}%
4126 }
```

\HyField@NewFlagOnly

```
4127 \def\HyField@NewFlagOnly#1#2{%
4128   \lowercase{\HyField@NewBitsetFlag{#2}}{#2}{#1}%
4129 }
```

\HyField@NewOption #1: option name

```
4130 \def\HyField@NewOption#1{%
4131   \expandafter\newif\csname ifFld@#1\endcsname
4132   \define@key{Field}{#1}[true]{%
4133     \lowercase{\Field@boolkey{##1}}{#1}%
4134   }%
4135 }
```

\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

```
4136 \def\HyField@NewBitsetFlag#1#2#3#4{%
4137   \begingroup
4138     \count@=#4\relax
4139     \advance\count@\m@ne
4140     \def\x##1{%
4141       \endgroup
4142       \expandafter\def\csname HyField@#3@#1\endcsname{##1}%
4143       \expandafter\ifx\csname HyField@#3@##1\endcsname\relax
4144         \expandafter\edef\csname HyField@#3@##1\endcsname{%
4145           (\number#4) #2%
4146         }%
4147       \else
4148         \expandafter\edef\csname HyField@#3@##1\endcsname{%
4149           \csname HyField@#3@##1\endcsname
4150           /#2%
4151         }%
4152       \fi
4153     }%
4154   \expandafter\x\expandafter{\the\count@}%
4155 }
```

```

\HyField@UseFlag The bit set is HyField@#1
4156 \def\HyField@UseFlag#1#2{%
4157 \lowercase{\HyField@@UseFlag{#2}}{#1}%
4158 }

\HyField@@UseFlag
4159 \def\HyField@@UseFlag#1#2{%
4160 \bitsetSetValue{HyField@#2}{%
4161 \csname HyField@#2@#1\endcsname
4162 }{%
4163 \csname ifFld@#1\endcsname 1\else 0\fi
4164 }%
4165 }

\HyField@SetFlag The bit set is HyField@#1
4166 \def\HyField@SetFlag#1#2{%
4167 \lowercase{\HyField@@SetFlag{#2}}{#1}%
4168 }

\HyField@@SetFlag
4169 \def\HyField@@SetFlag#1#2{%
4170 \bitsetSetValue{HyField@#2}{%
4171 \csname HyField@#2@#1\endcsname
4172 }{1}%
4173 }

\HyField@PrintFlags
4174 \def\HyField@PrintFlags#1#2{%
4175 \ifHy@verbose
4176 \begingroup
4177 \let\Hy@temp\@empty
4178 \let\MessageBreak\relax
4179 \expandafter\@for\expandafter\x\expandafter:\expandafter=%
4180 \bitsetGetSetBitList{HyField@#1}\do{%
4181 \edef\Hy@temp{%
4182 \Hy@temp
4183 \csname HyField@#1@\x\endcsname\MessageBreak
4184 }%
4185 }%
4186 \edef\x{\endgroup
4187 \noexpand\Hy@Info{%
4188 Field flags: %
4189 \expandafter\ifx\@car#1\@nil S\else/\fi
4190 #1 %
4191 \bitsetGetDec{HyField@#1} %
4192 (0x\bitsetGetHex{HyField@#1}{32})\MessageBreak
4193 \Hy@temp
4194 for #2%
4195 }%
4196 }\x
4197 \fi
4198 }

```

### 19.1.1 Declarations of field flags

“Table 8.70 Field flags common to all field types”

```

4199 \HyField@NewFlag{Ff}{ReadOnly}{1}
4200 \HyField@NewFlag{Ff}{Required}{2}
4201 \HyField@NewFlag{Ff}{NoExport}{3}

```

“Table 8.75 Field flags specific to button fields”

```

4202 \HyField@NewFlag{Ff}{NoToggleToOff}{15}
4203 \HyField@NewFlag{Ff}{Radio}{16}
4204 \HyField@NewFlag{Ff}{Pushbutton}{17}
4205 \HyField@NewFlag{Ff}{RadiosInUnison}{26}

```

“Table 8.77 Field flags specific to text fields”

```

4206 \HyField@NewFlag{Ff}{Multiline}{13}
4207 \HyField@NewFlag{Ff}{Password}{14}
4208 \HyField@NewFlag{Ff}{FileSelect}{21}% PDF 1.4
4209 \HyField@NewFlag{Ff}{DoNotSpellCheck}{23}% PDF 1.4
4210 \HyField@NewFlag{Ff}{DoNotScroll}{24}% PDF 1.4
4211 \HyField@NewFlag{Ff}{Comb}{25}% PDF 1.4
4212 \HyField@NewFlag{Ff}{RichText}{26}% PDF 1.5

```

“Table 8.79 field flags specific to choice fields”

```

4213 \HyField@NewFlag{Ff}{Combo}{18}
4214 \HyField@NewFlag{Ff}{Edit}{19}
4215 \HyField@NewFlag{Ff}{Sort}{20}
4216 \HyField@NewFlag{Ff}{MultiSelect}{22}% PDF 1.4
4217 % \HyField@NewFlag{Ff}{DoNotSpellCheck}{23}% PDF 1.4
4218 \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.

```

4219 \newif\iffld@popdown
4220 \define@key{Field}{popdown}[true]{%
4221   \lowercase{\Field@boolkey{#1}}{popdown}%
4222 }

```

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.

```

4223 \HyField@NewFlag{F}{Invisible}{1}
4224 \HyField@NewFlag{F}{Hidden}{2}% PDF 1.2
4225 \HyField@NewFlag{F}{Print}{3}% PDF 1.2
4226 \HyField@NewFlag{F}{NoZoom}{4}% PDF 1.2
4227 \HyField@NewFlag{F}{NoRotate}{5}% PDF 1.3
4228 \HyField@NewFlag{F}{NoView}{6}% PDF 1.3
4229 \HyField@NewFlag{F}{Locked}{8}% PDF 1.4
4230 \HyField@NewFlag{F}{ToggleNoView}{9}% PDF 1.5
4231 \HyField@NewFlag{F}{LockedContents}{10}% PDF 1.7

4232 \ifHy@pdfa
4233   \def\HyField@PDFAFlagWarning#1#2{%
4234     \Hy@Warning{%
4235       PDF/A: Annotation flag ‘#1’ must\MessageBreak
4236       be set to ‘#2’%
4237     }%
4238   }%
4239   \Fld@invisiblefalse
4240   \def\Fld@invisibletrue{%

```

```

4241 \HyField@PDFAFIagWarning{invisible}{false}%
4242 }%
4243 \Fld@hiddenfalse
4244 \def\Fld@hiddenttrue{%
4245 \HyField@PDFAFIagWarning{hidden}{false}%
4246 }%
4247 \Fld@printrtrue
4248 \def\Fld@printfalse{%
4249 \HyField@PDFAFIagWarning{print}{true}%
4250 }%
4251 \Fld@nozoomtrue
4252 \def\Fld@nozoomfalse{%
4253 \HyField@PDFAFIagWarning{nozoom}{true}%
4254 }%
4255 \Fld@norotatetrue
4256 \def\Fld@norotatefalse{%
4257 \HyField@PDFAFIagWarning{norotate}{true}%
4258 }%
4259 \Fld@noviewfalse
4260 \def\Fld@noviewtrue{%
4261 \HyField@PDFAFIagWarning{noview}{false}%
4262 }%
4263 \fi

```

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

```

4264 \HyField@NewFlag{Submit}{IncludeNoValueFields}{2}
4265 \HyField@NewFlagOnly{Submit}{ExportFormat}{3}
4266 \HyField@NewFlag{Submit}{GetMethod}{4}
4267 \HyField@NewFlag{Submit}{SubmitCoordinates}{5}
4268 \HyField@NewFlagOnly{Submit}{XFDF}{6}
4269 \HyField@NewFlag{Submit}{IncludeAppendSaves}{7}
4270 \HyField@NewFlag{Submit}{IncludeAnnotations}{8}
4271 \HyField@NewFlagOnly{Submit}{SubmitPDF}{9}
4272 \HyField@NewFlag{Submit}{CanonicalFormat}{10}
4273 \HyField@NewFlag{Submit}{ExclNonUserAnnots}{11}
4274 \HyField@NewFlag{Submit}{ExclFKey}{12}
4275 \HyField@NewFlag{Submit}{EmbedForm}{14}

4276 \define@key{Field}{export}{%
4277 \lowercase{\def\Hy@temp{#1}}%
4278 \@ifundefined{Fld@export@\Hy@temp}{%
4279 \@onelevel@sanitize\Hy@temp
4280 \PackageError{hyperref}{%
4281 Unknown export format '\Hy@temp'.\MessageBreak
4282 Known formats are 'FDF', 'HTML', 'XFDF', and 'PDF'%
4283 }\@ehc
4284 }{%
4285 \let\Fld@export\Hy@temp
4286 }%
4287 }
4288 \def\Fld@export{fdf}
4289 \@namedef{Fld@export@fdf}{0}%
4290 \@namedef{Fld@export@html}{1}%
4291 \@namedef{Fld@export@xdf}{2}%
4292 \@namedef{Fld@export@pdf}{3}%

```

### 19.1.2 Set submit flags

\HyField@FlagsSubmit

```
4293 \def\HyField@FlagsSubmit{%
4294   \bitsetReset{HyField@Submit}%
4295   \ifcase\@nameuse{Fld@export@\Fld@export} %
4296     % FDF
4297     \HyField@UseFlag{Submit}{IncludeNoValueFields}%
4298     \HyField@UseFlag{Submit}{SubmitCoordinates}%
4299     \HyField@UseFlag{Submit}{IncludeAppendSaves}%
4300     \HyField@UseFlag{Submit}{IncludeAnnotations}%
4301     \HyField@UseFlag{Submit}{CanonicalFormat}%
4302     \HyField@UseFlag{Submit}{ExclNonUserAnnots}%
4303     \HyField@UseFlag{Submit}{ExclFKey}%
4304     \HyField@UseFlag{Submit}{EmbedForm}%
4305   \or % HTML
4306     \HyField@SetFlag{Submit}{ExportFormat}%
4307     \HyField@UseFlag{Submit}{IncludeNoValueFields}%
4308     \HyField@UseFlag{Submit}{GetMethod}%
4309     \HyField@UseFlag{Submit}{SubmitCoordinates}%
4310     \HyField@UseFlag{Submit}{CanonicalFormat}%
4311   \or % XFDF
4312     \HyField@SetFlag{Submit}{XFDF}%
4313     \HyField@UseFlag{Submit}{IncludeNoValueFields}%
4314     \HyField@UseFlag{Submit}{SubmitCoordinates}%
4315     \HyField@UseFlag{Submit}{CanonicalFormat}%
4316   \or % PDF
4317     \HyField@SetFlag{Submit}{SubmitPDF}%
4318     \HyField@UseFlag{Submit}{GetMethod}%
4319   \fi
4320   \HyField@PrintFlags{Submit}{submit button field}%
4321   \bitsetIsEmpty{HyField@Submit}{%
4322     \def\Fld@submitflags{%
4323     }{%
4324     \edef\Fld@submitflags{/Flags \bitsetGetDec{HyField@Submit}}%
4325     }%
4326 }
```

### 19.1.3 Set annot flags in fields

\HyField@FlagsAnnot

```
4327 \def\HyField@FlagsAnnot#1{%
4328   \bitsetReset{HyField@F}%
4329   \HyField@UseFlag{F}{Invisible}%
4330   \HyField@UseFlag{F}{Hidden}%
4331   \HyField@UseFlag{F}{Print}%
4332   \HyField@UseFlag{F}{NoZoom}%
4333   \HyField@UseFlag{F}{NoRotate}%
4334   \HyField@UseFlag{F}{NoView}%
4335   \HyField@UseFlag{F}{Locked}%
4336   \HyField@UseFlag{F}{ToggleNoView}%
4337   \HyField@UseFlag{F}{LockedContents}%
4338   \HyField@PrintFlags{F}{#1}%
4339   \bitsetIsEmpty{HyField@F}{%
4340     \def\Fld@annotflags{%
4341     }{%
4342     \edef\Fld@annotflags{/F \bitsetGetDec{HyField@F}}%
4343     }%
4344 }
```

```

4343 }%
4344 }

```

#### 19.1.4 Pushbutton field

\HyField@FlagsPushButton

```

4345 \def\HyField@FlagsPushButton{%
4346 \HyField@FlagsAnnot{push button field}%
4347 \bitsetReset{HyField@Ff}%
4348 \HyField@UseFlag{Ff}{ReadOnly}%
4349 \HyField@UseFlag{Ff}{Required}%
4350 \HyField@UseFlag{Ff}{NoExport}%
4351 \HyField@SetFlag{Ff}{Pushbutton}%
4352 \HyField@PrintFlags{Ff}{push button field}%
4353 \bitsetIsEmpty{HyField@Ff}{%
4354 \def\Fld@flags{%
4355 }{%
4356 \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}}%
4357 }%
4358 }

```

#### 19.1.5 Check box field

\HyField@FlagsCheckBox

```

4359 \def\HyField@FlagsCheckBox{%
4360 \HyField@FlagsAnnot{check box field}%
4361 \bitsetReset{HyField@Ff}%
4362 \HyField@UseFlag{Ff}{ReadOnly}%
4363 \HyField@UseFlag{Ff}{Required}%
4364 \HyField@UseFlag{Ff}{NoExport}%
4365 \HyField@PrintFlags{Ff}{check box field}%
4366 \bitsetIsEmpty{HyField@Ff}{%
4367 \def\Fld@flags{%
4368 }{%
4369 \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}}%
4370 }%
4371 }

```

#### 19.1.6 Radio button field

\HyField@FlagsRadioButton

```

4372 \def\HyField@FlagsRadioButton{%
4373 \HyField@FlagsAnnot{radio button field}%
4374 \bitsetReset{HyField@Ff}%
4375 \HyField@UseFlag{Ff}{ReadOnly}%
4376 \HyField@UseFlag{Ff}{Required}%
4377 \HyField@UseFlag{Ff}{NoExport}%
4378 \HyField@UseFlag{Ff}{NoToggleToOff}%
4379 \HyField@SetFlag{Ff}{Radio}%
4380 \HyField@UseFlag{Ff}{RadiosInUnison}%
4381 \HyField@PrintFlags{Ff}{radio button field}%
4382 \bitsetIsEmpty{HyField@Ff}{%
4383 \def\Fld@flags{%
4384 }{%
4385 \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}}%
4386 }%

```

4387 }

### 19.1.7 Text fields

\HyField@FlagsText

```
4388 \def\HyField@FlagsText{%
4389   \HyField@FlagsAnnot{text field}%
4390   \bitsetReset{HyField@Ff}%
4391   \HyField@UseFlag{Ff}{ReadOnly}%
4392   \HyField@UseFlag{Ff}{Required}%
4393   \HyField@UseFlag{Ff}{NoExport}%
4394   \HyField@UseFlag{Ff}{Multiline}%
4395   \HyField@UseFlag{Ff}{Password}%
4396   \HyField@UseFlag{Ff}{FileSelect}%
4397   \HyField@UseFlag{Ff}{DoNotSpellCheck}%
4398   \HyField@UseFlag{Ff}{DoNotScroll}%
4399   \ifFld@comb
4400     \ifcase0\ifFld@multiline
4401       \else\ifFld@password
4402       \else\ifFld@fileselect
4403       \else 1\fi\fi\fi\relax
4404     \PackageError{hyperref}{%
4405       Field option ‘comb’ cannot used together with\MessageBreak
4406       ‘multiline’, ‘password’, or ‘fileselect’%
4407     }\@ehc
4408   \else
4409     \HyField@UseFlag{Ff}{Comb}%
4410   \fi
4411 \fi
4412 \HyField@UseFlag{Ff}{RichText}%
4413 \HyField@PrintFlags{Ff}{text field}%
4414 \bitsetIsEmpty{HyField@Ff}{%
4415   \def\Fld@flags{%
4416   }{%
4417   \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}}%
4418 }%
4419 }
```

### 19.1.8 Choice fields

\HyField@FlagsChoice

```
4420 \def\HyField@FlagsChoice{%
4421   \HyField@FlagsAnnot{choice field}%
4422   \bitsetReset{HyField@Ff}%
4423   \HyField@UseFlag{Ff}{ReadOnly}%
4424   \HyField@UseFlag{Ff}{Required}%
4425   \HyField@UseFlag{Ff}{NoExport}%
4426   \HyField@UseFlag{Ff}{Combo}%
4427   \ifFld@combo
4428     \HyField@UseFlag{Ff}{Edit}%
4429   \fi
4430   \HyField@UseFlag{Ff}{Sort}%
4431   \HyField@UseFlag{Ff}{MultiSelect}%
4432   \ifFld@combo
4433     \ifFld@edit
4434       \HyField@UseFlag{Ff}{DoNotSpellCheck}%

```

```

4435 \fi
4436 \fi
4437 \HyField@UseFlag{Ff}{CommitOnSelChange}%
4438 \HyField@PrintFlags{Ff}{choice field}%
4439 \bitsetIsEmpty{HyField@Ff}{%
4440 \def\Fld@flags{%
4441 }{%
4442 \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}}%
4443 }%
4444 }

```

## 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`.

```

4445 \def\HyField@PDFChoices#1{%
4446 \begingroup
4447 \gdef\Fld@choices{%
4448 \def\HyTmp@optlist{%
4449 \let\HyTmp@optitem\relax
4450 \count@=0 %
4451 \kv@parse{#1}{%
4452 \Hy@pdfstringdef\kv@key\kv@key
4453 \ifx\kv@value\relax
4454 \ifnum\Hy@pdfversion<3 % implementation note 122, PDF spec 1.7
4455 \xdef\Fld@choices{\Fld@choices[(\kv@key)(\kv@key)]}%
4456 \else
4457 \xdef\Fld@choices{\Fld@choices(\kv@key)}%
4458 \fi
4459 \else
4460 \Hy@pdfstringdef\kv@value\kv@value
4461 \xdef\Fld@choices{\Fld@choices[(\kv@value)(\kv@key)]}%
4462 \fi
4463 \edef\HyTmp@optlist{%
4464 \HyTmp@optlist
4465 \HyTmp@optitem{\the\count@}{\kv@key}0%
4466 }%
4467 \advance\count@ by 1 %
4468 \@gobbletwo
4469 }%
4470 \xdef\Fld@choices{/Opt[\Fld@choices]}%
4471 \ifFld@multiselect
4472 \HyField@@PDFChoices{DV}\Fld@default
4473 \HyField@@PDFChoices{V}\Fld@value
4474 \else
4475 \ifx\Fld@default\relax
4476 \else
4477 \pdfstringdef\Hy@gtemp\Fld@default
4478 \xdef\Fld@choices{\Fld@choices/DV(\Hy@gtemp)}%
4479 \fi
4480 \ifx\Fld@value\relax
4481 \else
4482 \pdfstringdef\Hy@gtemp\Fld@value
4483 \xdef\Fld@choices{\Fld@choices/V(\Hy@gtemp)}%
4484 \fi
4485 \fi

```

```

4486 \endgroup
4487 }

```

\HyField@@PDFChoices

```

4488 \def\HyField@@PDFChoices#1#2{%
4489   \ifx#2\relax
4490   \else
4491     \count@=0 %
4492     \def\HyTmp@optitem##1##2##3{%
4493       \def\HyTmp@key{##2}%
4494       \ifx\HyTmp@key\Hy@gtemp
4495         \expandafter\def\expandafter\HyTmp@optlist\expandafter{%
4496           \HyTmp@optlist
4497           \HyTmp@optitem{##1}{##2}1%
4498         }%
4499         \let\HyTmp@found=Y%
4500       \else
4501         \expandafter\def\expandafter\HyTmp@optlist\expandafter{%
4502           \HyTmp@optlist
4503           \HyTmp@optitem{##1}{##2}##3%
4504         }%
4505       \fi
4506     }%
4507     \expandafter\comma@parse\expandafter{#2}{%
4508       \pdfstringdef\Hy@gtemp\comma@entry
4509       \let\HyTmp@found=N %
4510       \expandafter\let\expandafter\HyTmp@optlist\expandafter\@empty
4511       \HyTmp@optlist
4512       \ifx\HyTmp@found Y%
4513         \advance\count@ by 1 %
4514       \else
4515         \@onelevel@sanitize\comma@entry
4516         \PackageWarning{hyperref}{%
4517           \string\ChoiceBox: Ignoring value '\comma@entry',%
4518           \MessageBreak
4519           it cannot be found in the choices%
4520         }%
4521       \fi
4522       \@gobble
4523     }%
4524     \def\HyTmp@optitem##1##2##3{%
4525       \ifnum##3=1 %
4526         (##2)%
4527       \fi
4528     }%
4529     \ifcase\count@
4530     \or
4531       \xdef\Fld@choices{\Fld@choices/#1\HyTmp@optlist}%
4532     \else
4533       \xdef\Fld@choices{\Fld@choices/#1[\HyTmp@optlist]}%
4534       \ifx#1V%
4535         \def\HyTmp@optitem##1##2##3{%
4536           \ifnum##3=1 %
4537             \@firstofone{ ##1}%
4538           \fi
4539         }%
4540       \edef\HyTmp@optlist{\HyTmp@optlist}%

```

```

4541     \xdef\Fld@choices{%
4542         \Fld@choices
4543         /I[\expandafter\@firstofone\HyTmp@optlist]%
4544     }%
4545     \fi
4546     \fi
4547     \fi
4548 }

```

## 19.3 Forms

\HyField@SetKeys

```

4549 \def\HyField@SetKeys{%
4550     \setkeys{Field}%
4551 }

4552 \newif\ifFld@checked
4553 \newif\ifFld@disabled
4554 \Fld@checkedfalse
4555 \Fld@disabledfalse
4556 \newcount\Fld@menulength
4557 \newdimen\Fld@Width
4558 \newdimen\Fld@charsize
4559 \Fld@charsize=10\p@
4560 \def\Fld@maxlen{0}
4561 \def\Fld@align{0}
4562 \def\Fld@color{0 0 0 rg}
4563 \def\Fld@bcolor{1 1 1}
4564 \def\Fld@bordercolor{1 0 0}
4565 \def\Fld@bordersep{1\p@}
4566 \def\Fld@borderwidth{1}
4567 \def\Fld@borderstyle{S}
4568 \def\Fld@cbsymbol{4}
4569 \def\Fld@radiosymbol{H}
4570 \def\Fld@rotation{0}
4571 \def\Form{\@ifnextchar[{\@Form}{\@Form[]}}
4572 \def\endForm{\@endForm}
4573 \newif\ifForm@html
4574 \Form@htmlfalse
4575 \def\Form@boolkey#1#2{%
4576     \csname Form@#2\ifx\relax#1\relax true\else#1\fi\endcsname
4577 }
4578 \define@key{Form}{action}{%
4579     \hyper@normalise\Hy@DefFormAction{#1}%
4580 }
4581 \def\Hy@DefFormAction{\def\Form@action}
4582 \def\enc@html{html}
4583 \define@key{Form}{encoding}{%
4584     \def\Hy@tempa{#1}%
4585     \ifx\Hy@tempa\enc@html
4586         \Form@htmltrue
4587         \def\Fld@export{html}%
4588     \else
4589         \typeout{hyperref: form 'encoding' key set to #1 %
4590             -- unknown type%
4591         }%
4592     \Form@htmlfalse

```

```

4593 \fi
4594 }
4595 \define@key{Form}{method}{%
4596 \lowercase{\def\Hy@temp{#1}}%
4597 \@ifundefined{Form@method@\Hy@temp}{%
4598 \onelevel@sanitize\Hy@temp
4599 \PackageError{hyperref}{%
4600   Unknown method '\Hy@temp'.\MessageBreak
4601   Known values are 'post' and 'get'%
4602 }\@ehc
4603 }{%
4604 \let\Form@method\Hy@temp
4605 \ifcase\@nameuse{Form@method@\Hy@temp} %
4606 \Fld@getmethodfalse
4607 \else
4608 \Fld@getmethodtrue
4609 \fi
4610 }%
4611 }
4612 \def\Form@method{}
4613 \@namedef{Form@method@post}{0}
4614 \@namedef{Form@method@get}{1}
4615 \def\Fld@boolkey#1#2{%
4616 \csname Fld@#2\ifx\relax#1\relax true\else#1\fi\endcsname
4617 }
4618 \newtoks\Fld@toks
4619 \Fld@toks={ }%
4620 \def\Fld@addtoks#1#2{%
4621 \edef\@processme{\Fld@toks{\the\Fld@toks\space #1="#2"}}%
4622 \@processme
4623 }
4624 \def\Fld@checkequals#1=#2=#3\\{%
4625 \def\@currDisplay{#1}%
4626 \ifx\\#2\\%
4627 \def\@currValue{#1}%
4628 \else
4629 \def\@currValue{#2}%
4630 \fi
4631 }
4632 \define@key{Field}{loc}{%
4633 \def\Fld@loc{#1}%
4634 }
4635 \define@key{Field}{checked}[true]{%
4636 \lowercase{\Field@boolkey{#1}}{checked}%
4637 }
4638 \define@key{Field}{disabled}[true]{%
4639 \lowercase{\Field@boolkey{#1}}{disabled}%
4640 }
4641 \define@key{Field}{accesskey}{%
4642 \Field@addtoks{accesskey}{#1}%
4643 }
4644 \define@key{Field}{tabkey}{%
4645 \Field@addtoks{tabkey}{#1}%
4646 }
4647 \define@key{Field}{name}{%
4648 \def\Fld@name{#1}%
4649 }

```

```

4650 \define@key{Field}{width}{%
4651   \def\Fld@width{#1}%
4652   \Field@Width#1\setbox0=\hbox{m}%
4653 }
4654 \define@key{Field}{maxlen}{%
4655   \def\Fld@maxlen{#1}%
4656 }
4657 \define@key{Field}{menulength}{%
4658   \Fld@menulength=#1\relax
4659 }
4660 \define@key{Field}{height}{%
4661   \def\Fld@height{#1}%
4662 }
4663 \define@key{Field}{charsize}{%
4664   \Fld@charsize#1%
4665 }
4666 \define@key{Field}{borderwidth}{%
4667   \def\Fld@borderwidth{#1}%
4668 }
4669 \define@key{Field}{borderstyle}{%
4670   \def\Fld@borderstyle{#1}%
4671 }
4672 \define@key{Field}{bordersep}{%
4673   \def\Fld@bordersep{#1}%
4674 }
4675 \define@key{Field}{default}{%
4676   \def\Fld@default{#1}%
4677 }
4678 \define@key{Field}{align}{%
4679   \def\Fld@align{#1}%
4680 }
4681 \define@key{Field}{value}{%
4682   \def\Fld@value{#1}%
4683 }
4684 \define@key{Field}{checkboxsymbol}{%
4685   \Fld@DingDef\Fld@cbsymbol{#1}%
4686 }
4687 \define@key{Field}{radiosymbol}{%
4688   \Fld@DingDef\Fld@radiosymbol{#1}%
4689 }
4690 \def\Fld@DingDef#1#2{%
4691   \def\Fld@temp{}%
4692   \Fld@@DingDef#2\ding{ }\@nil
4693   \let#1\Fld@temp
4694 }
4695 \def\Fld@@DingDef#1\ding#2#3\@nil{%
4696   \expandafter\def\expandafter\Fld@temp\expandafter{%
4697     \Fld@temp
4698     #1%
4699   }%
4700   \ifx\#3\%
4701     \expandafter\@gobble
4702   \else
4703     \begingroup
4704       \lccode'0=#2\relax
4705       \lowercase{\endgroup
4706       \expandafter\def\expandafter\Fld@temp\expandafter{%

```

```

4707     \Fld@temp
4708     0%
4709   }%
4710 }%
4711 \expandafter\@firstofone
4712 \fi
4713 {%
4714   \Fld@@DingDef#3\@nil
4715 }%
4716 }

4717 \define@key{Field}{rotation}{%
4718   \def\Fld@rotation{#1}%
4719 }

4720 \define@key{Field}{backgroundcolor}{%
4721   \HyColor@FieldBColor{#1}\Fld@bcolor{hyperref}{backgroundcolor}%
4722 }
4723 \define@key{Field}{bordercolor}{%
4724   \HyColor@FieldBColor{#1}\Fld@bordercolor{hyperref}{bordercolor}%
4725 }
4726 \define@key{Field}{color}{%
4727   \HyColor@FieldColor{#1}\Fld@color{hyperref}{color}%
4728 }

4729 \def\Fld@onclick@code{}
4730 \def\Fld@format@code{}
4731 \def\Fld@validate@code{}
4732 \def\Fld@calculate@code{}
4733 \def\Fld@keystroke@code{}
4734 \def\Fld@onfocus@code{}
4735 \def\Fld@onblur@code{}
4736 \def\Fld@onmousedown@code{}
4737 \def\Fld@onmouseup@code{}
4738 \def\Fld@onenter@code{}
4739 \def\Fld@onexit@code{}
4740 \def\Hy@temp#1{%
4741   \expandafter\Hy@@temp\csname Fld@#1@code\endcsname{#1}%
4742 }
4743 \def\Hy@@temp#1#2{%
4744   \ifHy@pdfa
4745     \define@key{Field}{#2}{%
4746       \PackageError{hyperref}{%
4747         PDF/A: Additional action ‘#2’ is prohibited%
4748       }\@ehc
4749     }%
4750   \else
4751     \define@key{Field}{#2}{%
4752       \def#1{##1}%
4753     }%
4754   \fi
4755 }
4756 \Hy@temp{keystroke}
4757 \Hy@temp{format}
4758 \Hy@temp{validate}
4759 \Hy@temp{calculate}
4760 \Hy@temp{onfocus}
4761 \Hy@temp{onblur}
4762 \Hy@temp{onenter}

```

```

4763 \Hy@temp{onexit}
4764 \def\Hy@temp#1{%
4765   \define@key{Field}{#1}{%
4766     \Field@addtoks{#1}{##1}%
4767   }%
4768 }
4769 \Hy@temp{onselect}
4770 \Hy@temp{onchange}
4771 \Hy@temp{ondblclick}
4772 \Hy@temp{onmousedown}
4773 \Hy@temp{onmouseup}
4774 \Hy@temp{onmouseover}
4775 \Hy@temp{onmousemove}
4776 \Hy@temp{onmouseout}
4777 \Hy@temp{onkeypress}
4778 \Hy@temp{onkeydown}
4779 \Hy@temp{onkeyup}
4780 \ifHy@pdfa
4781   \define@key{Field}{onclick}{%
4782     \PackageError{hyperref}{%
4783       PDF/A: Action 'onclick' is prohibited%
4784     }\@ehc
4785   }%
4786 \else
4787   \define@key{Field}{onclick}{%
4788     \def\Fld@onclick@code{#1}%
4789     \Field@addtoks{onclick}{#1}%
4790   }%
4791 \fi

4792 \DeclareRobustCommand\TextField{%
4793   \@ifnextchar[{\@TextField}{\@TextField[]}%
4794 }
4795 \DeclareRobustCommand\ChoiceMenu{%
4796   \@ifnextchar[{\@ChoiceMenu}{\@ChoiceMenu[]}%
4797 }
4798 \DeclareRobustCommand\CheckBox{%
4799   \@ifnextchar[{\@CheckBox}{\@CheckBox[]}%
4800 }
4801 \DeclareRobustCommand\PushButton{%
4802   \@ifnextchar[{\@PushButton}{\@PushButton[]}%
4803 }
4804 \DeclareRobustCommand\Gauge{%
4805   \@ifnextchar[{\@Gauge}{\@Gauge[]}%
4806 }
4807 \DeclareRobustCommand\Submit{%
4808   \@ifnextchar[{\@Submit}{\@Submit[]}%
4809 }
4810 \DeclareRobustCommand\Reset{%
4811   \@ifnextchar[{\@Reset}{\@Reset[]}%
4812 }
4813 \def\LayoutTextField#1#2{% label, field
4814   #1 #2%
4815 }
4816 \def\LayoutChoiceField#1#2{% label, field
4817   #1 #2%
4818 }
4819 \def\LayoutCheckField#1#2{% label, field

```

```

4820 #1 #2%
4821 }
4822 \def\LayoutPushButtonField#1{% button
4823 #1%
4824 }
4825 \def\MakeRadioField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
4826 \def\MakeCheckField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
4827 \def\MakeTextField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
4828 \def\MakeChoiceField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
4829 \def\MakeButtonField#1{%
4830 \sbox0{%
4831 \hskip\Fld@borderwidth bp#1\hskip\Fld@borderwidth bp%
4832 }%
4833 \@tempdima\ht0 %
4834 \advance\@tempdima by \Fld@borderwidth bp %
4835 \advance\@tempdima by \Fld@borderwidth bp %
4836 \ht0\@tempdima
4837 \@tempdima\dp0 %
4838 \advance\@tempdima by \Fld@borderwidth bp %
4839 \advance\@tempdima by \Fld@borderwidth bp %
4840 \dp0\@tempdima
4841 \box0\relax
4842 }
4843 \def\DefaultHeightofSubmit{14pt}
4844 \def\DefaultWidthofSubmit{2cm}
4845 \def\DefaultHeightofReset{14pt}
4846 \def\DefaultWidthofReset{2cm}
4847 \def\DefaultHeightofCheckBox{\baselineskip}
4848 \def\DefaultWidthofCheckBox{\baselineskip}
4849 \def\DefaultHeightofChoiceMenu{\baselineskip}
4850 \def\DefaultWidthofChoiceMenu{\baselineskip}
4851 \def\DefaultHeightofText{\baselineskip}
4852 \def\DefaultHeightofTextMultiline{4\baselineskip}
4853 \def\DefaultWidthofText{3cm}
4854 \def\DefaultOptionsofSubmit{print,name=Submit,noexport}
4855 \def\DefaultOptionsofReset{print,name=Reset,noexport}
4856 \def\DefaultOptionsofPushButton{print}
4857 \def\DefaultOptionsofCheckBox{print}
4858 \def\DefaultOptionsofText{print}

```

Default options for the types of \ChoiceMenu.

```

4859 \def\DefaultOptionsofListBox{print}
4860 \def\DefaultOptionsofComboBox{print,edit,sort}
4861 \def\DefaultOptionsofPopdownBox{print}
4862 \def\DefaultOptionsofRadio{print,notoggletooff}

```

## 20 Setup

```

4863 \ifHy@figures
4864 \Hy@Info{Hyper figures ON}%
4865 \else
4866 \Hy@Info{Hyper figures OFF}%
4867 \fi
4868 \ifHy@nesting
4869 \Hy@Info{Link nesting ON}%
4870 \else
4871 \Hy@Info{Link nesting OFF}%

```

```

4872 \fi
4873 \ifHy@hyperindex
4874 \Hy@Info{Hyper index ON}%
4875 \else
4876 \Hy@Info{Hyper index OFF}%
4877 \fi
4878 \ifHy@backref
4879 \Hy@Info{backreferencing ON}%
4880 \else
4881 \Hy@Info{backreferencing OFF}%
4882 \fi
4883 \ifHy@colorlinks
4884 \Hy@Info{Link coloring ON}%
4885 \else
4886 \Hy@Info{Link coloring OFF}%
4887 \fi
4888 \ifHy@ocgcolorlinks
4889 \Hy@Info{Link coloring with OCG ON}%
4890 \else
4891 \Hy@Info{Link coloring with OCG OFF}%
4892 \fi
4893 \ifHy@pdfa
4894 \Hy@Info{PDF/A mode ON}%
4895 \else
4896 \Hy@Info{PDF/A mode OFF}%
4897 \fi

```

## 21 Low-level utility macros

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

```

4898 \edef\hyper@hash{\string#}
4899 \edef\hyper@tilde{\string~}
4900 \edef\hyper@quote{\string"}
4901 \let\@currentHref\@empty
4902 \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.

```

4903 \AfterBeginDocument{%
4904 \Hy@pdfstringtrue
4905 \PDF@SetupDoc
4906 \let\PDF@SetupDoc\@empty
4907 \Hy@DisableOption{pdfpagescrop}%
4908 \Hy@DisableOption{pdfpagemode}%
4909 \Hy@DisableOption{pdfnonfullscreenpagemode}%
4910 \Hy@DisableOption{pdfdirection}%
4911 \Hy@DisableOption{pdfviewarea}%
4912 \Hy@DisableOption{pdfviewclip}%
4913 \Hy@DisableOption{pdfprintarea}%
4914 \Hy@DisableOption{pdfprintclip}%
4915 \Hy@DisableOption{pdfprintscaling}%
4916 \Hy@DisableOption{pdfduplex}%
4917 \Hy@DisableOption{pdfpicktraybypdfsize}%
4918 \Hy@DisableOption{pdfprintpagerange}%
4919 \Hy@DisableOption{pdfnumcopies}%
4920 \Hy@DisableOption{pdfstartview}%
4921 \Hy@DisableOption{pdfstartpage}%

```

```

4922 \Hy@DisableOption{pdftoolbar}%
4923 \Hy@DisableOption{pdfmenubar}%
4924 \Hy@DisableOption{pdfwindowui}%
4925 \Hy@DisableOption{pdfitwindow}%
4926 \Hy@DisableOption{pdfcenterwindow}%
4927 \Hy@DisableOption{pdfdisplaydoctitle}%
4928 \Hy@DisableOption{pdfpagelayout}%
4929 \Hy@DisableOption{pdflang}%
4930 \Hy@DisableOption{baseurl}%
4931 \ifHy@texht\else\hyper@anchorstart{Doc-Start}\hyper@anchorend\fi
4932 \Hy@pdfstringfalse
4933 }

```

Ignore star from referencing macros:

```

4934 \LetLtxMacro\NoHy@OrgRef\ref
4935 \DeclareRobustCommand*\ref{%
4936 \@ifstar\NoHy@OrgRef\NoHy@OrgRef
4937 }
4938 \LetLtxMacro\NoHy@OrgPageRef\pageref
4939 \DeclareRobustCommand*\pageref{%
4940 \@ifstar\NoHy@OrgPageRef\NoHy@OrgPageRef
4941 }

```

## 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.

```

4942 \def\NoHyper{%
4943 \def\hyper@link@{##1}##2##3##4{##4}%
4944 \def\hyper@@anchor##1{%
4945 \global\let\hyper@livelink\hyper@link
4946 \gdef\hyper@link##1##2##3{##3}%
4947 \def\hyper@anchorstart##1{%
4948 \let\hyper@anchorend\@empty
4949 \def\hyper@linkstart##1##2{%
4950 \let\hyper@linkend\@empty
4951 \def\hyper@linkurl##1##2{##1}%
4952 \def\hyper@linkfile##1##2##3{##1}%
4953 \def\hyper@link@{##1}##2##3}%
4954 \let\Hy@backout\@gobble
4955 }
4956 \def@stop@hyper{%
4957 \def\hyper@link@{##1}##2##3##4{##4}%
4958 \let\Hy@backout\@gobble
4959 \def\hyper@@anchor##1{%
4960 \def\hyper@link##1##2##3{##3}%
4961 \def\hyper@anchorstart##1{%
4962 \let\hyper@anchorend\@empty
4963 \def\hyper@linkstart##1##2{%
4964 \let\hyper@linkend\@empty
4965 \def\hyper@linkurl##1##2{##1}%
4966 \def\hyper@linkfile##1##2##3{##1}%
4967 \def\hyper@link@{##1}##2##3}%
4968 }

```

```

4969 \def\endNoHyper{%
4970   \global\let\hyper@link\hyper@livelink
4971 }
4972 \</package>

```

## 23 Package nohyperref

This package is introduced by Sebastian Rahtz.

Package nohyperref is a dummy package that defines some low level and some top-level commands. It is done for jadetex, which calls hyperref low-level commands, but it would also be useful with people using normal hyperref, who really do not want the package loaded at all.

Some low-level commands:

```

4973 \*nohyperref
4974 \RequirePackage{letltxmacro}[2008/06/13]
4975 \let\hyper@@anchor\@gobble
4976 \def\hyper@link#1#2#3{#3}%
4977 \let\hyper@anchorstart\@gobble
4978 \let\hyper@anchorend\@empty
4979 \let\hyper@linkstart\@gobbletwo
4980 \let\hyper@linkend\@empty
4981 \def\hyper@linkurl#1#2{#1}%
4982 \def\hyper@linkfile#1#2#3{#1}%
4983 \def\hyper@link@{#1}#2#3{#1}%
4984 \let\PDF@SetupDoc\@empty
4985 \let\PDF@FinishDoc\@empty
4986 \def\nohyperpage#1{#1}

```

Some top-level commands:

```

4987 \def\Acrobatmenu#1#2{\leavevmode#2}
4988 \let\pdfstringdefDisableCommands\@gobbletwo
4989 \let\texorpdfstring\@firstoftwo
4990 \let\pdfbookmark\@undefined
4991 \newcommand\pdfbookmark[3]{}{}
4992 \let\phantomsection\@empty
4993 \let\hypersetup\@gobble
4994 \let\hyperbaseurl\@gobble
4995 \let\href\@gobble
4996 \let\hyperdef\@gobbletwo
4997 \let\hyperlink\@gobble
4998 \let\hypertarget\@gobble
4999 \def\hyperref{%
5000   \ifnextchar[\@gobbleopt{\expandafter\@gobbletwo\@gobble}%
5001 }
5002 \long\def\@gobbleopt[#1]{}
5003 \let\hyperpage\@empty

```

Ignore star from referencing macros:

```

5004 \LetLtxMacro\NoHy@OrgRef\ref
5005 \DeclareRobustCommand*\ref{%
5006   \@ifstar\NoHy@OrgRef\NoHy@OrgRef
5007 }
5008 \LetLtxMacro\NoHy@OrgPageRef\pageref
5009 \DeclareRobustCommand*\pageref{%
5010   \@ifstar\NoHy@OrgPageRef\NoHy@OrgPageRef
5011 }
5012 \</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}`

```
5013 \<package>
5014 \AfterBeginDocument{%
```

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.

```
5015 \if@files
5016 \ifHy@typexml
5017 \immediate\closeout\@mainaux
5018 \immediate\openout\@mainaux\jobname.aux\relax
5019 \immediate\write\@auxout{<relaxxml>\relax}%
5020 \fi
5021 \immediate\write\@auxout{%
5022 \string\ifx\string\hyper@anchor\string\@undefined^^J%
5023 \global\let\string\oldcontentsline\string\contentsline^^J%
5024 \gdef\string\contentsline%
5025 \string#1\string#2\string#3\string#4{%
5026 \string\oldcontentsline%
5027 {\string#1}{\string#2}{\string#3}}^^J%
5028 \global\let\string\oldnewlabel\string\newlabel^^J%
5029 \gdef\string\newlabel\string#1\string#2{%
5030 \string\newlabelxx{\string#1}\string#2}^^J%
5031 \gdef\string\newlabelxx%
5032 \string#1\string#2\string#3\string#4\string#5\string#6{%
5033 \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.

```
5034 \string\AtEndDocument{%
5035 \let\string\contentsline\string\oldcontentsline^^J%
5036 \let\string\newlabel\string\oldnewlabel}^^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.

```
5037 \string\else^^J%
5038 \global\let\string\hyper@last\relax^^J%
5039 \string\fi^^J%
5040 }%
5041 \fi
```

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.

```
5042 \ifx\hyper@last\@undefined
5043 \def\@starttoc#1{%
5044 \begingroup
5045 \makeatletter
5046 \IfFileExists{\jobname.#1}{%
5047 \Hy@WarningNoLine{%
5048 old #1 file detected, not used; run LaTeX again%
```

```

5049     }%
5050   }{}%
5051   \if@filesw
5052     \expandafter\newwrite\csname tf@#1\endcsname
5053     \immediate\openout\csname tf@#1\endcsname \jobname.#1\relax
5054   \fi
5055   \@nobreakfalse
5056 \endgroup
5057 }%
5058 \def\newlabel#1#2{\@newl@bel r{#1}{#2}{-}{-}{-}}%
5059 \fi
5060 }

```

## 25 Title strings

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

```

5061 \ifHy@usetitle
5062   \let\HyOrg@title\title
5063   \let\HyOrg@author\author
5064   \def\title{\@ifnextchar{\Hy@scanopttitle}{\Hy@scantitle}}%
5065   \def\Hy@scanopttitle[#1]{%
5066     \gdef\Hy@title{#1}%
5067     \HyOrg@title{#1}%
5068   }%
5069   \def\Hy@scantitle#1{%
5070     \gdef\Hy@title{#1}%
5071     \HyOrg@title{#1}%
5072   }%
5073   \def\author{\@ifnextchar{\Hy@scanoptauthor}{\Hy@scanauthor}}%
5074   \def\Hy@scanoptauthor[#1]{%
5075     \gdef\Hy@author{#1}%
5076     \HyOrg@author{#1}%
5077   }%
5078   \def\Hy@scanauthor#1{%
5079     \gdef\Hy@author{#1}%
5080     \HyOrg@author{#1}%
5081   }%

```

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.

```

5082 \begingroup
5083   \def\process@me#1\@nil#2{%
5084     \expandafter\let\expandafter\x\csname @#2\endcsname
5085     \edef\y{\expandafter\strip@prefix\meaning\x}%
5086     \def\c##1#1##2\@nil{%
5087       \ifx\\##1\\%
5088         \else
5089           \expandafter\gdef\csname Hy@#2\expandafter\endcsname
5090             \expandafter{\x}%
5091         \fi
5092       }%
5093       \expandafter\c\y\relax#1\@nil
5094     }%
5095     \expandafter\process@me\string\@latex@\@nil{title}%
5096     \expandafter\process@me\string\@latex@\@nil{author}%

```

```

5097 \endgroup
5098 \fi
5099 \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.

```

5100 \def\Hy@UseMaketitleString#1{%
5101   \ifundefined{Hy@#1}{}%
5102   \begingroup
5103     \let\Hy@saved@hook\pdfstringdefPreHook
5104     \pdfstringdefDisableCommands{%
5105       \expandafter\let\expandafter\\ \csname Hy@newline@#1\endcsname
5106       \let\newline\\%
5107     }%
5108     \expandafter\ifx\csname @pdf#1\endcsname \@empty
5109       \expandafter\pdfstringdef\csname @pdf#1\endcsname{%
5110         \csname Hy@#1\endcsname \@empty
5111       }%
5112     \fi
5113     \global\let\pdfstringdefPreHook\Hy@saved@hook
5114   \endgroup
5115 }%
5116 }
5117 \def\Hy@newline@title#1{ #1}
5118 \def\Hy@newline@author#1{, #1}
5119 \def\Hy@UseMaketitleInfos{%
5120   \Hy@UseMaketitleString{title}%
5121   \Hy@UseMaketitleString{author}%
5122 }

```

## 26 Page numbers

This stuff is done by Heiko Oberdiek.

## 27 Every page

```

5123 \RequirePackage{atbegshi}[2007/09/09]
5124 \def\Hy@EveryPageHook{}
5125 \def\Hy@EveryPageBoxHook{}
5126 \def\Hy@FirstPageHook{}
5127 \AtBeginShipout{%
5128   \Hy@EveryPageHook
5129   \ifx\Hy@EveryPageBoxHook \@empty
5130   \else
5131     \setbox\AtBeginShipoutBox=\vbox{%
5132       \offinterlineskip
5133       \Hy@EveryPageBoxHook
5134       \box\AtBeginShipoutBox

```

```

5135 }%
5136 \fi
5137 }
5138 \AtBeginShipoutFirst{%
5139 \Hy@FirstPageHook
5140 }
5141 \g@addto@macro\Hy@FirstPageHook{%
5142 \PDF@FinishDoc
5143 \gdef\PDF@FinishDoc{}}%
5144 }

```

## 27.1 PDF /PageLabels

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

```

5145 \ifHy@pagelabels
5146 \begingroup\expandafter\expandafter\expandafter\endgroup
5147 \expandafter\ifx\csname thepage\endcsname\relax
5148 \Hy@pagelabelsfalse
5149 \Hy@WarningNoLine{%
5150 Option 'pdfpagelabels' is turned off\MessageBreak
5151 because \string\thepage\space is undefined%
5152 }%
5153 \csname fi\endcsname
5154 \csname iffalse\expandafter\endcsname
5155 \fi

```

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

```

5156 \def\thispdfpagelabel#1{%
5157 \gdef\HyPL@thisLabel{#1}%
5158 }%
5159 \global\let\HyPL@thisLabel\relax

```

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

```

5160 \def\HyPL@Labels{}%

```

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

```

5161 \newcount\Hy@abspage
5162 \Hy@abspage=0 %

```

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

```

5163 \def\HyPL@LastType{init}%
5164 \def\HyPL@LastNumber{0}%
5165 \def\HyPL@LastPrefix{}%

```

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

```

5166 \def\HyPL@arabic{D}%
5167 \def\HyPL@Roman{R}%
5168 \def\HyPL@roman{r}%
5169 \def\HyPL@Alph{A}%
5170 \def\HyPL@alph{a}%

```

\HyPL@EveryPage If a page is shipout and the page number is known, \HyPL@EveryPage has to be called. It stores the current page label.

```

5171 \def\HyPL@EveryPage{%
5172 \begingroup
5173 \ifx\HyPL@thisLabel\relax

```

```

5174     \let\HyPL@page\thepage
5175   \else
5176     \let\HyPL@page\HyPL@thisLabel
5177     \global\let\HyPL@thisLabel\relax
5178   \fi
5179   \let\HyPL@Type\relax
5180   \ifnum\the\c@page>0 %
5181     \expandafter\HyPL@CheckThePage\HyPL@page\@nil
5182   \fi
5183   \let\Hy@temp Y%
5184   \ifx\HyPL@Type\HyPL@LastType
5185   \else
5186     \let\Hy@temp N%
5187   \fi
5188   \ifx\HyPL@Type\relax
5189     \pdfstringdef\HyPL@Prefix{\HyPL@page}%
5190   \else
5191     \pdfstringdef\HyPL@Prefix\HyPL@Prefix
5192   \fi
5193   \ifx\HyPL@Prefix\HyPL@LastPrefix
5194   \else
5195     \let\Hy@temp N%
5196   \fi
5197   \if Y\Hy@temp
5198     \advance\c@page by -1 %
5199     \ifnum\HyPL@LastNumber=\the\c@page\relax
5200   \else
5201     \let\Hy@temp N%
5202   \fi
5203   \Hy@StepCount\c@page
5204   \fi
5205   \if N\Hy@temp
5206     \ifx\HyPL@Type\relax
5207       \HyPL@storePageLabel{/P(\HyPL@Prefix)}%
5208     \else
5209       \HyPL@storePageLabel{%
5210         \ifx\HyPL@Prefix\@empty
5211         \else
5212           /P(\HyPL@Prefix)%
5213         \fi
5214         /S/\csname HyPL\HyPL@Type\endcsname
5215         \ifnum\the\c@page=1 %
5216         \else
5217           \space/St \the\c@page
5218         \fi
5219       }%
5220     \fi
5221   \fi
5222   \xdef\HyPL@LastNumber{\the\c@page}%
5223   \global\let\HyPL@LastType\HyPL@Type
5224   \global\let\HyPL@LastPrefix\HyPL@Prefix
5225   \endgroup
5226   \Hy@GlobalStepCount\Hy@abspage
5227 }%

```

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

```

5228 \def\HyPL@CheckThePage#1\@nil{%

```

```

5229 \HyPL@@CheckThePage{#1}#1\csname\endcsname\c@page\@nil
5230 }%

```

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

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

```

5231 \def\HyPL@@CheckThePage#1#2\csname#3\endcsname\c@page#4\@nil{%
5232 \def\Hy@tempa{#4}%
5233 \def\Hy@tempb{\csname\endcsname\c@page}%
5234 \ifx\Hy@tempa\Hy@tempb
5235 \expandafter\ifx\csname HyPL#3\endcsname\relax
5236 \else
5237 \def\HyPL@Type{#3}%
5238 \def\HyPL@Prefix{#2}%
5239 \fi
5240 \else
5241 \begingroup
5242 \let\Hy@next\endgroup
5243 \let\HyPL@found\@undefined
5244 \def\arabic{\HyPL@Format{arabic}}%
5245 \def\Roman{\HyPL@Format{Roman}}%
5246 \def\roman{\HyPL@Format{roman}}%
5247 \def\Alph{\HyPL@Format{Alph}}%
5248 \def\alph{\HyPL@Format{alph}}%
5249 \protected@edef\Hy@temp{#1}%
5250 \ifx\HyPL@found\relax
5251 \toks@{\expandafter{\Hy@temp}}%
5252 \edef\Hy@next{\endgroup
5253 \noexpand\HyPL@@@CheckThePage\the\toks@
5254 \noexpand\HyPL@found\relax\noexpand\@nil
5255 }%
5256 \fi
5257 \Hy@next
5258 \fi
5259 }%

```

`\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`.

```

5260 \def\HyPL@Format#1#2{%
5261 \ifx\HyPL@found\@undefined
5262 \expandafter\ifx\csname c@#2\endcsname\c@page
5263 \expandafter\noexpand\csname HyPL@found\endcsname{#1}%
5264 \else
5265 \expandafter\noexpand\csname#1\endcsname{#2}%
5266 \fi
5267 \else
5268 \expandafter\noexpand\csname#1\endcsname{#2}%
5269 \fi
5270 }%

```

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

```

5271 \def\HyPL@@@CheckThePage#1\HyPL@found#2#3\@nil{%
5272 \def\Hy@tempa{#3}%

```

```

5273 \def\Hy@tempb{\HyPL@found\relax}%
5274 \ifx\Hy@tempa\Hy@tempb
5275 \def\HyPL@Type{@#2}%
5276 \def\HyPL@Prefix{#1}%
5277 \fi
5278 }%

```

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

```

5279 \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`.

```

5280 \def\HyPL@Useless{0<</S/D>>}%
5281 \@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.

```

5282 \def\HyPL@SetPageLabels{%
5283 \@onelevel@sanitize\HyPL@Labels
5284 \ifx\HyPL@Labels\@empty
5285 \else
5286 \ifx\HyPL@Labels\HyPL@Useless
5287 \else
5288 \Hy@PutCatalog{/PageLabels<</Nums[\HyPL@Labels]>>}%
5289 \fi
5290 \fi
5291 }%

```

```

5292 \g@addto@macro\Hy@EveryPageHook{\HyPL@EveryPage}%
5293 \fi

```

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

```

5294 \Hy@DisableOption{pdfpagelabels}
5295 </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`

```

5296 <pdfTeX>\let\Hy@PutCatalog\pdfcatalog

```

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.

```

5297 <*vTeX>
5298 \providecommand*{\XR@ext}{pdf}
5299 \edef\Hy@VTeXversion{%
5300 \ifx\VTeXversion\@undefined
5301 \z@
5302 \else
5303 \ifx\VTeXversion\relax
5304 \z@
5305 \else

```

```

5306 \VTeXversion
5307 \fi
5308 \fi
5309 }
5310 \begingroup
5311 \ifnum\VTeXversion<660 %
5312 \gdef\Hy@PutCatalog#1{%
5313 \Hy@WarningNoLine{%
5314 VTeX 6.59g or above required for pdfpagelabels%
5315 }%
5316 }%
5317 \else
5318 \gdef\Hy@PutCatalog#1{%
5319 \Hy@vt@PutCatalog#1/PageLabels<<>>\@nil
5320 }%
5321 \gdef\Hy@vt@PutCatalog#1/PageLabels<<#2>>#3\@nil{%
5322 \ifx\#2\%
5323 \else
5324 \immediate\special{!pdfpagelabels #2}%
5325 \fi
5326 }%
5327 \fi
5328 \endgroup
5329 </vtex>

5330 <*pdfTeX | vtex>

```

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

```

5331 \ifHy@pagelabels
5332 \def\HyPL@StorePageLabel#1{%
5333 \toks@ \expandafter{\HyPL@Labels}%
5334 \xdef\HyPL@Labels{%
5335 \the\toks@
5336 \the\Hy@absPage<<#1>>%
5337 }%
5338 }%

```

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.

```

5339 \RequirePackage{atveryend}[2009/12/07]%
5340 \AtVeryEndDocument{%
5341 \HyPL@SetPageLabels
5342 }%

5343 \fi
5344 </pdfTeX | vtex>

```

### 27.1.2 xetex

```

5345 <*xetex>
5346 \HyPsd@LoadUnicode
5347 \Hy@unicodetrue
5348 \ifx\HyPsd@pdfencoding\HyPsd@pdfencoding@unicode
5349 \else
5350 \let\HyPsd@pdfencoding\HyPsd@pdfencoding@auto
5351 \fi
5352 \HyPsd@LoadStringEncoding

```

```

5353 \define@key{Hyp}{unicode}[true]{%
5354   \Hy@boolkey{unicode}{#1}%
5355   \ifHy@unicode
5356   \else
5357     \Hy@Warning{%
5358       XeTeX driver only supports 'unicode=true'.\MessageBreak
5359       Ignoring option setting 'unicode=false'%
5360     }%
5361     \Hy@unicodetrue
5362   \fi
5363 }
5364 \define@key{Hyp}{pdfencoding}{%
5365   \edef\HyPsd@temp{#1}%
5366   \ifx\HyPsd@temp\HyPsd@pdfencoding@unicode
5367     \let\HyPsd@pdfencoding\HyPsd@temp
5368   \else
5369     \ifx\HyPsd@temp\HyPsd@pdfencoding@auto
5370       \let\HyPsd@pdfencoding\HyPsd@temp
5371     \else
5372       \Hy@Warning{%
5373         XeTeX driver only supports 'pdfencoding=unicode|auto.%
5374         \MessageBreak
5375         Ignoring option setting 'pdfencoding=\HyPsd@temp'%
5376       }%
5377     \fi
5378   \fi
5379 }
5380 \let\HyXeTeX@CheckUnicode\relax
5381 \xetex

```

### 27.1.3 pdfmarkbase, dvipdfm, xetex

```

5382 \pdfmarkbase
5383 \begingroup
5384 \ifundefined{headerps@out}{%
5385   \toks@{\expandafter{\Hy@FirstPageHook}%
5386   \xdef\Hy@FirstPageHook{%
5387     \noexpand\headerps@out{%
5388       systemdict /pdfmark known%
5389       {%
5390         userdict /?pdfmark systemdict /exec get put%
5391       }{%
5392         userdict /?pdfmark systemdict /pop get put %
5393         userdict /pdfmark systemdict /cleartomark get put%
5394       }%
5395       ifelse%
5396     }%
5397   \the\toks@
5398   }%
5399 }%
5400 \endgroup
5401 \pdfmarkbase

```

\Hy@PutCatalog

```

5402 \dvipdfm|xetex\def\Hy@PutCatalog#1{\@pdfm@mark{docview << #1 >>}}
5403 \pdfmarkbase
5404 \def\Hy@PutCatalog#1{%
5405   \pdfmark{pdfmark=/PUT,Raw={\string{Catalog}\string} << #1 >>}}%
5406 }

```

```
5407 </pdfmarkbase>
```

```
5408 <*pdfmarkbase | dvipdfm | xetex>
```

```
5409 \ifHy@pagelabels
```

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

```
5410 \def\HyPL@StorePageLabel#1{%
5411   \if@filesw
5412     \begingroup
5413     \edef\Hy@tempa{\the\Hy@abspage<<#1>>}%
5414     \immediate\write\@mainaux{%
5415       \string\HyPL@Entry{\Hy@tempa}%
5416     }%
5417   \endgroup
5418   \fi
5419 }%
```

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.

```
5420 \AfterBeginDocument{%
5421   \if@filesw
5422     \immediate\write\@mainaux{%
5423       \string\providecommand\string*\string\HyPL@Entry[1]{}%
5424     }%
5425   \fi
5426   \ifx\HyPL@Labels\@empty
5427     \Hy@WarningNoLine{Rerun to get /PageLabels entry}%
5428   \else
5429     \HyPL@SetPageLabels
5430   \fi
5431   \let\HyPL@Entry\@gobble
5432 }%
```

`\HyPL@Entry`

```
5433 \def\HyPL@Entry#1{%
5434   \expandafter\gdef\expandafter\HyPL@Labels\expandafter{%
5435     \HyPL@Labels
5436     #1%
5437   }%
5438 }%

5439 \fi
5440 </pdfmarkbase | dvipdfm | xetex>

5441 <*package>
5442 \MaybeStopEarly
```

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

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

which may be useable. But then its up to you to make sure these are legal PDF and HTML names. The ‘hypertextnames=false’ option just makes up arbitrary names.

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

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

Start with a fallback for equations

```

5443 \def\Hy@CounterExists#1{%
5444   \begingroup\expandafter\expandafter\expandafter\endgroup
5445   \expandafter\ifx\csname c@#1\endcsname\relax
5446     \expandafter\@gobble
5447   \else
5448     \begingroup\expandafter\expandafter\expandafter\endgroup
5449     \expandafter\ifx\csname the#1\endcsname\relax
5450       \expandafter\expandafter\expandafter\@gobble
5451     \else
5452       \expandafter\expandafter\expandafter\@firstofone
5453     \fi
5454   \fi
5455 }
5456 \Hy@CounterExists{section}{%
5457   \newcommand\theHequation{\theHsection.\arabic{equation}}}%
5458 }
5459 \Hy@CounterExists{part}{%
5460   \newcommand\theHpart{\arabic{part}}}%
5461 }
5462 \@ifundefined{thechapter}{%
5463   \newcommand\theHsection   {\arabic{section}}}%
5464   \newcommand\theHfigure    {\arabic{figure}}}%
5465   \newcommand\theHtable     {\arabic{table}}}%
5466 }{%
5467   \newcommand\theHchapter   {\arabic{chapter}}}%
5468   \newcommand\theHfigure    {\theHchapter.\arabic{figure}}}%
5469   \newcommand\theHtable     {\theHchapter.\arabic{table}}}%
5470   \newcommand\theHsection   {\theHchapter.\arabic{section}}}%
5471 }
5472 \newcommand\theHsubsection  {\theHsection.\arabic{subsection}}
5473 \newcommand\theHsubsubsection{\theHsubsection.\arabic{subsubsection}}
5474 \newcommand\theHparagraph   {\theHsubsubsection.\arabic{paragraph}}
5475 \newcommand\theHsubparagraph{\theHparagraph.\arabic{subparagraph}}
5476 \newcommand\theHtheorem     {\theHsection.\arabic{theorem}}
5477 \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.

```

5478 \let\H@item\item
5479 \newcounter{Item}
5480 \def\theHItem{\arabic{Item}}
5481 \def\item{%
5482   \@hyper@itemfalse
5483   \if@nmbrlist\@hyper@itemtrue\fi
5484   \H@item
5485 }

```

```

5486 \newcommand\theHenumi    {\theHItem}
5487 \newcommand\theHenumii   {\theHItem}
5488 \newcommand\theHenumiii  {\theHItem}
5489 \newcommand\theHenumiv   {\theHItem}
5490 \newcommand\theHHfootnote {\arabic{Hfootnote}}
5491 \newcommand\theHmpfootnote{\arabic{mpfootnote}}
5492 \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.

```

5493 \let\H@refstepcounter\refstepcounter
5494 \edef\name@of@eq{equation}%
5495 \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.

```

5496 \newif\if@hyper@item
5497 \newif\if@skiphyperref
5498 \@hyper@itemfalse
5499 \@skiphyperreffalse
5500 \def\refstepcounter#1{%
5501   \ifHy@pdfstring
5502   \else
5503     \H@refstepcounter{#1}%
5504     \edef\This@name{#1}%
5505     \ifx\This@name\name@of@slide
5506     \else
5507       \if@skiphyperref
5508       \else
5509         \if@hyper@item
5510           \stepcounter{Item}%
5511           \hyper@refstepcounter{Item}%
5512           \@hyper@itemfalse
5513         \else
5514           \hyper@refstepcounter{#1}%
5515         \fi
5516       \fi
5517     \fi
5518   \fi
5519 }

```

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

```

5520 \@ifpackageloaded{amsmath}{\newif\ifmeasuring@\measuring@false}

```

`\hyper@refstepcounter`

```

5521 \def\hyper@refstepcounter#1{%
5522   \edef\This@name{#1}%
5523   \ifx\This@name\name@of@eq
5524     \@ifundefined{theHequation}{%
5525       \make@stripped@name{\theequation}%
5526       \let\theHequation\newname
5527     }{}%
5528   \fi
5529   \@ifundefined{theH#1}{%
5530     \expandafter\def\csname theH#1\endcsname{\arabic{#1}}%

```

```

5531 }{}%
5532 \hyper@makecurrent{#1}%
5533 \ifmeasuring@
5534 \else
5535 \Hy@raisedlink{%
5536   \hyper@anchorstart{\@currentHref}\hyper@anchorend
5537 }%
5538 \fi
5539 }

```

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`.

```

5540 \begingroup\expandafter\expandafter\expandafter\endgroup
5541 \expandafter\ifx\csname chapter\endcsname\relax
5542 \def\Hy@chapterstring{section}%
5543 \else
5544 \def\Hy@chapterstring{chapter}%
5545 \fi
5546 \def\Hy@appendixstring{appendix}
5547 \def\Hy@chapapp{\Hy@chapterstring}
5548 \let\HyOrg@appendix\appendix
5549 \def\appendix{%
5550   \@ifundefined{chapter}%
5551   {\gdef\theHsection{\Alph{section}}}%
5552   {\gdef\theHchapter{\Alph{chapter}}}%
5553   \xdef\Hy@chapapp{\Hy@appendixstring}%
5554   \HyOrg@appendix
5555 }

```

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

```

5556 \def\hyper@makecurrent#1{%
5557   \begingroup
5558   \edef\Hy@param{#1}%
5559   \ifx\Hy@param\Hy@chapterstring
5560     \let\Hy@param\Hy@chapapp
5561   \fi
5562   \ifHy@hypertexnames
5563     \let\@number\@firstofone
5564     \@ifundefined{latin@Alph}{}{%
5565       \ifx\@Alph\greek@Alph
5566         \def\@Alph{Alph\@arabic}%
5567       \fi
5568     }%
5569     \ifx\@Alph\@Alph@bul
5570       \def\@Alph{Alph\@arabic}%
5571     \fi
5572     \ifx\@alph\@alph@bul
5573       \def\@alph{alph\@arabic}%
5574     \fi
5575     \ifHy@naturalnames
5576       \let\textlatin\@firstofone
5577       \xdef\@currentHlabel{\csname the#1\endcsname}%

```

```

5578 \else
5579 \xdef\@currentHlabel{%
5580 \csname
5581 the%
5582 \expandafter\ifx\csname theH#1\endcsname\relax\else H\fi
5583 #1%
5584 \endcsname
5585 }%
5586 \fi
5587 \xdef\@currentHref{%
5588 \Hy@param.\expandafter\strip@prefix\meaning\@currentHlabel
5589 }%
5590 \else
5591 \Hy@GlobalStepCount\Hy@linkcounter
5592 \xdef\@currentHref{\Hy@param.\the\Hy@linkcounter}%
5593 \fi
5594 \endgroup
5595 }

5596 \@ifpackageloaded{fancyvrb}{%
5597 \@ifpackagelater{fancyvrb}{1998/05/20}{-}{-}%
5598 \def\FV@StepLineNo{%
5599 \FV@SetLineNo
5600 \def\FV@StepLineNo{\H@refstepcounter{FancyVerbLine}}%
5601 \FV@StepLineNo
5602 }%
5603 }%
5604 }{}

```

## 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`

```

5605 \AtBeginDocument{%
5606 \@ifclassloaded{revtex4}{%
5607 \@namedef{ver@lastpage.sty}{1994/06/25}%
5608 }{}%
5609 \@ifpackageloaded{lastpage}{%
5610 \ifHy@pageanchor
5611 \else
5612 \Hy@WarningNoLine{%
5613 The \string\pageref{LastPage} link doesn't work\MessageBreak
5614 with disabled option 'pageanchor'%
5615 }%
5616 \fi
5617 \def\lastpage@putlabel{%
5618 \addtocounter{page}{-1}%
5619 \if@files@w
5620 \begin@group

```

```

5621 \let\@number\@firstofone
5622 \ifHy@pageanchor
5623 \ifHy@hypertexnames
5624 \ifHy@plainpages
5625 \def\Hy@temp{\arabic{page}}}%
5626 \else
5627 \Hy@unicodedefalse
5628 \pdfstringdef\Hy@temp{\thepage}%
5629 \fi
5630 \else
5631 \def\Hy@temp{\the\Hy@pagecounter}%
5632 \fi
5633 \fi
5634 \immediate\write\@auxout{%
5635 \string\newlabel
5636 {LastPage}{\thepage}{\thepage}%
5637 \ifHy@pageanchor page.\Hy@temp\fi}{}}%
5638 }%
5639 \endgroup
5640 \fi
5641 \addtocounter{page}{1}%
5642 }%
5643 \@ifclassloaded{revtex4}{%
5644 \begingroup
5645 \toks@{\expandafter{\lastpage@putlabel}%
5646 \edef\x{\endgroup
5647 \def\noexpand\lastpage@putlabel{%
5648 \noexpand\stepcounter{page}%
5649 \the\toks@
5650 \noexpand\addtocounter{page}\noexpand\m@ne
5651 }%
5652 }%
5653 \x
5654 }{}%
5655 }{}%
5656 }
5657 \</package>
5658 \<*check>
5659 \checkpackage{lastpage}[1994/06/25]
5660 \checkcommand\def\lastpage@putlabel{%
5661 \addtocounter{page}{-1}%
5662 \immediate\write\@auxout{%
5663 \string\newlabel{LastPage}{\thepage}{\thepage}%
5664 }%
5665 \addtocounter{page}{1}%
5666 }
5667 \</check>
5668 \<*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.

```

5669 \def\hypergetref#1{\getrefbykeydefault{#1}{\{}}{??}}
5670 \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:

```
5671 \ifpackageloaded{titlesec}{%
5672   \def\ttl@Hy@steplink#1{%
5673     \Hy@GlobalStepCount\Hy@linkcounter
5674     \xdef\@currentHref{#1*.\the\Hy@linkcounter}%
5675     \edef\ttl@Hy@saveanchor{%
5676       \noexpand\Hy@raisedlink{%
5677         \noexpand\hyper@anchorstart{\@currentHref}%
5678         \noexpand\hyper@anchorend
5679         \def\noexpand\ttl@Hy@SavedCurrentHref{\@currentHref}%
5680         \noexpand\ttl@Hy@PatchSaveWrite
5681       }%
5682     }%
5683   }%
5684   \def\ttl@Hy@PatchSaveWrite{%
5685     \begingroup
5686     \toks@\expandafter{\ttl@savewrite}%
5687     \edef\x{\endgroup
5688       \def\noexpand\ttl@savewrite{%
5689         \let\noexpand\@currentHref
5690         \noexpand\ttl@Hy@SavedCurrentHref
5691         \the\toks@
5692       }%
5693     }%
5694     \x
5695   }%
5696   \def\ttl@Hy@refstepcounter#1{%
5697     \let\ttl@b\Hy@raisedlink
5698     \def\Hy@raisedlink##1{%
5699       \def\ttl@Hy@saveanchor{\Hy@raisedlink{##1}}%
5700     }%
5701     \refstepcounter{#1}%
5702     \let\Hy@raisedlink\ttl@b
5703   }%
5704 }{}
```

Package titletoc support:

```
5705 \ifpackageloaded{titletoc}{%
5706   \def\ttl@gobblecontents#1#2#3#4{\ignorespaces}%
5707 }{}
```

## 32 Package varioref support

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

```
5708 \def\Hy@varioref@undefined{???}{??}{-}{-}}
5709 \ifpackageloaded{varioref}{%
5710   \def\vref@pagenum#1#2{%
5711     \ifundefined{r@#2}{%
5712       \expandafter\let\csname r@#2\endcsname\Hy@varioref@undefined
5713     }{}%
5714     \edef#1{\getpagerefnumber{#2}}%
5715   }%
```

5716 }{} }

### 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

```

5717 \ifpackageloaded{longtable}{%
5718   \begingroup
5719   \def\y{\LT@array}%
5720   \ifundefined{scr@LT@array}{}{\def\y{scr@LT@array}}%
5721   \long\def\x\refstepcounter#1#2\@sharp#3#4\@nil{%
5722     \expandafter\endgroup
5723     \expandafter\def\y[#1]##2{%
5724       \H@refstepcounter{#1}%
5725       \hyper@makecurrent{table}%
5726       \let\Hy@LT@currentHlabel\@currentHlabel
5727       \let\Hy@LT@currentHref\@currentHref
5728       #2\@sharp###4%
5729     }%
5730   }%
5731   \expandafter\expandafter\expandafter\x\y[{#1}]{#2}\@nil

```

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

```

5732 \begingroup
5733 \def\x#1\ifvoid\LT@firsthead\copy#2\@nil{%
5734   \endgroup
5735   \def\LT@start{%
5736     #1%
5737     \let\@currentHlabel\Hy@LT@currentHlabel
5738     \let\@currentHref\Hy@LT@currentHref
5739     \Hy@raisedlink{%
5740       \hyper@anchorstart{\@currentHref}\hyper@anchorend
5741     }%
5742     \ifvoid\LT@firsthead\copy
5743     #2%
5744   }%
5745 }%
5746 \expandafter\x\LT@start\@nil
5747 }{}

```

### 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.

```

5748 \let\new@refstepcounter\refstepcounter
5749 \let\H@equation\equation
5750 \let\H@endequation\endequation

```

```

5751 \@ifpackageloaded{amsmath}{%
5752   \long\def\Hy@temp{%
5753     \incr@eqnum
5754     \mathdisplay@push
5755     \st@rredfalse \global\@eqnswtrue
5756     \mathdisplay{equation}%
5757   }%
5758   \ifx\Hy@temp\equation
5759     \expandafter\ifx\csname if@fleqn\expandafter\endcsname
5760       \csname iftrue\endcsname
5761   \else
5762     \long\def\equation{%
5763       \mathdisplay@push
5764       \st@rredfalse \global\@eqnswtrue
5765       \mathdisplay{equation}%
5766       \incr@eqnum
5767     }%
5768   \fi
5769 \fi
5770 }{%
5771 \def\equation{%
5772   \let\refstepcounter\H@refstepcounter
5773   \H@equation
5774   \@ifundefined{theHequation}{%
5775     \make@stripped@name{\theequation}%
5776     \let\theHequation\newname
5777   }{%
5778     \hyper@makecurrent{equation}%
5779     \Hy@raisedlink{\hyper@anchorstart{\@currentHref}}%
5780     \let\refstepcounter\new@refstepcounter
5781   }%
5782   \def\endequation{\Hy@raisedlink{\hyper@anchorend}\H@endequation}%
5783 }

```

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.

```

5784 \newif\if@eqnstar
5785 \@eqnstarfalse
5786 \let\H@eqnarray\eqnarray
5787 \let\H@endeqnarray\endeqnarray
5788 \def\eqnarray{%
5789   \let\Hy@reserved@a\relax
5790   \def\@currentHref{}%
5791   \H@eqnarray
5792   \if@eqnstar
5793   \else
5794     \ifx\\ \@currentHref\\%
5795   \else
5796     \@ifundefined{theHequation}{%
5797       \make@stripped@name{\theequation}%
5798       \let\theHequation\newname
5799     }{%
5800       \hyper@makecurrent{equation}%
5801       \hyper@anchorstart{\@currentHref}{\hyper@anchorend

```

```

5802   \fi
5803   \fi
5804 }
5805 \def\endeqnarray{%
5806   \H@endeqnarray
5807 }

```

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.

```

5808 \@namedef{eqnarray*}{%
5809   \def\@eqnrcr{\nonumber\@seqnrcr}\@eqnstartrue\eqnarray
5810 }
5811 \@namedef{endeqnarray*}{%
5812   \nonumber\endeqnarray\@eqnstarfalse
5813 }

```

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

```

5814 \@ifundefined{subeqnarray}{%
5815   \let\H@subeqnarray\subeqnarray
5816   \let\H@endsubeqnarray\endsubeqnarray
5817   \def\subeqnarray{%
5818     \let\Hy@reserved@a\relax
5819     \H@subeqnarray
5820     \@ifundefined{theHequation}{%
5821       \make@stripped@name{\theequation}%
5822       \let\theHequation\newname
5823     }{}%
5824     \hyper@makecurrent{equation}%
5825     \hyper@anchorstart{\@currentHref}{\hyper@anchorend
5826   }%
5827   \def\endsubeqnarray{%
5828     \H@endsubeqnarray
5829   }%
5830   \newcommand\theHsubequation{\theHequation\alph{subequation}}%
5831 }

```

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

```

5832 \def\make@stripped@name#1{%
5833   \begingroup
5834     \escapechar\m@ne
5835     \global\let\newname\@empty
5836     \protected@edef\Hy@tempa{#1}%
5837     \edef\@tempb{%
5838       \noexpand\@tfor\noexpand\Hy@tempa:=%
5839       \expandafter\strip@prefix\meaning\Hy@tempa
5840     }%
5841     \@tempb\do{%
5842       \if\Hy@tempa\else
5843         \if\Hy@tempa\else
5844           \xdef\newname{\newname\Hy@tempa}%
5845         \fi
5846       \fi
5847     }%
5848   \endgroup
5849 }

```

Support for amsmath's subequations:

```

5850 \begingroup\expandafter\expandafter\expandafter\endgroup

```

```

5851 \expandafter\ifx\csname subequations\endcsname\relax
5852 \else
5853 \let\HyOrg@subequations\subequations
5854 \def\subequations{%
5855 \stepcounter{equation}%
5856 \protected@edef\theHparentequation{%
5857 \ifundefined{theHequation}\theequation\theHequation
5858 }%
5859 \addtocounter{equation}{-1}%
5860 \HyOrg@subequations
5861 \def\theHequation{\theHparentequation\alph{equation}}%
5862 \ignorespaces
5863 }%
5864 \fi

Support for package amsthm (Daniel Müllner):
5865 \ifpackageloaded{amsthm}{%
5866 \def\@thm#1#2#3{%
5867 \ifhmode
5868 \unskip\unskip\par
5869 \fi
5870 \normalfont
5871 \trivlist
5872 \let\thmheadnl\relax
5873 \let\thm@swap\@gobble
5874 \thm@notefont{\fontseries\mddefault\upshape}%
5875 \thm@headpunct{.}% add period after heading
5876 \thm@headsep 5\p@ plus\p@ minus\p@\relax
5877 \thm@space@setup
5878 #1% style overrides
5879 \@topsep \thm@preskip % used by thm head
5880 \@topsepadd \thm@postskip % used by \@endparenv
5881 \def\dth@counter{#2}%
5882 \ifx\@empty\dth@counter
5883 \def\@tempa{%
5884 \oparg{\@begintheorem{#3}{}}[]%
5885 }%
5886 \else
5887 \H@refstepcounter{#2}%
5888 \hyper@makecurrent{#2}%
5889 \def\@tempa{%
5890 \oparg{\@begintheorem{#3}{\csname the#2\endcsname}}[]%
5891 }%
5892 \fi
5893 \@tempa
5894 }%
5895 \dth@everypar={%
5896 \@minipagefalse
5897 \global\@newlistfalse
5898 \@noparitemfalse
5899 \if@inlabel
5900 \global\@inlabelfalse
5901 \begingroup
5902 \setbox\z@\lastbox
5903 \ifvoid\z@
5904 \kern-\itemindent
5905 \fi
5906 \endgroup

```

```

5907 \ifx\@empty\dth@counter
5908 \else
5909 \Hy@raisedlink{%
5910 \hyper@anchorstart{\@currentHref}\hyper@anchorend
5911 }%
5912 \fi
5913 \unhbox\@labels
5914 \fi
5915 \if@nobreak
5916 \@nobreakfalse \clubpenalty\@M
5917 \else
5918 \clubpenalty\@clubpenalty \everypar{}%
5919 \fi
5920 }%
5921 }{}

```

## 35 Footnotes

The footnote mark is a hypertext link, and the text is a target. We separately number the footnotes sequentially through the text, separately from whatever labels the text assigns. Too hard to keep track of markers otherwise. If the raw forms `\footnotemark` and `\footnotetext` are used, force them to use un-hyper original.

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

```

5922 \@ifpackageloaded{tabularx}{\Hy@hyperfootnotesfalse}{}
5923 \ifHy@hyperfootnotes
5924 \newcounter{Hfootnote}%
5925 \let\H@@footnotetext\@footnotetext
5926 \let\H@@footnotemark\@footnotemark
5927 \def\xfootnotenext[#1]{%
5928 \begingroup
5929 \csname c@\@mpfn\endcsname #1\relax
5930 \unrestored@protected@xdef\@thefnmark{\thempfn}%
5931 \endgroup
5932 \ifx\@footnotetext\@mpfootnotetext
5933 \expandafter\H@@mpfootnotetext
5934 \else
5935 \expandafter\H@@footnotetext
5936 \fi
5937 }%
5938 \def\xfootnotemark[#1]{%
5939 \begingroup
5940 \c@footnote #1\relax
5941 \unrestored@protected@xdef\@thefnmark{\thefootnote}%
5942 \endgroup
5943 \H@@footnotemark
5944 }%
5945 \let\H@@mpfootnotetext\@mpfootnotetext
5946 \long\def\@mpfootnotetext#1{%
5947 \H@@mpfootnotetext{%
5948 \ifHy@nesting
5949 \expandafter\hyper@@anchor\expandafter{%
5950 \Hy@footnote@currentHref
5951 }{#1}%
5952 \else
5953 \Hy@raisedlink{%
5954 \expandafter\hyper@@anchor\expandafter{%

```

```

5955     \Hy@footnote@currentHref
5956     }{\relax}%
5957     }#1%
5958     \fi
5959   }%
5960 }%
5961 \long\def\@footnotetext#1{%
5962   \H@@footnotetext{%
5963     \ifHy@nesting
5964       \expandafter\hyper@@@anchor\expandafter{%
5965         \Hy@footnote@currentHref
5966       }{#1}%
5967     \else
5968       \Hy@raisedlink{%
5969         \expandafter\hyper@@@anchor\expandafter{%
5970           \Hy@footnote@currentHref
5971         }{\relax}%
5972       }%
5973       \let\@currentHlabel\Hy@footnote@currentHlabel
5974       \let\@currentHref\Hy@footnote@currentHref
5975       \let\@currentlabelname\@empty
5976       #1%
5977     \fi
5978   }%
5979 }%

```

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.

```

5980 \def\@footnotemark{%
5981   \leavevmode
5982   \ifhmode\edef\@x@sf{\the\spacefactor}\nobreak\fi
5983   \stepcounter{Hfootnote}%
5984   \global\let\Hy@saved@currentHlabel\@currentHlabel
5985   \global\let\Hy@saved@currentHref\@currentHref
5986   \hyper@makecurrent{Hfootnote}%
5987   \global\let\Hy@footnote@currentHlabel\@currentHlabel
5988   \global\let\Hy@footnote@currentHref\@currentHref
5989   \global\let\@currentHlabel\Hy@saved@currentHlabel
5990   \global\let\@currentHref\Hy@saved@currentHref
5991   \hyper@linkstart{link}{\Hy@footnote@currentHref}%
5992   \@makefnmark
5993   \hyper@linkend
5994   \ifhmode\spacefactor\@x@sf\fi
5995   \relax
5996 }%

```

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

```

5997 \ifpackageloaded{longtable}{%
5998   \CheckCommand*{\LT@p@ftntext}[1]{%
5999     \edef\@tempa{%
6000       \the\LT@p@ftn
6001       \noexpand\footnotetext[\the\c@footnote]%
6002     }%

```

```

6003 \global\LT@p@ftn\expandafter{\@tempa{#1}}%
6004 }%
6005 \long\def\LT@p@ftntext#1{%
6006 \edef\@tempa{%
6007 \the\LT@p@ftn
6008 \begingroup
6009 \noexpand\c@footnote=\the\c@footnote\relax
6010 \noexpand\protected@xdef
6011 \noexpand\@thefnmark{\noexpand\thempfn}%
6012 \noexpand\protected@xdef\noexpand\@thefnmark{%
6013 \noexpand\thempfn
6014 }%
6015 \expandafter\expandafter\expandafter\noexpand
6016 \expandafter\expandafter\expandafter\Hy@LT@footnotetext
6017 \expandafter\expandafter\expandafter{%
6018 \expandafter\Hy@footnote@currentHref\expandafter
6019 }\expandafter{\Hy@footnote@currentHlabel}%
6020 }%
6021 \global\LT@p@ftn\expandafter{%
6022 \@tempa{#1}%
6023 \endgroup
6024 }%
6025 }%
6026 \long\def\Hy@LT@footnotetext#1#2#3{%
6027 \H@@@footnotetext{%
6028 \ifHy@nesting
6029 \hyper@@@anchor{#1}{#3}%
6030 \else
6031 \Hy@raisedlink{%
6032 \hyper@@@anchor{#1}{\relax}%
6033 }%
6034 \def\@currentHlabel{#2}%
6035 \def\@currentHref{#1}%
6036 \let\@currentlabelname\@empty
6037 #3%
6038 \fi
6039 }%
6040 }%
6041 }{}%

```

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

```

6042 \@ifpackageloaded{fancyvrb}{%
6043 \def\V@@@footnotetext{%
6044 \insert\footins\bgroup
6045 \csname reset@font\endcsname
6046 \footnotesize
6047 \interlinepenalty\interfootnotelinepenalty
6048 \splittopskip\footnotesep
6049 \splitmaxdepth\dp\strutbox
6050 \floatingpenalty \@MM
6051 \hsize\columnwidth
6052 \@parboxrestore
6053 \edef\@currentlabel{\csname p@footnote\endcsname\@thefnmark}%
6054 \@makefnptext{}%
6055 \rule{\z@}{\footnotesep}%
6056 \bgroup
6057 \aftergroup\V@@@footnotetext
6058 \Hy@raisedlink{%

```

```

6059     \expandafter\hyper@@anchor\expandafter{%
6060       \Hy@footnote@currentHref
6061     }{\relax}%
6062   }%
6063   \let\@currentHlabel\Hy@footnote@currentHlabel
6064   \let\@currentHref\Hy@footnote@currentHref
6065   \let\@currentlabelname\@empty
6066   \ignorespaces
6067 }%
6068 }{}%

```

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.

```

6069 \let\HyOrg@maketitle\maketitle
6070 \def\maketitle{%
6071   \let\Hy@saved@footnotemark\@footnotemark
6072   \let\Hy@saved@footnotetext\@footnotetext
6073   \let\@footnotemark\H@@footnotemark
6074   \let\@footnotetext\H@@footnotetext
6075   \@ifnextchar[\Hy@maketitle@optarg{% ]
6076     \HyOrg@maketitle
6077     \Hy@maketitle@end
6078   }%
6079 }%
6080 \def\Hy@maketitle@optarg[#1]{%
6081   \HyOrg@maketitle[{#1}]%
6082   \Hy@maketitle@end
6083 }%
6084 \def\Hy@maketitle@end{%
6085   \ifx\@footnotemark\H@@footnotemark
6086     \let\@footnotemark\Hy@saved@footnotemark
6087     \fi
6088   \ifx\@footnotetext\H@@footnotetext
6089     \let\@footnotetext\Hy@saved@footnotetext
6090     \fi
6091 }%

```

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

```

6092 \def\realfootnote{%
6093   \@ifnextchar[\@xfootnote{%
6094     \stepcounter{\@mpfn}%
6095     \protected@xdef\@thefnmark{\thempfn}%
6096     \H@@footnotemark\H@@footnotetext
6097   }%
6098 }%
6099 \fi
6100 \Hy@DisableOption{hyperfootnotes}
6101 \</package>
6102 \<*check>
6103 \checklatex
6104 \checkcommand\def\@xfootnotenext[#1]{%
6105   \begingroup
6106     \csname c@\@mpfn\endcsname #1\relax
6107     \unrestored@protected@xdef\@thefnmark{\thempfn}%
6108   \endgroup
6109   \@footnotetext

```

```

6110 }
6111 \checkcommand\def\@xfootnotemark[#1]{%
6112   \begingroup
6113     \c@footnote #1\relax
6114     \unrestored@protected@xdef\@thefnmark{\thefootnote}%
6115   \endgroup
6116   \@footnotemark
6117 }
6118 \checkcommand\def\@footnotemark{%
6119   \leavevmode
6120   \ifhmode\edef\@x@sf{\the\spacefactor}\nobreak\fi
6121   \@makefnmark
6122   \ifhmode\spacefactor\@x@sf\fi
6123   \relax
6124 }
6125 \end{check}
6126 \end{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.

```

6127 \def\caption{%
6128   \ifx\@cuptype\@undefined
6129     \@latex@error{\noexpand\caption outside float}\@ehd
6130     \expandafter\@gobble
6131   \else
6132     \H@refstepcounter\@cuptype
6133     \let\Hy@tempa\@caption
6134     \@ifundefined{float@caption}{%
6135       }{%
6136         \expandafter\ifx\csname @float@c@\@cuptype\endcsname
6137           \float@caption
6138         \let\Hy@tempa\Hy@float@caption
6139       \fi
6140     }%
6141     \expandafter\@firstofone
6142   \fi
6143   {\@dblarg{\Hy@tempa\@cuptype}}%
6144 }
6145 \long\def\@caption#1[#2]#3{%
6146   \expandafter\ifx\csname if@capstart\expandafter\endcsname
6147     \csname iftrue\endcsname
6148     \global\let\@currentHref\hc@currentHref
6149   \else
6150     \hyper@makecurrent{\@cuptype}%
6151   \fi
6152   \@ifundefined{NR@gettitle}{%
6153     \def\@currentlabelname{#2}%
6154   }{%
6155     \NR@gettitle{#2}%
6156   }%
6157   \par\addcontentsline{\csname ext@#1\endcsname}{#1}{%
6158     \protect\numberline{\csname the#1\endcsname}{\ignorespaces #2}%
6159   }%
6160   \begingroup

```

```

6161 \parboxrestore
6162 \if@minipage
6163 \setminipage
6164 \fi
6165 \normalize
6166 \expandafter\ifx\csname if@capstart\expandafter\endcsname
6167 \csname iftrue\endcsname
6168 \global\@capstartfalse
6169 \@makecaption{\csname fnum@#1\endcsname}{\ignorespaces#3}%
6170 \else
6171 \@makecaption{\csname fnum@#1\endcsname}{%
6172 \ignorespaces

```

If we cannot have nesting, the anchor is empty.

```

6173 \ifHy@nesting
6174 \expandafter\hyper@@anchor\expandafter{\@currentHref}{#3}%
6175 \else
6176 \Hy@raisedlink{%
6177 \expandafter\hyper@@anchor\expandafter{%
6178 \@currentHref
6179 }{\relax}%
6180 }%
6181 #3%
6182 \fi
6183 }%
6184 \fi
6185 \par
6186 \endgroup
6187 }

```

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.

```

6188 \let\Hy@float@caption\@caption
6189 \ifpackageloaded{float}{%
6190 \def\Hy@float@caption{%
6191 \ifx\Hy@float@currentHref\@undefined
6192 \hyper@makecurrent{\@cuptype}%
6193 \global\let\Hy@float@currentHref\@currentHref
6194 \else
6195 \let\@currentHref\Hy@float@currentHref
6196 \fi
6197 \float@caption
6198 }%
6199 \let\HyOrg@float@makebox\float@makebox
6200 \renewcommand{\float@makebox}[1]{%
6201 \HyOrg@float@makebox{%
6202 #1\relax
6203 \ifx\Hy@float@currentHref\@undefined
6204 \else
6205 \expandafter\hyper@@anchor\expandafter{%
6206 \Hy@float@currentHref
6207 }{\relax}%
6208 \global\let\Hy@float@currentHref\@undefined
6209 \fi
6210 }%
6211 }%
6212 }{}
6213 </package>

```

```

6214 <*check>
6215 \checklatex[1999/06/01 - 2000/06/01]
6216 \checkcommand\def\caption{%
6217   \ifx\@capttype\@undefined
6218     \@latex@error{\noexpand\caption outside float}\@ehd
6219     \expandafter\@gobble
6220   \else
6221     \refstepcounter\@capttype
6222     \expandafter\@firstofone
6223   \fi
6224   {\@dblarg{\@caption\@capttype}}}%
6225 }
6226 \checkcommand\long\def\@caption#1[#2]#3{%
6227   \par
6228   \addcontentsline{\csname ext@#1\endcsname}{#1}{%
6229     \protect\numberline{\csname the#1\endcsname}{\ignorespaces #2}%
6230   }%
6231   \begingroup
6232     \@parboxrestore
6233     \if@minipage
6234       \@setminipage
6235     \fi
6236     \normalsize
6237     \@makecaption{\csname fnum@#1\endcsname}{\ignorespaces #3}\par
6238   \endgroup
6239 }
6240 </check>
6241 <*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.

```

6242 \def\hyper@natlinkstart#1{%
6243   \Hy@backout{#1}%
6244   \hyper@linkstart{cite}{cite.#1}%
6245   \def\hyper@nat@current{#1}%
6246 }
6247 \def\hyper@natlinkend{%
6248   \hyper@linkend
6249 }
6250 \def\hyper@natlinkbreak#1#2{%
6251   \hyper@linkend#1\hyper@linkstart{cite}{cite.#2}%
6252 }
6253 \def\hyper@natanchorstart#1{%
6254   \Hy@raisedlink{\hyper@anchorstart{cite.#1}}%
6255 }
6256 \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.

```

6257 \ifundefined{NAT@parse}{%
6258   \providecommand*\@extra@binfo{}%
6259   \providecommand*\@extra@b@citeb{}%
6260   \def\bibcite#1#2{%
6261     \@newl@bel{b}{#1\@extra@binfo}{%
6262       \hyper@link[cite]{#1\@extra@b@citeb}{#2}%
6263     }%
6264   }%
6265   \gdef\@extra@binfo{}%

```

Package babel redefines \bibcite with macro \bbl@cite@choice. It needs to be over-written to avoid the warning “Label(s) may have changed.”.

```

6266 \let\Hy@bibcite\bibcite
6267 \begingroup
6268   \ifundefined{bbl@cite@choice}{%
6269     \g@addto@macro\bbl@cite@choice{%
6270       \let\bibcite\Hy@bibcite
6271     }%
6272   }%
6273 \endgroup

```

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

```

6274 \providecommand*\@BIBLABEL{\@biblabel}%
6275 \def\@bibitem[#1]#2{%
6276   \@skiphyperreftrue
6277   \H@item[%
6278     \ifx\Hy@raisedlink\@empty
6279       \hyper@anchorstart{cite.#2\@extra@b@citeb}%
6280       \@BIBLABEL{#1}%
6281       \hyper@anchorend
6282     \else
6283       \Hy@raisedlink{%
6284         \hyper@anchorstart{cite.#2\@extra@b@citeb}\hyper@anchorend
6285       }%
6286       \@BIBLABEL{#1}%
6287     \fi
6288     \hfill
6289   ]%
6290   \@skiphyperreffalse
6291   \if@filesw
6292     \begingroup
6293       \let\protect\noexpand
6294       \immediate\write\@auxout{%
6295         \string\bibcite{#2}{#1}%
6296       }%
6297     \endgroup
6298   \fi
6299   \ignorespaces
6300 }%

```

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

```

6301 \def\@bibitem#1{%
6302   \@skiphyperreftrue\H@item\@skiphyperreffalse
6303   \Hy@raisedlink{%

```

```

6304 \hyper@anchorstart{cite.#1\@extra@b@citeb}\relax\hyper@anchorend
6305 }%
6306 \if@filesw
6307 \begingroup
6308 \let\protect\noexpand
6309 \immediate\write\@auxout{%
6310 \string\bibcite{#1}{\the\value{\@listctr}}}%
6311 }%
6312 \endgroup
6313 \fi
6314 \ignorespaces
6315 }%
6316 }{}

6317 </package>
6318 <*check>
6319 \checklatex
6320 \checkcommand\def\@lbibitem[#1]#2{%
6321 \item[\@biblabel{#1}\hfill]%
6322 \if@filesw
6323 {%
6324 \let\protect\noexpand
6325 \immediate\write\@auxout{%
6326 \string\bibcite{#2}{#1}%
6327 }%
6328 }%
6329 \fi
6330 \ignorespaces
6331 }
6332 \checkcommand\def\@bibitem#1{%
6333 \item
6334 \if@filesw
6335 \immediate\write\@auxout{%
6336 \string\bibcite{#1}{\the\value{\@listctr}}}%
6337 }%
6338 \fi
6339 \ignorespaces
6340 }
6341 </check>
6342 <*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.

```

6343 \@ifclassloaded{revtex}{%
6344 \Hy@Info{*** compatibility with revtex **** }%
6345 \def\revtex@checking#1#2{%
6346 \expandafter\let\expandafter\T@temp\csname b@#1\endcsname
6347 \expandafter\def\csname b@#1\endcsname{#2}%
6348 \@SetMaxRnhefLabel{#1}%
6349 \expandafter\let\csname b@#1\endcsname\T@temp
6350 }%

```

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

```

6351 \@ifundefined{CITE}{\def\CITE{\cite}}{}%
6352 \providecommand*{\@extra@b@citeb}{}%
6353 \def\CITEX[#1]#2{%

```

```

6354 \let\@citea\@empty
6355 \leavevmode
6356 \unskip
6357 $\sim$
6358 \scriptstyle
6359 \@CITE{
6360   \@for\@citeb:=#2\do{
6361     \@citea
6362     \def\@citea{,\penalty\@m\ }
6363     \edef\@citeb{\expandafter\@firstofone\@citeb}%
6364     \if@filesw
6365       \immediate\write\@auxout{\string\citation{\@citeb}}%
6366     \fi
6367     \@ifundefined{b@\@citeb\extra@b@citeb}{
6368       \mbox{\reset@font\bfseries ?}%
6369       \G@refundefinedtrue
6370       \@latex@warning{
6371         Citation '\@citeb' on page \thepage \space undefined%
6372       }
6373     }{
6374       {\csname b@\@citeb\extra@b@citeb\endcsname}%
6375     }
6376   }
6377 }{#1}%
6378 }$%
6379 }%

```

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

```

6380 \def\@citex[#1]#2{
6381   \let\@citea\@empty
6382   \@cite{
6383     \@for\@citeb:=#2\do{
6384       \@citea
6385       \def\@citea{,\penalty\@m\ }
6386       \edef\@citeb{\expandafter\@firstofone\@citeb}%
6387       \if@filesw
6388         \immediate\write\@auxout{\string\citation{\@citeb}}%
6389       \fi
6390       \@ifundefined{b@\@citeb\extra@b@citeb}{
6391         \mbox{\reset@font\bfseries ?}%
6392         \G@refundefinedtrue
6393         \@latex@warning{
6394           Citation '\@citeb' on page \thepage \space undefined%
6395         }
6396       }{
6397         \hbox{\csname b@\@citeb\extra@b@citeb\endcsname}%
6398       }
6399     }
6400   }{#1}%
6401 }%
6402 }{}

```

### 37.1 Package harvard

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

section for each bibliography entry.

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

```

6403 \ifpackageloaded{harvard}{%
6404   \AtBeginDocument{%
6405     \Hy@Info{*** compatibility with harvard **** }%
6406     \Hy@raiselinksfalse
6407     \def\harvardcite#1#2#3#4{%
6408       \global\@namedef{HAR@fn@#1}{\hyper@link[cite]{cite.#1}{#2}}%
6409       \global\@namedef{HAR@an@#1}{\hyper@link[cite]{cite.#1}{#3}}%
6410       \global\@namedef{HAR@yr@#1}{\hyper@link[cite]{cite.#1}{#4}}%
6411       \global\@namedef{HAR@df@#1}{\csname HAR@fn@#1\endcsname}%
6412     }%
6413     \def\HAR@citetoaux#1{%
6414       \if@filesw\immediate\write\@auxout{\string\citation{#1}}\fi%
6415       \ifHy@backref
6416         \ifx\@empty\@currentlabel
6417           \else
6418             \@bsphack
6419             \if@filesw
6420               \protected@write\@auxout{}{%
6421                 \string\@writefile{brf}{%
6422                   \string\backcite{#1}{%
6423                     {\thepage}{\@currentlabel}{\@currentHref}%
6424                   }%
6425                 }%
6426               }%
6427             \fi
6428             \@esphack
6429           \fi
6430         \fi
6431       }%
6432       \def\harvarditem{%
6433         \ifnextchar[{\@harvarditem}{\@harvarditem[\null]}%
6434       }%
6435       \def\@harvarditem[#1]#2#3#4#5\par{%
6436         \item[]%
6437         \hyper@anchorstart{cite.#4}\relax\hyper@anchorend
6438         \if@filesw
6439           \begingroup
6440             \def\protect##1{\string ##1\space}%
6441             \ifthenelse{\equal{#1}{\null}}{%
6442               {\def\next{{#4}{#2}{#3}}}%
6443               {\def\next{{#4}{#2}{#1}{#3}}}%
6444             \immediate\write\@auxout{\string\harvardcite\codeof\next}%
6445           \endgroup
6446           \fi
6447           \protect\hspace*{-\labelwidth}%
6448           \protect\hspace*{-\labelsep}%
6449           \ignorespaces
6450           #5%
6451           \ifHy@backref
6452             \newblock
6453             \backref{\csname br@#4\endcsname}%
6454           \fi
6455         \par

```

```
6456 }%
```

`\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`:

```
6457 \long\def\HAR@checkcitations#1#2#3#4{%
6458   \def\HAR@tempa{\hyper@@link[cite]{\cite.#1}{#2}}%
6459   \expandafter\ifx\csname HAR@fn@#1\endcsname\HAR@tempa
6460   \def\HAR@tempa{\hyper@@link[cite]{\cite.#1}{#3}}%
6461   \expandafter\ifx\csname HAR@an@#1\endcsname\HAR@tempa
6462   \def\HAR@tempa{\hyper@@link[cite]{\cite.#1}{#4}}%
6463   \expandafter\ifx\csname HAR@yr@#1\endcsname\HAR@tempa
6464   \else
6465     \@tempswatrue
6466   \fi
6467   \else
6468     \@tempswatrue
6469   \fi
6470   \else
6471     \@tempswatrue
6472   \fi
6473 }%
6474 }%

6475 }{}
```

## 37.2 Package chicago

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

```
6476 \@ifpackageloaded{chicago}{%
```

`\citeN`

```
6477 \def\citeN{%
6478   \def\@citesep{-1000}%
6479   \def\@cite##1##2{##1}%
6480   \def\citeauthoryear##1##2##3{##1 (##3\@cite@opt)}%
6481   \@citedata@opt
6482 }%
```

`\shortciteN`

```
6483 \def\shortciteN{%
6484   \def\@citesep{-1000}%
6485   \def\@cite##1##2{##1}%
6486   \def\citeauthoryear##1##2##3{##2 (##3\@cite@opt)}%
6487   \@citedata@opt
6488 }%
```

`\@citedata@opt`

```
6489 \def\@citedata@opt{%
6490   \let\@cite@opt\@empty
6491   \ifnextchar [{%
6492     \@tempswatrue
6493     \@citedatax@opt
6494   }{%
6495     \@tempswafalse
6496     \@citedatax[]%
```

```

6497 }%
6498 }%

```

\@citedatax@opt

```

6499 \def\@citedatax@opt[#1]{%
6500   \def\@cite@opt{, #1}%
6501   \@citedatax[{#1}]%
6502 }%

6503 }{}

```

## 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.

```

6504 \def\Hy@EveryPageAnchor{%
6505   \Hy@DistillerDestFix
6506   \ifHy@pageanchor
6507     \ifHy@hypertextnames
6508       \ifHy@plainpages
6509         \def\Hy@TempPageAnchor{\hyper@@anchor{page.\the\c@page}}%
6510       \else
6511         \begingroup
6512           \let\@number\@firstofone
6513           \Hy@unicodedefalse
6514           \pdfstringdef\@the@H@page{\thepage}%
6515         \endgroup
6516         \def\Hy@TempPageAnchor{\hyper@@anchor{page.\@the@H@page}}%
6517       \fi
6518     \else
6519       \Hy@GlobalStepCount\Hy@pagecounter
6520       \def\Hy@TempPageAnchor{%
6521         \hyper@@anchor{page.\the\Hy@pagecounter}%
6522       }%
6523     \fi
6524   \vbox to 0pt{%
6525     \kern\voffset
6526     \kern\topmargin
6527     \kern-1bp\relax
6528     \hbox to 0pt{%
6529       \kern\hoffset
6530       \kern\ifodd\value{page}%
6531         \oddsidemargin
6532       \else
6533         \evensidemargin
6534       \fi
6535       \kern-1bp\relax
6536       \Hy@TempPageAnchor
6537     \hss
6538   }%
6539   \vss
6540 }%

```

```

6541 \fi
6542 }
6543 \g@addto@macro\Hy@EveryPageBoxHook{%
6544 \Hy@EveryPageAnchor
6545 }

```

## 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.

```

6546 \def\addcontentsline#1#2#3{% toc extension, type, tag
6547 \begingroup
6548 \let\label\@gobble
6549 \ifx\@currentHref\@empty
6550 \Hy@Warning{%
6551 No destination for bookmark of \string\addcontentsline,%
6552 \MessageBreak destination is added%
6553 }%
6554 \phantomsection
6555 \fi
6556 \expandafter\ifx\csname toplevel@#2\endcsname\relax
6557 \begingroup
6558 \def\Hy@tempa{#1}%
6559 \ifx\Hy@tempa\Hy@bookmarkstype
6560 \Hy@WarningNoLine{%
6561 bookmark level for unknown #2 defaults to 0%
6562 }%
6563 \else
6564 \Hy@Info{bookmark level for unknown #2 defaults to 0}%
6565 \fi
6566 \endgroup
6567 \expandafter\gdef\csname toplevel@#2\endcsname{0}%
6568 \fi
6569 \edef\Hy@toclevel{\csname toplevel@#2\endcsname}%
6570 \Hy@writebookmark{\csname the#2\endcsname}%
6571 {#3}%
6572 {\@currentHref}%
6573 {\Hy@toclevel}%
6574 {#1}%
6575 \ifHy@verbose
6576 \def\Hy@tempa{#3}%
6577 \@onelevel@sanitize\Hy@tempa
6578 \typeout{pdfTeX: bookmark at \the\inputlineno: %
6579 {\csname the#2\endcsname}%
6580 {\Hy@tempa}%
6581 {\@currentHref}%
6582 {\Hy@toclevel}%
6583 {#1}%
6584 }%
6585 \fi
6586 \addtocontents{#1}{%
6587 \protect\contentsline{#2}{#3}{\thepage}{\@currentHref}%
6588 }%
6589 \endgroup
6590 }

```

```

6591 \def\contentsline#1#2#3#4{%
6592   \ifx\#4\%
6593     \csname l@#1\endcsname{#2}{#3}%
6594   \else
6595     \ifcase\Hy@linktoc % none
6596       \csname l@#1\endcsname{#2}{#3}%
6597     \or % section
6598       \csname l@#1\endcsname{%
6599         \hyper@linkstart{link}{#4}{#2}\hyper@linkend
6600       }{#3}%
6601     \or % page
6602       \csname l@#1\endcsname{#{#2}}{%
6603         \hyper@linkstart{link}{#4}{#3}\hyper@linkend
6604       }%
6605     \else % all
6606       \csname l@#1\endcsname{%
6607         \hyper@linkstart{link}{#4}{#2}\hyper@linkend
6608       }{%
6609         \hyper@linkstart{link}{#4}{#3}\hyper@linkend
6610       }%
6611     \fi
6612   \fi
6613 }

6614 \end{package}
6615 \check
6616 \checklatex
6617 \checkcommand\def\addcontentsline#1#2#3{%
6618   \addtocontents{#1}{\protect\contentsline{#2}{#3}{\thepage}}%
6619 }
6620 \checkcommand\def\contentsline#1{\csname l@#1\endcsname}
6621 \end{check}
6622 \end{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.

```

6623 \let\H@definecounter\@definecounter
6624 \def\@definecounter#1{%
6625   \H@definecounter{#1}%
6626   \expandafter\def\csname theH#1\endcsname{\arabic{#1}}%
6627 }

```

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.

```

6628 \let\H@newctr\@newctr
6629 \def\@newctr#1[#2]{%
6630   \H@newctr#1[#2]%
6631   \expandafter\def\csname theH#1\endcsname{%
6632     \csname the\@ifundefined{theH#2}{H}{H}#2\endcsname.\arabic{#1}%
6633   }%
6634 }

```

## 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.

```

6635 \ifpackageloaded{amsmath}{%
6636   \def\Hy@make@anchor{%
6637     \Hy@GlobalStepCount\Hy@linkcounter
6638     \xdef\@currentHref{AMS.\the\Hy@linkcounter}%
6639     \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
6640   }%
6641   \def\Hy@make@df@tag@@#1{%
6642     \gdef\df@tag{%
6643       \maketag@@@{\Hy@make@anchor#1}%
6644       \def\@currentlabel{#1}%
6645     }%
6646   }%
6647   \def\Hy@make@df@tag@@@#1{%
6648     \gdef\df@tag{%
6649       \tagform@{\Hy@make@anchor#1}%
6650       \toks@{\xp{p@equation{#1}}}%
6651       \edef\@currentlabel{\the\toks@}%
6652     }%
6653   }%
6654   \let\HyOrg@make@df@tag@@\make@df@tag@@
6655   \let\HyOrg@make@df@tag@@@\make@df@tag@@@
6656   \let\make@df@tag@@\Hy@make@df@tag@@
6657   \let\make@df@tag@@@\Hy@make@df@tag@@@
6658 }{}

```

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

```

6659 \ifpackagewith{hyperref}{pdf $\text{\TeX}$ }{%
6660   \let\H@seteqlabel\@seteqlabel
6661   \def\@seteqlabel#1{%
6662     \H@seteqlabel{#1}%
6663     \xdef\@currentHref{AMS.\the\Hy@linkcounter}%
6664     \Hy@raisedlink{%
6665       \hyper@anchorstart{\@currentHref}\hyper@anchorend
6666     }%
6667   }%
6668 }{}

```

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.

```

6669 \let\HyOrg@addtoreset\@addtoreset
6670 \def\@addtoreset#1#2{%
6671   \HyOrg@addtoreset{#1}{#2}%
6672   \expandafter\xdef\csname theH#1\endcsname{%
6673     \expandafter\noexpand
6674     \csname the\@ifundefined{theH#2}{H#2}\endcsname
6675     .\noexpand\the\noexpand\value{#1}%
6676   }%
6677 }
```

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

```

6678 \</package>
6679 \< *check>
6680 \checkpackage{amsmath}[1999/12/14 - 2000/06/06]
6681 \checkcommand\newcommand{\numberwithin}[3][\arabic]{%
6682   \@ifundefined{c@#2}{\@nocounterr{#2}}{%
6683     \@ifundefined{c@#3}{\@nocnterr{#3}}{%
6684       \@addtoreset{#2}{#3}%
6685       \@xp\xdef\csname the#2\endcsname{%
6686         \@xp\@nx\csname the#3\endcsname .\@nx#1{#2}%
6687       }%
6688     }%
6689   }%
6690 }%
6691 \< /check>
6692 \< *package>
6693 \@ifpackageloaded{amsmath}{%
6694   \@ifpackagelater{amsmath}{1999/12/14}{%
6695     \renewcommand*{\numberwithin}[3][\arabic]{%
6696       \@ifundefined{c@#2}{\@nocounterr{#2}}{%
6697         \@ifundefined{c@#3}{\@nocnterr{#3}}{%
6698           \HyOrg@addtoreset{#2}{#3}%
6699           \@xp\xdef\csname the#2\endcsname{%
6700             \@xp\@nx\csname the#3\endcsname .\@nx#1{#2}%
6701           }%
6702           \@xp\xdef\csname theH#2\endcsname{%
6703             \@xp\@nx
6704             \csname the\@ifundefined{theH#3}{H#3}\endcsname
6705             .\@nx#1{#2}%
6706           }%
6707         }%
6708       }%
6709     }%
6710   }{%
6711     \Hy@WarningNoLine{%
6712       \string\numberwithin\space of package 'amsmath' %
6713       only fixed\MessageBreak
6714       for version 2000/06/06 v2.12 or newer%
6715     }%
6716   }%
6717 }
```

## 42 Included figures

Simply intercept the low level graphics package macro.

```
6718 \ifHy@figures
6719 \let\Hy@Gin@setfile\Gin@setfile
6720 \def\Gin@setfile#1#2#3{%
6721   \hyperimage{#3}{\Hy@Gin@setfile{#1}{#2}{#3}}%
6722 }%
6723 \fi
6724 \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.

```
6725 \ifHy@hyperindex
6726 \def\HyInd@ParenLeft{ }%
6727 \def\HyInd@ParenRight{ }%
6728 \def\hyperindexformat#1#2{%
6729   \let\HyOrg@hyperpage\hyperpage
6730   \let\hyperpage\@firstofone
6731   #1{\HyOrg@hyperpage{#2}}%
6732   \let\hyperpage\HyOrg@hyperpage
6733 }%
6734 \Hy@nextfalse
6735 \@ifpackageloaded{multind}{\Hy@nexttrue}{ }%
6736 \@ifpackageloaded{index}{\Hy@nexttrue}{ }%
6737 \@ifpackageloaded{amsmidx}{\Hy@nexttrue}{ }%
6738 \begingroup
6739 \lccode'\|=\expandafter'\HyInd@EncapChar\relax
6740 \lccode'\|/'\|'\relax
6741 \lowercase{\endgroup
6742 \ifHy@next
6743   \let\HyInd@org@wrindex\@wrindex
6744   \def\@wrindex#1#2{\HyInd@\@wrindex{#1}{#2}||\}%
6745   \def\HyInd@\@wrindex#1#2|#3|#4\{\%
6746     \ifx\|#3\%
6747       \HyInd@org@wrindex{#1}{#2|hyperpage}%
6748     \else
6749       \HyInd@@@@wrindex{#1}{#2}{#3}\%
6750     \fi
6751   }%
6752   \def\HyInd@@@@wrindex#1#2#3#4\{\%
6753   \def\Hy@temp@A{#3}%
6754   \ifcase0\ifx\Hy@temp@A\HyInd@ParenLeft 1\fi
6755     \ifx\Hy@temp@A\HyInd@ParenRight 1\fi
6756     \relax
6757   \HyInd@org@wrindex{#1}{%

```

```

6758         #2|hyperindexformat{/#3#4}%
6759     }%
6760 \else
6761     \ifx\\#4\\%
6762         \ifx\Hy@temp@A\HyInd@ParenRight
6763             \HyInd@org@wrindex{#1}{#2|#3}%
6764         \else
6765             \HyInd@org@wrindex{#1}{#2|#3hyperpage}%
6766         \fi
6767     \else
6768         \HyInd@org@wrindex{#1}{%
6769             #2|#3hyperindexformat{/#4}%
6770         }%
6771     \fi
6772 \fi
6773 }%
6774 \else
6775 \def\@wrindex#1{\@@wrindex#1||\}%
6776 \def\@@wrindex#1|#2|#3\{\%
6777 \if@filesw
6778     \ifx\\#2\\%
6779         \protected@write\@indexfile{}\{%
6780             \string\indexentry{#1|hyperpage}\{thepage}%
6781         }%
6782     \else
6783         \HyInd@@@wrindex{#1}#2\%
6784     \fi
6785 \fi
6786 \endgroup
6787 \@esphack
6788 }%
6789 \def\HyInd@@@wrindex#1#2#3\{\%
6790 \def\Hy@temp@A{#2}%
6791 \ifcase0\ifx\Hy@temp@A\HyInd@ParenLeft 1\fi
6792     \ifx\Hy@temp@A\HyInd@ParenRight 1\fi
6793     \relax
6794 \protected@write\@indexfile{}\{%
6795     \string\indexentry{%
6796         #1|hyperindexformat{/#2#3}%
6797     }\{thepage}%
6798 }%
6799 \else
6800     \ifx\\#3\\%
6801         \ifx\Hy@temp@A\HyInd@ParenRight
6802             \protected@write\@indexfile{}\{%
6803                 \string\indexentry{#1|#2}\{thepage}%
6804             }%
6805         \else
6806             \protected@write\@indexfile{}\{%
6807                 \string\indexentry{#1|#2hyperpage}\{thepage}%
6808             }%
6809         \fi
6810     \else
6811         \protected@write\@indexfile{}\{%
6812             \string\indexentry{%
6813                 #1|#2hyperindexformat{/#3}%
6814             }\{thepage}%

```

```

6815     }%
6816     \fi
6817     \fi
6818     }%
6819     \fi
6820     }%
6821 \fi
6822 \Hy@DisableOption{hyperindex}
6823 \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.

```

6824 \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.

```

6825 \def\hyperpage#1{%
6826   \HyInd@hyperpage#1\nohyperpage{}\@nil
6827 }
6828 \def\HyInd@hyperpage#1\nohyperpage#2#3\@nil{%
6829   \HyInd@@hyperpage{#1}%
6830   #2%
6831   \def\Hy@temp{#3}%
6832   \ifx\Hy@temp\@empty
6833     \else
6834       \Hy@ReturnAfterFi{%
6835         \HyInd@hyperpage#3\@nil
6836       }%
6837     \fi
6838 }
6839 \def\HyInd@@hyperpage#1{\@hyperpage#1----\}
6840 \def\@hyperpage#1--#2--#3\{\{%
6841   \ifx\#2\}%
6842     \@commahyperpage{#1}%
6843   \else
6844     \HyInd@pagelink{#1}--\HyInd@pagelink{#2}%
6845   \fi
6846 }
6847 \def\@commahyperpage#1{\@commahyperpage#1, ,\}
6848 \def\@commahyperpage#1, #2,#3\{\{%
6849   \ifx\#2\}%
6850     \HyInd@pagelink{#1}%
6851   \else
6852     \HyInd@pagelink{#1}, \HyInd@pagelink{#2}%
6853   \fi
6854 }

```

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

```

6855 \def\HyInd@pagelink#1{%
6856   \begingroup
6857   \toks@={}%
6858   \HyInd@removespaces#1 \@nil
6859 \endgroup
6860 }
6861 \def\HyInd@removespaces#1 #2\@nil{%
6862   \toks@=\expandafter{\the\toks@#1}%

```

```

6863 \ifx\#2\%
6864 \edef\x{\the\toks@}%
6865 \ifx\x\@empty
6866 \else
6867 \hyperlink{page.\the\toks@}{\the\toks@}%
6868 \fi
6869 \else
6870 \Hy@ReturnAfterFi{%
6871 \HyInd@removespaces#2\@nil
6872 }%
6873 \fi
6874 }

```

## 44 Compatibility with foiltex

```

6875 \@ifclassloaded{foils}{%
6876 \providecommand*\ext@table{lot}%
6877 \providecommand*\ext@figure{lof}%
6878 }{}

```

## 45 Compatibility with seminar slide package

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

```

6879 \@ifclassloaded{seminar}{%
6880 \Hy@seminarslidestrue\newcommand\theHslide{\arabic{slide}}}%
6881 }{%
6882 \Hy@seminarslidesfalse
6883 }
6884 \@ifpackageloaded{slidesec}{%
6885 \newcommand\theHslidesection {\arabic{slidesection}}}%
6886 \newcommand\theHslidesubsection{%
6887 \theHslidesection.\arabic{slidesubsection}}%
6888 }%
6889 \def\slide@heading[#1]#2{%
6890 \H@refstepcounter{slidesection}%
6891 \@addtoreset{slidesubsection}{slidesection}%
6892 \addtocontents{los}{%
6893 \protect\l@slide{\the\c@slidesection}{\ignorespaces#1}%
6894 {\@SCTR}{slideheading.\theslidesection}%
6895 }%
6896 \def\Hy@tempa{#2}%
6897 \ifx\Hy@tempa\@empty
6898 \else
6899 {%
6900 \edef\@currentlabel{%
6901 \csname p@slidesection\endcsname\theslidesection
6902 }%
6903 \makeslideheading{#2}%
6904 }%
6905 \fi
6906 \gdef\theslideheading{#1}%
6907 \gdef\theslidesubheading{}%
6908 \ifHy@bookmarksnumbered
6909 \def\Hy@slidetitle{\theslidesection\space #1}%
6910 \else

```

```

6911 \def\Hy@slidetitle{#1}%
6912 \fi
6913 \ifHy@hypertextnames
6914 \ifHy@naturalnames
6915 \hyper@@anchor{slideheading.\theslidesection}{\relax}%
6916 \Hy@writebookmark
6917 {\theslidesection}%
6918 {\Hy@slidetitle}%
6919 {slideheading.\theslidesection}%
6920 {1}%
6921 {toc}%
6922 \else
6923 \hyper@@anchor{slideheading.\theHslidesection}{\relax}%
6924 \Hy@writebookmark
6925 {\theslidesection}%
6926 {\Hy@slidetitle}%
6927 {slideheading.\theHslidesection}%
6928 {1}%
6929 {toc}%
6930 \fi
6931 \else
6932 \Hy@GlobalStepCount\Hy@linkcounter
6933 \hyper@@anchor{slideheading.\the\Hy@linkcounter}{\relax}%
6934 \Hy@writebookmark
6935 {\theslidesection}%
6936 {\Hy@slidetitle}%
6937 {slideheading.\the\Hy@linkcounter}%
6938 {1}%
6939 {toc}%
6940 \fi
6941 }%
6942 \def\slide@subheading{#1}#2{%
6943 \H@refstepcounter{slidesubsection}%
6944 \addtocontents{los}{%
6945 \protect\l@subslide{\the\c@slidesubsection}{\ignorespaces#1}%
6946 {\@SCTR}{slideheading.\theslidesubsection}%
6947 }%
6948 \def\Hy@tempa{#2}%
6949 \ifx\Hy@tempa\@empty
6950 \else
6951 {%
6952 \edef\@currentlabel{%
6953 \csname p@slidesubsection\endcsname\theslidesubsection
6954 }%
6955 \makeslidesubheading{#2}%
6956 }%
6957 \fi
6958 \gdef\theslidesubheading{#1}%
6959 \ifHy@bookmarksnumbered
6960 \def\Hy@slidetitle{\theslidesubsection\space #1}%
6961 \else
6962 \def\Hy@slidetitle{#1}%
6963 \fi
6964 \ifHy@hypertextnames
6965 \ifHy@naturalnames
6966 \hyper@@anchor{slideheading.\theslidesubsection}{\relax}%
6967 \Hy@writebookmark

```

```

6968     {\theslidesubsection}%
6969     {\Hy@slidetitle}%
6970     {slideheading.\theslidesubsection}%
6971     {2}%
6972     {toc}%
6973   \else
6974     \hyper@@anchor{slideheading.\theHslidesubsection}{\relax}%
6975     \Hy@writebookmark
6976       {\theslidesubsection}%
6977       {\Hy@slidetitle}%
6978       {slideheading.\theHslidesubsection}%
6979       {2}%
6980       {toc}%
6981   \fi
6982 \else
6983   \Hy@GlobalStepCount\Hy@linkcounter
6984   \hyper@@anchor{slideheading.\the\Hy@linkcounter}{\relax}%
6985   \Hy@writebookmark
6986     {\theslidesubsection}%
6987     {\Hy@slidetitle}%
6988     {slideheading.\the\Hy@linkcounter}%
6989     {1}%
6990     {toc}%
6991 \fi
6992 }%
6993 \providecommand*{\listslidenam}{List of Slides}%
6994 \def\listofslides{%
6995   \section*{%
6996     \listslidenam
6997     \@mkboth{%
6998       \expandafter\MakeUppercase\listslidenam
6999     }{%
7000       \expandafter\MakeUppercase\listslidenam
7001     }%
7002   }%
7003   \def\l@slide##1##2##3##4{%
7004     \slide@undottedcline{%
7005       \slidenumberline{##3}{\hyperlink{##4}{##2}}%
7006     }{%
7007     }%
7008     \let\l@subslide\l@slide
7009     \@startlos
7010   }%
7011   \def\slide@contents{%
7012     \def\l@slide##1##2##3##4{%
7013       \slide@ccline{\slidenumberline{##3}{\hyperlink{##4}{##2}}}{##3}%
7014     }%
7015     \let\l@subslide\@gobblefour
7016     \@startlos
7017   }%
7018   \def\Slide@contents{%
7019     \def\l@slide##1##2##3##4{%
7020       \ifcase\lslide@flag
7021         \message{##1 ** \the\c@slidesection}%
7022         \ifnum##1>\c@slidesection
7023           \def\lslide@flag{1}%
7024         {%

```

```

7025     \large
7026     \slide@cline{%
7027         \slidenumberline{$\rightarrow\bullet$}%
7028         {\hyperlink{##4}{##2}}%
7029     }{##3}%
7030 }%
7031 \else
7032 {%
7033     \large
7034     \slide@cline{%
7035         \slidenumberline{$\surd\;\bullet$}%
7036         {\hyperlink{##4}{##2}}%
7037     }{##3}%
7038 }%
7039 \fi
7040 \or
7041 \def\lslide@flag{2}%
7042 {%
7043     \large
7044     \slide@cline{%
7045         \slidenumberline{$\bullet$}%
7046         {\hyperlink{##4}{##2}}%
7047     }{##3}%
7048 }%
7049 \or
7050 {%
7051     \large
7052     \slide@cline{%
7053         \slidenumberline{$\bullet$}%
7054         {\hyperlink{##4}{##2}}%
7055     }{##3}%
7056 }%
7057 \fi
7058 }%
7059 \def\l@subslide##1##2##3##4{%
7060     \ifnum\lslide@flag=1 %
7061         \@undottedtocline{2}{3.8em}{3.2em}{\hyperlink{##4}{##2}}{}%
7062     \fi
7063 }%
7064 \def\lslide@flag{0}%
7065 \@startlos
7066 }%
7067 }{}

```

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.)

```

7068 \ifHy@texht
7069   \expandafter\endinput
7070 \fi
7071 \let\real@setref\@setref
7072 \def\@setref#1#2#3{% csname, extract group, refname
7073   \ifx#1\relax
7074     \protect\G@refundefinedtrue
7075     \nfss@text{\reset@font\bfseries ??}%
7076     \@latex@warning{%
7077       Reference ‘#3’ on page \thepage \space undefined%
7078     }%

```

```

7079 \else
7080 \expandafter\Hy@setref@link#1\@empty\@empty\@nil{#2}%
7081 \fi
7082 }

```

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

```

7083 \def\Hy@setref@link#1#2#3#4#5#6\@nil#7{%
7084 \begingroup
7085 \toks0={\hyper@@link{#5}{#4}}%
7086 \toks1=\expandafter{#7{#1}{#2}{#3}{#4}{#5}}%
7087 \edef\x{\endgroup
7088 \the\toks0 {\the\toks1 }%
7089 }%
7090 \x
7091 }
7092 \def\@pagesetref#1#2#3{% csname, extract macro, ref
7093 \ifx#1\relax
7094 \protect\G@refundefinedtrue
7095 \nfss@text{\reset@font\bfseries ??}%
7096 \@latex@warning{%
7097 Reference '#3' on page \thepage \space undefined%
7098 }%
7099 \else
7100 \protect\hyper@@link
7101 {\expandafter\@fifthoffive#1}%
7102 {page.\expandafter\@secondoffive#1}%
7103 {\expandafter\@secondoffive#1}%
7104 \fi
7105 }
7106 \endpackage
7107 \ifx\check
7108 \checklatex
7109 \checkcommand\def\@setref#1#2#3{%
7110 \ifx#1\relax
7111 \protect\G@refundefinedtrue
7112 \nfss@text{\reset@font\bfseries ??}%
7113 \@latex@warning{%
7114 Reference '#3' on page \thepage\space undefined%
7115 }%
7116 \else
7117 \expandafter#2#1\null
7118 \fi
7119 }
7120 \endcheck
7121 \endpackage

```

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

```

7122 \def\HyRef@StarSetRef#1{%
7123 \begingroup
7124 \Hy@safe@activetrue
7125 \edef\x{#1}%
7126 \@onelevel@sanitize\x
7127 \edef\x{\endgroup
7128 \noexpand\HyRef@@StarSetRef
7129 \expandafter\noexpand\csname r@\x\endcsname{\x}%
7130 }%

```

```

7131 \x
7132 }
7133 \def\HyRef@@StarSetRef#1#2#3{%
7134 \ifx#1\@undefined
7135 \let#1\relax
7136 \fi
7137 \real@setref#1#3{#2}%
7138 }
7139 \def\@refstar#1{%
7140 \HyRef@StarSetRef{#1}\@firstoffive
7141 }
7142 \def\@pagerefstar#1{%
7143 \HyRef@StarSetRef{#1}\@secondoffive
7144 }
7145 \AtBeginDocument{%
7146 \ifpackageloaded{varioref}{%
7147 \def\@Refstar#1{%
7148 \HyRef@StarSetRef{#1}\HyRef@MakeUppercaseFirstOfFive
7149 }%
7150 \def\HyRef@MakeUppercaseFirstOfFive#1#2#3#4#5{%
7151 \MakeUppercase#1%
7152 }%
7153 \DeclareRobustCommand*\@Ref{#1}{%
7154 \@ifstar\@Refstar\HyRef@Ref
7155 }%
7156 \def\HyRef@Ref#1{%
7157 \hyperref[{#1}]{\@Ref*{#1}}%
7158 }%
7159 \def\Vr@f#1{%
7160 \leavevmode\unskip\vref@space
7161 \hyperref[{#1}]{%
7162 \Ref*{#1}%
7163 \let\vref@space\nobreakspace
7164 \@vpageref{\unskip}{#1}%
7165 }%
7166 }%
7167 \def\vr@f#1{%
7168 \leavevmode\unskip\vref@space
7169 \begingroup
7170 \let\T@pageref\@pagerefstar
7171 \hyperref[{#1}]{%
7172 \ref*{#1}%
7173 \vpageref{\unskip}{#1}%
7174 }%
7175 \endgroup
7176 }%
7177 }{}%
7178 }
7179 \DeclareRobustCommand*\@autopageref{%
7180 \@ifstar{%
7181 \HyRef@autopagerefname\pageref*%
7182 }\HyRef@autopageref
7183 }
7184 \def\HyRef@autopageref#1{%
7185 \hyperref[{#1}]{\HyRef@autopagerefname\pageref*{#1}}%
7186 }
7187 \def\HyRef@autopagerefname{%

```

```

7188 \@ifundefined{pageautorefname}{%
7189 \@ifundefined{pagename}{%
7190 \Hy@Warning{No autoref name for 'page'}%
7191 }{%
7192 \pagename\nobreakspace
7193 }%
7194 }{%
7195 \pageautorefname\nobreakspace
7196 }%
7197 }
7198 \DeclareRobustCommand*{\autoref}{%
7199 \@ifstar{\HyRef@autoref@gobbletwo}{\HyRef@autoref\hyper@@link}%
7200 }
7201 \def\HyRef@autoref#1#2{%
7202 \begingroup
7203 \Hy@safe@activetrue
7204 \expandafter\HyRef@autosetref\csname r@#2\endcsname{#2}{#1}%
7205 \endgroup
7206 }
7207 \def\HyRef@autosetref#1#2#3{% link command, csname, refname
7208 \HyRef@ShowKeysRef{#2}%
7209 \ifcase 0\ifx#1\relax 1\fi\ifx#1\Hy@varioref@undefined 1\fi\relax
7210 \edef\HyRef@thisref{%
7211 \expandafter\@fourthoffive#1\@empty\@empty\@empty
7212 }%
7213 \expandafter\HyRef@testreftype\HyRef@thisref.\.%
7214 \Hy@safe@activesfalse
7215 #3{%
7216 \expandafter\@fifthoffive#1\@empty\@empty\@empty
7217 }{%
7218 \expandafter\@fourthoffive#1\@empty\@empty\@empty
7219 }{%
7220 \HyRef@currentHtag
7221 \expandafter\@firstoffive#1\@empty\@empty\@empty
7222 \null
7223 }%
7224 \else
7225 \protect\G@refundefinedtrue
7226 \nfss@text{\reset@font\bfseries ??}%
7227 \@latex@warning{%
7228 Reference '#2' on page \thepage\space undefined%
7229 }%
7230 \fi
7231 }
7232 \def\HyRef@testreftype#1.#2\.{%
7233 \@ifundefined{#1autorefname}{%
7234 \@ifundefined{#1name}{%
7235 \HyRef@StripStar#1\*\@nil{#1}%
7236 \@ifundefined{\HyRef@name autorefname}{%
7237 \@ifundefined{\HyRef@name name}{%
7238 \def\HyRef@currentHtag{}%
7239 \Hy@Warning{No autoref name for '#1'}%
7240 }{%
7241 \edef\HyRef@currentHtag{%
7242 \expandafter\noexpand\csname\HyRef@name name\endcsname
7243 \noexpand~%
7244 }%

```

```

7245     }%
7246   }{%
7247     \edef\HyRef@currentHtag{%
7248       \expandafter\noexpand
7249       \csname\HyRef@name autorefname\endcsname
7250       \noexpand~%
7251     }%
7252   }%
7253 }{%
7254   \edef\HyRef@currentHtag{%
7255     \expandafter\noexpand\csname#1name\endcsname
7256     \noexpand~%
7257   }%
7258 }%
7259 }{%
7260   \edef\HyRef@currentHtag{%
7261     \expandafter\noexpand\csname#1autorefname\endcsname
7262     \noexpand~%
7263   }%
7264 }%
7265 }
7266 \def\HyRef@StripStar#1*\#2\@nil#3{%
7267   \def\HyRef@name{#2}%
7268   \ifx\HyRef@name\HyRef@CaseStar
7269     \def\HyRef@name{#1}%
7270   \else
7271     \def\HyRef@name{#3}%
7272   \fi
7273 }
7274 \def\HyRef@CaseStar{*\\}
7275 \def\HyRef@currentHtag{

```

Support for package showkeys.

\HyRef@ShowKeysRef

```

7276 \let\HyRef@ShowKeysRef\@gobble
7277 \def\HyRef@ShowKeysInit{%
7278   \begingroup\expandafter\expandafter\expandafter\endgroup
7279   \expandafter\ifx\csname SK@@label\endcsname\relax
7280   \else
7281     \ifx\SK@ref\@empty
7282     \else
7283       \def\HyRef@ShowKeysRef{%
7284         \SK@\SK@@ref
7285       }%
7286     \fi
7287   \fi
7288 }
7289 \@ifpackageloaded{showkeys}{%
7290   \HyRef@ShowKeysInit
7291 }{%
7292   \AtBeginDocument{%
7293     \@ifpackageloaded{showkeys}{%
7294       \HyRef@ShowKeysInit
7295     }{}%
7296   }%
7297 }

```

Defaults for the names that `\autoref` uses.

```

7298 \providecommand* \AMSautorefname{ \equationautorefname}
7299 \providecommand* \Hfootnoteautorefname{ \footnoteautorefname}
7300 \providecommand* \Itemautorefname{ \itemautorefname}
7301 \providecommand* \itemautorefname{ item}
7302 \providecommand* \equationautorefname{ Equation}
7303 \providecommand* \footnoteautorefname{ footnote}
7304 \providecommand* \itemautorefname{ item}
7305 \providecommand* \figureautorefname{ Figure}
7306 \providecommand* \tableautorefname{ Table}
7307 \providecommand* \partautorefname{ Part}
7308 \providecommand* \appendixautorefname{ Appendix}
7309 \providecommand* \chapterautorefname{ chapter}
7310 \providecommand* \sectionautorefname{ section}
7311 \providecommand* \subsectionautorefname{ subsection}
7312 \providecommand* \subsubsectionautorefname{ subsubsection}
7313 \providecommand* \paragraphautorefname{ paragraph}
7314 \providecommand* \subparagraphautorefname{ subparagraph}
7315 \providecommand* \FancyVerbLineautorefname{ line}
7316 \providecommand* \theoremautorefname{ Theorem}
7317 \providecommand* \pageautorefname{ page}
7318 \</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`.

```

7319 <*pdfTeX | dvipdfm | xetex | vtex | pdfmarkbase | dviwindo>
7320 \RequirePackage{pdfTeXcmds}[2009/04/10]
7321 \begingroup \expandafter \expandafter \expandafter \endgroup
7322 \expandafter \ifx \curname pdf@escapestring \endcurname \relax
7323 \begingroup
7324 \catcode'\ =0 %
7325 \@makeother\ %
7326 |@firstofone{ \endgroup
7327 |def|Hy@pstringdef#1#2{%
7328 | \begingroup
7329 | \edef~{ |string~}%
7330 | \xdef|Hy@gtemp{#2}%
7331 | \endgroup
7332 | \let#1|Hy@gtemp
7333 | @onelevel@sanitize#1%
7334 | \edef#1{ | \expandafter |Hy@ExchangeBackslash#1\ |@nil}%
7335 | \edef#1{ | \expandafter |Hy@ExchangeLeftParenthesis#1( |@nil}%
7336 | \edef#1{ | \expandafter |Hy@ExchangeRightParenthesis#1) |@nil}%
7337 }%
7338 |def|Hy@ExchangeBackslash#1\#2|@nil{%
7339 #1%

```

```

7340 |ifx|\#2|\%%
7341 |else
7342 \\\%
7343 |Hy@ReturnAfterFi{%
7344 |Hy@ExchangeBackslash#2|@nil
7345 }%
7346 |fi
7347 }%
7348 }%
7349 \def\Hy@ExchangeLeftParenthesis#1(#2\@nil{%
7350 #1%
7351 \ifx\#2\\%
7352 \else
7353 \@backslashchar(%
7354 \Hy@ReturnAfterFi{%
7355 \Hy@ExchangeLeftParenthesis#2\@nil
7356 }%
7357 \fi
7358 }%
7359 \def\Hy@ExchangeRightParenthesis#1)#2\@nil{%
7360 #1%
7361 \ifx\#2\\%
7362 \else
7363 \@backslashchar)%
7364 \Hy@ReturnAfterFi{%
7365 \Hy@ExchangeRightParenthesis#2\@nil
7366 }%
7367 \fi
7368 }%
7369 \else
7370 \def\Hy@pstringdef#1#2{%
7371 \begingroup
7372 \edef~{\string~}%
7373 \xdef\Hy@gtemp{\pdf@escapestring{#2}}%
7374 \endgroup
7375 \let#1\Hy@gtemp
7376 }%
7377 \fi
7378 </pdfTeX | dvipdfm | xetex | vtex | pdfmarkbase | dviwindo>

```

## 46.2 pdfTeX

```

7379 <*pdfTeX>
7380 \providecommand*{\XR@ext}{pdf}
7381 \Hy@setbreaklinks{true}

```

This driver is for Han The Thanh's T<sub>E</sub>X variant which produces PDF directly. This has new primitives to do PDF things, which usually translate almost directly to PDF code, so there is a lot of flexibility which we do not at present harness.

Set PDF version if requested by option `pdfversion`.

- pdfT<sub>E</sub>X 1.10a, 2003-01-16: `\pdfoptionpdfminorversion`
- pdfT<sub>E</sub>X 1.30, 2005-08-08: `\pdfminorversion`

```

7382 \let\Hy@pdfminorversion\relax
7383 \begingroup\expandafter\expandafter\expandafter\endgroup
7384 \expandafter\ifx\curname pdfminorversion\endcurname\relax
7385 \begingroup\expandafter\expandafter\expandafter\endgroup

```

```

7386 \expandafter\ifx\csmname pdfoptionpdfminorversion\endcsmname\relax
7387 \else
7388 \def\Hy@pdfminorversion{\pdfoptionpdfminorversion}%
7389 \fi
7390 \else
7391 \def\Hy@pdfminorversion{\pdfminorversion}%
7392 \fi
7393 \@ifundefined{Hy@pdfminorversion}{%
7394 \PackageInfo{hyperref}{%
7395 PDF version is not set, because pdfTeX is too old (<1.10a)%
7396 }%
7397 }{%
7398 \ifHy@ocgcolorlinks
7399 \ifnum\Hy@pdfminorversion<5 %
7400 \setkeys{Hyp}{pdfversion=1.5}%
7401 \fi
7402 \fi
7403 \ifHy@setpdfversion
7404 \ifnum\Hy@pdfminorversion=\Hy@pdfversion\relax
7405 \else
7406 \Hy@pdfminorversion=\Hy@pdfversion\relax
7407 \fi
7408 \PackageInfo{hyperref}{%
7409 \expandafter\string\Hy@pdfminorversion
7410 :=\number\Hy@pdfversion\space
7411 }%
7412 \fi
7413 \edef\Hy@pdfversion{\number\Hy@pdfminorversion}%
7414 }
7415 \Hy@DisableOption{pdfversion}%

7416 \ifHy@ocgcolorlinks
7417 \immediate\pdfobj{%
7418 <<%
7419 /Type/OCG%
7420 /Name(View)%
7421 /Usage<<%
7422 /Print<<%
7423 /PrintState/OFF%
7424 >>%
7425 /View<<%
7426 /ViewState/ON%
7427 >>%
7428 >>%
7429 >>%
7430 }%
7431 \edef\OBJ@OCG@view{\the\pdflastobj\space 0 R}%
7432 \immediate\pdfobj{%
7433 <<%
7434 /Type/OCG%
7435 /Name(Print)%
7436 /Usage<<%
7437 /Print<<%
7438 /PrintState/ON%
7439 >>%
7440 /View<<%
7441 /ViewState/OFF%
7442 >>%

```

```

7443     >>%
7444     >>%
7445 }%
7446 \edef\OBJ@OCG@print{\the\pdfflastobj\space 0 R}%
7447 \immediate\pdfobj{%
7448 [%
7449   \OBJ@OCG@view\space\OBJ@OCG@print
7450 ]%
7451 }%
7452 \edef\OBJ@OCGs{\the\pdfflastobj\space 0 R}%
7453 \pdfcatalog{%
7454   /OCProperties<<%
7455     /OCGs \OBJ@OCGs
7456     /D<<%
7457       /OFF[\OBJ@OCG@print]%
7458       /AS[%
7459         <<%
7460           /Event/View%
7461           /OCGs \OBJ@OCGs
7462           /Category[/View]%
7463         >>%
7464         <<%
7465           /Event/Print%
7466           /OCGs \OBJ@OCGs
7467           /Category[/Print]%
7468         >>%
7469         <<%
7470           /Event/Export%
7471           /OCGs \OBJ@OCGs
7472           /Category[/Print]%
7473         >>%
7474       ]%
7475     >>%
7476   >>%
7477 }%
7478 \begingroup
7479 \edef\x{\endgroup
7480   \pdfpageresources{%
7481     /Properties<<%
7482       /OCView \OBJ@OCG@view
7483       /OCPrint \OBJ@OCG@print
7484     >>%
7485   }%
7486 }%
7487 \x
7488 \AtBeginDocument{%
7489   \def\Hy@colorlink#1{%
7490     \begingroup
7491       \ifHy@ocgcolorlinks
7492         \def\Hy@ocgcolor{#1}%
7493         \setbox0=\color@hbox
7494       \else
7495         \HyColor@UseColor#1%
7496       \fi
7497     }%
7498   \def\Hy@endcolorlink{%
7499     \ifHy@ocgcolorlinks

```

```

7500 \color@endbox
7501 \mbox{%
7502 \pdfliteral page{/OC/OCPrint BDC}%
7503 \rlap{\copy0}%
7504 \pdfliteral page{EMC/OC/OCView BDC}%
7505 \begingroup
7506 \expandafter\HyColor@UseColor\Hy@ocgcolor
7507 \box0 %
7508 \endgroup
7509 \pdfliteral page{EMC}%
7510 }%
7511 \fi
7512 \endgroup
7513 }%
7514 }%
7515 \else
7516 \Hy@DisableOption{ocgcolorlinks}%
7517 \fi

```

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

```

7518 \def\setpdfinkmargin#1{\pdfinkmargin#1}
7519 \ifx\pdfstartlink\@undefined% less than version 14
7520 \let\pdfstartlink\pdfannotlink
7521 \let\pdfinkmargin\@tempdima
7522 \let\pdfxform\pdfform
7523 \let\pdfastxform\pdfastform
7524 \let\pdfrefxform\pdfrefform
7525 \else
7526 \pdfinkmargin1pt %
7527 \fi

```

First set up the default linking

```

7528 \providecommand*\@pdfview{XYZ}

```

First define the anchors:

```

7529 \def\new@pdfink#1{%
7530 \ifHy@verbose
7531 \typeout{pdftex: define anchor at line \the\inputlineno: #1}%
7532 \fi
7533 \Hy@SaveLastskip
7534 \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
7535 \Hy@DestName\Hy@pstringDest\@pdfview
7536 \Hy@RestoreLastskip
7537 }
7538 \let\pdf@endanchor\@empty

```

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

```

7539 \def\Hy@DestName#1#2{%
7540 \pdfdest name{#1}#2\relax
7541 }

```

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.

```

7542 \providecommand*\@pdfborder{0 0 1}
7543 \providecommand*\@pdfborderstyle{}

```

```

7544 \def\Hy@undefinedname{UNDEFINED}
7545 \def\find@pdfink#1#2{%
7546   \leavevmode
7547   \protected@edef\Hy@testname{#2}%
7548   \ifx\Hy@testname\@empty
7549     \Hy@Warning{%
7550       Empty destination name,\MessageBreak
7551       using '\Hy@undefinedname'%
7552     }%
7553     \let\Hy@testname\Hy@undefinedname
7554   \else
7555     \Hy@pstringdef\Hy@testname{%
7556       \expandafter\HyperDestNameFilter\expandafter{\Hy@testname}%
7557     }%
7558   \fi
7559   \Hy@StartlinkName{%
7560     \ifHy@pdfa /F 4\fi
7561     \Hy@setpdfborder
7562     \ifx\@pdfhighlight\@empty
7563       \else
7564         /H\@pdfhighlight
7565       \fi
7566       \ifx\CurrentBorderColor\relax
7567         \else
7568           /C[\CurrentBorderColor]%
7569         \fi
7570     }\Hy@testname
7571     \expandafter\Hy@colorlink\csname @#1color\endcsname
7572   }
7573 \def\Hy@StartlinkName#1#2{%
7574   \pdfstartlink attr{#1}goto name{#2}\relax
7575 }
7576 \def\close@pdfink{\Hy@endcolorlink\pdfendlink}
7577 \def\hyper@anchor#1{\new@pdfink{#1}\anchor@spot\pdf@endanchor}
7578 \def\hyper@anchorstart#1{\new@pdfink{#1}\Hy@activeanchortrue}
7579 \def\hyper@anchorend{\pdf@endanchor\Hy@activeanchorfalse}
7580 \def\hyper@linkstart#1#2{%
7581   \@ifundefined{@#1bordercolor}{%
7582     \let\CurrentBorderColor\relax
7583   }{%
7584     \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
7585   }%
7586   \find@pdfink{#1}{#2}%
7587 }
7588 \def\hyper@linkend{\close@pdfink}
7589 \def\hyper@link#1#2#3{%
7590   \@ifundefined{@#1bordercolor}{%
7591     \let\CurrentBorderColor\relax
7592   }{%
7593     \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
7594   }%
7595   \find@pdfink{#1}{#2}#3%
7596   \close@pdfink
7597 }
7598 \let\CurrentBorderColor\@linkbordercolor
7599 \def\hyper@linkurl#1#2{%
7600   \begingroup

```

```

7601 \Hy@pstringdef\Hy@pstringURI{#2}%
7602 \hyper@chars
7603 \leavevmode
7604 \pdfstartlink
7605   attr{%
7606     \Hy@setpdfborder
7607     \ifx\@pdfhighlight\@empty
7608     \else
7609       /H\@pdfhighlight
7610     \fi
7611     \ifx\@urlbordercolor\relax
7612     \else
7613       /C[\@urlbordercolor]%
7614     \fi
7615   }%
7616   user{%
7617     /Subtype/Link%
7618     \ifHy@pdfa /F 4\fi
7619     /A<<%
7620     /Type/Action%
7621     /S/URI%
7622     /URI(\Hy@pstringURI)%
7623   >>%
7624   }%
7625   \relax
7626 \Hy@colorlink\@urlcolor#1%
7627 \close@pdfink
7628 \endgroup
7629 }
7630 \def\hyper@linkfile#1#2#3{% anchor text, filename, linkname
7631 \begingroup
7632 \Hy@pstringdef\Hy@pstringF{#2}%
7633 \Hy@pstringdef\Hy@pstringD{#3}%
7634 \leavevmode
7635 \pdfstartlink
7636   attr{%
7637     \Hy@setpdfborder
7638     \ifx\@pdfhighlight\@empty
7639     \else
7640       /H\@pdfhighlight
7641     \fi
7642     \ifx\@filebordercolor\relax
7643     \else
7644       /C[\@filebordercolor]%
7645     \fi
7646   }%
7647   user {%
7648     /Subtype/Link%
7649     \ifHy@pdfa /F 4\fi
7650     /A<<%
7651     /F(\Hy@pstringF)%
7652     /S/GoToR%
7653     \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}

```

```

7654      \ifx\|#3\|%
7655      /D[0 \@pdfstartview]%
7656      \else
7657      /D(\Hy@pstringD)%
7658      \fi
7659      >>%
7660      }%
7661      \relax
7662      \Hy@colorlink\@filecolor#1%
7663      \close@pdfink
7664      \endgroup
7665      }
7666      \def\@hyper@launch run:#1\|#2#3{% filename, anchor text linkname
7667      \begingroup
7668      \Hy@pstringdef\Hy@pstringF{#1}%
7669      \Hy@pstringdef\Hy@pstringP{#3}%
7670      \leavevmode
7671      \pdfstartlink
7672      attr{%
7673      \Hy@setpdfborder
7674      \ifx\@pdfhighlight\@empty
7675      \else
7676      /H\@pdfhighlight
7677      \fi
7678      \ifx\@runbordercolor\relax
7679      \else
7680      /C[\@runbordercolor]%
7681      \fi
7682      }%
7683      user {%
7684      /Subtype/Link%
7685      \ifHy@pdfa /F 4\fi
7686      /A<<%
7687      /F(\Hy@pstringF)%
7688      /S/Launch%
7689      \Hy@SetNewWindow
7690      \ifx\|#3\|%
7691      \else
7692      /Win<</P(\Hy@pstringP)/F(\Hy@pstringF)>>%
7693      \fi
7694      >>%
7695      }%
7696      \relax
7697      \Hy@colorlink\@runcolor#2%
7698      \close@pdfink
7699      \endgroup
7700      }

```

\@pdfproducer

```

7701 \ifx\@pdfproducer\relax
7702 \begingroup\expandafter\expandafter\expandafter\endgroup

```

```

7703 \expandafter\ifx\csname luatexversion\endcsname\relax
7704 \def\@pdfproducer{pdfTeX}%
7705 \ifx\eTeXversion\@undefined
7706 \else
7707 \ifx\eTeXversion\relax
7708 \else
7709 \ifnum\eTeXversion>0 %
7710 \def\@pdfproducer{pdfTeX}%
7711 \fi
7712 \fi
7713 \fi
7714 \ifx\pdfTeXversion\@undefined
7715 \else
7716 \ifnum\pdfTeXversion<100 %
7717 \edef\@pdfproducer{%
7718 \@pdfproducer
7719 \the\pdfTeXversion.\pdfTeXrevision
7720 }%
7721 \else
7722 \ifnum\pdfTeXversion<130 %
7723 \edef\@pdfproducer{%
7724 \@pdfproducer-
7725 \expandafter\@car\the\pdfTeXversion\@empty\@nil.%
7726 \expandafter\@cdr\the\pdfTeXversion\@empty\@nil
7727 \pdfTeXrevision
7728 }%
7729 \else
7730 \ifnum\pdfTeXversion<140 %
7731 \else
7732 \def\@pdfproducer{pdfTeX}%
7733 \fi
7734 \edef\@pdfproducer{%
7735 \@pdfproducer-
7736 \expandafter\@car\the\pdfTeXversion\@empty\@nil.%
7737 \expandafter\@cdr\the\pdfTeXversion\@empty\@nil.%
7738 \pdfTeXrevision
7739 }%
7740 \fi
7741 \fi
7742 \fi
7743 \else
7744 \begingroup
7745 \count@=\luatexversion
7746 \divide\count@ by 100 %
7747 \edef\x{\the\count@}%
7748 \count@=-\x\relax
7749 \multiply\count@ by 100 %
7750 \advance\count@ by \luatexversion
7751 \edef\x{\endgroup
7752 \def\noexpand\@pdfproducer{%
7753 LuaTeX-\x.\the\count@.\luatexrevision
7754 }%
7755 }%
7756 \x
7757 \fi
7758 \fi

```

\PDF@SetupDox

```
7759 \def\PDF@SetupDoc{%
7760   \ifx\@pdfpagescrop\@empty
7761   \else
7762     \edef\process@me{%
7763       \pdfpagesattr={%
7764         /CropBox[\@pdfpagescrop]%
7765         \expandafter\ifx\expandafter\\the\pdfpagesattr\\%
7766         \else
7767           ^^J\the\pdfpagesattr
7768         \fi
7769       }%
7770     }%
7771     \process@me
7772   \fi
7773   \Hy@pstringdef\Hy@pstringB{\@baseurl}%
7774   \pdfcatalog{%
7775     /PageMode/\@pdfpagemode
7776     \ifx\@baseurl\@empty
7777     \else
7778       /URI<</Base(\Hy@pstringB)>>%
7779     \fi
7780   }%
7781   \ifx\@pdfstartpage\@empty
7782   \else
7783     \ifx\@pdfstartview\@empty
7784     \else
7785       openaction goto page\@pdfstartpage{\@pdfstartview}%
7786     \fi
7787   \fi
7788   \edef\Hy@temp{%
7789     \ifHy@toolbar\else /HideToolbar true\fi
7790     \ifHy@menubar\else /HideMenubar true\fi
7791     \ifHy>windowui\else /HideWindowUI true\fi
7792     \ifHy@fitwindow /FitWindow true\fi
7793     \ifHy@centerwindow /CenterWindow true\fi
7794     \ifHy@displaydoctitle /DisplayDocTitle true\fi
7795     \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
7796     \Hy@UseNameKey{Direction}\@pdfdirection
7797     \Hy@UseNameKey{ViewArea}\@pdfviewarea
7798     \Hy@UseNameKey{ViewClip}\@pdfviewclip
7799     \Hy@UseNameKey{PrintArea}\@pdfprintarea
7800     \Hy@UseNameKey{PrintClip}\@pdfprintclip
7801     \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
7802     \Hy@UseNameKey{Duplex}\@pdfduplex
7803     \ifx\@pdfpicktraybypdfsize\@empty
7804     \else
7805       /PickTrayByPDFSize \@pdfpicktraybypdfsize
7806     \fi
7807     \ifx\@pdfprintpagerange\@empty
7808     \else
7809       /PrintPageRange[\@pdfprintpagerange]%
7810     \fi
7811     \ifx\@pdfnumcopies\@empty
7812     \else
7813       /NumCopies \@pdfnumcopies
7814     \fi
```

```

7815 }%
7816 \pdfcatalog{%
7817   \ifx\Hy@temp\@empty
7818   \else
7819     /ViewerPreferences<<\Hy@temp>>%
7820   \fi
7821   \Hy@UseNameKey{PageLayout}\pdfpagelayout
7822   \ifx\@pdflang\@empty
7823   \else
7824     /Lang(\@pdflang)%
7825   \fi
7826 }%
7827 }

```

\PDF@FinishDoc

```

7828 \def\PDF@FinishDoc{%
7829   \Hy@UseMaketitleInfos
7830   \HyInfo@GenerateAddons
7831   \pdfinfo{%
7832     /Author(\@pdfauthor)%
7833     /Title(\@pdftitle)%
7834     /Subject(\@pdfsubject)%
7835     /Creator(\@pdfcreator)%
7836     \ifx\@pdfcreationdate\@empty
7837     \else
7838       /CreationDate(\@pdfcreationdate)%
7839     \fi
7840     \ifx\@pdfmoddate\@empty
7841     \else
7842       /ModDate(\@pdfmoddate)%
7843     \fi
7844     \ifx\@pdfproducer\relax
7845     \else
7846       /Producer(\@pdfproducer)%
7847     \fi
7848     /Keywords(\@pdfkeywords)%
7849     \ifx\@pdftrapped\@empty
7850     \else
7851       /Trapped/\@pdftrapped
7852     \fi
7853     \HyInfo@Addons
7854   }%
7855   \Hy@DisableOption{pdfauthor}%
7856   \Hy@DisableOption{pdftitle}%
7857   \Hy@DisableOption{pdfsubject}%
7858   \Hy@DisableOption{pdfcreator}%
7859   \Hy@DisableOption{pdfcreationdate}%
7860   \Hy@DisableOption{pdfmoddate}%
7861   \Hy@DisableOption{pdfproducer}%
7862   \Hy@DisableOption{pdfkeywords}%
7863   \Hy@DisableOption{pdftrapped}%
7864   \Hy@DisableOption{pdfinfo}%
7865 }

```

\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.

```

7866 \def\hyper@pagetransition{%
7867   \ifx\@pdfpagetransition\relax
7868   \else
7869     \expandafter\Hy@RemoveTransPageAttr
7870     \the\pdfpageattr^^J/Trans{}}>>\END
7871   \ifx\@pdfpagetransition\@empty
7872   \else
7873     \edef\@processme{%
7874       \global\pdfpageattr{%
7875         \the\pdfpageattr
7876         ^^J/Trans << /S /\@pdfpagetransition\space >>%
7877       }%
7878     }%
7879     \@processme
7880   \fi
7881 \fi
7882 }

```

`\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.

```

7883 \gdef\Hy@RemoveTransPageAttr#1^^J/Trans#2#3>>#4\END{%
7884   \ifx\#2\%
7885     \global\pdfpageattr{#1}%
7886   \else
7887     \Hy@RemoveTransPageAttr#1#4\END
7888   \fi
7889 }

```

`\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`.

```

7890 \def\hyper@pageduration{%
7891   \ifx\@pdfpageduration\relax
7892   \else
7893     \expandafter
7894     \Hy@RemoveDurPageAttr\the\pdfpageattr^^J/Dur{}} \END
7895   \ifx\@pdfpageduration\@empty
7896   \else
7897     \edef\@processme{%
7898       \global\pdfpageattr{%
7899         \the\pdfpageattr
7900         ^^J/Dur \@pdfpageduration\space
7901       }%
7902     }%
7903     \@processme
7904   \fi
7905 \fi
7906 }

```

`\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.

```

7907 \gdef\Hy@RemoveDurPageAttr#1^^J/Dur#2#3 #4\END{%

```

```

7908 \ifx\|#2\|%
7909 \global\pdfpageattr{#1}%
7910 \else
7911 \Hy@RemoveDurPageAttr#1#4\END
7912 \fi
7913 }

```

`\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).

```

7914 \def\hyper@pagehidden{%
7915 \ifHy@useHidKey
7916 \expandafter
7917 \Hy@RemoveHidPageAttr\the\pdfpageattr^^J/Hid{} \END
7918 \ifHy@pdfpagehidden
7919 \edef\@processme{%
7920 \global\pdfpageattr{%
7921 \the\pdfpageattr
7922 ^^J/Hid true % SPACE
7923 }%
7924 }%
7925 \@processme
7926 \fi
7927 \fi
7928 }

```

`\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.

```

7929 \gdef\Hy@RemoveHidPageAttr#1^^J/Hid#2#3 #4\END{%
7930 \ifx\|#2\|%
7931 \global\pdfpageattr{#1}%
7932 \else
7933 \Hy@RemoveHidPageAttr#1#4\END
7934 \fi
7935 }

7936 \g@addto@macro\Hy@EveryPageHook{%
7937 \hyper@pagetransition
7938 \hyper@pageduration
7939 \hyper@pagehidden
7940 }

```

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

```

7941 </pdfTeX>
7942 <*pdfTeX | xetex>
7943 \AtBeginDocument{%
7944 \ifHy@setpagesize
7945 \expandafter\@firstofone
7946 \else
7947 \expandafter\@gobble
7948 \fi
7949 {%
7950 \@ifclassloaded{seminar}{%
7951 <*pdfTeX>

```

```

7952 \setlength{\pdfhorigin}{1truein}%
7953 \setlength{\pdfvorigin}{1truein}%
7954 </pdftex>
7955 \ifportrait
7956 \ifdim\paperwidth=\z@
7957 \else
7958 \setlength{\pdfpagewidth}{\strip@pt\paperwidth truept}%
7959 \fi
7960 \ifdim\paperheight=\z@
7961 \else
7962 \setlength{\pdfpageheight}{\strip@pt\paperheight truept}%
7963 \fi
7964 \else
7965 \ifdim\paperheight=\z@
7966 \else
7967 \setlength{\pdfpagewidth}{\strip@pt\paperheight truept}%
7968 \fi
7969 \ifdim\paperwidth=\z@
7970 \else
7971 \setlength{\pdfpageheight}{\strip@pt\paperwidth truept}%
7972 \fi
7973 \fi
7974 }{%
7975 \@ifundefined{stockwidth}{%
7976 \ifdim\paperwidth>\z@
7977 \setlength{\pdfpagewidth}{\paperwidth}%
7978 \fi
7979 \ifdim\paperheight>\z@
7980 \setlength{\pdfpageheight}{\paperheight}%
7981 \fi
7982 }{%
7983 \ifdim\stockwidth>\z@
7984 \setlength{\pdfpagewidth}{\stockwidth}%
7985 \fi
7986 \ifdim\stockheight>\z@
7987 \setlength{\pdfpageheight}{\stockheight}%
7988 \fi
7989 }%
7990 }%
7991 }%
7992 \Hy@DisableOption{setpagesize}%
7993 }
7994 </pdftex | xetex>
7995 <*pdftex>
7996 \def\Acrobatmenu#1#2{%
7997 \Hy@Acrobatmenu{#1}{#2}%
7998 \pdfstartlink
7999 attr{%
8000 \Hy@setpdfborder
8001 \ifx\@pdfhighlight\@empty
8002 \else
8003 /H\@pdfhighlight
8004 \fi
8005 \ifx\@menubordercolor\relax
8006 \else
8007 /C[\@menubordercolor]%
8008 \fi

```

```

8009    }%
8010    user{%
8011        /Subtype/Link%
8012        \ifHy@pdfa /F 4\fi
8013        /A<<%
8014        /S/Named/N/#1%
8015        >>%
8016    }%
8017    \relax
8018    \Hy@colorlink\@menucolor#2%
8019    \close@pdfink
8020 }%
8021 }

```

#### 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`.

```

8022 \def\Hy@FixNotFirstPage{%
8023   \gdef\Hy@FixNotFirstPage{%
8024     \setbox\AtBeginShipoutBox=\hbox{%
8025       \copy\AtBeginShipoutBox
8026     }%
8027   }%
8028 }
8029 \AtBeginShipout{\Hy@FixNotFirstPage}
8030 </pdfTeX>

```

### 46.3 hypertex

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

**href:** `html:<a href = "href_string">`

**name:** `html:<a name = "name_string">`

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

**image:** `html:<img src = "href_string">`

**base\_name:** `html:<base href = "href_string">`

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

The *href* and *name* commands must be paired with an *end* command later in the TeX file — the TeX commands between the two ends of a pair form an *anchor* in the

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

```

8031 \*hypertext
8032 \providecommand*\XR@ext\{dvi}
8033 \def\PDF@FinishDoc{}
8034 \def\PDF@SetupDoc{%
8035   \ifx\@baseurl\@empty
8036   \else
8037     \special{html:<base href="\@baseurl">}%
8038   \fi
8039 }
8040 \def\hyper@anchor#1{%
8041   \Hy@SaveLastskip
8042   \begingroup
8043     \let\protect=\string
8044     \hyper@chars
8045     \special{html:<a name=%
8046       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
8047   \endgroup
8048   \Hy@Activeanchortrue
8049   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
8050   \special{html:</a>}%
8051   \Hy@Activeanchorfalse
8052   \Hy@RestoreLastskip
8053 }
8054 \def\hyper@anchorstart#1{%
8055   \Hy@SaveLastskip
8056   \begingroup
8057     \hyper@chars
8058     \special{html:<a name=%
8059       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
8060   \endgroup
8061   \Hy@Activeanchortrue
8062 }
8063 \def\hyper@anchorend{%
8064   \special{html:</a>}%
8065   \Hy@Activeanchorfalse
8066   \Hy@RestoreLastskip
8067 }
8068 \def\@urltype{url}
8069 \def\hyper@linkstart#1#2{%
8070   \expandafter\Hy@colorlink\csname @#1color\endcsname
8071   \def\Hy@tempa{#1}%
8072   \ifx\Hy@tempa\@urltype
8073     \special{html:<a href=\hyper@quote#2\hyper@quote>}%
8074   \else
8075     \begingroup
8076       \hyper@chars
8077       \special{html:<a href=%

```

```

8078      \hyper@quote\#\HyperDestNameFilter{#2}\hyper@quote>}%
8079      \endgroup
8080      \fi
8081    }
8082    \def\hyper@linkend{%
8083      \special{html:</a>}%
8084      \Hy@endcolorlink
8085    }
8086    \def\hyper@linkfile#1#2#3{%
8087      \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\#3\\\else\#3\fi}%
8088    }
8089    \def\hyper@linkurl#1#2{%

```

If we want to raise up the final link `\special`, we need to get its height; ask me why  $\LaTeX$  constructs make this totally foul up, and make us revert to basic  $\TeX$ . I do not know.

```

8090    \leavevmode
8091    \ifHy@raiselinks
8092      \setbox\@tempboxa=\color@hbox #1\color@endbox
8093      \@linkdim\dp\@tempboxa
8094      \lower\@linkdim\hbox{%
8095        \hyper@chars
8096        \special{html:<a href=\hyper@quote#2\hyper@quote>}%
8097      }%
8098      \Hy@colorlink\@urlcolor#1%
8099      \@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).

```

8100      \advance\@linkdim by -6.5\p@
8101      \raise\@linkdim\hbox{\special{html:</a>}}%
8102      \Hy@endcolorlink
8103    \else
8104      \begingroup
8105        \hyper@chars
8106        \special{html:<a href=\hyper@quote#2\hyper@quote>}%
8107        \Hy@colorlink\@urlcolor#1%
8108        \special{html:</a>}%
8109        \Hy@endcolorlink
8110      \endgroup
8111    \fi
8112  }

```

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

```

8113    \def\hyper@link#1#2#3{%
8114      \hyper@linkurl{#3}{\#\HyperDestNameFilter{#2}}%
8115    }
8116    \def\hyper@image#1#2{%
8117      \begingroup
8118        \hyper@chars
8119        \special{html:<img src=\hyper@quote#1\hyper@quote>}%
8120      \endgroup
8121    }
8122    </hypertex>
8123    <*dviwindo>

```

## 46.4 dviwindo

[This was developed by David Carlisle]. Within a file dviwindo hyperlinking is used, for external URL's a call to `\wwwbrowser` is made. (You can define this command before or after loading the `hyperref` package if the default `c:/netscape/netscape` is not suitable) Dviwindo could in fact handle external links to dvi files on the same machine without calling a web browser, but that would mean parsing the URL to recognise such, and this is currently not done.

This was more or less blindly copied from the `hypertex` cfg. For dviwindo,  $\LaTeX$  must specify the size of the active area for links. For some hooks this information is available but for some, the start and end of the link are specified separately in which case a fixed size area of 10000000sp wide by `\baselineskip` high is used.

```
8124 \providecommand*\XR@ext}{dvi}
8125 \providecommand*\wwwbrowser{c:\string\netscape\string\netscape}
8126 \def\hyper@anchor#1{%
8127   \Hy@SaveLastskip
8128   \begingroup
8129     \let\protect=\string
8130     \special{mark: #1}%
8131   \endgroup
8132   \Hy@activeanchortrue
8133   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
8134   \Hy@activeanchorfalse
8135   \Hy@RestoreLastskip
8136 }
8137 \def\hyper@anchorstart#1{%
8138   \Hy@SaveLastskip
8139   \special{mark: #1}%
8140   \Hy@activeanchortrue
8141 }
8142 \def\hyper@anchorend{%
8143   \Hy@activeanchorfalse
8144   \Hy@RestoreLastskip
8145 }
8146 \def\hyper@linkstart#1#2{%
8147   \expandafter\Hy@colorlink\csname @#1color\endcsname
8148   \special{button: %
8149     10000000 %
8150     \number\baselineskip\space
8151     #2%
8152   }%
8153 }
8154 \def\hyper@linkend{%
8155   \Hy@endcolorlink
8156 }
8157 \def\hyper@link#1#2#3{%
8158   \setbox\@tempboxa=\color@hbox #3\color@endbox
8159   \leavevmode
8160   \ifHy@raiselinks
8161     \@linkdim\dp\@tempboxa
8162     \lower\@linkdim\hbox{%
8163       \special{button: %
8164         \number\wd\@tempboxa\space
8165         \number\ht\@tempboxa\space
8166         #2%
8167       }%
8168       \expandafter\Hy@colorlink\csname @#1color\endcsname#3%
```

```

8169 \Hy@endcolorlink
8170 }%
8171 \@linkdim\ht\@tempboxa
8172 \advance\@linkdim by -6.5\p@
8173 \raise\@linkdim\hbox{}%
8174 \else
8175 \special{button: %
8176 \number\wd\@tempboxa\space
8177 \number\ht\@tempboxa\space
8178 #2%
8179 }%
8180 \expandafter\Hy@colorlink\csname @#1color\endcsname#3%
8181 \Hy@endcolorlink
8182 \fi
8183 }
8184 \def\hyper@linkurl#1#2{%
8185 \begingroup
8186 \hyper@chars
8187 \leavevmode
8188 \setbox\@tempboxa=\color@hbox #1\color@endbox
8189 \ifHy@raiselinks
8190 \@linkdim\dp\@tempboxa
8191 \lower\@linkdim\hbox{%
8192 \special{button: %
8193 \number\wd\@tempboxa\space
8194 \number\ht\@tempboxa\space
8195 launch: \wwwbrowser\space
8196 #2%
8197 }%
8198 \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
8199 }%
8200 \@linkdim\ht\@tempboxa
8201 \advance\@linkdim by -6.5\p@
8202 \raise\@linkdim\hbox{}%
8203 \else
8204 \special{button: %
8205 \number\wd\@tempboxa\space
8206 \number\ht\@tempboxa\space
8207 launch: \wwwbrowser\space
8208 #2%
8209 }%
8210 \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
8211 \fi
8212 \endgroup
8213 }
8214 \def\hyper@linkfile#1#2#3{%
8215 \begingroup
8216 \hyper@chars
8217 \leavevmode
8218 \setbox\@tempboxa=\color@hbox #1\color@endbox
8219 \ifHy@raiselinks
8220 \@linkdim\dp\@tempboxa
8221 \lower\@linkdim\hbox{%
8222 \special{button: %
8223 \number\wd\@tempboxa\space
8224 \number\ht\@tempboxa\space
8225 #3,%

```

```

8226         file: #2%
8227     }%
8228     \Hy@colorlink\@filecolor#1\Hy@endcolorlink
8229 }%
8230 \@linkdim\ht\@tempboxa
8231 \advance\@linkdim by -6.5\p@
8232 \raise\@linkdim\hbox{}%
8233 \else
8234 \special{button: %
8235 \number\wd\@tempboxa\space
8236 \number\ht\@tempboxa\space
8237 #3,%
8238 file: #2%
8239 }%
8240 \Hy@colorlink\@filecolor#1\Hy@endcolorlink
8241 \fi
8242 \endgroup
8243 }
8244 \ifx\@pdfproducer\relax
8245 \def\@pdfproducer{dviwindo + Distiller}%
8246 \fi
8247 \HyInfo@AddonUnsupportedtrue
8248 \def\PDF@FinishDoc{%
8249 \Hy@UseMaketitleInfos
8250 \HyInfo@TrappedUnsupported
8251 \special{PDF: Keywords \@pdfkeywords}%
8252 \special{PDF: Title \@pdftitle}%
8253 \special{PDF: Creator \@pdfcreator}%
8254 \ifx\@pdfcreationdate\@empty
8255 \else
8256 \special{PDF: CreationDate \@pdfcreationdate}%
8257 \fi
8258 \ifx\@pdfmoddate\@empty
8259 \else
8260 \special{PDF: ModDate \@pdfmoddate}%
8261 \fi
8262 \special{PDF: Author \@pdfauthor}%
8263 \ifx\@pdfproducer\relax
8264 \else
8265 \special{PDF: Producer \@pdfproducer}%
8266 \fi
8267 \special{PDF: Subject \@pdfsubject}%
8268 \Hy@DisableOption{pdfauthor}%
8269 \Hy@DisableOption{pdftitle}%
8270 \Hy@DisableOption{pdfsubject}%
8271 \Hy@DisableOption{pdfcreator}%
8272 \Hy@DisableOption{pdfcreationdate}%
8273 \Hy@DisableOption{pdfmoddate}%
8274 \Hy@DisableOption{pdfproducer}%
8275 \Hy@DisableOption{pdfkeywords}%
8276 \Hy@DisableOption{pdftrapped}%
8277 \Hy@DisableOption{pdfinfo}%
8278 }
8279 \def\PDF@SetupDoc{%
8280 \ifx\@baseurl\@empty
8281 \else
8282 \special{PDF: Base \@baseurl}%

```

```

8283 \fi
8284 \ifx\@pdfpagescrop\@empty\else
8285 \special{PDF: BBox \@pdfpagescrop}%
8286 \fi
8287 \def\Hy@temp{}%
8288 \ifx\@pdfstartpage\@empty
8289 \else
8290 \ifx\@pdfstartview\@empty
8291 \else
8292 \edef\Hy@temp{%
8293     ,Page=\@pdfstartpage
8294     ,View=\@pdfstartview
8295 }%
8296 \fi
8297 \fi
8298 \edef\Hy@temp{%
8299 \noexpand\pdfmark{%
8300     pdfmark=/DOCVIEW,%
8301     PageMode=/\@pdfpagemode
8302     \Hy@temp
8303 }%
8304 }%
8305 \Hy@temp
8306 \ifx\@pdfpagescrop\@empty
8307 \else
8308 \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
8309 \fi
8310 \edef\Hy@temp{%
8311 \ifHy@toolbar\else /HideToolbar true\fi
8312 \ifHy@menubar\else /HideMenubar true\fi
8313 \ifHy>windowui\else /HideWindowUI true\fi
8314 \ifHy@fitwindow /FitWindow true\fi
8315 \ifHy@centerwindow /CenterWindow true\fi
8316 \ifHy@displaydoctitle /DisplayDocTitle true\fi
8317 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
8318 \Hy@UseNameKey{Direction}\@pdfdirection
8319 \Hy@UseNameKey{ViewArea}\@pdfviewarea
8320 \Hy@UseNameKey{ViewClip}\@pdfviewclip
8321 \Hy@UseNameKey{PrintArea}\@pdfprintarea
8322 \Hy@UseNameKey{PrintClip}\@pdfprintclip
8323 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
8324 \Hy@UseNameKey{Duplex}\@pdfduplex
8325 \ifx\@pdfpicktraybypdfsize\@empty
8326 \else
8327 /PickTrayByPDFSize \@pdfpicktraybypdfsize
8328 \fi
8329 \ifx\@pdfprintpagerange\@empty
8330 \else
8331 /PrintPageRange[\@pdfprintpagerange]%
8332 \fi
8333 \ifx\@pdfnumcopies\@empty
8334 \else
8335 /NumCopies \@pdfnumcopies
8336 \fi
8337 }%
8338 \pdfmark{pdfmark=/PUT,%
8339     Raw={%

```

```

8340 \string{Catalog\string}<<%
8341 \ifx\Hy@temp\@empty
8342 \else
8343 /ViewerPreferences<<\Hy@temp>>%
8344 \fi
8345 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
8346 \ifx\@pdflang\@empty
8347 \else
8348 /Lang(\@pdflang)%
8349 \fi
8350 >>%
8351 }%
8352 }%
8353 }
8354 </dviwindo>
8355 <*dvipdfm | xetex>

```

## 46.5 dvipdfm/xetex dvi to PDF converter

Provided by Mark Wicks (mwicks@kettering.edu)

```

8356 \providecommand*{\XR@ext}{pdf}
8357 \Hy@setbreaklinks{true}
8358 \newsavebox{\pdfm@box}
8359 \def\@pdfm@mark#1{\special{pdf:#1}}
8360 \def\@pdfm@dest#1{%
8361 \Hy@SaveLastskip
8362 \begingroup
8363 \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
8364 \def\x{XYZ}%
8365 \ifx\x\@pdfview
8366 \def\x{XYZ @xpos @ypos null}%
8367 \else
8368 \def\x{FitH}%
8369 \ifx\x\@pdfview
8370 \def\x{FitH @ypos}%
8371 \else
8372 \def\x{FitBH}%
8373 \ifx\x\@pdfview
8374 \def\x{FitBH @ypos}%
8375 \else
8376 \def\x{FitV}%
8377 \ifx\x\@pdfview
8378 \def\x{FitV @xpos}%
8379 \else
8380 \def\x{FitBV}%
8381 \ifx\x\@pdfview
8382 \def\x{FitBV @xpos}%
8383 \else
8384 \def\x{Fit}%
8385 \ifx\x\@pdfview
8386 \let\x\@pdfview
8387 \else
8388 \def\x{FitB}%
8389 \ifx\x\@pdfview
8390 \let\x\@pdfview
8391 \else
8392 \def\x{FitR}%

```

```

8393         \ifx\x\@pdfview
8394         \Hy@Warning{'pdfview=FitR' is not supported}%
8395         \def\x{XYZ @xpos @ypos null}%
8396     \else
8397         \@onelevel@sanitize\@pdfview
8398         \Hy@Warning{%
8399             Unknown value '\@pdfview' for pdfview%
8400         }%
8401         \def\x{XYZ @xpos @ypos null}%
8402     \fi
8403 \fi
8404 \fi
8405 \fi
8406 \fi
8407 \fi
8408 \fi
8409 \fi
8410 \@pdfm@mark{dest (\Hy@pstringDest) [@thispage /\x]}%
8411 \endgroup
8412 \Hy@RestoreLastskip
8413 }
8414 \providecommand*\@pdfview{XYZ}
8415 \providecommand*\@pdfborder{0 0 1}
8416 \providecommand*\@pdfborderstyle{}
8417 \def\hyper@anchor#1{%
8418     \@pdfm@dest{#1}%
8419 }
8420 \def\hyper@anchorstart#1{%
8421     \Hy@activeanchortrue
8422     \@pdfm@dest{#1}%
8423 }
8424 \def\hyper@anchorend{%
8425     \Hy@activeanchorfalse
8426 }
8427 \newcounter{Hy@AnnotLevel}
8428 \ifHy@ocgcolorlinks
8429     \def\OBJ@OCG@view{@OCG@view}%
8430     \@pdfm@mark{%
8431         obj \OBJ@OCG@view <<%
8432         /Type/OCG%
8433         /Name(View)%
8434         /Usage<<%
8435         /Print<<%
8436         /PrintState/OFF%
8437         >>%
8438         /View<<%
8439         /ViewState/ON%
8440         >>%
8441         >>%
8442         >>%
8443     }%
8444     \@pdfm@mark{close \OBJ@OCG@view}%
8445     \def\OBJ@OCG@print{@OCG@print}%
8446     \@pdfm@mark{%
8447         obj \OBJ@OCG@print <<%
8448         /Type/OCG%
8449         /Name(Print)%

```

```

8450     /Usage<<%
8451     /Print<<%
8452     /PrintState/ON%
8453     >>%
8454     /View<<%
8455     /ViewState/OFF%
8456     >>%
8457     >>%
8458     >>%
8459 }%
8460 \@pdfm@mark{close \OBJ@OCG@print}%
8461 \def\OBJ@OCGs{@OCGs}%
8462 \@pdfm@mark{%
8463     obj \OBJ@OCGs [%
8464         \OBJ@OCG@view\space\OBJ@OCG@print
8465     ]%
8466 }%
8467 \@pdfm@mark{close \OBJ@OCGs}%
8468 \@pdfm@mark{%
8469     put @catalog <<%
8470     /OCProperties<<%
8471     /OCGs \OBJ@OCGs
8472     /D<<%
8473     /OFF[\OBJ@OCG@print]%
8474     /AS[%
8475         <<%
8476         /Event/View%
8477         /OCGs \OBJ@OCGs
8478         /Category[/View]%
8479         >>%
8480         <<%
8481         /Event/Print%
8482         /OCGs \OBJ@OCGs
8483         /Category[/Print]%
8484         >>%
8485         <<%
8486         /Event/Export%
8487         /OCGs \OBJ@OCGs
8488         /Category[/Print]%
8489         >>%
8490     ]%
8491     >>%
8492     >>%
8493     >>%
8494 }%
8495 \AtBeginShipout{%
8496     \setbox\AtBeginShipoutBox=\hbox{%
8497         \copy\AtBeginShipoutBox
8498         \@pdfm@mark{%
8499             put @resources <<%
8500             /Properties<<%
8501             /OCView \OBJ@OCG@view
8502             /OCPrint \OBJ@OCG@print
8503             >>%
8504             >>%
8505         }%
8506     }%

```

```

8507 }%
8508 \AtBeginDocument{%
8509 \def\Hy@colorlink#1{%
8510 \begingroup
8511 \ifHy@ocgcolorlinks
8512 \def\Hy@ocgcolor{#1}%
8513 \setbox0=\color@hbox
8514 \else
8515 \HyColor@UseColor#1%
8516 \fi
8517 }%
8518 \def\Hy@endcolorlink{%
8519 \ifHy@ocgcolorlinks
8520 \color@endbox
8521 \mbox{%
8522 \@pdfm@mark{content /OC/OCPrint BDC}%
8523 \rlap{\copy0}%
8524 \@pdfm@mark{content EMC/OC/OCView BDC}%
8525 \begingroup
8526 \expandafter\HyColor@UseColor\Hy@ocgcolor
8527 \box0 %
8528 \endgroup
8529 \@pdfm@mark{content EMC}%
8530 }%
8531 \fi
8532 \endgroup
8533 }%
8534 }%
8535 \else
8536 \Hy@DisableOption{ocgcolorlinks}%
8537 \fi

8538 \def\Hy@BeginAnnot#1{%
8539 \stepcounter{Hy@AnnotLevel}%
8540 \ifnum\value{Hy@AnnotLevel}=\@ne
8541 #1%
8542 \fi
8543 }
8544 \def\Hy@EndAnnot{%
8545 \ifnum\value{Hy@AnnotLevel}=\@ne
8546 \Hy@endcolorlink
8547 \@pdfm@mark{eann}%
8548 \fi
8549 \addtocounter{Hy@AnnotLevel}\m@ne
8550 }

8551 \def\Hy@undefinedname{UNDEFINED}
8552 \def\hyper@linkstart#1#2{%
8553 \Hy@BeginAnnot{%
8554 \protected@edef\Hy@testname{#2}%
8555 \ifx\Hy@testname\@empty
8556 \Hy@Warning{%
8557 Empty destination name,\MessageBreak
8558 using '\Hy@undefinedname'%
8559 }%
8560 \let\Hy@testname\Hy@undefinedname
8561 \else
8562 \Hy@pstringdef\Hy@testname{%
8563 \expandafter\HyperDestNameFilter\expandafter{%

```

```

8564     \Hy@testname
8565     }%
8566     }%
8567     \fi
8568     \@pdfm@mark{%
8569     bann<<%
8570     /Type/Annot%
8571     /Subtype/Link%
8572     \ifHy@pdfa /F 4\fi
8573     \Hy@setpdfborder
8574     \expandafter\ifx\csname @#1bordercolor\endcsname\relax
8575     \else
8576     /C[\csname @#1bordercolor\endcsname]%
8577     \fi
8578     /A<<%
8579     /S/GoTo%
8580     /D(\Hy@testname)%
8581     >>%
8582     >>%
8583     }%
8584     \expandafter\Hy@colorlink\csname @#1color\endcsname
8585     }%
8586 }
8587 \def\hyper@linkend{\Hy@EndAnnot}%
8588 \def\hyper@link#1#2#3{%
8589   \hyper@linkstart{#1}{#2}#3\hyper@linkend
8590 }
8591 \def\hyper@linkfile#1#2#3{%
8592   \leavevmode
8593   \Hy@BeginAnnot{%
8594     \Hy@pstringdef\Hy@pstringF{#2}%
8595     \Hy@pstringdef\Hy@pstringD{#3}%
8596     \@pdfm@mark{%
8597     bann<<%
8598     /Type/Annot%
8599     /Subtype/Link%
8600     \ifHy@pdfa /F 4\fi
8601     \Hy@setpdfborder
8602     \ifx\@filebordercolor\relax
8603     \else
8604     /C[\@filebordercolor]%
8605     \fi
8606     /A<<%
8607     /S/GoToR%
8608     /F(\Hy@pstringF)%
8609     /D\ifx\#3\[\[0 \@pdfstartview]\else(\Hy@pstringD)\fi
8610     \Hy@SetNewWindow
8611     >>%
8612     >>%
8613     }%
8614     \Hy@colorlink\@filecolor
8615     }%
8616     #1%
8617     \Hy@EndAnnot
8618 }
8619 \def\hyper@linkurl#1#2{%
8620   \leavevmode

```

```

8621 \Hy@BeginAnnot{%
8622 \Hy@pstringdef\Hy@pstringURI{#2}%
8623 \@pdfm@mark{%
8624   bann<<%
8625     /Type/Annot%
8626     /Subtype/Link%
8627     \ifHy@pdfa /F 4\fi
8628     \Hy@setpdfborder
8629     \ifx\@urlbordercolor\relax
8630     \else
8631       /C[\@urlbordercolor]%
8632     \fi
8633     /A<<%
8634     /S/URI%
8635     /URI(\Hy@pstringURI)%
8636     >>%
8637   >>%
8638 }%
8639 \Hy@colorlink\@urlcolor
8640}%
8641 #1%
8642 \Hy@endAnnot
8643}
8644\def\Acrobatmenu#1#2{%
8645 \Hy@Acrobatmenu{#1}{#2}{%
8646 \Hy@BeginAnnot{%
8647 \Atpdfm@mark{%
8648   bann<<%
8649     /Type/Annot%
8650     /Subtype/Link%
8651     \ifHy@pdfa /F 4\fi
8652     /A<<%
8653     /S/Named%
8654     /N/#1%
8655     >>%
8656     \Hy@setpdfborder
8657     \ifx\@menubordercolor\relax
8658     \relax
8659     /C[\@menubordercolor]%
8660     \fi
8661     >>%
8662   }%
8663   \Hy@colorlink\@menucolor
8664 }%
8665 #2%
8666 \Hy@endAnnot
8667}%
8668}
8669\ifx\@pdfproducer\relax
8670 \def\@pdfproducer{dvipdfm}%

```

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

```

8671 \begingroup\expandafter\expandafter\expandafter\endgroup
8672 \expandafter\ifx\csname XeTeXversion\endcsname\relax
8673 \else
8674 \edef\@pdfproducer{XeTeX \the\XeTeXversion\XeTeXrevision}%
8675 \fi
8676 \fi

```

```

8677 \def\PDF@FinishDoc{%
8678   \Hy@UseMaketitleInfos
8679   \HyInfo@GenerateAddons
8680   \@pdfm@mark{%
8681     docinfo<<%
8682     /Title(\@pdftitle)%
8683     /Subject(\@pdfsubject)%
8684     /Creator(\@pdfcreator)%
8685     \ifx\@pdfcreationdate\@empty
8686     \else
8687       /CreationDate(\@pdfcreationdate)%
8688     \fi
8689     \ifx\@pdfmoddate\@empty
8690     \else
8691       /ModDate(\@pdfmoddate)%
8692     \fi
8693     /Author(\@pdfauthor)%
8694     \ifx\@pdfproducer\relax
8695     \else
8696       /Producer(\@pdfproducer)%
8697     \fi
8698     /Keywords(\@pdfkeywords)%
8699     \ifx\@pdftrapped\@empty
8700     \else
8701       /Trapped/\@pdftrapped
8702     \fi
8703     \HyInfo@Addons
8704     >>%
8705   }%
8706   \Hy@DisableOption{pdfauthor}%
8707   \Hy@DisableOption{pdftitle}%
8708   \Hy@DisableOption{pdfsubject}%
8709   \Hy@DisableOption{pdfcreator}%
8710   \Hy@DisableOption{pdfcreationdate}%
8711   \Hy@DisableOption{pdfmoddate}%
8712   \Hy@DisableOption{pdfproducer}%
8713   \Hy@DisableOption{pdfkeywords}%
8714   \Hy@DisableOption{pdftrapped}%
8715   \Hy@DisableOption{pdfinfo}%
8716 }

8717 \def\PDF@SetupDoc{%
8718   \edef\Hy@temp{%
8719     \ifHy@toolbar\else /HideToolbar true\fi
8720     \ifHy@menubar\else /HideMenubar true\fi
8721     \ifHy>windowui\else /HideWindowUI true\fi
8722     \ifHy@fitwindow /FitWindow true\fi
8723     \ifHy@centerwindow /CenterWindow true\fi
8724     \ifHy@displaydoctitle /DisplayDocTitle true\fi
8725     \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
8726     \Hy@UseNameKey{Direction}\@pdfdirection
8727     \Hy@UseNameKey{ViewArea}\@pdfviewarea
8728     \Hy@UseNameKey{ViewClip}\@pdfviewclip
8729     \Hy@UseNameKey{PrintArea}\@pdfprintarea
8730     \Hy@UseNameKey{PrintClip}\@pdfprintclip
8731     \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
8732     \Hy@UseNameKey{Duplex}\@pdfduplex
8733     \ifx\@pdfpicktraybypdfsize\@empty

```

```

8734 \else
8735 /PickTrayByPDFSize \@pdfpicktraybypdfsize
8736 \fi
8737 \ifx\@pdfprintpagerange\@empty
8738 \else
8739 /PrintPageRange[\@pdfprintpagerange]%
8740 \fi
8741 \ifx\@pdfnumcopies\@empty
8742 \else
8743 /NumCopies \@pdfnumcopies
8744 \fi
8745 }%
8746 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
8747 \@pdfm@mark{%
8748 docview<<%
8749 \ifx\@pdfstartpage\@empty
8750 \else
8751 \ifx\@pdfstartview\@empty
8752 \else
8753 /OpenAction[@page\@pdfstartpage\@pdfstartview]%
8754 \fi
8755 \fi
8756 \ifx\@baseurl\@empty
8757 \else
8758 /URI<</Base(\Hy@pstringB)>>%
8759 \fi
8760 /PageMode/\@pdfpagemode
8761 \ifx\Hy@temp\@empty
8762 \else
8763 /ViewerPreferences<<\Hy@temp>>%
8764 \fi
8765 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
8766 \ifx\@pdflang\@empty
8767 \else
8768 /Lang(\@pdflang)%
8769 \fi
8770 >>%
8771 }%
8772 \ifx\@pdfpagescrop\@empty
8773 \else
8774 \@pdfm@mark{put @pages <</CropBox[\@pdfpagescrop]>>}%
8775 \fi
8776 }
8777 </dvipdfm | xetex>

```

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

```

8778 <*dvipdfm>
8779 \AtBeginShipoutFirst{%
8780 \ifHy@setpagesize
8781 \begingroup
8782 \@ifundefined{stockwidth}{%
8783 \ifdim\paperwidth>\z@
8784 \ifdim\paperheight>\z@
8785 \special{papersize=\the\paperwidth,\the\paperheight}%
8786 \fi
8787 \fi
8788 }{%

```

```

8789 \ifdim\stockwidth>\z@
8790 \ifdim\stockheight>\z@
8791 \special{papersize=\the\stockwidth,\the\stockheight}%
8792 \fi
8793 \fi
8794 }%
8795 \endgroup
8796 \fi
8797 \Hy@DisableOption{setpagesize}%
8798 }
8799 </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.

```

8800 <*vtexhtml>
8801 \providecommand*{\XR@ext}{htm}
8802 \RequirePackage{vtexhtml}
8803 \newif\if@Localurl
8804 \def\PDF@FinishDoc{}
8805 \def\PDF@SetupDoc{%
8806 \ifx\@baseurl\@empty
8807 \else
8808 \special{!direct <base href="\@baseurl">}}%
8809 \fi
8810 }
8811 \def\@urltype{url}
8812 \def\hyper@link#1#2#3{%
8813 \leavevmode
8814 \special{!direct <a href=%
8815 \hyper@quote\hyper@hash\HyperDestNameFilter{#2}\hyper@quote>}}%
8816 #3%
8817 \special{!direct </a>}}%
8818 }
8819 \def\hyper@linkurl#1#2{%
8820 \begingroup
8821 \hyper@chars
8822 \leavevmode
8823 \MathBSuppress=1\relax
8824 \special{!direct <a href=%
8825 \hyper@quote\HyperDestNameFilter{#2}\hyper@quote>}}%
8826 #1%
8827 \MathBSuppress=0\relax
8828 \special{!direct </a>}}%
8829 \endgroup
8830 }
8831 \def\hyper@linkfile#1#2#3{%
8832 \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\else\\#3\fi}%
8833 }
8834 \def\hyper@linkstart#1#2{%
8835 \def\Hy@tempa{#1}\ifx\Hy@tempa\@urltype
8836 \@Localurltrue
8837 \special{!direct <a href=\hyper@quote#2\hyper@quote>}}%
8838 \else
8839 \@Localurlfalse
8840 \begingroup

```

```

8841 \hyper@chars
8842 \special{!aref \HyperDestNameFilter{#2}}%
8843 \endgroup
8844 \fi
8845 }
8846 \def\hyper@linkend{%
8847 \if@Localurl
8848 \special{!endaref}%
8849 \else
8850 \special{!direct </a>}%
8851 \fi
8852 }
8853 \def\hyper@anchorstart#1{%
8854 \Hy@SaveLastskip
8855 \begingroup
8856 \hyper@chars
8857 \special{!aname #1}%
8858 \special{!direct <a name=%
8859 \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
8860 \endgroup
8861 \Hy@Activeanchortrue
8862 }
8863 \def\hyper@anchorend{%
8864 \special{!direct </a>}%
8865 \Hy@Activeanchorfalse
8866 \Hy@RestoreLastskip
8867 }
8868 \def\hyper@anchor#1{%
8869 \Hy@SaveLastskip
8870 \begingroup
8871 \let\protect=\string
8872 \hyper@chars
8873 \leavevmode
8874 \special{!aname #1}%
8875 \special{!direct <a name=%
8876 \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
8877 \endgroup
8878 \Hy@Activeanchortrue
8879 \bgroup\anchor@spot\egroup
8880 \special{!direct </a>}%
8881 \Hy@Activeanchorfalse
8882 \Hy@RestoreLastskip
8883 }
8884 \def\@Form[#1]{%
8885 \typeout{Sorry, TeXpider does not yet support FORMs}%
8886 }
8887 \def\@endForm{}
8888 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
8889 \typeout{Sorry, TeXpider does not yet support FORM gauges}%
8890 }
8891 \def\@TextField[#1]#2{% parameters, label
8892 \typeout{Sorry, TeXpider does not yet support FORM text fields}%
8893 }
8894 \def\@CheckBox[#1]#2{% parameters, label
8895 \typeout{Sorry, TeXpider does not yet support FORM checkboxes}%
8896 }
8897 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices

```

```

8898 \typeout{Sorry, TeXpider does not yet support FORM choice menus}%
8899 }
8900 \def\@PushButton[#1]#2{% parameters, label
8901 \typeout{Sorry, TeXpider does not yet support FORM pushbuttons}%
8902 }
8903 \def\@Reset[#1]#2{%
8904 \typeout{Sorry, TeXpider does not yet support FORMs}%
8905 }
8906 \def\@Submit[#1]#2{%
8907 \typeout{Sorry, TeXpider does not yet support FORMs}%
8908 }
8909 \</vtexhtml>
8910 \< *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.

```

8911 \ifx\mediaheight\@undefined
8912 \else
8913 \ifx\mediaheight\relax
8914 \else
8915 \ifHy@setpagesize
8916 \providecommand*\VTeXInitMediaSize{%
8917 \ifundefined{stockwidth}{%
8918 \ifdim\paperheight>0pt %
8919 \setlength\mediaheight\paperheight
8920 \fi
8921 \ifdim\paperheight>0pt %
8922 \setlength\mediawidth\paperwidth
8923 \fi
8924 }{%
8925 \ifdim\stockheight>0pt %
8926 \setlength\mediaheight\stockheight
8927 \fi
8928 \ifdim\stockwidth>0pt %
8929 \setlength\mediawidth\stockwidth
8930 \fi
8931 }%
8932 }%
8933 \AtBeginDocument{\VTeXInitMediaSize}%
8934 \fi
8935 \Hy@DisableOption{setpagesize}%
8936 \fi
8937 \fi

```

Older versions of VTeX require xyz in lower case.

```

8938 \providecommand*\@pdfview{xyz}
8939 \providecommand*\@pdfborder{0 0 1}
8940 \providecommand*\@pdfborderstyle{}
8941 \let\CurrentBorderColor\@linkbordercolor
8942 \def\hyper@anchor#1{%
8943 \Hy@SaveLastskip
8944 \begingroup
8945 \let\protect=\string
8946 \hyper@chars
8947 \special{!aname \HyperDestNameFilter{#1};\@pdfview}%
8948 \endgroup
8949 \Hy@activeanchortrue

```

```

8950 \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
8951 \Hy@activeanchorfalse
8952 \Hy@RestoreLastskip
8953 }
8954 \def\hyper@anchorstart#1{%
8955 \Hy@SaveLastskip
8956 \begingroup
8957 \hyper@chars
8958 \special{!aname \HyperDestNameFilter{#1};\@pdfview}%
8959 \endgroup
8960 \Hy@activeanchortrue
8961 }
8962 \def\hyper@anchorend{%
8963 \Hy@activeanchorfalse
8964 \Hy@RestoreLastskip
8965 }
8966 \def\@urltype{url}
8967 \def\Hy@undefinedname{UNDEFINED}
8968 \def\hyper@linkstart#1#2{%
8969 \Hy@pstringdef\Hy@pstringURI{#2}%
8970 \expandafter\Hy@colorlink\csname @#1color\endcsname
8971 \@ifundefined{@#1bordercolor}{%
8972 \let\CurrentBorderColor\relax
8973 }{%
8974 \edef\CurrentBorderColor{%
8975 \csname @#1bordercolor\endcsname
8976 }%
8977 }%
8978 \def\Hy@tempa{#1}%
8979 \ifx\Hy@tempa\@urltype
8980 \special{!%
8981 aref <u=/Type /Action /S /URI /URI (\Hy@pstringURI)>;%
8982 a=<%
8983 \ifHy@pdfa /F 4\fi
8984 \Hy@setpdfborder
8985 \ifx\CurrentBorderColor\relax
8986 \else
8987 /C [\CurrentBorderColor]%
8988 \fi
8989 >%
8990 }%
8991 \else
8992 \protected@edef\Hy@testname{#2}%
8993 \ifx\Hy@testname\@empty
8994 \Hy@Warning{%
8995 Empty destination name,\MessageBreak
8996 using '\Hy@undefinedname'%
8997 }%
8998 \let\Hy@testname\Hy@undefinedname
8999 \fi
9000 \special{!%
9001 aref \expandafter\HyperDestNameFilter
9002 \expandafter{\Hy@testname};%
9003 a=<%
9004 \ifHy@pdfa /F 4\fi
9005 \Hy@setpdfborder
9006 \ifx\CurrentBorderColor\relax

```

```

9007     \else
9008         /C [\CurrentBorderColor]%
9009     \fi
9010     >%
9011     }%
9012 \fi
9013 }
9014 \def\hyper@linkend{%
9015     \special{!endaref}%
9016     \Hy@endcolorlink
9017 }
9018 \def\hyper@linkfile#1#2#3{%
9019     \leavevmode
9020     \special{!%
9021         aref <%
9022         \ifnum\Hy@VTeXversion>753 \ifHy@newwindow n\fi
9023         f=#2>#3;%
9024         a=<%
9025         \ifHy@pdfa /F 4\fi
9026         \Hy@setpdfborder
9027         \ifx\@filebordercolor\relax
9028         \else
9029             /C [\@filebordercolor]%
9030         \fi
9031         >%
9032     }%
9033     \Hy@colorlink\@filecolor#1\Hy@endcolorlink
9034     \special{!endaref}%
9035 }
9036 \def\hyper@linkurl#1#2{%
9037     \begingroup
9038     \Hy@pstringdef\Hy@pstringURI{#2}%
9039     \hyper@chars
9040     \leavevmode
9041     \special{!%
9042         aref <u=/Type /Action /S /URI /URI (\Hy@pstringURI)>;%
9043         a=<%
9044         \ifHy@pdfa /F 4\fi
9045         \Hy@setpdfborder
9046         \ifx\@urlbordercolor\relax
9047         \else
9048             /C [\@urlbordercolor]%
9049         \fi
9050         >%
9051     }%
9052     \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
9053     \special{!endaref}%
9054 \endgroup
9055 }
9056 \def\hyper@link#1#2#3{%
9057     \@ifundefined{@#1bordercolor}{%
9058         \let\CurrentBorderColor\relax
9059     }{%
9060         \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
9061     }%
9062     \leavevmode
9063     \protected@edef\Hy@testname{#2}%

```

```

9064 \ifx\Hy@testname\@empty
9065   \Hy@Warning{%
9066     Empty destination name,\MessageBreak
9067     using '\Hy@undefinedname'%
9068   }%
9069   \let\Hy@testname\Hy@undefinedname
9070 \fi
9071 \special{!%
9072   aref \expandafter\HyperDestNameFilter
9073   \expandafter{\Hy@testname};%
9074   a=<%
9075   \ifHy@pdfa /F 4\fi
9076   \Hy@setpdfborder
9077   \ifx\CurrentBorderColor\relax
9078   \else
9079     /C [\CurrentBorderColor]%
9080   \fi
9081   >%
9082 }%
9083 \expandafter
9084 \Hy@colorlink\csname @#1color\endcsname#3\Hy@endcolorlink
9085 \special{!endaref}%
9086 }
9087 \def\hyper@image#1#2{%
9088   \hyper@linkurl{#2}{#1}%
9089 }
9090 \def\@hyper@launch run:#1\#2#3{%
9091   \Hy@pstringdef\Hy@pstringF{#1}%
9092   \Hy@pstringdef\Hy@pstringP{#3}%
9093   \leavevmode
9094   \special{!aref %
9095     <u=%
9096     /Type/Action%
9097     /S/Launch%
9098     /F(\Hy@pstringF)%
9099     \Hy@SetNewWindow
9100     \ifx\#3\%
9101     \else
9102       /Win<</F(\Hy@pstringF)/P(\Hy@pstringP)>>%
9103     \fi%
9104     >;%
9105     a=<%
9106     \ifHy@pdfa /F 4\fi
9107     \Hy@setpdfborder
9108     \ifx\@runbordercolor\relax
9109     \else
9110       /C[\@runbordercolor]%
9111     \fi
9112     >%
9113   }%
9114   \Hy@colorlink\@runcolor#2\Hy@endcolorlink
9115   \special{!endaref}%
9116 }
9117 \def\Acrobatmenu#1#2{%
9118   \Hy@Acrobatmenu{#1}{#2}{%
9119     \special{!%
9120       aref <u=/S /Named /N /#1>;%

```

```

9121     a=<%
9122         \ifHy@pdfa /F 4\fi
9123         \Hy@setpdfborder
9124         \ifx\@menubordercolor\relax
9125         \else
9126         /C[\@menubordercolor]%
9127         \fi
9128     >%
9129 }%
9130 \Hy@colorlink\@menucolor#2\Hy@endcolorlink
9131 \special{!endaref}%
9132 }%
9133 }

```

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

The code below makes sense for VT<sub>E</sub>X 7.02 or later.

Please never use `\ifundefined{VTEXversion}{...}{...}` *globally*.

```

9134 \ifnum\Hy@VTEXversion<702 %
9135 \else
9136 \def\hyper@pagetransition{%
9137     \ifx\@pdfpagetransition\relax
9138     \else
9139     \ifx\@pdfpagetransition\@empty

```

Standard incantation.

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

```

9140     \else
9141     \hvtex@parse@trans\@pdfpagetransition
9142     \fi
9143 \fi
9144 }%

```

I have to write an “honest” parser to convert raw PDF code into VT<sub>E</sub>X `\special`.  
(AVK)

Syntax of VT<sub>E</sub>X `\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:

```

9145 \def\hvtex@trans@effect@Blinds{\def\hvtex@trans@code{B}}%
9146 \def\hvtex@trans@effect@Box{\def\hvtex@trans@code{X}}%
9147 \def\hvtex@trans@effect@Dissolve{\def\hvtex@trans@code{D}}%
9148 \def\hvtex@trans@effect@Glitter{\def\hvtex@trans@code{G}}%
9149 \def\hvtex@trans@effect@Split{\def\hvtex@trans@code{S}}%
9150 \def\hvtex@trans@effect@Wipe{\def\hvtex@trans@code{W}}%

```

```
9151 \def\hvtex@trans@effect@R{\def\hvtex@trans@code{R}}}%
```

Optional parameters:

```
9152 \def\hvtex@par@dimension{/Dm}%
```

```
9153 \def\hvtex@par@direction{/Di}%
```

```
9154 \def\hvtex@par@duration{/D}%
```

```
9155 \def\hvtex@par@motion{/M}%
```

Tokenizer:

```
9156 \def\hvtex@gettoken{%
```

```
9157 \expandafter\hvtex@gettoken@\hvtex@buffer\@nil
```

```
9158 }%
```

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

```
9159 \def\hvtex@gettoken@#1 #2\@nil{%
```

```
9160 \edef\hvtex@token{#1}%
```

```
9161 \edef\hvtex@buffer{#2}%
```

```
9162 }%
```

```
9163 \def\hvtex@parse@trans#1{%
```

Initializing code:

```
9164 \let\hvtex@trans@code\@empty
```

```
9165 \let\hvtex@param@dimension\@empty
```

```
9166 \let\hvtex@param@direction\@empty
```

```
9167 \let\hvtex@param@duration\@empty
```

```
9168 \let\hvtex@param@motion\@empty
```

```
9169 \edef\hvtex@buffer{#1\space}%
```

First token is the PDF transition name without escape.

```
9170 \hvtex@gettoken
```

```
9171 \ifx\hvtex@token\@empty
```

Leading space(s)?

```
9172 \ifx\hvtex@buffer\@empty
```

The buffer is empty, nothing to do.

```
9173 \else
```

```
9174 \hvtex@gettoken
```

```
9175 \fi
```

```
9176 \fi
```

```
9177 \csname hvtex@trans@effect@\hvtex@token\endcsname
```

Now is time to parse optional parameters.

```
9178 \hvtex@trans@params
```

```
9179 }%
```

Reentrant macro to parse optional parameters.

```
9180 \def\hvtex@trans@params{%
```

```
9181 \ifx\hvtex@buffer\@empty
```

```
9182 \else
```

```
9183 \hvtex@gettoken
```

```
9184 \let\hvtex@trans@par\hvtex@token
```

```
9185 \ifx\hvtex@buffer\@empty
```

```
9186 \else
```

```
9187 \hvtex@gettoken
```

```
9188 \ifx\hvtex@trans@par\hvtex@par@duration
```

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

```
9189 \let\hvtex@param@duration\hvtex@token
```

```
9190 \else \ifx\hvtex@trans@par\hvtex@par@motion
```

/M can be either /I or /O

```
9191      \expandafter\edef\expandafter\hvtex@param@motion
9192      \expandafter{\expandafter\@gobble\hvtex@token}%
9193      \else \ifx\hvtex@trans@par\hvtex@par@dimension
```

/Dm can be either /H or /V

```
9194      \expandafter\edef\expandafter\hvtex@param@dimension
9195      \expandafter{\expandafter\@gobble\hvtex@token}%
9196      \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).

```
9197      \let\hvtex@param@direction\hvtex@token
9198      \fi\fi\fi\fi
9199      \fi
9200      \fi
9201      \ifx\hvtex@buffer\@empty
9202      \let\next\hvtex@produce@trans
9203      \else
9204      \let\next\hvtex@trans@params
9205      \fi
9206      \next
9207      }%
```

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

```
9208 \def\hvtex@produce@trans{%
9209 \let\vtex@trans@special\@empty
9210 \if S\hvtex@trans@code
9211 \edef\vtex@trans@special{\hvtex@trans@code
9212 \hvtex@param@dimension\hvtex@param@motion}%
9213 \else\if B\hvtex@trans@code
9214 \edef\vtex@trans@special{%
9215 \hvtex@trans@code\hvtex@param@dimension
9216 }%
9217 \else\if X\hvtex@trans@code
9218 \edef\vtex@trans@special{%
9219 \hvtex@trans@code\hvtex@param@motion
9220 }%
9221 \else\if W\hvtex@trans@code
9222 \edef\vtex@trans@special{%
9223 \hvtex@trans@code\hvtex@param@direction
9224 }%
9225 \else\if D\hvtex@trans@code
9226 \let\vtex@trans@special\hvtex@trans@code
9227 \else\if R\hvtex@trans@code
9228 \let\vtex@trans@special\hvtex@trans@code
9229 \else\if G\hvtex@trans@code
9230 \edef\vtex@trans@special{%
9231 \hvtex@trans@code\hvtex@param@direction
9232 }%
9233 \fi\fi\fi\fi\fi\fi
9234 \ifx\vtex@trans@special\@empty
9235 \else
9236 \ifx\hvtex@param@duration\@empty
9237 \else
9238 \setlength{\dimen@}{\hvtex@param@duration\p}%
```

I'm not guilty of possible overflow.

```

9239      \multiply\dimen@ \@m
9240      \edef\vtex@trans@special{%
9241        \vtex@trans@special,\strip@pt\dimen@
9242      }%
9243      \fi

      And all the mess is just for this.

9244      \special{!trans \vtex@trans@special}%
9245      \fi
9246    }%

9247    \def\hyper@pageduration{%
9248      \ifx \@pdfpageduration\relax
9249      \else
9250      \ifx \@pdfpageduration\@empty
9251        \special{!duration-}%
9252      \else
9253        \special{!duration \@pdfpageduration}%
9254      \fi
9255      \fi
9256    }%

9257    \def\hyper@pagehidden{%
9258      \ifHy@useHidKey
9259      \special{!hidden\ifHy@pdfpagehidden +\else -\fi}%
9260      \fi
9261    }%

9262    \g@addto@macro\Hy@EveryPageBoxHook{%
9263      \hyper@pagetransition
9264      \hyper@pageduration
9265      \hyper@pagehidden
9266    }%
9267    \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

```

9268 \ifx \@pdfproducer\relax
9269 \def \@pdfproducer{VTeX}%
9270 \ifnum \Hy@VTeXversion>\z@
9271   \count@ \VTeXversion
9272   \divide\count@ 100 %
9273   \edef \@pdfproducer{\@pdfproducer\space v\the\count@}%
9274   \multiply\count@ -100 %
9275   \advance\count@ \VTeXversion
9276   \edef \@pdfproducer{%
9277     \@pdfproducer
9278     .\ifnum \count@<10 0\fi\the\count@
9279   \ifx \VTeXOS\@undefined\else
9280     \ifnum \VTeXOS>0 %
9281       \ifnum \VTeXOS<6 %
9282         \space(
9283         \ifcase \VTeXOS

```

```

9284      \or Windows\or Linux\or OS/2\or MacOS\or MacOS/X%
9285      \fi
9286      )%
9287      \fi
9288      \fi
9289      \fi
9290      ,\space
9291      \ifnum\OpMode=\@ne PDF\else PS\fi
9292      \space backend%
9293      \ifx\gexmode\@undefined\else
9294      \ifnum\gexmode>z@\space with GeX\fi
9295      \fi
9296      }%
9297      \fi
9298      \fi

```

Current !pdfinfo key syntax:

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

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

```

9299 \def\PDF@SetupDoc{%
9300   \ifx\@pdfpagescrop\@empty
9301   \else
9302     \special{!pdfinfo b=<\@pdfpagescrop>}%
9303   \fi
9304   \ifx\@pdfstartpage\@empty
9305   \else
9306     \ifx\@pdfstartview\@empty
9307     \else
9308       \special{!onopen Page\@pdfstartpage}%
9309     \fi
9310   \fi
9311   \special{!pdfinfo p=</\@pdfpagemode>}%
9312   \ifx\@baseurl\@empty
9313   \else
9314     \special{!pdfinfo u=<<</Base (\@baseurl)>>>}%
9315   \fi
9316   \special{!pdfinfo v=<<<%
9317     \ifHy@toolbar\else /HideToolbar true\fi
9318     \ifHy@menubar\else /HideMenubar true\fi
9319     \ifHy>windowui\else /HideWindowUI true\fi
9320     \ifHy@fitwindow /FitWindow true\fi
9321     \ifHy@centerwindow /CenterWindow true\fi
9322     \ifHy@displaydoctitle /DisplayDocTitle true\fi
9323     \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
9324     \Hy@UseNameKey{Direction}\@pdfdirection
9325     \Hy@UseNameKey{ViewArea}\@pdfviewarea

```

```

9326 \Hy@UseNameKey{ViewClip}\@pdfviewclip
9327 \Hy@UseNameKey{PrintArea}\@pdfprintarea
9328 \Hy@UseNameKey{PrintClip}\@pdfprintclip
9329 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
9330 \Hy@UseNameKey{Duplex}\@pdfduplex
9331 \ifx\@pdfpicktraybypdfsize\@empty
9332 \else
9333   /PickTrayByPDFSize \@pdfpicktraybypdfsize
9334 \fi
9335 \ifx\@pdfprintpagerange\@empty
9336 \else
9337   /PrintPageRange\@pdfprintpagerange]%
9338 \fi
9339 \ifx\@pdfnumcopies\@empty
9340 \else
9341   /NumCopies \@pdfnumcopies
9342 \fi
9343 >>>}%
9344 \ifx\@pdfpagelayout\@empty
9345 \else
9346   \special{!pdfinfo l=</\@pdfpagelayout\space>}%
9347 \fi
9348 }%
9349 \HyInfo@AddonUnsupportedtrue
9350 \def\PDF@FinishDoc{%
9351   \Hy@UseMaketitleInfos
9352   \HyInfo@TrappedUnsupported
9353   \special{!pdfinfo a=<\@pdfauthor>}%
9354   \special{!pdfinfo t=<\@pdftitle>}%
9355   \special{!pdfinfo s=<\@pdfsubject>}%
9356   \special{!pdfinfo c=<\@pdfcreator>}%
9357   \ifx\@pdfproducer\relax
9358   \else
9359     \special{!pdfinfo r=<\@pdfproducer>}%
9360   \fi
9361   \special{!pdfinfo k=<\@pdfkeywords>}%
9362   \Hy@DisableOption{pdfauthor}%
9363   \Hy@DisableOption{pdftitle}%
9364   \Hy@DisableOption{pdfsubject}%
9365   \Hy@DisableOption{pdfcreator}%
9366   \Hy@DisableOption{pdfcreationdate}%
9367   \Hy@DisableOption{pdfmoddate}%
9368   \Hy@DisableOption{pdfproducer}%
9369   \Hy@DisableOption{pdfkeywords}%
9370   \Hy@DisableOption{pdftrapped}%
9371   \Hy@DisableOption{pdfinfo}%
9372 }
9373 </vtex>

```

## 46.7 Fix for Adobe bug number 466320

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

```

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

```

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

```

9374 <dviwindo>\def\literalps@out#1{\special{ps:#1}}%
9375 <package>\providecommand*{\Hy@DistillerDestFix}{-}
9376 <*pdfmark | dviwindo>
9377 \def\Hy@DistillerDestFix{%
9378   \begingroup
9379   \let\x\literalps@out

```

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

```

9380   \ifnum \@ifundefined{OpMode}{0}{%
9381     \@ifundefined{gexmode}{0}{%
9382       \ifnum\gexmode>0 \OpMode\else 0\fi
9383     }>1 %
9384   \def\x##1{%
9385     \immediate\special{!=##1}%
9386   }%
9387   \fi
9388   \x{%
9389     /product where{%
9390       pop %
9391       product(Distiller)search{%
9392         pop pop pop %
9393         version(.)search{%
9394           exch pop exch pop%
9395           (3011)eq{%
9396             gsave %
9397             newpath 0 0 moveto closepath clip%
9398             /Courier findfont 10 scalefont setfont %
9399             72 72 moveto(.).show %
9400             grestore%
9401           }if%
9402         }{pop}ifelse%
9403       }{pop}ifelse%
9404     }if%
9405   }%
9406   \endgroup
9407 }
9408 </pdfmark | dviwindo>

```

## 46.8 Direct pdfmark support

Drivers that load pdfmark.def have to provide the correct macro definitions of

<code>\@pdfproducer</code>	for document information
<code>\literalps@out</code>	PostScript output
<code>\headerps@out</code>	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

```

9409 (*pdfmark)
9410 \Hy@breaklinks@unsupported
9411 \def\hyper@anchor#1{%
9412   \Hy@SaveLastskip
9413   \begingroup
9414     \pdfmark[\anchor@spot]{%
9415       pdfmark=/DEST,%
9416       linktype=anchor,%
9417       View=/\@pdfview \@pdfviewparams,%
9418       DestAnchor={#1}%
9419     }%
9420   \endgroup
9421   \Hy@RestoreLastskip
9422 }
9423 \@ifundefined{hyper@anchorstart}{\endinput}{}
9424 \def\hyper@anchorstart#1{%
9425   \Hy@SaveLastskip
9426   \literalps@out{H.S}%
9427   \xdef\hyper@currentanchor{#1}%
9428   \Hy@activeanchortrue
9429 }
9430 \def\hyper@anchorend{%
9431   \literalps@out{\strip@pt@and@otherjunk\baselineskip\space H.A}%
9432   \pdfmark{%
9433     pdfmark=/DEST,%
9434     linktype=anchor,%
9435     View=/\@pdfview \@pdfviewparams,%
9436     DestAnchor=\hyper@currentanchor,%
9437   }%
9438   \Hy@activeanchorfalse
9439   \Hy@RestoreLastskip
9440 }
9441 \def\hyper@linkstart#1#2{%
9442   \ifHy@breaklinks
9443   \else
9444     \leavevmode\hbox\bgroup
9445     \fi
9446     \expandafter\Hy@colorlink\csname @#1color\endcsname
9447     \literalps@out{H.S}%
9448     \xdef\hyper@currentanchor{#2}%
9449     \gdef\hyper@currentlinktype{#1}%
9450 }
9451 \def\hyper@linkend{%
9452   \literalps@out{\strip@pt@and@otherjunk\baselineskip\space H.L}%
9453   \@ifundefined{@\hyper@currentlinktype bordercolor}{%
9454     \let\Hy@tempcolor\relax
9455   }{%
9456     \edef\Hy@tempcolor{%
9457       \csname @\hyper@currentlinktype bordercolor\endcsname
9458     }%
9459   }%
9460   \pdfmark{%
9461     pdfmark=/ANN,%
9462     linktype=link,%
9463     Subtype=/Link,%
9464     PDFAFlags=4,%
9465     Dest=\hyper@currentanchor,%

```

```

9466   AcroHighlight=\@pdfhighlight,%
9467   Border=\@pdfborder,%
9468   BorderStyle=\@pdfborderstyle,%
9469   Color=\Hy@tempcolor,%
9470   Raw=H.B%
9471 }%
9472 \Hy@endcolorlink
9473 \ifHy@breaklinks
9474 \else
9475   \egroup
9476 \fi
9477 }

```

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.

```

9478 \begingroup
9479 \catcode'P=12 %
9480 \catcode'T=12 %
9481 \lowercase{\endgroup
9482 \gdef\rem@ptetc#1.#2PT#3!{#1\ifnum#2>\z@.#2\fi}%
9483 }
9484 \def\strip@pt@and@otherjunk#1{\expandafter\rem@ptetc\the#1!}

```

\hyper@pagetransition

```

9485 \def\hyper@pagetransition{%
9486   \ifx\@pdfpagetransition\relax
9487   \else
9488     \ifx\@pdfpagetransition\@empty
9489       % 1. Does an old entry have to be deleted?
9490       % 2. If 1=yes, how to delete?
9491     \else
9492       \pdfmark{%
9493         pdfmark=/PUT,%
9494         Raw={%
9495           \string{ThisPage\string}%
9496           <</Trans << /S /\@pdfpagetransition\space >> >>%
9497         }%
9498       }%
9499     \fi
9500 \fi
9501 }

```

\hyper@pageduration

```

9502 \def\hyper@pageduration{%
9503   \ifx\@pdfpageduration\relax
9504   \else
9505     \ifx\@pdfpageduration\@empty
9506       % 1. Does an old entry have to be deleted?
9507       % 2. If 1=yes, how to delete?
9508     \else
9509       \pdfmark{%
9510         pdfmark=/PUT,%
9511         Raw={%
9512           \string{ThisPage\string}%
9513           <</Dur \@pdfpageduration>>%
9514       }%

```

```

9515     }%
9516     \fi
9517 \fi
9518 }

```

\hyper@pagehidden

```

9519 \def\hyper@pagehidden{%
9520   \ifHy@useHidKey
9521     \pdfmark{%
9522       pdfmark=/PUT,%
9523       Raw={%
9524         \string{ThisPage\string}%
9525         <</Hid \ifHy@pdfpagehidden true\else false\fi>>%
9526       }%
9527     }%
9528   \fi
9529 }

9530 \g@addto@macro\Hy@EveryPageBoxHook{%
9531   \hyper@pagetransition
9532   \hyper@pageduration
9533   \hyper@pagehidden
9534 }

9535 \def\hyper@image#1#2{%
9536   \hyper@linkurl{#2}{#1}%
9537 }

9538 \def\Hy@undefinedname{UNDEFINED}
9539 \def\hyper@link#1#2#3{%
9540   \@ifundefined{@#1bordercolor}{%
9541     \let\Hy@tempcolor\relax
9542   }{%
9543     \edef\Hy@tempcolor{\csname @#1bordercolor\endcsname}%
9544   }%
9545   \begingroup
9546     \protected@edef\Hy@testname{#2}%
9547     \ifx\Hy@testname\@empty
9548       \Hy@Warning{%
9549         Empty destination name,\MessageBreak
9550         using '\Hy@undefinedname'%
9551       }%
9552     \let\Hy@testname\Hy@undefinedname
9553   \fi
9554   \pdfmark[{#3}]{%
9555     Color=\Hy@tempcolor,%
9556     linktype={#1},%
9557     AcroHighlight=\@pdfhighlight,%
9558     Border=\@pdfborder,%
9559     BorderStyle=\@pdfborderstyle,%
9560     pdfmark=/ANN,%
9561     Subtype=/Link,%
9562     PDFAMlags=4,%
9563     Dest=\Hy@testname
9564   }%
9565   \endgroup
9566 }

9567 \newtoks\pdf@docset
9568 \def\PDF@FinishDoc{%

```

```

9569 \Hy@UseMaketitleInfos
9570 \HyInfo@GenerateAddons
9571 \let\Hy@temp\@empty
9572 \ifx\@pdfcreationdate\@empty
9573 \else
9574 \def\Hy@temp{CreationDate=\@pdfcreationdate,}%
9575 \fi
9576 \ifx\@pdfmoddate\@empty
9577 \else
9578 \expandafter\def\expandafter\Hy@temp\expandafter{%
9579 \Hy@temp
9580 ModDate=\@pdfmoddate,%
9581 }%
9582 \fi
9583 \ifx\@pdfproducer\relax
9584 \else
9585 \expandafter\def\expandafter\Hy@temp\expandafter{%
9586 \Hy@temp
9587 Producer=\@pdfproducer,%
9588 }%
9589 \fi
9590 \expandafter
9591 \pdfmark\expandafter{%
9592 \Hy@temp
9593 pdfmark=/DOCINFO,%
9594 Title=\@pdftitle,%
9595 Subject=\@pdfsubject,%
9596 Creator=\@pdfcreator,%
9597 Author=\@pdfauthor,%
9598 Keywords=\@pdfkeywords,%
9599 Trapped=\@pdftrapped
9600 }%
9601 \ifx\HyInfo@Addons\@empty
9602 \else
9603 \pdfmark{%
9604 pdfmark=/DOCINFO,%
9605 Raw={\HyInfo@Addons}%
9606 }%
9607 \fi
9608 \Hy@DisableOption{pdfauthor}%
9609 \Hy@DisableOption{pdftitle}%
9610 \Hy@DisableOption{pdfsubject}%
9611 \Hy@DisableOption{pdfcreator}%
9612 \Hy@DisableOption{pdfcreationdate}%
9613 \Hy@DisableOption{pdfmoddate}%
9614 \Hy@DisableOption{pdfproducer}%
9615 \Hy@DisableOption{pdfkeywords}%
9616 \Hy@DisableOption{pdftrapped}%
9617 \Hy@DisableOption{pdfinfo}%
9618 }
9619 \def\PDF@SetupDoc{%
9620 \def\Hy@temp{}%
9621 \ifx\@pdfstartpage\@empty
9622 \else
9623 \ifx\@pdfstartview\@empty
9624 \else
9625 \edef\Hy@temp{%

```

```

9626     ,Page=\@pdfstartpage
9627     ,View=\@pdfstartview
9628   }%
9629   \fi
9630 \fi
9631 \edef\Hy@temp{%
9632   \noexpand\pdfmark{%
9633     pdfmark=/DOCVIEW,%
9634     PageMode=/\@pdfpagemode
9635   \Hy@temp
9636   }%
9637 }%
9638 \Hy@temp
9639 \ifx\@pdfpagescrop\@empty
9640 \else
9641   \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
9642 \fi
9643 \edef\Hy@temp{%
9644   \ifHy@toolbar\else /HideToolbar true\fi
9645   \ifHy@menubar\else /HideMenubar true\fi
9646   \ifHy>windowui\else /HideWindowUI true\fi
9647   \ifHy@fitwindow /FitWindow true\fi
9648   \ifHy@centerwindow /CenterWindow true\fi
9649   \ifHy@displaydoctitle /DisplayDocTitle true\fi
9650   \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
9651   \Hy@UseNameKey{Direction}\@pdfdirection
9652   \Hy@UseNameKey{ViewArea}\@pdfviewarea
9653   \Hy@UseNameKey{ViewClip}\@pdfviewclip
9654   \Hy@UseNameKey{PrintArea}\@pdfprintarea
9655   \Hy@UseNameKey{PrintClip}\@pdfprintclip
9656   \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
9657   \Hy@UseNameKey{Duplex}\@pdfduplex
9658   \ifx\@pdfpicktraybypdfsize\@empty
9659   \else
9660     /PickTrayByPDFSize \@pdfpicktraybypdfsize
9661   \fi
9662   \ifx\@pdfprintpagerange\@empty
9663   \else
9664     /PrintPageRange[\@pdfprintpagerange]%
9665   \fi
9666   \ifx\@pdfnumcopies\@empty
9667   \else
9668     /NumCopies \@pdfnumcopies
9669   \fi
9670 }%
9671 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
9672 \pdfmark{%
9673   pdfmark=/PUT,%
9674   Raw={%
9675     \string{Catalog\string}<<%
9676     \ifx\Hy@temp\@empty
9677     \else
9678       /ViewerPreferences<<\Hy@temp>>%
9679     \fi
9680     \Hy@UseNameKey{PageLayout}\@pdfpagelayout
9681     \ifx\@pdflang\@empty
9682     \else

```

```

9683      /Lang(\@pdflang)%
9684      \fi
9685      \ifx\@baseurl\@empty
9686      \else
9687      /URI<</Base(\Hy@pstringB)>>%
9688      \fi
9689      >>%
9690      }%
9691      }%
9692  }
9693  </pdfmark>
9694  <*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.

```

9695 \newif\ifHy@pdfmarkerror
9696 \def\pdfmark{\@ifnextchar[{\pdfmark@}{\pdfmark@[]}}
9697 \def\pdfmark@[#1]#2{%
9698   \Hy@pdfmarkerrorfalse
9699   \edef\@processme{\noexpand\pdf@toks={\the\pdf@defaulttoks}}%
9700   \@processme
9701   \let\pdf@type\relax
9702   \setkeys{PDF}{#2}%
9703   \ifHy@pdfmarkerror
9704   \else
9705     \ifx\pdf@type\relax
9706       \Hy@WarningNoLine{no pdfmark type specified in #2!!}%
9707       \ifx\#1\%
9708       \else
9709         \pdf@rect{#1}%
9710         \fi
9711       \else
9712         \ifx\#1\%
9713         \literalps@out{%
9714           [\the\pdf@toks\space\pdf@type\space pdfmark%
9715           ]%
9716         \else
9717           \@ifundefined{@\pdf@linktype color}{%
9718             \Hy@colorlink\@linkcolor
9719           }{%
9720             \expandafter\Hy@colorlink
9721             \csname @\pdf@linktype color\endcsname
9722           }%
9723           \pdf@rect{#1}%
9724           \literalps@out{%
9725             [\the\pdf@toks\space\pdf@type\space pdfmark%
9726             ]%
9727             \Hy@endcolorlink
9728           \fi
9729         \fi
9730       \fi
9731     }

```

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}
```

```
9732 \newsavebox{\pdf@box}
9733 \providecommand*{\Hy@setouterhbox}{\sbox}
9734 \providecommand*{\Hy@breaklinksunhbox}{\unhbox}
9735 \def\Hy@DEST{/DEST}
9736 \def\pdf@rect#1{%
9737   \leavevmode
9738   \ifHy@breaklinks
9739     \Hy@setouterhbox\pdf@box{#1}%
9740   \else
9741     \sbox\pdf@box{#1}%
9742   \fi
9743   \dimen@ht\pdf@box
9744   \ifdim\dp\pdf@box=\z@
9745     \literalps@out{H.S}%
9746   \else
9747     \lower\dp\pdf@box\hbox{\literalps@out{H.S}}%
9748   \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...).

```
9749 \ifHy@breaklinks
9750   \expandafter\Hy@breaklinksunhbox
9751 \else
9752   \expandafter\box
9753 \fi
9754 \pdf@box
```

but if it can have multiple paragraphs you'd need one of these, but in that case the measured box size would be wrong anyway.

```
\ifHy@breaklinks#1\else\box\pdf@box\fi
\ifHy@breaklinks{#1}\else\box\pdf@box\fi
```

```
9755 \ifdim\dimen@=\z@
9756   \literalps@out{H.R}%
9757 \else
9758   \raise\dimen@\hbox{\literalps@out{H.R}}%
9759 \fi
9760 \ifx\pdf@type\Hy@DEST
9761 \else
9762   \pdf@addtoksx{H.B}%
9763 \fi
9764 }
```

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.

```
9765 \newtoks\pdf@toks
9766 \newtoks\pdf@defaulttoks
9767 \pdf@defaulttoks={}
9768 \def\pdf@addtoks#1#2{%
```

```

9769 \edef\@processme{\pdf@toks{\the\pdf@toks/#2 #1}}%
9770 \@processme
9771 }
9772 \def\pdf@addtoksx#1{%
9773 \edef\@processme{\pdf@toks{\the\pdf@toks\space #1}}%
9774 \@processme
9775 }
9776 \def\PDFdefaults#1{%
9777 \pdf@defaulttoks={#1}%
9778 }

```

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

```

9779 % what is the type of pdfmark?
9780 \define@key{PDF}{pdfmark}{\def\pdf@type{#1}}
9781 % what is the link type?
9782 \define@key{PDF}{linktype}{\def\pdf@linktype{#1}}
9783 \def\pdf@linktype{link}
9784 % parameter is a stream of PDF
9785 \define@key{PDF}{Raw}{\pdf@addtoksx{#1}}
9786 % parameter is a name
9787 \define@key{PDF}{Action}{\pdf@addtoks{#1}{Action}}
9788 % parameter is a array
9789 \define@key{PDF}{Border}{%
9790 \edef\Hy@temp{#1}%
9791 \ifx\Hy@temp\@empty
9792 \else
9793 \pdf@addtoks{[#1]\Hy@BorderArrayPatch}{Border}% hash-ok
9794 \fi
9795 }
9796 \let\Hy@BorderArrayPatch\@empty
9797 % parameter is a dictionary
9798 \define@key{PDF}{BorderStyle}{%
9799 \edef\Hy@temp{#1}%
9800 \ifx\Hy@temp\@empty
9801 \else
9802 \pdf@addtoks{<<#1>>}{BS}%
9803 \fi
9804 }
9805 % parameter is a array
9806 \define@key{PDF}{Color}{%
9807 \ifx\relax#1\relax
9808 \else
9809 \pdf@addtoks{[#1]}{Color}% hash-ok
9810 \fi
9811 }
9812 % parameter is a string
9813 \define@key{PDF}{Contents}{\pdf@addtoks{(#1)}{Contents}}
9814 % parameter is a integer
9815 \define@key{PDF}{Count}{\pdf@addtoks{#1}{Count}}
9816 % parameter is a array
9817 \define@key{PDF}{CropBox}{\pdf@addtoks{[#1]}{CropBox}}% hash-ok
9818 % parameter is a string
9819 \define@key{PDF}{DOSFile}{\pdf@addtoks{(#1)}{DOSFile}}
9820 % parameter is a string or file
9821 \define@key{PDF}{DataSource}{\pdf@addtoks{(#1)}{DataSource}}
9822 % parameter is a destination
9823 \define@key{PDF}{Dest}{%
9824 \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%

```

```

9825 \ifx\Hy@pstringDest\@empty
9826 \Hy@pdfmarkerrortrue
9827 \Hy@Warning{Destination with empty name ignored}%
9828 \else
9829 \pdf@addtoks{(\Hy@pstringDest) cvn}{Dest}%
9830 \fi
9831 }
9832 \define@key{PDF}{DestAnchor}{%
9833 \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
9834 \ifx\Hy@pstringDest\@empty
9835 \Hy@pdfmarkerrortrue
9836 \Hy@Warning{Destination with empty name ignored}%
9837 \else
9838 \pdf@addtoks{(\Hy@pstringDest) cvn}{Dest}%
9839 \fi
9840 }
9841 % parameter is a string
9842 \define@key{PDF}{Dir}{\pdf@addtoks{(#1)}{Dir}}
9843 % parameter is a string
9844 \define@key{PDF}{File}{\pdf@addtoks{(#1)}{File}}
9845 % parameter is a int
9846 \define@key{PDF}{Flags}{\pdf@addtoks{#1}{Flags}}
9847 \define@key{PDF}{PDFAFlags}{%
9848 \ifHy@pdfa
9849 \pdf@addtoks{#1}{F}%
9850 \fi
9851 }
9852 % parameter is a name
9853 \define@key{PDF}{AcroHighlight}{%
9854 \begingroup
9855 \edef\x{#1}%
9856 \expandafter\endgroup\ifx\x\@empty
9857 \else
9858 \pdf@addtoks{#1}{H}%
9859 \fi
9860 }
9861 % parameter is a string
9862 \define@key{PDF}{ID}{\pdf@addtoks{[#1]}{ID}}% hash-ok
9863 % parameter is a string
9864 \define@key{PDF}{MacFile}{\pdf@addtoks{(#1)}{MacFile}}
9865 % parameter is a string
9866 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
9867 % parameter is a string
9868 \define@key{PDF}{Op}{\pdf@addtoks{(#1)}{Op}}
9869 % parameter is a Boolean
9870 \define@key{PDF}{Open}{\pdf@addtoks{#1}{Open}}
9871 % parameter is a integer or name
9872 \define@key{PDF}{Page}{\pdf@addtoks{#1}{Page}}
9873 % parameter is a name
9874 \define@key{PDF}{PageMode}{\pdf@addtoks{#1}{PageMode}}
9875 % parameter is a string
9876 \define@key{PDF}{Params}{\pdf@addtoks{(#1)}{Params}}
9877 % parameter is a array
9878 \define@key{PDF}{Rect}{\pdf@addtoks{[#1]}{Rect}}% hash-ok
9879 % parameter is a integer
9880 \define@key{PDF}{SrcPg}{\pdf@addtoks{#1}{SrcPg}}
9881 % parameter is a name

```

```

9882 \define@key{PDF}{Subtype}{\pdf@addtoks{#1}{Subtype}}
9883 % parameter is a string
9884 \define@key{PDF}{Title}{\pdf@addtoks{(#1)}{Title}}
9885 % parameter is a string
9886 \define@key{PDF}{Unix}{\pdf@addtoks{(#1)}{Unix}}
9887 % parameter is a string
9888 \define@key{PDF}{UnixFile}{\pdf@addtoks{(#1)}{UnixFile}}
9889 % parameter is an array
9890 \define@key{PDF}{View}{\pdf@addtoks{[#1]}{View}}% hash-ok
9891 % parameter is a string
9892 \define@key{PDF}{WinFile}{\pdf@addtoks{(#1)}{WinFile}}

```

These are the keys used in the DOCINFO section.

```

9893 \define@key{PDF}{Author}{\pdf@addtoks{(#1)}{Author}}
9894 \define@key{PDF}{Creator}{\pdf@addtoks{(#1)}{Creator}}
9895 \define@key{PDF}{CreationDate}{\pdf@addtoks{(#1)}{CreationDate}}
9896 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
9897 \define@key{PDF}{Producer}{\pdf@addtoks{(#1)}{Producer}}
9898 \define@key{PDF}{Subject}{\pdf@addtoks{(#1)}{Subject}}
9899 \define@key{PDF}{Keywords}{\pdf@addtoks{(#1)}{Keywords}}
9900 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
9901 \define@key{PDF}{Base}{\pdf@addtoks{(#1)}{Base}}
9902 \define@key{PDF}{URI}{\pdf@addtoks{#1}{URI}}
9903 \define@key{PDF}{Trapped}{%
9904   \edef\Hy@temp{#1}%
9905   \ifx\Hy@temp\@empty
9906     \else
9907       \pdf@addtoks{/#1}{Trapped}%
9908     \fi
9909 }
9910
9911 </pdfmarkbase>
9912 <*pdfmark>
9913 \def\Acrobatmenu#1#2{%
9914   \Hy@Acrobatmenu{#1}{#2}{%
9915     \pdfmark[{#2}]{%
9916       linktype=menu,%
9917       pdfmark=/ANN,%
9918       AcroHighlight=\@pdfhighlight,%
9919       Border=\@pdfborder,%
9920       BorderStyle=\@pdfborderstyle,%
9921       Action={<< /Subtype /Named /N /#1 >>},%
9922       Subtype=/Link,%
9923       PDFANFlags=4%
9924     }%
9925   }%
9926 }

```

And now for some useful examples:

```

9927 \def\PDFNextPage{\@ifnextchar[{\PDFNextPage@}{\PDFNextPage@[]}}
9928 \def\PDFNextPage@[#1]#2{%
9929   \pdfmark[{#2}]{%
9930     #1,%
9931     Border=\@pdfborder,%
9932     BorderStyle=\@pdfborderstyle,%
9933     Color=.2 .1 .5,%
9934     pdfmark=/ANN,%
9935     Subtype=/Link,%

```

```

9936   PDFAFlags=4,%
9937   Page=/Next%
9938 }%
9939 }
9940 \def\PDFPreviousPage{%
9941   \@ifnextchar[{\PDFPreviousPage@}{\PDFPreviousPage@[]}%
9942 }
9943 \def\PDFPreviousPage@[#1]#2{%
9944   \pdfmark[#{#2}]{%
9945     #1,%
9946     Border=\@pdfborder,%
9947     BorderStyle=\@pdfborderstyle,%
9948     Color=.4 .4 .1,%
9949     pdfmark=/ANN,%
9950     Subtype=/Link,%
9951     PDFAFlags=4,%
9952     Page=/Prev%
9953   }%
9954 }
9955 \def\PDFOpen#1{%
9956   \pdfmark{#1,pdfmark=/DOCVIEW}%
9957 }

```

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

```

9958 \def\hyper@linkurl#1#2{%
9959   \begingroup
9960   \Hy@pstringdef\Hy@pstringURI{#2}%
9961   \hyper@chars
9962   \leavevmode
9963   \pdfmark[#{#1}]{%
9964     pdfmark=/ANN,%
9965     linktype=url,%
9966     AcroHighlight=\@pdfhighlight,%
9967     Border=\@pdfborder,%
9968     BorderStyle=\@pdfborderstyle,%
9969     Color=\@urlbordercolor,%
9970     Action={<< /Subtype /URI /URI (\Hy@pstringURI) >>},%
9971     Subtype=/Link,%
9972     PDFAFlags=4%
9973   }%
9974   \endgroup
9975 }
9976 \def\hyper@linkfile#1#2#3{%
9977   \begingroup
9978   \Hy@pstringdef\Hy@pstringF{#2}%
9979   \Hy@pstringdef\Hy@pstringD{#3}%
9980   \leavevmode
9981   \pdfmark[#{#1}]{%
9982     pdfmark=/ANN,%
9983     Subtype=/Link,%
9984     PDFAFlags=4,%
9985     AcroHighlight=\@pdfhighlight,%
9986     Border=\@pdfborder,%
9987     BorderStyle=\@pdfborderstyle,%
9988     linktype=file,%
9989     Color=\@filebordercolor,%
9990     Action={%
9991       <<%

```

```

9992      /S/GoToR%
9993      \Hy@SetNewWindow
9994      /F(\Hy@pstringF)%
9995      /D\ifx\#3\0 \@pdfstartview\else(\Hy@pstringD)cvn\fi
9996      >>%
9997    }%
9998  }%
9999  \endgroup
10000}
10001\def\@hyper@launch run:#1\#2#3{%
10002  \begingroup
10003    \Hy@pstringdef\Hy@pstringF{#1}%
10004    \Hy@pstringdef\Hy@pstringP{#3}%
10005    \leavevmode
10006    \pdfmark[{#2}]{%
10007      pdfmark=/ANN,%
10008      Subtype=/Link,%
10009      PDFAFlags=4,%
10010      AcroHighlight=\@pdfhighlight,%
10011      Border=\@pdfborder,%
10012      BorderStyle=\@pdfborderstyle,%
10013      linktype=run,%
10014      Color=\@runbordercolor,%
10015      Action={%
10016        <<%
10017        /S/Launch%
10018        \Hy@SetNewWindow
10019        /F(\Hy@pstringF)%
10020        \ifx\#3\%
10021        \else
10022          /Win<</P(\Hy@pstringP)/F(\Hy@pstringF)>>%
10023        \fi
10024        >>%
10025      }%
10026    }%
10027  \endgroup
10028}
10029</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.

```

10030< *dvips>
10031\providecommand*{\XR@ext}{pdf}
10032\def\Hy@raisedlink{}
10033\def\literalps@out#1{\special{ps:SDict begin #1 end}}%
10034\def\headerps@out#1{\special{! #1}}%
10035\input{pdfmark.def}%
10036\ifx\@pdfproducer\relax
10037  \def\@pdfproducer{dvips + Distiller}%
10038\fi
10039\providecommand*\@pdfborder{0 0 1}

```

```

10040 \providecommand*\@pdfborderstyle{}
10041 \providecommand*\@pdfview{XYZ}
10042 \providecommand*\@pdfviewparams{ H.V}
10043 \def\Hy@BorderArrayPatch{BorderArrayPatch}

10044 \g@addto@macro\Hy@FirstPageHook{%
10045   \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.

```

10046   /DvipsToPDF{72.27 mul Resolution div} def%
10047   /PDFToDvips{72.27 div Resolution mul} def%
10048   /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.

```

10049   /BorderArrayPatch{%
10050     [exch{%
10051       dup dup type/integertype eq exch type/realtype eq or%
10052       {BPToDvips}if%
10053     }forall]%
10054   }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.

```

10055   /HyperBorder {1 PDFToDvips} def%
10056   /H.V {pdf@hoff pdf@voff null} def%
10057   /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

```

10058   /H.S {%
10059     currentpoint %
10060     HyperBorder add /pdf@lly exch def %
10061     dup DvipsToPDF 72 add /pdf@hoff exch def %
10062     HyperBorder sub /pdf@llx exch def%
10063   } 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`

```

10064   /H.L {%
10065     2 sub dup%

```

```

10066 /HyperBasePt exch def %
10067 PDFToDvips /HyperBaseDvips exch def %
10068 currentpoint %
10069 HyperBaseDvips sub /pdf@ury exch def%
10070 /pdf@urx exch def%
10071 } def%
10072 /H.A {%
10073 H.L %
10074 % | /pdf@voff| = the distance from the top of the page to a point
10075 % | \baselineskip| above the current point in PDF coordinates
10076 currentpoint exch pop %
10077 vsize 72 sub exch DvipsToPDF %
10078 HyperBasePt sub % baseline skip
10079 sub /pdf@voff exch def%
10080 } def%
10081 /H.R {%
10082 currentpoint %
10083 HyperBorder sub /pdf@ury exch def %
10084 HyperBorder add /pdf@urx exch def %
10085 % | /pdf@voff| = the distance from the top of the page to the current point, in
10086 % PDF coordinates
10087 currentpoint exch pop vsize 72 sub %
10088 exch DvipsToPDF sub /pdf@voff exch def%
10089 } def%
10090 }%
10091 }
10092 \AtBeginShipoutFirst{%
10093 \ifHy@setpagesize
10094 \begingroup
10095 \@ifundefined{stockwidth}{%
10096 \ifdim\paperwidth>\z@
10097 \ifdim\paperheight>\z@
10098 \special{papersize=\the\paperwidth,\the\paperheight}%
10099 \fi
10100 \fi
10101 }{%
10102 \ifdim\stockwidth>\z@
10103 \ifdim\stockheight>\z@
10104 \special{papersize=\the\stockwidth,\the\stockheight}%
10105 \fi
10106 \fi
10107 }%
10108 \endgroup
10109 \fi
10110 \Hy@DisableOption{setpagesize}%
10111 }
10112 </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.

```

10113 < *vtexpdfmark >
10114 \providecommand*{\XR@ext}{pdf}

```

```

10115 \def\Hy@raisedlink{}
10116 \def\literalps@out#1{\special{pS:#1}}%
10117 \def\headerps@out#1{\immediate\special{pS:#1}}%
10118 \input{pdfmark.def}%
10119 \ifx\@pdfproducer\relax
10120   \ifnum\OpMode=\@ne
10121     \def\@pdfproducer{VTeX}%
10122   \else
10123     \def\@pdfproducer{VTeX + Distiller}%
10124   \fi
10125 \fi
10126 \providecommand*\@pdfborder{0 0 1}
10127 \providecommand*\@pdfborderstyle{}
10128 \providecommand*\@pdfview{XYZ}
10129 \providecommand*\@pdfviewparams{ H.V}

10130 \g@addto@macro\Hy@FirstPageHook{%
10131   \headerps@out{%
10132     /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.

```

10133   /HyperBorder {1} def%
10134   /H.V {pdf@hoff pdf@voff null} def%
10135   /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:  $\text{pdf@lly} = Y_c - \text{HyperBorder}$ ,  $\text{pdf@hoff} = X_c + 72$ ,  $\text{pdf@llx} = X_c - \text{HyperBorder}$

```

10136   /H.S {%
10137     currentpoint %
10138     HyperBorder sub%
10139     /pdf@lly exch def %
10140     dup 72 add /pdf@hoff exch def %
10141     HyperBorder sub%
10142     /pdf@llx exch def%
10143   } def%

```

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

```

10144   /H.L {%
10145     2 sub%
10146     /HyperBasePt exch def %
10147     currentpoint %
10148     HyperBasePt add HyperBorder add%
10149     /pdf@ury exch def %
10150     HyperBorder add%
10151     /pdf@urx exch def%
10152   } def%
10153   /H.A {%
10154     H.L %
10155     currentpoint exch pop %
10156     vsize 72 sub exch %
10157     HyperBasePt add add%
10158     /pdf@voff exch def%
10159   } def%

```

$\text{pdf@ury} = Y_c + \text{HyperBorder}$ ,  $\text{pdf@urx} = X_c + \text{HyperBorder}$

```

10160   /H.R {%

```

```

10161    currentpoint %
10162    HyperBorder add%
10163    /pdf@ury exch def %
10164    HyperBorder add%
10165    /pdf@urx exch def %
10166    currentpoint exch pop vsize 72 sub add%
10167    /pdf@voff exch def%
10168    } def%
10169    }%
10170 }
10171 </vtexpdfmark>

```

## 46.11 Textures

```

10172 <*textures>
10173 \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.

```

10174 \begingroup
10175   \obeylines %
10176   \gdef\Hy@ps@CR{\noexpand
10177   }%
10178 \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`.

```

10179 \def\literalps@out#1{%
10180   \special{postscript 0 0 transform}%
10181   \special{rawpostscript itransform moveto\Hy@ps@CR #1}%
10182 }%
10183 %

```

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.

```

10184 \def\headerps@out#1{%
10185   \special{%
10186     prepostscript TeXdict begin\Hy@ps@CR
10187     #1\Hy@ps@CR
10188     end%
10189   }%
10190 }%
10191 %

```

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.

```

10192 \g@addto@macro\Hy@FirstPageHook{%
10193   \headerps@out{%
10194     /betterpdfmark {%
10195       systemdict begin %
10196         dup /BP eq%
10197         {cleartomark gsave nulldevice []}%
10198         {dup /EP eq%
10199           {cleartomark cleartomark grestore}%
10200           {cleartomark}%
10201           ifelse%
10202         }ifelse %
10203       end%
10204     }def\Hy@ps@CR
10205     ___pdfmark___ not{/pdfmark /betterpdfmark load def}if%
10206   }% end of \headerps@out
10207 }% end of \AtBeginShipoutFirst
10208 %
10209 \input{pdfmark.def}%
10210 %
10211 \ifx\@pdfproducer\relax
10212   \def\@pdfproducer{Textures + Distiller}%
10213 \fi
10214 \providecommand*\@pdfborder{0 0 1}
10215 \providecommand*\@pdfborderstyle{}
10216 \providecommand*\@pdfview{XYZ}
10217 \providecommand*\@pdfviewparams{ H.V}
10218 %

```

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  $\TeX$ .

```

10219 \AfterBeginDocument{%
10220   \headerps@out{%

```

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

```

10221   /vsize {\Hy@pageheight} def%
10222   /DvipsToPDF {} def%
10223   /PDFToDvips {} def%
10224   /BPToDvips {} def%
10225   /HyperBorder { 1 PDFToDvips } def\Hy@ps@CR
10226   /H.V {pdf@hoff pdf@voff null} def\Hy@ps@CR
10227   /H.B {/Rect[pdf@llx pdf@lly pdf@urx pdf@ury]} def\Hy@ps@CR
10228   /H.S {%
10229     currentpoint %
10230     HyperBorder add /pdf@lly exch def %
10231     dup DvipsToPDF 72 add /pdf@hoff exch def %
10232     HyperBorder sub /pdf@llx exch def%
10233   } def\Hy@ps@CR
10234   /H.L {%
10235     2 sub %
10236     PDFToDvips /HyperBase exch def %
10237     currentpoint %

```

```

10238   HyperBase sub /pdf@ury exch def%
10239   /pdf@urx exch def%
10240 } def\Hy@ps@CR
10241 /H.A {%
10242   H.L %
10243   currentpoint exch pop %
10244   vsize 72 sub exch DvipsToPDF %
10245   HyperBase sub % baseline skip
10246   sub /pdf@voff exch def%
10247 } def\Hy@ps@CR
10248 /H.R {%
10249   currentpoint %
10250   HyperBorder sub /pdf@ury exch def %
10251   HyperBorder add /pdf@urx exch def %
10252   currentpoint exch pop vsize 72 sub %
10253   exch DvipsToPDF sub /pdf@voff exch def%
10254 } def\Hy@ps@CR
10255 }%
10256 }

10257 \AfterBeginDocument{%
10258   \ifHy@colorlinks
10259     \headerps@out{/PDFBorder{/Border [0 0 0]}def}%
10260   \fi
10261 }

```

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.

```

10262 \expandafter\let\expandafter\keepPDF@SetupDoc
10263   \csname PDF@SetupDoc\endcsname
10264 \def\PDF@SetupDoc{%
10265   \ifx\@baseurl\@empty
10266   \else
10267     \special{html:<base href="\@baseurl">}%
10268   \fi
10269   \keepPDF@SetupDoc
10270 }
10271 \def\hyper@anchor#1{%
10272   \Hy@SaveLastskip
10273   \begingroup
10274     \let\protect=\string
10275     \special{html:<a name=%
10276       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
10277   \endgroup
10278   \Hy@activeanchortrue
10279   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
10280   \special{html:</a>}%
10281   \Hy@activeanchorfalse
10282   \Hy@RestoreLastskip
10283 }
10284 \def\hyper@anchorstart#1{%
10285   \Hy@SaveLastskip
10286   \begingroup
10287     \hyper@chars
10288     \special{html:<a name=%
10289       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
10290   \endgroup
10291   \Hy@activeanchortrue

```

```

10292 }
10293 \def\hyper@anchorend{%
10294   \special{html:</a>}%
10295   \Hy@activeanchorfalse
10296   \Hy@RestoreLastskip
10297 }
10298 \def\@urlltype{url}
10299 \def\hyper@linkstart#1#2{%
10300   \expandafter\Hy@colorlink\csname @#1color\endcsname
10301   \def\Hy@tempa{#1}%
10302   \ifx\Hy@tempa\@urlltype
10303     \special{html:<a href=\hyper@quote#2\hyper@quote>}%
10304   \else
10305     \begingroup
10306       \hyper@chars
10307       \special{%
10308         html:<a href=%
10309         \hyper@quote\#\Hy@DestNameFilter{#2}\hyper@quote>%
10310       }%
10311     \endgroup
10312   \fi
10313 }
10314 \def\hyper@linkend{%
10315   \special{html:</a>}%
10316   \Hy@endcolorlink
10317 }
10318 \def\hyper@linkfile#1#2#3{%
10319   \hyper@linkurl{#1}{%
10320     \Hy@linkfileprefix#2\ifx\\#3\\\else\##3\fi
10321   }%
10322 }
10323 \def\hyper@linkurl#1#2{%
10324   \leavevmode
10325   \ifHy@raiselinks
10326     \setbox\@tempboxa=\color@hbox #1\color@endbox
10327     \@linkdim\dp\@tempboxa
10328     \lower\@linkdim\hbox{%
10329       \hyper@chars
10330       \special{html:<a href=\hyper@quote#2\hyper@quote>}%
10331     }%
10332     \Hy@colorlink\@urlcolor#1%
10333     \@linkdim\ht\@tempboxa
10334     \advance\@linkdim by -6.5\p@
10335     \raise\@linkdim\hbox{\special{html:</a>}}%
10336     \Hy@endcolorlink
10337   \else
10338     \begingroup
10339       \hyper@chars
10340       \special{html:<a href=\hyper@quote#2\hyper@quote>}%
10341       \Hy@colorlink\@urlcolor#1%
10342       \special{html:</a>}%
10343       \Hy@endcolorlink
10344     \endgroup
10345   \fi
10346 }

```

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

```

10347 \def\hyper@link#1#2#3{%

```

```

10348 \hyper@linkurl{#3}{\#HyperDestNameFilter{#2}}%
10349 }
10350 \def\hyper@image#1#2{%
10351 \begingroup
10352 \hyper@chars
10353 \special{html:<img src=\hyper@quote#1\hyper@quote>}%
10354 \endgroup
10355 }
10356 </textures>

```

## 46.12 dvipsone

```

10357 % \subsection{dvipsone driver}
10358 % Over-ride the default setup macro in pdfmark driver to use Y\&Y
10359 % |\special| commands.
10360 (*dvipsone)
10361 \providecommand*\XR@ext}{pdf}
10362 \def\Hy@raisedlink{}
10363 \providecommand*\@pdfborder{0 0 1}
10364 \providecommand*\@pdfborderstyle{}
10365 \def\literalps@out#1{\special{ps:#1}}%
10366 \def\headerps@out#1{\special{headertext=#1}}%
10367 \input{pdfmark.def}%
10368 \ifx\@pdfproducer\relax
10369 \def\@pdfproducer{dvipsone + Distiller}%
10370 \fi
10371 \HyInfo@AddonUnsupportedtrue
10372 \def\PDF@FinishDoc{%
10373 \Hy@UseMaketitleInfos
10374 \HyInfo@TrappedUnsupported
10375 \special{PDF: Keywords \@pdfkeywords}%
10376 \special{PDF: Title \@pdftitle}%
10377 \special{PDF: Creator \@pdfcreator}%
10378 \ifx\@pdfcreationdate\@empty
10379 \else
10380 \special{PDF: CreationDate \@pdfcreationdate}%
10381 \fi
10382 \ifx\@pdfmoddate\@empty
10383 \else
10384 \special{PDF: ModDate \@pdfmoddate}%
10385 \fi
10386 \special{PDF: Author \@pdfauthor}%
10387 \ifx\@pdfproducer\relax
10388 \else
10389 \special{PDF: Producer \@pdfproducer}%
10390 \fi
10391 \special{PDF: Subject \@pdfsubject}%
10392 \Hy@DisableOption{pdfauthor}%
10393 \Hy@DisableOption{pdftitle}%
10394 \Hy@DisableOption{pdfsubject}%
10395 \Hy@DisableOption{pdfcreator}%
10396 \Hy@DisableOption{pdfcreationdate}%
10397 \Hy@DisableOption{pdfmoddate}%
10398 \Hy@DisableOption{pdfproducer}%
10399 \Hy@DisableOption{pdfkeywords}%
10400 \Hy@DisableOption{pdftrapped}%
10401 \Hy@DisableOption{pdfinfo}%

```

```

10402 }
10403 \def\PDF@SetupDoc{%
10404   \def\Hy@temp{}%
10405   \ifx\@pdfstartpage\@empty
10406   \else
10407     \ifx\@pdfstartview\@empty
10408     \else
10409       \edef\Hy@temp{%
10410         ,Page=\@pdfstartpage
10411         ,View=\@pdfstartview
10412       }%
10413     \fi
10414   \fi
10415   \edef\Hy@temp{%
10416     \noexpand\pdfmark{%
10417       pdfmark=/DOCVIEW,%
10418       PageMode=/\@pdfpagemode
10419     }\Hy@temp
10420   }%
10421 }%
10422 \Hy@temp
10423 \ifx\@pdfpagescrop\@empty
10424 \else
10425   \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
10426 \fi
10427 \edef\Hy@temp{%
10428   \ifHy@toolbar\else /HideToolbar true\fi
10429   \ifHy@menubar\else /HideMenubar true\fi
10430   \ifHy>windowui\else /HideWindowUI true\fi
10431   \ifHy@fitwindow /FitWindow true\fi
10432   \ifHy@centerwindow /CenterWindow true\fi
10433   \ifHy@displaydoctitle /DisplayDocTitle true\fi
10434   \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
10435   \Hy@UseNameKey{Direction}\@pdfdirection
10436   \Hy@UseNameKey{ViewArea}\@pdfviewarea
10437   \Hy@UseNameKey{ViewClip}\@pdfviewclip
10438   \Hy@UseNameKey{PrintArea}\@pdfprintarea
10439   \Hy@UseNameKey{PrintClip}\@pdfprintclip
10440   \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
10441   \Hy@UseNameKey{Duplex}\@pdfduplex
10442   \ifx\@pdfpicktraybypdfsize\@empty
10443   \else
10444     /PickTrayByPDFSize \@pdfpicktraybypdfsize
10445   \fi
10446   \ifx\@pdfprintpagerange\@empty
10447   \else
10448     /PrintPageRange[\@pdfprintpagerange]%
10449   \fi
10450   \ifx\@pdfnumcopies\@empty
10451   \else
10452     /NumCopies \@pdfnumcopies
10453   \fi
10454 }%
10455 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
10456 \pdfmark{%
10457   pdfmark=/PUT,%
10458   Raw={%

```

```

10459 \string{Catalog\string}<<%
10460 \ifx\Hy@temp\@empty
10461 \else
10462 /ViewerPreferences<<\Hy@temp>>%
10463 \fi
10464 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
10465 \ifx\@pdflang\@empty
10466 \else
10467 /Lang(\@pdflang)%
10468 \fi
10469 \ifx\@baseurl\@empty
10470 \else
10471 /URI<</Base(\Hy@pstringB)>>%
10472 \fi
10473 >>%
10474 }%
10475 }%
10476 }
10477 \providecommand*\@pdfview{XYZ}
10478 \providecommand*\@pdfviewparams{ %
10479 gsave revscl currentpoint grestore %
10480 72 add exch pop null exch null%
10481 }
10482 \def\Hy@BorderArrayPatch{BorderArrayPatch}

```

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

```

10483 \g@addto@macro\Hy@FirstPageHook{%
10484 \headerps@out{%

```

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

```

10485 /DvipsToPDF { 65781 div } def%
10486 /PDFToDvips { 65781 mul } def%
10487 /BPToDvips{65781 mul}def%
10488 /HyperBorder { 1 PDFToDvips } def%
10489 /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.

```

10490 /BorderArrayPatch{%
10491 [exch{%
10492 dup dup type/integertype eq exch type/realtype eq or%
10493 {BPToDvips}if%
10494 }forall]%
10495 }def%
10496 /H.S {%
10497 currentpoint %
10498 HyperBorder add /pdf@lly exch def %
10499 dup DvipsToPDF 72 add /pdf@hoff exch def %
10500 HyperBorder sub /pdf@llx exch def%
10501 } def%
10502 /H.L {%
10503 2 sub %
10504 PDFToDvips /HyperBase exch def %
10505 currentpoint %

```

```

10506   HyperBase sub /pdf@ury exch def%
10507   /pdf@urx exch def%
10508   } def%
10509   /H.A {%
10510     H.L %
10511     currentpoint exch pop %
10512     HyperBase sub % baseline skip
10513     DvipsToPDF /pdf@voff exch def%
10514   } def%
10515   /H.R {%
10516     currentpoint %
10517     HyperBorder sub /pdf@ury exch def %
10518     HyperBorder add /pdf@urx exch def %
10519     currentpoint exch pop DvipsToPDF /pdf@voff exch def%
10520   } def%
10521   }%
10522 }
10523 </dvipsone>

```

## 46.13 TeX4ht

```

10524 <*tex4ht>
10525 \providecommand*{\XR@ext}{html}
10526 \def\Hy@raisedlink{}
10527 \ifpackageloaded{tex4ht}{%
10528   \typeout{hyperref tex4ht: tex4ht already loaded}%
10529 }{%
10530   \RequirePackage[hTeX4ht]{tex4ht}%
10531 }
10532 \hyperlinkfileprefix{}
10533 \def\PDF@FinishDoc{}
10534 \def\PDF@SetupDoc{%
10535   \ifx\@baseurl\@empty
10536   \else
10537     \special{t4ht=<base href="\@baseurl">}%
10538   \fi
10539 }
10540 \def\hyper@anchor#1{%
10541   \Hy@SaveLastskip
10542   \begingroup
10543     \let\protect=\string
10544     \special{t4ht=<a name=%
10545       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
10546   \endgroup
10547   \Hy@activeanchortrue
10548   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
10549   \special{t4ht=</a>}%
10550   \Hy@activeanchorfalse
10551   \Hy@RestoreLastskip
10552 }
10553 \def\hyper@anchorstart#1{%
10554   \Hy@SaveLastskip
10555   \begingroup
10556     \hyper@chars\special{t4ht=<a name=%
10557       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
10558   \endgroup
10559   \Hy@activeanchortrue
10560 }

```

```

10561 \def\hyper@anchorend{%
10562   \special{t4ht=</a>}%
10563   \Hy@activeanchorfalse
10564   \Hy@RestoreLastskip
10565 }
10566 \def\@urltype{url}
10567 \def\hyper@linkstart#1#2{%
10568   \expandafter\Hy@colorlink\csname @#1color\endcsname
10569   \def\Hy@tempa{#1}%
10570   \ifx\Hy@tempa\@urltype
10571     \special{t4ht=<a href=\hyper@quote#2\hyper@quote>}%
10572   \else
10573     \begingroup
10574       \hyper@chars
10575       \special{t4ht=<a href=
10576         \hyper@quote\#\HyperDestNameFilter{#2}\hyper@quote>}%
10577     \endgroup
10578   \fi
10579 }
10580 \def\hyper@linkend{%
10581   \special{t4ht=</a>}%
10582   \Hy@endcolorlink
10583 }
10584 \def\hyper@linkfile#1#2#3{%
10585   \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\ \else\##3\fi}%
10586 }
10587 \def\hyper@linkurl#1#2{%
10588   \leavevmode
10589   \ifHy@raiselinks
10590     \setbox\@tempboxa=\color@hbox #1\color@endbox
10591     \@linkdim\dp\@tempboxa
10592     \lower\@linkdim\hbox{%
10593       \begingroup
10594         \hyper@chars
10595         \special{%
10596           t4ht=<a href=\hyper@quote#2\hyper@quote>%
10597         }%
10598       \endgroup
10599     }%
10600     \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
10601     \@linkdim\ht\@tempboxa
10602     \advance\@linkdim by -6.5\p@
10603     \raise\@linkdim\hbox{\special{t4ht=</a>}}%
10604   \else
10605     \begingroup
10606       \hyper@chars
10607       \special{t4ht=<a href=\hyper@quote#2\hyper@quote>}%
10608       \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
10609       \special{t4ht=</a>}%
10610     \endgroup
10611   \fi
10612 }

```

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

```

10613 \def\hyper@link#1#2#3{%
10614   \hyper@linkurl{#3}{\#\HyperDestNameFilter{#2}}%
10615 }
10616 \def\hyper@image#1#2{%

```

```

10617 \begingroup
10618   \hyper@chars
10619   \special{t4ht=<img src=\hyper@quote#1\hyper@quote>}%
10620 \endgroup
10621 }
10622 \let\autoref\ref
10623 \ifx \rEfLiNK \UnDef
10624   \def\rEfLiNK #1#2{#2}%
10625 \fi
10626 \def\backref#1{}
10627 </tex4ht>
10628 <*tex4htcfg>
10629 \IfFileExists{\jobname.cfg}{\endinput}{}
10630 \Preamble{html}
10631   \begin{document}%
10632 \EndPreamble
10633 \def\TeX{\TeX}
10634 \def\OMEGA{\Omega}
10635 \def\LaTeX{\LaTeX}
10636 \def\LaTeXe{\LaTeX2e}
10637 \def\eTeX{e-TeX}
10638 \def\MF{Metafont}
10639 \def\MP{MetaPost}
10640 </tex4htcfg>

```

## 47 Driver-specific form support

### 47.1 pdfmarks

```

10641 <*pdfmark>
10642 \long\def\@Form[#1]{%
10643   \g@addto@macro\Hy@FirstPageHook{%
10644     \headerps@out{%
10645 [%
10646   /_objdef{pdfDocEncoding}%
10647   /type/dict%
10648   /OBJ pdfmark%
10649 [%
10650   {pdfDocEncoding}%
10651   <<%
10652   /Type/Encoding%
10653   /Differences[%
10654     24/breve/caron/circumflex/dotaccent/hungarumlaut/ogonek/ring%
10655     /tilde %
10656     39/quotesingle %
10657     96/grave %
10658     128/bullet/dagger/daggerdbl/ellipsis/emdash/endash/florin%
10659     /fraction/guilsinglleft/guilsinglright/minus/perthousand%
10660     /quotedblbase/quotedblleft/quotedblright/quoteleft%
10661     /quoteright/quotesinglbase/trademark/fi/fl/Lslash/OE/Scaron%
10662     /Ydieresis/Zcaron/dotlessi/lslash/oe/scaron/zcaron %
10663     164/currency %
10664     166/brokenbar %
10665     168/dieresis/copyright/ordfeminine %
10666     172/logicalnot/.notdef/registered/macron/degree/plusminus%
10667     /twosuperior/threesuperior/acute/mu %
10668     183/periodcentered/cedilla/onesuperior/ordmasculine %
10669     188/onequarter/onehalf/threequarters %

```

```

10670    192/Agave/Aacute/Acircumflex/Atilde/Adieresis/Aring/AE%
10671    /Ccedilla/Egrave/Eacute/Ecircumflex/Edieresis/Igrave%
10672    /Iacute/Icircumflex/Idieresis/Eth/Ntilde/Ograve/Oacute%
10673    /Ocircumflex/Otilde/Odieresis/multiply/Oslash/Ugrave%
10674    /Uacute/Ucircumflex/Udieresis/Yacute/Thorn/germandbls%
10675    /agrave/aacute/acircumflex/atilde/adieresis/aring/ae%
10676    /ccedilla/egrave/eacute/ecircumflex/edieresis/igrave%
10677    /iacute/icircumflex/idieresis/eth/ntilde/ograde/oacute%
10678    /ocircumflex/otilde/odieresis/divide/oslash/ugrave/uacute%
10679    /ucircumflex/udieresis/yacute/thorn/ydieresis%
10680    ]%
10681    >>%
10682 /PUT pdfmark%
10683 [%
10684    /__objdef{ZaDb}%
10685    /type/dict%
10686 /OBJ pdfmark%
10687 [%
10688    {ZaDb}%
10689    <<%
10690    /Type/Font%
10691    /Subtype/Type1%
10692    /Name/ZaDb%
10693    /BaseFont/ZapfDingbats%
10694    >>%
10695 /PUT pdfmark%
10696 [%
10697    /__objdef{Helv}%
10698    /type/dict%
10699 /OBJ pdfmark%
10700 [%
10701    {Helv}%
10702    <<%
10703    /Type/Font%
10704    /Subtype/Type1%
10705    /Name/Helv%
10706    /BaseFont/Helvetica%
10707    /Encoding{pdfDocEncoding}%
10708    >>%
10709 /PUT pdfmark%
10710 [%
10711    /__objdef{aform}%
10712    /type/dict%
10713 /OBJ pdfmark%
10714 [%
10715    /__objdef{afields}%
10716    /type/array%
10717 /OBJ pdfmark%
10718 {%
10719    [%
10720    /BBox[0 0 100 100]%
10721    /__objdef{Check}%
10722 /BP pdfmark %
10723    1 0 0 setrgbcolor%
10724 /ZapfDingbats 80 selectfont %
10725    20 20 moveto%
10726    (4)show%

```

```

10727 [/EP pdfmark%
10728 [%
10729   /BBox[0 0 100 100]%
10730   /_objdef{Cross}%
10731 /BP pdfmark %
10732 1 0 0 setrgbcolor%
10733 /ZapfDingbats 80 selectfont %
10734 20 20 moveto%
10735 (8)show%
10736 [/EP pdfmark%
10737 [%
10738   /BBox[0 0 250 100]%
10739   /_objdef{Submit}%
10740 /BP pdfmark %
10741 0.6 setgray %
10742 0 0 250 100 rectfill %
10743 1 setgray %
10744 2 2 moveto %
10745 2 98 lineto %
10746 248 98 lineto %
10747 246 96 lineto %
10748 4 96 lineto %
10749 4 4 lineto %
10750 fill %
10751 0.34 setgray %
10752 248 98 moveto %
10753 248 2 lineto %
10754 2 2 lineto %
10755 4 4 lineto %
10756 246 4 lineto %
10757 246 96 lineto %
10758 fill%
10759 /Helvetica 76 selectfont %
10760 0 setgray %
10761 8 22.5 moveto%
10762 (Submit)show%
10763 [/EP pdfmark%
10764 [%
10765   /BBox[0 0 250 100]%
10766   /_objdef{SubmitP}%
10767 /BP pdfmark %
10768 0.6 setgray %
10769 0 0 250 100 rectfill %
10770 0.34 setgray %
10771 2 2 moveto %
10772 2 98 lineto %
10773 248 98 lineto %
10774 246 96 lineto %
10775 4 96 lineto %
10776 4 4 lineto %
10777 fill %
10778 1 setgray %
10779 248 98 moveto %
10780 248 2 lineto %
10781 2 2 lineto %
10782 4 4 lineto %
10783 246 4 lineto %

```

```

10784 246 96 lineto %
10785 fill%
10786 /Helvetica 76 selectfont %
10787 0 setgray %
10788 10 20.5 moveto%
10789 (Submit)show%
10790 [/EP pdfmark%
10791 } ?pdfmark%
10792 [%
10793 {aform}%
10794 <<%
10795 /Fields{afields}%
10796 /DR<<%
10797 /Font<<%
10798 /ZaDb{ZaDb}%
10799 /Helv{Helv}%
10800 >>%
10801 >>%
10802 /DA(/Helv 10 Tf 0 g)%
10803 /CO{corder}%
10804 \ifHy@pdfa
10805 \else
10806 /NeedAppearances true%
10807 \fi
10808 >>%
10809 /PUT pdfmark%
10810 [%
10811 {Catalog}%
10812 <<%
10813 /AcroForm{aform}%
10814 >>%
10815 /PUT pdfmark%
10816 [%
10817 /__objdef{corder}%
10818 /type/array%
10819 /OBJ pdfmark% dps
10820 }}%
10821 \setkeys{Form}{#1}%
10822 }
10823 \def\@endForm{}
10824 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
10825 \typeout{Sorry, pdfmark drivers do not support FORM gauges}%
10826 }
10827 \def\@TextField[#1]#2{% parameters, label
10828 \def\Fld@name{#2}%
10829 \def\Fld@default{}%
10830 \let\Fld@value\@empty
10831 \def\Fld@width{\DefaultWidthofText}%
10832 \def\Fld@height{%
10833 \ifFld@multiline
10834 \DefaultHeightofTextMultiline
10835 \else
10836 \DefaultHeightofText
10837 \fi
10838 }%
10839 \begingroup
10840 \Field@toks={ }%

```

```

10841 \expandafter\HyField@SetKeys\expandafter{%
10842 \DefaultOptionsofText,#1%
10843 }%
10844 \HyField@FlagsText
10845 \ifFld@hidden\def\Fld@width{1sp}\fi
10846 \ifx\Fld@value\empty\def\Fld@value{\Fld@default}\fi
10847 \LayoutTextField{#2}{%
10848 \Hy@escapeform\PDFForm@Text
10849 \pdfmark[\MakeTextField{\Fld@width}{\Fld@height}]{%
10850 pdfmark=/ANN,Raw={\PDFForm@Text}%
10851 }%
10852 }%
10853 \endgroup
10854 }
10855 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
10856 \def\Fld@name{#2}%
10857 \let\Fld@default\relax
10858 \let\Fld@value\relax
10859 \def\Fld@width{\DefaultWidthofChoiceMenu}%
10860 \def\Fld@height{\DefaultHeightofChoiceMenu}%
10861 \begingroup
10862 \Fld@menulength=0 %
10863 \@tempdima\z@
10864 \@for\@curropt:=#3\do{%
10865 \expandafter\Fld@checkequals\@curropt==\%
10866 \Hy@StepCount\Fld@menulength
10867 \settowidth{\@tempdimb}{\@currDisplay}%
10868 \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
10869 }%
10870 \advance\@tempdima by 15\p@
10871 \Field@toks={ }%
10872 \begingroup
10873 \HyField@SetKeys{#1}%
10874 \edef\x{\endgroup
10875 \noexpand\expandafter
10876 \noexpand\HyField@SetKeys
10877 \noexpand\expandafter{%
10878 \expandafter\noexpand\csname DefaultOptionsof%
10879 \ifFld@radio
10880 Radio%
10881 \else
10882 \ifFld@combo
10883 \ifFld@popdown
10884 PopdownBox%
10885 \else
10886 ComboBox%
10887 \fi
10888 \else
10889 ListBox%
10890 \fi
10891 \fi
10892 \endcsname
10893 }%
10894 }\x
10895 \HyField@SetKeys{#1}%
10896 \ifFld@hidden\def\Fld@width{1sp}\fi
10897 \ifx\Fld@value\relax

```

```

10898 \let\Fld@value\Fld@default
10899 \fi
10900 \LayoutChoiceField{#2}{%
10901 \ifFld@radio
10902 \HyField@FlagsRadioButton
10903 \@@Radio{#3}%
10904 \else
10905 \begingroup
10906 \HyField@FlagsChoice
10907 \ifdim\Fld@width<\@tempdima
10908 \ifdim\@tempdima<1cm\@tempdima1cm\fi
10909 \edef\Fld@width{\the\@tempdima}%
10910 \fi
10911 \ifFld@combo
10912 \else
10913 \@tempdima=\the\Fld@menulength\Fld@charsize
10914 \advance\@tempdima by \Fld@borderwidth bp %
10915 \advance\@tempdima by \Fld@borderwidth bp %
10916 \edef\Fld@height{\the\@tempdima}%
10917 \fi
10918 \@@ListBox{#3}%
10919 \endgroup
10920 \fi
10921 }%
10922 \endgroup
10923 }
10924 \def\@@Radio#1{%
10925 \Fld@listcount=0 %
10926 \@for\@curropt:=#1\do{%
10927 \expandafter\Fld@checkequals\@curropt==\%
10928 \Hy@StepCount\Fld@listcount
10929 \@currDisplay\space
10930 \Hy@escapeform\PDFForm@Radio
10931 \pdfmark[\MakeRadioField{\Fld@width}{\Fld@height}]{%
10932 pdfmark=/ANN,%
10933 Raw={%
10934 \PDFForm@Radio /AP <</N <</\@currValue\space {Check}>> >>%
10935 }%
10936 } % deliberate space between radio buttons
10937 }%
10938 }
10939 \newcount\Fld@listcount
10940 \def\@@ListBox#1{%
10941 \HyField@PDFChoices{#1}%
10942 \Hy@escapeform\PDFForm@List
10943 \pdfmark[\MakeChoiceField{\Fld@width}{\Fld@height}]{%
10944 pdfmark=/ANN,Raw={\PDFForm@List}%
10945 }%
10946 }
10947 \def\@PushButton[#1]#2{% parameters, label
10948 \def\Fld@name{#2}%
10949 \begingroup
10950 \Fld@toks={ }%
10951 \expandafter\HyField@SetKeys\expandafter{%
10952 \DefaultOptionsofPushButton,#1%
10953 }%
10954 \ifHy@pdfa

```

```

10955 \PackageError{hyperref}{%
10956   PDF/A: Push button with JavaScript is prohibited%
10957 } \@ehc
10958 \LayoutPushButtonField{%
10959   \leavevmode
10960   \MakeButtonField{#2}%
10961 }%
10962 \else
10963   \HyField@FlagsPushButton
10964   \ifFld@hidden\def\Fld@width{1sp}\fi
10965   \LayoutPushButtonField{%
10966     \leavevmode
10967     \Hy@escapeform\PDFForm@Push
10968     \pdfmark[\MakeButtonField{#2}]{%
10969       pdfmark=/ANN,Raw={\PDFForm@Push}%
10970     }%
10971   }%
10972 \fi
10973 \endgroup
10974 }
10975 \def\@Submit[#1]#2{%
10976   \Field@toks={ }%
10977   \def\Fld@width{\DefaultWidthofSubmit}%
10978   \def\Fld@height{\DefaultHeightofSubmit}%
10979   \begingroup
10980     \expandafter\HyField@SetKeys\expandafter{%
10981       \DefaultOptionsofSubmit,#1%
10982     }%
10983     \HyField@FlagsPushButton
10984     \HyField@FlagsSubmit
10985     \ifFld@hidden\def\Fld@width{1sp}\fi
10986     \Hy@escapeform\PDFForm@Submit
10987     \pdfmark[\MakeButtonField{#2}]{%
10988       pdfmark=/ANN,%
10989       Raw={\PDFForm@Submit /AP << /N {Submit} /D {SubmitP} >>}%
10990     }%
10991   \endgroup
10992 }
10993 \def\@Reset[#1]#2{%
10994   \Field@toks={ }%
10995   \def\Fld@width{\DefaultWidthofReset}%
10996   \def\Fld@height{\DefaultHeightofReset}%
10997   \begingroup
10998     \expandafter\HyField@SetKeys\expandafter{%
10999       \DefaultOptionsofReset,#1%
11000     }%
11001     \leavevmode
11002     \ifHy@pdfa
11003       \PackageError{hyperref}{%
11004         PDF/A: Reset action is prohibited%
11005       } \@ehc
11006       \MakeButtonField{#2}%
11007     \else
11008       \HyField@FlagsPushButton
11009       \ifFld@hidden\def\Fld@width{1sp}\fi
11010       \Hy@escapeform\PDFForm@Reset
11011       \pdfmark[\MakeButtonField{#2}]{%

```

```

11012 pdfmark=/ANN,Raw={\PDFForm@Reset}%
11013 }%
11014 \fi
11015 \endgroup
11016 }%
11017 \def\@CheckBox[#1]#2{% parameters, label
11018 \def\Fld@name{#2}%
11019 \def\Fld@default{0}%
11020 \begingroup
11021 \def\Fld@width{\DefaultWidthofCheckBox}%
11022 \def\Fld@height{\DefaultHeightofCheckBox}%
11023 \Field@toks={ }%
11024 \expandafter\HyField@SetKeys\expandafter{%
11025 \DefaultOptionsofCheckBox,#1%
11026 }%
11027 \HyField@FlagsCheckBox
11028 \ifFld@hidden\def\Fld@width{1sp}\fi
11029 \LayoutCheckField{#2}{%
11030 \Hy@escapeform\PDFForm@Check
11031 \pdfmark[\MakeCheckField{\Fld@width}{\Fld@height}]{%
11032 pdfmark=/ANN,Raw={\PDFForm@Check}%
11033 }%
11034 }%
11035 \endgroup
11036 }
11037 \pdfmark>

```

## 47.2 HyperTeX

```

11038 \hypertex
11039 \def\@Form[#1]{\typeout{Sorry, HyperTeX does not support FORMs}}
11040 \def\@endForm{}
11041 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
11042 \typeout{Sorry, HyperTeX does not support FORM gauges}%
11043 }
11044 \def\@TextField[#1]#2{% parameters, label
11045 \typeout{Sorry, HyperTeX does not support FORM text fields}%
11046 }
11047 \def\@CheckBox[#1]#2{% parameters, label
11048 \typeout{Sorry, HyperTeX does not support FORM checkboxes}%
11049 }
11050 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
11051 \typeout{Sorry, HyperTeX does not support FORM choice menus}%
11052 }
11053 \def\@PushButton[#1]#2{% parameters, label
11054 \typeout{Sorry, HyperTeX does not support FORM pushbuttons}%
11055 }
11056 \def\@Reset[#1]#2{\typeout{Sorry, HyperTeX does not support FORMs}}
11057 \def\@Submit[#1]#2{\typeout{Sorry, HyperTeX does not support FORMs}}
11058 \hypertex

```

## 47.3 TeX4ht

```

11059 \tex4ht
11060 \def\@Form[#1]{%
11061 \setkeys{Form}{#1}%
11062 \HCode{<form action="\Form@action" method="\Form@method">}%
11063 }
11064 \def\@endForm{\HCode{</form>}}

```

```

11065 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
11066 \typeout{Sorry, TeX4ht does not support gauges}%
11067 }
11068 \def\@TextField[#1]#2{% parameters, label
11069 \let\Hy@reserved@a\@empty
11070 \def\Fld@name{#2}%
11071 \def\Fld@default{}%
11072 \bgroup
11073 \Field@toks={ }%
11074 \setkeys{Field}{#1}%
11075 \HCode{<label for="\Fld@name">#2</label>}%
11076 \ifFld@password
11077 \@@PasswordField
11078 \else
11079 \@@TextField
11080 \fi
11081 \egroup
11082 }
11083 \def\@@PasswordField{%
11084 \HCode{%
11085 <input type="password" %
11086 id="\Fld@name" %
11087 name="\Fld@name" %
11088 \ifFld@hidden type="hidden" \fi
11089 value="\Fld@default" %
11090 \the\Field@toks
11091 >%
11092 }%
11093 }
11094 \def\@@TextField{%
11095 \ifFld@multiline
11096 \HCode{<textarea %
11097 \ifFld@readonly readonly \fi
11098 id="\Fld@name" %
11099 name="\Fld@name" %
11100 \ifFld@hidden type="hidden" \fi
11101 \the\Field@toks>%
11102 }%
11103 \Fld@default
11104 \HCode{</textarea>}%
11105 \else
11106 \HCode{<input type="text" %
11107 \ifFld@readonly readonly \fi
11108 id="\Fld@name" %
11109 name="\Fld@name" %
11110 \ifFld@hidden type="hidden" \fi
11111 value="\Fld@default" %
11112 \the\Field@toks>%
11113 }%
11114 \fi
11115 }
11116 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
11117 \def\Fld@name{#2}%
11118 \def\Fld@default{}%
11119 \let\Hy@reserved@a\relax
11120 \begingroup
11121 \expandafter\Fld@findlength#3\\%

```

```

11122 \Field@toks={ }%
11123 \setkeys{Field}{#1}%
11124 #2%
11125 \ifFld@radio
11126 \expandafter\@@Radio#3\\%
11127 \else
11128 \expandafter\@@Menu#3\\%
11129 \fi
11130 \endgroup
11131 }
11132 \def\Fld@findlength#1\\{%
11133 \Fld@menulength=0 %
11134 \@for\@curropt:=#1\do{\Hy@StepCount\Fld@menulength}%
11135 }
11136 \def\@@Menu#1\\{%
11137 \HCode{<select size="\the\Fld@menulength" %
11138 name="\Fld@name" %
11139 \the\Field@toks>%
11140 }%
11141 \@for\@curropt:=#1\do{%
11142 \expandafter\Fld@checkequals\@curropt==\\%
11143 \HCode{<option %
11144 \ifx\@curropt\Fld@default selected \fi
11145 value="\@currValue">\@currDisplay</option>%
11146 }%
11147 }%
11148 \HCode{</select>}%
11149 }
11150 \def\@@Radio#1\\{%
11151 \@for\@curropt:=#1\do{%
11152 \expandafter\Fld@checkequals\@curropt==\\%
11153 \HCode{<input type="radio" %
11154 \ifx\@curropt\Fld@default checked \fi
11155 name="\Fld@name" %
11156 value="\@currValue" %
11157 \the\Field@toks>%
11158 }%
11159 \@currDisplay
11160 }%
11161 }
11162 \def\@PushButton[#1]#2{% parameters, label
11163 \def\Fld@name{#2}%
11164 \bgroup
11165 \Field@toks={ }%
11166 \setkeys{Field}{#1}%
11167 \HCode{<input type="button" %
11168 name="\Fld@name" %
11169 value="#2" %
11170 \the\Field@toks>%
11171 }%
11172 \HCode{</button>}%
11173 \egroup
11174 }
11175 \def\@Submit[#1]#2{%
11176 \HCode{<button type="submit">#2</button>}%
11177 }
11178 \def\@Reset[#1]#2{%

```

```

11179 \HCode{<button type="reset">#2</button>}%
11180 }
11181 \def\@CheckBox[#1]#2{% parameters, label
11182 \let\Hy@reserved@a\@empty
11183 \def\Fld@name{#2}%
11184 \def\Fld@default{0}%
11185 \bgroup
11186 \Field@toks={ }%
11187 \setkeys{Field}{#1}%
11188 \HCode{<input type="checkbox" %
11189 \ifFld@checked checked \fi
11190 \ifFld@disabled disabled \fi
11191 \ifFld@readonly readonly \fi
11192 name="\Fld@name" %
11193 \ifFld@hidden type="hidden" \fi
11194 value="\Fld@default" %
11195 \the\Field@toks>%
11196 #2%
11197 }%
11198 \egroup
11199 }
11200 </tex4ht>

```

## 47.4 pdfTeX

```

11201 <*pdfTeX>
11202 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
11203 \typeout{Sorry, pdfTeX does not support FORM gauges}%
11204 }
11205 \def\MakeFieldObject#1#2{\sbox0{#1}%
11206 \immediate\pdfxform0 %
11207 \expandafter\edef\csname #2Object\endcsname{%
11208 \the\pdflastxform\space 0 R%
11209 }%
11210 % \hbox to 0pt{\hskip-\maxdimen{\pdfrefxform \the\pdflastxform}}%
11211 }%
11212 \def\HyField@afields{}
11213 \begingroup\expandafter\expandafter\expandafter\endgroup
11214 \expandafter\ifx\csname pdfastlink\endcsname\relax
11215 \let\HyField@AddToFields\relax
11216 \PackageInfo{hyperref}{%
11217 You need pdfTeX 1.40.0 for setting the /Fields entry.%
11218 \MessageBreak
11219 Adobe Reader/Acrobat accepts an empty /Field array,%
11220 \MessageBreak
11221 but other PDF viewers might complain%
11222 }%
11223 \else
11224 \def\HyField@AddToFields{%
11225 \xdef\HyField@afields{%
11226 \ifx\HyField@afields\@empty
11227 \else
11228 \HyField@afields
11229 \space
11230 \fi
11231 \the\pdflastlink\space 0 R%
11232 }%
11233 }%

```

```

11234 \fi
11235 \def\@Form[#1]{%
11236   \ifundefined{textcolor}{\let\textcolor\@gobble}{}%
11237   \setkeys{Form}{#1}%
11238   \Hy@FormObjects
11239   \ifnum\pdfTeXversion>13 %
11240     \pdfrefobj\OBJ@pdfdocencoding
11241     \pdfrefobj\OBJ@ZaDb
11242     \pdfrefobj\OBJ@Helv
11243   \fi
11244   \AtEndDocument{%
11245     \immediate\pdfobj{%
11246       <<%
11247         /Fields\HyField@afields}%
11248       /DR<<%
11249         /Font<<%
11250           /ZaDb \OBJ@ZaDb\space 0 R%
11251           /Helv \OBJ@Helv\space 0 R%
11252         >>%
11253       >>%
11254       /DA(/Helv 10 Tf 0 g)%
11255       \ifHy@pdfa
11256       \else
11257         /NeedAppearances true%
11258       \fi
11259     >>%
11260   }%
11261   \edef\OBJ@acroform{\the\pdfastobj}%
11262   \pdfcatalog{/AcroForm \OBJ@acroform\space 0 R}%
11263 }%
11264 \MakeFieldObject{%

```

Same as \ding{123} of package pifont.

```

11265   \begingroup
11266     \fontfamily{pzd}%
11267     \fontencoding{U}%
11268     \fontseries{m}%
11269     \fontshape{n}%
11270     \selectfont
11271     \char123 %
11272   \endgroup
11273 }{Ding}%
11274 \MakeFieldObject{%
11275   \fbox{\textcolor{yellow}{\textsf{Submit}}}%
11276 }{Submit}%
11277 \MakeFieldObject{%
11278   \fbox{\textcolor{yellow}{\textsf{SubmitP}}}%
11279 }{SubmitP}%
11280 }
11281 \def\@endForm{}
11282 \def\@TextField[#1]#2{% parameters, label
11283   \def\Fld@name{#2}%
11284   \def\Fld@default{}%
11285   \let\Fld@value\@empty
11286   \def\Fld@width{\DefaultWidthofText}%
11287   \def\Fld@height{%
11288     \ifFld@multiline
11289       \DefaultHeightofTextMultiline

```

```

11290 \else
11291 \DefaultHeightofText
11292 \fi
11293 }%
11294 \begingroup
11295 \Field@toks={ }%
11296 \expandafter\HyField@SetKeys\expandafter{%
11297 \DefaultOptionsofText,#1%
11298 }%
11299 \PDFForm@Name
11300 \HyField@FlagsText
11301 \ifFld@hidden\def\Fld@width{1sp}\fi
11302 \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
11303 \LayoutTextField{#2}{%
11304 \Hy@escapeform\PDFForm@Text
11305 \pdfstartlink user {\PDFForm@Text}\relax
11306 \MakeTextField{\Fld@width}{\Fld@height}\pdfendlink
11307 \HyField@AddToFields
11308 }%
11309 \endgroup
11310 }
11311 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
11312 \def\Fld@name{#2}%
11313 \let\Fld@default\relax
11314 \let\Fld@value\relax
11315 \def\Fld@width{\DefaultWidthofChoiceMenu}%
11316 \def\Fld@height{\DefaultHeightofChoiceMenu}%
11317 \begingroup
11318 \Fld@menulength=0 %
11319 \@tempdima\z@
11320 \@for\@curropt:=#3\do{%
11321 \expandafter\Fld@checkequals\@curropt==\%
11322 \Hy@StepCount\Fld@menulength
11323 \settowidth{\@tempdimb}{\@currDisplay}%
11324 \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
11325 }%
11326 \advance\@tempdima by 15\p@
11327 \Field@toks={ }%
11328 \begingroup
11329 \HyField@SetKeys{#1}%
11330 \edef\x{\endgroup
11331 \noexpand\expandafter
11332 \noexpand\HyField@SetKeys
11333 \noexpand\expandafter{%
11334 \expandafter\noexpand\curname DefaultOptionsof%
11335 \ifFld@radio
11336 Radio%
11337 \else
11338 \ifFld@combo
11339 \ifFld@popdown
11340 PopdownBox%
11341 \else
11342 ComboBox%
11343 \fi
11344 \else
11345 ListBox%
11346 \fi

```

```

11347     \fi
11348     \endcsname
11349   }%
11350 } \x
11351 \HyField@SetKeys{#1}%
11352 \PDFForm@Name
11353 \ifFld@hidden\def\Fld@width{1sp}\fi
11354 \ifx\Fld@value\relax
11355   \let\Fld@value\Fld@default
11356 \fi
11357 \LayoutChoiceField{#2}{%
11358   \ifFld@radio
11359     \HyField@FlagsRadioButton
11360     \@@Radio{#3}%
11361   \else
11362     \begingroup
11363     \HyField@FlagsChoice
11364     \ifdim\Fld@width<\@tempdima
11365       \ifdim\@tempdima<1cm\@tempdima1cm\fi
11366       \edef\Fld@width{\the\@tempdima}%
11367     \fi
11368     \ifFld@combo
11369     \else
11370       \@tempdima=\the\Fld@menulength\Fld@charsize
11371       \advance\@tempdima by \Fld@borderwidth bp %
11372       \advance\@tempdima by \Fld@borderwidth bp %
11373       \edef\Fld@height{\the\@tempdima}%
11374     \fi
11375     \@@ListBox{#3}%
11376   \endgroup
11377 \fi
11378 }%
11379 \endgroup
11380 }
11381 \def\@@Radio#1{%
11382   \Fld@listcount=0 %
11383   \@for\@curropt=#1\do{%
11384     \expandafter\Fld@checkequals\@curropt==\%
11385     \Hy@StepCount\Fld@listcount
11386     \@currDisplay\space
11387     \leavevmode
11388     \Hy@escapeform\PDFForm@Radio
11389     \pdfstartlink user {%
11390       \PDFForm@Radio
11391       /AP<<%
11392       /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.

```

11393     /\@currValue\space \DingObject
11394     >>%
11395     >>%
11396   }%
11397   \relax
11398   \MakeRadioField{\Fld@width}{\Fld@height}\pdfendlink
11399   \ifnum\Fld@listcount=1 %
11400     \HyField@AddToFields

```

```

11401 \fi
11402 \space % deliberate space between radio buttons
11403 }%
11404 }
11405 \newcount\Fld@listcount
11406 \def\@@ListBox#1{%
11407 \HyField@PDFChoices{#1}%
11408 \leavevmode
11409 \Hy@escapeform\PDFForm@List
11410 \pdfstartlink user {\PDFForm@List}\relax
11411 \MakeChoiceField{\Fld@width}{\Fld@height}%
11412 \pdfendlink
11413 \HyField@AddToFields
11414 }
11415 \def\@PushButton[#1]#2{% parameters, label
11416 \def\Fld@name{#2}%
11417 \begingroup
11418 \Field@toks={}%
11419 \expandafter\HyField@SetKeys\expandafter{%
11420 \DefaultOptionsofPushButton,#1%
11421 }%
11422 \PDFForm@Name
11423 \ifHy@pdfa
11424 \PackageError{hyperref}{%
11425 PDF/A: Push button with JavaScript is prohibited%
11426 }{\@ehc
11427 \LayoutPushButtonField{%
11428 \leavevmode
11429 \MakeButtonField{#2}%
11430 }%
11431 \else
11432 \HyField@FlagsPushButton
11433 \ifFld@hidden\def\Fld@width{1sp}\fi
11434 \LayoutPushButtonField{%
11435 \leavevmode
11436 \Hy@escapeform\PDFForm@Push
11437 \pdfstartlink user {\PDFForm@Push}\relax
11438 \MakeButtonField{#2}%
11439 \pdfendlink
11440 \HyField@AddToFields
11441 }%
11442 \fi
11443 \endgroup
11444 }
11445 \def\@Submit[#1]#2{%
11446 \Field@toks={}%
11447 \def\Fld@width{\DefaultWidthofSubmit}%
11448 \def\Fld@height{\DefaultHeightofSubmit}%
11449 \begingroup
11450 \expandafter\HyField@SetKeys\expandafter{%
11451 \DefaultOptionsofSubmit,#1%
11452 }%
11453 \HyField@FlagsPushButton
11454 \HyField@FlagsSubmit
11455 \ifFld@hidden\def\Fld@width{1sp}\fi
11456 \leavevmode
11457 \Hy@escapeform\PDFForm@Submit

```

```

11458 \pdfstartlink user {%
11459 \PDFForm@Submit
11460 /AP<</N \SubmitObject/D \SubmitPObject>>%
11461 }%
11462 \relax
11463 \MakeButtonField{#2}%
11464 \pdfendlink
11465 \HyField@AddToFields
11466 \endgroup
11467 }
11468 \def\@Reset[#1]#2{%
11469 \Field@toks={ }%
11470 \def\Fld@width{\DefaultWidthofReset}%
11471 \def\Fld@height{\DefaultHeightofReset}%
11472 \begingroup
11473 \expandafter\HyField@SetKeys\expandafter{%
11474 \DefaultOptionsofReset,#1%
11475 }%
11476 \leavevmode
11477 \ifHy@pdfa
11478 \PackageError{hyperref}{%
11479 PDF/A: Reset action is prohibited%
11480 }{\@ehc
11481 \MakeButtonField{#2}%
11482 \else
11483 \HyField@FlagsPushButton
11484 \ifFld@hidden\def\Fld@width{1sp}\fi
11485 \Hy@escapeform\PDFForm@Reset
11486 \pdfstartlink user {\PDFForm@Reset}\relax
11487 \MakeButtonField{#2}%
11488 \pdfendlink
11489 \HyField@AddToFields
11490 \fi
11491 \endgroup
11492 }
11493 \def\@CheckBox[#1]#2{% parameters, label
11494 \def\Fld@name{#2}%
11495 \def\Fld@default{0}%
11496 \begingroup
11497 \def\Fld@width{\DefaultWidthofCheckBox}%
11498 \def\Fld@height{\DefaultHeightofCheckBox}%
11499 \Field@toks={ }%
11500 \expandafter\HyField@SetKeys\expandafter{%
11501 \DefaultOptionsofCheckBox,#1%
11502 }%
11503 \PDFForm@Name
11504 \HyField@FlagsCheckBox
11505 \ifFld@hidden\def\Fld@width{1sp}\fi
11506 \LayoutCheckField{#2}{%
11507 \Hy@escapeform\PDFForm@Check
11508 \pdfstartlink user {\PDFForm@Check}\relax
11509 \MakeCheckField{\Fld@width}{\Fld@height}%
11510 \pdfendlink
11511 \HyField@AddToFields
11512 }%
11513 \endgroup
11514 }

```

```

11515 \def\Hy@FormObjects{%
11516   \pdfobj {%
11517     <<%
11518       /Type/Encoding%
11519       /Differences[%
11520         24/breve/caron/circumflex/dotaccent/hungarumlaut/ogonek%
11521         /ring/tilde %
11522         39/quotesingle %
11523         96/grave %
11524         128/bullet/dagger/daggerdbl/ellipsis/emdash/endash/florin%
11525         /fraction/guilsinglleft/guilsinglright/minus/perthousand%
11526         /quotedblbase/quotedblleft/quotedblright/quoteleft%
11527         /quoteright/quotesinglbase/trademark/fi/fl/Lslash/OE%
11528         /Scaron/Ydieresis/Zcaron/dotlessi/lslash/oe/scaron/zcaron %
11529         164/currency %
11530         166/brokenbar %
11531         168/dieresis/copyright/ordfeminine %
11532         172/logicalnot/.notdef/registered/macron/degree/plusminus%
11533         /twosuperior/threesuperior/acute/mu %
11534         183/periodcentered/cedilla/onesuperior/ordmasculine %
11535         188/onequarter/onehalf/threequarters %
11536         192/Agrave/Aacute/Acircumflex/Atilde/Adieresis/Aring/AE%
11537         /Ccedilla/Egrave/Eacute/Ecircumflex/Edieresis/Igrave%
11538         /Iacute/Icircumflex/Idieresis/Eth/Ntilde/Ograve/Oacute%
11539         /Ocircumflex/Otilde/Odieresis/multiply/Oslash/Ugrave%
11540         /Uacute/Ucircumflex/Udieresis/Yacute/Thorn/germandbls%
11541         /agrave/aacute/acircumflex/atilde/adieresis/aring/ae%
11542         /ccedilla/egrave/eacute/ecircumflex/edieresis/igrave%
11543         /iacute/icircumflex/idieresis/eth/ntilde/ograde/oacute%
11544         /ocircumflex/otilde/odieresis/divide/oslash/ugrave%
11545         /uacute/ucircumflex/udieresis/yacute/thorn/ydieresis%
11546       ]%
11547     >>%
11548   }%
11549   \xdef\OBJ@pdfdocencoding{\the\pdfastobj}%
11550   \pdfobj{%
11551     <<%
11552       /Type/Font%
11553       /Subtype/Type1%
11554       /Name/ZaDb%
11555       /BaseFont/ZapfDingbats%
11556     >>%
11557   }%
11558   \xdef\OBJ@ZaDb{\the\pdfastobj}%
11559   \pdfobj{%
11560     <<%
11561       /Type/Font%
11562       /Subtype/Type1%
11563       /Name/Helv%
11564       /BaseFont/Helvetica%
11565       /Encoding \OBJ@pdfdocencoding\space 0 R%
11566     >>%
11567   }%
11568   \xdef\OBJ@Helv{\the\pdfastobj}%
11569   \global\let\Hy@FormObjects\relax
11570 }
11571 </pdftex>

```

## 47.5 dvipdfm, xetex

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

11572  $\langle$ \*dvipdfm | xetex $\rangle$

\@Gauge

```
11573 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
11574 \typeout{Sorry, dvipdfm/XeTeX does not support FORM gauges}%
11575 }
```

\@Form

```
11576 \def\@Form[#1]{%
11577 \ifundefined{textcolor}{\let\textcolor\@gobble}{}}%
11578 \setkeys{Form}{#1}%
11579 \Hy@FormObjects
11580 \@pdfm@mark{obj @afields []}%
11581 \@pdfm@mark{obj @corder []}%
11582 \@pdfm@mark{%
11583   obj @aform <<%
11584     /Fields @afields%
11585     /DR<<%
11586     /Font<<%
11587     /ZaDb @OBJZaDb%
11588     /Helv @OBJHelv%
11589     >>%
11590     >>%
11591     /DA(/Helv 10 Tf 0 g)%
11592     /CO @corder%
11593     \ifHy@pdfa
11594     \else
11595     /NeedAppearances true%
11596     \fi
11597     >>%
11598   }%
11599 \@pdfm@mark{put @catalog <</AcroForm @aform>>}}%
11600 }
```

\@endForm

```
11601 \def\@endForm{}
```

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

```
11602 \def\dvipdfm@setdim{%
11603   height \the\ht\pdfm@box\space
11604   width \the\wd\pdfm@box\space
11605   depth \the\dp\pdfm@box\space
11606 }
```

\HyField@AnnotCount

```
11607 \newcount\HyField@AnnotCount
11608 \HyField@AnnotCount=\z@
```

\HyField@AdvanceAnnotCount

```
11609 \def\HyField@AdvanceAnnotCount{%
11610   \global\advance\HyField@AnnotCount\@ne
11611 }
```

\HyField@TheAnnotCount

```
11612 \def\HyField@TheAnnotCount{%
11613   \the\HyField@AnnotCount
11614 }
```

\@TextField

```
11615 \def\@TextField[#1]#2{% parameters, label
11616   \def\Fld@name{#2}%
11617   \def\Fld@default{}%
11618   \let\Fld@value\@empty
11619   \def\Fld@width{\DefaultWidthofText}%
11620   \def\Fld@height{%
11621     \ifFld@multiline
11622       \DefaultHeightofTextMultiline
11623     \else
11624       \DefaultHeightofText
11625     \fi
11626   }%
11627   \begingroup
11628     \Field@toks={ }%
11629     \expandafter\HyField@SetKeys\expandafter{%
11630       \DefaultOptionsofText,#1%
11631     }%
11632     \PDFForm@Name
11633     \HyField@FlagsText
11634     \ifFld@hidden\def\Fld@width{1sp}\fi
11635     \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
11636     \setbox\pdfm@box=\hbox{%
11637       \MakeTextField{\Fld@width}{\Fld@height}%
11638     }%
11639     \HyField@AdvanceAnnotCount
11640     \LayoutTextField{#2}{%
11641       \Hy@escapeform\PDFForm@Text
11642       \@pdfm@mark{%
11643         ann @text\HyField@TheAnnotCount\space
11644         \dvipdfm@setdim << \PDFForm@Text >>%
11645       }%
11646     }%
11647     \unhbox\pdfm@box
11648     \@pdfm@mark{put @afields @text\HyField@TheAnnotCount}%
11649     % record in @afields array
11650   \endgroup
11651 }
```

\@ChoiceMenu

```
11652 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
11653   \def\Fld@name{#2}%
11654   \let\Fld@default\relax
11655   \let\Fld@value\relax
11656   \def\Fld@width{\DefaultWidthofChoiceMenu}%
11657   \def\Fld@height{\DefaultHeightofChoiceMenu}%
11658   \begingroup
11659     \Fld@menulength=0 %
11660     \@tempdima\z@
11661     \@for\@curropt:=#3\do{%
11662       \expandafter\Fld@checkequals\@curropt==\%
11663       \Hy@StepCount\Fld@menulength
```

```

11664 \settowidth{\@tempdimb}{\@currDisplay}%
11665 \ifdim \@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
11666 }%
11667 \advance\@tempdima by 15\p@
11668 \Field@toks={ }%
11669 \begingroup
11670 \HyField@SetKeys{#1}%
11671 \edef\x{\endgroup
11672 \noexpand\expandafter
11673 \noexpand\HyField@SetKeys
11674 \noexpand\expandafter{%
11675 \expandafter\noexpand\csname DefaultOptionsof%
11676 \ifFld@radio
11677 Radio%
11678 \else
11679 \ifFld@combo
11680 \ifFld@popdown
11681 PopdownBox%
11682 \else
11683 ComboBox%
11684 \fi
11685 \else
11686 ListBox%
11687 \fi
11688 \fi
11689 \endcsname
11690 }%
11691 }\x
11692 \HyField@SetKeys{#1}%
11693 \PDFForm@Name
11694 \ifFld@hidden\def\Fld@width{1sp}\fi
11695 \ifx\Fld@value\relax
11696 \let\Fld@value\Fld@default
11697 \fi
11698 \LayoutChoiceField{#2}{%
11699 \ifFld@radio
11700 \HyField@FlagsRadioButton
11701 \@@Radio{#3}%
11702 \else
11703 \begingroup
11704 \HyField@FlagsChoice
11705 \ifdim\Fld@width<\@tempdima
11706 \ifdim \@tempdima<1cm\@tempdima1cm\fi
11707 \edef\Fld@width{\the\@tempdima}%
11708 \fi
11709 \ifFld@combo
11710 \else
11711 \@tempdima=\the\Fld@menulength\Fld@charsize
11712 \advance\@tempdima by \Fld@borderwidth bp %
11713 \advance\@tempdima by \Fld@borderwidth bp %
11714 \edef\Fld@height{\the\@tempdima}%
11715 \fi
11716 \@@ListBox{#3}%
11717 \endgroup
11718 \fi
11719 }%
11720 \endgroup

```

```

11721 }

\@@Radio
11722 \def\@@Radio#1{%
11723   \Fld@listcount=0 %
11724   \setbox\pdfm@box=\hbox{%
11725     \MakeRadioField{\Fld@width}{\Fld@height}%
11726   }%
11727   \@for\@curropt:=#1\do{%
11728     \expandafter\Fld@checkequals\@curropt==\%
11729     \Hy@StepCount\Fld@listcount
11730     \@currDisplay\space
11731     \leavevmode
11732     \Hy@escapeform\PDFForm@Radio
11733     \ifnum\Fld@listcount=1 %
11734       \HyField@AdvanceAnnotCount
11735     \fi
11736     \@pdfm@mark{%
11737       ann %
11738       \ifnum\Fld@listcount=1 %
11739         @radio\HyField@TheAnnotCount%
11740         \space
11741       \fi
11742       \dvipdfm@setdim
11743       <<%
11744       \PDFForm@Radio
11745       /AP<</N<</\@currValue /null>>>>%
11746       >>%
11747     }%
11748     \unhcopy\pdfm@box\space% deliberate space between radio buttons
11749     \ifnum\Fld@listcount=1 %
11750       \@pdfm@mark{%
11751         put @afields @radio\HyField@TheAnnotCount
11752       }%
11753     \fi
11754   }%
11755 }

\Fld@listcount
11756 \newcount\Fld@listcount

\@@Listbox
11757 \def\@@Listbox#1{%
11758   \HyField@PDFChoices{#1}%
11759   \setbox\pdfm@box=\hbox{%
11760     \MakeChoiceField{\Fld@width}{\Fld@height}%
11761   }%
11762   \leavevmode
11763   \Hy@escapeform\PDFForm@List
11764   \HyField@AdvanceAnnotCount
11765   \@pdfm@mark{%
11766     ann @list\HyField@TheAnnotCount\space
11767     \dvipdfm@setdim
11768     <<\PDFForm@List>>%
11769   }%
11770   \unhbox\pdfm@box
11771   \@pdfm@mark{put @afields @list\HyField@TheAnnotCount}%

```

```

11772 }

\@PushButton
11773 \def\@PushButton[#1]#2{% parameters, label
11774   \def\Fld@name{#2}%
11775   \begingroup
11776     \Field@toks={ }%
11777     \expandafter\HyField@SetKeys\expandafter{%
11778       \DefaultOptionsofPushButton,#1%
11779     }%
11780     \PDFForm@Name
11781     \ifHy@pdfa
11782       \PackageError{hyperref}{%
11783         PDF/A: Push button with JavaScript is prohibited%
11784       }\@ehc
11785       \LayoutPushButtonField{%
11786         \leavevmode
11787         \MakeButtonField{#2}%
11788       }%
11789     \else
11790       \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
11791       \HyField@FlagsPushButton
11792       \ifFld@hidden\def\Fld@width{1sp}\fi
11793       \HyField@AdvanceAnnotCount
11794       \LayoutPushButtonField{%
11795         \leavevmode
11796         \Hy@escapeform\PDFForm@Push
11797         \@pdfm@mark{%
11798           ann @push\HyField@TheAnnotCount\space
11799           \dvipdfm@setdim
11800           <<\PDFForm@Push>>%
11801         }%
11802       }%
11803       \unhbox\pdfm@box
11804       \@pdfm@mark{put @afields @push\HyField@TheAnnotCount}%
11805     \fi
11806   \endgroup
11807 }

\@Submit
11808 \def\@Submit[#1]#2{%
11809   \Field@toks={ }%
11810   \def\Fld@width{\DefaultWidthofSubmit}%
11811   \def\Fld@height{\DefaultHeightofSubmit}%
11812   \begingroup
11813     \expandafter\HyField@SetKeys\expandafter{%
11814       \DefaultOptionsofSubmit,#1%
11815     }%
11816     \HyField@FlagsPushButton
11817     \HyField@FlagsSubmit
11818     \ifFld@hidden\def\Fld@width{1sp}\fi
11819     \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
11820     \leavevmode
11821     \Hy@escapeform\PDFForm@Submit
11822     \HyField@AdvanceAnnotCount
11823     \@pdfm@mark{%
11824       ann @submit\HyField@TheAnnotCount\space

```

```

11825 \dvi pdfm@setdim
11826 <<\PDFForm@Submit>>%
11827 }%
11828 \unhbox\pdfm@box%
11829 \@pdfm@mark{put @afields @submit\HyField@TheAnnotCount}%
11830 \endgroup
11831 }

\@Reset
11832 \def\@Reset[#1]#2{%
11833 \Field@toks={ }%
11834 \def\Fld@width{\DefaultWidthofReset}%
11835 \def\Fld@height{\DefaultHeightofReset}%
11836 \begingroup
11837 \expandafter\HyField@SetKeys\expandafter{%
11838 \DefaultOptionsofReset,#1%
11839 }%
11840 \leavevmode
11841 \ifHy@pdfa
11842 \PackageError{hyperref}{%
11843 PDF/A: Reset action is prohibited%
11844 }\@ehc
11845 \MakeButtonField{#2}%
11846 \else
11847 \HyField@FlagsPushButton
11848 \ifFld@hidden\def\Fld@width{1sp}\fi
11849 \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
11850 \Hy@escapeform\PDFForm@Reset
11851 \HyField@AdvanceAnnotCount
11852 \@pdfm@mark{%
11853 ann @reset\HyField@TheAnnotCount\space
11854 \dvi pdfm@setdim
11855 <<\PDFForm@Reset>>%
11856 }%
11857 \unhbox\pdfm@box
11858 \@pdfm@mark{put @afields @reset\HyField@TheAnnotCount}%
11859 \fi
11860 \endgroup
11861 }

\@CheckBox
11862 \def\@CheckBox[#1]#2{% parameters, label
11863 \def\Fld@name{#2}%
11864 \def\Fld@default{0}%
11865 \begingroup
11866 \def\Fld@width{\DefaultWidthofCheckBox}%
11867 \def\Fld@height{\DefaultHeightofCheckBox}%
11868 \Field@toks={ }%
11869 \expandafter\HyField@SetKeys\expandafter{%
11870 \DefaultOptionsofCheckBox,#1%
11871 }%
11872 \PDFForm@Name
11873 \HyField@FlagsCheckBox
11874 \ifFld@hidden\def\Fld@width{1sp}\fi
11875 \setbox\pdfm@box=\hbox{%
11876 \MakeCheckField{\Fld@width}{\Fld@height}%
11877 }%

```

```

11878 \HyField@AdvanceAnnotCount
11879 \LayoutCheckField{#2}{%
11880 \Hy@escapeform\PDFForm@Check
11881 \@pdfm@mark{%
11882 ann @check\HyField@TheAnnotCount\space
11883 \dvipdfm@setdim
11884 <<\PDFForm@Check>>%
11885 }%
11886 \unhbox\pdfm@box
11887 \@pdfm@mark{put @afields @check\HyField@TheAnnotCount}%
11888 }%
11889 \endgroup
11890 }

11891 \def\Hy@FormObjects{%
11892 \@pdfm@mark{obj @OBJpdfdocencoding%
11893 <<%
11894 /Type/Encoding%
11895 /Differences[%
11896 24/breve/caron/circumflex/dotaccent/hungarumlaut/ogonek/ring/tilde %
11897 39/quotesingle %
11898 96/grave %
11899 128/bullet/dagger/daggerdbl/ellipsis/emdash/endash/florin%
11900 /fraction/guilsinglleft/guilsinglright/minus/perthousand%
11901 /quotedblbase/quotedblleft/quotedblright/quoteleft/quoteright%
11902 /quotesinglbase/trademark/fi/fl/Lslash/OE/Scaron/Ydieresis%
11903 /Zcaron/dotlessi/lslash/oe/scaron/zcaron %
11904 164/currency %
11905 166/brokenbar %
11906 168/dieresis/copyright/ordfeminine %
11907 172/logicalnot/.notdef/registered/macron/degree/plusminus%
11908 /twosuperior/threesuperior/acute/mu %
11909 183/periodcentered/cedilla/onesuperior/ordmasculine %
11910 188/onequarter/onehalf/threequarters %
11911 192/Agrave/Aacute/Acircumflex/Atilde/Adieresis/Aring/AE%
11912 /Ccedilla/Egrave/Eacute/Ecircumflex/Edieresis/Igrave/Iacute%
11913 /Icircumflex/Idieresis/Eth/Ntilde/Ograve/Oacute/Ocircumflex%
11914 /Otilde/Odieresis/multiply/Oslash/Ugrave/Uacute/Ucircumflex%
11915 /Udieresis/Yacute/Thorn/germandbls/agrave/aacute/acircumflex%
11916 /atilde/adieresis/aring/ae/ccedilla/egrave/eacute%
11917 /ecircumflex/edieresis/igrave/iacute/icircumflex/idieresis%
11918 /eth/ntilde/ograve/oacute/ocircumflex/otilde/odieresis%
11919 /divide/oslash/ugrave/uacute/ucircumflex/udieresis/yacute%
11920 /thorn/ydieresis%
11921 ]%
11922 >>%
11923 }%
11924 \@pdfm@mark{obj @OBJZaDb%
11925 <<%
11926 /Type/Font%
11927 /Subtype/Type1%
11928 /Name/ZaDb%
11929 /BaseFont/ZapfDingbats%
11930 >>%
11931 }%
11932 \@pdfm@mark{obj @OBJHelv%
11933 <<%
11934 /Type/Font%

```

```

11935 /Subtype/Type1%
11936 /Name/Helv%
11937 /BaseFont/Helvetica%
11938 /Encoding @OBJpdfdocencoding%
11939 >>%
11940 }%
11941 \global\let\Hy@FormObjects\relax
11942 }
11943 </dvipdfm | xetex>

```

## 47.6 Common forms part

```

11944 <*pdfform>

```

\Hy@escapestring

```

11945 \begingroup\expandafter\expandafter\expandafter\endgroup
11946 \expandafter\ifx\csname pdfescapestring\endcsname\relax
11947 \let\Hy@escapestring\@firstofone
11948 \def\Hy@escapeform#1{%
11949 \ifHy@escapeform
11950 \def\Hy@escapestring##1{%
11951 \noexpand\Hy@escapestring{\noexpand##1}%
11952 }%
11953 \edef\Hy@temp{#1}%
11954 \expandafter\Hy@@@escapeform\Hy@temp\Hy@escapestring{}\@nil
11955 \def\Hy@escapestring##1{%
11956 \@ifundefined{Hy@esc@\string##1}{%
11957 ##1%
11958 \ThisShouldNotHappen
11959 }{%
11960 \csname Hy@esc@\string##1\endcsname
11961 }%
11962 }%
11963 \else
11964 \let\Hy@escapestring\@firstofone
11965 \fi
11966 }%
11967 \def\Hy@@@escapeform#1\Hy@escapestring#2#3\@nil{%
11968 \ifx\#3\%
11969 \else
11970 \expandafter
11971 \Hy@pstringdef\csname Hy@esc@\string#2\endcsname{#2}%
11972 \Hy@ReturnAfterFi{%
11973 \Hy@@@escapeform#3\@nil
11974 }%
11975 \fi
11976 }%
11977 \else
11978 \def\Hy@escapeform#1{%
11979 \ifHy@escapeform
11980 \let\Hy@escapestring\pdfescapestring
11981 \else
11982 \let\Hy@escapestring\@firstofone
11983 \fi
11984 }%
11985 \Hy@escapeform{}%
11986 \fi

```

## \PDFForm@Name

```
11987 \def\PDFForm@Name{%
11988   \begingroup
11989   \ifnum\Hy@pdfversion<5 % implementation note 117, PDF spec 1.7
11990     \ifHy@unicode
11991       \Hy@unicodedefalse
11992     \fi
11993   \fi
11994   \HyPsd@XeTeXBigCharstrue
11995   \pdfstringdef\Hy@gtemp\Fld@name
11996 \endgroup
11997 \let\Fld@name\Hy@gtemp
11998 }
```

## \PDFForm@Check

```
11999 \def\PDFForm@Check{%
12000   /Subtype/Widget%
12001   \Fld@annotflags
12002   /T(\Fld@name)%
12003   /FT/Btn%
12004   \Fld@flags
12005   /Q \Fld@align
12006   /BS<</W \Fld@borderwidth /S/\Fld@borderstyle>>%
12007   /MK<<%
12008     \ifnum\Fld@rotation=\z@
12009     \else
12010       /R \Fld@rotation
12011     \fi
12012     \ifx\Fld@bordercolor\relax
12013     \else
12014       /BC[\Fld@bordercolor]%
12015     \fi
12016     \ifx\Fld@bcolor\relax
12017     \else
12018       /BG[\Fld@bcolor]%
12019     \fi
12020     /CA(\Hy@escapestring{\Fld@cbsymbol})%
12021   >>%
12022   /DA(/ZaDb \strip@pt\Fld@charsize\space Tf%
12023     \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
12024   /H/P%
12025   \ifFld@checked /V/Yes\else /V/Off\fi
12026 }
```

## \PDFForm@Push

```
12027 \ifHy@pdfa
12028 \else
12029   \def\PDFForm@Push{%
12030     /Subtype/Widget%
12031     \Fld@annotflags
12032     /T(\Fld@name)%
12033     /FT/Btn%
12034     \Fld@flags
12035     /H/P%
12036     /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
12037     \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
12038       \ifx\Fld@bordercolor\relax\else 1\fi
```

```

12039         \space
12040     \else
12041         /MK<<%
12042         \ifnum\Fld@rotation=\z@
12043     \else
12044         /R \Fld@rotation
12045     \fi
12046     \ifx\Fld@bordercolor\relax
12047     \else
12048         /BC[\Fld@bordercolor]%
12049     \fi
12050     >>%
12051 \fi
12052 /A<</S/JavaScript/JS(\Hy@escapestring{\Fld@onclick@code})>>%
12053 }%
12054 \fi

```

\Fld@additionalactions

```

12055 \def\Fld@@additionalactions{%
K input (keystroke) format
12056 \ifx\Fld@keystroke@code\@empty
12057 \else
12058     /K<</S/JavaScript/JS(\Hy@escapestring{\Fld@keystroke@code})>>%
12059 \fi
F display format
12060 \ifx\Fld@format@code\@empty
12061 \else
12062     /F<</S/JavaScript/JS(\Hy@escapestring{\Fld@format@code})>>%
12063 \fi
V validation
12064 \ifx\Fld@validate@code\@empty
12065 \else
12066     /V<</S/JavaScript/JS(\Hy@escapestring{\Fld@validate@code})>>%
12067 \fi
C calculation
12068 \ifx\Fld@calculate@code\@empty
12069 \else
12070     /C<</S/JavaScript/JS(\Hy@escapestring{\Fld@calculate@code})>>%
12071 \fi
Fo receiving the input focus
12072 \ifx\Fld@onfocus@code\@empty
12073 \else
12074     /Fo<</S/JavaScript/JS(\Hy@escapestring{\Fld@onfocus@code})>>%
12075 \fi
Bl loosing the input focus (blurred)
12076 \ifx\Fld@onblur@code\@empty
12077 \else
12078     /Bl<</S/JavaScript/JS(\Hy@escapestring{\Fld@onblur@code})>>%
12079 \fi
D pressing the mouse button (down)
12080 \ifx\Fld@onmousedown@code\@empty
12081 \else
12082     /D<</S/JavaScript/JS(\Hy@escapestring{\Fld@onmousedown@code})>>%
12083 \fi

```

U releasing the mouse button (up)

```
12084 \ifx\Fld@onmouseup@code\@empty
12085 \else
12086 /U<</S/JavaScript/JS(\Hy@escapestring{\Fld@onmouseup@code})>>%
12087 \fi
```

E cursor enters the annotation's active area.

```
12088 \ifx\Fld@onenter@code\@empty
12089 \else
12090 /E<</S/JavaScript/JS(\Hy@escapestring{\Fld@onenter@code})>>%
12091 \fi
```

X cursor exits the annotation's active area.

```
12092 \ifx\Fld@onexit@code\@empty
12093 \else
12094 /X<</S/JavaScript/JS(\Hy@escapestring{\Fld@onexit@code})>>%
12095 \fi
12096 }
12097 \def\Fld@additionalactions{%
12098 \if\Fld@@additionalactions-%
12099 \else
12100 \ifHy@pdfa
12101 \else
12102 /AA<<\Fld@@additionalactions>>%
12103 \fi
12104 \fi
12105 }
```

\PDFForm@List

```
12106 \def\PDFForm@List{%
12107 /Subtype/Widget%
12108 \Fld@annotflags
12109 /T(\Fld@name)%
12110 /FT/Ch%
12111 \Fld@flags
12112 /Q \Fld@align
12113 /BS<</W \Fld@borderwidth/S\Fld@borderstyle>>%
12114 \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
12115 \ifx\Fld@bordercolor\relax\else 1\fi
12116 \ifx\Fld@bcolor\relax \else 1\fi
12117 \space
12118 \else
12119 /MK<<%
12120 \ifnum\Fld@rotation=\z@
12121 \else
12122 /R \Fld@rotation
12123 \fi
12124 \ifx\Fld@bordercolor\relax
12125 \else
12126 /BC[\Fld@bordercolor]%
12127 \fi
12128 \ifx\Fld@bcolor\relax
12129 \else
12130 /BG[\Fld@bcolor]%
12131 \fi
12132 >>%
12133 \fi
12134 /DA(/Helv \strip@pt\Fld@charsize\space Tf%
```

```

12135     \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
12136   \Fld@choices
12137   \Fld@additionalactions
12138 }

```

#### \PDFForm@Radio

```

12139 \def\PDFForm@Radio{%
12140   /Subtype/Widget%
12141   \Fld@annotflags
12142   /T(\Fld@name)%
12143   /FT/Btn%
12144   \Fld@flags
12145   /H/P%
12146   /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
12147   /MK<<%
12148     \ifnum\Fld@rotation=\z@
12149     \else
12150       /R \Fld@rotation
12151     \fi
12152     \ifx\Fld@bordercolor\relax
12153     \else
12154       /BC[\Fld@bordercolor]%
12155     \fi
12156     \ifx\Fld@bcolor\relax
12157     \else
12158       /BG[\Fld@bcolor]%
12159     \fi
12160     /CA(\Fld@radiosymbol)%
12161   >>%
12162   /DA(/ZaDb \strip@pt\Fld@charsize\space Tf%
12163     \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
12164   \ifx\@currValue\Fld@default
12165     /V/\Fld@default
12166   \else
12167     /V/Off%
12168   \fi
12169   \Fld@additionalactions
12170 }

```

#### \PDFForm@Text

```

12171 \def\PDFForm@Text{%
12172   /Subtype/Widget%
12173   \Fld@annotflags
12174   /T(\Fld@name)%
12175   /FT/Tx%
12176   \Fld@flags
12177   /Q \Fld@align
12178   /BS<</W \Fld@borderwidth\space /S /\Fld@borderstyle>>%
12179   \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
12180     \ifx\Fld@bordercolor\relax\else 1\fi
12181     \ifx\Fld@bcolor\relax \else 1\fi
12182     \space
12183   \else
12184     /MK<<%
12185     \ifnum\Fld@rotation=\z@
12186     \else
12187       /R \Fld@rotation

```

```

12188 \fi
12189 \ifx\Fld@bordercolor\relax
12190 \else
12191 /BC[\Fld@bordercolor]%
12192 \fi
12193 \ifx\Fld@bcolor\relax
12194 \else
12195 /BG[\Fld@bcolor]%
12196 \fi
12197 >>%
12198 \fi
12199 /DA(/Helv \strip@pt\Fld@charsize\space Tf%
12200 \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
12201 /DV(\Hy@escapestring{\Fld@default})%
12202 /V(\Hy@escapestring{\Fld@value})%
12203 \Fld@additionalactions
12204 \ifnum\Fld@maxlen>\z@/MaxLen \Fld@maxlen \fi
12205 }

```

#### \PDFForm@Submit

```

12206 \def\PDFForm@Submit{%
12207 /Subtype/Widget%
12208 \Fld@annotflags
12209 /T(\Fld@name)%
12210 /FT/Btn%
12211 \Fld@flags
12212 /H/P%
12213 /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
12214 \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
12215 \ifx\Fld@bordercolor\relax\else 1\fi
12216 \space
12217 \else
12218 /MK<<%
12219 \ifnum\Fld@rotation=\z@
12220 \else
12221 /R \Fld@rotation
12222 \fi
12223 \ifx\Fld@bordercolor\relax
12224 \else
12225 /BC[\Fld@bordercolor]%
12226 \fi
12227 >>%
12228 \fi
12229 /A<<%
12230 /S/SubmitForm%
12231 /F<<%
12232 /FS/URL%
12233 /F(\Hy@escapestring{\Form@action})%
12234 >>%
12235 \Fld@submitflags
12236 >>%
12237 }

```

#### \PDFForm@Reset

```

12238 \ifHy@pdfa
12239 \else
12240 \def\PDFForm@Reset{%

```

```

12241 /Subtype/Widget%
12242 \Fld@annotflags
12243 /T(\Fld@name)%
12244 /FT/Btn%
12245 \Fld@flags
12246 /H/P%
12247 /DA(/Helv \strip@pt\Fld@charsize\space Tf 0 0 1 rg)%
12248 \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
12249 \ifx\Fld@bordercolor\relax\else 1\fi
12250 \space
12251 \else
12252 /MK<<%
12253 \ifnum\Fld@rotation=\z@
12254 \else
12255 /R \Fld@rotation
12256 \fi
12257 \ifx\Fld@bordercolor\relax
12258 \else
12259 /BC[\Fld@bordercolor]%
12260 \fi
12261 % /CA (Clear)
12262 % /AC (Done)
12263 >>%
12264 \fi
12265 /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
12266 /A<</S/ResetForm>>%
12267 }%
12268 \fi

12269 </pdfform>
12270 <*package>

```

## 48 Bookmarks in the PDF file

This was originally developed by Yannis Haralambous (it was the separate `repere.sty`); it needed the `repere` or `makebook.pl` post-processor to work properly. Now redundant, as it is done entirely in  $\text{\LaTeX}$  macros.

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

```

12271 \def\phantomsection{%
12272 \Hy@GlobalStepCount\Hy@linkcounter
12273 \xdef\@currentHref{section*.\the\Hy@linkcounter}%
12274 \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
12275 }
12276 </package>

```

### 48.1 Bookmarks

```
12277 <*outlines>
```

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

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

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

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

```

12278 \def\Hy@writebookmark#1#2#3#4#5{%
12279   % section number, text, label, level, file
12280   \ifx\WriteBookmarks\relax%
12281     \else
12282       \ifnum#4>\Hy@bookmarksdepth\relax
12283       \else
12284         \@@writetorep{#1}{#2}{#3}{#4}{#5}%
12285       \fi
12286     \fi
12287 }
12288 \def\Hy@currentbookmarklevel{0}
12289 \def\Hy@numberline#1{#1 }
12290 \def\@@@writetorep#1#2#3#4#5{%
12291   \begingroup
12292     \edef\Hy@tempa{#5}%
12293     \ifx\Hy@tempa\Hy@bookmarkstype
12294       \edef\Hy@level{#4}%
12295       \ifx\Hy@levelcheck Y%
12296         \@tempcnta\Hy@level\relax
12297         \advance\@tempcnta by -1 %
12298         \ifnum\Hy@currentbookmarklevel<\@tempcnta
12299           \advance\@tempcnta by -\Hy@currentbookmarklevel\relax
12300           \advance\@tempcnta by 1 %
12301           \Hy@Warning{%
12302             Difference (\the\@tempcnta) between bookmark levels is %
12303             greater \MessageBreak than one, level fixed%
12304           }%
12305           \@tempcnta\Hy@currentbookmarklevel
12306           \advance\@tempcnta by 1 %
12307           \edef\Hy@level{\the\@tempcnta}%
12308         \fi
12309       \else
12310         \global\let\Hy@levelcheck Y%
12311       \fi
12312       \global\let\Hy@currentbookmarklevel\Hy@level
12313       \@tempcnta\Hy@level\relax
12314       \expandafter\xdef\csname Parent\Hy@level\endcsname{#3}%
12315       \advance\@tempcnta by -1 %
12316       \edef\Hy@tempa{#3}%
12317       \edef\Hy@tempb{\csname Parent\the\@tempcnta\endcsname}%
12318       \ifx\Hy@tempa\Hy@tempb
12319         \Hy@Warning{%
12320           The anchor of a bookmark and its parent's must not%
12321           \MessageBreak be the same. Added a new anchor%

```

```

12322     }%
12323     \phantomsection
12324     \fi
12325     \ifHy@bookmarksnumbered
12326         \let\numberline\Hy@numberline
12327         \let\partnumberline\Hy@numberline
12328         \let\chapternumberline\Hy@numberline
12329     \else
12330         \let\numberline\@gobble
12331         \let\partnumberline\@gobble
12332         \let\chapternumberline\@gobble
12333     \fi
12334     \HyPsd@XeTeXBigCharstrue
12335     \pdfstringdef\Hy@tempa{#2}%
12336     \if@filesw
12337         \stepcounter{bookmark@seq@number}%
12338         \ifundefined{@outlinefile}{%
12339             }{%
12340                 \protected@write\@outlinefile{}{%
12341                     \protect\BOOKMARK
12342                     [\Hy@level][\@bookmarkopenstatus{\Hy@level}]{#3}%
12343                     {\Hy@tempa}{\Hy@tempb}%
12344                     \@percentchar\space\thebookmark@seq@number
12345                 }%
12346             }%
12347         \fi
12348     \fi
12349     \endgroup
12350 }
12351 \newcounter{bookmark@seq@number}

```

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

```

12352 \newcommand{\currentpdfbookmark}{%
12353     \pdfbookmark[\Hy@currentbookmarklevel]%
12354 }
12355 \newcommand{\subpdfbookmark}{%
12356     \@tempcnta\Hy@currentbookmarklevel
12357     \Hy@StepCount\@tempcnta
12358     \expandafter\pdfbookmark\expandafter[\the\@tempcnta]%
12359 }
12360 \newcommand{\belowpdfbookmark}[2]{%
12361     \@tempcnta\Hy@currentbookmarklevel
12362     \Hy@StepCount\@tempcnta
12363     \expandafter\pdfbookmark\expandafter[\the\@tempcnta]{#1}{#2}%
12364     \advance\@tempcnta by -1 %
12365     \xdef\Hy@currentbookmarklevel{\the\@tempcnta}%
12366 }

```

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.

```

12367 \renewcommand\pdfbookmark[3][0]{%
12368     \Hy@writebookmark{}{#2}{#3.#1}{#1}{toc}%
12369     \hyper@anchorstart{#3.#1}\hyper@anchorend
12370 }
12371 \def\BOOKMARK{%
12372     \ifnextchar[\@BOOKMARK]{\@@BOOKMARK[1][-]}%

```

```

12373 }
12374 \def\@BOOKMARK[#1]{%
12375   \ifnextchar[{\@BOOKMARK[{#1}]}{\@BOOKMARK[{#1}][-]}%
12376 }

```

The macros for calculating structure of outlines are derived from those by Petr Olsak used in the texinfo<sub>pdf</sub> macros.

#### 48.1.1 Rerun warning

\Hy@OutlineRerunCheck

```

12377 \RequirePackage{rerunfilecheck}[2009/12/10]
12378 \def\Hy@OutlineRerunCheck{%
12379   \RerunFileCheck{\jobname.out}{%
12380     \immediate\closeout\@outlinefile
12381   }{%
12382     Rerun to get outlines right\MessageBreak
12383     or use package 'bookmark'%
12384   }%
12385 }

```

#### 48.1.2 Driver stuff

The VTEX section was written originally by VTEX, but then amended by Denis Girou (denis.girou@idris.fr), then by by Taco Hoekwater (taco.hoekwater@wkap.nl). The problem is that VTEX, with its close integration of the PDF backend, does look at the contents of bookmarks, escaping \ and the like.

```

12386 <*vtex>
12387 \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.

```

12388 \begingroup
12389   \catcode'\'=12 %
12390   \ifnum\Hy@VTeXversion<650 %
12391     \catcode'\ "=12 %
12392     \gdef\hv@pdf@char#1#2#3{%
12393       \char
12394       \ifcase'#1#2#3 %
12395         "00\or"01\or"02\or"03\or"04\or"05\or"06\or"07%
12396         \or"08\or"09\or"0A\or"0B\or"0C\or"0D\or"0E\or"0F%
12397         \or"10\or"11\or"12\or"13\or"14\or"15\or"16\or"17%
12398         \or"18\or"19\or"1A\or"1B\or"1C\or"1D\or"1E\or"1F%
12399         \or"20\or"21\or"22\or"23\or"24\or"25\or"26\or"27%
12400         \or"28\or"29\or"2A\or"2B\or"2C\or"2D\or"2E\or"2F%
12401         \or"30\or"31\or"32\or"33\or"34\or"35\or"36\or"37%
12402         \or"38\or"39\or"3A\or"3B\or"3C\or"3D\or"3E\or"3F%
12403         \or"40\or"41\or"42\or"43\or"44\or"45\or"46\or"47%
12404         \or"48\or"49\or"4A\or"4B\or"4C\or"4D\or"4E\or"4F%
12405         \or"50\or"51\or"52\or"53\or"54\or"55\or"56\or"57%
12406         \or"58\or"59\or"5A\or"5B\or"5C\or"5D\or"5E\or"5F%
12407         \or"60\or"61\or"62\or"63\or"64\or"65\or"66\or"67%
12408         \or"68\or"69\or"6A\or"6B\or"6C\or"6D\or"6E\or"6F%
12409         \or"70\or"71\or"72\or"73\or"74\or"75\or"76\or"77%
12410         \or"78\or"79\or"7A\or"7B\or"7C\or"7D\or"7E\or"7F%
12411         \or"80\or"81\or"82\or"83\or"84\or"85\or"86\or"87%

```

```

12412 \or"88\or"89\or"8A\or"8B\or"8C\or"8D\or"8E\or"8F%
12413 \or"90\or"91\or"92\or"93\or"94\or"95\or"96\or"97%
12414 \or"98\or"99\or"9A\or"9B\or"9C\or"9D\or"9E\or"9F%
12415 \or"A0\or"A1\or"A2\or"A3\or"A4\or"A5\or"A6\or"A7%
12416 \or"A8\or"A9\or"AA\or"AB\or"AC\or"AD\or"AE\or"AF%
12417 \or"B0\or"B1\or"B2\or"B3\or"B4\or"B5\or"B6\or"B7%
12418 \or"B8\or"B9\or"BA\or"BB\or"BC\or"BD\or"BE\or"BF%
12419 \or"C0\or"C1\or"C2\or"C3\or"C4\or"C5\or"C6\or"C7%
12420 \or"C8\or"C9\or"CA\or"CB\or"CC\or"CD\or"CE\or"CF%
12421 \or"D0\or"D1\or"D2\or"D3\or"D4\or"D5\or"D6\or"D7%
12422 \or"D8\or"D9\or"DA\or"DB\or"DC\or"DD\or"DE\or"DF%
12423 \or"E0\or"E1\or"E2\or"E3\or"E4\or"E5\or"E6\or"E7%
12424 \or"E8\or"E9\or"EA\or"EB\or"EC\or"ED\or"EE\or"EF%
12425 \or"F0\or"F1\or"F2\or"F3\or"F4\or"F5\or"F6\or"F7%
12426 \or"F8\or"F9\or"FA\or"FB\or"FC\or"FD\or"FE\or"FF%
12427 \fi
12428 }%
12429 \else
12430 \gdef\hv@pdf@char{\char'}%
12431 \fi
12432 \endgroup

```

\@@BOOKMARK

```

12433 \def\@@BOOKMARK[#1][#2]#3#4#5{%
12434 \expandafter\edef\csname @count@#3\endcsname{%
12435 \the\@serial@counter
12436 }%
12437 \edef\@mycount{\the\@serial@counter}%
12438 \Hy@StepCount\@serial@counter
12439 \edef\@parcount{%
12440 \expandafter\ifx\csname @count@#5\endcsname\relax
12441 0%
12442 \else
12443 \csname @count@#5\endcsname
12444 \fi
12445 }%
12446 \immediate\special{%
12447 !outline \HyperDestNameFilter{#3};p=\@parcount,i=\@mycount,%
12448 s=\ifx#2-c\else o\fi,t=#4%
12449 }%
12450 }%

```

\ReadBookmarks

```

12451 \def\ReadBookmarks{%
12452 \begingroup
12453 \def\0{\hv@pdf@char 0}%
12454 \def\1{\hv@pdf@char 1}%
12455 \def\2{\hv@pdf@char 2}%
12456 \def\3{\hv@pdf@char 3}%
12457 \def\{({}%
12458 \def\)}{)%
12459 \def\do##1{%
12460 \ifnum\the\catcode'##1=\active
12461 \@makeother##1%
12462 \fi
12463 }%
12464 \dospecials

```

```

12465 \InputIfFileExists{\jobname.out}{-}{-}%
12466 \endgroup
12467 \ifx\WriteBookmarks\relax
12468 \else
12469 \if@filesw
12470 \newwrite\@outlinefile
12471 \Hy@OutlineRerunCheck
12472 \immediate\openout\@outlinefile=\jobname.out\relax
12473 \ifHy@typexml
12474 \immediate\write\@outlinefile{<relaxxml>\relax}%
12475 \fi
12476 \fi
12477 \fi
12478 }

12479 </vtex>
12480 <*\vtex>
12481 \def\ReadBookmarks{%
12482 \begingroup
12483 \escapechar='\'%
12484 \let\escapechar\@gobble %
12485 \def\@@BOOKMARK[##1][##2]##3##4##5{%
12486 \calc@bm@number{##5}%
12487 }%
12488 \InputIfFileExists{\jobname.out}{-}{-}%
12489 \ifx\WriteBookmarks\relax
12490 \global\let\WriteBookmarks\relax
12491 \fi
12492 \def\@@BOOKMARK[##1][##2]##3##4##5{%
12493 \def\Hy@temp{##4}%
12494 <*\pdfTex>
12495 \Hy@pstringdef\Hy@pstringName{\HyperDestNameFilter{##3}}%
12496 \Hy@OutlineName{\Hy@pstringName{%
12497 ##2\check@bm@number{##3}}%
12498 }{%
12499 \expandafter\strip@prefix\meaning\Hy@temp
12500 }%
12501 </pdfTex>
12502 <*\pdfmark>
12503 \pdfmark{%
12504 pdfmark=/OUT,%
12505 Count={##2\check@bm@number{##3}},%
12506 Dest={##3},%
12507 Title=\expandafter\strip@prefix\meaning\Hy@temp
12508 }%
12509 </pdfmark>
12510 <*\dvipdfm|xetex>
12511 \Hy@pstringdef\Hy@pstringName{\HyperDestNameFilter{##3}}%
12512 \@pdfm@mark{%
12513 outline \ifHy@DvipdfmxOutlineOpen
12514 [%
12515 \ifnum##21>\z@
12516 \else
12517 -%
12518 \fi
12519 ] %
12520 \fi
12521 ##1<<%

```

```

12522      /Title(\expandafter\strip@prefix\meaning\Hy@temp)%
12523      /A<<%
12524      /S/GoTo%
12525      /D(\Hy@pstringName)%
12526      >>%
12527      >>%
12528      }%
12529 </dvipdfm | xetex>
12530 }%
12531 {%
12532   \def\WriteBookmarks{0}%
12533   \InputIfFileExists{\jobname.out}{-}{-}%
12534 }%
12535 {%\escapechar\m@ne\InputIfFileExists{\jobname.out}{-}{-}}%
12536 \ifx\WriteBookmarks\relax
12537 \else
12538   \if@files
12539     \newwrite\@outlinefile
12540     \Hy@OutlineRerunCheck
12541     \immediate\openout\@outlinefile=\jobname.out\relax
12542     \ifHy@typexml
12543       \immediate\write\@outlinefile{<relaxxml>\relax}%
12544     \fi
12545   \fi
12546 \fi
12547 \endgroup
12548 }
12549 <*pdfTeX>
12550 \def\Hy@OutlineName#1#2#3#4{%
12551   \pdfoutline goto name{#2}count#3{#4}%
12552 }
12553 </pdfTeX>
12554 \def\check@bm@number#1{%
12555   \expandafter\ifx\csname B_#1\endcsname\relax
12556     0%
12557   \else
12558     \csname B_#1\endcsname
12559   \fi
12560 }
12561 \def\calc@bm@number#1{%
12562   \@tempcnta=\check@bm@number{#1}\relax
12563   \advance\@tempcnta by 1 %
12564   \expandafter\xdef\csname B_#1\endcsname{the\@tempcnta}%
12565 }
12566 </!vtex>

12567 \ifHy@implicit
12568 \else
12569   \expandafter\endinput
12570 \fi

12571 </outlines>
12572 <*outlines | hypertex>

12573 \newlength\Hy@SectionHShift
12574 \def\Hy@SectionAnchorHref#1{%
12575   \ifx\protect\@typeset@protect
12576     \Hy@@@SectionAnchor{#1}%
12577   \fi

```

```

12578 }
12579 \DeclareRobustCommand*{\Hy@@SectionAnchor}[1]{%
12580   \leavevmode
12581   \hbox to 0pt{%
12582     \kern-\Hy@SectionHShift
12583     \Hy@raisedlink{%
12584       \hyper@anchorstart{#1}\hyper@anchorend
12585     }%
12586     \hss
12587   }%
12588 }
12589 \let\H@old@ssect\@ssect
12590 \def\@ssect#1#2#3#4#5{%
12591   \Hy@GlobalStepCount\Hy@linkcounter
12592   \xdef\@currentHref{section*.\the\Hy@linkcounter}%
12593   \setlength{\Hy@SectionHShift}{#1}%
12594   \begingroup
12595     \toks@{\H@old@ssect{#1}{#2}{#3}{#4}}%
12596     \toks\tw@\expandafter{%
12597       \expandafter\Hy@SectionAnchorHref\expandafter{\@currentHref}%
12598       #5%
12599     }%
12600   \edef\x{\endgroup
12601     \the\toks@{\the\toks\tw@}}%
12602   }\x
12603 }
12604 \let\H@old@schapter\@schapter
12605 \def\@schapter#1{%
12606   \begingroup
12607     \let\@mkboth\@gobbletwo
12608     \Hy@GlobalStepCount\Hy@linkcounter
12609     \xdef\@currentHref{\Hy@chapapp*.\the\Hy@linkcounter}%
12610     \Hy@raisedlink{%
12611       \hyper@anchorstart{\@currentHref}\hyper@anchorend
12612     }%
12613   \endgroup
12614   \H@old@schapter{#1}%
12615 }

```

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:

```

12616 \ifundefined{@chapter}{\}{%
12617   \let\Hy@org@chapter\@chapter
12618   \def\@chapter{%
12619     \def\Hy@next{%
12620       \Hy@GlobalStepCount\Hy@linkcounter
12621       \xdef\@currentHref{\Hy@chapapp*.\the\Hy@linkcounter}%
12622       \Hy@raisedlink{%
12623         \hyper@anchorstart{\@currentHref}\hyper@anchorend
12624       }%
12625     }%
12626     \ifnum\c@secnumdepth>\m@ne
12627       \ifundefined{if@mainmatter}%
12628         \iftrue{\csname if@mainmatter\endcsname}%
12629         \let\Hy@next\relax
12630       \fi
12631     \fi

```

```

12632 \Hy@next
12633 \Hy@org@chapter
12634 }%
12635 }

12636 \let\H@old@part\@part
12637 \begingroup\expandafter\expandafter\expandafter\endgroup
12638 \expandafter\ifx\csname chapter\endcsname\relax
12639 \let\Hy@secnum@part\z@
12640 \else
12641 \let\Hy@secnum@part\m@ne
12642 \fi
12643 \def\@part{%
12644 \ifnum\Hy@secnum@part>\c@secnumdepth
12645 \phantomsection
12646 \fi
12647 \H@old@part
12648 }

12649 \let\H@old@spart\@spart
12650 \def\@spart#1{%
12651 \Hy@GlobalStepCount\Hy@linkcounter
12652 \xdef\@currentHref{part*.\the\Hy@linkcounter}%
12653 \Hy@raisedlink{%
12654 \hyper@anchorstart{\@currentHref}\hyper@anchorend
12655 }%
12656 \H@old@spart{#1}%
12657 }

12658 \let\H@old@sect\@sect
12659 \def\@sect#1#2#3#4#5#6[#7]#8{%
12660 \ifnum #2>\c@secnumdepth
12661 \expandafter\@firstoftwo
12662 \else
12663 \expandafter\@secondoftwo
12664 \fi
12665 {%
12666 \Hy@GlobalStepCount\Hy@linkcounter
12667 \xdef\@currentHref{section*.\the\Hy@linkcounter}%
12668 \setlength{\Hy@SectionHShift}{#3}%
12669 \begingroup
12670 \toks@{\H@old@sect{#1}{#2}{#3}{#4}{#5}{#6}{#7}}%
12671 \toks\tw@\expandafter{%
12672 \expandafter\Hy@SectionAnchorHref\expandafter{\@currentHref}%
12673 #8%
12674 }%
12675 \edef\x{\endgroup
12676 \the\toks@\the\toks\tw@}%
12677 }\x
12678 }{%
12679 \H@old@sect{#1}{#2}{#3}{#4}{#5}{#6}{#7}{#8}%
12680 }%
12681 }

12682 \</outlines | hypertext>
12683 \<*outlines>

12684 \expandafter\def\csname Parent-4\endcsname{}
12685 \expandafter\def\csname Parent-3\endcsname{}
12686 \expandafter\def\csname Parent-2\endcsname{}
12687 \expandafter\def\csname Parent-1\endcsname{}

```

```

12688 \expandafter\def\csname Parent0\endcsname{}
12689 \expandafter\def\csname Parent1\endcsname{}
12690 \expandafter\def\csname Parent2\endcsname{}
12691 \expandafter\def\csname Parent3\endcsname{}
12692 \expandafter\def\csname Parent4\endcsname{}
12693 </outlines>

```

## 49 Compatibility with koma-script classes

```

12694 <*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.

```

12695 \def\Hy@tempa{%
12696   \def\@addchap{##1}##2{%
12697     \typeout{##2}%
12698     \if@twoside
12699       \mkboth{##1}{}%
12700     \else
12701       \mkboth{}{##1}%
12702     \fi
12703     \addtocontents{lof}{\protect\addvspace{10\p@}}%
12704     \addtocontents{lot}{\protect\addvspace{10\p@}}%
12705     \Hy@GlobalStepCount\Hy@linkcounter
12706     \xdef\@currentHref{\Hy@chapapp*.\the\Hy@linkcounter}%
12707     \Hy@raisedlink{%
12708       \hyper@anchorstart{\@currentHref}\hyper@anchorend
12709     }%
12710     \if@twocolumn
12711       \@topnewpage[\@makeschapterhead{##2}]%
12712     \else
12713       \@makeschapterhead{##2}%
12714       \@afterheading
12715     \fi
12716     \addcontentsline{toc}{chapter}{##1}%
12717   }%
12718 }
12719 \ifclassloaded{scrbook}{%
12720   \ifclasslater{scrbook}{2001/01/01}{%
12721     \let\Hy@tempa\@empty
12722   }{}%
12723 }{%
12724   \ifclassloaded{scrreprt}{%
12725     \ifclasslater{scrreprt}{2001/01/01}{%
12726       \let\Hy@tempa\@empty
12727     }{}%
12728   }{%
12729     \let\Hy@tempa\@empty
12730   }%
12731 }%
12732 \Hy@tempa
12733 </outlines | hypertex>

```

## 50 Encoding definition files for encodings of PDF strings

This was contributed by Heiko Oberdiek.

### 50.1 PD1 encoding

```
12734 (*pd1enc)
12735 \DeclareFontEncoding{PD1}{-}{-}

Accents
12736 \DeclareTextAccent{'}{PD1}{\textasciigrave}
12737 \DeclareTextAccent`}{PD1}{\textacute}
12738 \DeclareTextAccent{^}{PD1}{\textasciicircum}
12739 \DeclareTextAccent{~}{PD1}{\texttilde}
12740 \DeclareTextAccent{"}{PD1}{\textasciidieresis}
12741 \DeclareTextAccent{r}{PD1}{\textring}
12742 \DeclareTextAccent{v}{PD1}{\textasciicaron}
12743 \DeclareTextAccent\.}{PD1}{\textdotaccent}
12744 \DeclareTextAccent{c}{PD1}{\textcedilla}
12745 \DeclareTextAccent{=}{PD1}{\textasciimacron}
12746 \DeclareTextAccent{b}{PD1}{\textmacronbelow}
12747 \DeclareTextAccent{d}{PD1}{\textdotbelow}
12748 \DeclareTextCompositeCommand{'}{PD1}{\@empty}{\textasciigrave}
12749 \DeclareTextCompositeCommand`}{PD1}{\@empty}{\textacute}
12750 \DeclareTextCompositeCommand{^}{PD1}{\@empty}{\textasciicircum}
12751 \DeclareTextCompositeCommand{~}{PD1}{\@empty}{\texttilde}
12752 \DeclareTextCompositeCommand{"}{PD1}{\@empty}{\textasciidieresis}
12753 \DeclareTextCompositeCommand{r}{PD1}{\@empty}{\textring}
12754 \DeclareTextCompositeCommand{v}{PD1}{\@empty}{\textasciicaron}
12755 \DeclareTextCompositeCommand\.}{PD1}{\@empty}{\textdotaccent}
12756 \DeclareTextCompositeCommand{c}{PD1}{\@empty}{\textcedilla}
12757 \DeclareTextCompositeCommand{=}{PD1}{\@empty}{\textasciimacron}
12758 \DeclareTextCompositeCommand{b}{PD1}{\@empty}{\textmacronbelow}
12759 \DeclareTextCompositeCommand{d}{PD1}{\@empty}{\textdotbelow}
12760 \DeclareTextCompositeCommand{'}{PD1}{\ }{\textasciigrave}
12761 \DeclareTextCompositeCommand`}{PD1}{\ }{\textacute}
12762 \DeclareTextCompositeCommand{^}{PD1}{\ }{\textasciicircum}
12763 \DeclareTextCompositeCommand{~}{PD1}{\ }{\texttilde}
12764 \DeclareTextCompositeCommand{"}{PD1}{\ }{\textasciidieresis}
12765 \DeclareTextCompositeCommand{r}{PD1}{\ }{\textring}
12766 \DeclareTextCompositeCommand{v}{PD1}{\ }{\textasciicaron}
12767 \DeclareTextCompositeCommand\.}{PD1}{\ }{\textdotaccent}
12768 \DeclareTextCompositeCommand{c}{PD1}{\ }{\textcedilla}
12769 \DeclareTextCompositeCommand{=}{PD1}{\ }{\textasciimacron}
12770 \DeclareTextCompositeCommand{b}{PD1}{\ }{\textmacronbelow}
12771 \DeclareTextCompositeCommand{d}{PD1}{\ }{\textdotbelow}
12772 \DeclareTextCommand{k}{PD1}[1]{\TextSymbolUnavailable{k{#1}}#1}
12773 \DeclareTextCommand{t}{PD1}[1]{\TextSymbolUnavailable{t{#1}}#1}
12774 \DeclareTextCommand\newtie}{PD1}[1]{%
12775 \TextSymbolUnavailable\newtie{#1}}#1%
12776 }
```

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

```
12777 % U+0009 (CHARACTER TABULATION)
12778 \DeclareTextCommand{textHT}{PD1}{\011}% U+0009
12779 % U+000A (LINE FEED)
12780 \DeclareTextCommand{textLF}{PD1}{\012}% U+000A
12781 % U+000D (CARRIAGE RETURN)
```

12782 \DeclareTextCommand{\textCR}{PD1}{\015}% U+000D

Accent glyph names

12783 % U+02D8 BREVE; breve

12784 \DeclareTextCommand{\textasciibreve}{PD1}{\030}% U+02D8

12785 % U+02C7 CARON; caron

12786 \DeclareTextCommand{\textasciicaron}{PD1}{\031}% U+02C7

12787 % U+02C6 MODIFIER LETTER CIRCUMFLEX ACCENT; circumflex

12788 \DeclareTextCommand{\textcircumflex}{PD1}{\032}% U+02C6

12789 % U+02D9 DOT ABOVE; dotaccent

12790 \DeclareTextCommand{\textdotaccent}{PD1}{\033}% U+02D9

12791 % U+02DD DOUBLE ACUTE ACCENT; hungarumlaut

12792 \DeclareTextCommand{\texthungarumlaut}{PD1}{\034}% U+02DD

12793 % U+02DB OGONEK; ogonek

12794 \DeclareTextCommand{\textogonek}{PD1}{\035}% U+02DB

12795 % U+02DA RING ABOVE; ring

12796 \DeclareTextCommand{\textring}{PD1}{\036}% U+02DA

12797 % U+02DC SMALL TILDE; ilde, \*tilde

12798 \DeclareTextCommand{\texttilde}{PD1}{\037}% U+02DC

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

\041: U+0021 EXCLAMATION MARK; exclam

12799 % U+0022 QUOTATION MARK; quotedbl

12800 \DeclareTextCommand{\textquotedbl}{PD1}{\string"}% \042 U+0022

12801 % U+0023 NUMBER SIGN; numbersign

12802 \DeclareTextCommand{\textnumbersign}{PD1}{\043}% U+0023

12803 % U+0024 DOLLAR SIGN; dollar

12804 \DeclareTextCommand{\textdollar}{PD1}{\044}% U+0024

12805 % U+0025 PERCENT SIGN; percent

12806 \DeclareTextCommand{\textpercent}{PD1}{\045}% U+0025

12807 % U+0026 AMPERSAND; ampersand

12808 \DeclareTextCommand{\textampersand}{PD1}{\046}% U+0026

\047: U+0027 APOSTROPHE; quotesingle

12809 % U+0028 LEFT PARENTHESIS; parenleft

12810 \DeclareTextCommand{\textparenleft}{PD1}{\string\(% } \050 U+0028

12811 % U+0029 RIGHT PARENTHESIS; parenright

12812 \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

12813 % U+002E FULL STOP; period

12814 \DeclareTextCommand{\textdotbelow}{PD1}{\string\.) } \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

12815 % U+003C LESS-THAN SIGN; less

12816 \DeclareTextCommand{\textless}{PD1}{\string\<} \074 U+003C

\075: U+003D EQUALS SIGN; equal

12817 % U+003E GREATER-THAN SIGN; greater

12818 \DeclareTextCommand{\textgreater}{PD1}{\string\>} \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  
 12819 % U+005C REVERSE SOLIDUS; backslash  
 12820 \DeclareTextCommand{\textbackslash}{PD1}{\134}% U+005C  
 \135: U+005D RIGHT SQUARE BRACKET; bracketright  
 12821 % U+005E CIRCUMFLEX ACCENT; asciicircum  
 12822 \DeclareTextCommand{\textasciicircum}{PD1}{\136}% U+005E  
 12823 % U+005F LOW LINE; underscore  
 12824 \DeclareTextCommand{\textunderscore}{PD1}{\137}% U+005F  
 12825 \DeclareTextCommand{\textmacronbelow}{PD1}{\137}% U+005F  
 12826 % U+0060 GRAVE ACCENT; grave  
 12827 \DeclareTextCommand{\textasciigrave}{PD1}{\140}% U+0060  
 \141: U+0061 LATIN SMALL LETTER A; a  
 ...  
 \150: U+0068 LATIN SMALL LETTER H; h  
 12828 % U+0069 LATIN SMALL LETTER I; i  
 12829 \DeclareTextCompositeCommand{\.}{PD1}{i}{i}% \151 U+0069  
 \152: U+006A LATIN SMALL LETTER J; j  
 ...  
 \172: U+007A LATIN SMALL LETTER Z; z  
 12830 % U+007B LEFT CURLY BRACKET; braceleft  
 12831 \DeclareTextCommand{\textbraceleft}{PD1}{\173}% U+007B  
 12832 % U+007C VERTICAL LINE; \*bar, verticalbar  
 12833 \DeclareTextCommand{\textbar}{PD1}{|}% U+007C  
 12834 % U+007D RIGHT CURLY BRACKET; braceright  
 12835 \DeclareTextCommand{\textbraceright}{PD1}{\175}% U+007D  
 12836 % U+007E TILDE; asciitilde  
 12837 \DeclareTextCommand{\textasciitilde}{PD1}{\176}% U+007E  
 Slot \177 (0x7F) is undefined in PDFDocEncoding.  
 12838 % U+2022 BULLET; bullet  
 12839 \DeclareTextCommand{\textbullet}{PD1}{\200}% U+2022  
 12840 % U+2020 DAGGER; dagger  
 12841 \DeclareTextCommand{\textdagger}{PD1}{\201}% U+2020  
 12842 % U+2021 DOUBLE DAGGER; daggerdbl  
 12843 \DeclareTextCommand{\textdaggerdbl}{PD1}{\202}% U+2021  
 12844 % U+2026 HORIZONTAL ELLIPSIS; ellipsis  
 12845 \DeclareTextCommand{\textellipsis}{PD1}{\203}% U+2026  
 12846 % U+2014 EM DASH; emdash  
 12847 \DeclareTextCommand{\textemdash}{PD1}{\204}% U+2014  
 12848 % U+2013 EN DASH; endash  
 12849 \DeclareTextCommand{\textendash}{PD1}{\205}% U+2013  
 12850 % U+0192 LATIN SMALL LETTER F WITH HOOK; florin  
 12851 \DeclareTextCommand{\textflorin}{PD1}{\206}% U+0192  
 12852 % U+2044 FRACTION SLASH; fraction  
 12853 \DeclareTextCommand{\textfractionsolidus}{PD1}{\207}% U+2044  
 12854 % U+2039 SINGLE LEFT-POINTING ANGLE QUOTATION MARK; guil-  
 lingleft  
 12855 \DeclareTextCommand{\guilsinglleft}{PD1}{\210}% U+2039  
 12856 % U+203A SINGLE RIGHT-POINTING ANGLE QUOTATION MARK; guil-  
 lingright  
 12857 \DeclareTextCommand{\guilsinglright}{PD1}{\211}% U+203A

12858 % U+2212 MINUS SIGN; minus  
 12859 \DeclareTextCommand{\textminus}{PD1}{\212}% U+2212  
 12860 % U+2030 PER MILLE SIGN; perthousand  
 12861 \DeclareTextCommand{\textperthousand}{PD1}{\213}% U+2030  
 12862 % U+201E DOUBLE LOW-9 QUOTATION MARK; quotedblbase  
 12863 \DeclareTextCommand{\quotedblbase}{PD1}{\214}% U+201E  
 12864 % U+201C LEFT DOUBLE QUOTATION MARK; quotedblleft  
 12865 \DeclareTextCommand{\textquotedblleft}{PD1}{\215}% U+201C  
 12866 % U+201D RIGHT DOUBLE QUOTATION MARK; quotedblright  
 12867 \DeclareTextCommand{\textquotedblright}{PD1}{\216}% U+201D  
 12868 % U+2018 LEFT SINGLE QUOTATION MARK; quoteleft  
 12869 \DeclareTextCommand{\textquoteleft}{PD1}{\217}% U+2018  
 12870 % U+2019 RIGHT SINGLE QUOTATION MARK; quoteright  
 12871 \DeclareTextCommand{\textquoteright}{PD1}{\220}% U+2019  
 12872 % U+201A SINGLE LOW-9 QUOTATION MARK; quotesinglbase  
 12873 \DeclareTextCommand{\quotesinglbase}{PD1}{\221}% U+201A  
 12874 % U+2122 TRADE MARK SIGN; trademark  
 12875 \DeclareTextCommand{\texttrademark}{PD1}{\222}% U+2122  
 12876 % U+FB01 LATIN SMALL LIGATURE FI; fi  
 12877 \DeclareTextCommand{\textfi}{PD1}{\223}% U+FB01  
 12878 % U+FB02 LATIN SMALL LIGATURE FL; fl  
 12879 \DeclareTextCommand{\textfl}{PD1}{\224}% U+FB02  
 12880 % U+0141 LATIN CAPITAL LETTER L WITH STROKE; Lslash  
 12881 \DeclareTextCommand{\L}{PD1}{\225}% U+0141  
 12882 % U+0152 LATIN CAPITAL LIGATURE OE; OE  
 12883 \DeclareTextCommand{\OE}{PD1}{\226}% U+0152  
 12884 % U+0160 LATIN CAPITAL LETTER S WITH CARON; Scaron  
 12885 \DeclareTextCompositeCommand{\v}{PD1}{S}{\227}% U+0160  
 12886 % U+0178 LATIN CAPITAL LETTER Y WITH DIAERESIS; Ydieresis  
 12887 \DeclareTextCompositeCommand{"}{PD1}{Y}{\230}% U+0178  
 12888 \DeclareTextCommand{\IJ}{PD1}{\230}  
 12889 % U+017D LATIN CAPITAL LETTER Z WITH CARON; Zcaron  
 12890 \DeclareTextCompositeCommand{\v}{PD1}{Z}{\231}% U+017D  
 12891 % U+0131 LATIN SMALL LETTER DOTLESS I; dotlessi  
 12892 \DeclareTextCommand{\i}{PD1}{\232}% U+0131  
 12893 % U+0142 LATIN SMALL LETTER L WITH STROKE; lslash  
 12894 \DeclareTextCommand{\l}{PD1}{\233}% U+0142  
 12895 % U+0153 LATIN SMALL LIGATURE OE; oe  
 12896 \DeclareTextCommand{\oe}{PD1}{\234}% U+0153  
 12897 % U+0161 LATIN SMALL LETTER S WITH CARON; scaron  
 12898 \DeclareTextCompositeCommand{\v}{PD1}{s}{\235}% U+0161  
 12899 % U+017E LATIN SMALL LETTER Z WITH CARON; zcaron  
 12900 \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.

12901 % U+20AC EURO SIGN; \*Euro, euro  
 12902 \DeclareTextCommand{\texteuro}{PD1}{\240}% U+20AC  
 12903 % U+00A1 INVERTED EXCLAMATION MARK; exclamdown  
 12904 \DeclareTextCommand{\textexclamdown}{PD1}{\241}% U+00A1  
 12905 % U+00A2 CENT SIGN; cent  
 12906 \DeclareTextCommand{\textcent}{PD1}{\242}% U+00A2  
 12907 % U+00A3 POUND SIGN; sterling  
 12908 \DeclareTextCommand{\textsterling}{PD1}{\243}% U+00A3  
 12909 % U+00A4 CURRENCY SIGN; currency  
 12910 \DeclareTextCommand{\textcurrency}{PD1}{\244}% U+00A4  
 12911 % U+00A5 YEN SIGN; yen  
 12912 \DeclareTextCommand{\textyen}{PD1}{\245}% U+00A5

12913 % U+00A6 BROKEN BAR; brokenbar  
 12914 \DeclareTextCommand{\textbrokenbar}{PD1}{\246}% U+00A6  
 12915 % U+00A7 SECTION SIGN; section  
 12916 \DeclareTextCommand{\textsection}{PD1}{\247}% U+00A7  
 12917 % U+00A8 DIAERESIS; dieresis  
 12918 \DeclareTextCommand{\textasciidieresis}{PD1}{\250}% U+00A8  
 12919 % U+00A9 COPYRIGHT SIGN; copyright  
 12920 \DeclareTextCommand{\textcopyright}{PD1}{\251}% U+00A9  
 12921 % U+00AA FEMININE ORDINAL INDICATOR; ordfeminine  
 12922 \DeclareTextCommand{\textordfeminine}{PD1}{\252}% U+00AA  
 12923 % U+00AB LEFT-POINTING DOUBLE ANGLE QUOTATION MARK; guillemotleft  
 12924 \DeclareTextCommand{\guillemotleft}{PD1}{\253}% U+00AB  
 12925 % U+00AC NOT SIGN; logicalnot  
 12926 \DeclareTextCommand{\textlogicalnot}{PD1}{\254}% U+00AC  
 12927 \DeclareTextCommand{\textlnot}{PD1}{\254}% logical not  
 No glyph \255 in PDFDocEncoding.  
 12928 % U+00AE REGISTERED SIGN; registered  
 12929 \DeclareTextCommand{\textregistered}{PD1}{\256}% U+00AE  
 12930 % U+00AF MACRON; \*macron, overscore  
 12931 \DeclareTextCommand{\textasciimacron}{PD1}{\257}% U+00AF  
 12932 % U+00B0 DEGREE SIGN; degree  
 12933 \DeclareTextCommand{\textdegree}{PD1}{\260}% U+00B0  
 12934 % U+00B1 PLUS-MINUS SIGN; plusminus  
 12935 \DeclareTextCommand{\textplusminus}{PD1}{\261}% U+00B1  
 12936 % U+00B2 SUPERScript TWO; twosuperior  
 12937 \DeclareTextCommand{\texttwosuperior}{PD1}{\262}% U+00B2  
 12938 % U+00B3 SUPERScript THREE; threesuperior  
 12939 \DeclareTextCommand{\textthreesuperior}{PD1}{\263}% U+00B3  
 12940 % U+00B4 ACUTE ACCENT; acute  
 12941 \DeclareTextCommand{\textacute}{PD1}{\264}% U+00B4  
 12942 % U+00B5 MICRO SIGN; mu, mul  
 12943 \DeclareTextCommand{\textmu}{PD1}{\265}% U+00B5  
 12944 % U+00B6 PILCROW SIGN; paragraph  
 12945 \DeclareTextCommand{\textparagraph}{PD1}{\266}% U+00B6  
 12946 % U+00B7 MIDDLE DOT; middot, \*periodcentered  
 12947 \DeclareTextCommand{\textperiodcentered}{PD1}{\267}% U+00B7  
 12948 % U+00B8 CEDILLA; cedilla  
 12949 \DeclareTextCommand{\textcedilla}{PD1}{\270}% U+00B8  
 12950 % U+00B9 SUPERScript ONE; onesuperior  
 12951 \DeclareTextCommand{\textonesuperior}{PD1}{\271}% U+00B9  
 12952 % U+00BA MASCULINE ORDINAL INDICATOR; ordmasculine  
 12953 \DeclareTextCommand{\textordmasculine}{PD1}{\272}% U+00BA  
 12954 % U+00BB RIGHT-POINTING DOUBLE ANGLE QUOTATION MARK; guillemotright  
 12955 \DeclareTextCommand{\guillemotright}{PD1}{\273}% U+00BB  
 12956 % U+00BC VULGAR FRACTION ONE QUARTER; onequarter  
 12957 \DeclareTextCommand{\textonequarter}{PD1}{\274}% U+00BC  
 12958 % U+00BD VULGAR FRACTION ONE HALF; onehalf  
 12959 \DeclareTextCommand{\textonehalf}{PD1}{\275}% U+00BD  
 12960 % U+00BE VULGAR FRACTION THREE QUARTERS; threequarters  
 12961 \DeclareTextCommand{\textthreequarters}{PD1}{\276}% U+00BE  
 12962 % U+00BF INVERTED QUESTION MARK; questiondown  
 12963 \DeclareTextCommand{\textquestiondown}{PD1}{\277}% U+00BF  
 12964 % U+00C0 LATIN CAPITAL LETTER A WITH GRAVE; Agrave  
 12965 \DeclareTextCompositeCommand{\`}{PD1}{A}{\300}% U+00C0  
 12966 % U+00C1 LATIN CAPITAL LETTER A WITH ACUTE; Aacute

12967 \DeclareTextCompositeCommand{\'}{PD1}{A}{\301}% U+00C1  
 12968 % U+00C2 LATIN CAPITAL LETTER A WITH CIRCUMFLEX; Acircumflex  
 12969 \DeclareTextCompositeCommand{\^}{PD1}{A}{\302}% U+00C2  
 12970 % U+00C3 LATIN CAPITAL LETTER A WITH TILDE; Atilde  
 12971 \DeclareTextCompositeCommand{\~}{PD1}{A}{\303}% U+00C3  
 12972 % U+00C4 LATIN CAPITAL LETTER A WITH DIAERESIS; Adieresis  
 12973 \DeclareTextCompositeCommand{\"}{PD1}{A}{\304}% U+00C4  
 12974 % U+00C5 LATIN CAPITAL LETTER A WITH RING ABOVE; Aring  
 12975 \DeclareTextCompositeCommand{\r}{PD1}{A}{\305}% U+00C5  
 12976 % U+00C6 LATIN CAPITAL LETTER AE; AE  
 12977 \DeclareTextCommand{\AE}{PD1}{\306}% U+00C6  
 12978 % U+00C7 LATIN CAPITAL LETTER C WITH CEDILLA; Ccedilla  
 12979 \DeclareTextCompositeCommand{\c}{PD1}{C}{\307}% U+00C7  
 12980 % U+00C8 LATIN CAPITAL LETTER E WITH GRAVE; Egrave  
 12981 \DeclareTextCompositeCommand{\`}{PD1}{E}{\310}% U+00C8  
 12982 % U+00C9 LATIN CAPITAL LETTER E WITH ACUTE; Eacute  
 12983 \DeclareTextCompositeCommand{\'}{PD1}{E}{\311}% U+00C9  
 12984 % U+00CA LATIN CAPITAL LETTER E WITH CIRCUMFLEX; Ecircumflex  
 12985 \DeclareTextCompositeCommand{\^}{PD1}{E}{\312}% U+00CA  
 12986 % U+00CB LATIN CAPITAL LETTER E WITH DIAERESIS; Edieresis  
 12987 \DeclareTextCompositeCommand{\"}{PD1}{E}{\313}% U+00CB  
 12988 % U+00CC LATIN CAPITAL LETTER I WITH GRAVE; Igrave  
 12989 \DeclareTextCompositeCommand{\`}{PD1}{I}{\314}% U+00CC  
 12990 % U+00CD LATIN CAPITAL LETTER I WITH ACUTE; Iacute  
 12991 \DeclareTextCompositeCommand{\'}{PD1}{I}{\315}% U+00CD  
 12992 % U+00CE LATIN CAPITAL LETTER I WITH CIRCUMFLEX; Icircumflex  
 12993 \DeclareTextCompositeCommand{\^}{PD1}{I}{\316}% U+00CE  
 12994 % U+00CF LATIN CAPITAL LETTER I WITH DIAERESIS; Idieresis  
 12995 \DeclareTextCompositeCommand{\"}{PD1}{I}{\317}% U+00CF  
 12996 % U+00D0 LATIN CAPITAL LETTER ETH; Eth  
 12997 \DeclareTextCommand{\DH}{PD1}{\320}% U+00D0  
 12998 \DeclareTextCommand{\DJ}{PD1}{\320}% U+00D0  
 12999 % U+00D1 LATIN CAPITAL LETTER N WITH TILDE; Ntilde  
 13000 \DeclareTextCompositeCommand{\~}{PD1}{N}{\321}% U+00D1  
 13001 % U+00D2 LATIN CAPITAL LETTER O WITH GRAVE; Ograve  
 13002 \DeclareTextCompositeCommand{\`}{PD1}{O}{\322}% U+00D2  
 13003 % U+00D3 LATIN CAPITAL LETTER O WITH ACUTE; Oacute  
 13004 \DeclareTextCompositeCommand{\'}{PD1}{O}{\323}% U+00D3  
 13005 % U+00D4 LATIN CAPITAL LETTER O WITH CIRCUMFLEX; Ocircumflex  
 13006 \DeclareTextCompositeCommand{\^}{PD1}{O}{\324}% U+00D4  
 13007 % U+00D5 LATIN CAPITAL LETTER O WITH TILDE; Otilde  
 13008 \DeclareTextCompositeCommand{\~}{PD1}{O}{\325}% U+00D5  
 13009 % U+00D6 LATIN CAPITAL LETTER O WITH DIAERESIS; Odieresis  
 13010 \DeclareTextCompositeCommand{\"}{PD1}{O}{\326}% U+00D6  
 13011 % U+00D7 MULTIPLICATION SIGN; multiply  
 13012 \DeclareTextCommand{\textmultiply}{PD1}{\327}% U+00D7  
 13013 % U+00D8 LATIN CAPITAL LETTER O WITH STROKE; Oslash  
 13014 \DeclareTextCommand{\O}{PD1}{\330}% U+00D8  
 13015 % U+00D9 LATIN CAPITAL LETTER U WITH GRAVE; Ugrave  
 13016 \DeclareTextCompositeCommand{\`}{PD1}{U}{\331}% U+00D9  
 13017 % U+00DA LATIN CAPITAL LETTER U WITH ACUTE; Uacute  
 13018 \DeclareTextCompositeCommand{\'}{PD1}{U}{\332}% U+00DA  
 13019 % U+00DB LATIN CAPITAL LETTER U WITH CIRCUMFLEX; Ucircumflex  
 13020 \DeclareTextCompositeCommand{\^}{PD1}{U}{\333}% U+00DB  
 13021 % U+00DC LATIN CAPITAL LETTER U WITH DIAERESIS; Udieresis  
 13022 \DeclareTextCompositeCommand{\"}{PD1}{U}{\334}% U+00DC  
 13023 % U+00DD LATIN CAPITAL LETTER Y WITH ACUTE; Yacute

13024 \DeclareTextCompositeCommand{'}{PD1}{Y}{\335}% U+00DD  
13025 % U+00DE LATIN CAPITAL LETTER THORN; Thorn  
13026 \DeclareTextCommand{\TH}{PD1}{\336}% U+00DE  
13027 % U+00DF LATIN SMALL LETTER SHARP S; germandbls  
13028 \DeclareTextCommand{\ss}{PD1}{\337}% U+00DF  
13029 % U+00E0 LATIN SMALL LETTER A WITH GRAVE; agrave  
13030 \DeclareTextCompositeCommand{'}{PD1}{a}{\340}% U+00E0  
13031 % U+00E1 LATIN SMALL LETTER A WITH ACUTE; acute  
13032 \DeclareTextCompositeCommand{'}{PD1}{a}{\341}% U+00E1  
13033 % U+00E2 LATIN SMALL LETTER A WITH CIRCUMFLEX; acircumflex  
13034 \DeclareTextCompositeCommand{'}{PD1}{a}{\342}% U+00E2  
13035 % U+00E3 LATIN SMALL LETTER A WITH TILDE; atilde  
13036 \DeclareTextCompositeCommand{'}{PD1}{a}{\343}% U+00E3  
13037 % U+00E4 LATIN SMALL LETTER A WITH DIAERESIS; adieresis  
13038 \DeclareTextCompositeCommand{"}{PD1}{a}{\344}% U+00E4  
13039 % U+00E5 LATIN SMALL LETTER A WITH RING ABOVE; aring  
13040 \DeclareTextCompositeCommand{r}{PD1}{a}{\345}% U+00E5  
13041 % U+00E6 LATIN SMALL LETTER AE; ae  
13042 \DeclareTextCommand{\ae}{PD1}{\346}% U+00E6  
13043 % U+00E7 LATIN SMALL LETTER C WITH CEDILLA; ccedilla  
13044 \DeclareTextCompositeCommand{c}{PD1}{c}{\347}% U+00E7  
13045 % U+00E8 LATIN SMALL LETTER E WITH GRAVE; egrave  
13046 \DeclareTextCompositeCommand{'}{PD1}{e}{\350}% U+00E8  
13047 % U+00E9 LATIN SMALL LETTER E WITH ACUTE; eacute  
13048 \DeclareTextCompositeCommand{'}{PD1}{e}{\351}% U+00E9  
13049 % U+00EA LATIN SMALL LETTER E WITH CIRCUMFLEX; ecircumflex  
13050 \DeclareTextCompositeCommand{'}{PD1}{e}{\352}% U+00EA  
13051 % U+00EB LATIN SMALL LETTER E WITH DIAERESIS; edieresis  
13052 \DeclareTextCompositeCommand{"}{PD1}{e}{\353}% U+00EB  
13053 % U+00EC LATIN SMALL LETTER I WITH GRAVE; igrave  
13054 \DeclareTextCompositeCommand{'}{PD1}{i}{\354}% U+00EC  
13055 \DeclareTextCompositeCommand{'}{PD1}{i}{\354}% U+00EC  
13056 % U+00ED LATIN SMALL LETTER I WITH ACUTE; iacute  
13057 \DeclareTextCompositeCommand{'}{PD1}{i}{\355}% U+00ED  
13058 \DeclareTextCompositeCommand{'}{PD1}{i}{\355}% U+00ED  
13059 % U+00EE LATIN SMALL LETTER I WITH CIRCUMFLEX; icircumflex  
13060 \DeclareTextCompositeCommand{'}{PD1}{i}{\356}% U+00EE  
13061 \DeclareTextCompositeCommand{'}{PD1}{i}{\356}% U+00EE  
13062 % U+00EF LATIN SMALL LETTER I WITH DIAERESIS; idieresis  
13063 \DeclareTextCompositeCommand{"}{PD1}{i}{\357}% U+00EF  
13064 \DeclareTextCompositeCommand{"}{PD1}{i}{\357}% U+00EF  
13065 % U+00F0 LATIN SMALL LETTER ETH; eth  
13066 \DeclareTextCommand{\dh}{PD1}{\360}% U+00F0  
13067 % U+00F1 LATIN SMALL LETTER N WITH TILDE; ntilde  
13068 \DeclareTextCompositeCommand{'}{PD1}{n}{\361}% U+00F1  
13069 % U+00F2 LATIN SMALL LETTER O WITH GRAVE; ograve  
13070 \DeclareTextCompositeCommand{'}{PD1}{o}{\362}% U+00F2  
13071 % U+00F3 LATIN SMALL LETTER O WITH ACUTE; oacute  
13072 \DeclareTextCompositeCommand{'}{PD1}{o}{\363}% U+00F3  
13073 % U+00F4 LATIN SMALL LETTER O WITH CIRCUMFLEX; ocircumflex  
13074 \DeclareTextCompositeCommand{'}{PD1}{o}{\364}% U+00F4  
13075 % U+00F5 LATIN SMALL LETTER O WITH TILDE; otilde  
13076 \DeclareTextCompositeCommand{'}{PD1}{o}{\365}% U+00F5  
13077 % U+00F6 LATIN SMALL LETTER O WITH DIAERESIS; odieresis  
13078 \DeclareTextCompositeCommand{"}{PD1}{o}{\366}% U+00F6  
13079 % U+00F7 DIVISION SIGN; divide  
13080 \DeclareTextCommand{\textdivide}{PD1}{\367}% U+00F7

13081 % U+00F8 LATIN SMALL LETTER O WITH STROKE; oslash  
 13082 \DeclareTextCommand{\o}{PD1}{\370}% U+00F8  
 13083 % U+00F9 LATIN SMALL LETTER U WITH GRAVE; ugrave  
 13084 \DeclareTextCompositeCommand{\'}{PD1}{u}{\371}% U+00F9  
 13085 % U+00FA LATIN SMALL LETTER U WITH ACUTE; uacute  
 13086 \DeclareTextCompositeCommand{\'}{PD1}{u}{\372}% U+00FA  
 13087 % U+00FB LATIN SMALL LETTER U WITH CIRCUMFLEX; ucircumflex  
 13088 \DeclareTextCompositeCommand{\^}{PD1}{u}{\373}% U+00FB  
 13089 % U+00FC LATIN SMALL LETTER U WITH DIAERESIS; udieresis  
 13090 \DeclareTextCompositeCommand{\"}{PD1}{u}{\374}% U+00FC  
 13091 % U+00FD LATIN SMALL LETTER Y WITH ACUTE; yacute  
 13092 \DeclareTextCompositeCommand{\'}{PD1}{y}{\375}% U+00FD  
 13093 % U+00FE LATIN SMALL LETTER THORN; thorn  
 13094 \DeclareTextCommand{\th}{PD1}{\376}% U+00FE  
 13095 % U+00FF LATIN SMALL LETTER Y WITH DIAERESIS; ydieresis  
 13096 \DeclareTextCompositeCommand{\"}{PD1}{y}{\377}% U+00FF  
 13097 \DeclareTextCommand{\ij}{PD1}{\377}% U+00FF

Glyphs that consist of several characters.

13098 \DeclareTextCommand{\SS}{PD1}{SS}  
 13099 \DeclareTextCommand{\textcelsius}{PD1}{\textdegree C}

Aliases (german.sty)

13100 \DeclareTextCommand{\textglqq}{PD1}{\quotedblbase}  
 13101 \DeclareTextCommand{\textgrqq}{PD1}{\textquotedblleft}  
 13102 \DeclareTextCommand{\textglq}{PD1}{\quotesinglbase}  
 13103 \DeclareTextCommand{\textgrq}{PD1}{\textquoteleft}  
 13104 \DeclareTextCommand{\textflqq}{PD1}{\guillemotleft}  
 13105 \DeclareTextCommand{\textfrqq}{PD1}{\guillemotright}  
 13106 \DeclareTextCommand{\textflq}{PD1}{\guilsinglleft}  
 13107 \DeclareTextCommand{\textfrq}{PD1}{\guilsinglright}

Aliases (math names)

13108 \DeclareTextCommand{\textneg}{PD1}{\textlogicalnot}  
 13109 \DeclareTextCommand{\texttimes}{PD1}{\textmultiply}  
 13110 \DeclareTextCommand{\textdiv}{PD1}{\textdivide}  
 13111 \DeclareTextCommand{\textpm}{PD1}{\textplusminus}  
 13112 \DeclareTextCommand{\textcdot}{PD1}{\textperiodcentered}  
 13113 \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).

13114 \DeclareTextCompositeCommand{\k}{PD1}{a}{a}% aogonek  
 13115 \DeclareTextCompositeCommand{\'}{PD1}{c}{c}% cacute  
 13116 \DeclareTextCompositeCommand{\k}{PD1}{e}{e}% eogonek  
 13117 \DeclareTextCompositeCommand{\'}{PD1}{n}{n}% nacute  
 13118 \DeclareTextCompositeCommand{\'}{PD1}{s}{s}% sacute  
 13119 \DeclareTextCompositeCommand{\'}{PD1}{z}{z}% zacute  
 13120 \DeclareTextCompositeCommand{\.}{PD1}{z}{z}% zdot  
 13121 \DeclareTextCompositeCommand{\k}{PD1}{A}{A}% Aogonek  
 13122 \DeclareTextCompositeCommand{\'}{PD1}{C}{C}% Cacute  
 13123 \DeclareTextCompositeCommand{\k}{PD1}{E}{E}% Eogonek  
 13124 \DeclareTextCompositeCommand{\'}{PD1}{N}{N}% Nacute  
 13125 \DeclareTextCompositeCommand{\'}{PD1}{S}{S}% Sacute  
 13126 \DeclareTextCompositeCommand{\'}{PD1}{Z}{Z}% Zacute  
 13127 \DeclareTextCompositeCommand{\.}{PD1}{Z}{Z}% Zdot

13128 </pdlenc>

## 50.2 PU encoding

```
13129 ⟨*puenc⟩
13130 \DeclareFontEncoding{PU}{-}{-}
```

### 50.2.1 NFSS2 accents

```
13131 % U+0300 COMBINING GRAVE ACCENT; gravecmb, *gravecomb
13132 \DeclareTextCommand{\'}{PU}[1]{#1\83\000}% U+0300
13133 % U+0301 COMBINING ACUTE ACCENT; acutecmb, *acutecomb
13134 \DeclareTextCommand{\'}{PU}[1]{#1\83\001}% U+0301
13135 % U+0302 COMBINING CIRCUMFLEX ACCENT; circumflexcmb
13136 \DeclareTextCommand{\^}{PU}[1]{#1\83\002}% U+0302
13137 % U+0303 COMBINING TILDE; tildecmb, *tildecmb
13138 \DeclareTextCommand{\~}{PU}[1]{#1\83\003}% U+0303
13139 % U+0304 COMBINING MACRON; macroncmb
13140 \DeclareTextCommand{\=}{PU}[1]{#1\83\004}% U+0304
13141 % U+0306 COMBINING BREVE; brevecmb
13142 \DeclareTextCommand{\u}{PU}[1]{#1\83\006}% U+0306
13143 \DeclareTextCommand{\U}{PU}[1]{#1\83\006}% U+0306
13144 % U+0307 COMBINING DOT ABOVE; dotaccentcmb
13145 \DeclareTextCommand{\.}{PU}[1]{#1\83\007}% U+0307
13146 % U+0308 COMBINING DIAERESIS; dieresiscmb
13147 \DeclareTextCommand{\"}{PU}[1]{#1\83\010}% U+0308
13148 % U+030A COMBINING RING ABOVE; ringcmb
13149 \DeclareTextCommand{\r}{PU}[1]{#1\83\012}% U+030A
13150 % U+030B COMBINING DOUBLE ACUTE ACCENT; hungarumlautcmb
13151 \DeclareTextCommand{\H}{PU}[1]{#1\83\013}% U+030B
13152 % U+030C COMBINING CARON; caroncmb
13153 \DeclareTextCommand{\v}{PU}[1]{#1\83\014}% U+030C
13154 % U+030F COMBINING DOUBLE GRAVE ACCENT; dblgravecmb
13155 \DeclareTextCommand{\G}{PU}[1]{#1\83\017}% U+030F
13156 \DeclareTextCommand{\C}{PU}[1]{#1\83\017}% U+030F
13157 % U+0311 COMBINING INVERTED BREVE; breveinvertedcmb
13158 \DeclareTextCommand{\newtie}{PU}[1]{#1\83\021}% U+0311
13159 % U+0323 COMBINING DOT BELOW; dotbelowcmb, *dotbelowcomb
13160 \DeclareTextCommand{\d}{PU}[1]{#1\83\043}% U+0323
13161 % U+0331 COMBINING MACRON BELOW; macronbelowcmb
13162 \DeclareTextCommand{\b}{PU}[1]{#1\83\061}% U+0331
13163 % U+0327 COMBINING CEDILLA; cedillacmb
13164 \DeclareTextCommand{\c}{PU}[1]{#1\83\047}% U+0327
13165 % U+0328 COMBINING OGONEK; ogonekcmb
13166 \DeclareTextCommand{\k}{PU}[1]{#1\83\050}% U+0328
13167 % U+0361 COMBINING DOUBLE INVERTED BREVE; breveinverteddoublecmb
13168 \DeclareTextCommand{\t}{PU}[1]{#1\83\141}% U+0361
13169 % U+20DD COMBINING ENCLOSING CIRCLE
13170 \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.

```
13171 \DeclareTextCompositeCommand{\'}{PU}{\@empty}{\textasciigrave}
13172 \DeclareTextCompositeCommand{\'}{PU}{\@empty}{\textacute}
13173 \DeclareTextCompositeCommand{\^}{PU}{\@empty}{\textasciicircum}
13174 \DeclareTextCompositeCommand{\~}{PU}{\@empty}{\textasciitilde}
13175 \DeclareTextCompositeCommand{\"}{PU}{\@empty}{\textasciidieresis}
13176 \DeclareTextCompositeCommand{\r}{PU}{\@empty}{\textring}
13177 \DeclareTextCompositeCommand{\v}{PU}{\@empty}{\textasciicaron}
13178 \DeclareTextCompositeCommand{\.}{PU}{\@empty}{\textdotaccent}
13179 \DeclareTextCompositeCommand{\c}{PU}{\@empty}{\textcedilla}
```

```

13180 \DeclareTextCompositeCommand{\u}{PU}{\@empty}{\textasciibreve}
13181 \DeclareTextCompositeCommand{\G}{PU}{\@empty}{\textdoublegrave}
13182 \DeclareTextCompositeCommand{\=}{PU}{\@empty}{\textasciimacron}
13183 \DeclareTextCompositeCommand{\H}{PU}{\@empty}{\texthungarumlaut}
13184 \DeclareTextCompositeCommand{\k}{PU}{\@empty}{\textogonek}
13185 \DeclareTextCompositeCommand{\b}{PU}{\@empty}{\textmacronbelow}
13186 \DeclareTextCompositeCommand{\d}{PU}{\@empty}{\textdotbelow}
13187 \DeclareTextCompositeCommand{\t}{PU}{\@empty}{\texttie}
13188 \DeclareTextCompositeCommand{\newtie}{PU}{\@empty}{\textnewtie}
13189 \DeclareTextCompositeCommand{\textcircled}{PU}{\@empty}{\textbigcircle}

13190 \DeclareTextCompositeCommand{\'}{PU}{\ }{\textasciigrave}
13191 \DeclareTextCompositeCommand{\'}{PU}{\ }{\textacute}
13192 \DeclareTextCompositeCommand{\~}{PU}{\ }{\textasciicircum}
13193 \DeclareTextCompositeCommand{\-}{PU}{\ }{\texttilde}
13194 \DeclareTextCompositeCommand{\"}{PU}{\ }{\textasciidieresis}
13195 \DeclareTextCompositeCommand{\r}{PU}{\ }{\textring}
13196 \DeclareTextCompositeCommand{\v}{PU}{\ }{\textasciicaron}
13197 \DeclareTextCompositeCommand{\.}{PU}{\ }{\textdotaccent}
13198 \DeclareTextCompositeCommand{\c}{PU}{\ }{\textcedilla}
13199 \DeclareTextCompositeCommand{\u}{PU}{\ }{\textasciibreve}
13200 \DeclareTextCompositeCommand{\G}{PU}{\ }{\textdoublegrave}
13201 \DeclareTextCompositeCommand{\=}{PU}{\ }{\textasciimacron}
13202 \DeclareTextCompositeCommand{\H}{PU}{\ }{\texthungarumlaut}
13203 \DeclareTextCompositeCommand{\k}{PU}{\ }{\textogonek}
13204 \DeclareTextCompositeCommand{\b}{PU}{\ }{\textmacronbelow}
13205 \DeclareTextCompositeCommand{\d}{PU}{\ }{\textdotbelow}
13206 \DeclareTextCompositeCommand{\t}{PU}{\ }{\texttie}
13207 \DeclareTextCompositeCommand{\newtie}{PU}{\ }{\textnewtie}
13208 \DeclareTextCompositeCommand{\textcircled}{PU}{\ }{\textbigcircle}

```

Accents for capitals (see encoding TS1)

```

13209 \DeclareTextCommand{\capitalcedilla}{PU}[1]{\c{#1}}
13210 \DeclareTextCommand{\capitalogonek}{PU}[1]{\k{#1}}
13211 \DeclareTextCommand{\capitalgrave}{PU}[1]{\{'{#1}}
13212 \DeclareTextCommand{\capitalacute}{PU}[1]{\'{#1}}
13213 \DeclareTextCommand{\capitalcircumflex}{PU}[1]{\^{#1}}
13214 \DeclareTextCommand{\capitaltilde}{PU}[1]{\~{#1}}
13215 \DeclareTextCommand{\capitaldieresis}{PU}[1]{\#{#1}}
13216 \DeclareTextCommand{\capitalhungarumlaut}{PU}[1]{\H{#1}}
13217 \DeclareTextCommand{\capitalring}{PU}[1]{\r{#1}}
13218 \DeclareTextCommand{\capitalcaron}{PU}[1]{\v{#1}}
13219 \DeclareTextCommand{\capitalbreve}{PU}[1]{\u{#1}}
13220 \DeclareTextCommand{\capitalmacron}{PU}[1]{\={#1}}
13221 \DeclareTextCommand{\capitaldotaccent}{PU}[1]{\.{#1}}
13222 \DeclareTextCommand{\capitaltie}{PU}[1]{\t{#1}}
13223 \DeclareTextCommand{\capitalnewtie}{PU}[1]{\newtie{#1}}

```

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

Special white space escape characters.

```

13224 % U+0009 (CHARACTER TABULATION)
13225 \DeclareTextCommand{\textHT}{PU}{\80\011}% U+0009
13226 % U+000A (LINE FEED)
13227 \DeclareTextCommand{\textLF}{PU}{\80\012}% U+000A
13228 % U+000D (CARRIAGE RETURN)
13229 \DeclareTextCommand{\textCR}{PU}{\80\015}% U+000D

```

\80\040: U+0020 SPACE; space, spacehackarabic

\80\041: U+0021 EXCLAMATION MARK; exclam

13230 % U+0022 QUOTATION MARK; quotedbl  
 13231 \DeclareTextCommand{\textquotedbl}{PU}{\string"}% \80\042 U+0022  
 13232 % U+0023 NUMBER SIGN; numbersign  
 13233 \DeclareTextCommand{\textnumbersign}{PU}{\80\043}% U+0023  
 13234 % U+0024 DOLLAR SIGN; dollar  
 13235 \DeclareTextCommand{\textdollar}{PU}{\80\044}% U+0024  
 13236 % U+0025 PERCENT SIGN; percent  
 13237 \DeclareTextCommand{\textpercent}{PU}{\80\045}% U+0025  
 13238 % U+0026 AMPERSAND; ampersand  
 13239 \DeclareTextCommand{\textampersand}{PU}{\80\046}% U+0026  
 13240 % U+0027 APOSTROPHE; quotesingle  
 13241 \DeclareTextCommand{\textquotesingle}{PU}{\80\047}% U+0027  
 13242 % U+0028 LEFT PARENTHESIS; parenleft  
 13243 \DeclareTextCommand{\textparenleft}{PU}{\80\050}% U+0028  
 13244 % U+0029 RIGHT PARENTHESIS; parenright  
 13245 \DeclareTextCommand{\textparenright}{PU}{\80\051}% U+0029  
 13246 % U+002A ASTERISK; asterisk  
 13247 \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  
 13248 % U+003C LESS-THAN SIGN; less  
 13249 \DeclareTextCommand{\textless}{PU}{<}% \80\074 U+003C  
 \80\075: U+003D EQUALS SIGN; equal  
 13250 % U+003E GREATER-THAN SIGN; greater  
 13251 \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  
 13252 % U+005C REVERSE SOLIDUS; backslash  
 13253 \DeclareTextCommand{\textbackslash}{PU}{\80\134}% U+005C  
 \80\135: U+005D RIGHT SQUARE BRACKET; bracketright  
 13254 % U+005E CIRCUMFLEX ACCENT; asciicircum  
 13255 \DeclareTextCommand{\textasciicircum}{PU}{\80\136}% U+005E  
 13256 % U+005F LOW LINE; underscore  
 13257 \DeclareTextCommand{\textunderscore}{PU}{\80\137}% U+005F  
 13258 % U+0060 GRAVE ACCENT; grave  
 13259 \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  
 13260 % U+0069 LATIN SMALL LETTER I; i  
 13261 \DeclareTextCompositeCommand{\.}{PU}{i}{i} % \80\151 U+0069

13262 \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  
 13263 % U+007B LEFT CURLY BRACKET; braceleft  
 13264 \DeclareTextCommand{\textbraceleft}{PU}{\80\173}% U+007B  
 13265 % U+007C VERTICAL LINE; \*bar, verticalbar  
 13266 \DeclareTextCommand{\textbar}{PU}{|}% \80\174 U+007C  
 13267 % U+007D RIGHT CURLY BRACKET; braceright  
 13268 \DeclareTextCommand{\textbraceright}{PU}{\80\175}% U+007D  
 13269 % U+007E TILDE; asciitilde  
 13270 \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  
 13271 % U+00A1 INVERTED EXCLAMATION MARK; exclamdown  
 13272 \DeclareTextCommand{\textexclamdown}{PU}{\80\241}% U+00A1  
 13273 % U+00A2 CENT SIGN; cent  
 13274 \DeclareTextCommand{\textcent}{PU}{\80\242}% U+00A2  
 13275 % U+00A3 POUND SIGN; sterling  
 13276 \DeclareTextCommand{\textsterling}{PU}{\80\243}% U+00A3  
 13277 % U+00A4 CURRENCY SIGN; currency  
 13278 \DeclareTextCommand{\textcurrency}{PU}{\80\244}% U+00A4  
 13279 % U+00A5 YEN SIGN; yen  
 13280 \DeclareTextCommand{\textyen}{PU}{\80\245}% U+00A5  
 13281 % U+00A6 BROKEN BAR; brokenbar  
 13282 \DeclareTextCommand{\textbrokenbar}{PU}{\80\246}% U+00A6  
 13283 % U+00A7 SECTION SIGN; section  
 13284 \DeclareTextCommand{\textsection}{PU}{\80\247}% U+00A7  
 13285 % U+00A8 DIAERESIS; diaeresis  
 13286 \DeclareTextCommand{\textasciidieresis}{PU}{\80\250}% U+00A8  
 13287 % U+00A9 COPYRIGHT SIGN; copyright  
 13288 \DeclareTextCommand{\textcopyright}{PU}{\80\251}% U+00A9  
 13289 % U+00AA FEMININE ORDINAL INDICATOR; ordfeminine  
 13290 \DeclareTextCommand{\textordfeminine}{PU}{\80\252}% U+00AA  
 13291 % U+00AB LEFT-POINTING DOUBLE ANGLE QUOTATION MARK; guille-  
 motleft  
 13292 \DeclareTextCommand{\guillemotleft}{PU}{\80\253}% U+00AB  
 13293 % U+00AC NOT SIGN; logicalnot  
 13294 \DeclareTextCommand{\textlogicalnot}{PU}{\80\254}% U+00AC  
 13295 \DeclareTextCommand{\textlnot}{PU}{\80\254}% U+00AC  
 \80\255: U+00AD SOFT HYPHEN; sfthyphen, softthyphen  
 13296 % U+00AE REGISTERED SIGN; registered  
 13297 \DeclareTextCommand{\textregistered}{PU}{\80\256}% U+00AE  
 13298 % U+00AF MACRON; \*macron, overscore  
 13299 \DeclareTextCommand{\textasciimacron}{PU}{\80\257}% U+00AF  
 13300 % U+00B0 DEGREE SIGN; degree  
 13301 \DeclareTextCommand{\textdegree}{PU}{\80\260}% U+00B0  
 13302 % U+00B1 PLUS-MINUS SIGN; plusminus  
 13303 \DeclareTextCommand{\textplusminus}{PU}{\80\261}% U+00B1  
 13304 % U+00B2 SUPERScript TWO; twosuperior  
 13305 \DeclareTextCommand{\texttwosuperior}{PU}{\80\262}% U+00B2  
 13306 % U+00B3 SUPERScript THREE; threesuperior  
 13307 \DeclareTextCommand{\textthreesuperior}{PU}{\80\263}% U+00B3  
 13308 % U+00B4 ACUTE ACCENT; acute

13309 \DeclareTextCommand{\textacute}{PU}{\80\264}% U+00B4  
13310 \DeclareTextCommand{\textasciicute}{PU}{\80\264}% U+00B4  
13311 % U+00B5 MICRO SIGN; mu, mul  
13312 \DeclareTextCommand{\textmu}{PU}{\80\265}% U+00B5  
13313 % U+00B6 PILCROW SIGN; paragraph  
13314 \DeclareTextCommand{\textparagraph}{PU}{\80\266}% U+00B6  
13315 % U+00B7 MIDDLE DOT; middot, \*periodcentered  
13316 \DeclareTextCommand{\textperiodcentered}{PU}{\80\267}% U+00B7  
13317 % U+00B8 CEDILLA; cedilla  
13318 \DeclareTextCommand{\textcedilla}{PU}{\80\270}% U+00B8  
13319 % U+00B9 SUPERSCRIPT ONE; onesuperior  
13320 \DeclareTextCommand{\textonesuperior}{PU}{\80\271}% U+00B9  
13321 % U+00BA MASCULINE ORDINAL INDICATOR; ordmasculine  
13322 \DeclareTextCommand{\textordmasculine}{PU}{\80\272}% U+00BA  
13323 % U+00BB RIGHT-POINTING DOUBLE ANGLE QUOTATION MARK; guille-  
motright  
13324 \DeclareTextCommand{\guillemotright}{PU}{\80\273}% U+00BB  
13325 % U+00BC VULGAR FRACTION ONE QUARTER; onequarter  
13326 \DeclareTextCommand{\textonequarter}{PU}{\80\274}% U+00BC  
13327 % U+00BD VULGAR FRACTION ONE HALF; onehalf  
13328 \DeclareTextCommand{\textonehalf}{PU}{\80\275}% U+00BD  
13329 % U+00BE VULGAR FRACTION THREE QUARTERS; threequarters  
13330 \DeclareTextCommand{\textthreequarters}{PU}{\80\276}% U+00BE  
13331 % U+00BF INVERTED QUESTION MARK; questiondown  
13332 \DeclareTextCommand{\textquestiondown}{PU}{\80\277}% U+00BF  
13333 % U+00C0 LATIN CAPITAL LETTER A WITH GRAVE; Agrave  
13334 \DeclareTextCompositeCommand{\`}{PU}{A}{\80\300}% U+00C0  
13335 % U+00C1 LATIN CAPITAL LETTER A WITH ACUTE; Aacute  
13336 \DeclareTextCompositeCommand{\'}{PU}{A}{\80\301}% U+00C1  
13337 % U+00C2 LATIN CAPITAL LETTER A WITH CIRCUMFLEX; Acircumflex  
13338 \DeclareTextCompositeCommand{\^}{PU}{A}{\80\302}% U+00C2  
13339 % U+00C3 LATIN CAPITAL LETTER A WITH TILDE; Atilde  
13340 \DeclareTextCompositeCommand{\~}{PU}{A}{\80\303}% U+00C3  
13341 % U+00C4 LATIN CAPITAL LETTER A WITH DIAERESIS; Adieresis  
13342 \DeclareTextCompositeCommand{\"}{PU}{A}{\80\304}% U+00C4  
13343 % U+00C5 LATIN CAPITAL LETTER A WITH RING ABOVE; Aring  
13344 \DeclareTextCompositeCommand{\r}{PU}{A}{\80\305}% U+00C5  
13345 % U+00C6 LATIN CAPITAL LETTER AE; AE  
13346 \DeclareTextCommand{\AE}{PU}{\80\306}% U+00C6  
13347 % U+00C7 LATIN CAPITAL LETTER C WITH CEDILLA; Ccedilla  
13348 \DeclareTextCompositeCommand{\c}{PU}{C}{\80\307}% U+00C7  
13349 % U+00C8 LATIN CAPITAL LETTER E WITH GRAVE; Egrave  
13350 \DeclareTextCompositeCommand{\`}{PU}{E}{\80\310}% U+00C8  
13351 % U+00C9 LATIN CAPITAL LETTER E WITH ACUTE; Eacute  
13352 \DeclareTextCompositeCommand{\'}{PU}{E}{\80\311}% U+00C9  
13353 % U+00CA LATIN CAPITAL LETTER E WITH CIRCUMFLEX; Ecircumflex  
13354 \DeclareTextCompositeCommand{\^}{PU}{E}{\80\312}% U+00CA  
13355 % U+00CB LATIN CAPITAL LETTER E WITH DIAERESIS; Edieresis  
13356 \DeclareTextCompositeCommand{\"}{PU}{E}{\80\313}% U+00CB  
13357 % U+00CC LATIN CAPITAL LETTER I WITH GRAVE; Igrave  
13358 \DeclareTextCompositeCommand{\`}{PU}{I}{\80\314}% U+00CC  
13359 % U+00CD LATIN CAPITAL LETTER I WITH ACUTE; Iacute  
13360 \DeclareTextCompositeCommand{\'}{PU}{I}{\80\315}% U+00CD  
13361 % U+00CE LATIN CAPITAL LETTER I WITH CIRCUMFLEX; Icircumflex  
13362 \DeclareTextCompositeCommand{\^}{PU}{I}{\80\316}% U+00CE  
13363 % U+00CF LATIN CAPITAL LETTER I WITH DIAERESIS; Idieresis  
13364 \DeclareTextCompositeCommand{\"}{PU}{I}{\80\317}% U+00CF

13365 % U+00D0 LATIN CAPITAL LETTER ETH; Eth  
 13366 \DeclareTextCommand{\DH}{PU}{\80\320}% U+00D0  
 13367 % U+00D1 LATIN CAPITAL LETTER N WITH TILDE; Ntilde  
 13368 \DeclareTextCompositeCommand{\~}{PU}{N}{\80\321}% U+00D1  
 13369 % U+00D2 LATIN CAPITAL LETTER O WITH GRAVE; Ograve  
 13370 \DeclareTextCompositeCommand{\`}{PU}{O}{\80\322}% U+00D2  
 13371 % U+00D3 LATIN CAPITAL LETTER O WITH ACUTE; Oacute  
 13372 \DeclareTextCompositeCommand{\'}{PU}{O}{\80\323}% U+00D3  
 13373 % U+00D4 LATIN CAPITAL LETTER O WITH CIRCUMFLEX; Ocircumflex  
 13374 \DeclareTextCompositeCommand{\^}{PU}{O}{\80\324}% U+00D4  
 13375 % U+00D5 LATIN CAPITAL LETTER O WITH TILDE; Otilde  
 13376 \DeclareTextCompositeCommand{\-}{PU}{O}{\80\325}% U+00D5  
 13377 % U+00D6 LATIN CAPITAL LETTER O WITH DIAERESIS; Odieresis  
 13378 \DeclareTextCompositeCommand{\"}{PU}{O}{\80\326}% U+00D6  
 13379 % U+00D7 MULTIPLICATION SIGN; multiply  
 13380 \DeclareTextCommand{\textmultiply}{PU}{\80\327}% U+00D7  
 13381 % U+00D8 LATIN CAPITAL LETTER O WITH STROKE; Oslash  
 13382 \DeclareTextCommand{\O}{PU}{\80\330}% U+00D8  
 13383 % U+00D9 LATIN CAPITAL LETTER U WITH GRAVE; Ugrave  
 13384 \DeclareTextCompositeCommand{\`}{PU}{U}{\80\331}% U+00D9  
 13385 % U+00DA LATIN CAPITAL LETTER U WITH ACUTE; Uacute  
 13386 \DeclareTextCompositeCommand{\'}{PU}{U}{\80\332}% U+00DA  
 13387 % U+00DB LATIN CAPITAL LETTER U WITH CIRCUMFLEX; Ucircumflex  
 13388 \DeclareTextCompositeCommand{\^}{PU}{U}{\80\333}% U+00DB  
 13389 % U+00DC LATIN CAPITAL LETTER U WITH DIAERESIS; Udieresis  
 13390 \DeclareTextCompositeCommand{\"}{PU}{U}{\80\334}% U+00DC  
 13391 % U+00DD LATIN CAPITAL LETTER Y WITH ACUTE; Yacute  
 13392 \DeclareTextCompositeCommand{\'}{PU}{Y}{\80\335}% U+00DD  
 13393 % U+00DE LATIN CAPITAL LETTER THORN; Thorn  
 13394 \DeclareTextCommand{\TH}{PU}{\80\336}% U+00DE  
 13395 % U+00DF LATIN SMALL LETTER SHARP S; germandbls  
 13396 \DeclareTextCommand{\ss}{PU}{\80\337}% U+00DF  
 13397 % U+00E0 LATIN SMALL LETTER A WITH GRAVE; agrave  
 13398 \DeclareTextCompositeCommand{\`}{PU}{a}{\80\340}% U+00E0  
 13399 % U+00E1 LATIN SMALL LETTER A WITH ACUTE; aacute  
 13400 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\341}% U+00E1  
 13401 % U+00E2 LATIN SMALL LETTER A WITH CIRCUMFLEX; acircumflex  
 13402 \DeclareTextCompositeCommand{\^}{PU}{a}{\80\342}% U+00E2  
 13403 % U+00E3 LATIN SMALL LETTER A WITH TILDE; atilde  
 13404 \DeclareTextCompositeCommand{\-}{PU}{a}{\80\343}% U+00E3  
 13405 % U+00E4 LATIN SMALL LETTER A WITH DIAERESIS; adieresis  
 13406 \DeclareTextCompositeCommand{\"}{PU}{a}{\80\344}% U+00E4  
 13407 % U+00E5 LATIN SMALL LETTER A WITH RING ABOVE; aring  
 13408 \DeclareTextCompositeCommand{\r}{PU}{a}{\80\345}% U+00E5  
 13409 % U+00E6 LATIN SMALL LETTER AE; ae  
 13410 \DeclareTextCommand{\ae}{PU}{\80\346}% U+00E6  
 13411 % U+00E7 LATIN SMALL LETTER C WITH CEDILLA; ccedilla  
 13412 \DeclareTextCompositeCommand{\c}{PU}{c}{\80\347}% U+00E7  
 13413 % U+00E8 LATIN SMALL LETTER E WITH GRAVE; egrave  
 13414 \DeclareTextCompositeCommand{\`}{PU}{e}{\80\350}% U+00E8  
 13415 % U+00E9 LATIN SMALL LETTER E WITH ACUTE; eacute  
 13416 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\351}% U+00E9  
 13417 % U+00EA LATIN SMALL LETTER E WITH CIRCUMFLEX; ecircumflex  
 13418 \DeclareTextCompositeCommand{\^}{PU}{e}{\80\352}% U+00EA  
 13419 % U+00EB LATIN SMALL LETTER E WITH DIAERESIS; edieresis  
 13420 \DeclareTextCompositeCommand{\"}{PU}{e}{\80\353}% U+00EB  
 13421 % U+00EC LATIN SMALL LETTER I WITH GRAVE; igrave

13422 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\354}% U+00EC  
 13423 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\354}% U+00EC  
 13424 % U+00ED LATIN SMALL LETTER I WITH ACUTE; iacute  
 13425 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\355}% U+00ED  
 13426 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\355}% U+00ED  
 13427 % U+00EE LATIN SMALL LETTER I WITH CIRCUMFLEX; icircumflex  
 13428 \DeclareTextCompositeCommand{\^}{PU}{i}{\80\356}% U+00EE  
 13429 \DeclareTextCompositeCommand{\^}{PU}{i}{\80\356}% U+00EE  
 13430 % U+00EF LATIN SMALL LETTER I WITH DIAERESIS; idieresis  
 13431 \DeclareTextCompositeCommand{\"}{PU}{i}{\80\357}% U+00EF  
 13432 \DeclareTextCompositeCommand{\"}{PU}{i}{\80\357}% U+00EF  
 13433 % U+00F0 LATIN SMALL LETTER ETH; eth  
 13434 \DeclareTextCommand{\dh}{PU}{\80\360}% U+00F0  
 13435 % U+00F1 LATIN SMALL LETTER N WITH TILDE; ntilde  
 13436 \DeclareTextCompositeCommand{\~}{PU}{n}{\80\361}% U+00F1  
 13437 % U+00F2 LATIN SMALL LETTER O WITH GRAVE; ograve  
 13438 \DeclareTextCompositeCommand{\`}{PU}{o}{\80\362}% U+00F2  
 13439 % U+00F3 LATIN SMALL LETTER O WITH ACUTE; oacute  
 13440 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\363}% U+00F3  
 13441 % U+00F4 LATIN SMALL LETTER O WITH CIRCUMFLEX; ocircumflex  
 13442 \DeclareTextCompositeCommand{\^}{PU}{o}{\80\364}% U+00F4  
 13443 % U+00F5 LATIN SMALL LETTER O WITH TILDE; otilde  
 13444 \DeclareTextCompositeCommand{\~}{PU}{o}{\80\365}% U+00F5  
 13445 % U+00F6 LATIN SMALL LETTER O WITH DIAERESIS; odieresis  
 13446 \DeclareTextCompositeCommand{\"}{PU}{o}{\80\366}% U+00F6  
 13447 % U+00F7 DIVISION SIGN; divide  
 13448 \DeclareTextCommand{\textdivide}{PU}{\80\367}% U+00F7  
 13449 % U+00F8 LATIN SMALL LETTER O WITH STROKE; oslash  
 13450 \DeclareTextCommand{\o}{PU}{\80\370}% U+00F8  
 13451 % U+00F9 LATIN SMALL LETTER U WITH GRAVE; ugrave  
 13452 \DeclareTextCompositeCommand{\`}{PU}{u}{\80\371}% U+00F9  
 13453 % U+00FA LATIN SMALL LETTER U WITH ACUTE; uacute  
 13454 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\372}% U+00FA  
 13455 % U+00FB LATIN SMALL LETTER U WITH CIRCUMFLEX; ucircumflex  
 13456 \DeclareTextCompositeCommand{\^}{PU}{u}{\80\373}% U+00FB  
 13457 % U+00FC LATIN SMALL LETTER U WITH DIAERESIS; udieresis  
 13458 \DeclareTextCompositeCommand{\"}{PU}{u}{\80\374}% U+00FC  
 13459 % U+00FD LATIN SMALL LETTER Y WITH ACUTE; yacute  
 13460 \DeclareTextCompositeCommand{\'}{PU}{y}{\80\375}% U+00FD  
 13461 % U+00FE LATIN SMALL LETTER THORN; thorn  
 13462 \DeclareTextCommand{\th}{PU}{\80\376}% U+00FE  
 13463 % U+00FF LATIN SMALL LETTER Y WITH DIAERESIS; ydieresis  
 13464 \DeclareTextCompositeCommand{\"}{PU}{y}{\80\377}% U+00FF

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

13465 % U+0100 LATIN CAPITAL LETTER A WITH MACRON; Amacron  
 13466 \DeclareTextCompositeCommand{\=}{PU}{A}{\81\000}% U+0100  
 13467 % U+0101 LATIN SMALL LETTER A WITH MACRON; amacron  
 13468 \DeclareTextCompositeCommand{\=}{PU}{a}{\81\001}% U+0101  
 13469 % U+0102 LATIN CAPITAL LETTER A WITH BREVE; Abreve  
 13470 \DeclareTextCompositeCommand{\u}{PU}{A}{\81\002}% U+0102  
 13471 % U+0103 LATIN SMALL LETTER A WITH BREVE; abreve  
 13472 \DeclareTextCompositeCommand{\u}{PU}{a}{\81\003}% U+0103  
 13473 % U+0104 LATIN CAPITAL LETTER A WITH OGONEK; Aogonek  
 13474 \DeclareTextCompositeCommand{\k}{PU}{A}{\81\004}% U+0104  
 13475 % U+0105 LATIN SMALL LETTER A WITH OGONEK; aogonek

13476 \DeclareTextCompositeCommand{\k}{PU}{a}{\81\005}% U+0105  
13477 % U+0106 LATIN CAPITAL LETTER C WITH ACUTE; Cacute  
13478 \DeclareTextCompositeCommand{\'}{PU}{C}{\81\006}% U+0106  
13479 % U+0107 LATIN SMALL LETTER C WITH ACUTE; cacute  
13480 \DeclareTextCompositeCommand{\'}{PU}{c}{\81\007}% U+0107  
13481 % U+0108 LATIN CAPITAL LETTER C WITH CIRCUMFLEX; Ccircumflex  
13482 \DeclareTextCompositeCommand{\^}{PU}{C}{\81\010}% U+0108  
13483 % U+0109 LATIN SMALL LETTER C WITH CIRCUMFLEX; ccircumflex  
13484 \DeclareTextCompositeCommand{\^}{PU}{c}{\81\011}% U+0109  
13485 % U+010A LATIN CAPITAL LETTER C WITH DOT ABOVE; Cdot, Cdotaccent  
13486 \DeclareTextCompositeCommand{\.}{PU}{C}{\81\012}% U+010A  
13487 % U+010B LATIN SMALL LETTER C WITH DOT ABOVE; cdot, cdotaccent  
13488 \DeclareTextCompositeCommand{\.}{PU}{c}{\81\013}% U+010B  
13489 % U+010C LATIN CAPITAL LETTER C WITH CARON; Ccaron  
13490 \DeclareTextCompositeCommand{\v}{PU}{C}{\81\014}% U+010C  
13491 % U+010D LATIN SMALL LETTER C WITH CARON; ccaron  
13492 \DeclareTextCompositeCommand{\v}{PU}{c}{\81\015}% U+010D  
13493 % U+010E LATIN CAPITAL LETTER D WITH CARON; Dcaron  
13494 \DeclareTextCompositeCommand{\v}{PU}{D}{\81\016}% U+010E  
13495 % U+010F LATIN SMALL LETTER D WITH CARON; dcaron  
13496 \DeclareTextCompositeCommand{\v}{PU}{d}{\81\017}% U+010F  
13497 % U+0110 LATIN CAPITAL LETTER D WITH STROKE; Dcroat, Dslash  
13498 \DeclareTextCommand{\DJ}{PU}{\81\020}% U+0110  
13499 % U+0111 LATIN SMALL LETTER D WITH STROKE; dcroat, dmacron  
13500 \DeclareTextCommand{\dj}{PU}{\81\021}% U+0111  
13501 % U+0112 LATIN CAPITAL LETTER E WITH MACRON; Emacron  
13502 \DeclareTextCompositeCommand{\=}{PU}{E}{\81\022}% U+0112  
13503 % U+0113 LATIN SMALL LETTER E WITH MACRON; emacron  
13504 \DeclareTextCompositeCommand{\=}{PU}{e}{\81\023}% U+0113  
13505 % U+0114 LATIN CAPITAL LETTER E WITH BREVE; Ebreve  
13506 \DeclareTextCompositeCommand{\u}{PU}{E}{\81\024}% U+0114  
13507 % U+0115 LATIN SMALL LETTER E WITH BREVE; ebreve  
13508 \DeclareTextCompositeCommand{\u}{PU}{e}{\81\025}% U+0115  
13509 % U+0116 LATIN CAPITAL LETTER E WITH DOT ABOVE; Edot, Edotaccent  
13510 \DeclareTextCompositeCommand{\.}{PU}{E}{\81\026}% U+0116  
13511 % U+0117 LATIN SMALL LETTER E WITH DOT ABOVE; edot, edotaccent  
13512 \DeclareTextCompositeCommand{\.}{PU}{e}{\81\027}% U+0117  
13513 % U+0118 LATIN CAPITAL LETTER E WITH OGONEK; Eogonek  
13514 \DeclareTextCompositeCommand{\k}{PU}{E}{\81\030}% U+0118  
13515 % U+0119 LATIN SMALL LETTER E WITH OGONEK; eogonek  
13516 \DeclareTextCompositeCommand{\k}{PU}{e}{\81\031}% U+0119  
13517 % U+011A LATIN CAPITAL LETTER E WITH CARON; Ecaron  
13518 \DeclareTextCompositeCommand{\v}{PU}{E}{\81\032}% U+011A  
13519 % U+011B LATIN SMALL LETTER E WITH CARON; ecaron  
13520 \DeclareTextCompositeCommand{\v}{PU}{e}{\81\033}% U+011B  
13521 % U+011C LATIN CAPITAL LETTER G WITH CIRCUMFLEX; Gcircumflex  
13522 \DeclareTextCompositeCommand{\^}{PU}{G}{\81\034}% U+011C  
13523 % U+011D LATIN SMALL LETTER G WITH CIRCUMFLEX; gcircumflex  
13524 \DeclareTextCompositeCommand{\^}{PU}{g}{\81\035}% U+011D  
13525 % U+011E LATIN CAPITAL LETTER G WITH BREVE; Gbreve  
13526 \DeclareTextCompositeCommand{\u}{PU}{G}{\81\036}% U+011E  
13527 % U+011F LATIN SMALL LETTER G WITH BREVE; gbreve  
13528 \DeclareTextCompositeCommand{\u}{PU}{g}{\81\037}% U+011F  
13529 % U+0120 LATIN CAPITAL LETTER G WITH DOT ABOVE; Gdot, Gdotaccent  
13530 \DeclareTextCompositeCommand{\.}{PU}{G}{\81\040}% U+0120  
13531 % U+0121 LATIN SMALL LETTER G WITH DOT ABOVE; gdot, gdotaccent  
13532 \DeclareTextCompositeCommand{\.}{PU}{g}{\81\041}% U+0121

13533 % U+0122 LATIN CAPITAL LETTER G WITH CEDILLA; Gcedilla, Gcommaaccent  
 13534 \DeclareTextCompositeCommand{\c}{PU}{G}{\81\042}% U+0122  
 13535 % U+0123 LATIN SMALL LETTER G WITH CEDILLA; gcedilla, gcommaaccent  
 13536 \DeclareTextCompositeCommand{\c}{PU}{g}{\81\043}% U+0123  
 13537 % U+0124 LATIN CAPITAL LETTER H WITH CIRCUMFLEX; Hcircumflex  
 13538 \DeclareTextCompositeCommand{\^}{PU}{H}{\81\044}% U+0124  
 13539 % U+0125 LATIN SMALL LETTER H WITH CIRCUMFLEX; hcircumflex  
 13540 \DeclareTextCompositeCommand{\^}{PU}{h}{\81\045}% U+0125  
 13541 % U+0126 LATIN CAPITAL LETTER H WITH STROKE; Hbar  
 13542 \DeclareTextCommand{\textHslash}{PU}{\81\046}% U+0126  
 13543 % U+0127 LATIN SMALL LETTER H WITH STROKE; hbar  
 13544 \DeclareTextCommand{\texthslash}{PU}{\81\047}% U+0127  
 13545 % U+0128 LATIN CAPITAL LETTER I WITH TILDE; Itilde  
 13546 \DeclareTextCompositeCommand{\~}{PU}{I}{\81\050}% U+0128  
 13547 % U+0129 LATIN SMALL LETTER I WITH TILDE; itilde  
 13548 \DeclareTextCompositeCommand{\~}{PU}{i}{\81\051}% U+0129  
 13549 \DeclareTextCompositeCommand{\~}{PU}{\i}{\81\051}% U+0129  
 13550 % U+012A LATIN CAPITAL LETTER I WITH MACRON; Imacron  
 13551 \DeclareTextCompositeCommand{\=}{PU}{I}{\81\052}% U+012A  
 13552 % U+012B LATIN SMALL LETTER I WITH MACRON; imacron  
 13553 \DeclareTextCompositeCommand{\=}{PU}{i}{\81\053}% U+012B  
 13554 \DeclareTextCompositeCommand{\=}{PU}{\i}{\81\053}% U+012B  
 13555 % U+012C LATIN CAPITAL LETTER I WITH BREVE; Ibreve  
 13556 \DeclareTextCompositeCommand{\u}{PU}{I}{\81\054}% U+012C  
 13557 % U+012D LATIN SMALL LETTER I WITH BREVE; ibreve  
 13558 \DeclareTextCompositeCommand{\u}{PU}{i}{\81\055}% U+012D  
 13559 \DeclareTextCompositeCommand{\u}{PU}{\i}{\81\055}% U+012D  
 13560 % U+012E LATIN CAPITAL LETTER I WITH OGONEK; Iogonek  
 13561 \DeclareTextCompositeCommand{\k}{PU}{I}{\81\056}% U+012E  
 13562 % U+012F LATIN SMALL LETTER I WITH OGONEK; iogonek  
 13563 \DeclareTextCompositeCommand{\k}{PU}{i}{\81\057}% U+012F  
 13564 \DeclareTextCompositeCommand{\k}{PU}{\i}{\81\057}% U+012F  
 13565 % U+0130 LATIN CAPITAL LETTER I WITH DOT ABOVE; Idot, Idotaccent  
 13566 \DeclareTextCompositeCommand{\.}{PU}{I}{\81\060}% U+0130  
 13567 % U+0131 LATIN SMALL LETTER DOTLESS I; dotlessi  
 13568 \DeclareTextCommand{\i}{PU}{\81\061}% U+0131  
 13569 % U+0132 LATIN CAPITAL LIGATURE IJ; IJ  
 13570 \DeclareTextCommand{\IJ}{PU}{\81\062}% U+0132  
 13571 % U+0133 LATIN SMALL LIGATURE IJ; ij  
 13572 \DeclareTextCommand{\ij}{PU}{\81\063}% U+0133  
 13573 % U+0134 LATIN CAPITAL LETTER J WITH CIRCUMFLEX; Jcircumflex  
 13574 \DeclareTextCompositeCommand{\^}{PU}{J}{\81\064}% U+0134  
 13575 % U+0135 LATIN SMALL LETTER J WITH CIRCUMFLEX; jcircumflex  
 13576 \DeclareTextCompositeCommand{\^}{PU}{j}{\81\065}% U+0135  
 13577 \DeclareTextCompositeCommand{\^}{PU}{\j}{\81\065}% U+0135  
 13578 % U+0136 LATIN CAPITAL LETTER K WITH CEDILLA; Kcedilla, Kcommaaccent  
 13579 \DeclareTextCompositeCommand{\c}{PU}{K}{\81\066}% U+0136  
 13580 % U+0137 LATIN SMALL LETTER K WITH CEDILLA; kcedilla, kcommaaccent  
 13581 \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 chosen `\textkra`.

13582 % U+0138 LATIN SMALL LETTER KRA; kgreenlandic  
 13583 \DeclareTextCommand{\textkra}{PU}{\81\070}% U+0138  
 13584 % U+0139 LATIN CAPITAL LETTER L WITH ACUTE; Lacute

13585 \DeclareTextCompositeCommand{\'}{PU}{L}{\81\071}% U+0139  
13586 % U+013A LATIN SMALL LETTER L WITH ACUTE; lacute  
13587 \DeclareTextCompositeCommand{\'}{PU}{l}{\81\072}% U+013A  
13588 % U+013B LATIN CAPITAL LETTER L WITH CEDILLA; Lcedilla, Lcommaac-  
cent  
13589 \DeclareTextCompositeCommand{\c}{PU}{L}{\81\073}% U+013B  
13590 % U+013C LATIN SMALL LETTER L WITH CEDILLA; lcedilla, lcommaaccent  
13591 \DeclareTextCompositeCommand{\c}{PU}{l}{\81\074}% U+013C  
13592 % U+013D LATIN CAPITAL LETTER L WITH CARON; Lcaron  
13593 \DeclareTextCompositeCommand{\v}{PU}{L}{\81\075}% U+013D  
13594 % U+013E LATIN SMALL LETTER L WITH CARON; lcaron  
13595 \DeclareTextCompositeCommand{\v}{PU}{l}{\81\076}% U+013E  
There seems to be no variants of letters 'L' and 'l' with a dot above (reasonable). There-  
fore the \. accent is reused instead of making a separate accent macro \textmiddledot.  
13596 % U+013F LATIN CAPITAL LETTER L WITH MIDDLE DOT; Ldot, Ldotaccent  
13597 \DeclareTextCompositeCommand{\.}{PU}{L}{\81\077}% U+013F  
13598 % U+0140 LATIN SMALL LETTER L WITH MIDDLE DOT; ldot, ldotaccent  
13599 \DeclareTextCompositeCommand{\.}{PU}{l}{\81\100}% U+0140  
13600 % U+0141 LATIN CAPITAL LETTER L WITH STROKE; Lslash  
13601 \DeclareTextCommand{\L}{PU}{\81\101}% U+0141  
13602 % U+0142 LATIN SMALL LETTER L WITH STROKE; lslash  
13603 \DeclareTextCommand{\l}{PU}{\81\102}% U+0142  
13604 % U+0143 LATIN CAPITAL LETTER N WITH ACUTE; Nacute  
13605 \DeclareTextCompositeCommand{\'}{PU}{N}{\81\103}% U+0143  
13606 % U+0144 LATIN SMALL LETTER N WITH ACUTE; nacute  
13607 \DeclareTextCompositeCommand{\'}{PU}{n}{\81\104}% U+0144  
13608 % U+0145 LATIN CAPITAL LETTER N WITH CEDILLA; Ncedilla, Ncommaac-  
cent  
13609 \DeclareTextCompositeCommand{\c}{PU}{N}{\81\105}% U+0145  
13610 % U+0146 LATIN SMALL LETTER N WITH CEDILLA; ncedilla, ncommaaccent  
13611 \DeclareTextCompositeCommand{\c}{PU}{n}{\81\106}% U+0146  
13612 % U+0147 LATIN CAPITAL LETTER N WITH CARON; Ncaron  
13613 \DeclareTextCompositeCommand{\v}{PU}{N}{\81\107}% U+0147  
13614 % U+0148 LATIN SMALL LETTER N WITH CARON; ncaron  
13615 \DeclareTextCompositeCommand{\v}{PU}{n}{\81\110}% U+0148  
13616 % U+0149 LATIN SMALL LETTER N PRECEDED BY APOSTROPHE; napos-  
trophe, quoterightn  
13617 \DeclareTextCommand{\textnapostrophe}{PU}{\81\111}% U+0149  
13618 % U+014A LATIN CAPITAL LETTER ENG; Eng  
13619 \DeclareTextCommand{\NG}{PU}{\81\112}% U+014A  
13620 % U+014B LATIN SMALL LETTER ENG; eng  
13621 \DeclareTextCommand{\ng}{PU}{\81\113}% U+014B  
13622 % U+014C LATIN CAPITAL LETTER O WITH MACRON; Omacron  
13623 \DeclareTextCompositeCommand{\=}{PU}{O}{\81\114}% U+014C  
13624 % U+014D LATIN SMALL LETTER O WITH MACRON; omacron  
13625 \DeclareTextCompositeCommand{\=}{PU}{o}{\81\115}% U+014D  
13626 % U+014E LATIN CAPITAL LETTER O WITH BREVE; Obreve  
13627 \DeclareTextCompositeCommand{\u}{PU}{O}{\81\116}% U+014E  
13628 % U+014F LATIN SMALL LETTER O WITH BREVE; obreve  
13629 \DeclareTextCompositeCommand{\u}{PU}{o}{\81\117}% U+014F  
13630 % U+0150 LATIN CAPITAL LETTER O WITH DOUBLE ACUTE; Odblac-  
cute, Ohungarumlaut  
13631 \DeclareTextCompositeCommand{\H}{PU}{O}{\81\120}% U+0150  
13632 % U+0151 LATIN SMALL LETTER O WITH DOUBLE ACUTE; odblacute, ohun-  
garumlaut  
13633 \DeclareTextCompositeCommand{\H}{PU}{o}{\81\121}% U+0151  
13634 % U+0152 LATIN CAPITAL LIGATURE OE; OE

13635 \DeclareTextCommand{\OE}{PU}{\81\122}% U+0152  
13636 % U+0153 LATIN SMALL LIGATURE OE; oe  
13637 \DeclareTextCommand{\oe}{PU}{\81\123}% U+0153  
13638 % U+0154 LATIN CAPITAL LETTER R WITH ACUTE; Racute  
13639 \DeclareTextCompositeCommand{\'}{PU}{R}{\81\124}% U+0154  
13640 % U+0155 LATIN SMALL LETTER R WITH ACUTE; racute  
13641 \DeclareTextCompositeCommand{\'}{PU}{r}{\81\125}% U+0155  
13642 % U+0156 LATIN CAPITAL LETTER R WITH CEDILLA; Rcedilla, Rcommaaccent  
13643 \DeclareTextCompositeCommand{\c}{PU}{R}{\81\126}% U+0156  
13644 % U+0157 LATIN SMALL LETTER R WITH CEDILLA; rcedilla, rcommaaccent  
13645 \DeclareTextCompositeCommand{\c}{PU}{r}{\81\127}% U+0157  
13646 % U+0158 LATIN CAPITAL LETTER R WITH CARON; Rcaron  
13647 \DeclareTextCompositeCommand{\v}{PU}{R}{\81\130}% U+0158  
13648 % U+0159 LATIN SMALL LETTER R WITH CARON; rcaron  
13649 \DeclareTextCompositeCommand{\v}{PU}{r}{\81\131}% U+0159  
13650 % U+015A LATIN CAPITAL LETTER S WITH ACUTE; Sacute  
13651 \DeclareTextCompositeCommand{\'}{PU}{S}{\81\132}% U+015A  
13652 % U+015B LATIN SMALL LETTER S WITH ACUTE; sacute  
13653 \DeclareTextCompositeCommand{\'}{PU}{s}{\81\133}% U+015B  
13654 % U+015C LATIN CAPITAL LETTER S WITH CIRCUMFLEX; Scircumflex  
13655 \DeclareTextCompositeCommand{\^}{PU}{S}{\81\134}% U+015C  
13656 % U+015D LATIN SMALL LETTER S WITH CIRCUMFLEX; scircumflex  
13657 \DeclareTextCompositeCommand{\^}{PU}{s}{\81\135}% U+015D  
13658 % U+015E LATIN CAPITAL LETTER S WITH CEDILLA; Scedilla  
13659 \DeclareTextCompositeCommand{\c}{PU}{S}{\81\136}% U+015E  
13660 % U+015F LATIN SMALL LETTER S WITH CEDILLA; scedilla  
13661 \DeclareTextCompositeCommand{\c}{PU}{s}{\81\137}% U+015F  
13662 % U+0160 LATIN CAPITAL LETTER S WITH CARON; Scaron  
13663 \DeclareTextCompositeCommand{\v}{PU}{S}{\81\140}% U+0160  
13664 % U+0161 LATIN SMALL LETTER S WITH CARON; scaron  
13665 \DeclareTextCompositeCommand{\v}{PU}{s}{\81\141}% U+0161  
13666 % U+0162 LATIN CAPITAL LETTER T WITH CEDILLA; Tcedilla, Tcommaaccent  
13667 \DeclareTextCompositeCommand{\c}{PU}{T}{\81\142}% U+0162  
13668 % U+0163 LATIN SMALL LETTER T WITH CEDILLA; tcedilla, tcommaaccent  
13669 \DeclareTextCompositeCommand{\c}{PU}{t}{\81\143}% U+0163  
13670 % U+0164 LATIN CAPITAL LETTER T WITH CARON; Tcaron  
13671 \DeclareTextCompositeCommand{\v}{PU}{T}{\81\144}% U+0164  
13672 % U+0165 LATIN SMALL LETTER T WITH CARON; tcaron  
13673 \DeclareTextCompositeCommand{\v}{PU}{t}{\81\145}% U+0165  
13674 % U+0166 LATIN CAPITAL LETTER T WITH STROKE; Tbar  
13675 \DeclareTextCommand{\textTslash}{PU}{\81\146}% U+0166  
13676 % U+0167 LATIN SMALL LETTER T WITH STROKE; tbar  
13677 \DeclareTextCommand{\texttslash}{PU}{\81\147}% U+0167  
13678 % U+0168 LATIN CAPITAL LETTER U WITH TILDE; Utilde  
13679 \DeclareTextCompositeCommand{\~}{PU}{U}{\81\150}% U+0168  
13680 % U+0169 LATIN SMALL LETTER U WITH TILDE; utilde  
13681 \DeclareTextCompositeCommand{\~}{PU}{u}{\81\151}% U+0169  
13682 % U+016A LATIN CAPITAL LETTER U WITH MACRON; Umacron  
13683 \DeclareTextCompositeCommand{\=}{PU}{U}{\81\152}% U+016A  
13684 % U+016B LATIN SMALL LETTER U WITH MACRON; umacron  
13685 \DeclareTextCompositeCommand{\=}{PU}{u}{\81\153}% U+016B  
13686 % U+016C LATIN CAPITAL LETTER U WITH BREVE; Ubreve  
13687 \DeclareTextCompositeCommand{\u}{PU}{U}{\81\154}% U+016C  
13688 % U+016D LATIN SMALL LETTER U WITH BREVE; ubreve  
13689 \DeclareTextCompositeCommand{\u}{PU}{u}{\81\155}% U+016D

13690 % U+016E LATIN CAPITAL LETTER U WITH RING ABOVE; Uring  
 13691 \DeclareTextCompositeCommand{\r}{PU}{U}{\81\156}% U+016E  
 13692 % U+016F LATIN SMALL LETTER U WITH RING ABOVE; uring  
 13693 \DeclareTextCompositeCommand{\r}{PU}{u}{\81\157}% U+016F  
 13694 % U+0170 LATIN CAPITAL LETTER U WITH DOUBLE ACUTE; Udblacute, Uhungarumlaut  
 13695 \DeclareTextCompositeCommand{\H}{PU}{U}{\81\160}% U+0170  
 13696 % U+0171 LATIN SMALL LETTER U WITH DOUBLE ACUTE; udblacute, uhungarumlaut  
 13697 \DeclareTextCompositeCommand{\H}{PU}{u}{\81\161}% U+0171  
 13698 % U+0172 LATIN CAPITAL LETTER U WITH OGONEK; Uogonek  
 13699 \DeclareTextCompositeCommand{\k}{PU}{U}{\81\162}% U+0172  
 13700 % U+0173 LATIN SMALL LETTER U WITH OGONEK; uogonek  
 13701 \DeclareTextCompositeCommand{\k}{PU}{u}{\81\163}% U+0173  
 13702 % U+0174 LATIN CAPITAL LETTER W WITH CIRCUMFLEX; Wcircumflex  
 13703 \DeclareTextCompositeCommand{\^}{PU}{W}{\81\164}% U+0174  
 13704 % U+0175 LATIN SMALL LETTER W WITH CIRCUMFLEX; wcircumflex  
 13705 \DeclareTextCompositeCommand{\^}{PU}{w}{\81\165}% U+0175  
 13706 % U+0176 LATIN CAPITAL LETTER Y WITH CIRCUMFLEX; Ycircumflex  
 13707 \DeclareTextCompositeCommand{\^}{PU}{Y}{\81\166}% U+0176  
 13708 % U+0177 LATIN SMALL LETTER Y WITH CIRCUMFLEX; ycircumflex  
 13709 \DeclareTextCompositeCommand{\^}{PU}{y}{\81\167}% U+0177  
 13710 % U+0178 LATIN CAPITAL LETTER Y WITH DIAERESIS; Ydieresis  
 13711 \DeclareTextCompositeCommand{"}{PU}{Y}{\81\170}% U+0178  
 13712 % U+0179 LATIN CAPITAL LETTER Z WITH ACUTE; Zacute  
 13713 \DeclareTextCompositeCommand{\'}{PU}{Z}{\81\171}% U+0179  
 13714 % U+017A LATIN SMALL LETTER Z WITH ACUTE; zacute  
 13715 \DeclareTextCompositeCommand{\'}{PU}{z}{\81\172}% U+017A  
 13716 % U+017B LATIN CAPITAL LETTER Z WITH DOT ABOVE; Zdot, Zdotaccent  
 13717 \DeclareTextCompositeCommand{\.}{PU}{Z}{\81\173}% U+017B  
 13718 % U+017C LATIN SMALL LETTER Z WITH DOT ABOVE; zdot, zdotaccent  
 13719 \DeclareTextCompositeCommand{\.}{PU}{z}{\81\174}% U+017C  
 13720 % U+017D LATIN CAPITAL LETTER Z WITH CARON; Zcaron  
 13721 \DeclareTextCompositeCommand{\v}{PU}{Z}{\81\175}% U+017D  
 13722 % U+017E LATIN SMALL LETTER Z WITH CARON; zcaron  
 13723 \DeclareTextCompositeCommand{\v}{PU}{z}{\81\176}% U+017E  
 13724 % U+017F LATIN SMALL LETTER LONG S; longs, slong  
 13725 \DeclareTextCommand{\textlongS}{PU}{\81\177}% U+017F

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

13726 % U+0192 LATIN SMALL LETTER F WITH HOOK; florin  
 13727 \DeclareTextCommand{\textflorin}{PU}{\81\222}% U+0192  
 13728 % U+01CD LATIN CAPITAL LETTER A WITH CARON; Acaron  
 13729 \DeclareTextCompositeCommand{\v}{PU}{A}{\81\315}% U+01CD  
 13730 % U+01CE LATIN SMALL LETTER A WITH CARON; acaron  
 13731 \DeclareTextCompositeCommand{\v}{PU}{a}{\81\316}% U+01CE  
 13732 % U+01CF LATIN CAPITAL LETTER I WITH CARON; Icaron  
 13733 \DeclareTextCompositeCommand{\v}{PU}{I}{\81\317}% U+01CF  
 13734 % U+01D0 LATIN SMALL LETTER I WITH CARON; icaron  
 13735 \DeclareTextCompositeCommand{\v}{PU}{i}{\81\320}% U+01D0  
 13736 \DeclareTextCompositeCommand{\v}{PU}{i}{\81\320}% U+01D0  
 13737 % U+01D1 LATIN CAPITAL LETTER O WITH CARON; Ocaron  
 13738 \DeclareTextCompositeCommand{\v}{PU}{O}{\81\321}% U+01D1  
 13739 % U+01D2 LATIN SMALL LETTER O WITH CARON; ocaron  
 13740 \DeclareTextCompositeCommand{\v}{PU}{o}{\81\322}% U+01D2  
 13741 % U+01D3 LATIN CAPITAL LETTER U WITH CARON; Ucaron  
 13742 \DeclareTextCompositeCommand{\v}{PU}{U}{\81\323}% U+01D3

13743 % U+01D4 LATIN SMALL LETTER U WITH CARON; ucaron  
13744 \DeclareTextCompositeCommand{\v}{PU}{u}{\81\324}% U+01D4  
13745 % U+01E4 LATIN CAPITAL LETTER G WITH STROKE; Gstroke  
13746 \DeclareTextCommand{\textGslash}{PU}{\81\344}% U+01E4  
13747 % U+01E5 LATIN SMALL LETTER G WITH STROKE; gstroke  
13748 \DeclareTextCommand{\textgslash}{PU}{\81\345}% U+01E5  
13749 % U+01E6 LATIN CAPITAL LETTER G WITH CARON; Gcaron  
13750 \DeclareTextCompositeCommand{\v}{PU}{G}{\81\346}% U+01E6  
13751 % U+01E7 LATIN SMALL LETTER G WITH CARON; gcaron  
13752 \DeclareTextCompositeCommand{\v}{PU}{g}{\81\347}% U+01E7  
13753 % U+01E8 LATIN CAPITAL LETTER K WITH CARON; Kcaron  
13754 \DeclareTextCompositeCommand{\v}{PU}{K}{\81\350}% U+01E8  
13755 % U+01E9 LATIN SMALL LETTER K WITH CARON; kcaron  
13756 \DeclareTextCompositeCommand{\v}{PU}{k}{\81\351}% U+01E9  
13757 % U+01EA LATIN CAPITAL LETTER O WITH OGONEK; Oogonek  
13758 \DeclareTextCompositeCommand{\k}{PU}{O}{\81\352}% U+01EA  
13759 % U+01EB LATIN SMALL LETTER O WITH OGONEK; oogonek  
13760 \DeclareTextCompositeCommand{\k}{PU}{o}{\81\353}% U+01EB  
13761 % U+01F0 LATIN SMALL LETTER J WITH CARON; jcaron  
13762 \DeclareTextCompositeCommand{\v}{PU}{j}{\81\360}% U+01F0  
13763 \DeclareTextCompositeCommand{\v}{PU}{j}{\81\360}% U+01F0  
13764 % U+01F4 LATIN CAPITAL LETTER G WITH ACUTE; Gacute  
13765 \DeclareTextCompositeCommand{\'}{PU}{G}{\81\364}% U+01F4  
13766 % U+01F5 LATIN SMALL LETTER G WITH ACUTE; gacute  
13767 \DeclareTextCompositeCommand{\'}{PU}{g}{\81\365}% U+01F5  
13768 % U+01F8 LATIN CAPITAL LETTER N WITH GRAVE  
13769 \DeclareTextCompositeCommand{\`}{PU}{N}{\81\370}% U+01F8  
13770 % U+01F9 LATIN SMALL LETTER N WITH GRAVE  
13771 \DeclareTextCompositeCommand{\`}{PU}{n}{\81\371}% U+01F9  
13772 % U+01FC LATIN CAPITAL LETTER AE WITH ACUTE; AEacute  
13773 \DeclareTextCompositeCommand{\'}{PU}{\AE}{\81\374}% U+01FC  
13774 % U+01FD LATIN SMALL LETTER AE WITH ACUTE; aeacute  
13775 \DeclareTextCompositeCommand{\'}{PU}{\ae}{\81\375}% U+01FD  
13776 % U+01FE LATIN CAPITAL LETTER O WITH STROKE AND ACUTE; \*Oslasha-  
acute, Ostrokeacute  
13777 \DeclareTextCompositeCommand{\'}{PU}{\O}{\81\376}% U+01FE  
13778 % U+01FF LATIN SMALL LETTER O WITH STROKE AND ACUTE; \*oslasha-  
acute, ostrokeacute  
13779 \DeclareTextCompositeCommand{\'}{PU}{\o}{\81\377}% U+01FF  
13780 % U+0200 LATIN CAPITAL LETTER A WITH DOUBLE GRAVE; Adblgrave  
13781 \DeclareTextCompositeCommand{\G}{PU}{A}{\82\000}% U+0200  
13782 % U+0201 LATIN SMALL LETTER A WITH DOUBLE GRAVE; adblgrave  
13783 \DeclareTextCompositeCommand{\G}{PU}{a}{\82\001}% U+0201  
13784 % U+0204 LATIN CAPITAL LETTER E WITH DOUBLE GRAVE; Edblgrave  
13785 \DeclareTextCompositeCommand{\G}{PU}{E}{\82\004}% U+0204  
13786 % U+0205 LATIN SMALL LETTER E WITH DOUBLE GRAVE; edblgrave  
13787 \DeclareTextCompositeCommand{\G}{PU}{e}{\82\005}% U+0205  
13788 % U+0208 LATIN CAPITAL LETTER I WITH DOUBLE GRAVE; Idblgrave  
13789 \DeclareTextCompositeCommand{\G}{PU}{I}{\82\010}% U+0208  
13790 % U+0209 LATIN SMALL LETTER I WITH DOUBLE GRAVE; idblgrave  
13791 \DeclareTextCompositeCommand{\G}{PU}{i}{\82\011}% U+0209  
13792 \DeclareTextCompositeCommand{\G}{PU}{i}{\82\011}% U+0209  
13793 % U+020C LATIN CAPITAL LETTER O WITH DOUBLE GRAVE; Odblgrave  
13794 \DeclareTextCompositeCommand{\G}{PU}{O}{\82\014}% U+020C  
13795 % U+020D LATIN SMALL LETTER O WITH DOUBLE GRAVE; odblgrave  
13796 \DeclareTextCompositeCommand{\G}{PU}{o}{\82\015}% U+020D  
13797 % U+0210 LATIN CAPITAL LETTER R WITH DOUBLE GRAVE; Rdblgrave

13798 \DeclareTextCompositeCommand{\G}{PU}{R}{\82\020}% U+0210  
 13799 % U+0211 LATIN SMALL LETTER R WITH DOUBLE GRAVE; rdblgrave  
 13800 \DeclareTextCompositeCommand{\G}{PU}{r}{\82\021}% U+0211  
 13801 % U+0214 LATIN CAPITAL LETTER U WITH DOUBLE GRAVE; Udblgrave  
 13802 \DeclareTextCompositeCommand{\G}{PU}{U}{\82\024}% U+0214  
 13803 % U+0215 LATIN SMALL LETTER U WITH DOUBLE GRAVE; udblgrave  
 13804 \DeclareTextCompositeCommand{\G}{PU}{u}{\82\025}% U+0215  
 13805 % U+021E LATIN CAPITAL LETTER H WITH CARON  
 13806 \DeclareTextCompositeCommand{\v}{PU}{H}{\82\036}% U+021E  
 13807 % U+021F LATIN SMALL LETTER H WITH CARON  
 13808 \DeclareTextCompositeCommand{\v}{PU}{h}{\82\037}% U+021F  
 13809 % U+0226 LATIN CAPITAL LETTER A WITH DOT ABOVE  
 13810 \DeclareTextCompositeCommand{\.}{PU}{A}{\82\046}% U+0226  
 13811 % U+0227 LATIN SMALL LETTER A WITH DOT ABOVE  
 13812 \DeclareTextCompositeCommand{\.}{PU}{a}{\82\047}% U+0227  
 13813 % U+0228 LATIN CAPITAL LETTER E WITH CEDILLA  
 13814 \DeclareTextCompositeCommand{\c}{PU}{E}{\82\050}% U+0228  
 13815 % U+0229 LATIN SMALL LETTER E WITH CEDILLA  
 13816 \DeclareTextCompositeCommand{\c}{PU}{e}{\82\051}% U+0229  
 13817 % U+022E LATIN CAPITAL LETTER O WITH DOT ABOVE  
 13818 \DeclareTextCompositeCommand{\.}{PU}{O}{\82\056}% U+022E  
 13819 % U+022F LATIN SMALL LETTER O WITH DOT ABOVE  
 13820 \DeclareTextCompositeCommand{\.}{PU}{o}{\82\057}% U+022F  
 13821 % U+0232 LATIN CAPITAL LETTER Y WITH MACRON  
 13822 \DeclareTextCompositeCommand{\=}{PU}{Y}{\82\062}% U+0232  
 13823 % U+0233 LATIN SMALL LETTER Y WITH MACRON  
 13824 \DeclareTextCompositeCommand{\=}{PU}{y}{\82\063}% U+0233  
 13825 % U+0237 LATIN SMALL LETTER DOTLESS J  
 13826 \DeclareTextCommand{\j}{PU}{\82\067}% U+0237

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

13827 % U+02C7 CARON; caron  
 13828 \DeclareTextCommand{\textasciicaron}{PU}{\82\307}% U+02C7  
 13829 % U+02D8 BREVE; breve  
 13830 \DeclareTextCommand{\textasciibreve}{PU}{\82\330}% U+02D8  
 13831 % U+02D9 DOT ABOVE; dotaccent  
 13832 \DeclareTextCommand{\textdotaccent}{PU}{\82\331}% U+02D9  
 13833 % U+02DA RING ABOVE; ring  
 13834 \DeclareTextCommand{\textring}{PU}{\82\332}% U+02DA  
 13835 % U+02DB OGONEK; ogonek  
 13836 \DeclareTextCommand{\textogonek}{PU}{\82\333}% U+02DB  
 13837 % U+02DC SMALL TILDE; ilde, \*tilde  
 13838 \DeclareTextCommand{\texttilde}{PU}{\82\334}% U+02DC  
 13839 % U+02DD DOUBLE ACUTE ACCENT; hungarumlaut  
 13840 \DeclareTextCommand{\texthungarumlaut}{PU}{\82\335}% U+02DD  
 13841 \DeclareTextCommand{\textacutedbl}{PU}{\texthungarumlaut}% U+02DD  
 13842 % U+02F5 MODIFIER LETTER MIDDLE DOUBLE GRAVE ACCENT  
 13843 \DeclareTextCommand{\textgravedbl}{PU}{\82\365}% U+02F5  
 13844 % U+02F7 MODIFIER LETTER LOW TILDE  
 13845 \DeclareTextCommand{\texttildelow}{PU}{\82\367}% U+02F7

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

13846 % U+030F COMBINING DOUBLE GRAVE ACCENT; dblgravecmb  
 13847 \DeclareTextCommand{\textdoublegrave}{PU}{\83\017}% U+030F  
 13848 % U+0311 COMBINING INVERTED BREVE; breveinvertedcmb  
 13849 \DeclareTextCommand{\textnewtie}{PU}{\83\021}% U+0311  
 13850 % U+0323 COMBINING DOT BELOW; dotbelowcmb, \*dotbelowcomb

13851 \DeclareTextCommand{\textdotbelow}{PU}{\83\043}% U+0323  
 13852 % U+0331 COMBINING MACRON BELOW; macronbelowcmb  
 13853 \DeclareTextCommand{\textmacronbelow}{PU}{\83\061}% U+0331  
 13854 % U+0361 COMBINING DOUBLE INVERTED BREVE; breveinverteddoublecmb  
 13855 \DeclareTextCommand{\texttie}{PU}{\83\141}% U+0361

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

13856 % U+0374 GREEK NUMERAL SIGN; numeralsigngreek  
 13857 \DeclareTextCommand{\textnumeralsigngreek}{PU}{\83\164}% U+0374  
 13858 % U+0375 GREEK LOWER NUMERAL SIGN; numeralsignlowergreek  
 13859 \DeclareTextCommand{\textnumeralsignlowergreek}{PU}{\83\165}% U+0375  
 13860 % U+0386 GREEK CAPITAL LETTER ALPHA WITH TONOS; Alphatonos  
 13861 \DeclareTextCompositeCommand{\'}{PU}{\textAlpha}{\83\206}% U+0386  
 13862 % U+0388 GREEK CAPITAL LETTER EPSILON WITH TONOS; Epsilontonos  
 13863 \DeclareTextCompositeCommand{\'}{PU}{\textEpsilon}{\83\210}% U+0388  
 13864 % U+0389 GREEK CAPITAL LETTER ETA WITH TONOS; Etatonos  
 13865 \DeclareTextCompositeCommand{\'}{PU}{\textEta}{\83\211}% U+0389  
 13866 % U+038A GREEK CAPITAL LETTER IOTA WITH TONOS; Iotatonos  
 13867 \DeclareTextCompositeCommand{\'}{PU}{\textIota}{\83\212}% U+038A  
 13868 % U+038C GREEK CAPITAL LETTER OMICRON WITH TONOS; Omi-  
 cronos  
 13869 \DeclareTextCompositeCommand{\'}{PU}{\textOmicron}{\83\214}% U+038C  
 13870 % U+038E GREEK CAPITAL LETTER UPSILON WITH TONOS; Upsilononos  
 13871 \DeclareTextCompositeCommand{\'}{PU}{\textUpsilon}{\83\216}% U+038E  
 13872 % U+038F GREEK CAPITAL LETTER OMEGA WITH TONOS; Omegatonos  
 13873 \DeclareTextCompositeCommand{\'}{PU}{\textOmega}{\83\217}% U+038F  
 13874 % U+0390 GREEK SMALL LETTER IOTA WITH DIALYTIKA AND TONOS; io-  
 tadiesistonos  
 13875 \DeclareTextCompositeCommand{\'}{PU}{\textIotadiesesis}{\83\220}% U+0390  
 13876 % U+0391 GREEK CAPITAL LETTER ALPHA; Alpha  
 13877 \DeclareTextCommand{\textAlpha}{PU}{\83\221}% U+0391  
 13878 % U+0392 GREEK CAPITAL LETTER BETA; Beta  
 13879 \DeclareTextCommand{\textBeta}{PU}{\83\222}% U+0392  
 13880 % U+0393 GREEK CAPITAL LETTER GAMMA; Gamma  
 13881 \DeclareTextCommand{\textGamma}{PU}{\83\223}% U+0393  
 13882 % U+0394 GREEK CAPITAL LETTER DELTA; Deltagreek, \*Delta  
 13883 \DeclareTextCommand{\textDelta}{PU}{\83\224}% U+0394  
 13884 % U+0395 GREEK CAPITAL LETTER EPSILON; Epsilon  
 13885 \DeclareTextCommand{\textEpsilon}{PU}{\83\225}% U+0395  
 13886 % U+0396 GREEK CAPITAL LETTER ZETA; Zeta  
 13887 \DeclareTextCommand{\textZeta}{PU}{\83\226}% U+0396  
 13888 % U+0397 GREEK CAPITAL LETTER ETA; Eta  
 13889 \DeclareTextCommand{\textEta}{PU}{\83\227}% U+0397  
 13890 % U+0398 GREEK CAPITAL LETTER THETA; Theta  
 13891 \DeclareTextCommand{\textTheta}{PU}{\83\230}% U+0398  
 13892 % U+0399 GREEK CAPITAL LETTER IOTA; Iota  
 13893 \DeclareTextCommand{\textIota}{PU}{\83\231}% U+0399  
 13894 % U+039A GREEK CAPITAL LETTER KAPPA; Kappa  
 13895 \DeclareTextCommand{\textKappa}{PU}{\83\232}% U+039A  
 13896 % U+039B GREEK CAPITAL LETTER LAMDA; Lambda  
 13897 \DeclareTextCommand{\textLambda}{PU}{\83\233}% U+039B  
 13898 % U+039C GREEK CAPITAL LETTER MU; Mu  
 13899 \DeclareTextCommand{\textMu}{PU}{\83\234}% U+039C  
 13900 % U+039D GREEK CAPITAL LETTER NU; Nu  
 13901 \DeclareTextCommand{\textNu}{PU}{\83\235}% U+039D  
 13902 % U+039E GREEK CAPITAL LETTER XI; Xi  
 13903 \DeclareTextCommand{\textXi}{PU}{\83\236}% U+039E

13904 % U+039F GREEK CAPITAL LETTER OMICRON; Omicron  
 13905 \DeclareTextCommand{\textOmicron}{PU}{\83\237}% U+039F  
 13906 % U+03A0 GREEK CAPITAL LETTER PI; Pi  
 13907 \DeclareTextCommand{\textPi}{PU}{\83\240}% U+03A0  
 13908 % U+03A1 GREEK CAPITAL LETTER RHO; Rho  
 13909 \DeclareTextCommand{\textRho}{PU}{\83\241}% U+03A1  
 13910 % U+03A3 GREEK CAPITAL LETTER SIGMA; Sigma  
 13911 \DeclareTextCommand{\textSigma}{PU}{\83\243}% U+03A3  
 13912 % U+03A4 GREEK CAPITAL LETTER TAU; Tau  
 13913 \DeclareTextCommand{\textTau}{PU}{\83\244}% U+03A4  
 13914 % U+03A5 GREEK CAPITAL LETTER UPSILON; Upsilon  
 13915 \DeclareTextCommand{\textUpsilon}{PU}{\83\245}% U+03A5  
 13916 % U+03A6 GREEK CAPITAL LETTER PHI; Phi  
 13917 \DeclareTextCommand{\textPhi}{PU}{\83\246}% U+03A6  
 13918 % U+03A7 GREEK CAPITAL LETTER CHI; Chi  
 13919 \DeclareTextCommand{\textChi}{PU}{\83\247}% U+03A7  
 13920 % U+03A8 GREEK CAPITAL LETTER PSI; Psi  
 13921 \DeclareTextCommand{\textPsi}{PU}{\83\250}% U+03A8  
 13922 % U+03A9 GREEK CAPITAL LETTER OMEGA; Omegagreek, \*Omega  
 13923 \DeclareTextCommand{\textOmega}{PU}{\83\251}% U+03A9  
 13924 % U+03AA GREEK CAPITAL LETTER IOTA WITH DIALYTIKA; Iotadieresis  
 13925 \DeclareTextCommand{\textIotadieresis}{PU}{\83\252}% U+03AA  
 13926 \DeclareTextCompositeCommand{"}{PU}{\textIota}{\83\252}% U+03AA  
 13927 % U+03AB GREEK CAPITAL LETTER UPSILON WITH DIALYTIKA; Upsilonondieresis  
 13928 \DeclareTextCompositeCommand{"}{PU}{\textUpsilon}{\83\253}% U+03AB  
 13929 % U+03AC GREEK SMALL LETTER ALPHA WITH TONOS; alphanos  
 13930 \DeclareTextCompositeCommand{'}{PU}{\textalpha}{\83\254}% U+03AC  
 13931 % U+03AD GREEK SMALL LETTER EPSILON WITH TONOS; epsilononos  
 13932 \DeclareTextCompositeCommand{'}{PU}{\textepsilon}{\83\255}% U+03AD  
 13933 % U+03AE GREEK SMALL LETTER ETA WITH TONOS; etanos  
 13934 \DeclareTextCompositeCommand{'}{PU}{\texteta}{\83\256}% U+03AE  
 13935 % U+03AF GREEK SMALL LETTER IOTA WITH TONOS; iotanos  
 13936 \DeclareTextCompositeCommand{'}{PU}{\textiota}{\83\257}% U+03AF  
 13937 % U+03B0 GREEK SMALL LETTER UPSILON WITH DIALYTIKA AND TONOS; upsilonondieresis  
 13938 \DeclareTextCompositeCommand{"}{PU}{\textupsilon}{\83\260}% U+03B0  
 13939 % U+03B1 GREEK SMALL LETTER ALPHA; alpha  
 13940 \DeclareTextCommand{\textalpha}{PU}{\83\261}% U+03B1  
 13941 % U+03B2 GREEK SMALL LETTER BETA; beta  
 13942 \DeclareTextCommand{\textbeta}{PU}{\83\262}% U+03B2  
 13943 % U+03B3 GREEK SMALL LETTER GAMMA; gamma  
 13944 \DeclareTextCommand{\textgamma}{PU}{\83\263}% U+03B3  
 13945 % U+03B4 GREEK SMALL LETTER DELTA; delta  
 13946 \DeclareTextCommand{\textdelta}{PU}{\83\264}% U+03B4  
 13947 % U+03B5 GREEK SMALL LETTER EPSILON; epsilon  
 13948 \DeclareTextCommand{\textepsilon}{PU}{\83\265}% U+03B5  
 13949 % U+03B6 GREEK SMALL LETTER ZETA; zeta  
 13950 \DeclareTextCommand{\textzeta}{PU}{\83\266}% U+03B6  
 13951 % U+03B7 GREEK SMALL LETTER ETA; eta  
 13952 \DeclareTextCommand{\texteta}{PU}{\83\267}% U+03B7  
 13953 % U+03B8 GREEK SMALL LETTER THETA; theta  
 13954 \DeclareTextCommand{\texttheta}{PU}{\83\270}% U+03B8  
 13955 % U+03B9 GREEK SMALL LETTER IOTA; iota  
 13956 \DeclareTextCommand{\textiota}{PU}{\83\271}% U+03B9  
 13957 % U+03BA GREEK SMALL LETTER KAPPA; kappa  
 13958 \DeclareTextCommand{\textkappa}{PU}{\83\272}% U+03BA

13959 % U+03BB GREEK SMALL LETTER LAMDA; lambda  
13960 \DeclareTextCommand{\textlambda}{PU}{\83\273}% U+03BB  
13961 % U+03BC GREEK SMALL LETTER MU; mugreek, \*mu  
13962 \DeclareTextCommand{\textmugreek}{PU}{\83\274}% U+03BC  
13963 % U+03BD GREEK SMALL LETTER NU; nu  
13964 \DeclareTextCommand{\textnu}{PU}{\83\275}% U+03BD  
13965 % U+03BE GREEK SMALL LETTER XI; xi  
13966 \DeclareTextCommand{\textxi}{PU}{\83\276}% U+03BE  
13967 % U+03BF GREEK SMALL LETTER OMICRON; omicron  
13968 \DeclareTextCommand{\textomicron}{PU}{\83\277}% U+03BF  
13969 % U+03C0 GREEK SMALL LETTER PI; pi  
13970 \DeclareTextCommand{\textpi}{PU}{\83\300}% U+03C0  
13971 % U+03C1 GREEK SMALL LETTER RHO; rho  
13972 \DeclareTextCommand{\textrho}{PU}{\83\301}% U+03C1  
13973 % U+03C2 GREEK SMALL LETTER FINAL SIGMA; \*sigma1, sigmafinal  
13974 \DeclareTextCommand{\textvarsigma}{PU}{\83\302}% U+03C2  
13975 % U+03C3 GREEK SMALL LETTER SIGMA; sigma  
13976 \DeclareTextCommand{\textsigma}{PU}{\83\303}% U+03C3  
13977 % U+03C4 GREEK SMALL LETTER TAU; tau  
13978 \DeclareTextCommand{\texttau}{PU}{\83\304}% U+03C4  
13979 % U+03C5 GREEK SMALL LETTER UPSILON; upsilon  
13980 \DeclareTextCommand{\textupsilon}{PU}{\83\305}% U+03C5  
13981 % U+03C6 GREEK SMALL LETTER PHI; phi  
13982 \DeclareTextCommand{\textphi}{PU}{\83\306}% U+03C6  
13983 % U+03C7 GREEK SMALL LETTER CHI; chi  
13984 \DeclareTextCommand{\textchi}{PU}{\83\307}% U+03C7  
13985 % U+03C8 GREEK SMALL LETTER PSI; psi  
13986 \DeclareTextCommand{\textpsi}{PU}{\83\310}% U+03C8  
13987 % U+03C9 GREEK SMALL LETTER OMEGA; omega  
13988 \DeclareTextCommand{\textomega}{PU}{\83\311}% U+03C9  
13989 % U+03CA GREEK SMALL LETTER IOTA WITH DIALYTIKA; iotadieresis  
13990 \DeclareTextCompositeCommand{"}{PU}{\textiota}{\83\312}% U+03CA  
13991 % U+03CB GREEK SMALL LETTER UPSILON WITH DIALYTIKA; up-  
silondieresis  
13992 \DeclareTextCompositeCommand{"}{PU}{\textupsilon}{\83\313}% U+03CB  
13993 % U+03CC GREEK SMALL LETTER OMICRON WITH TONOS; omicrontonos  
13994 \DeclareTextCompositeCommand{'}{PU}{\textomicron}{\83\314}% U+03CC  
13995 % U+03CD GREEK SMALL LETTER UPSILON WITH TONOS; upsilontonos  
13996 \DeclareTextCommand{\textupsilonacute}{PU}{\83\315}% U+03CD  
13997 \DeclareTextCompositeCommand{'}{PU}{\textupsilon}{\83\315}% U+03CD  
13998 % U+03CE GREEK SMALL LETTER OMEGA WITH TONOS; omegatonos  
13999 \DeclareTextCompositeCommand{'}{PU}{\textomega}{\83\316}% U+03CE  
14000 % U+03DA GREEK LETTER STIGMA; Stigmagreek  
14001 \DeclareTextCommand{\textStigmagreek}{PU}{\83\332}% U+03DA  
14002 % U+03DB GREEK SMALL LETTER STIGMA  
14003 \DeclareTextCommand{\textstigmagreek}{PU}{\83\333}% U+03DB  
14004 % U+03DC GREEK LETTER DIGAMMA; Digammagreek  
14005 \DeclareTextCommand{\textDigammagreek}{PU}{\83\334}% U+03DC  
14006 % U+03DD GREEK SMALL LETTER DIGAMMA  
14007 \DeclareTextCommand{\textdigammagreek}{PU}{\83\335}% U+03DD  
14008 % U+03DE GREEK LETTER KOPPA; Koppagreek  
14009 \DeclareTextCommand{\textKoppagreek}{PU}{\83\336}% U+03DE  
14010 % U+03DF GREEK SMALL LETTER KOPPA  
14011 \DeclareTextCommand{\textkoppagreek}{PU}{\83\337}% U+03DF  
14012 % U+03E0 GREEK LETTER SAMPI; Sampigreek  
14013 \DeclareTextCommand{\textSampigreek}{PU}{\83\340}% U+03E0  
14014 % U+03E1 GREEK SMALL LETTER SAMPI

14015 \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.

14016 % U+0400 CYRILLIC CAPITAL LETTER IE WITH GRAVE  
14017 \DeclareTextCompositeCommand{\'}{PU}{\CYRE}{\84\000}% U+0400  
14018 % U+0401 CYRILLIC CAPITAL LETTER IO; Iocyrillic, \*afii10023  
14019 \DeclareTextCommand{\CYRYO}{PU}{\84\001}% U+0401  
14020 \DeclareTextCompositeCommand{\"}{PU}{\CYRE}{\84\001}% ???  
14021 % U+0402 CYRILLIC CAPITAL LETTER DJE; Djecyrillic, \*afii10051  
14022 \DeclareTextCommand{\CYRDJE}{PU}{\84\002}% U+0402  
14023 % U+0403 CYRILLIC CAPITAL LETTER GJE; Gjecyrillic, \*afii10052  
14024 \DeclareTextCompositeCommand{\'}{PU}{\CYRG}{\84\003}% U+0403  
14025 % U+0404 CYRILLIC CAPITAL LETTER UKRAINIAN IE; Ecyrillic, \*afii10053  
14026 \DeclareTextCommand{\CYRIE}{PU}{\84\004}% U+0404  
14027 % U+0405 CYRILLIC CAPITAL LETTER DZE; Dzecyrillic, \*afii10054  
14028 \DeclareTextCommand{\CYRDZE}{PU}{\84\005}% U+0405  
14029 % U+0406 CYRILLIC CAPITAL LETTER BYELORUSSIAN-UKRAINIAN I; Icyrillic, \*afii10055  
14030 \DeclareTextCommand{\CYRII}{PU}{\84\006}% U+0406  
14031 % U+0407 CYRILLIC CAPITAL LETTER YI; Yicyrillic, \*afii10056  
14032 \DeclareTextCommand{\CYRYI}{PU}{\84\007}% U+0407  
14033 \DeclareTextCompositeCommand{\"}{PU}{\CYRII}{\84\007}% U+0407  
14034 % U+0408 CYRILLIC CAPITAL LETTER JE; Jecyrillic, \*afii10057  
14035 \DeclareTextCommand{\CYRJE}{PU}{\84\010}% U+0408  
14036 % U+0409 CYRILLIC CAPITAL LETTER LJE; Ljecyrillic, \*afii10058  
14037 \DeclareTextCommand{\CYRLJE}{PU}{\84\011}% U+0409  
14038 % U+040A CYRILLIC CAPITAL LETTER NJE; Njecyrillic, \*afii10059  
14039 \DeclareTextCommand{\CYRNJE}{PU}{\84\012}% U+040A  
14040 % U+040B CYRILLIC CAPITAL LETTER TSHE; Tshecyrillic, \*afii10060  
14041 \DeclareTextCommand{\CYRTSHE}{PU}{\84\013}% U+040B  
14042 % U+040C CYRILLIC CAPITAL LETTER KJE; Kjecyrillic, \*afii10061  
14043 \DeclareTextCompositeCommand{\'}{PU}{\CYRK}{\84\014}% U+040C  
14044 % U+040D CYRILLIC CAPITAL LETTER I WITH GRAVE  
14045 \DeclareTextCompositeCommand{\'}{PU}{\CYRI}{\84\015}% U+040D  
14046 % U+040E CYRILLIC CAPITAL LETTER SHORT U; Ushortcyrillic, \*afii10062  
14047 \DeclareTextCommand{\CYRUSHRT}{PU}{\84\016}% U+040E  
14048 \DeclareTextCompositeCommand{\U}{PU}{\CYRU}{\84\016}% U+040E  
14049 % U+040F CYRILLIC CAPITAL LETTER DZHE; Dzhecyrillic, \*afii10145  
14050 \DeclareTextCommand{\CYRDZHE}{PU}{\84\017}% U+040F  
14051 % U+0410 CYRILLIC CAPITAL LETTER A; Acyrillic, \*afii10017  
14052 \DeclareTextCommand{\CYRA}{PU}{\84\020}% U+0410  
14053 % U+0411 CYRILLIC CAPITAL LETTER BE; Becyrillic, \*afii10018  
14054 \DeclareTextCommand{\CYRB}{PU}{\84\021}% U+0411  
14055 % U+0412 CYRILLIC CAPITAL LETTER VE; Vecyrillic, \*afii10019  
14056 \DeclareTextCommand{\CYRV}{PU}{\84\022}% U+0412  
14057 % U+0413 CYRILLIC CAPITAL LETTER GHE; Gecyrillic, \*afii10020  
14058 \DeclareTextCommand{\CYRG}{PU}{\84\023}% U+0413  
14059 % U+0414 CYRILLIC CAPITAL LETTER DE; Decyrillic, \*afii10021  
14060 \DeclareTextCommand{\CYRD}{PU}{\84\024}% U+0414  
14061 % U+0415 CYRILLIC CAPITAL LETTER IE; Iecyrillic, \*afii10022  
14062 \DeclareTextCommand{\CYRE}{PU}{\84\025}% U+0415  
14063 % U+0416 CYRILLIC CAPITAL LETTER ZHE; Zhecyrillic, \*afii10024  
14064 \DeclareTextCommand{\CYRZH}{PU}{\84\026}% U+0416  
14065 % U+0417 CYRILLIC CAPITAL LETTER ZE; Zecyrillic, \*afii10025  
14066 \DeclareTextCommand{\CYRZ}{PU}{\84\027}% U+0417

14067 % U+0418 CYRILLIC CAPITAL LETTER I; Iicyrillic, \*afii10026  
 14068 \DeclareTextCommand{\CYRI}{PU}{\84\030}% U+0418  
 14069 % U+0419 CYRILLIC CAPITAL LETTER SHORT I; Iishortcyrillic, \*afii10027  
 14070 \DeclareTextCommand{\CYRISHRT}{PU}{\84\031}% U+0419  
 14071 \DeclareTextCompositeCommand{\U}{PU}{\CYRI}{\84\031}% U+0419  
 14072 % U+041A CYRILLIC CAPITAL LETTER KA; Kacyrillic, \*afii10028  
 14073 \DeclareTextCommand{\CYRK}{PU}{\84\032}% U+041A  
 14074 % U+041B CYRILLIC CAPITAL LETTER EL; Elcyrillic, \*afii10029  
 14075 \DeclareTextCommand{\CYRL}{PU}{\84\033}% U+041B  
 14076 % U+041C CYRILLIC CAPITAL LETTER EM; Emcyrillic, \*afii10030  
 14077 \DeclareTextCommand{\CYRM}{PU}{\84\034}% U+041C  
 14078 % U+041D CYRILLIC CAPITAL LETTER EN; Encyrillic, \*afii10031  
 14079 \DeclareTextCommand{\CYRN}{PU}{\84\035}% U+041D  
 14080 % U+041E CYRILLIC CAPITAL LETTER O; Ocyrillic, \*afii10032  
 14081 \DeclareTextCommand{\CYRO}{PU}{\84\036}% U+041E  
 14082 % U+041F CYRILLIC CAPITAL LETTER PE; Pecyrillic, \*afii10033  
 14083 \DeclareTextCommand{\CYRP}{PU}{\84\037}% U+041F  
 14084 % U+0420 CYRILLIC CAPITAL LETTER ER; Ercyrillic, \*afii10034  
 14085 \DeclareTextCommand{\CYRR}{PU}{\84\040}% U+0420  
 14086 % U+0421 CYRILLIC CAPITAL LETTER ES; Escyrillic, \*afii10035  
 14087 \DeclareTextCommand{\CYRS}{PU}{\84\041}% U+0421  
 14088 % U+0422 CYRILLIC CAPITAL LETTER TE; Tecyrillic, \*afii10036  
 14089 \DeclareTextCommand{\CYRT}{PU}{\84\042}% U+0422  
 14090 % U+0423 CYRILLIC CAPITAL LETTER U; Ucyrillic, \*afii10037  
 14091 \DeclareTextCommand{\CYRU}{PU}{\84\043}% U+0423  
 14092 % U+0424 CYRILLIC CAPITAL LETTER EF; Efcyrillic, \*afii10038  
 14093 \DeclareTextCommand{\CYRF}{PU}{\84\044}% U+0424  
 14094 % U+0425 CYRILLIC CAPITAL LETTER HA; Khacyrillic, \*afii10039  
 14095 \DeclareTextCommand{\CYRH}{PU}{\84\045}% U+0425  
 14096 % U+0426 CYRILLIC CAPITAL LETTER TSE; Tsecyrillic, \*afii10040  
 14097 \DeclareTextCommand{\CYRC}{PU}{\84\046}% U+0426  
 14098 % U+0427 CYRILLIC CAPITAL LETTER CHE; Checyrillic, \*afii10041  
 14099 \DeclareTextCommand{\CYRCH}{PU}{\84\047}% U+0427  
 14100 % U+0428 CYRILLIC CAPITAL LETTER SHA; Shacyrillic, \*afii10042  
 14101 \DeclareTextCommand{\CYRSH}{PU}{\84\050}% U+0428  
 14102 % U+0429 CYRILLIC CAPITAL LETTER SHCHA; Shchacyrillic, \*afii10043  
 14103 \DeclareTextCommand{\CYRSHCH}{PU}{\84\051}% U+0429  
 14104 % U+042A CYRILLIC CAPITAL LETTER HARD SIGN; Hardsigncyrillic, \*afii10044  
 14105 \DeclareTextCommand{\CYRHRDSN}{PU}{\84\052}% U+042A  
 14106 % U+042B CYRILLIC CAPITAL LETTER YERU; Yericyrillic, \*afii10045  
 14107 \DeclareTextCommand{\CYRERY}{PU}{\84\053}% U+042B  
 14108 % U+042C CYRILLIC CAPITAL LETTER SOFT SIGN; Softsigncyrillic, \*afii10046  
 14109 \DeclareTextCommand{\CYRSFTSN}{PU}{\84\054}% U+042C  
 14110 % U+042D CYRILLIC CAPITAL LETTER E; Ereversedcyrillic, \*afii10047  
 14111 \DeclareTextCommand{\CYREREV}{PU}{\84\055}% U+042D  
 14112 % U+042E CYRILLIC CAPITAL LETTER YU; IUcyrillic, \*afii10048  
 14113 \DeclareTextCommand{\CYRYU}{PU}{\84\056}% U+042E  
 14114 % U+042F CYRILLIC CAPITAL LETTER YA; IAcyrillic, \*afii10049  
 14115 \DeclareTextCommand{\CYRYA}{PU}{\84\057}% U+042F  
 14116 % U+0430 CYRILLIC SMALL LETTER A; acyrillic, \*afii10065  
 14117 \DeclareTextCommand{\cyra}{PU}{\84\060}% U+0430  
 14118 % U+0431 CYRILLIC SMALL LETTER BE; \*afii10066, becyrillic  
 14119 \DeclareTextCommand{\cyrb}{PU}{\84\061}% U+0431  
 14120 % U+0432 CYRILLIC SMALL LETTER VE; \*afii10067, vecyrillic  
 14121 \DeclareTextCommand{\cyrv}{PU}{\84\062}% U+0432  
 14122 % U+0433 CYRILLIC SMALL LETTER GHE; \*afii10068, gecyrillic  
 14123 \DeclareTextCommand{\cyrg}{PU}{\84\063}% U+0433

14124 % U+0434 CYRILLIC SMALL LETTER DE; \*afii10069, decyrillic  
14125 \DeclareTextCommand{\cyrd}{PU}{\84\064}% U+0434  
14126 % U+0435 CYRILLIC SMALL LETTER IE; \*afii10070, iecyrillic  
14127 \DeclareTextCommand{\cyre}{PU}{\84\065}% U+0435  
14128 % U+0436 CYRILLIC SMALL LETTER ZHE; \*afii10072, zhecyrillic  
14129 \DeclareTextCommand{\cyrzh}{PU}{\84\066}% U+0436  
14130 % U+0437 CYRILLIC SMALL LETTER ZE; \*afii10073, zecyrillic  
14131 \DeclareTextCommand{\cyrz}{PU}{\84\067}% U+0437  
14132 % U+0438 CYRILLIC SMALL LETTER I; \*afii10074, iicyrillic  
14133 \DeclareTextCommand{\cyri}{PU}{\84\070}% U+0438  
14134 % U+0439 CYRILLIC SMALL LETTER SHORT I; \*afii10075, iishortcyrillic  
14135 \DeclareTextCommand{\cyrishrt}{PU}{\84\071}% U+0439  
14136 \DeclareTextCompositeCommand{\U}{PU}{\cyri}{\84\071}% U+0439  
14137 % U+043A CYRILLIC SMALL LETTER KA; \*afii10076, kacyrillic  
14138 \DeclareTextCommand{\cyrk}{PU}{\84\072}% U+043A  
14139 % U+043B CYRILLIC SMALL LETTER EL; \*afii10077, elcyrillic  
14140 \DeclareTextCommand{\cyrl}{PU}{\84\073}% U+043B  
14141 % U+043C CYRILLIC SMALL LETTER EM; \*afii10078, emcyrillic  
14142 \DeclareTextCommand{\cyrm}{PU}{\84\074}% U+043C  
14143 % U+043D CYRILLIC SMALL LETTER EN; \*afii10079, encyrillic  
14144 \DeclareTextCommand{\cyrn}{PU}{\84\075}% U+043D  
14145 % U+043E CYRILLIC SMALL LETTER O; \*afii10080, ocyrillic  
14146 \DeclareTextCommand{\cyro}{PU}{\84\076}% U+043E  
14147 % U+043F CYRILLIC SMALL LETTER PE; \*afii10081, pecyrillic  
14148 \DeclareTextCommand{\cyrp}{PU}{\84\077}% U+043F  
14149 % U+0440 CYRILLIC SMALL LETTER ER; \*afii10082, ercyrillic  
14150 \DeclareTextCommand{\cyrr}{PU}{\84\100}% U+0440  
14151 % U+0441 CYRILLIC SMALL LETTER ES; \*afii10083, escyrillic  
14152 \DeclareTextCommand{\cyr{s}}{PU}{\84\101}% U+0441  
14153 % U+0442 CYRILLIC SMALL LETTER TE; \*afii10084, tecyrillic  
14154 \DeclareTextCommand{\cyrt}{PU}{\84\102}% U+0442  
14155 % U+0443 CYRILLIC SMALL LETTER U; \*afii10085, ucyrillic  
14156 \DeclareTextCommand{\cyru}{PU}{\84\103}% U+0443  
14157 % U+0444 CYRILLIC SMALL LETTER EF; \*afii10086, efcyrillic  
14158 \DeclareTextCommand{\cyrf}{PU}{\84\104}% U+0444  
14159 % U+0445 CYRILLIC SMALL LETTER HA; \*afii10087, khacyrillic  
14160 \DeclareTextCommand{\cyrh}{PU}{\84\105}% U+0445  
14161 % U+0446 CYRILLIC SMALL LETTER TSE; \*afii10088, tsecyrillic  
14162 \DeclareTextCommand{\cyrc}{PU}{\84\106}% U+0446  
14163 % U+0447 CYRILLIC SMALL LETTER CHE; \*afii10089, checyrillic  
14164 \DeclareTextCommand{\cyrch}{PU}{\84\107}% U+0447  
14165 % U+0448 CYRILLIC SMALL LETTER SHA; \*afii10090, shacyrillic  
14166 \DeclareTextCommand{\cyrsh}{PU}{\84\110}% U+0448  
14167 % U+0449 CYRILLIC SMALL LETTER SHCHA; \*afii10091, shchacyrillic  
14168 \DeclareTextCommand{\cyrshch}{PU}{\84\111}% U+0449  
14169 % U+044A CYRILLIC SMALL LETTER HARD SIGN; \*afii10092, hardsigncyrillic  
14170 \DeclareTextCommand{\cyrhrdsn}{PU}{\84\112}% U+044A  
14171 % U+044B CYRILLIC SMALL LETTER YERU; \*afii10093, yericyrillic  
14172 \DeclareTextCommand{\cyrery}{PU}{\84\113}% U+044B  
14173 % U+044C CYRILLIC SMALL LETTER SOFT SIGN; \*afii10094, softsigncyrillic  
14174 \DeclareTextCommand{\cyr{s}ftsn}{PU}{\84\114}% U+044C  
14175 % U+044D CYRILLIC SMALL LETTER E; \*afii10095, ereversedcyrillic  
14176 \DeclareTextCommand{\cyrerev}{PU}{\84\115}% U+044D  
14177 % U+044E CYRILLIC SMALL LETTER YU; \*afii10096, iucyrillic  
14178 \DeclareTextCommand{\cyryu}{PU}{\84\116}% U+044E  
14179 % U+044F CYRILLIC SMALL LETTER YA; \*afii10097, iacyrillic  
14180 \DeclareTextCommand{\cyrya}{PU}{\84\117}% U+044F

14181 % U+0450 CYRILLIC SMALL LETTER IE WITH GRAVE  
14182 \DeclareTextCompositeCommand{\'}{PU}{\cyre}{\84\120}% U+0450  
14183 % U+0451 CYRILLIC SMALL LETTER IO; \*afii10071, iocyrrillic  
14184 \DeclareTextCommand{\cyryo}{PU}{\84\121}% U+0451  
14185 \DeclareTextCompositeCommand{\"}{PU}{\cyre}{\84\121}% U+0451  
14186 % U+0452 CYRILLIC SMALL LETTER DJE; \*afii10099, djecyrillic  
14187 \DeclareTextCommand{\cyrdje}{PU}{\84\122}% U+0452  
14188 % U+0453 CYRILLIC SMALL LETTER GJE; \*afii10100, gjecyrillic  
14189 \DeclareTextCompositeCommand{\'}{PU}{\cyrg}{\84\123}% U+0453  
14190 % U+0454 CYRILLIC SMALL LETTER UKRAINIAN IE; \*afii10101, ecyrillic  
14191 \DeclareTextCommand{\cyrie}{PU}{\84\124}% U+0454  
14192 % U+0455 CYRILLIC SMALL LETTER DZE; \*afii10102, dzecyrillic  
14193 \DeclareTextCommand{\cyrdze}{PU}{\84\125}% U+0455  
14194 % U+0456 CYRILLIC SMALL LETTER BYELORUSSIAN-UKRAINIAN I; \*afii10103, icyril-  
lic  
14195 \DeclareTextCommand{\cyrii}{PU}{\84\126}% U+0456  
14196 % U+0457 CYRILLIC SMALL LETTER YI; \*afii10104, yicyrillic  
14197 \DeclareTextCommand{\cyryi}{PU}{\84\127}% U+0457  
14198 \DeclareTextCompositeCommand{\"}{PU}{\cyrii}{\84\127}% U+0457  
14199 % U+0458 CYRILLIC SMALL LETTER JE; \*afii10105, jecyrillic  
14200 \DeclareTextCommand{\cyrje}{PU}{\84\130}% U+0458  
14201 % U+0459 CYRILLIC SMALL LETTER LJE; \*afii10106, ljecyrillic  
14202 \DeclareTextCommand{\cyrlje}{PU}{\84\131}% U+0459  
14203 % U+045A CYRILLIC SMALL LETTER NJE; \*afii10107, njecyrillic  
14204 \DeclareTextCommand{\cyrnje}{PU}{\84\132}% U+045A  
14205 % U+045B CYRILLIC SMALL LETTER TSHE; \*afii10108, tshecyrillic  
14206 \DeclareTextCommand{\cyrtshe}{PU}{\84\133}% U+045B  
14207 % U+045C CYRILLIC SMALL LETTER KJE; \*afii10109, kjecyrillic  
14208 \DeclareTextCompositeCommand{\'}{PU}{\cyrk}{\84\134}% U+045C  
14209 % U+045D CYRILLIC SMALL LETTER I WITH GRAVE  
14210 \DeclareTextCompositeCommand{\'}{PU}{\cyri}{\84\135}% U+045D  
14211 % U+045E CYRILLIC SMALL LETTER SHORT U; \*afii10110, ushortcyrillic  
14212 \DeclareTextCommand{\cyrushrt}{PU}{\84\136}% U+045E  
14213 \DeclareTextCompositeCommand{\U}{PU}{\curu}{\84\136}% U+045E  
14214 % U+045F CYRILLIC SMALL LETTER DZHE; \*afii10193, dzhecyrillic  
14215 \DeclareTextCommand{\cyrdzhe}{PU}{\84\137}% U+045F  
14216 % U+0460 CYRILLIC CAPITAL LETTER OMEGA; Omegacyrillic  
14217 \DeclareTextCommand{\CYROMEGA}{PU}{\84\140}% U+0460  
14218 % U+0461 CYRILLIC SMALL LETTER OMEGA; omegacyrillic  
14219 \DeclareTextCommand{\cyromega}{PU}{\84\141}% U+0461  
14220 % U+0462 CYRILLIC CAPITAL LETTER YAT; Yatcyrillic, \*afii10146  
14221 \DeclareTextCommand{\CYRYAT}{PU}{\84\142}% U+0462  
14222 % U+0463 CYRILLIC SMALL LETTER YAT; \*afii10194, yatcyrillic  
14223 \DeclareTextCommand{\cyryat}{PU}{\84\143}% U+0463  
14224 % U+0464 CYRILLIC CAPITAL LETTER IOTIFIED E; Eiotifiedcyrillic  
14225 \DeclareTextCommand{\CYRIOTE}{PU}{\84\144}% U+0464  
14226 % U+0465 CYRILLIC SMALL LETTER IOTIFIED E; eiotifiedcyrillic  
14227 \DeclareTextCommand{\cyriote}{PU}{\84\145}% U+0465  
14228 % U+0466 CYRILLIC CAPITAL LETTER LITTLE YUS; Yuslittlecyrillic  
14229 \DeclareTextCommand{\CYRLYUS}{PU}{\84\146}% U+0466  
14230 % U+0467 CYRILLIC SMALL LETTER LITTLE YUS; yuslittlecyrillic  
14231 \DeclareTextCommand{\cyrlyus}{PU}{\84\147}% U+0467  
14232 % U+0468 CYRILLIC CAPITAL LETTER IOTIFIED LITTLE YUS; Yuslittleio-  
tifiedcyrillic  
14233 \DeclareTextCommand{\CYRIOTLYUS}{PU}{\84\150}% U+0468  
14234 % U+0469 CYRILLIC SMALL LETTER IOTIFIED LITTLE YUS; yuslittleioti-  
fiedcyrillic

14235 \DeclareTextCommand{\cyriotlyus}{PU}{\84\151}% U+0469  
14236 % U+046A CYRILLIC CAPITAL LETTER BIG YUS; Yusbigcyrillic  
14237 \DeclareTextCommand{\CYRBYUS}{PU}{\84\152}% U+046A  
14238 % U+046B CYRILLIC SMALL LETTER BIG YUS; yusbigcyrillic  
14239 \DeclareTextCommand{\cyrbyus}{PU}{\84\153}% U+046B  
14240 % U+046C CYRILLIC CAPITAL LETTER IOTIFIED BIG YUS; Yusbigiotified-  
cyrillic  
14241 \DeclareTextCommand{\CYRIOTBYUS}{PU}{\84\154}% U+046C  
14242 % U+046D CYRILLIC SMALL LETTER IOTIFIED BIG YUS; yusbigiotifiedcyril-  
lic  
14243 \DeclareTextCommand{\cyriotbyus}{PU}{\84\155}% U+046D  
14244 % U+046E CYRILLIC CAPITAL LETTER KSI; Ksicyrillic  
14245 \DeclareTextCommand{\CYRKSI}{PU}{\84\156}% U+046E  
14246 % U+046F CYRILLIC SMALL LETTER KSI; ksicyrillic  
14247 \DeclareTextCommand{\cyrksi}{PU}{\84\157}% U+046F  
14248 % U+0470 CYRILLIC CAPITAL LETTER PSI; Psicyrillic  
14249 \DeclareTextCommand{\CYRPSI}{PU}{\84\160}% U+0470  
14250 % U+0471 CYRILLIC SMALL LETTER PSI; psicyrillic  
14251 \DeclareTextCommand{\cyrpsi}{PU}{\84\161}% U+0471  
14252 % U+0472 CYRILLIC CAPITAL LETTER FITA; Fitacyrillic, \*afii10147  
14253 \DeclareTextCommand{\CYRFITA}{PU}{\84\162}% U+0472  
14254 % U+0473 CYRILLIC SMALL LETTER FITA; \*afii10195, fitacyrillic  
14255 \DeclareTextCommand{\cyrfita}{PU}{\84\163}% U+0473  
14256 % U+0474 CYRILLIC CAPITAL LETTER IZHITSA; Izhitsacyrillic, \*afii10148  
14257 \DeclareTextCommand{\CYRIZH}{PU}{\84\164}% U+0474  
14258 % U+0475 CYRILLIC SMALL LETTER IZHITSA; \*afii10196, izhitsacyrillic  
14259 \DeclareTextCommand{\cyrizh}{PU}{\84\165}% U+0475  
14260 % U+0476 CYRILLIC CAPITAL LETTER IZHITSA WITH DOUBLE GRAVE AC-  
CENT; Izhitsadblgravecyrillic  
14261 \DeclareTextCompositeCommand{\C}{PU}{\CYRIZH}{\84\166}% U+0476  
14262 % U+0477 CYRILLIC SMALL LETTER IZHITSA WITH DOUBLE GRAVE AC-  
CENT; izhitsadblgravecyrillic  
14263 \DeclareTextCompositeCommand{\C}{PU}{\cyrizh}{\84\167}% U+0477  
14264 % U+0478 CYRILLIC CAPITAL LETTER UK; Ukcyrillic  
14265 \DeclareTextCommand{\CYRUK}{PU}{\84\170}% U+0478  
14266 % U+0479 CYRILLIC SMALL LETTER UK; ukcyrillic  
14267 \DeclareTextCommand{\cyruk}{PU}{\84\171}% U+0479  
14268 % U+047A CYRILLIC CAPITAL LETTER ROUND OMEGA; Omegaroundcyril-  
lic  
14269 \DeclareTextCommand{\CYROMEGARND}{PU}{\84\172}% U+047A  
14270 % U+047B CYRILLIC SMALL LETTER ROUND OMEGA; omegaroundcyrillic  
14271 \DeclareTextCommand{\cyromegarnd}{PU}{\84\173}% U+047B  
14272 % U+047C CYRILLIC CAPITAL LETTER OMEGA WITH TITLO; Omegatitlo-  
cyrillic  
14273 \DeclareTextCommand{\CYROMEGATITLO}{PU}{\84\174}% U+047C  
14274 % U+047D CYRILLIC SMALL LETTER OMEGA WITH TITLO; omegatitlo-  
cyrillic  
14275 \DeclareTextCommand{\cyromegatitlo}{PU}{\84\175}% U+047D  
14276 % U+047E CYRILLIC CAPITAL LETTER OT; Otcyrillic  
14277 \DeclareTextCommand{\CYROT}{PU}{\84\176}% U+047E  
14278 % U+047F CYRILLIC SMALL LETTER OT; otcyrillic  
14279 \DeclareTextCommand{\cyrot}{PU}{\84\177}% U+047F  
14280 % U+0480 CYRILLIC CAPITAL LETTER KOPPA; Koppacyrillic  
14281 \DeclareTextCommand{\CYRKOPPA}{PU}{\84\200}% U+0480  
14282 % U+0481 CYRILLIC SMALL LETTER KOPPA; koppacyrillic  
14283 \DeclareTextCommand{\cyrkoppa}{PU}{\84\201}% U+0481  
14284 % U+0482 CYRILLIC THOUSANDS SIGN; thousandcyrillic

14285 \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  
 14286 % U+048A CYRILLIC CAPITAL LETTER SHORT I WITH TAIL  
 14287 \DeclareTextCommand{\CYRISHRTDSC}{PU}{\84\212}% U+048A  
 14288 % U+048B CYRILLIC SMALL LETTER SHORT I WITH TAIL  
 14289 \DeclareTextCommand{\cyrishrtdsc}{PU}{\84\213}% U+048B  
 14290 % U+048C CYRILLIC CAPITAL LETTER SEMISOFT SIGN  
 14291 \DeclareTextCommand{\CYRSEMISFTSN}{PU}{\84\214}% U+048C  
 14292 % U+048D CYRILLIC SMALL LETTER SEMISOFT SIGN  
 14293 \DeclareTextCommand{\cyrsemisftsn}{PU}{\84\215}% U+048D  
 14294 % U+048E CYRILLIC CAPITAL LETTER ER WITH TICK  
 14295 \DeclareTextCommand{\CYRRTICK}{PU}{\84\216}% U+048E  
 14296 % U+048F CYRILLIC SMALL LETTER ER WITH TICK  
 14297 \DeclareTextCommand{\cyrrtick}{PU}{\84\217}% U+048F  
 14298 % U+0490 CYRILLIC CAPITAL LETTER GHE WITH UPTURN; Gheupturncyrillic, \*afii10050  
 14299 \DeclareTextCommand{\CYRGUP}{PU}{\84\220}% U+0490  
 14300 % U+0491 CYRILLIC SMALL LETTER GHE WITH UPTURN; \*afii10098, gheupturncyrillic  
 14301 \DeclareTextCommand{\cyrgup}{PU}{\84\221}% U+0491  
 14302 % U+0492 CYRILLIC CAPITAL LETTER GHE WITH STROKE; Ghestrokecyrillic  
 14303 \DeclareTextCommand{\CYRGHCRS}{PU}{\84\222}% U+0492  
 14304 % U+0493 CYRILLIC SMALL LETTER GHE WITH STROKE; ghestrokecyrillic  
 14305 \DeclareTextCommand{\cyrghcrs}{PU}{\84\223}% U+0493  
 14306 % U+0494 CYRILLIC CAPITAL LETTER GHE WITH MIDDLE HOOK; Ghemiddlehookcyrillic  
 14307 \DeclareTextCommand{\CYRGHK}{PU}{\84\224}% U+0494  
 14308 % U+0495 CYRILLIC SMALL LETTER GHE WITH MIDDLE HOOK; ghemiddlehookcyrillic  
 14309 \DeclareTextCommand{\cyrghk}{PU}{\84\225}% U+0495  
 14310 % U+0496 CYRILLIC CAPITAL LETTER ZHE WITH DESCENDER; Zhedescendercyrillic  
 14311 \DeclareTextCommand{\CYRZHDSC}{PU}{\84\226}% U+0496  
 14312 % U+0497 CYRILLIC SMALL LETTER ZHE WITH DESCENDER; zhedescendercyrillic  
 14313 \DeclareTextCommand{\cyrzhdsc}{PU}{\84\227}% U+0497  
 14314 % U+0498 CYRILLIC CAPITAL LETTER ZE WITH DESCENDER; Zedescendercyrillic  
 14315 \DeclareTextCommand{\CYRZDSC}{PU}{\84\230}% U+0498  
 14316 \DeclareTextCompositeCommand{\c}{PU}{\CYRZ}{\84\230}% U+0498  
 14317 % U+0499 CYRILLIC SMALL LETTER ZE WITH DESCENDER; zedescendercyrillic  
 14318 \DeclareTextCommand{\cyrzds}{PU}{\84\231}% U+0499  
 14319 \DeclareTextCompositeCommand{\c}{PU}{\cyrz}{\84\231}% U+0499  
 14320 % U+049A CYRILLIC CAPITAL LETTER KA WITH DESCENDER; Kadescendercyrillic

14321 \DeclareTextCommand{\CYRKDSC}{PU}{\84\232}% U+049A  
14322 % U+049B CYRILLIC SMALL LETTER KA WITH DESCENDER; kadesender-cyrillic  
14323 \DeclareTextCommand{\cyrkdsc}{PU}{\84\233}% U+049B  
14324 % U+049C CYRILLIC CAPITAL LETTER KA WITH VERTICAL STROKE; Kaver-ticalstrokecyrillic  
14325 \DeclareTextCommand{\CYRKVCRS}{PU}{\84\234}% U+049C  
14326 % U+049D CYRILLIC SMALL LETTER KA WITH VERTICAL STROKE; kaver-ticalstrokecyrillic  
14327 \DeclareTextCommand{\cyrkvcrs}{PU}{\84\235}% U+049D  
14328 % U+049E CYRILLIC CAPITAL LETTER KA WITH STROKE; Kastrokecyrillic  
14329 \DeclareTextCommand{\CYRKHCRS}{PU}{\84\236}% U+049E  
14330 % U+049F CYRILLIC SMALL LETTER KA WITH STROKE; kastrokecyrillic  
14331 \DeclareTextCommand{\cyrkhcrs}{PU}{\84\237}% U+049F  
14332 % U+04A0 CYRILLIC CAPITAL LETTER BASHKIR KA; Kabashkircyrillic  
14333 \DeclareTextCommand{\CYRKBEAK}{PU}{\84\240}% U+04A0  
14334 % U+04A1 CYRILLIC SMALL LETTER BASHKIR KA; kabashkircyrillic  
14335 \DeclareTextCommand{\cyrkbeak}{PU}{\84\241}% U+04A1  
14336 % U+04A2 CYRILLIC CAPITAL LETTER EN WITH DESCENDER; Endescen-dercyrillic  
14337 \DeclareTextCommand{\CYRNDSC}{PU}{\84\242}% U+04A2  
14338 % U+04A3 CYRILLIC SMALL LETTER EN WITH DESCENDER; endescender-cyrillic  
14339 \DeclareTextCommand{\cyrndsc}{PU}{\84\243}% U+04A3  
14340 % U+04A4 CYRILLIC CAPITAL LIGATURE EN GHE; Enghecyrillic  
14341 \DeclareTextCommand{\CYRNG}{PU}{\84\244}% U+04A4  
14342 % U+04A5 CYRILLIC SMALL LIGATURE EN GHE; enghecyrillic  
14343 \DeclareTextCommand{\cyrng}{PU}{\84\245}% U+04A5  
14344 % U+04A6 CYRILLIC CAPITAL LETTER PE WITH MIDDLE HOOK; Pemid-dlehookcyrillic  
14345 \DeclareTextCommand{\CYRPHK}{PU}{\84\246}% U+04A6  
14346 % U+04A7 CYRILLIC SMALL LETTER PE WITH MIDDLE HOOK; pemiddle-hookcyrillic  
14347 \DeclareTextCommand{\cyrphk}{PU}{\84\247}% U+04A7  
14348 % U+04A8 CYRILLIC CAPITAL LETTER ABKHASIAN HA; Haabkhasiancyrillic  
14349 \DeclareTextCommand{\CYRABHHA}{PU}{\84\250}% U+04A8  
14350 % U+04A9 CYRILLIC SMALL LETTER ABKHASIAN HA; haabkhasiancyrillic  
14351 \DeclareTextCommand{\cyrabhha}{PU}{\84\251}% U+04A9  
14352 % U+04AA CYRILLIC CAPITAL LETTER ES WITH DESCENDER; Esdescen-dercyrillic  
14353 \DeclareTextCommand{\CYRSDSC}{PU}{\84\252}% U+04AA  
14354 \DeclareTextCompositeCommand{\CYRSDSC}{PU}{\CYRS}{\84\252}% U+04AA  
14355 % U+04AB CYRILLIC SMALL LETTER ES WITH DESCENDER; esdescender-cyrillic  
14356 \DeclareTextCommand{\cyrsdsc}{PU}{\84\253}% U+04AB  
14357 \DeclareTextCompositeCommand{\k}{PU}{\cyr}{\84\253}% U+04AB  
14358 % U+04AC CYRILLIC CAPITAL LETTER TE WITH DESCENDER; Tedescen-dercyrillic  
14359 \DeclareTextCommand{\CYRTDSC}{PU}{\84\254}% U+04AC  
14360 % U+04AD CYRILLIC SMALL LETTER TE WITH DESCENDER; tedescender-cyrillic  
14361 \DeclareTextCommand{\cyrtdsc}{PU}{\84\255}% U+04AD  
14362 % U+04AE CYRILLIC CAPITAL LETTER STRAIGHT U; Ustraightcyrillic  
14363 \DeclareTextCommand{\CYRY}{PU}{\84\256}% U+04AE  
14364 % U+04AF CYRILLIC SMALL LETTER STRAIGHT U; ustraightcyrillic  
14365 \DeclareTextCommand{\cyr}{PU}{\84\257}% U+04AF

14366 % U+04B0 CYRILLIC CAPITAL LETTER STRAIGHT U WITH STROKE; Us-  
 traightstrokecyrillic  
 14367 \DeclareTextCommand{\CYRYHCRS}{PU}{\84\260}% U+04B0  
 14368 % U+04B1 CYRILLIC SMALL LETTER STRAIGHT U WITH STROKE; us-  
 traightstrokecyrillic  
 14369 \DeclareTextCommand{\cyrhcrs}{PU}{\84\261}% U+04B1  
 14370 % U+04B2 CYRILLIC CAPITAL LETTER HA WITH DESCENDER; Hadescen-  
 dercyrillic  
 14371 \DeclareTextCommand{\CYRHDSC}{PU}{\84\262}% U+04B2  
 14372 % U+04B3 CYRILLIC SMALL LETTER HA WITH DESCENDER; hadescen-  
 dercyrillic  
 14373 \DeclareTextCommand{\cyrhdsc}{PU}{\84\263}% U+04B3  
 14374 % U+04B4 CYRILLIC CAPITAL LIGATURE TE TSE; Tetsecyrillic  
 14375 \DeclareTextCommand{\CYRTETSE}{PU}{\84\264}% U+04B4  
 14376 % U+04B5 CYRILLIC SMALL LIGATURE TE TSE; tetsecyrillic  
 14377 \DeclareTextCommand{\cyrtetse}{PU}{\84\265}% U+04B5  
 14378 % U+04B6 CYRILLIC CAPITAL LETTER CHE WITH DESCENDER; Chedescen-  
 dercyrillic  
 14379 \DeclareTextCommand{\CYRCHRDSC}{PU}{\84\266}% U+04B6  
 14380 % U+04B7 CYRILLIC SMALL LETTER CHE WITH DESCENDER; chedescen-  
 dercyrillic  
 14381 \DeclareTextCommand{\cyrchrds}{PU}{\84\267}% U+04B7  
 14382 % U+04B8 CYRILLIC CAPITAL LETTER CHE WITH VERTICAL STROKE; Chev-  
 erticalstrokecyrillic  
 14383 \DeclareTextCommand{\CYRCHVCRS}{PU}{\84\270}% U+04B8  
 14384 % U+04B9 CYRILLIC SMALL LETTER CHE WITH VERTICAL STROKE; chev-  
 erticalstrokecyrillic  
 14385 \DeclareTextCommand{\cyrchvcrs}{PU}{\84\271}% U+04B9  
 14386 % U+04BA CYRILLIC CAPITAL LETTER SHHA; Shhacyrillic  
 14387 \DeclareTextCommand{\CYRSHHA}{PU}{\84\272}% U+04BA  
 14388 % U+04BB CYRILLIC SMALL LETTER SHHA; shhacyrillic  
 14389 \DeclareTextCommand{\cyrshha}{PU}{\84\273}% U+04BB  
 14390 % U+04BC CYRILLIC CAPITAL LETTER ABKHASIAN CHE; Cheabkhasian-  
 cyrillic  
 14391 \DeclareTextCommand{\CYRABHCH}{PU}{\84\274}% U+04BC  
 14392 % U+04BD CYRILLIC SMALL LETTER ABKHASIAN CHE; cheabkhasiancyril-  
 lic  
 14393 \DeclareTextCommand{\cyrabhch}{PU}{\84\275}% U+04BD  
 14394 % U+04BE CYRILLIC CAPITAL LETTER ABKHASIAN CHE WITH DESCEN-  
 DER; Chedescenderabkhasiancyrillic  
 14395 \DeclareTextCommand{\CYRABHCHDSC}{PU}{\84\276}% U+04BE  
 14396 \DeclareTextCompositeCommand{\k}{PU}{\CYRABHCH}{\84\276}% U+04BE  
 14397 % U+04BF CYRILLIC SMALL LETTER ABKHASIAN CHE WITH DESCEN-  
 DER; chedescenderabkhasiancyrillic  
 14398 \DeclareTextCommand{\cyrabhchdsc}{PU}{\84\277}% U+04BF  
 14399 \DeclareTextCompositeCommand{\k}{PU}{\cyrabhch}{\84\277}% U+04BF  
 14400 % U+04C0 CYRILLIC LETTER PALOCHKA; palochkacyrillic  
 14401 \DeclareTextCommand{\CYRpalochka}{PU}{\84\300}% U+04C0  
 14402 % U+04C1 CYRILLIC CAPITAL LETTER ZHE WITH BREVE; Zhebrevecyrillic  
 14403 \DeclareTextCompositeCommand{\U}{PU}{\CYRZH}{\84\301}% U+04C1  
 14404 % U+04C2 CYRILLIC SMALL LETTER ZHE WITH BREVE; zhebrevecyrillic  
 14405 \DeclareTextCompositeCommand{\U}{PU}{\cyrzh}{\84\302}% U+04C2  
 14406 % U+04C3 CYRILLIC CAPITAL LETTER KA WITH HOOK; Kahookcyrillic  
 14407 \DeclareTextCommand{\CYRKHK}{PU}{\84\303}% U+04C3  
 14408 % U+04C4 CYRILLIC SMALL LETTER KA WITH HOOK; kahookcyrillic  
 14409 \DeclareTextCommand{\cyrkhk}{PU}{\84\304}% U+04C4  
 14410 % U+04C5 CYRILLIC CAPITAL LETTER EL WITH TAIL

14411 \DeclareTextCommand{\CYRLDSC}{PU}{\84\305}% U+04C5  
14412 % U+04C6 CYRILLIC SMALL LETTER EL WITH TAIL  
14413 \DeclareTextCommand{\cyrldsc}{PU}{\84\306}% U+04C6  
14414 % U+04C7 CYRILLIC CAPITAL LETTER EN WITH HOOK; Enhookcyrillic  
14415 \DeclareTextCommand{\CYRNHK}{PU}{\84\307}% U+04C7  
14416 % U+04C8 CYRILLIC SMALL LETTER EN WITH HOOK; enhookcyrillic  
14417 \DeclareTextCommand{\cyrnhk}{PU}{\84\310}% U+04C8  
14418 % U+04CB CYRILLIC CAPITAL LETTER KHAKASSIAN CHE; Chekhakassian-  
cyrillic  
14419 \DeclareTextCommand{\CYRCHLDSC}{PU}{\84\313}% U+04CB  
14420 % U+04CC CYRILLIC SMALL LETTER KHAKASSIAN CHE; chekhakassian-  
cyrillic  
14421 \DeclareTextCommand{\cyrchldsc}{PU}{\84\314}% U+04CC  
14422 % U+04CD CYRILLIC CAPITAL LETTER EM WITH TAIL  
14423 \DeclareTextCommand{\CYRMDSC}{PU}{\84\315}% U+04CD  
14424 % U+04CE CYRILLIC SMALL LETTER EM WITH TAIL  
14425 \DeclareTextCommand{\cyrmdsc}{PU}{\84\316}% U+04CE  
\84\317: U+04CF CYRILLIC SMALL LETTER PALOCHKA  
14426 % U+04D0 CYRILLIC CAPITAL LETTER A WITH BREVE; Abrevcyrillic  
14427 \DeclareTextCompositeCommand{\U}{PU}{\CYRA}{\84\320}% U+04D0  
14428 % U+04D1 CYRILLIC SMALL LETTER A WITH BREVE; abrevcyrillic  
14429 \DeclareTextCompositeCommand{\U}{PU}{\cyra}{\84\321}% U+04D1  
14430 % U+04D2 CYRILLIC CAPITAL LETTER A WITH DIAERESIS; Adieresiscyril-  
lic  
14431 \DeclareTextCompositeCommand{\U}{PU}{\CYRA}{\84\322}% U+04D2  
14432 % U+04D3 CYRILLIC SMALL LETTER A WITH DIAERESIS; adieresiscyrillic  
14433 \DeclareTextCompositeCommand{\U}{PU}{\cyra}{\84\323}% U+04D3  
14434 % U+04D4 CYRILLIC CAPITAL LIGATURE A IE; Aiecyrillic  
14435 \DeclareTextCommand{\CYRAE}{PU}{\84\324}% U+04D4  
14436 % U+04D5 CYRILLIC SMALL LIGATURE A IE; aiecyrillic  
14437 \DeclareTextCommand{\cyrcae}{PU}{\84\325}% U+04D5  
14438 % U+04D6 CYRILLIC CAPITAL LETTER IE WITH BREVE; Iebrevcyrillic  
14439 \DeclareTextCompositeCommand{\U}{PU}{\CYRE}{\84\326}% U+04D6  
14440 % U+04D7 CYRILLIC SMALL LETTER IE WITH BREVE; iebrevcyrillic  
14441 \DeclareTextCompositeCommand{\U}{PU}{\cyre}{\84\327}% U+04D7  
14442 % U+04D8 CYRILLIC CAPITAL LETTER SCHWA; Schwacyrillic  
14443 \DeclareTextCommand{\CYRSCHWA}{PU}{\84\330}% U+04D8  
14444 % U+04D9 CYRILLIC SMALL LETTER SCHWA; \*afi10846, schwacyrillic  
14445 \DeclareTextCommand{\cyrswa}{PU}{\84\331}% U+04D9  
14446 % U+04DA CYRILLIC CAPITAL LETTER SCHWA WITH DIAERESIS; Schwadiere-  
siscyrillic  
14447 \DeclareTextCompositeCommand{\U}{PU}{\CYRSCHWA}{\84\332}% U+04DA  
14448 % U+04DB CYRILLIC SMALL LETTER SCHWA WITH DIAERESIS; schwadiere-  
siscyrillic  
14449 \DeclareTextCompositeCommand{\U}{PU}{\cyrswa}{\84\333}% U+04DB  
14450 % U+04DC CYRILLIC CAPITAL LETTER ZHE WITH DIAERESIS; Zhediere-  
siscyrillic  
14451 \DeclareTextCompositeCommand{\U}{PU}{\CYRZH}{\84\334}% U+04DC  
14452 % U+04DD CYRILLIC SMALL LETTER ZHE WITH DIAERESIS; zhedieres-  
cyrillic  
14453 \DeclareTextCompositeCommand{\U}{PU}{\cyrzh}{\84\335}% U+04DD  
14454 % U+04DE CYRILLIC CAPITAL LETTER ZE WITH DIAERESIS; Zedieres-  
cyrillic  
14455 \DeclareTextCompositeCommand{\U}{PU}{\CYRZ}{\84\336}% U+04DE  
14456 % U+04DF CYRILLIC SMALL LETTER ZE WITH DIAERESIS; zedieresiscyrillic  
14457 \DeclareTextCompositeCommand{\U}{PU}{\cyrz}{\84\337}% U+04DF

14458 % U+04E0 CYRILLIC CAPITAL LETTER ABKHASIAN DZE; Dzeabkhasian-cyrillic  
 14459 \DeclareTextCommand{\CYRABHDZE}{PU}{\84\340}% U+04E0  
 14460 % U+04E1 CYRILLIC SMALL LETTER ABKHASIAN DZE; dzeabkhasiancyrillic  
 14461 \DeclareTextCommand{\cyrabhdze}{PU}{\84\341}% U+04E1  
 14462 % U+04E2 CYRILLIC CAPITAL LETTER I WITH MACRON; Imacroncyrillic  
 14463 \DeclareTextCompositeCommand{\=} {PU}{\CYRI}{\84\342}% U+04E2  
 14464 % U+04E3 CYRILLIC SMALL LETTER I WITH MACRON; imacroncyrillic  
 14465 \DeclareTextCompositeCommand{\=} {PU}{\cyri}{\84\343}% U+04E3  
 14466 % U+04E4 CYRILLIC CAPITAL LETTER I WITH DIAERESIS; Idieresiscyrillic  
 14467 \DeclareTextCompositeCommand{\"} {PU}{\CYRI}{\84\344}% U+04E4  
 14468 % U+04E5 CYRILLIC SMALL LETTER I WITH DIAERESIS; idieresiscyrillic  
 14469 \DeclareTextCompositeCommand{\"} {PU}{\cyri}{\84\345}% U+04E5  
 14470 % U+04E6 CYRILLIC CAPITAL LETTER O WITH DIAERESIS; Odieresiscyrillic  
 14471 \DeclareTextCompositeCommand{\"} {PU}{\CYRO}{\84\346}% U+04E6  
 14472 % U+04E7 CYRILLIC SMALL LETTER O WITH DIAERESIS; odieresiscyrillic  
 14473 \DeclareTextCompositeCommand{\"} {PU}{\cyro}{\84\347}% U+04E7  
 14474 % U+04E8 CYRILLIC CAPITAL LETTER BARRED O; Obarredcyrillic  
 14475 \DeclareTextCommand{\CYROTLD}{PU}{\84\350}% U+04E8  
 14476 % U+04E9 CYRILLIC SMALL LETTER BARRED O; obarredcyrillic  
 14477 \DeclareTextCommand{\cyrotld}{PU}{\84\351}% U+04E9  
 14478 % U+04EA CYRILLIC CAPITAL LETTER BARRED O WITH DIAERESIS; Obarreddieresiscyrillic  
 14479 \DeclareTextCompositeCommand{\"} {PU}{\CYROTLD}{\84\352}% U+04EA  
 14480 % U+04EB CYRILLIC SMALL LETTER BARRED O WITH DIAERESIS; obarreddieresiscyrillic  
 14481 \DeclareTextCompositeCommand{\"} {PU}{\cyrotld}{\84\353}% U+04EB  
 14482 % U+04EC CYRILLIC CAPITAL LETTER E WITH DIAERESIS  
 14483 \DeclareTextCompositeCommand{\"} {PU}{\CYREREV}{\84\354}% U+04EC  
 14484 % U+04ED CYRILLIC SMALL LETTER E WITH DIAERESIS  
 14485 \DeclareTextCompositeCommand{\"} {PU}{\cyreref}{\84\355}% U+04ED  
 14486 % U+04EE CYRILLIC CAPITAL LETTER U WITH MACRON; Umacroncyrillic  
 14487 \DeclareTextCompositeCommand{\=} {PU}{\CYRU}{\84\356}% U+04EE  
 14488 % U+04EF CYRILLIC SMALL LETTER U WITH MACRON; umacroncyrillic  
 14489 \DeclareTextCompositeCommand{\=} {PU}{\cyru}{\84\357}% U+04EF  
 14490 % U+04F0 CYRILLIC CAPITAL LETTER U WITH DIAERESIS; Udieresiscyrillic  
 14491 \DeclareTextCompositeCommand{\"} {PU}{\CYRU}{\84\360}% U+04F0  
 14492 % U+04F1 CYRILLIC SMALL LETTER U WITH DIAERESIS; udieresiscyrillic  
 14493 \DeclareTextCompositeCommand{\"} {PU}{\cyru}{\84\361}% U+04F1  
 14494 % U+04F2 CYRILLIC CAPITAL LETTER U WITH DOUBLE ACUTE; Uhungarumlautcyrillic  
 14495 \DeclareTextCompositeCommand{\H} {PU}{\CYRU}{\84\362}% U+04F2  
 14496 % U+04F3 CYRILLIC SMALL LETTER U WITH DOUBLE ACUTE; uhungarumlautcyrillic  
 14497 \DeclareTextCompositeCommand{\H} {PU}{\cyru}{\84\363}% U+04F3  
 14498 % U+04F4 CYRILLIC CAPITAL LETTER CHE WITH DIAERESIS; Chedieresiscyrillic  
 14499 \DeclareTextCompositeCommand{\"} {PU}{\CYRCH}{\84\364}% U+04F4  
 14500 % U+04F5 CYRILLIC SMALL LETTER CHE WITH DIAERESIS; chedieresiscyrillic  
 14501 \DeclareTextCompositeCommand{\"} {PU}{\cyrch}{\84\365}% U+04F5  
 14502 % U+04F6 CYRILLIC CAPITAL LETTER GHE WITH DESCENDER  
 14503 \DeclareTextCommand{\CYRGDSC}{PU}{\84\366}% U+04F6  
 14504 % U+04F7 CYRILLIC SMALL LETTER GHE WITH DESCENDER  
 14505 \DeclareTextCommand{\cyrgdsc}{PU}{\84\367}% U+04F7

14506 % U+04F8 CYRILLIC CAPITAL LETTER YERU WITH DIAERESIS; Yerudiere-  
siscyrillic  
14507 \DeclareTextCompositeCommand{"}{PU}{\CYRERY}{\84\370}% U+04F8  
14508 % U+04F9 CYRILLIC SMALL LETTER YERU WITH DIAERESIS; yerudiere-  
siscyrillic  
14509 \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  
14510 % U+04FC CYRILLIC CAPITAL LETTER HA WITH HOOK  
14511 \DeclareTextCommand{\CYRHHK}{PU}{\84\374}% U+04FC  
14512 % U+04FD CYRILLIC SMALL LETTER HA WITH HOOK  
14513 \DeclareTextCommand{\cyrrhk}{PU}{\84\375}% U+04FD  
\84\376: U+04FE CYRILLIC CAPITAL LETTER HA WITH STROKE  
\84\377: U+04FF CYRILLIC SMALL LETTER HA WITH STROKE

## 50.2.10 Thai: U+0E00 to U+0E7F

14514 % U+0E3F THAI CURRENCY SYMBOL BAHT; bahtthai  
14515 \DeclareTextCommand{\textbaht}{PU}{\9016\077}% U+0E3F

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

14516 % U+1E02 LATIN CAPITAL LETTER B WITH DOT ABOVE; Bdotaccent  
14517 \DeclareTextCompositeCommand{.}{PU}{B}{\9036\002}% U+1E02  
14518 % U+1E03 LATIN SMALL LETTER B WITH DOT ABOVE; bdotaccent  
14519 \DeclareTextCompositeCommand{.}{PU}{b}{\9036\003}% U+1E03  
14520 % U+1E06 LATIN CAPITAL LETTER B WITH LINE BELOW; Blinebelow  
14521 \DeclareTextCompositeCommand{\b}{PU}{B}{\9036\006}% U+1E06  
14522 % U+1E07 LATIN SMALL LETTER B WITH LINE BELOW; blinebelow  
14523 \DeclareTextCompositeCommand{\b}{PU}{b}{\9036\007}% U+1E07  
14524 % U+1E0A LATIN CAPITAL LETTER D WITH DOT ABOVE; Ddotaccent  
14525 \DeclareTextCompositeCommand{.}{PU}{D}{\9036\012}% U+1E0A  
14526 % U+1E0B LATIN SMALL LETTER D WITH DOT ABOVE; ddotaccent  
14527 \DeclareTextCompositeCommand{.}{PU}{d}{\9036\013}% U+1E0B  
14528 % U+1E0E LATIN CAPITAL LETTER D WITH LINE BELOW; Dlinebelow  
14529 \DeclareTextCompositeCommand{\b}{PU}{D}{\9036\016}% U+1E0E  
14530 % U+1E0F LATIN SMALL LETTER D WITH LINE BELOW; dlinebelow  
14531 \DeclareTextCompositeCommand{\b}{PU}{d}{\9036\017}% U+1E0F  
14532 % U+1E10 LATIN CAPITAL LETTER D WITH CEDILLA; Dcedilla  
14533 \DeclareTextCompositeCommand{\c}{PU}{D}{\9036\020}% U+1E10  
14534 % U+1E11 LATIN SMALL LETTER D WITH CEDILLA; dcedilla  
14535 \DeclareTextCompositeCommand{\c}{PU}{d}{\9036\021}% U+1E11  
14536 % U+1E1E LATIN CAPITAL LETTER F WITH DOT ABOVE; Fdotaccent  
14537 \DeclareTextCompositeCommand{.}{PU}{F}{\9036\036}% U+1E1E  
14538 % U+1E1F LATIN SMALL LETTER F WITH DOT ABOVE; fdotaccent  
14539 \DeclareTextCompositeCommand{.}{PU}{f}{\9036\037}% U+1E1F  
14540 % U+1E20 LATIN CAPITAL LETTER G WITH MACRON; Gmacron  
14541 \DeclareTextCompositeCommand{=} {PU}{G}{\9036\040}% U+1E20  
14542 % U+1E21 LATIN SMALL LETTER G WITH MACRON; gmacron  
14543 \DeclareTextCompositeCommand{=} {PU}{g}{\9036\041}% U+1E21  
14544 % U+1E22 LATIN CAPITAL LETTER H WITH DOT ABOVE; Hdotaccent  
14545 \DeclareTextCompositeCommand{.}{PU}{H}{\9036\042}% U+1E22  
14546 % U+1E23 LATIN SMALL LETTER H WITH DOT ABOVE; hdotaccent  
14547 \DeclareTextCompositeCommand{.}{PU}{h}{\9036\043}% U+1E23  
14548 % U+1E26 LATIN CAPITAL LETTER H WITH DIAERESIS; Hdieresis  
14549 \DeclareTextCompositeCommand{"}{PU}{H}{\9036\046}% U+1E26  
14550 % U+1E27 LATIN SMALL LETTER H WITH DIAERESIS; hdieresis

14551 \DeclareTextCompositeCommand{"}{PU}{h}{\9036\047}% U+1E27  
14552 % U+1E28 LATIN CAPITAL LETTER H WITH CEDILLA; Hcedilla  
14553 \DeclareTextCompositeCommand{\c}{PU}{H}{\9036\050}% U+1E28  
14554 % U+1E29 LATIN SMALL LETTER H WITH CEDILLA; hcedilla  
14555 \DeclareTextCompositeCommand{\c}{PU}{h}{\9036\051}% U+1E29  
14556 % U+1E30 LATIN CAPITAL LETTER K WITH ACUTE; Kacute  
14557 \DeclareTextCompositeCommand{'}{PU}{K}{\9036\060}% U+1E30  
14558 % U+1E31 LATIN SMALL LETTER K WITH ACUTE; kacute  
14559 \DeclareTextCompositeCommand{'}{PU}{k}{\9036\061}% U+1E31  
14560 % U+1E34 LATIN CAPITAL LETTER K WITH LINE BELOW; Klinebelow  
14561 \DeclareTextCompositeCommand{\b}{PU}{K}{\9036\064}% U+1E34  
14562 % U+1E35 LATIN SMALL LETTER K WITH LINE BELOW; klinebelow  
14563 \DeclareTextCompositeCommand{\b}{PU}{k}{\9036\065}% U+1E35  
14564 % U+1E3A LATIN CAPITAL LETTER L WITH LINE BELOW; Llinebelow  
14565 \DeclareTextCompositeCommand{\b}{PU}{L}{\9036\072}% U+1E3A  
14566 % U+1E3B LATIN SMALL LETTER L WITH LINE BELOW; llinebelow  
14567 \DeclareTextCompositeCommand{\b}{PU}{l}{\9036\073}% U+1E3B  
14568 % U+1E3E LATIN CAPITAL LETTER M WITH ACUTE; Macute  
14569 \DeclareTextCompositeCommand{'}{PU}{M}{\9036\076}% U+1E3E  
14570 % U+1E3F LATIN SMALL LETTER M WITH ACUTE; macute  
14571 \DeclareTextCompositeCommand{'}{PU}{m}{\9036\077}% U+1E3F  
14572 % U+1E40 LATIN CAPITAL LETTER M WITH DOT ABOVE; Mdotaccent  
14573 \DeclareTextCompositeCommand{\.}{PU}{M}{\9036\100}% U+1E40  
14574 % U+1E41 LATIN SMALL LETTER M WITH DOT ABOVE; mdotaccent  
14575 \DeclareTextCompositeCommand{\.}{PU}{m}{\9036\101}% U+1E41  
14576 % U+1E44 LATIN CAPITAL LETTER N WITH DOT ABOVE; Ndotaccent  
14577 \DeclareTextCompositeCommand{\.}{PU}{N}{\9036\104}% U+1E44  
14578 % U+1E45 LATIN SMALL LETTER N WITH DOT ABOVE; ndotaccent  
14579 \DeclareTextCompositeCommand{\.}{PU}{n}{\9036\105}% U+1E45  
14580 % U+1E48 LATIN CAPITAL LETTER N WITH LINE BELOW; Nlinebelow  
14581 \DeclareTextCompositeCommand{\b}{PU}{N}{\9036\110}% U+1E48  
14582 % U+1E49 LATIN SMALL LETTER N WITH LINE BELOW; nlinebelow  
14583 \DeclareTextCompositeCommand{\b}{PU}{n}{\9036\111}% U+1E49  
14584 % U+1E54 LATIN CAPITAL LETTER P WITH ACUTE; Pacute  
14585 \DeclareTextCompositeCommand{'}{PU}{P}{\9036\124}% U+1E54  
14586 % U+1E55 LATIN SMALL LETTER P WITH ACUTE; pacute  
14587 \DeclareTextCompositeCommand{'}{PU}{p}{\9036\125}% U+1E55  
14588 % U+1E56 LATIN CAPITAL LETTER P WITH DOT ABOVE; Pdotaccent  
14589 \DeclareTextCompositeCommand{\.}{PU}{P}{\9036\126}% U+1E56  
14590 % U+1E57 LATIN SMALL LETTER P WITH DOT ABOVE; pdotaccent  
14591 \DeclareTextCompositeCommand{\.}{PU}{p}{\9036\127}% U+1E57  
14592 % U+1E58 LATIN CAPITAL LETTER R WITH DOT ABOVE; Rdotaccent  
14593 \DeclareTextCompositeCommand{\.}{PU}{R}{\9036\130}% U+1E58  
14594 % U+1E59 LATIN SMALL LETTER R WITH DOT ABOVE; rdotaccent  
14595 \DeclareTextCompositeCommand{\.}{PU}{r}{\9036\131}% U+1E59  
14596 % U+1E5E LATIN CAPITAL LETTER R WITH LINE BELOW; Rlinebelow  
14597 \DeclareTextCompositeCommand{\b}{PU}{R}{\9036\136}% U+1E5E  
14598 % U+1E5F LATIN SMALL LETTER R WITH LINE BELOW; rlinebelow  
14599 \DeclareTextCompositeCommand{\b}{PU}{r}{\9036\137}% U+1E5F  
14600 % U+1E60 LATIN CAPITAL LETTER S WITH DOT ABOVE; Sdotaccent  
14601 \DeclareTextCompositeCommand{\.}{PU}{S}{\9036\140}% U+1E60  
14602 % U+1E61 LATIN SMALL LETTER S WITH DOT ABOVE; sdotaccent  
14603 \DeclareTextCompositeCommand{\.}{PU}{s}{\9036\141}% U+1E61  
14604 % U+1E6E LATIN CAPITAL LETTER T WITH LINE BELOW; Tlinebelow  
14605 \DeclareTextCompositeCommand{\b}{PU}{T}{\9036\156}% U+1E6E  
14606 % U+1E6F LATIN SMALL LETTER T WITH LINE BELOW; tlinebelow  
14607 \DeclareTextCompositeCommand{\b}{PU}{t}{\9036\157}% U+1E6F

14608 % U+1E7C LATIN CAPITAL LETTER V WITH TILDE; Vtilde  
14609 \DeclareTextCompositeCommand{\~}{PU}{V}{\9036\174}% U+1E7C  
14610 % U+1E7D LATIN SMALL LETTER V WITH TILDE; vtilde  
14611 \DeclareTextCompositeCommand{\~}{PU}{v}{\9036\175}% U+1E7D  
14612 % U+1E80 LATIN CAPITAL LETTER W WITH GRAVE; Wgrave  
14613 \DeclareTextCompositeCommand{\`}{PU}{W}{\9036\200}% U+1E80  
14614 % U+1E81 LATIN SMALL LETTER W WITH GRAVE; wgrave  
14615 \DeclareTextCompositeCommand{\`}{PU}{w}{\9036\201}% U+1E81  
14616 % U+1E82 LATIN CAPITAL LETTER W WITH ACUTE; Wacute  
14617 \DeclareTextCompositeCommand{\`}{PU}{W}{\9036\202}% U+1E82  
14618 % U+1E83 LATIN SMALL LETTER W WITH ACUTE; wacute  
14619 \DeclareTextCompositeCommand{\`}{PU}{w}{\9036\203}% U+1E83  
14620 % U+1E84 LATIN CAPITAL LETTER W WITH DIAERESIS; Wdieresis  
14621 \DeclareTextCompositeCommand{\"}{PU}{W}{\9036\204}% U+1E84  
14622 % U+1E85 LATIN SMALL LETTER W WITH DIAERESIS; wdieresis  
14623 \DeclareTextCompositeCommand{\"}{PU}{w}{\9036\205}% U+1E85  
14624 % U+1E86 LATIN CAPITAL LETTER W WITH DOT ABOVE; Wdotaccent  
14625 \DeclareTextCompositeCommand{\.}{PU}{W}{\9036\206}% U+1E86  
14626 % U+1E87 LATIN SMALL LETTER W WITH DOT ABOVE; wdotaccent  
14627 \DeclareTextCompositeCommand{\.}{PU}{w}{\9036\207}% U+1E87  
14628 % U+1E8A LATIN CAPITAL LETTER X WITH DOT ABOVE; Xdotaccent  
14629 \DeclareTextCompositeCommand{\.}{PU}{X}{\9036\212}% U+1E8A  
14630 % U+1E8B LATIN SMALL LETTER X WITH DOT ABOVE; xdotaccent  
14631 \DeclareTextCompositeCommand{\.}{PU}{x}{\9036\213}% U+1E8B  
14632 % U+1E8C LATIN CAPITAL LETTER X WITH DIAERESIS; Xdieresis  
14633 \DeclareTextCompositeCommand{\"}{PU}{X}{\9036\214}% U+1E8C  
14634 % U+1E8D LATIN SMALL LETTER X WITH DIAERESIS; xdieresis  
14635 \DeclareTextCompositeCommand{\"}{PU}{x}{\9036\215}% U+1E8D  
14636 % U+1E8E LATIN CAPITAL LETTER Y WITH DOT ABOVE; Ydotaccent  
14637 \DeclareTextCompositeCommand{\.}{PU}{Y}{\9036\216}% U+1E8E  
14638 % U+1E8F LATIN SMALL LETTER Y WITH DOT ABOVE; ydotaccent  
14639 \DeclareTextCompositeCommand{\.}{PU}{y}{\9036\217}% U+1E8F  
14640 % U+1E90 LATIN CAPITAL LETTER Z WITH CIRCUMFLEX; Zcircumflex  
14641 \DeclareTextCompositeCommand{\^}{PU}{Z}{\9036\220}% U+1E90  
14642 % U+1E91 LATIN SMALL LETTER Z WITH CIRCUMFLEX; zcircumflex  
14643 \DeclareTextCompositeCommand{\^}{PU}{z}{\9036\221}% U+1E91  
14644 % U+1E94 LATIN CAPITAL LETTER Z WITH LINE BELOW; Zlinebelow  
14645 \DeclareTextCompositeCommand{\b}{PU}{Z}{\9036\224}% U+1E94  
14646 % U+1E95 LATIN SMALL LETTER Z WITH LINE BELOW; zlinebelow  
14647 \DeclareTextCompositeCommand{\b}{PU}{z}{\9036\225}% U+1E95  
14648 % U+1E96 LATIN SMALL LETTER H WITH LINE BELOW; hlinebelow  
14649 \DeclareTextCompositeCommand{\b}{PU}{h}{\9036\226}% U+1E96  
14650 % U+1E97 LATIN SMALL LETTER T WITH DIAERESIS; tdieresis  
14651 \DeclareTextCompositeCommand{\"}{PU}{t}{\9036\227}% U+1E97  
14652 % U+1E98 LATIN SMALL LETTER W WITH RING ABOVE; wring  
14653 \DeclareTextCompositeCommand{\r}{PU}{w}{\9036\230}% U+1E98  
14654 % U+1E99 LATIN SMALL LETTER Y WITH RING ABOVE; yring  
14655 \DeclareTextCompositeCommand{\r}{PU}{y}{\9036\231}% U+1E99  
14656 % U+1E9B LATIN SMALL LETTER LONG S WITH DOT ABOVE; slongdotac-  
cent  
14657 \DeclareTextCompositeCommand{\.}{PU}{\textlongs}{\9036\233}% U+1E9B  
14658 % U+1EBC LATIN CAPITAL LETTER E WITH TILDE; Etilde  
14659 \DeclareTextCompositeCommand{\~}{PU}{E}{\9036\274}% U+1EBC  
14660 % U+1EBD LATIN SMALL LETTER E WITH TILDE; etilde  
14661 \DeclareTextCompositeCommand{\~}{PU}{e}{\9036\275}% U+1EBD  
14662 % U+1EF2 LATIN CAPITAL LETTER Y WITH GRAVE; Ygrave  
14663 \DeclareTextCompositeCommand{\`}{PU}{Y}{\9036\362}% U+1EF2

14664 % U+1EF3 LATIN SMALL LETTER Y WITH GRAVE; ygrave  
 14665 \DeclareTextCompositeCommand{\'}{PU}{y}{\9036\363}% U+1EF3  
 14666 % U+1EF8 LATIN CAPITAL LETTER Y WITH TILDE; Ytilde  
 14667 \DeclareTextCompositeCommand{\~}{PU}{Y}{\9036\370}% U+1EF8  
 14668 % U+1EF9 LATIN SMALL LETTER Y WITH TILDE; ytilde  
 14669 \DeclareTextCompositeCommand{\~}{PU}{y}{\9036\371}% U+1EF9

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

14670 % U+200C ZERO WIDTH NON-JOINER; \*afi61664, zerowidthnonjoiner  
 14671 \DeclareTextCommand{\textcompwordmark}{PU}{\9040\014}% U+200C  
 14672 % U+2013 EN DASH; endash  
 14673 \DeclareTextCommand{\textendash}{PU}{\9040\023}% U+2013  
 14674 % U+2014 EM DASH; emdash  
 14675 \DeclareTextCommand{\textemdash}{PU}{\9040\024}% U+2014  
 14676 % U+2016 DOUBLE VERTICAL LINE; dblverticalbar  
 14677 \DeclareTextCommand{\textbardbl}{PU}{\9040\026}% U+2016  
 14678 % U+2018 LEFT SINGLE QUOTATION MARK; quoteleft  
 14679 \DeclareTextCommand{\textquoteleft}{PU}{\9040\030}% U+2018  
 14680 % U+2019 RIGHT SINGLE QUOTATION MARK; quoteright  
 14681 \DeclareTextCommand{\textquoteright}{PU}{\9040\031}% U+2019  
 14682 % U+201A SINGLE LOW-9 QUOTATION MARK; quotesinglbase  
 14683 \DeclareTextCommand{\quotesinglbase}{PU}{\9040\032}% U+201A  
 14684 % U+201C LEFT DOUBLE QUOTATION MARK; quotedblleft  
 14685 \DeclareTextCommand{\textquotedblleft}{PU}{\9040\034}% U+201C  
 14686 % U+201D RIGHT DOUBLE QUOTATION MARK; quotedblright  
 14687 \DeclareTextCommand{\textquotedblright}{PU}{\9040\035}% U+201D  
 14688 % U+201E DOUBLE LOW-9 QUOTATION MARK; quotedblbase  
 14689 \DeclareTextCommand{\quotedblbase}{PU}{\9040\036}% U+201E  
 14690 % U+2020 DAGGER; dagger  
 14691 \DeclareTextCommand{\textdagger}{PU}{\9040\040}% U+2020  
 14692 % U+2021 DOUBLE DAGGER; daggerdbl  
 14693 \DeclareTextCommand{\textdaggerdbl}{PU}{\9040\041}% U+2021  
 14694 % U+2022 BULLET; bullet  
 14695 \DeclareTextCommand{\textbullet}{PU}{\9040\042}% U+2022  
 14696 % U+2026 HORIZONTAL ELLIPSIS; ellipsis  
 14697 \DeclareTextCommand{\textellipsis}{PU}{\9040\046}% U+2026  
 14698 % U+2030 PER MILLE SIGN; perthousand  
 14699 \DeclareTextCommand{\textperthousand}{PU}{\9040\060}% U+2030  
 14700 % U+2031 PER TEN THOUSAND SIGN  
 14701 \DeclareTextCommand{\textpertenthousand}{PU}{\9040\061}% U+2031  
 14702 % U+2039 SINGLE LEFT-POINTING ANGLE QUOTATION MARK; guil-  
     inglleft  
 14703 \DeclareTextCommand{\guilsinglleft}{PU}{\9040\071}% U+2039  
 14704 % U+203A SINGLE RIGHT-POINTING ANGLE QUOTATION MARK; guils-  
     inglright  
 14705 \DeclareTextCommand{\guilsinglright}{PU}{\9040\072}% U+203A  
 14706 % U+203B REFERENCE MARK; referencemark  
 14707 \DeclareTextCommand{\textreferencemark}{PU}{\9040\073}% U+203B  
 14708 % U+203D INTERROBANG  
 14709 \DeclareTextCommand{\textinterrobang}{PU}{\9040\075}% U+203D  
 14710 % U+2044 FRACTION SLASH; fraction  
 14711 \DeclareTextCommand{\textfractionsolidus}{PU}{\9040\104}% U+2044  
 14712 % U+2045 LEFT SQUARE BRACKET WITH QUILL  
 14713 \DeclareTextCommand{\textlquill}{PU}{\9040\105}% U+2045  
 14714 % U+2046 RIGHT SQUARE BRACKET WITH QUILL  
 14715 \DeclareTextCommand{\textrquill}{PU}{\9040\106}% U+2046  
 14716 % U+2052 COMMERCIAL MINUS SIGN

14717 \DeclareTextCommand{\textdiscount}{PU}{\9040\122}% U+2052

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

14718 % U+2070 SUPERSCRIPT ZERO; zerosuperior  
14719 \DeclareTextCommand{\textzerosuperior}{PU}{\9040\160}% U+2070  
14720 % U+2074 SUPERSCRIPT FOUR; foursuperior  
14721 \DeclareTextCommand{\textfoursuperior}{PU}{\9040\164}% U+2074  
14722 % U+2075 SUPERSCRIPT FIVE; fivesuperior  
14723 \DeclareTextCommand{\textfivesuperior}{PU}{\9040\165}% U+2075  
14724 % U+2076 SUPERSCRIPT SIX; sixsuperior  
14725 \DeclareTextCommand{\textsixsuperior}{PU}{\9040\166}% U+2076  
14726 % U+2077 SUPERSCRIPT SEVEN; sevensuperior  
14727 \DeclareTextCommand{\textsevensuperior}{PU}{\9040\167}% U+2077  
14728 % U+2078 SUPERSCRIPT EIGHT; eightsuperior  
14729 \DeclareTextCommand{\texteightsuperior}{PU}{\9040\170}% U+2078  
14730 % U+2079 SUPERSCRIPT NINE; ninesuperior  
14731 \DeclareTextCommand{\textninesuperior}{PU}{\9040\171}% U+2079  
14732 % U+207A SUPERSCRIPT PLUS SIGN; plussuperior  
14733 \DeclareTextCommand{\textplussuperior}{PU}{\9040\172}% U+207A  
14734 % U+207B SUPERSCRIPT MINUS  
14735 \DeclareTextCommand{\textminussuperior}{PU}{\9040\173}  
14736 % U+207C SUPERSCRIPT EQUALS SIGN; equalsuperior  
14737 \DeclareTextCommand{\textequalsuperior}{PU}{\9040\174}  
14738 % U+207D SUPERSCRIPT LEFT PARENTHESIS; parenleftsuperior  
14739 \DeclareTextCommand{\textparenleftsuperior}{PU}{\9040\175}  
14740 % U+207E SUPERSCRIPT RIGHT PARENTHESIS; parenrightsuperior  
14741 \DeclareTextCommand{\textparenrightsuperior}{PU}{\9040\176}  
14742 % U+207F SUPERSCRIPT LATIN SMALL LETTER N; nsuperior  
14743 \DeclareTextCommand{\textnsuperior}{PU}{\9040\177}  
14744 % U+2080 SUBSCRIPT ZERO; zeroinferior  
14745 \DeclareTextCommand{\textzeroinferior}{PU}{\9040\200}% U+2080  
14746 % U+2081 SUBSCRIPT ONE; oneinferior  
14747 \DeclareTextCommand{\textoneinferior}{PU}{\9040\201}% U+2081  
14748 % U+2082 SUBSCRIPT TWO; twoinferior  
14749 \DeclareTextCommand{\texttwoinferior}{PU}{\9040\202}% U+2082  
14750 % U+2083 SUBSCRIPT THREE; threeinferior  
14751 \DeclareTextCommand{\textthreeinferior}{PU}{\9040\203}% U+2083  
14752 % U+2084 SUBSCRIPT FOUR; fourinferior  
14753 \DeclareTextCommand{\textfourinferior}{PU}{\9040\204}% U+2084  
14754 % U+2085 SUBSCRIPT FIVE; fiveinferior  
14755 \DeclareTextCommand{\textfiveinferior}{PU}{\9040\205}% U+2085  
14756 % U+2086 SUBSCRIPT SIX; sixinferior  
14757 \DeclareTextCommand{\textsixinferior}{PU}{\9040\206}% U+2086  
14758 % U+2087 SUBSCRIPT SEVEN; seveninferior  
14759 \DeclareTextCommand{\textseveninferior}{PU}{\9040\207}% U+2087  
14760 % U+2088 SUBSCRIPT EIGHT; eightinferior  
14761 \DeclareTextCommand{\texteightinferior}{PU}{\9040\210}% U+2088  
14762 % U+2089 SUBSCRIPT NINE; nineinferior  
14763 \DeclareTextCommand{\textnineinferior}{PU}{\9040\211}% U+2089  
14764 % U+208D SUBSCRIPT LEFT PARENTHESIS; parenleftinferior  
14765 \DeclareTextCommand{\textparenleftinferior}{PU}{\9040\215}% U+208D  
14766 % U+208E SUBSCRIPT RIGHT PARENTHESIS; parenrightinferior  
14767 \DeclareTextCommand{\textparenrightinferior}{PU}{\9040\216}% U+208E

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

14768 % U+20A1 COLON SIGN; \*colonmonetary, colonsign  
14769 \DeclareTextCommand{\textcolonmonetary}{PU}{\9040\241}% U+20A1

14770 % U+20A4 LIRA SIGN; afii08941, \*lira  
 14771 \DeclareTextCommand{\textlira}{PU}{\9040\244}% U+20A4  
 14772 % U+20A6 NAIRA SIGN  
 14773 \DeclareTextCommand{\textnaira}{PU}{\9040\246}% U+20A6  
 14774 % U+20A7 PESETA SIGN; peseta  
 14775 \DeclareTextCommand{\textpeseta}{PU}{\9040\247}% U+20A7  
 14776 % U+20A9 WON SIGN; won  
 14777 \DeclareTextCommand{\textwon}{PU}{\9040\251}% U+20A9  
 14778 % U+20AB DONG SIGN; dong  
 14779 \DeclareTextCommand{\textdong}{PU}{\9040\253}% U+20AB  
 14780 % U+20AC EURO SIGN; \*Euro, euro  
 14781 \DeclareTextCommand{\texteuro}{PU}{\9040\254}% U+20AC  
 14782 % U+20B1 PESO SIGN  
 14783 \DeclareTextCommand{\textpeso}{PU}{\9040\261}% U+20B1  
 14784 % U+20B2 GUARANI SIGN  
 14785 \DeclareTextCommand{\textguarani}{PU}{\9040\262}% U+20B2

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

14786 % U+2103 DEGREE CELSIUS; centigrade  
 14787 \DeclareTextCommand{\textcelsius}{PU}{\9041\003}% U+2103  
 14788 % U+2116 NUMERO SIGN; \*afii61352, numero  
 14789 \DeclareTextCommand{\textnumero}{PU}{\9041\026}% U+2116  
 14790 % U+2117 SOUND RECORDING COPYRIGHT  
 14791 \DeclareTextCommand{\textcircledP}{PU}{\9041\027}% U+2117  
 14792 % U+211E PRESCRIPTION TAKE; prescription  
 14793 \DeclareTextCommand{\textrecipe}{PU}{\9041\036}% U+211E  
 14794 % U+2120 SERVICE MARK  
 14795 \DeclareTextCommand{\textservicemark}{PU}{\9041\040}% U+2120  
 14796 % U+2122 TRADE MARK SIGN; trademark  
 14797 \DeclareTextCommand{\texttrademark}{PU}{\9041\042}% U+2122  
 14798 % U+2126 OHM SIGN; Ohm, Omega  
 14799 \DeclareTextCommand{\textohm}{PU}{\9041\046}% U+2126  
 14800 % U+2127 INVERTED OHM SIGN  
 14801 \DeclareTextCommand{\textmho}{PU}{\9041\047}% U+2127  
 14802 % U+212B ANGSTROM SIGN; angstrom  
 14803 \DeclareTextCommand{\textangstrom}{PU}{\9041\053}% U+212B  
 14804 % U+212E ESTIMATED SYMBOL; estimated  
 14805 \DeclareTextCommand{\textestimated}{PU}{\9041\056}% U+212E  
 14806 % U+2135 ALEF SYMBOL; aleph  
 14807 \DeclareTextCommand{\textaleph}{PU}{\9041\065}% U+2135

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

14808 % U+2190 LEFTWARDS ARROW; arrowleft  
 14809 \DeclareTextCommand{\textleftarrow}{PU}{\9041\220}% U+2190  
 14810 % U+2191 UPWARDS ARROW; arrowup  
 14811 \DeclareTextCommand{\textuparrow}{PU}{\9041\221}% U+2191  
 14812 % U+2192 RIGHTWARDS ARROW; arrowright  
 14813 \DeclareTextCommand{\textrightarrow}{PU}{\9041\222}% U+2192  
 14814 % U+2193 DOWNWARDS ARROW; arrowdown  
 14815 \DeclareTextCommand{\textdownarrow}{PU}{\9041\223}% U+2193

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

14816 % U+2212 MINUS SIGN; minus  
 14817 \DeclareTextCommand{\textminus}{PU}{\9042\022}% U+2212  
 14818 % U+221A SQUARE ROOT; radical  
 14819 \DeclareTextCommand{\textsurd}{PU}{\9042\032}% U+221A

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

14820 % U+2329 LEFT-POINTING ANGLE BRACKET; angleleft  
14821 \DeclareTextCommand{\textlangle}{PU}{\9043\051}% U+2329  
14822 % U+232A RIGHT-POINTING ANGLE BRACKET; angleright  
14823 \DeclareTextCommand{\textrangle}{PU}{\9043\052}% U+232A

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

14824 % U+2422 BLANK SYMBOL  
14825 \DeclareTextCommand{\textblank}{PU}{\9044\042}% U+2422  
14826 % U+2423 OPEN BOX; blank  
14827 \DeclareTextCommand{\textvisiblespace}{PU}{\9044\043}% U+2423

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

14828 % U+2460 CIRCLED DIGIT ONE; onecircle  
14829 \DeclareTextCompositeCommand{\textcircled}{PU}{1}{\9044\140}% U+2460  
14830 % U+2461 CIRCLED DIGIT TWO; twocircle  
14831 \DeclareTextCompositeCommand{\textcircled}{PU}{2}{\9044\141}% U+2461  
14832 % U+2462 CIRCLED DIGIT THREE; threecircle  
14833 \DeclareTextCompositeCommand{\textcircled}{PU}{3}{\9044\142}% U+2462  
14834 % U+2463 CIRCLED DIGIT FOUR; fourcircle  
14835 \DeclareTextCompositeCommand{\textcircled}{PU}{4}{\9044\143}% U+2463  
14836 % U+2464 CIRCLED DIGIT FIVE; fivecircle  
14837 \DeclareTextCompositeCommand{\textcircled}{PU}{5}{\9044\144}% U+2464  
14838 % U+2465 CIRCLED DIGIT SIX; sixcircle  
14839 \DeclareTextCompositeCommand{\textcircled}{PU}{6}{\9044\145}% U+2465  
14840 % U+2466 CIRCLED DIGIT SEVEN; sevendigit  
14841 \DeclareTextCompositeCommand{\textcircled}{PU}{7}{\9044\146}% U+2466  
14842 % U+2467 CIRCLED DIGIT EIGHT; eightcircle  
14843 \DeclareTextCompositeCommand{\textcircled}{PU}{8}{\9044\147}% U+2467  
14844 % U+2468 CIRCLED DIGIT NINE; ninecircle  
14845 \DeclareTextCompositeCommand{\textcircled}{PU}{9}{\9044\150}% U+2468  
14846 % U+2469 CIRCLED NUMBER TEN; tencircle  
14847 \DeclareTextCompositeCommand{\textcircled}{PU}{10}{\9044\151}% U+2469  
14848 % U+246A CIRCLED NUMBER ELEVEN; elevencircle  
14849 \DeclareTextCompositeCommand{\textcircled}{PU}{11}{\9044\152}% U+246A  
14850 % U+246B CIRCLED NUMBER TWELVE; twelvecircle  
14851 \DeclareTextCompositeCommand{\textcircled}{PU}{12}{\9044\153}% U+246B  
14852 % U+246C CIRCLED NUMBER THIRTEEN; thirteencircle  
14853 \DeclareTextCompositeCommand{\textcircled}{PU}{13}{\9044\154}% U+246C  
14854 % U+246D CIRCLED NUMBER FOURTEEN; fourteencircle  
14855 \DeclareTextCompositeCommand{\textcircled}{PU}{14}{\9044\155}% U+246D  
14856 % U+246E CIRCLED NUMBER FIFTEEN; fifteencircle  
14857 \DeclareTextCompositeCommand{\textcircled}{PU}{15}{\9044\156}% U+246E  
14858 % U+246F CIRCLED NUMBER SIXTEEN; sixteencircle  
14859 \DeclareTextCompositeCommand{\textcircled}{PU}{16}{\9044\157}% U+246F  
14860 % U+2470 CIRCLED NUMBER SEVENTEEN; seventeencircle  
14861 \DeclareTextCompositeCommand{\textcircled}{PU}{17}{\9044\160}% U+2470  
14862 % U+2471 CIRCLED NUMBER EIGHTEEN; eighteencircle  
14863 \DeclareTextCompositeCommand{\textcircled}{PU}{18}{\9044\161}% U+2471  
14864 % U+2472 CIRCLED NUMBER NINETEEN; nineteencircle  
14865 \DeclareTextCompositeCommand{\textcircled}{PU}{19}{\9044\162}% U+2472  
14866 % U+2473 CIRCLED NUMBER TWENTY; twentycircle  
14867 \DeclareTextCompositeCommand{\textcircled}{PU}{20}{\9044\163}% U+2473  
14868 % U+24B6 CIRCLED LATIN CAPITAL LETTER A; Acircle  
14869 \DeclareTextCompositeCommand{\textcircled}{PU}{A}{\9044\266}% U+24B6  
14870 % U+24B7 CIRCLED LATIN CAPITAL LETTER B; Bcircle  
14871 \DeclareTextCompositeCommand{\textcircled}{PU}{B}{\9044\267}% U+24B7

14872 % U+24B8 CIRCLED LATIN CAPITAL LETTER C; Ccircle  
 14873 \DeclareTextCompositeCommand{\textcircled}{PU}{C}{\9044\270}% U+24B8  
 14874 % U+24B9 CIRCLED LATIN CAPITAL LETTER D; Dcircle  
 14875 \DeclareTextCompositeCommand{\textcircled}{PU}{D}{\9044\271}% U+24B9  
 14876 % U+24BA CIRCLED LATIN CAPITAL LETTER E; Ecircle  
 14877 \DeclareTextCompositeCommand{\textcircled}{PU}{E}{\9044\272}% U+24BA  
 14878 % U+24BB CIRCLED LATIN CAPITAL LETTER F; Fcircle  
 14879 \DeclareTextCompositeCommand{\textcircled}{PU}{F}{\9044\273}% U+24BB  
 14880 % U+24BC CIRCLED LATIN CAPITAL LETTER G; Gcircle  
 14881 \DeclareTextCompositeCommand{\textcircled}{PU}{G}{\9044\274}% U+24BC  
 14882 % U+24BD CIRCLED LATIN CAPITAL LETTER H; Hcircle  
 14883 \DeclareTextCompositeCommand{\textcircled}{PU}{H}{\9044\275}% U+24BD  
 14884 % U+24BE CIRCLED LATIN CAPITAL LETTER I; Icircle  
 14885 \DeclareTextCompositeCommand{\textcircled}{PU}{I}{\9044\276}% U+24BE  
 14886 % U+24BF CIRCLED LATIN CAPITAL LETTER J; Jcircle  
 14887 \DeclareTextCompositeCommand{\textcircled}{PU}{J}{\9044\277}% U+24BF  
 14888 % U+24C0 CIRCLED LATIN CAPITAL LETTER K; Kcircle  
 14889 \DeclareTextCompositeCommand{\textcircled}{PU}{K}{\9044\300}% U+24C0  
 14890 % U+24C1 CIRCLED LATIN CAPITAL LETTER L; Lcircle  
 14891 \DeclareTextCompositeCommand{\textcircled}{PU}{L}{\9044\301}% U+24C1  
 14892 % U+24C2 CIRCLED LATIN CAPITAL LETTER M; Mcircle  
 14893 \DeclareTextCompositeCommand{\textcircled}{PU}{M}{\9044\302}% U+24C2  
 14894 % U+24C3 CIRCLED LATIN CAPITAL LETTER N; Ncircle  
 14895 \DeclareTextCompositeCommand{\textcircled}{PU}{N}{\9044\303}% U+24C3  
 14896 % U+24C4 CIRCLED LATIN CAPITAL LETTER O; Ocircle  
 14897 \DeclareTextCompositeCommand{\textcircled}{PU}{O}{\9044\304}% U+24C4  
 14898 % U+24C5 CIRCLED LATIN CAPITAL LETTER P; Pcircle  
 14899 \DeclareTextCompositeCommand{\textcircled}{PU}{P}{\9044\305}% U+24C5  
 14900 % U+24C6 CIRCLED LATIN CAPITAL LETTER Q; Qcircle  
 14901 \DeclareTextCompositeCommand{\textcircled}{PU}{Q}{\9044\306}% U+24C6  
 14902 % U+24C7 CIRCLED LATIN CAPITAL LETTER R; Rcircle  
 14903 \DeclareTextCompositeCommand{\textcircled}{PU}{R}{\9044\307}% U+24C7  
 14904 % U+24C8 CIRCLED LATIN CAPITAL LETTER S; Scircle  
 14905 \DeclareTextCompositeCommand{\textcircled}{PU}{S}{\9044\310}% U+24C8  
 14906 % U+24C9 CIRCLED LATIN CAPITAL LETTER T; Tcircle  
 14907 \DeclareTextCompositeCommand{\textcircled}{PU}{T}{\9044\311}% U+24C9  
 14908 % U+24CA CIRCLED LATIN CAPITAL LETTER U; Ucircle  
 14909 \DeclareTextCompositeCommand{\textcircled}{PU}{U}{\9044\312}% U+24CA  
 14910 % U+24CB CIRCLED LATIN CAPITAL LETTER V; Vcircle  
 14911 \DeclareTextCompositeCommand{\textcircled}{PU}{V}{\9044\313}% U+24CB  
 14912 % U+24CC CIRCLED LATIN CAPITAL LETTER W; Wcircle  
 14913 \DeclareTextCompositeCommand{\textcircled}{PU}{W}{\9044\314}% U+24CC  
 14914 % U+24CD CIRCLED LATIN CAPITAL LETTER X; Xcircle  
 14915 \DeclareTextCompositeCommand{\textcircled}{PU}{X}{\9044\315}% U+24CD  
 14916 % U+24CE CIRCLED LATIN CAPITAL LETTER Y; Ycircle  
 14917 \DeclareTextCompositeCommand{\textcircled}{PU}{Y}{\9044\316}% U+24CE  
 14918 % U+24CF CIRCLED LATIN CAPITAL LETTER Z; Zcircle  
 14919 \DeclareTextCompositeCommand{\textcircled}{PU}{Z}{\9044\317}% U+24CF  
 14920 % U+24D0 CIRCLED LATIN SMALL LETTER A; acircle  
 14921 \DeclareTextCompositeCommand{\textcircled}{PU}{a}{\9044\320}% U+24D0  
 14922 % U+24D1 CIRCLED LATIN SMALL LETTER B; bcircle  
 14923 \DeclareTextCompositeCommand{\textcircled}{PU}{b}{\9044\321}% U+24D1  
 14924 % U+24D2 CIRCLED LATIN SMALL LETTER C; ccircle  
 14925 \DeclareTextCompositeCommand{\textcircled}{PU}{c}{\9044\322}% U+24D2  
 14926 % U+24D3 CIRCLED LATIN SMALL LETTER D; dcircle  
 14927 \DeclareTextCompositeCommand{\textcircled}{PU}{d}{\9044\323}% U+24D3  
 14928 % U+24D4 CIRCLED LATIN SMALL LETTER E; ecircle

14929 \DeclareTextCompositeCommand{\textcircled}{PU}{e}{\9044\324}% U+24D4  
 14930 % U+24D5 CIRCLED LATIN SMALL LETTER F; fcircle  
 14931 \DeclareTextCompositeCommand{\textcircled}{PU}{f}{\9044\325}% U+24D5  
 14932 % U+24D6 CIRCLED LATIN SMALL LETTER G; gcircle  
 14933 \DeclareTextCompositeCommand{\textcircled}{PU}{g}{\9044\326}% U+24D6  
 14934 % U+24D7 CIRCLED LATIN SMALL LETTER H; hcircle  
 14935 \DeclareTextCompositeCommand{\textcircled}{PU}{h}{\9044\327}% U+24D7  
 14936 % U+24D8 CIRCLED LATIN SMALL LETTER I; icircle  
 14937 \DeclareTextCompositeCommand{\textcircled}{PU}{i}{\9044\330}% U+24D8  
 14938 % U+24D9 CIRCLED LATIN SMALL LETTER J; jcircle  
 14939 \DeclareTextCompositeCommand{\textcircled}{PU}{j}{\9044\331}% U+24D9  
 14940 % U+24DA CIRCLED LATIN SMALL LETTER K; kcircle  
 14941 \DeclareTextCompositeCommand{\textcircled}{PU}{k}{\9044\332}% U+24DA  
 14942 % U+24DB CIRCLED LATIN SMALL LETTER L; lcircle  
 14943 \DeclareTextCompositeCommand{\textcircled}{PU}{l}{\9044\333}% U+24DB  
 14944 % U+24DC CIRCLED LATIN SMALL LETTER M; mcircle  
 14945 \DeclareTextCompositeCommand{\textcircled}{PU}{m}{\9044\334}% U+24DC  
 14946 % U+24DD CIRCLED LATIN SMALL LETTER N; ncircle  
 14947 \DeclareTextCompositeCommand{\textcircled}{PU}{n}{\9044\335}% U+24DD  
 14948 % U+24DE CIRCLED LATIN SMALL LETTER O; ocircle  
 14949 \DeclareTextCompositeCommand{\textcircled}{PU}{o}{\9044\336}% U+24DE  
 14950 % U+24DF CIRCLED LATIN SMALL LETTER P; pcircle  
 14951 \DeclareTextCompositeCommand{\textcircled}{PU}{p}{\9044\337}% U+24DF  
 14952 % U+24E0 CIRCLED LATIN SMALL LETTER Q; qcircle  
 14953 \DeclareTextCompositeCommand{\textcircled}{PU}{q}{\9044\340}% U+24E0  
 14954 % U+24E1 CIRCLED LATIN SMALL LETTER R; rcircle  
 14955 \DeclareTextCompositeCommand{\textcircled}{PU}{r}{\9044\341}% U+24E1  
 14956 % U+24E2 CIRCLED LATIN SMALL LETTER S; scircle  
 14957 \DeclareTextCompositeCommand{\textcircled}{PU}{s}{\9044\342}% U+24E2  
 14958 % U+24E3 CIRCLED LATIN SMALL LETTER T; tcircle  
 14959 \DeclareTextCompositeCommand{\textcircled}{PU}{t}{\9044\343}% U+24E3  
 14960 % U+24E4 CIRCLED LATIN SMALL LETTER U; ucircle  
 14961 \DeclareTextCompositeCommand{\textcircled}{PU}{u}{\9044\344}% U+24E4  
 14962 % U+24E5 CIRCLED LATIN SMALL LETTER V; vcircle  
 14963 \DeclareTextCompositeCommand{\textcircled}{PU}{v}{\9044\345}% U+24E5  
 14964 % U+24E6 CIRCLED LATIN SMALL LETTER W; wcircle  
 14965 \DeclareTextCompositeCommand{\textcircled}{PU}{w}{\9044\346}% U+24E6  
 14966 % U+24E7 CIRCLED LATIN SMALL LETTER X; xcircle  
 14967 \DeclareTextCompositeCommand{\textcircled}{PU}{x}{\9044\347}% U+24E7  
 14968 % U+24E8 CIRCLED LATIN SMALL LETTER Y; ycircle  
 14969 \DeclareTextCompositeCommand{\textcircled}{PU}{y}{\9044\350}% U+24E8  
 14970 % U+24E9 CIRCLED LATIN SMALL LETTER Z; zcircle  
 14971 \DeclareTextCompositeCommand{\textcircled}{PU}{z}{\9044\351}% U+24E9  
 14972 % U+24EA CIRCLED DIGIT ZERO  
 14973 \DeclareTextCompositeCommand{\textcircled}{PU}{0}{\9044\352}% U+24EA

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

14974 % U+25E6 WHITE BULLET; \*openbullet, whitebullet  
 14975 \DeclareTextCommand{\textopenbullet}{PU}{\9045\346}% U+25E6  
 14976 % U+25EF LARGE CIRCLE; largecircle  
 14977 \DeclareTextCommand{\textbigcircle}{PU}{\9045\357}% U+25EF

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

14978 % U+266A EIGHTH NOTE; musicalnote  
 14979 \DeclareTextCommand{\textmusicalnote}{PU}{\9046\152}% U+266A  
 14980 % U+26AD MARRIAGE SYMBOL  
 14981 \DeclareTextCommand{\textmarried}{PU}{\9046\255}% U+26AD

14982 % U+26AE DIVORCE SYMBOL  
 14983 \DeclareTextCommand{\textdivorced}{PU}{\9046\256}% U+26AE

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

14984 % U+27E6 MATHEMATICAL LEFT WHITE SQUARE BRACKET  
 14985 \DeclareTextCommand{\textlbrackdbl}{PU}{\9047\346}% U+27E6  
 14986 % U+27E7 MATHEMATICAL RIGHT WHITE SQUARE BRACKET  
 14987 \DeclareTextCommand{\textrbrackdbl}{PU}{\9047\347}% U+27E7

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

14988 % U+FB01 LATIN SMALL LIGATURE FI; fi  
 14989 \DeclareTextCommand{\textfi}{PU}{\9373\001}% U+FB01  
 14990 % U+FB02 LATIN SMALL LIGATURE FL; fl  
 14991 \DeclareTextCommand{\textfl}{PU}{\9373\002}% U+FB02

### 50.2.25 Miscellaneous

14992 \DeclareTextCommand{\SS}{PU}{SS}

### 50.2.26 Aliases

Aliases (german.sty)

14993 \DeclareTextCommand{\textglqq}{PU}{\quotedblbase}  
 14994 \DeclareTextCommand{\textgrqq}{PU}{\textquotedblleft}  
 14995 \DeclareTextCommand{\textglq}{PU}{\quotesinglbase}  
 14996 \DeclareTextCommand{\textgrq}{PU}{\textquoteleft}  
 14997 \DeclareTextCommand{\textflqq}{PU}{\guillemotleft}  
 14998 \DeclareTextCommand{\textfrqq}{PU}{\guillemotright}  
 14999 \DeclareTextCommand{\textflq}{PU}{\guilsinglleft}  
 15000 \DeclareTextCommand{\textfrq}{PU}{\guilsinglright}

Aliases (math names)

15001 \DeclareTextCommand{\textneg}{PU}{\textlogicalnot}  
 15002 \DeclareTextCommand{\texttimes}{PU}{\textmultiply}  
 15003 \DeclareTextCommand{\textdiv}{PU}{\textdivide}  
 15004 \DeclareTextCommand{\textpm}{PU}{\textplusminus}  
 15005 \DeclareTextCommand{\textcdot}{PU}{\textperiodcentered}  
 15006 </puenc>

## 50.3 PU encoding, additions for VnTeX

This file is provided by Han The Thanh.

15007 <\*puvnenc>  
 15008 \DeclareTextCommand{\abreve}{PU}{\81\003}  
 15009 \DeclareTextCommand{\acircumflex}{PU}{\80\342}  
 15010 \DeclareTextCommand{\dj}{PU}{\81\021}  
 15011 \DeclareTextCommand{\ecircumflex}{PU}{\80\352}  
 15012 \DeclareTextCommand{\ocircumflex}{PU}{\80\364}  
 15013 \DeclareTextCommand{\ohorn}{PU}{\81\241}  
 15014 \DeclareTextCommand{\uhorn}{PU}{\81\260}  
 15015 \DeclareTextCommand{\ABREVE}{PU}{\81\002}  
 15016 \DeclareTextCommand{\ACIRCUMFLEX}{PU}{\80\302}  
 15017 \DeclareTextCommand{\DJ}{PU}{\81\020}  
 15018 \DeclareTextCommand{\ECIRCUMFLEX}{PU}{\80\312}  
 15019 \DeclareTextCommand{\OCIRCUMFLEX}{PU}{\80\324}  
 15020 \DeclareTextCommand{\OHORN}{PU}{\81\240}  
 15021 \DeclareTextCommand{\UHORN}{PU}{\81\257}

15022 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\341}  
15023 \DeclareTextCompositeCommand{\d}{PU}{a}{\9036\241}  
15024 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\340}  
15025 \DeclareTextCompositeCommand{\h}{PU}{a}{\9036\243}  
15026 \DeclareTextCompositeCommand{\~}{PU}{a}{\80\343}  
15027 \DeclareTextCompositeCommand{\'}{PU}{\abreve}{\9036\257}  
15028 \DeclareTextCompositeCommand{\d}{PU}{\abreve}{\9036\267}  
15029 \DeclareTextCompositeCommand{\'}{PU}{\abreve}{\9036\261}  
15030 \DeclareTextCompositeCommand{\h}{PU}{\abreve}{\9036\263}  
15031 \DeclareTextCompositeCommand{\~}{PU}{\abreve}{\9036\265}  
15032 \DeclareTextCompositeCommand{\'}{PU}{\acircumflex}{\9036\245}  
15033 \DeclareTextCompositeCommand{\d}{PU}{\acircumflex}{\9036\255}  
15034 \DeclareTextCompositeCommand{\'}{PU}{\acircumflex}{\9036\247}  
15035 \DeclareTextCompositeCommand{\h}{PU}{\acircumflex}{\9036\251}  
15036 \DeclareTextCompositeCommand{\~}{PU}{\acircumflex}{\9036\253}  
15037 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\351}  
15038 \DeclareTextCompositeCommand{\d}{PU}{e}{\9036\271}  
15039 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\350}  
15040 \DeclareTextCompositeCommand{\h}{PU}{e}{\9036\273}  
15041 \DeclareTextCompositeCommand{\~}{PU}{e}{\9036\275}  
15042 \DeclareTextCompositeCommand{\'}{PU}{\ecircumflex}{\9036\277}  
15043 \DeclareTextCompositeCommand{\d}{PU}{\ecircumflex}{\9036\307}  
15044 \DeclareTextCompositeCommand{\'}{PU}{\ecircumflex}{\9036\301}  
15045 \DeclareTextCompositeCommand{\h}{PU}{\ecircumflex}{\9036\303}  
15046 \DeclareTextCompositeCommand{\~}{PU}{\ecircumflex}{\9036\305}  
15047 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\355}  
15048 \DeclareTextCompositeCommand{\d}{PU}{i}{\9036\313}  
15049 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\354}  
15050 \DeclareTextCompositeCommand{\h}{PU}{i}{\9036\311}  
15051 \DeclareTextCompositeCommand{\~}{PU}{i}{\81\051}  
15052 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\363}  
15053 \DeclareTextCompositeCommand{\d}{PU}{o}{\9036\315}  
15054 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\362}  
15055 \DeclareTextCompositeCommand{\h}{PU}{o}{\9036\317}  
15056 \DeclareTextCompositeCommand{\~}{PU}{o}{\80\365}  
15057 \DeclareTextCompositeCommand{\'}{PU}{\ocircumflex}{\9036\321}  
15058 \DeclareTextCompositeCommand{\d}{PU}{\ocircumflex}{\9036\331}  
15059 \DeclareTextCompositeCommand{\'}{PU}{\ocircumflex}{\9036\323}  
15060 \DeclareTextCompositeCommand{\h}{PU}{\ocircumflex}{\9036\325}  
15061 \DeclareTextCompositeCommand{\~}{PU}{\ocircumflex}{\9036\327}  
15062 \DeclareTextCompositeCommand{\'}{PU}{\ohorn}{\9036\333}  
15063 \DeclareTextCompositeCommand{\d}{PU}{\ohorn}{\9036\343}  
15064 \DeclareTextCompositeCommand{\'}{PU}{\ohorn}{\9036\335}  
15065 \DeclareTextCompositeCommand{\h}{PU}{\ohorn}{\9036\337}  
15066 \DeclareTextCompositeCommand{\~}{PU}{\ohorn}{\9036\341}  
15067 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\372}  
15068 \DeclareTextCompositeCommand{\d}{PU}{u}{\9036\345}  
15069 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\371}  
15070 \DeclareTextCompositeCommand{\h}{PU}{u}{\9036\347}  
15071 \DeclareTextCompositeCommand{\~}{PU}{u}{\81\151}  
15072 \DeclareTextCompositeCommand{\'}{PU}{\uhorn}{\9036\351}  
15073 \DeclareTextCompositeCommand{\d}{PU}{\uhorn}{\9036\361}  
15074 \DeclareTextCompositeCommand{\'}{PU}{\uhorn}{\9036\353}  
15075 \DeclareTextCompositeCommand{\h}{PU}{\uhorn}{\9036\355}  
15076 \DeclareTextCompositeCommand{\~}{PU}{\uhorn}{\9036\357}  
15077 \DeclareTextCompositeCommand{\'}{PU}{y}{\80\375}  
15078 \DeclareTextCompositeCommand{\d}{PU}{y}{\9036\365}

15079 \DeclareTextCompositeCommand{'}{PU}{y}{\9036\363}  
15080 \DeclareTextCompositeCommand{h}{PU}{y}{\9036\367}  
15081 \DeclareTextCompositeCommand{~}{PU}{y}{\9036\371}  
15082 \DeclareTextCompositeCommand{'}{PU}{A}{\80\301}  
15083 \DeclareTextCompositeCommand{d}{PU}{A}{\9036\240}  
15084 \DeclareTextCompositeCommand{'}{PU}{A}{\80\300}  
15085 \DeclareTextCompositeCommand{h}{PU}{A}{\9036\242}  
15086 \DeclareTextCompositeCommand{~}{PU}{A}{\80\303}  
15087 \DeclareTextCompositeCommand{'}{PU}{\ABREVE}{\9036\256}  
15088 \DeclareTextCompositeCommand{d}{PU}{\ABREVE}{\9036\266}  
15089 \DeclareTextCompositeCommand{'}{PU}{\ABREVE}{\9036\260}  
15090 \DeclareTextCompositeCommand{h}{PU}{\ABREVE}{\9036\262}  
15091 \DeclareTextCompositeCommand{~}{PU}{\ABREVE}{\9036\264}  
15092 \DeclareTextCompositeCommand{'}{PU}{\ACIRCUMFLEX}{\9036\244}  
15093 \DeclareTextCompositeCommand{d}{PU}{\ACIRCUMFLEX}{\9036\254}  
15094 \DeclareTextCompositeCommand{'}{PU}{\ACIRCUMFLEX}{\9036\246}  
15095 \DeclareTextCompositeCommand{h}{PU}{\ACIRCUMFLEX}{\9036\250}  
15096 \DeclareTextCompositeCommand{~}{PU}{\ACIRCUMFLEX}{\9036\252}  
15097 \DeclareTextCompositeCommand{'}{PU}{E}{\80\311}  
15098 \DeclareTextCompositeCommand{d}{PU}{E}{\9036\270}  
15099 \DeclareTextCompositeCommand{'}{PU}{E}{\80\310}  
15100 \DeclareTextCompositeCommand{h}{PU}{E}{\9036\272}  
15101 \DeclareTextCompositeCommand{~}{PU}{E}{\9036\274}  
15102 \DeclareTextCompositeCommand{'}{PU}{\ECIRCUMFLEX}{\9036\276}  
15103 \DeclareTextCompositeCommand{d}{PU}{\ECIRCUMFLEX}{\9036\306}  
15104 \DeclareTextCompositeCommand{'}{PU}{\ECIRCUMFLEX}{\9036\300}  
15105 \DeclareTextCompositeCommand{h}{PU}{\ECIRCUMFLEX}{\9036\302}  
15106 \DeclareTextCompositeCommand{~}{PU}{\ECIRCUMFLEX}{\9036\304}  
15107 \DeclareTextCompositeCommand{'}{PU}{I}{\80\315}  
15108 \DeclareTextCompositeCommand{d}{PU}{I}{\9036\312}  
15109 \DeclareTextCompositeCommand{'}{PU}{I}{\80\314}  
15110 \DeclareTextCompositeCommand{h}{PU}{I}{\9036\310}  
15111 \DeclareTextCompositeCommand{~}{PU}{I}{\81\050}  
15112 \DeclareTextCompositeCommand{'}{PU}{O}{\80\323}  
15113 \DeclareTextCompositeCommand{d}{PU}{O}{\9036\314}  
15114 \DeclareTextCompositeCommand{'}{PU}{O}{\80\322}  
15115 \DeclareTextCompositeCommand{h}{PU}{O}{\9036\316}  
15116 \DeclareTextCompositeCommand{~}{PU}{O}{\80\325}  
15117 \DeclareTextCompositeCommand{'}{PU}{\OCIRCUMFLEX}{\9036\320}  
15118 \DeclareTextCompositeCommand{d}{PU}{\OCIRCUMFLEX}{\9036\330}  
15119 \DeclareTextCompositeCommand{'}{PU}{\OCIRCUMFLEX}{\9036\322}  
15120 \DeclareTextCompositeCommand{h}{PU}{\OCIRCUMFLEX}{\9036\324}  
15121 \DeclareTextCompositeCommand{~}{PU}{\OCIRCUMFLEX}{\9036\326}  
15122 \DeclareTextCompositeCommand{'}{PU}{\OHORN}{\9036\332}  
15123 \DeclareTextCompositeCommand{d}{PU}{\OHORN}{\9036\342}  
15124 \DeclareTextCompositeCommand{'}{PU}{\OHORN}{\9036\334}  
15125 \DeclareTextCompositeCommand{h}{PU}{\OHORN}{\9036\336}  
15126 \DeclareTextCompositeCommand{~}{PU}{\OHORN}{\9036\340}  
15127 \DeclareTextCompositeCommand{'}{PU}{U}{\80\332}  
15128 \DeclareTextCompositeCommand{d}{PU}{U}{\9036\344}  
15129 \DeclareTextCompositeCommand{'}{PU}{U}{\80\331}  
15130 \DeclareTextCompositeCommand{h}{PU}{U}{\9036\346}  
15131 \DeclareTextCompositeCommand{~}{PU}{U}{\81\150}  
15132 \DeclareTextCompositeCommand{'}{PU}{\UHORN}{\9036\350}  
15133 \DeclareTextCompositeCommand{d}{PU}{\UHORN}{\9036\360}  
15134 \DeclareTextCompositeCommand{'}{PU}{\UHORN}{\9036\352}  
15135 \DeclareTextCompositeCommand{h}{PU}{\UHORN}{\9036\354}

```

15136 \DeclareTextCompositeCommand{\~}{PU}{\UHORN}{\9036\356}
15137 \DeclareTextCompositeCommand{\'}{PU}{Y}{\80\335}
15138 \DeclareTextCompositeCommand{\d}{PU}{Y}{\9036\364}
15139 \DeclareTextCompositeCommand{\'}{PU}{Y}{\9036\362}
15140 \DeclareTextCompositeCommand{\h}{PU}{Y}{\9036\366}
15141 \DeclareTextCompositeCommand{\-}{PU}{Y}{\9036\370}

15142 </puvnc>

```

## 50.4 PU encoding, additions for Arabi

This file is provided and maintained by Youssef Jabri.

```

15143 <*puarenc>

15144 \DeclareTextCommand{\hamza}{PU}{\86\041}% 0621;afi57409;ARABIC LET-
    TER HAMZA
15145 \DeclareTextCommand{\alefmadda}{PU}{\86\042}% 0622;afi57410;ARABIC LET-
    TER ALEF WITH MADDA ABOVE
15146 \DeclareTextCommand{\alefhamza}{PU}{\86\043}% 0623;afi57411;ARABIC LET-
    TER ALEF WITH HAMZA ABOVE
15147 \DeclareTextCommand{\wawhamza}{PU}{\86\044}% 0624;afi57412;ARABIC LET-
    TER WAW WITH HAMZA ABOVE
15148 \DeclareTextCommand{\aleflowerhamza}{PU}{\86\045}% 0625;afi57413;ARABIC LET-
    TER ALEF WITH HAMZA BELOW
15149 \DeclareTextCommand{\yahamza}{PU}{\86\046}% 0626;afi57414;ARABIC LET-
    TER YEH WITH HAMZA ABOVE
15150 \DeclareTextCommand{\alef}{PU}{\86\047}% 0627;afi57415;ARABIC LETTER ALEF
15151 \DeclareTextCommand{\baa}{PU}{\86\050}% 0628;afi57416;ARABIC LETTER BEH
15152 \DeclareTextCommand{\T}{PU}{\86\051}% 0629;afi57417;ARABIC LETTER TEH MARBUTA
15153 \DeclareTextCommand{\taa}{PU}{\86\052}% 062A;afi57418;ARABIC LETTER TEH
15154 \DeclareTextCommand{\thaa}{PU}{\86\053}% 062B;afi57419;ARABIC LET-
    TER THEH
15155 \DeclareTextCommand{\jeem}{PU}{\86\054}% 062C;afi57420;ARABIC LET-
    TER JEEM
15156 \DeclareTextCommand{\Haa}{PU}{\86\055}% 062D;afi57421;ARABIC LETTER HAH
15157 \DeclareTextCommand{\kha}{PU}{\86\056}% 062E;afi57422;ARABIC LETTER KHAH
15158 \DeclareTextCommand{\dal}{PU}{\86\057}% 062F;afi57423;ARABIC LETTER DAL
15159 \DeclareTextCommand{\dhal}{PU}{\86\060}% 0630;afi57424;ARABIC LETTER THAL
15160 \DeclareTextCommand{\ra}{PU}{\86\061}% 0631;afi57425;ARABIC LETTER REH
15161 \DeclareTextCommand{\zay}{PU}{\86\062}% 0632;afi57426;ARABIC LETTER ZAIN
15162 \DeclareTextCommand{\seen}{PU}{\86\063}% 0633;afi57427;ARABIC LETTER SEEN
15163 \DeclareTextCommand{\sheen}{PU}{\86\064}% 0634;afi57428;ARABIC LET-
    TER SHEEN
15164 \DeclareTextCommand{\sad}{PU}{\86\065}% 0635;afi57429;ARABIC LETTER SAD
15165 \DeclareTextCommand{\dad}{PU}{\86\066}% 0636;afi57430;ARABIC LETTER DAD
15166 \DeclareTextCommand{\Ta}{PU}{\86\067}% 0637;afi57431;ARABIC LETTER TAH
15167 \DeclareTextCommand{\za}{PU}{\86\070}% 0638;afi57432;ARABIC LETTER ZAH
15168 \DeclareTextCommand{\ayn}{PU}{\86\071}% 0639;afi57433;ARABIC LETTER AIN
15169 \DeclareTextCommand{\ghayn}{PU}{\86\072}% 063A;afi57434;ARABIC LET-
    TER GHAIN
15170 \DeclareTextCommand{\tatweel}{PU}{\86\100}% 0640;afi57440;ARABIC TATWEEL
15171 \DeclareTextCommand{\fa}{PU}{\86\101}% 0641;afi57441;ARABIC LETTER FEH
15172 \DeclareTextCommand{\qaf}{PU}{\86\102}% 0642;afi57442;ARABIC LETTER QAF
15173 \DeclareTextCommand{\kaf}{PU}{\86\103}% 0643;afi57443;ARABIC LETTER KAF
15174 \DeclareTextCommand{\lam}{PU}{\86\104}% 0644;afi57444;ARABIC LETTER LAM
15175 \DeclareTextCommand{\meem}{PU}{\86\105}% 0645;afi57445;ARABIC LET-
    TER MEEM
15176 \DeclareTextCommand{\nun}{PU}{\86\106}% 0646;afi57446;ARABIC LETTER NOON

```

```

15177 \DeclareTextCommand{\ha}{PU}{\86\107}% 0647;afi57470;ARABIC LETTER HEH
15178 \DeclareTextCommand{\waw}{PU}{\86\110}% 0648;afi57448;ARABIC LETTER WAW
15179 \DeclareTextCommand{\alefmaqsura}{PU}{\86\111}% 0649;afi57449;ARABIC LET-
TER ALEF MAKSURA
15180 \DeclareTextCommand{\ya}{PU}{\86\112}% 064A;afi57450;ARABIC LETTER YEH
15181 \DeclareTextCommand{\nasb}{PU}{\86\113}% 064B;afi57451;ARABIC FATHATAN
15182 \DeclareTextCommand{\raff}{PU}{\86\114}% 064C;afi57452;ARABIC DAMMATAN
15183 \DeclareTextCommand{\jarr}{PU}{\86\115}% 064D;afi57453;ARABIC KASRATAN
15184 \DeclareTextCommand{\fatha}{PU}{\86\116}% 064E;afi57454;ARABIC FATHA
15185 \DeclareTextCommand{\damma}{PU}{\86\117}% 064F;afi57455;ARABIC DAMMA
15186 \DeclareTextCommand{\kasra}{PU}{\86\120}% 0650;afi57456;ARABIC KASRA
15187 \DeclareTextCommand{\shadda}{PU}{\86\121}% 0651;afi57457;ARABIC SHADDA
15188 \DeclareTextCommand{\sukun}{PU}{\86\122}% 0652;afi57458;ARABIC SUKUN

Farsi
15189 \DeclareTextCommand{\peh}{PU}{\86\176}% 067E;afi57506;ARABIC LETTER PEH
15190 \DeclareTextCommand{\tcheh}{PU}{\86\206}% 0686;afi57507;ARABIC LET-
TER TCHEH
15191 \DeclareTextCommand{\jeh}{PU}{\86\230}% 0698;afi57508;ARABIC LETTER JEH
15192 \DeclareTextCommand{\farsikaf}{PU}{\86\251}% 06A9???;afi????;FARSI LET-
TER KAF
15193 \DeclareTextCommand{\gaf}{PU}{\86\257}% 06AF;afi57509;ARABIC LETTER GAF
15194 \DeclareTextCommand{\farsiya}{PU}{\86\314}% 06CC;afi????;FARSI LET-
TER YEH

15195 \DeclareTextCommand{\ZWNJ}{PU}{\9040\014}% 200C;ZWNJ%
15196 \DeclareTextCommand{\noboundary}{PU}{\86\325}% 200D;ZWJ
15197 </puarenc>

```

## 51 End of file hyccheck.tex

```

15198 <*check>
15199 \typeout{}
15200 \begin{document}
15201 \end{document}
15202 </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	13861, 13863, 13865, 13867, 13869, 13871, 13873, 13875, 13930, 13932, 13934, 13936, 13994, 13997, 13999, 14024, 14043, 14189, 14208, 14557, 14559, 14569, 14571, 14585, 14587, 14617, 14619, 15022, 15027, 15032, 15037, 15042, 15047, 15052, 15057, 15062, 15067, 15072, 15077, 15082, 15087, 15092, 15097, 15102, 15107, 15112, 15117, 15122, 15127, 15132, 15137
\"	202, 227, 2611, 12391, 12740, 12752, 12764, 12887, 12973, 12987, 12995, 13010, 13022, 13038, 13052, 13063, 13064, 13078, 13090, 13096, 13147, 13175, 13194, 13215, 13342, 13356, 13364, 13378, 13390, 13406, 13420, 13431, 13432, 13446, 13458, 13464, 13711, 13926, 13928, 13938, 13990, 13992, 14020, 14033, 14185, 14198, 14431, 14433, 14447, 14449, 14451, 14453, 14455, 14457, 14467, 14469, 14471, 14473, 14479, 14481, 14483, 14485, 14491, 14493, 14499, 14501, 14507, 14509, 14549, 14551, 14621, 14623, 14633, 14635, 14651	\( .. 190, 215, 602, 605, 607, 12457, 12810
\#	408, 1708, 1709, 3816, 3827, 3829, 3845, 3877, 3892, 7338, 7340, 8078, 8087, 8114, 8832, 10309, 10320, 10348, 10576, 10585, 10614	\) .. 191, 216, 574, 580, 583, 12458, 12812
\\$	184, 209, 409, 3818, 3891	\+ ..... 200, 225
\%	410, 1683, 1684, 3815, 3824, 3826, 3878, 7340	\- ..... 201, 226
\&	185, 210, 411, 3819, 3830, 3832, 10358	\. .... 198, 223, 1070, 12743, 12755, 12767, 12829, 13120, 13127, 13145, 13178, 13197, 13221, 13261, 13262, 13486, 13488, 13510, 13512, 13530, 13532, 13566, 13597, 13599, 13717, 13719, 13810, 13812, 13818, 13820, 14517, 14519, 14525, 14527, 14537, 14539, 14545, 14547, 14573, 14575, 14577, 14579, 14589, 14591, 14593, 14595, 14601, 14603, 14625, 14627, 14629, 14631, 14637, 14639, 14657
\'	203, 228, 2551, 2565, 2606, 2608, 2609, 2610, 2611, 2616, 2617, 2619, 2624, 2630, 2634, 2635, 2638, 2681, 2682, 2687, 2688, 2689, 2690, 2691, 2692, 2693, 2694, 2696, 2700, 2713, 12389, 12737, 12749, 12761, 12967, 12983, 12991, 13004, 13018, 13024, 13032, 13048, 13057, 13058, 13072, 13086, 13092, 13115, 13117, 13118, 13119, 13122, 13124, 13125, 13126, 13134, 13172, 13191, 13212, 13336, 13352, 13360, 13372, 13386, 13392, 13400, 13416, 13425, 13426, 13440, 13454, 13460, 13478, 13480, 13585, 13587, 13605, 13607, 13639, 13641, 13651, 13653, 13713, 13715, 13765, 13767, 13773, 13775, 13777, 13779,	\ / 194, 219, 516, 517, 518, 585, 1426, 6740
		\: ..... 189, 214
		\; ..... 199, 224, 7035
		\< ..... 196, 221
		\= 167, 173, 180, 183, 12745, 12757, 12769, 13140, 13182, 13201, 13220, 13466, 13468, 13502, 13504, 13551, 13553, 13554, 13623, 13625, 13683, 13685, 13822, 13824, 14463, 14465, 14487, 14489, 14541, 14543
		\> ..... 197, 222
		\@ ..... 2602
		\@@@ ..... 1932
		\@@@BOOKMARK . 12372, 12375, <u>12433</u> , 12485, 12492
		\@@@Listbox . 10918, 10940, 11375, 11406, 11716, <u>11757</u>
		\@@Menu ..... 11128, 11136
		\@@PasswordField . 11077, 11083
		\@@Radio .. 10903, 10924, 11126, 11150, 11360, 11381, 11701, <u>11722</u>
		\@@TextField ..... 11079, 11094
		\@@commahyperpage . 6847, 6848
		\@@hyperref ..... 3926, 3927
		\@@latextohtmlX .... 2444, 4113
		\@@wrindex ..... 6775, 6776
		\@@writetorep .... 12284, 12290
		\@Alph ... 5565, 5566, 5569, 5570
		\@Alph@bul ..... 5569
		\@BIBLABEL .. 6274, 6280, 6286
		\@BOOKMARK .. 12372, 12374
		\@CITE ..... 6351, 6359
		\@CITEX ..... 6353
		\@CheckBox .. 4799, 8894, 11017, 11047, 11181, 11493, <u>11862</u>
		\@ChoiceMenu . 4796, 8897, 10855, 11050, 11116, 11311, <u>11652</u>
		\@Form . 4571, 8884, 10642, 11039, 11060, 11235, <u>11576</u>
		\@Gauge 4805, 8888, 10824, 11041, 11065, 11202, <u>11573</u>
		\@Localurifalse ..... 8839
		\@Localurltrue ..... 8836
		\@M ..... 975, 1971, 5916
		\@MM ..... 6050
		\@PushButton . 4802, 8900, 10947, 11053, 11162, 11415, <u>11773</u>
		\@Refstar ..... 7147, 7154
		\@Reset . 4811, 8903, 10993, 11056, 11178, 11468, <u>11832</u>
		\@Roman ..... 476
		\@SCTR ..... 6894, 6946
		\@SetMaxRnhefLabel ..... 6348
		\@Submit 4808, 8906, 10975, 11057, 11175, 11445, <u>11808</u>
		\@TextField ... 4793, 8891, 10827, 11044, 11068, 11282, <u>11615</u>
		\@addchap ..... 12696
		\@addtoreset .. 6669, 6670, 6684, 6891
		\@afterheading ..... 12714
		\@alph ..... 5572, 5573
		\@alph@bul ..... 5572
		\@anchorcolor . 8049, 8133, 8950, 10279, 10548
		\@arabic 945, 950, 954, 5566, 5570, 5573

<code>\@auxout</code> . 1926, 3971, 5019, 5021, 5634, 5662, 6294, 6309, 6325, 6335, 6365, 6388, 6414, 6420, 6444	<code>\@currentHref</code> . 1934, 4901, 5536, 5587, 5592, 5674, 5677, 5679, 5689, 5727, 5738, 5740, 5779, 5790, 5794, 5801, 5825, 5910, 5974, 5985, 5988, 5990, 6035, 6064, 6148, 6174, 6178, 6193, 6195, 6423, 6549, 6572, 6581, 6587, 6638, 6639, 6663, 6665, 12273, 12274, 12592, 12597, 12609, 12611, 12621, 12623, 12652, 12654, 12667, 12672, 12706, 12708	<code>\@firstoftwo</code> . . 485, 766, 937, 1342, 4989, 12661
<code>\@backslashchar</code> . . . 696, 699, 702, 1603, 1607, 1610, 1731, 1748, 1754, 1758, 1766, 3840, 7353, 7363	<code>\@currentlabel</code> . 6053, 6416, 6423, 6644, 6651, 6900, 6952	<code>\@footnotemark</code> 5926, 5980, 6071, 6073, 6085, 6086, 6116, 6118
<code>\@baseurl</code> . . . . . 2907, 2909, 4065, 7773, 7776, 8035, 8037, 8280, 8282, 8746, 8756, 8806, 8808, 9312, 9314, 9671, 9685, 10265, 10267, 10455, 10469, 10535, 10537	<code>\@currentlabelname</code> . . 1924, 5975, 6036, 6065, 6153	<code>\@footnotetext</code> . 5925, 5932, 5961, 6072, 6074, 6088, 6089, 6109
<code>\@begintheorem</code> . . . . . 5884, 5890	<code>\@currentlabstr</code> . . . . . 1923, 1931	<code>\@for</code> 2926, 4179, 6360, 6383, 10864, 10926, 11134, 11141, 11151, 11320, 11383, 11661, 11727
<code>\@bibitem</code> . . . . . 6301, 6332	<code>\@curropt</code> . . 10864, 10865, 10926, 10927, 11134, 11141, 11142, 11144, 11151, 11152, 11154, 11320, 11321, 11383, 11384, 11661, 11662, 11727, 11728	<code>\@fourthoffive</code> . 3768, 3959, 7211, 7218
<code>\@biblabel</code> . . . . . 6274, 6321	<code>\@dblarg</code> . . . . . 2024, 6143, 6224	<code>\@gobble</code> . . . . . 49, 56, 117, 459, 460, 461, 462, 488, 489, 490, 499, 501, 660, 773, 809, 820, 961, 965, 968, 1152, 1165, 1169, 1231, 1294, 1295, 1302, 1307, 1321, 1326, 1961, 2193, 2205, 3219, 3372, 3374, 3426, 3806, 4522, 4701, 4954, 4958, 4975, 4977, 4993, 4994, 4995, 4997, 4998, 5000, 5431, 5446, 5450, 5873, 6130, 6219, 6548, 7276, 7947, 9192, 9195, 11236, 11577, 12330, 12331, 12332, 12484
<code>\@bookmarkopenstatus</code> . . . 3654, 3671, 12342	<code>\@definecounter</code> . . . . . 6623, 6624	<code>\@gobblefour</code> 526, 1078, 1079, 1080, 7015
<code>\@bookmarksopenlevel</code> 2870, 2872, 3657	<code>\@ehc</code> . . . . . 2250, 3424, 4029, 4283, 4407, 4602, 4748, 4784, 10957, 11005, 11426, 11480, 11784, 11844	<code>\@gobbleopt</code> . . . . . 5000, 5002
<code>\@bsphack</code> . . . . . 1919, 3964, 6418	<code>\@ehd</code> . . . . . 63, 6129, 6218	<code>\@gobbletwo</code> 492, 519, 527, 528, 673, 1077, 1249, 1326, 1330, 2078, 3376, 4468, 4979, 4988, 4996, 5000, 7199, 12607
<code>\@capstartfalse</code> . . . . . 6168	<code>\@endForm</code> . . . 4572, 8887, 10823, 11040, 11064, 11281, 11601	<code>\@harvarditem</code> . . . . . 6433, 6435
<code>\@caption</code> 6133, 6145, 6188, 6224, 6226	<code>\@endpary</code> . . . . . 5880	<code>\@hyper@Canchor</code> . . . 4074, 4075
<code>\@capytype</code> 1928, 6128, 6132, 6136, 6143, 6150, 6192, 6217, 6221, 6224	<code>\@eqnncr</code> . . . . . 5809	<code>\@hyper@Citemfalse</code> . . . 5482, 5498, 5512
<code>\@car</code> 1214, 1230, 1248, 1268, 2849, 4189, 7725, 7736	<code>\@eqnstarfalse</code> . . . . . 5785, 5812	<code>\@hyper@Citemtrue</code> . . . . . 5483
<code>\@cdr</code> . . . . . 7726, 7737	<code>\@eqnstartrue</code> . . . . . 5809	<code>\@hyper@launch</code> 4035, 4044, 7666, 9090, 10001
<code>\@chapter</code> . . . . . 12617, 12618	<code>\@eqnswtrue</code> . . . . . 5755, 5764	<code>\@hyper@linkfile</code> 4016, 4019, 4023, 4055
<code>\@cite</code> . . . . 6351, 6382, 6479, 6485	<code>\@esphack</code> . 1940, 3975, 6428, 6787	<code>\@hyper@readexternallink</code> . 4010, 4014
<code>\@cite@opt</code> . 6480, 6486, 6490, 6500	<code>\@extra@b@citeb</code> 6259, 6262, 6279, 6284, 6304, 6352, 6374, 6390, 6397	<code>\@hyperdef</code> . . . . . 3934, 3935
<code>\@citea</code> . . 6354, 6361, 6362, 6381, 6384, 6385	<code>\@extra@b@info</code> . . 6258, 6261, 6265	<code>\@hyperpage</code> . . . . . 6839, 6840
<code>\@citeb</code> . . 6360, 6363, 6365, 6367, 6371, 6374, 6383, 6386, 6388, 6390, 6394, 6397	<code>\@fifthoffive</code> 3384, 3769, 3958, 7101, 7216	<code>\@hyperref</code> . . . . . 3915, 3926
<code>\@citebordercolor</code> . . . . . 3311	<code>\@filebordercolor</code> 3309, 7642, 7644, 8602, 8604, 9027, 9029, 9989	<code>\@ifclasslater</code> . . . . . 12720, 12725
<code>\@citedata@opt</code> . 6481, 6487, 6489	<code>\@filecolor</code> 2899, 7662, 8228, 8240, 8614, 9033	<code>\@ifclassloaded</code> . . . . . 1911, 5606, 5643, 6343, 6875, 6879, 7950, 12719, 12724
<code>\@citedatax</code> . . . . . 6496, 6501	<code>\@firstoffive</code> 3765, 3774, 7140, 7221	<code>\@ifnextchar</code> 12, 88, 103, 123, 520, 3885, 3915, 3934, 3983, 4571, 4793, 4796, 4799, 4802, 4805, 4808, 4811, 5000, 5064, 5073, 6075, 6093, 6433, 6491, 9696, 9927, 9941, 12372, 12375
<code>\@citedatax@opt</code> . . . . 6493, 6499	<code>\@firstofone</code> . . . . . 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 466, 656, 811, 822, 1055, 1059, 1063, 3231, 3656, 4537, 4543, 4711, 5452, 5563, 5576, 5621, 6141, 6222, 6363, 6386, 6512, 6730, 7945, 11947, 11964, 11982	
<code>\@citeseppen</code> . . . . . 6478, 6484		
<code>\@citex</code> . . . . . 6380		
<code>\@clubpenalty</code> . . . . . 5918		
<code>\@commahyperpage</code> . . 6842, 6847		
<code>\@currDisplay</code> 4625, 10867, 10929, 11145, 11159, 11323, 11386, 11664, 11730		
<code>\@currValue</code> . . . 4627, 4629, 10934, 11145, 11156, 11393, 11745, 12164		
<code>\@currentHlabel</code> 5577, 5579, 5588, 5726, 5737, 5973, 5984, 5987, 5989, 6034, 6063		

<code>\@ifpackagelater</code> . 831, 1942, 5597, 6694	<code>\@m</code> . . . . . 958, 6362, 6385, 9239	<code>\@outlinefile</code> . 12340, 12380, 12470, 12472, 12474, 12539, 12541, 12543
<code>\@ifpackageloaded</code> . 362, 726, 830, 1914, 2302, 2826, 2830, 3363, 3506, 5520, 5596, 5609, 5671, 5705, 5709, 5717, 5751, 5865, 5922, 5997, 6042, 6189, 6403, 6476, 6635, 6693, 6735, 6736, 6737, 6884, 7146, 7289, 7293, 10527	<code>\@mainaux</code> . 5017, 5018, 5414, 5422	<code>\@pagerefstar</code> . . . 3792, 7142, 7170
<code>\@ifpackagewith</code> . . . . . 3364, 6659	<code>\@makecaption</code> . 6169, 6171, 6237	<code>\@pagesetref</code> . . . . . 7092
<code>\@ifstar</code> 66, 3790, 3792, 4936, 4940, 5006, 5010, 7154, 7180, 7199	<code>\@makefnmark</code> . . . . . 5992, 6121	<code>\@parboxrestore</code> . 6052, 6161, 6232
<code>\@ifundefined</code> . . . . . 34, 243, 467, 511, 586, 621, 737, 738, 739, 745, 753, 769, 772, 843, 849, 855, 860, 865, 872, 878, 884, 889, 895, 900, 910, 916, 922, 928, 1184, 1278, 1279, 1915, 1948, 2055, 2167, 2232, 2315, 2771, 2779, 2786, 2799, 2847, 3334, 3441, 3442, 3443, 4278, 4597, 5101, 5384, 5462, 5524, 5529, 5550, 5564, 5711, 5720, 5774, 5796, 5814, 5820, 5857, 6134, 6152, 6257, 6268, 6351, 6367, 6390, 6632, 6674, 6682, 6683, 6696, 6697, 6704, 7188, 7189, 7233, 7234, 7236, 7237, 7393, 7581, 7590, 7975, 8782, 8917, 8971, 9057, 9380, 9381, 9423, 9453, 9540, 9717, 10095, 11236, 11577, 11956, 12338, 12616, 12627	<code>\@makefntext</code> . . . . . 6054	<code>\@parcount</code> . . . . . 12439, 12447
<code>\@indexfile</code> 6779, 6794, 6802, 6806, 6811	<code>\@makeoother</code> . . 166, 167, 179, 180, 182, 183, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 3830, 7325, 12461	<code>\@part</code> . . . . . 12636, 12643
<code>\@inlabelfalse</code> . . . . . 5900	<code>\@makeschapterhead</code> 12711, 12713	<code>\@pdfauthor</code> . . 3059, 3314, 7832, 8262, 8693, 9353, 9597, 10386
<code>\@inmathwarn</code> . . . . . 402, 403	<code>\@menubordercolor</code> . . 3308, 8005, 8007, 8657, 8659, 9124, 9126	<code>\@pdfborder</code> . . . . . 2448, 2952, 2955, 2957, 3737, 7542, 8415, 8939, 9467, 9558, 9919, 9931, 9946, 9967, 9986, 10011, 10039, 10126, 10214, 10363
<code>\@inpenc@undefined@</code> . . . . 1786	<code>\@menucolor</code> . . . 8018, 8663, 9130	<code>\@pdfborderstyle</code> . . . . . 2953, 2959, 2961, 3738, 7543, 8416, 8940, 9468, 9559, 9920, 9932, 9947, 9968, 9987, 10012, 10040, 10127, 10215, 10364
<code>\@labels</code> . . . . . 5913	<code>\@minipagefalse</code> . . . . . 5896	<code>\@pdfcreationdate</code> . . . . . 3074, 3317, 7836, 7838, 8254, 8256, 8685, 8687, 9572, 9574, 10378, 10380
<code>\@latex@</code> . . . . . 5095, 5096	<code>\@mkboth</code> 492, 6997, 12607, 12699, 12701	<code>\@pdfcreator</code> . . 3069, 3316, 7835, 8253, 8684, 9356, 9596, 10377
<code>\@latex@error</code> . 2385, 2403, 2413, 2420, 6129, 6218	<code>\@mpfn</code> . . . . . 5929, 6094, 6106	<code>\@pdfdirection</code> . 7796, 8318, 8726, 9324, 9651, 10435
<code>\@latex@warning</code> 3953, 6370, 6393, 7076, 7096, 7113, 7227	<code>\@mpfootnotetext</code> 5932, 5945, 5946	<code>\@pdfduplex</code> . . 7802, 8324, 8732, 9330, 9657, 10441
<code>\@lbibitem</code> . . . . . 6275, 6320	<code>\@mycount</code> . . . . . 12437, 12447	<code>\@pdfhighlight</code> . 2945, 3312, 7562, 7564, 7609, 7638, 7640, 7674, 7676, 8001, 8003, 9466, 9557, 9918, 9966, 9985, 10010
<code>\@linkbordercolor</code> 3306, 7598, 8941	<code>\@namedef</code> 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 4289, 4290, 4291, 4292, 4613, 4614, 5607, 5808, 5811, 6408, 6409, 6410, 6411	<code>\@pdflightlight</code> . . . . . 7607
<code>\@linkcolor</code> . . . . . 9718	<code>\@nameuse</code> . 1928, 2322, 4295, 4605	<code>\@pdfkeywords</code> . 3091, 3320, 7848, 8251, 8698, 9361, 9598, 10375
<code>\@linkdim</code> . . . . . 329, 8093, 8094, 8099, 8100, 8101, 8161, 8162, 8171, 8172, 8173, 8190, 8191, 8200, 8201, 8202, 8220, 8221, 8230, 8231, 8232, 10327, 10328, 10333, 10334, 10335, 10591, 10592, 10601, 10602, 10603	<code>\@ne</code> . 944, 2269, 2364, 8540, 8545, 9291, 10120, 11610	<code>\@pdflang</code> 3298, 3326, 7822, 7824, 8346, 8348, 8766, 8768, 9681, 9683, 10465, 10467
<code>\@listctr</code> . . . . . 6310, 6336	<code>\@newctr</code> . . . . . 6628, 6629	<code>\@pdfm@dest</code> . . . 8360, 8418, 8422
	<code>\@newl@bel</code> . . . . . 5058, 6261	<code>\@pdfm@mark</code> . . . . . 5402, 8359, 8410, 8430, 8444, 8446, 8460, 8462, 8467, 8468, 8498, 8522, 8524, 8529, 8547, 8568, 8596, 8623, 8647, 8680, 8747, 8774, 11580, 11581, 11582, 11599, 11642, 11648, 11736, 11750, 11765, 11771, 11797, 11804, 11823, 11829, 11852, 11858, 11881, 11887, 11892, 11924, 11932, 12512
	<code>\@newlistfalse</code> . . . . . 5897	<code>\@pdfmoddate</code> . 3080, 3318, 7840, 7842, 8258, 8260, 8689, 8691, 9576, 9580, 10382, 10384
	<code>\@nil</code> 348, 352, 357, 361, 376, 1214, 1232, 1250, 1266, 1268, 1271, 1274, 1277, 1795, 1797, 1813, 1815, 2849, 3862, 3866, 3871, 4189, 4692, 4695, 4714, 5083, 5086, 5093, 5095, 5096, 5181, 5228, 5229, 5231, 5254, 5271, 5319, 5321, 5721, 5731, 5733, 5746, 6826, 6828, 6835, 6858, 6861, 6871, 7080, 7083, 7235, 7266, 7349, 7355, 7359, 7365, 7725, 7726, 7736, 7737, 9157, 9159, 11954, 11967, 11973	
	<code>\@nobreakfalse</code> . . . . . 5055, 5916	
	<code>\@nocnterr</code> . . . . . 6683, 6697	
	<code>\@nocounterr</code> . . . . . 6682, 6696	
	<code>\@noparitemfalse</code> . . . . . 5898	
	<code>\@number</code> . . . . . 5563, 5621, 6512	
	<code>\@nx</code> . . . . . 6686, 6700, 6703, 6705	
	<code>\@onelevel@sanitize</code> . . 2071, 2075, 2284, 2848, 3401, 3431, 4279, 4515, 4598, 5281, 5283, 6577, 7126, 8397	
	<code>\@oparg</code> . . . . . 5884, 5890	

\@pdfnonfullscreenpagemode . . .	\@pdftitle 3054, 3313, 7833, 8252,	\@tempboxa 8092, 8093, 8099, 8158,
7795, 8317, 8725, 9323, 9650,	8682, 9354, 9594, 10376	8161, 8164, 8165, 8171, 8176,
10434	\@pdftrapped . . 3096, 3099, 3102,	8177, 8188, 8190, 8193, 8194,
\@pdfnumcopies 7811, 7813, 8333,	3111, 3120, 3321, 7849, 7851,	8200, 8205, 8206, 8218, 8220,
8335, 8741, 8743, 9339, 9341,	8699, 8701, 9599	8223, 8224, 8230, 8235, 8236,
9666, 9668, 10450, 10452	\@pdfview . . . . . 3221,	10326, 10327, 10333, 10590,
\@pdfpageduration . . . 2915, 7891,	7528, 7535, 8365, 8369, 8373,	10591, 10601
7895, 7900, 9248, 9250, 9253,	8377, 8381, 8385, 8386, 8389,	\@tempcnta . 12296, 12297, 12298,
9503, 9505, 9513	8390, 8393, 8397, 8399, 8414,	12299, 12300, 12302, 12305,
\@pdfpagelayout 7821, 8345, 8765,	8938, 8947, 8958, 9417, 9435,	12306, 12307, 12313, 12315,
9344, 9346, 9680, 10464	10041, 10128, 10216, 10477	12317, 12356, 12357, 12358,
\@pdfpagemode 3494, 3495, 3667,	\@pdfviewarea . 7797, 8319, 8727,	12361, 12362, 12363, 12364,
3668, 3677, 3678, 7775, 8301,	9325, 9652, 10436	12365, 12562, 12563, 12564
8760, 9311, 9634, 10418	\@pdfviewclip . 7798, 8320, 8728,	\@tempdima . . . . .
\@pdfpagescrop 3252, 3322, 7760,	9326, 9653, 10437	1974, 4833, 4834, 4835, 4836,
7764, 8284, 8285, 8306, 8308,	\@pdfviewparams . . . . .	4837, 4838, 4839, 4840, 7521,
8772, 8774, 9300, 9302, 9639,	. . . . 3223, 3225, 9417, 9435,	10863, 10868, 10870, 10907,
9641, 10423, 10425	10042, 10129, 10217, 10478	10908, 10909, 10913, 10914,
\@pdfpagetransition . . 2913, 7867,	\@percentchar . 3825, 3826, 3878,	10915, 10916, 11319, 11324,
7871, 7876, 9137, 9139, 9141,	12344	11326, 11364, 11365, 11366,
9486, 9488, 9496	\@processme . . 4621, 4622, 7873,	11370, 11371, 11372, 11373,
\@pdfpicktraybypdfsize . . . . .	7879, 7897, 7903, 7919, 7925,	11660, 11665, 11667, 11705,
7803, 7805, 8325, 8327, 8733,	9699, 9700, 9769, 9770, 9773,	11706, 11707, 11711, 11712,
8735, 9331, 9333, 9658, 9660,	9774	11713, 11714
10442, 10444	\@protected@testopt . . . . . 523	\@tempdimb 10867, 10868, 11323,
\@pdfprintarea . 7799, 8321, 8729,	\@protected@testopt@xargs . 524	11324, 11664, 11665
9327, 9654, 10438	\@refstar . . . . . 3790, 7139	\@tempswafalse . . . . . 6495
\@pdfprintclip . 7800, 8322, 8730,	\@runbordercolor 3310, 7678, 7680,	\@tempswatruetrue 6465, 6468, 6471,
9328, 9655, 10439	9108, 9110, 10014	6492
\@pdfprintpagerange . 3026, 3325,	\@runcolor . . . . . 7697, 9114	\@temptokena . 2718, 2723, 2726,
7807, 7809, 8329, 8331, 8737,	\@safe@activesfalse . . . . 474, 3771	2728
8739, 9335, 9337, 9662, 9664,	\@safe@activetrue . . . . 473, 3770	\@tfor . . . . . 5838
10446, 10448	\@schapter . . . . . 12604, 12605	\@the@H@page . . . . . 6514, 6516
\@pdfprintscaling 7801, 8323, 8731,	\@secondoffive . 3385, 3766, 3779,	\@thefnmark . . 5930, 5941, 6011,
9329, 9656, 10440	7102, 7103, 7143	6012, 6053, 6095, 6107, 6114
\@pdfproducer . 3064, 3315, 7701,	\@secondoftwo . 463, 491, 764, 940,	\@thirdoffive . . . . . 3767
7844, 7846, 8244, 8245, 8263,	1340, 3384, 3385, 12663	\@thm . . . . . 5866
8265, 8669, 8670, 8674, 8694,	\@sect . . . . . 12658, 12659	\@topnewpage . . . . . 12711
8696, 9268, 9269, 9273, 9276,	\@seqncr . . . . . 5809	\@topsep . . . . . 5879
9277, 9357, 9359, 9583, 9587,	\@serial@counter . . 12387, 12435,	\@topsepadd . . . . . 5880
10036, 10037, 10119, 10121,	12437, 12438	\@typeset@protect . . . . . 12575
10123, 10211, 10212, 10368,	\@seteqlabel . . . . . 6660, 6661	\@undefined 529, 4990, 5022, 5042,
10369, 10387, 10389	\@setminipage . . . . . 6163, 6234	5243, 5261, 5300, 6128, 6191,
\@pdfstartpage 3240, 3242, 3324,	\@setref . . 3774, 3779, 7071, 7072,	6203, 6208, 6217, 7134, 7519,
7781, 7785, 8288, 8293, 8749,	7109	7705, 7714, 8911, 9279, 9293
8753, 9304, 9308, 9621, 9626,	\@sharp . . . . . 5721, 5728	\@undottedtocline . . . . . 7061
10405, 10410	\@skiphyperrfalse . . 5499, 6290,	\@unprocessedoptions . . . . 3616
\@pdfstartview 3247, 3249, 3323,	6302	\@urlbordercolor 3307, 7611, 7613,
7655, 7783, 7785, 8290, 8294,	\@skiphyperrtrue . . . 6276, 6302	8629, 8631, 9046, 9048, 9969
8609, 8751, 8753, 9306, 9623,	\@spart . . . . . 12649, 12650	\@urlcolor . . . . . 7626, 8098,
9627, 9995, 10407, 10411	\@sssect . . . . . 12589, 12590	8107, 8198, 8210, 8639, 9052,
\@pdfsubject . . 3086, 3319, 7834,	\@startlos . . . . . 7009, 7016, 7065	10332, 10341, 10600, 10608
8267, 8683, 9355, 9595, 10391	\@starttoc . . . . . 5043	\@urltype . . . . . 8068,
\@pdftempa . . . . 4021, 4022, 4025	\@tempa . 5883, 5889, 5893, 5999,	8072, 8811, 8835, 8966, 8979,
\@pdftempwordfile . . . 4012, 4022	6003, 6006, 6022	10298, 10302, 10566, 10570
\@pdftempwordrun . . 4013, 4025	\@tempb . . . . . 5837, 5841	\@vpageref . . . . . 7164
		\@whilenum . . . . . 1094

\@wrindex . . . . . 6743, 6744, 6775  
\@writefile . . . . . 6421  
\@xsf . . . . . 5982, 5994, 6120, 6122  
\@xfootnote . . . . . 6093  
\@xfootnotemark . . . . . 5938, 6111  
\@xfootnotenext . . . . . 5927, 6104  
\@xp 6650, 6685, 6686, 6699, 6700,  
6702, 6703  
\[ . . . . . 192, 217  
\{ . . . . . 405  
\} . . . . . 406  
\] . . . . . 193, 218  
\^ . . . . . 186, 211, 1724,  
1725, 2629, 3813, 3814, 3822,  
12738, 12750, 12762, 12969,  
12985, 12993, 13006, 13020,  
13034, 13050, 13060, 13061,  
13074, 13088, 13136, 13173,  
13192, 13213, 13338, 13354,  
13362, 13374, 13388, 13402,  
13418, 13428, 13429, 13442,  
13456, 13482, 13484, 13522,  
13524, 13538, 13540, 13574,  
13576, 13577, 13655, 13657,  
13703, 13705, 13707, 13709,  
14641, 14643  
\\_ . 187, 212, 413, 3817, 3834, 3835  
\` . . . . . 166, 172, 179, 182,  
2565, 2699, 2702, 2704, 2712,  
12736, 12748, 12760, 12965,  
12981, 12989, 13002, 13016,  
13030, 13046, 13054, 13055,  
13070, 13084, 13132, 13171,  
13190, 13211, 13334, 13350,  
13358, 13370, 13384, 13398,  
13414, 13422, 13423, 13438,  
13452, 13769, 13771, 14017,  
14045, 14182, 14210, 14613,  
14615, 14663, 14665, 15024,  
15029, 15034, 15039, 15044,  
15049, 15054, 15059, 15064,  
15069, 15074, 15079, 15084,  
15089, 15094, 15099, 15104,  
15109, 15114, 15119, 15124,  
15129, 15134, 15139  
\| 188, 213, 1549, 1665, 2511, 3349,  
6739, 7324, 7334  
\~ . . . . . 412, 1096, 1774, 2623,  
2631, 2632, 2633, 3445, 3838,  
12739, 12751, 12763, 12971,  
13000, 13008, 13036, 13068,  
13076, 13138, 13174, 13193,  
13214, 13340, 13368, 13376,  
13404, 13436, 13444, 13546,  
13548, 13549, 13679, 13681,  
14609, 14611, 14659, 14661,  
14667, 14669, 15026, 15031,

15036, 15041, 15046, 15051,  
15056, 15061, 15066, 15071,  
15076, 15081, 15086, 15091,  
15096, 15101, 15106, 15111,  
15116, 15121, 15126, 15131,  
15136, 15141

# Numbers

\3 . . . 390, 1138, 1139, 1140, 1141,  
1142, 1143, 1144, 1145, 1888,  
12456, 12965, 12967, 12969,  
12971, 12973, 12975, 12977,  
12979, 12981, 12983, 12985,  
12987, 12989, 12991, 12993,  
12995, 12997, 12998, 13000,  
13002, 13004, 13006, 13008,  
13010, 13012, 13014, 13016,  
13018, 13020, 13022, 13024,  
13026, 13028, 13030, 13032,  
13034, 13036, 13038, 13040,  
13042, 13044, 13046, 13048,  
13050, 13052, 13054, 13055,  
13057, 13058, 13060, 13061,  
13063, 13064, 13066, 13068,  
13070, 13072, 13074, 13076,  
13078, 13080, 13082, 13084,  
13086, 13088, 13090, 13092,  
13094, 13096, 13097, 13170,  
13334, 13336, 13338, 13340,  
13342, 13344, 13346, 13348,  
13350, 13352, 13354, 13356,  
13358, 13360, 13362, 13364,  
13366, 13368, 13370, 13372,  
13374, 13376, 13378, 13380,  
13382, 13384, 13386, 13388,  
13390, 13392, 13394, 13396,  
13398, 13400, 13402, 13404,  
13406, 13408, 13410, 13412,  
13414, 13416, 13418, 13420,  
13422, 13423, 13425, 13426,  
13428, 13429, 13431, 13432,  
13434, 13436, 13438, 13440,  
13442, 13444, 13446, 13448,  
13450, 13452, 13454, 13456,  
13458, 13460, 13462, 13464,  
13729, 13731, 13733, 13735,  
13736, 13738, 13740, 13742,  
13744, 13746, 13748, 13750,  
13752, 13754, 13756, 13758,  
13760, 13762, 13763, 13765,  
13767, 13769, 13771, 13773,  
13775, 13777, 13779, 13828,  
13830, 13832, 13834, 13836,  
13838, 13840, 13843, 13845,  
13970, 13972, 13974, 13976,  
13978, 13980, 13982, 13984,  
13986, 13988, 13990, 13992,  
13994, 13996, 13997, 13999,

14001, 14003, 14005, 14007,  
14009, 14011, 14013, 14015,  
14401, 14403, 14405, 14407,  
14409, 14411, 14413, 14415,  
14417, 14419, 14421, 14423,  
14425, 14427, 14429, 14431,  
14433, 14435, 14437, 14439,  
14441, 14443, 14445, 14447,  
14449, 14451, 14453, 14455,  
14457, 14459, 14461, 14463,  
14465, 14467, 14469, 14471,  
14473, 14475, 14477, 14479,  
14481, 14483, 14485, 14487,  
14489, 14491, 14493, 14495,  
14497, 14499, 14501, 14503,  
14505, 14507, 14509, 14511,  
14513, 14663, 14665, 14667,  
14669, 14889, 14891, 14893,  
14895, 14897, 14899, 14901,  
14903, 14905, 14907, 14909,  
14911, 14913, 14915, 14917,  
14919, 14921, 14923, 14925,  
14927, 14929, 14931, 14933,  
14935, 14937, 14939, 14941,  
14943, 14945, 14947, 14949,  
14951, 14953, 14955, 14957,  
14959, 14961, 14963, 14965,  
14967, 14969, 14971, 14973,  
14975, 14977, 14985, 14987,  
15009, 15011, 15012, 15016,  
15018, 15019, 15022, 15024,  
15026, 15037, 15039, 15043,  
15044, 15045, 15046, 15047,  
15048, 15049, 15050, 15052,  
15053, 15054, 15055, 15056,  
15057, 15058, 15059, 15060,  
15061, 15062, 15063, 15064,  
15065, 15066, 15067, 15068,  
15069, 15070, 15072, 15073,  
15074, 15075, 15076, 15077,  
15078, 15079, 15080, 15081,  
15082, 15084, 15086, 15097,  
15099, 15103, 15104, 15105,  
15106, 15107, 15108, 15109,  
15110, 15112, 15113, 15114,  
15115, 15116, 15117, 15118,  
15119, 15120, 15121, 15122,  
15123, 15124, 15125, 15126,  
15127, 15128, 15129, 15130,  
15132, 15133, 15134, 15135,  
15136, 15137, 15138, 15139,  
15140, 15141, 15194, 15196

\9 393, 1816, 1831, 1840, 1868, 1888,  
13170, 14515, 14517, 14519,  
14521, 14523, 14525, 14527,  
14529, 14531, 14533, 14535,  
14537, 14539, 14541, 14543,

14545, 14547, 14549, 14551, 14553, 14555, 14557, 14559, 14561, 14563, 14565, 14567, 14569, 14571, 14573, 14575, 14577, 14579, 14581, 14583, 14585, 14587, 14589, 14591, 14593, 14595, 14597, 14599, 14601, 14603, 14605, 14607, 14609, 14611, 14613, 14615, 14617, 14619, 14621, 14623, 14625, 14627, 14629, 14631, 14633, 14635, 14637, 14639, 14641, 14643, 14645, 14647, 14649, 14651, 14653, 14655, 14657, 14659, 14661, 14663, 14665, 14667, 14669, 14671, 14673, 14675, 14677, 14679, 14681, 14683, 14685, 14687, 14689, 14691, 14693, 14695, 14697, 14699, 14701, 14703, 14705, 14707, 14709, 14711, 14713, 14715, 14717, 14719, 14721, 14723, 14725, 14727, 14729, 14731, 14733, 14735, 14737, 14739, 14741, 14743, 14745, 14747, 14749, 14751, 14753, 14755, 14757, 14759, 14761, 14763, 14765, 14767, 14769, 14771, 14773, 14775, 14777, 14779, 14781, 14783, 14785, 14787, 14789, 14791, 14793, 14795, 14797, 14799, 14801, 14803, 14805, 14807, 14809, 14811, 14813, 14815, 14817, 14819, 14821, 14823, 14825, 14827, 14829, 14831, 14833, 14835, 14837, 14839, 14841, 14843, 14845, 14847, 14849, 14851, 14853, 14855, 14857, 14859, 14861, 14863, 14865, 14867, 14869, 14871, 14873, 14875, 14877, 14879, 14881, 14883, 14885, 14887, 14889, 14891, 14893, 14895, 14897, 14899, 14901, 14903, 14905, 14907, 14909, 14911, 14913, 14915, 14917, 14919, 14921, 14923, 14925, 14927, 14929, 14931, 14933, 14935, 14937, 14939, 14941, 14943, 14945, 14947, 14949, 14951, 14953, 14955, 14957, 14959, 14961, 14963, 14965, 14967, 14969, 14971, 14973, 14975, 14977, 14979, 14981, 14983, 14985, 14987, 14989, 14991, 15023, 15025, 15027, 15028,	15029, 15030, 15031, 15032, 15033, 15034, 15035, 15036, 15038, 15040, 15041, 15042, 15043, 15044, 15045, 15046, 15048, 15050, 15053, 15055, 15057, 15058, 15059, 15060, 15061, 15062, 15063, 15064, 15065, 15066, 15068, 15070, 15072, 15073, 15074, 15075, 15076, 15078, 15079, 15080, 15081, 15083, 15085, 15087, 15088, 15089, 15090, 15091, 15092, 15093, 15094, 15095, 15096, 15098, 15100, 15101, 15102, 15103, 15104, 15105, 15106, 15108, 15110, 15113, 15115, 15117, 15118, 15119, 15120, 15121, 15122, 15123, 15124, 15125, 15126, 15128, 15130, 15132, 15133, 15134, 15135, 15136, 15138, 15139, 15140, 15141, 15195	
\_ . . . 508, 2646, 2649, 6362, 6385, 12760, 12761, 12762, 12763, 12764, 12765, 12766, 12767, 12768, 12769, 12770, 12771, 13190, 13191, 13192, 13193, 13194, 13195, 13196, 13197, 13198, 13199, 13200, 13201, 13202, 13203, 13204, 13205, 13206, 13207, 13208		
<b>A</b>		
\ABREVE . . 15015, 15087, 15088, 15089, 15090, 15091		
\abreve 15008, 15027, 15028, 15029, 15030, 15031		
\AccFancyVerbLineautorefname . ..... 2673		
\Accfootnoteautorefname . . 2653		
\Acctheoremautorefname . . 2677		
\ACIRCUMFLEX . 15016, 15092, 15093, 15094, 15095, 15096		
\acircumflex . . 2704, 15009, 15032, 15033, 15034, 15035, 15036		
\Acrobatmenu . 1963, 3381, 4987, 7996, 8644, 9117, 9913		
\active . . . 1074, 1081, 3814, 3815, 3816, 3817, 3818, 3819, 3822, 3824, 3827, 3835, 12460		
\add@accent . . . . . 404		
\addcontentsline 6157, 6228, 6546, 6551, 6617, 12716		
\addtocontents 6586, 6618, 6892, 6944, 12703, 12704		
\addtocounter . 5618, 5641, 5650, 5661, 5665, 5859, 8549		
\addvspace . . . . . 12703, 12704		
\advance . . . . . 327, 328, 1095, 4139, 4467, 4513, 4834, 4835, 4838, 4839, 5198, 7750, 8100, 8172, 8201, 8231, 9275, 10334, 10602, 10870, 10914, 10915, 11326, 11371, 11372, 11610, 11667, 11712, 11713, 12297, 12299, 12300, 12306, 12315, 12364, 12563		
\AE . . . . . 12977, 13346, 13773		
\ae . . . . . 13042, 13410, 13775		
\afterassignment 1438, 1444, 1450		
\AfterBeginDocument 243, 2342, 2396, 3485, 3585, 3795, 4903, 5014, 5420, 10219, 10257		
\aftergroup . . . . . 6057		
\alef . . . . . 15150		
\alefhamza . . . . . 15146		
\aleflowerhamza . . . . . 15148		
\alefmadda . . . . . 15145		
\alefmaqsura . . . . . 15179		
\Alph . . . . . 5247, 5551, 5552		
\alph . . . . . 5248, 5830, 5861		
\AMSautorefname . . . . . 7298		
\anchor@spot . . 4079, 4092, 4099, 4105, 7577, 8049, 8133, 8879, 8950, 9414, 10279, 10548		
\appendix . . . . . 5548, 5549		
\appendixautorefname 2521, 2539, 2557, 2575, 2593, 2611, 2629, 2661, 2662, 2687, 2705, 7308		
\arabic . . . 5244, 5457, 5460, 5463, 5464, 5465, 5467, 5468, 5469, 5470, 5472, 5473, 5474, 5475, 5476, 5477, 5480, 5490, 5491, 5530, 5625, 6626, 6632, 6681, 6695, 6880, 6885, 6887		
\AtBeginDocument 244, 841, 2241, 2301, 2444, 2797, 3332, 3370, 3491, 3721, 5605, 6404, 7145, 7292, 7488, 7943, 8508, 8933		
\AtBeginShipout 5127, 8029, 8495		
\AtBeginShipoutBox . 5131, 5134, 8024, 8025, 8496, 8497		
\AtBeginShipoutFirst 5138, 8779, 10092, 10207		
\AtEndDocument . . 5034, 11244		
\AtEndOfPackage 735, 1912, 2770, 2778, 2785, 3473, 3499, 3505, 3650, 3673		
\AtVeryEndDocument . . . . 5340		
\author . . . . . 5063, 5073		
\autopageref . . . . . 3493, 7179		
\autoref . . . 496, 3492, 7198, 10622		

<code>\ayn</code> . . . . .	15168	<code>\c@footnote</code> . . . . .	5940, 6001, 6009, 6113	<code>\citeauthoryear</code> . . . . .	6480, 6486
<b>B</b>					
<code>\b</code> . . . . .	727, 731, 737, 12746, 12758, 12770, 13162, 13185, 13204, 14521, 14523, 14529, 14531, 14561, 14563, 14565, 14567, 14581, 14583, 14597, 14599, 14605, 14607, 14645, 14647, 14649	<code>\c@page</code> . . . . .	5180, 5198, 5199, 5203, 5215, 5217, 5222, 5229, 5231, 5233, 5262, 6509	<code>\citeN</code> . . . . .	6477
<code>\baa</code> . . . . .	15151	<code>\c@secnumdepth</code> . . . . .	12626, 12644, 12660	<code>\CJK@char</code> . . . . .	1077
<code>\back@none</code> . . . . .	2456, 2466, 2479	<code>\c@slidesection</code> . . . . .	6893, 7021, 7022	<code>\CJK@charx</code> . . . . .	1078
<code>\back@page</code> . . . . .	2458, 2471	<code>\c@slidesubsection</code> . . . . .	6945	<code>\CJK@ignorespaces</code> . . . . .	1076
<code>\back@section</code> . . . . .	2457, 2463, 2469, 2475	<code>\c@tocdepth</code> . . . . .	2840, 2845	<code>\CJK@punctchar</code> . . . . .	1079
<code>\back@slide</code> . . . . .	2459, 2468	<code>\calc@bm@number</code> . . . . .	12486, 12561	<code>\CJK@punctcharx</code> . . . . .	1080
<code>\backcite</code> . . . . .	6422	<code>\calculate@pdfview</code> . . . . .	3217, 3220	<code>\close@pdfink</code> . . . . .	7576, 7588, 7596, 7627, 7663, 7698, 8019
<code>\backref</code> . . . . .	6453, 10626	<code>\capitalacute</code> . . . . .	13212	<code>\closeout</code> . . . . .	5017, 12380
<code>\baselineskip</code> . . . . .	1966, 4847, 4848, 4849, 4850, 4851, 4852, 8150, 9431, 9452, 10075	<code>\capitalbreve</code> . . . . .	13219	<code>\clubpenalty</code> . . . . .	5916, 5918
<code>\bbl@cite@choice</code> . . . . .	6269	<code>\capitalcaron</code> . . . . .	13218	<code>\codeof</code> . . . . .	6444
<code>\BeforeTeXIVht</code> . . . . .	2338	<code>\capitalcedilla</code> . . . . .	13209	<code>\color@endbox</code> . . . . .	7500, 8092, 8158, 8188, 8218, 8520, 10326, 10590
<code>\begin</code> . . . . .	10631, 15200	<code>\capitalcircumflex</code> . . . . .	13213	<code>\color@hbox</code> . . . . .	7493, 8092, 8158, 8188, 8218, 8513, 10326, 10590
<code>\belowpdfbookmark</code> . . . . .	12360	<code>\capitaldieresis</code> . . . . .	13215	<code>\columnwidth</code> . . . . .	6051
<code>\bfseries</code> . . . . .	441, 6368, 6391, 7075, 7095, 7112, 7226	<code>\capitaldotaccent</code> . . . . .	13221	<code>\comma@entry</code> . . . . .	4508, 4515, 4517
<code>\bgroup</code> . . . . .	517, 3885, 6044, 6056, 8879, 9444, 11072, 11164, 11185	<code>\capitalgrave</code> . . . . .	13211	<code>\comma@parse</code> . . . . .	4507
<code>\bibcite</code> . . . . .	6260, 6266, 6270, 6295, 6310, 6326, 6336	<code>\capitalmacron</code> . . . . .	13220	<code>\contentsline</code> . . . . .	5023, 5024, 5035, 6587, 6591, 6618, 6620
<code>\bitsetGetDec</code> . . . . .	4191, 4324, 4342, 4356, 4369, 4385, 4417, 4442	<code>\capitalnewtie</code> . . . . .	13223	<code>\copy</code> . . . . .	5733, 5742, 7503, 8025, 8497, 8523
<code>\bitsetGetHex</code> . . . . .	4192	<code>\capitalogonek</code> . . . . .	13210	<code>\count@</code> . . . . .	692, 694, 695, 698, 701, 704, 707, 1093, 1094, 1095, 1096, 1439, 2856, 2857, 2862, 2863, 4138, 4139, 4154, 4450, 4465, 4467, 4491, 4513, 4529, 7745, 7746, 7747, 7748, 7749, 7750, 7753, 9271, 9272, 9273, 9274, 9275, 9278
<code>\bitsetGetSetBitList</code> . . . . .	4180	<code>\capitalring</code> . . . . .	13217	<code>\CurrentBorderColor</code> . . . . .	7566, 7568, 7582, 7584, 7591, 7593, 7598, 8941, 8972, 8974, 8985, 8987, 9006, 9008, 9058, 9060, 9077, 9079
<code>\bitsetIsEmpty</code> . . . . .	4321, 4339, 4353, 4366, 4382, 4414, 4439	<code>\capitaltie</code> . . . . .	13222	<code>\currentpdfbookmark</code> . . . . .	12352
<code>\bitsetReset</code> . . . . .	4294, 4328, 4347, 4361, 4374, 4390, 4422	<code>\capitaltilde</code> . . . . .	13214	<code>\curu</code> . . . . .	14213
<code>\bitsetSetValue</code> . . . . .	4160, 4170	<code>\caption</code> . . . . .	6127, 6129, 6216, 6218	<code>\cyr</code> . . . . .	475, 2641, 2643, 2646, 2649, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2663, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678
<code>\BOOKMARK</code> . . . . .	12341, 12371	<code>\catcode</code> . . . . .	172, 173, 184, 185, 186, 187, 206, 653, 654, 790, 1074, 1081, 1549, 1550, 1665, 1666, 1723, 1724, 1725, 3687, 3689, 3813, 3814, 3815, 3816, 3817, 3818, 3819, 3822, 3824, 3827, 3835, 3845, 3891, 3892, 7324, 9479, 9480, 12389, 12391, 12460	<code>\CYRA</code> . . . . .	14052, 14427, 14431
<code>\box</code> . . . . .	4841, 5134, 7507, 8527, 9752	<code>\cf@encoding</code> . . . . .	1150	<code>\cyra</code> . . . . .	2643, 2650, 2652, 2657, 2660, 2665, 2666, 2672, 2676, 14117, 14429, 14433
<code>\bullet</code> . . . . .	7027, 7035, 7045, 7053	<code>\chapterautorefname</code> . . . . .	2522, 2540, 2558, 2576, 2594, 2612, 2630, 2659, 2688, 2706, 7309	<code>\CYRABHCH</code> . . . . .	14391, 14396
<b>C</b>					
<code>\C</code> . . . . .	13156, 14261, 14263	<code>\chapternumberline</code> . . . . .	12328, 12332	<code>\cyrabhch</code> . . . . .	14393, 14399
<code>\c</code> . . . . .	728, 732, 738, 2623, 2631, 2632, 2633, 5086, 5093, 12744, 12756, 12768, 12979, 13044, 13164, 13179, 13198, 13209, 13348, 13412, 13534, 13536, 13579, 13581, 13589, 13591, 13609, 13611, 13643, 13645, 13659, 13661, 13667, 13669, 13814, 13816, 14316, 14319, 14533, 14535, 14553, 14555	<code>\char</code> . . . . .	11271, 12393, 12430	<code>\CYRABHCHDSC</code> . . . . .	14395
		<code>\chardef</code> . . . . .	2157, 2158, 2159, 2160, 2364, 2366	<code>\cyrabhchdsc</code> . . . . .	14398
		<code>\check@bm@number</code> . . . . .	12497, 12505, 12554, 12562	<code>\CYRABHDZE</code> . . . . .	14459
		<code>\CheckBox</code> . . . . .	4798	<code>\cyrabhdze</code> . . . . .	14461
		<code>\CheckCommand</code> . . . . .	5998	<code>\CYRABHHA</code> . . . . .	14349
		<code>\checkcommand</code> . . . . .	42, 5660, 6104, 6111, 6118, 6216, 6226, 6320, 6332, 6617, 6620, 6681, 7109	<code>\cyrabhha</code> . . . . .	14351
		<code>\checklatex</code> . . . . .	4, 6103, 6215, 6319, 6616, 7108		
		<code>\checkpackage</code> . . . . .	9, 5659, 6680		
		<code>\ChoiceBox</code> . . . . .	4517		
		<code>\ChoiceMenu</code> . . . . .	4795		
		<code>\citation</code> . . . . .	6365, 6388, 6414		

\CYRAE	14435	\CYRI	14045, 14068, 14071, 14463, 14467	\CYRNDSC	14337
\cyræ	14437	\cyri	2643, 2646, 2650, 2656, 2661, 2663, 14133, 14136, 14210, 14465, 14469	\cyrndsc	14339
\CYRB	14054	\CYRIE	14026	\CYRNG	14341
\cyrb	2657, 14119	\cyrie	14191	\cyrng	14343
\CYRBYUS	14237	\CYRII	14030, 14033	\CYRNHK	14415
\cyrbyus	14239	\cyrii	14195, 14198	\cyrnhk	14417
\CYRC	14097	\CYRIOTBYUS	14241	\CYRNJE	14039
\cyrç	14162	\cyriotbyus	14243	\cyrnje	14204
\CYRCH	14099, 14499	\CYRIOTE	14225	\CYRO	14081, 14471
\cyrch	2649, 2650, 2658, 14164, 14501	\cyriote	14227	\cyro	2646, 2649, 2652, 2653, 2663, 2672, 2673, 2675, 2676, 2677, 14146, 14473
\CYRCHLDSC	14419	\CYRIOTLYUS	14233	\CYROMEGA	14217
\cyrchldsc	14421	\cyriotlyus	14235	\cyromega	14219
\CYRCHRDSC	14379	\CYRISHRT	14070	\CYROMEGARND	14269
\cyrchrdsc	14381	\cyrishrt	14135	\cyromegarnd	14271
\CYRCHVCRS	14383	\CYRISHRTDSC	14287	\CYROMEGATITLO	14273
\cyrchvcrs	14385	\cyrishrtdsc	14289	\cyromegatitlo	14275
\CYRD	14060	\CYRIZH	14257, 14261	\CYROT	14277
\cyrd	2646, 2649, 2660, 2665, 2666, 14125	\cyrizh	14259, 14263	\cyrot	14279
\CYRDJE	14022	\CYRJE	14035	\CYROTLD	14475, 14479
\cyrdje	14187	\cyrje	14200	\cyrotld	14477, 14481
\CYRDZE	14028	\CYRK	14043, 14073	\CYRP	14083
\cyrdze	14193	\cyrk	2652, 2653, 2655, 2669, 2670, 2672, 2673, 2674, 14138, 14208	\cyrp	2646, 2649, 2650, 2654, 2655, 2661, 2663, 2667, 2668, 2669, 2670, 14148
\CYRDZHE	14050	\CYRKBEAK	14333	\CYRpalachka	14401
\cyrdzhe	14215	\cyrkbeak	14335	\CYRPHK	14345
\CYRE	14017, 14020, 14062, 14439	\CYRKDSC	14321	\cyrphk	14347
\cyre	2643, 2649, 2650, 2663, 2675, 2676, 2677, 14127, 14182, 14185, 14441	\cyrkdsc	14323	\CYRPSI	14249
\cyreref	14485	\CYRKHCERS	14329	\cyrpsi	14251
\CYREREV	14111, 14483	\cyrkhcrs	14331	\CYRR	14085
\cyrerev	14176	\CYRKHK	14407	\cyrr	2641, 2643, 2646, 2649, 2650, 2656, 2660, 2661, 2663, 2665, 2666, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 14150
\CYRERY	14107, 14507	\cyrkhk	14409	\CYRRTICK	14295
\cyrery	2641, 2643, 14172, 14509	\CYRKOPPA	14281	\cyrrtick	14297
\CYRF	14093	\cyrkoppa	14283	\CYRS	14087, 14354
\cyrf	14158	\CYRKSI	14245	\cyrs	2646, 2649, 2652, 2653, 2656, 2671, 2672, 2673, 2674, 2678, 14152, 14357
\CYRFITA	14253	\cyrksi	14247	\CYRSCHWA	14443, 14447
\cyrfita	14255	\CYRKVCRS	14325	\cyrschwa	14445, 14449
\CYRG	14024, 14058	\cyrkvcrs	14327	\CYRSDSC	14353, 14354
\cyrg	2659, 14123, 14189	\CYRL	14075	\cyrsdsc	14356
\CYRGDSC	14503	\cyril	2657, 2659, 2661, 2663, 14140	\CYRSEMISFTSN	14291
\cyrgdsc	14505	\CYRLDSC	14411	\cyrsemisftsn	14293
\CYRGHCRS	14303	\cyrldsc	14413	\CYRSFTSN	14109
\cyrghcrs	14305	\CYRLJE	14037	\cyrsftsn	14174
\CYRGHK	14307	\cyrlje	14202	\CYRSH	14101
\cyrghk	14309	\CYRLYUS	14229	\cyrsh	14166
\CYRGUP	14299	\cyrlyus	14231	\CYRSHCH	14103
\cyrgup	14301	\CYRM	14077	\cyrshch	14168
\CYRH	14095	\cyrm	2646, 2650, 2676, 2677, 14142	\CYRSHHA	14387
\cyrh	14160	\CYRMDSC	14423	\cyrshha	14389
\CYRHDSC	14371	\cyrmdsc	14425	\CYRT	14089
\cyrhdsc	14373	\CYRN	14079		
\CYRHHK	14511	\cyrn	2643, 2649, 2650, 2652, 2653, 2655, 2663, 2669, 2670, 14144		
\cyrhhk	14513				
\CYRHRDSN	14105				
\cyrhrdsn	14170				

\cyr	2646, 2649, 2655, 2657, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 14154
\CYRTDSC	14359
\cyrtdsc	14361
\CYRTETSE	14375
\cyrтетse	14377
\cyrthousands	14285
\CYRTSHE	14041
\cyrtshe	14206
\CYRU	14048, 14091, 14487, 14491, 14495
\cyru	2653, 2655, 2669, 2670, 2673, 2677, 14156, 14489, 14493, 14497
\CYRUK	14265
\cyruk	14267
\CYRUSHRT	14047
\cyrushrt	14212
\CYRV	14056
\cyrv	2641, 2643, 14121
\CYRY	14363
\cyr	14365
\CYRYA	14115
\cyr	14180
\CYRYAT	14221
\cyr	14223
\CYRYHCERS	14367
\cyr	14369
\CYRYI	14032
\cyr	14197
\CYRYO	14019
\cyr	14184
\CYRYU	14113
\cyr	14178
\CYRZ	14066, 14316, 14455
\cyrz	2660, 2665, 2666, 14131, 14319, 14457
\CYRZDSC	14315
\cyrz	14318
\CYRZH	14064, 14403, 14451
\cyrzh	2643, 2663, 14129, 14405, 14453
\CYRZHDSC	14311
\cyrz	14313
<b>D</b>	
\d	729, 733, 739, 2701, 2705, 2707, 2708, 2709, 2710, 2711, 2713, 12747, 12759, 12771, 13160, 13186, 13205, 15023, 15028, 15033, 15038, 15043, 15048, 15053, 15058, 15063, 15068, 15073, 15078, 15083, 15088, 15093, 15098, 15103, 15108, 15113, 15118, 15123, 15128, 15133, 15138
\dad	15165
\dal	15158
\damma	15185
\declare@shorthand	845, 846, 851, 852, 857, 867, 868, 869, 874, 875, 880, 881, 886, 891, 892, 897, 902, 903, 904, 905, 906, 907, 912, 913, 918, 919, 924, 925
\DeclareFontEncoding	12735, 13130
\DeclareFontFamily	749, 757, 2236
\DeclareFontShape	750, 758, 2237
\DeclareFontSubstitution	751, 759, 2238
\DeclareLocalOptions	3360
\DeclareRobustCommand	3790, 3791, 3884, 3901, 3903, 3905, 3914, 4792, 4795, 4798, 4801, 4804, 4807, 4810, 4935, 4939, 5005, 5009, 7153, 7179, 7198, 12579
\DeclareTextAccent	12736, 12737, 12738, 12739, 12740, 12741, 12742, 12743, 12744, 12745, 12746, 12747
\DefaultHeightofCheckBox	4847, 11022, 11498, 11867
\DefaultHeightofChoiceMenu	4849, 10860, 11316, 11657
\DefaultHeightofReset	4845, 10996, 11471, 11835
\DefaultHeightofSubmit	4843, 10978, 11448, 11811
\DefaultHeightofText	4851, 10836, 11291, 11624
\DefaultHeightofTextMultiline	4852, 10834, 11289, 11622
\DefaultOptionsofCheckBox	4857, 11025, 11501, 11870
\DefaultOptionsofComboBox	4860
\DefaultOptionsofListBox	4859
\DefaultOptionsofPopdownBox	4861
\DefaultOptionsofPushButton	4856, 10952, 11420, 11778
\DefaultOptionsofRadio	4862
\DefaultOptionsofReset	4855, 10999, 11474, 11838
\DefaultOptionsofSubmit	4854, 10981, 11451, 11814
\DefaultOptionsofText	4858, 10842, 11297, 11630
\DefaultWidthofCheckBox	4848, 11021, 11497, 11866
\DefaultWidthofChoiceMenu	4850, 10859, 11315, 11656
\DefaultWidthofReset	4846, 10995, 11470, 11834
\DefaultWidthofSubmit	4844, 10977, 11447, 11810
\DefaultWidthofText	4853, 10831, 11286, 11619
\define@key	2056, 2058, 2101, 2116, 2119, 2122, 2130, 2133, 2143, 2146, 2149, 2166, 2178, 2180, 2183, 2186, 2203, 2207, 2210, 2213, 2216, 2219, 2222, 2257, 2314, 2334, 2335, 2349, 2352, 2355, 2358, 2361, 2369, 2372, 2375, 2378, 2382, 2410, 2426, 2437, 2440, 2443, 2446, 2450, 2453, 2460, 2489, 2508, 2511, 2737, 2768, 2776, 2784, 2791, 2794, 2809, 2834, 2837, 2841, 2869, 2874, 2878, 2881, 2888, 2900, 2908, 2911, 2914, 2916, 2919, 2928, 2938, 2945, 2952, 2953, 3025, 3034, 3051, 3056, 3061, 3066, 3071, 3077, 3083, 3088, 3093, 3126, 3133, 3167, 3217, 3218, 3238, 3245, 3252, 3253, 3256, 3259, 3262, 3265, 3268, 3271, 3274, 3297, 3300, 3303, 4132, 4220, 4276, 4578, 4583, 4595, 4632, 4635, 4638, 4641, 4644, 4647, 4650, 4654, 4657, 4660, 4663, 4666, 4669, 4672, 4675, 4678, 4681, 4684, 4687, 4717, 4720, 4723, 4726, 4745, 4751, 4765, 4781, 4787, 5353, 5364, 9780, 9782, 9785, 9787, 9789, 9798, 9806, 9813, 9815, 9817, 9819, 9821, 9823, 9832, 9842, 9844, 9846, 9847, 9853, 9862, 9864, 9866, 9868, 9870, 9872, 9874, 9876, 9878, 9880, 9882, 9884, 9886, 9888, 9890, 9892, 9893, 9894, 9895, 9896, 9897, 9898, 9899, 9900, 9901, 9902, 9903
\df@tag	6642, 6648
\DH	12997, 13366
\dh	13066, 13434
\dhal	15159
\dimen@	368, 369, 373, 1445, 1513, 1514, 1517, 1519, 3335, 3336, 3338, 3345, 3346, 9238, 9239, 9241, 9743, 9755, 9758
\dimexpr	380, 1792, 1794, 1802, 1807, 1810, 1812, 1826, 1828, 1831, 1832, 1839, 1842, 1845, 1846, 1847, 1848, 1858, 1863, 1871, 1875, 1880, 1890, 1893,

1898, 1901, 1906, 1907  
\ding ..... 4692, 4695  
\DingObject ..... 11393  
\discretionary ..... 519  
\divide ..... 7746, 9272  
\DJ ... 2713, 12998, 13498, 15017  
\dj ..... 2710, 2711, 13500, 15010  
\do ..... 1094, 2073, 2078, 2083,  
2926, 2947, 2948, 2949, 2950,  
2965, 2966, 2967, 2968, 2969,  
2970, 2973, 2974, 2975, 2976,  
2977, 2978, 2981, 2982, 2985,  
2986, 2987, 2988, 2989, 2992,  
2993, 2994, 2995, 2996, 2999,  
3000, 3001, 3002, 3003, 3006,  
3007, 3008, 3009, 3010, 3013,  
3014, 3017, 3018, 3019, 3022,  
3023, 3029, 3030, 3031, 3032,  
3290, 3291, 3292, 3293, 3294,  
3295, 4180, 5841, 6360, 6383,  
10864, 10926, 11134, 11141,  
11151, 11320, 11383, 11661,  
11727, 12459  
\documentclass ..... 2  
\dospecials ..... 12464  
\dots ..... 416  
\dp ..... 4837, 4840, 6049, 8093,  
8161, 8190, 8220, 9744, 9747,  
10327, 10591, 11605  
\dth@counter ... 5881, 5882, 5907  
\dth@everypar ..... 5895  
\dvipdfm@setdim .. 11602, 11644,  
11742, 11767, 11799, 11825,  
11854, 11883

## E

\ECIRCUMFLEX . 15018, 15102,  
15103, 15104, 15105, 15106  
\ecircumflex . 15011, 15042, 15043,  
15044, 15045, 15046  
\edefEscapeHex ..... 672  
\edefEscapeName ... 3157, 3200  
\edefEscapeString ..... 628, 637  
\edefUnescapeName ..... 3158  
\edefUnescapeString ..... 623  
\egroup .. 518, 8879, 9475, 11081,  
11173, 11198  
\em ..... 447  
\emph ..... 426  
\empty ..... 1076, 2844  
\enc@html ..... 4582, 4585  
\enc@update ..... 401  
\END 1175, 1176, 1201, 1202, 1217,  
1218, 1235, 1236, 1253, 1254,  
1622, 1628, 1633, 1717, 1719,  
7870, 7883, 7887, 7894, 7907,  
7911, 7917, 7929, 7933

\end ..... 15201  
\endeqnarray ... 5787, 5805, 5812  
\endequation ..... 5750, 5782  
\endForm ..... 4572  
\endinput .. 64, 2346, 2386, 2387,  
2400, 2404, 2405, 2414, 2415,  
2421, 2422, 3489, 3589, 7069,  
9423, 10629, 12569  
\endlinechar ..... 3812  
\endNoHyper ..... 4969  
\EndPreamble ..... 10632  
\endsubeqnarray ... 5816, 5827  
\eqnarray ..... 5786, 5788, 5809  
\equal ..... 6441  
\equation .. 5749, 5758, 5762, 5771  
\equationautorefname 2515, 2533,  
2551, 2569, 2587, 2605, 2623,  
2641, 2642, 2681, 2699, 7298,  
7302  
\errmessage ..... 2734  
\es@roman ..... 476  
\es@save@dot ..... 1070  
\escapechar 386, 677, 5834, 12483,  
12484, 12535  
\TeX ..... 422, 10637  
\etex@unexpanded ... 1377, 1384  
\TeXversion ... 7705, 7707, 7709  
\evensidemargin ..... 6533  
\everypar ..... 5918  
\ExecuteOptions 3351, 3352, 3356  
\ext@figure ..... 6877  
\ext@table ..... 6876  
\extra@b@citeb ..... 6367  
\extrasvietnam ..... 2777  
\extrasvietnamese ..... 2769

## F

\fa ..... 15171  
\FancyVerbLineautorefname 2528,  
2546, 2564, 2582, 2600, 2618,  
2636, 2671, 2674, 2694, 2712,  
7315  
\farsikaf ..... 15192  
\farsiya ..... 15194  
\fatha ..... 15184  
\fbbox ..... 11275, 11278  
\Field@addtoks 4620, 4642, 4645,  
4766, 4789  
\Field@boolkey 4133, 4221, 4615,  
4636, 4639  
\Field@toks ... 4618, 4619, 4621,  
10840, 10871, 10950, 10976,  
10994, 11023, 11073, 11090,  
11101, 11112, 11122, 11139,  
11157, 11165, 11170, 11186,  
11195, 11295, 11327, 11418,  
11446, 11469, 11499, 11628,

11668, 11776, 11809, 11833,  
11868  
\Field@Width ..... 4557, 4652  
\figureautorefname ... 2518, 2536,  
2554, 2572, 2590, 2608, 2626,  
2656, 2684, 2702, 7305  
\filename@area ..... 4061  
\filename@base ..... 4061  
\filename@ext . 4058, 4059, 4061,  
4062  
\filename@parse ..... 4057  
\find@pdfink ... 7545, 7586, 7595  
\Fld@@additionalactions . 12055,  
12098, 12102  
\Fld@@@DingDef . 4692, 4695, 4714  
\Fld@additionalactions ... 12055,  
12137, 12169, 12203  
\Fld@align ... 4561, 4679, 12005,  
12112, 12177  
\Fld@annotflags 4340, 4342, 12001,  
12031, 12108, 12141, 12173,  
12208, 12242  
\Fld@bcolor ... 4563, 4721, 12016,  
12018, 12128, 12130, 12156,  
12158, 12181, 12193, 12195  
\fid@bcolor ..... 12116  
\Fld@bordercolor .... 4564, 4724,  
12012, 12014, 12038, 12046,  
12048, 12115, 12124, 12126,  
12152, 12154, 12180, 12189,  
12191, 12215, 12223, 12225,  
12249, 12257, 12259  
\Fld@bordersep ..... 4565, 4673  
\Fld@borderstyle .... 4567, 4670,  
12006, 12036, 12113, 12146,  
12178, 12213, 12265  
\Fld@borderwidth ... 4566, 4667,  
4831, 4834, 4835, 4838, 4839,  
10914, 10915, 11371, 11372,  
11712, 11713, 12006, 12036,  
12113, 12146, 12178, 12213,  
12265  
\Fld@calculate@code 4732, 12068,  
12070  
\Fld@cbsymbol 4568, 4685, 12020  
\Fld@charsize .. 4558, 4559, 4664,  
10913, 11370, 11711, 12022,  
12134, 12162, 12199, 12247  
\Fld@checkedfalse ..... 4554  
\Fld@checkequals ... 4624, 10865,  
10927, 11142, 11152, 11321,  
11384, 11662, 11728  
\Fld@choices .. 4447, 4455, 4457,  
4461, 4470, 4478, 4483, 4531,  
4533, 4541, 4542, 12136  
\Fld@color ... 4562, 4727, 12023,  
12135, 12163, 12200

\Fld@default	4472, 4475, 4477, 4676, 10829, 10846, 10857, 10898, 11019, 11071, 11089, 11103, 11111, 11118, 11144, 11154, 11184, 11194, 11284, 11302, 11313, 11355, 11495, 11617, 11635, 11654, 11696, 11864, 12164, 12165, 12201	\Fld@norotatefalse	4256	\flq	483
\Fld@DingDef	4685, 4688, 4690	\Fld@norotatetrue	4255	\flqq	481
\Fld@disabledfalse	4555	\Fld@noviewfalse	4259	\fmtname	7
\Fld@export	4285, 4288, 4295, 4587	\Fld@noviewtrue	4260	\fmtversion	7
\Fld@findlength	11121, 11132	\Fld@nozoomfalse	4252	\fontencoding	394, 398, 11267
\Fld@flags	4354, 4356, 4367, 4369, 4383, 4385, 4415, 4417, 4440, 4442, 12004, 12034, 12111, 12144, 12176, 12211, 12245	\Fld@nozoomtrue	4251	\fontfamily	11266
\Fld@format@code	4730, 12060, 12062	\Fld@onblur@code	4735, 12076, 12078	\fontseries	5874, 11268
\Fld@getmethodfalse	4606	\Fld@onclick@code	4729, 4788, 12052	\fontshape	3753, 11269
\Fld@getmethodtrue	4608	\Fld@onenter@code	4738, 12088, 12090	\footins	6044
\Fld@height	4661, 10832, 10849, 10860, 10916, 10931, 10943, 10978, 10996, 11022, 11031, 11287, 11306, 11316, 11373, 11398, 11411, 11448, 11471, 11498, 11509, 11620, 11637, 11657, 11714, 11725, 11760, 11811, 11835, 11867, 11876	\Fld@onexit@code	4739, 12092, 12094	\footnote	4109
\Fld@hiddenfalse	4243	\Fld@onfocus@code	4734, 12072, 12074	\footnoteautorefname	2516, 2534, 2552, 2570, 2588, 2606, 2624, 2645, 2648, 2682, 2700, 7299, 7303
\Fld@hiddentrue	4244	\Fld@onmousedown@code	4736, 12080, 12082	\footnotesep	6048, 6055
\Fld@invisiblefalse	4239	\Fld@onmouseup@code	4737, 12084, 12086	\footnotesize	452, 6046
\Fld@invisibletrue	4240	\Fld@printfalse	4248	\footnotetext	6001
\Fld@keystroke@code	4733, 12056, 12058	\Fld@printtrue	4247	\Form	4571
\Fld@listcount	10925, 10928, 10939, 11382, 11385, 11399, 11405, 11723, 11729, 11733, 11738, 11749, 11756	\Fld@radiosymbol	4569, 4688, 12160	\Form@action	4581, 11062, 12233
\Fld@loc	4633	\Fld@rotation	4570, 4718, 12008, 12010, 12037, 12042, 12044, 12114, 12120, 12122, 12148, 12150, 12179, 12185, 12187, 12214, 12219, 12221, 12248, 12253, 12255	\Form@boolkey	4575
\Fld@maxlen	4560, 4655, 12204	\Fld@submitflags	4322, 4324, 12235	\Form@htmlfalse	4574, 4592
\Fld@menulength	4556, 4658, 10862, 10866, 10913, 11133, 11134, 11137, 11318, 11322, 11370, 11659, 11663, 11711	\Fld@temp	4691, 4693, 4696, 4697, 4706, 4707	\Form@htmltrue	4586
\Fld@name	4648, 10828, 10856, 10948, 11018, 11070, 11075, 11086, 11087, 11098, 11099, 11108, 11109, 11117, 11138, 11155, 11163, 11168, 11183, 11192, 11283, 11312, 11416, 11494, 11616, 11653, 11774, 11863, 11995, 11997, 12002, 12032, 12109, 12142, 12174, 12209, 12243	\Fld@validate@code	4731, 12064, 12066	\Form@method	4604, 4612, 11062
\Fld@norotatefalse	4256	\Fld@value	4473, 4480, 4482, 4682, 10830, 10846, 10858, 10897, 10898, 11285, 11302, 11314, 11354, 11355, 11618, 11635, 11655, 11695, 11696, 12202	\frq	484
		\Fld@width	4651, 10831, 10845, 10849, 10859, 10896, 10907, 10909, 10931, 10943, 10964, 10977, 10985, 10995, 11009, 11021, 11028, 11031, 11286, 11301, 11306, 11315, 11353, 11364, 11366, 11398, 11411, 11433, 11447, 11455, 11470, 11484, 11497, 11505, 11509, 11619, 11634, 11637, 11656, 11694, 11705, 11707, 11725, 11760, 11792, 11810, 11818, 11834, 11848, 11866, 11874, 11876	\frqq	482
		\float@caption	6137, 6197	\futurelet	538, 1169
		\float@makebox	6199, 6200	\FV@SetLineNo	5599
		\floatingpenalty	6050	\FV@StepLineNo	5598, 5600, 5601

## G

\G	13155, 13181, 13200, 13781, 13783, 13785, 13787, 13789, 13791, 13792, 13794, 13796, 13798, 13800, 13802, 13804
\g@addto@macro	5141, 5292, 6269, 6543, 7936, 9262, 9530, 10044, 10130, 10192, 10483, 10643
\G@refundefinedtrue	3952, 6369, 6392, 7074, 7094, 7111, 7225
\gaf	15193
\Gauge	4804
\GenericError	526
\GenericInfo	528
\GenericWarning	527
\getpagerefnumber	5714
\getrefbykeydefault	5669, 5670
\gexmode	9293, 9294, 9382
\ghayn	15169
\Gin@setfile	6719, 6720
\glossary	490
\glq	479
\glqq	477
\greek@Alph	5565
\Greeknatural	933
\greeknumeral	932
\grq	480

<code>\grqq</code> . . . . .	478	<code>\hvtex@param@duration</code> . .	9167, 9189, 9236, 9238
<code>\guill@spacing</code> . . . . .	862	<code>\hvtex@param@motion</code>	9168, 9191, 9212, 9219
<code>\guillemotleft</code> . .	902, 12924, 13104, 13292, 14997	<code>\hvtex@parse@trans</code> . .	9141, 9163
<code>\guillemotright</code>	903, 12955, 13105, 13324, 14998	<code>\hvtex@produce@trans</code>	9202, 9208
<code>\guilsinglleft</code>	12855, 13106, 14703, 14999	<code>\hvtex@token</code> . .	9160, 9171, 9177, 9184, 9189, 9192, 9195, 9197
<code>\guilsinglright</code>	12857, 13107, 14705, 15000	<code>\hvtex@trans@code</code> . .	9145, 9146, 9147, 9148, 9149, 9150, 9151, 9164, 9210, 9211, 9213, 9215, 9217, 9219, 9221, 9223, 9225, 9226, 9227, 9228, 9229, 9231
<b>H</b>			
<code>\H</code> . . .	13151, 13183, 13202, 13216, 13631, 13633, 13695, 13697, 14495, 14497	<code>\hvtex@trans@effect@Blinds</code>	9145
<code>\h</code>	2703, 15025, 15030, 15035, 15040, 15045, 15050, 15055, 15060, 15065, 15070, 15075, 15080, 15085, 15090, 15095, 15100, 15105, 15110, 15115, 15120, 15125, 15130, 15135, 15140	<code>\hvtex@trans@effect@Box</code> . .	9146
<code>\H@@footnotemark</code> . .	5926, 5943, 6073, 6085, 6096	<code>\hvtex@trans@effect@Dissolve</code> . .	9147
<code>\H@@footnotetext</code> . . .	5925, 5935, 5962, 6027, 6074, 6088, 6096	<code>\hvtex@trans@effect@Glitter</code>	9148
<code>\H@@mpfootnotetext</code> .	5933, 5945, 5947	<code>\hvtex@trans@effect@R</code> . . .	9151
<code>\H@definecounter</code> . . . .	6623, 6625	<code>\hvtex@trans@effect@Split</code> .	9149
<code>\H@endeqnarray</code> . . . .	5787, 5806	<code>\hvtex@trans@effect@Wipe</code> .	9150
<code>\H@endequation</code> . . . .	5750, 5782	<code>\hvtex@trans@par</code> . . .	9184, 9188, 9190, 9193, 9196
<code>\H@endsubeqnarray</code> . .	5816, 5828	<code>\hvtex@trans@params</code>	9178, 9180, 9204
<code>\H@eqnarray</code> . . . . .	5786, 5791	<code>\Hy@@@boolkey</code> . . . . .	2024, 2025
<code>\H@equation</code> . . . . .	5749, 5773	<code>\Hy@@@DefNameKey</code> . .	2098, 2100
<code>\H@item</code> . .	5478, 5484, 6277, 6302	<code>\Hy@@@escapeform</code> .	11954, 11967, 11973
<code>\H@newctr</code> . . . . .	6628, 6630	<code>\Hy@@@SectionAnchor</code>	12576, 12579
<code>\H@old@part</code> . . . . .	12636, 12647	<code>\Hy@@@temp</code>	2885, 2887, 4741, 4743
<code>\H@old@schapter</code> . .	12604, 12614	<code>\Hy@abspage</code> . .	5161, 5226, 5336, 5413
<code>\H@old@ssect</code>	12658, 12670, 12679	<code>\Hy@Acrobatmenu</code> . . .	3397, 3438, 7997, 8645, 9118, 9914
<code>\H@old@spart</code> . . . .	12649, 12656	<code>\Hy@activeanchorfalse</code>	3810, 7579, 8051, 8065, 8134, 8143, 8425, 8865, 8881, 8951, 8963, 9438, 10281, 10295, 10550, 10563
<code>\H@old@ssect</code> . . . .	12589, 12595	<code>\Hy@activeanchortrue</code> . . . .	7578, 8048, 8061, 8132, 8140, 8421, 8861, 8878, 8949, 8960, 9428, 10278, 10291, 10547, 10559
<code>\H@refstepcounter</code> . .	5493, 5503, 5600, 5724, 5772, 5887, 6132, 6890, 6943	<code>\Hy@ActiveCarriageReturn</code>	3846, 3849
<code>\H@seteqlabel</code> . . . . .	6660, 6662	<code>\Hy@AnchorName</code> . . .	3937, 3939, 3942, 3944, 3966, 3968, 3972, 3977, 3979
<code>\H@subeqnarray</code> . . . .	5815, 5819	<code>\Hy@appendixstring</code> .	5546, 5553
<code>\ha</code> . . . . .	15177	<code>\Hy@author</code> . . . . .	5075, 5079
<code>\Haa</code> . . . . .	15156	<code>\Hy@babelnormalise</code> .	3915, 3917
<code>\halign</code> . . . . .	499	<code>\Hy@backout</code> . .	3806, 4954, 4958, 6243
<code>\hamza</code> . . . . .	15144	<code>\Hy@backreffalse</code>	291, 2480, 2502, 3497
<code>\HAR@checkcitations</code> . . . .	6457	<code>\Hy@backreftrue</code>	2473, 2477, 2499
<code>\HAR@citetoaux</code> . . . . .	6413		
<code>\HAR@tempa</code> . .	6458, 6459, 6460, 6461, 6462, 6463		
<code>\harvardcite</code> . . . . .	6407, 6444		
<code>\harvarditem</code> . . . . .	6432		
<code>\hbox</code> . . . . .	1437, 1443, 1449, 1978, 2855, 2861,		
	4652, 4825, 4826, 4827, 4828, 6397, 6528, 8024, 8094, 8101, 8162, 8173, 8191, 8202, 8221, 8232, 8496, 9444, 9747, 9758, 10328, 10335, 10592, 10603, 11210, 11636, 11724, 11759, 11790, 11819, 11849, 11875, 12581		
<code>\hc@currentHref</code> . . . . .	6148		
<code>\HCode</code>	11062, 11064, 11075, 11084, 11096, 11104, 11106, 11137, 11143, 11148, 11153, 11167, 11172, 11176, 11179, 11188		
<code>\headerps@out</code>	5387, 10034, 10045, 10117, 10131, 10184, 10193, 10206, 10220, 10259, 10366, 10484, 10644		
<code>\hfill</code>	4825, 4826, 4827, 4828, 6288, 6321		
<code>\Hfootnoteautorefname</code> . . .	7299		
<code>\hyperref</code> . . . . .	4114		
<code>\hoffset</code> . . . . .	6529		
<code>\hphantom</code> . . . . .	462		
<code>\href</code> .	491, 3884, 4108, 4109, 4995		
<code>\href@</code> . . . . .	3885, 3888, 3893		
<code>\href@split</code> . . . . .	3893, 3894		
<code>\hsize</code> . . . . .	6051		
<code>\hskip</code>	1448, 1526, 2014, 2015, 4831, 11210		
<code>\hspace</code> . . . . .	487, 6447, 6448		
<code>\hss</code> . . . . .	6537, 12586		
<code>\ht</code> . . . . .	4833, 4836, 8099, 8165, 8171, 8177, 8194, 8200, 8206, 8224, 8230, 8236, 9743, 10333, 10601, 11603		
<code>\htmladdimg</code> . . . . .	4107		
<code>\htmladdnormallink</code> . . . . .	4108		
<code>\htmladdnormallinkfoot</code> . . .	4109		
<code>\htmlref</code> . . . . .	4110		
<code>\Huge</code> . . . . .	449		
<code>\huge</code> . . . . .	453		
<code>\Hurl</code> . . . . .	3900, 3902, 3904		
<code>\hv@pdf@char</code>	12388, 12453, 12454, 12455, 12456		
<code>\hvtex@buffer</code> .	9157, 9161, 9169, 9172, 9181, 9185, 9201		
<code>\hvtex@gettoken</code>	9156, 9170, 9174, 9183, 9187		
<code>\hvtex@gettoken@</code> . . .	9157, 9159		
<code>\hvtex@par@dimension</code>	9152, 9193		
<code>\hvtex@par@direction</code>	9153, 9196		
<code>\hvtex@par@duration</code> .	9154, 9188		
<code>\hvtex@par@motion</code> . .	9155, 9190		
<code>\hvtex@param@dimension</code> .	9165, 9194, 9212, 9215		
<code>\hvtex@param@direction</code> . .	9166, 9197, 9223, 9231		

\Hy@BeginAnnot	8538, 8553, 8593, 8621, 8646		2998, 3005, 3012, 3016, 3021, 3028, 3289		10548, 10582, 10600, 10608	
\Hy@bibcite	6266, 6270	\Hy@DEST	9735, 9760		\Hy@EndWrap	3683, 3685, 3686, 3719
\Hy@bookmarksdepth	2840, 2845, 2857, 2863, 12282	\Hy@DestName	7535, 7539		\Hy@escapeform	10848, 10930, 10942, 10967, 10986, 11010, 11030, 11304, 11388, 11409, 11436, 11457, 11485, 11507, 11641, 11732, 11763, 11796, 11821, 11850, 11880, 11948, 11978, 11985
\Hy@bookmarksnumberedfalse	292	\Hy@DisableOption	2054, 3390, 3391, 3392, 3394, 3478, 3504, 3633, 3634, 3635, 3636, 3637, 3638, 3639, 3640, 3641, 3642, 3643, 3644, 3645, 3646, 3647, 3648, 3649, 3651, 3681, 3734, 3762, 3763, 3808, 3809, 4907, 4908, 4909, 4910, 4911, 4912, 4913, 4914, 4915, 4916, 4917, 4918, 4919, 4920, 4921, 4922, 4923, 4924, 4925, 4926, 4927, 4928, 4929, 4930, 5099, 5294, 6100, 6724, 6822, 6823, 7415, 7516, 7855, 7856, 7857, 7858, 7859, 7860, 7861, 7862, 7863, 7864, 7992, 8268, 8269, 8270, 8271, 8272, 8273, 8274, 8275, 8276, 8277, 8536, 8706, 8707, 8708, 8709, 8710, 8711, 8712, 8713, 8714, 8715, 8797, 8935, 9362, 9363, 9364, 9365, 9366, 9367, 9368, 9369, 9370, 9371, 9608, 9609, 9610, 9611, 9612, 9613, 9614, 9615, 9616, 9617, 10110, 10392, 10393, 10394, 10395, 10396, 10397, 10398, 10399, 10400, 10401		\Hy@escapeformfalse	298
\Hy@bookmarksopenfalse	293				\Hy@escapestring	11945, 12020, 12052, 12058, 12062, 12066, 12070, 12074, 12078, 12082, 12086, 12090, 12094, 12201, 12202, 12233
\Hy@bookmarkstrue	294				\Hy@EveryPageAnchor	6504, 6544
\Hy@bookmarkstype	2875, 2877, 6559, 12293				\Hy@EveryPageBoxHook	5125, 5129, 5133, 6543, 9262, 9530
\Hy@boolkey	2024, 2117, 2120, 2123, 2144, 2147, 2150, 2181, 2184, 2187, 2204, 2208, 2211, 2214, 2217, 2220, 2223, 2451, 2454, 2509, 2792, 2795, 2810, 2835, 2838, 2879, 2882, 2920, 3035, 3254, 3257, 3260, 3263, 3266, 3269, 3272, 3280, 3301, 3304, 5354				\Hy@EveryPageHook	5124, 5128, 5292, 7936
\Hy@BorderArrayPatch	9793, 9796, 10043, 10482				\Hy@ExchangeLeftParenthesis	7349, 7355
\Hy@breaklinks@unsupported	2192, 9410				\Hy@ExchangeRightParenthesis	7359, 7365
\Hy@breaklinksfalse	295				\Hy@false	1960, 2035, 2465, 2501
\Hy@breaklinks@unhbox	9734, 9750				\Hy@figuresfalse	299
\Hy@CatcodeWrapper	3682, 3741, 3785, 3798				\Hy@finalfalse	258
\Hy@centerwindowfalse	296				\Hy@finaltrue	257
\Hy@chapapp	5547, 5553, 5560, 12609, 12621, 12706				\Hy@FirstPage	3408
\Hy@chapterstring	5542, 5544, 5547, 5559	\Hy@displaydoctitlefalse	325		\Hy@FirstPageHook	5126, 5139, 5141, 5385, 5386, 10044, 10130, 10192, 10483, 10643
\Hy@CheckOptionValue	2068, 2105	\Hy@DistillerDestFix	6505, 9375, 9377		\Hy@fitwindowfalse	300
\Hy@CJKbookmarksfalse	297	\Hy@draftfalse	257		\Hy@FixNotFirstPage	8022, 8023, 8029
\Hy@cjkpu	1087, 1089, 1108	\Hy@drafttrue	258		\Hy@float@caption	6138, 6188, 6190
\Hy@colorlink	3745, 3753, 3757, 7489, 7571, 7626, 7662, 7697, 8018, 8049, 8070, 8098, 8107, 8133, 8147, 8168, 8180, 8198, 8210, 8228, 8240, 8509, 8584, 8614, 8639, 8663, 8950, 8970, 9033, 9052, 9084, 9114, 9130, 9446, 9718, 9720, 10279, 10300, 10332, 10341, 10548, 10568, 10600, 10608	\Hy@driver	330, 2197, 2339, 2350, 2353, 2356, 2359, 2370, 2373, 2376, 2379, 2390, 2393, 2418, 2427, 2438, 2441, 2447, 3507, 3510, 3514, 3517, 3521, 3524, 3526, 3530, 3534, 3538, 3541, 3545, 3549, 3553, 3556, 3560, 3563, 3565, 3569, 3573, 3576, 3579, 3582, 3593, 3596, 3598, 3604, 3606, 3611, 3613, 3615		\Hy@float@currentHref	6191, 6193, 6195, 6203, 6206, 6208
\Hy@ColorList	2925, 2926	\Hy@DvipdfmxOutlineOpentru	3623, 3630		\Hy@footnote@currentHlabel	5973, 5987, 6019, 6063
\Hy@CounterExists	5443, 5456, 5459	\Hy@EndAnnot	8544, 8587, 8617, 8642, 8666		\Hy@footnote@currentHref	4902, 5950, 5955, 5965, 5970, 5974, 5988, 5991, 6018, 6060, 6064
\Hy@currentbookmarklevel	12288, 12298, 12299, 12305, 12312, 12353, 12356, 12361, 12365	\Hy@endcolorlink	3749, 3754, 3758, 7498, 7576, 8049, 8084, 8102, 8109, 8133, 8155, 8169, 8181, 8198, 8210, 8228, 8240, 8518, 8546, 8950, 9016, 9033, 9052, 9084, 9114, 9130, 9472, 9727, 10279, 10316, 10336, 10343,		\Hy@FormObjects	11238, 11515, 11569, 11579, 11891, 11941
\Hy@defaultdriver	3574, 3598, 3604				\Hy@Gin@setfile	6719, 6721
\Hy@DefFormAction	4579, 4581				\Hy@GlobalStepCount	328, 5226, 5591, 5673, 6519, 6637, 6932, 6983, 12272, 12591, 12608, 12620, 12651, 12666, 12705
\Hy@DefNameKey	2097, 2946, 2964, 2972, 2980, 2984, 2991,				\Hy@gtemp	650, 651, 4477, 4478, 4482, 4483, 4494, 4508, 7373, 7375, 11995, 11997

\Hy@href . . . . .	3885, 3887		
\Hy@hyperfootnotesfalse . .	5922		
\Hy@hyperfootnotetrue . . .	301		
\Hy@hyperindextrue . . . . .	302		
\Hy@hypertexnamesfalse . .	1916		
\Hy@hypertexnamestrue . . .	303		
\Hy@imPLICITtrue . . . . .	304		
\Hy@Info . . . . .	242, 2043, 3448, 3450, 3453, 3455, 3458, 3460, 3463, 3465, 3468, 3470, 3666, 3672, 3750, 3755, 3759, 4187, 4864, 4866, 4869, 4871, 4874, 4876, 4879, 4881, 4884, 4886, 4889, 4891, 4894, 4896, 6344, 6405, 6564		
\Hy@LastPage . . . . .	3411		
\Hy@level . . . . .	12294, 12296, 12307, 12312, 12313, 12314, 12342		
\Hy@levelcheck . . . . .	12295, 12310		
\Hy@linkcounter . . . . .	. 332, 334, 5591, 5592, 5673, 5674, 6637, 6638, 6663, 6932, 6933, 6937, 6983, 6984, 6988, 12272, 12273, 12591, 12592, 12608, 12609, 12620, 12621, 12651, 12652, 12666, 12667, 12705, 12706		
\Hy@linkfileprefix 2910, 4046, 4067, 8087, 8832, 10320, 10585			
\Hy@linktoc . . . . .	2152, 2154, 2162, 2164, 2174, 6595		
\Hy@linktoc@all . . . . .	2160		
\Hy@linktoc@none . . . . .	2157		
\Hy@linktoc@page . . . . .	2152, 2159, 2162		
\Hy@linktoc@section . . . . .	2154, 2158, 2164		
\Hy@linktocpagefalse . . . . .	305		
\Hy@LT@currentHlabel 5726, 5737			
\Hy@LT@currentHref . . . . .	5727, 5738		
\Hy@LT@footnotetext 6016, 6026			
\Hy@make@anchor . . . . .	6636, 6643, 6649		
\Hy@make@df@tag@@ 6641, 6656			
\Hy@make@df@tag@@@ 6647, 6657			
\Hy@maketitle@end . . . . .	6077, 6082, 6084		
\Hy@maketitle@optarg 6075, 6080			
\Hy@MaybeStopNow . . . . .	2381, 2386, 2404, 2414, 2421, 3357		
\Hy@menubartrue . . . . .	306		
\Hy@naturalnamesfalse . . . .	307		
\Hy@nestingfalse . . . . .	308		
\Hy@newline@author . . . . .	5118		
\Hy@newline@title . . . . .	5117		
\Hy@newwindowfalse . . . . .	310		
\Hy@newwindowsetfalse 309, 3277			
\Hy@newwindowsettrue . . . .	3279		
\Hy@next 5242, 5252, 5257, 12619, 12629, 12632			
\Hy@nextfalse . . . . .	3440, 6734		
\Hy@NextPage . . . . .	3402		
\Hy@nexttrue . . . . .	3441, 3442, 3443, 6735, 6736, 6737		
\Hy@number . . . . .	3230, 3234, 3242		
\Hy@numberline . . . . .	12289, 12326, 12327, 12328		
\Hy@ObsoletePaperOption 2126, 2134			
\Hy@ocgcolor . . . . .	7492, 7506, 8512, 8526		
\Hy@ocgcolorlinksfalse . . . .	3729		
\Hy@org@chapter . . . . .	12617, 12633		
\Hy@OutlineName . . . . .	12496, 12550		
\Hy@OutlineRerunCheck . . . . .	12377, 12471, 12540		
\Hy@pageanchortrue . . . . .	311		
\Hy@pagecounter . . . . .	333, 335, 5631, 6519, 6521		
\Hy@pageheight . . . . .	3346, 10132, 10221		
\Hy@pagelabelsfalse . . . . .	5148		
\Hy@pagelabelstrue . . . . .	312		
\Hy@param 5558, 5559, 5560, 5588, 5592			
\Hy@pdfafalse . . . . .	326		
\Hy@pdfencoding@pdfdoc . . . .	2296		
\Hy@pdfmarkerrorfalse . . . .	9698		
\Hy@pdfmarkerrortrue 9826, 9835			
\Hy@pdfminorversion 7382, 7388, 7391, 7399, 7404, 7406, 7409, 7413			
\Hy@pdfpagehiddenfalse . . . .	313		
\Hy@pdfstringdef . . . . .	649, 4452, 4460		
\Hy@pdfstringfalse . . . . .	314, 4932		
\Hy@pdfstringtrue . . . . .	505, 4904		
\Hy@pdfversion 2322, 2333, 4454, 7404, 7406, 7410, 7413, 11989			
\Hy@plainpagesfalse . . . . .	315		
\Hy@PrevPage . . . . .	3405		
\Hy@ps@CR 10174, 10181, 10186, 10187, 10204, 10225, 10226, 10227, 10233, 10240, 10247, 10254			
\Hy@pstringB . . . . .	7773, 7778, 8746, 8758, 9671, 9687, 10455, 10471		
\Hy@pstringD . . . . .	7633, 7657, 8595, 8609, 9979, 9995		
\Hy@pstringdef . . . . .	7319, 7534, 7555, 7601, 7632, 7633, 7668, 7669, 7773, 8363, 8562, 8594, 8595, 8622, 8746, 8969, 9038, 9091, 9092, 9671, 9824, 9833, 9960, 9978, 9979, 10003, 10004, 10455, 11971, 12495, 12511		
\Hy@pstringDest 7534, 7535, 8363, 8410, 9824, 9825, 9829, 9833, 9834, 9838			
\Hy@pstringF . . . . .	7632, 7651, 7668, 7687, 7692, 8594, 8608, 9091, 9098, 9102, 9978, 9994, 10003, 10019, 10022		
\Hy@pstringName . . . . .	12495, 12496, 12511, 12525		
\Hy@pstringP . . . . .	7669, 7692, 9092, 9102, 10004, 10022		
\Hy@pstringURI 7601, 7622, 8622, 8635, 8969, 8981, 9038, 9042, 9960, 9970			
\Hy@PutCatalog 5288, 5296, 5402			
\Hy@raisedlink . . . . .	1967, 5535, 5676, 5697, 5698, 5699, 5702, 5739, 5779, 5782, 5909, 5953, 5968, 6031, 6058, 6176, 6254, 6278, 6283, 6303, 6639, 6664, 10032, 10115, 10362, 10526, 12274, 12583, 12610, 12622, 12653, 12707		
\Hy@raiselinksfalse . . . . .	316, 6406		
\Hy@RemoveDurPageAttr . . . .	7894, 7907		
\Hy@RemoveHidPageAttr . . . .	7917, 7929		
\Hy@RemovePercentCr . . . . .	3862, 3866, 3871		
\Hy@RemoveTransPageAttr 7869, 7883			
\Hy@Reserved@a 3982, 5789, 5818, 11069, 11119, 11182			
\Hy@RestoreCatcodes 205, 3353, 3617			
\Hy@RestoreLastskip . . . . .	. . . . . 1982, 7536, 8052, 8066, 8135, 8144, 8412, 8866, 8882, 8952, 8964, 9421, 9439, 10282, 10296, 10551, 10564		
\Hy@ReturnAfterElseFi 336, 3850			
\Hy@ReturnAfterElseFiFiEnd . .	. . . . . 340, 1411		
\Hy@ReturnAfterFi 336, 356, 1589, 3854, 3870, 6834, 6870, 7354, 7364, 11972			
\Hy@ReturnAfterFiFiEnd . . . .	339, 1403, 1417, 1495, 1502		
\Hy@ReturnEnd . . . . .	338, 339, 340, 1423, 1507		
\Hy@safe@activesfalse 341, 3775, 3780, 3996, 7214			

\Hy@safe@activestruer .	341, 3773, 3778, 3842, 3879, 3919, 3988, 7124, 7203	
\Hy@saved@currentHlabel .	5984, 5989	
\Hy@saved@currentHref . . .	5985, 5990	
\Hy@saved@footnotemark .	6071, 6086	
\Hy@saved@footnotetext . .	6072, 6089	
\Hy@saved@hook . . . . .	5103, 5113	
\Hy@SaveLastskip . . . . .	1982, 7533, 8041, 8055, 8127, 8138, 8361, 8854, 8869, 8943, 8955, 9412, 9425, 10272, 10285, 10541, 10554	
\Hy@scanauthor . . . . .	5073, 5078	
\Hy@scanoptauthor . . .	5073, 5074	
\Hy@scanopttitle . . . .	5064, 5065	
\Hy@scantitle . . . . .	5064, 5069	
\Hy@secnum@part . . . . .	12639, 12641, 12644	
\Hy@SectionAnchorHref . . . .	501, 12574, 12597, 12672	
\Hy@SectionHShift . . . . .	12573, 12582, 12593, 12668	
\Hy@seminarslidesfalse . . .	6882	
\Hy@seminarstrue . . . . .	6880	
\Hy@setbreaklinks . . . . .	2189, 2193, 2205, 7381, 8357	
\Hy@SetCatcodes . . . . .	181, 231, 3355	
\Hy@SetNewWindow . . . . .	3283, 7653, 7689, 8610, 9099, 9993, 10018	
\Hy@setouterhbox . . . . .	9733, 9739	
\Hy@setpagesizetrue . . . . .	317	
\Hy@setpdfborder . . . . .	2954, 7561, 7606, 7637, 7673, 8000, 8573, 8601, 8628, 8656, 8984, 9005, 9026, 9045, 9076, 9107, 9123	
\Hy@setpdfversiontrue . . . .	2321	
\Hy@setref@link . . . . .	7080, 7083	
\Hy@slidetitle . . . . .	6909, 6911, 6918, 6926, 6936, 6960, 6962, 6969, 6977, 6987	
\Hy@StartlinkName . . . . .	7559, 7573	
\Hy@StepCount . . . . .	327, 5203, 10866, 10928, 11134, 11322, 11385, 11663, 11729, 12357, 12362, 12438	
\Hy@temp . . . . .	533, 540, 653, 725, 829, 832, 840, 841, 2132, 2137, 2138, 2139, 2140, 2141, 2142, 2884, 2893, 2894, 2895, 2896, 2897, 2898, 2899, 2926, 2927, 2928, 2931, 2933, 2936, 3094, 3095, 3098, 3101, 3104, 3129, 3137, 3138, 3139, 3140, 3141, 3142, 3143, 3144, 3145, 3275, 3276, 3429, 3433, 3434, 3435, 3436, 3512, 3514, 3519, 3521, 3524, 3536, 3538, 3543, 3545, 3551, 3553, 3558, 3560, 3563, 3605, 3606, 4177, 4181, 4182, 4193, 4277, 4278, 4279, 4281, 4285, 4596, 4597, 4598, 4600, 4604, 4605, 4740, 4756, 4757, 4758, 4759, 4760, 4761, 4762, 4763, 4764, 4769, 4770, 4771, 4772, 4773, 4774, 4775, 4776, 4777, 4778, 4779, 5183, 5186, 5195, 5197, 5201, 5205, 5249, 5251, 5625, 5628, 5631, 5637, 5752, 5758, 6831, 6832, 7788, 7817, 7819, 8287, 8292, 8298, 8302, 8305, 8310, 8341, 8343, 8718, 8761, 8763, 9571, 9574, 9578, 9579, 9585, 9586, 9592, 9620, 9625, 9631, 9635, 9638, 9643, 9676, 9678, 9790, 9791, 9799, 9800, 9904, 9905, 10404, 10409, 10415, 10419, 10422, 10427, 10460, 10462, 11953, 11954, 12493, 12499, 12507, 12522	
\Hy@temp@A . . . . .	564, 565, 1395, 1397, 1408, 1410, 1415, 1416, 1419, 3130, 3132, 6753, 6754, 6755, 6762, 6790, 6791, 6792, 6801	
\Hy@temp@B . . . . .	1396, 1397	
\Hy@tempa . . . . .	2026, 2028, 2030, 2031, 2033, 2035, 2037, 2040, 2043, 2044, 2461, 2462, 2463, 2465, 2466, 2468, 2469, 2471, 2475, 2479, 2490, 2492, 2494, 2495, 2497, 2501, 3848, 3849, 3860, 3864, 3920, 3924, 3987, 3990, 3999, 4001, 4584, 4585, 5232, 5234, 5272, 5274, 5413, 5415, 5836, 5838, 5839, 5842, 5843, 5844, 6133, 6138, 6143, 6558, 6559, 6576, 6577, 6580, 6896, 6897, 6948, 6949, 8071, 8072, 8835, 8978, 8979, 10301, 10302, 10569, 10570, 12292, 12293, 12316, 12318, 12335, 12343, 12695, 12721, 12726, 12729, 12732	
\Hy@tempb . . . . .	5233, 5234, 5273, 5274, 12317, 12318, 12343	
\Hy@tempcolor . . . . .	9454, 9456, 9469, 9541, 9543, 9555	
\Hy@TempPageAnchor . . . . .	6509, 6516, 6520, 6536	
\Hy@testname . . . . .	7547, 7548, 7553, 7555, 7556, 7570, 8554, 8555, 8560, 8562, 8564, 8580, 8992, 8993, 8998, 9002, 9063, 9064, 9069, 9073, 9546, 9547, 9552, 9563	
\Hy@texhtfalse . . . . .	318	
\Hy@texhttrue . . . . .	2336, 3508	
\Hy@title . . . . .	5066, 5070	
\Hy@toclevel . . . . .	6569, 6573, 6582	
\Hy@toolbartrue . . . . .	319	
\Hy@true . . . . .	1959, 2031, 2033, 2495, 2497	
\Hy@typexmlfalse . . . . .	320	
\Hy@undefinedname . . . . .	7544, 7551, 7553, 8551, 8558, 8560, 8967, 8996, 8998, 9067, 9069, 9538, 9550, 9552	
\Hy@unicodefalse . . . . .	321, 630, 639, 2252, 2253, 2261, 3073, 3079, 5627, 6513, 11991	
\Hy@unicodetrue . . . . .	2253, 5347, 5361	
\Hy@useHidKeyfalse . . . . .	2918	
\Hy@useHidKeytrue . . . . .	2922	
\Hy@UseMaketitleInfos . . . .	5119, 7829, 8249, 8678, 9351, 9569, 10373	
\Hy@UseMaketitleString . . .	5100, 5120, 5121	
\Hy@UseNameKey . . . . .	2110, 7795, 7796, 7797, 7798, 7799, 7800, 7801, 7802, 7821, 8317, 8318, 8319, 8320, 8321, 8322, 8323, 8324, 8345, 8725, 8726, 8727, 8728, 8729, 8730, 8731, 8732, 8765, 9323, 9324, 9325, 9326, 9327, 9328, 9329, 9330, 9650, 9651, 9652, 9653, 9654, 9655, 9656, 9657, 9680, 10434, 10435, 10436, 10437, 10438, 10439, 10440, 10441, 10464	
\Hy@usetitlefalse . . . . .	322	
\Hy@varioref@undefined . . .	5708, 5712, 7209	
\Hy@verbosefalse . . . . .	323	
\Hy@vt@PutCatalog . . . . .	5319, 5321	
\Hy@VTeXversion . . . . .	5299, 5311, 9022, 9134, 9270, 12390	
\Hy@Warning . . . . .	240, 363, 1335, 2048, 2063, 2088, 2168, 2280, 2285, 2801, 2853, 3106, 3153, 3161, 3725, 4002, 4234, 5357, 6550, 7190, 7239, 7549, 8394, 8398, 8556, 8994, 9065, 9548, 9827, 9836, 12301, 12319	

\Hy@WarningNoLine . 241, 2127, 2195, 2306, 2904, 2942, 3041, 3122, 3339, 3388, 3516, 3525, 3540, 3555, 3564, 4077, 5047, 5149, 5313, 5427, 5612, 6560, 6711, 9706  
\Hy@WarningPageBorderColor . . . . . 2939, 2941, 2943  
\Hy@WarningPageColor . . . 2901, 2903, 2905  
\Hy@WarnOptionDisabled . 2060, 2062  
\Hy@WarnOptionValue . . . 2041, 2047, 2482, 2504  
\Hy@windowuitrue . . . . . 324  
\Hy@writebookmark . 1964, 6570, 6916, 6924, 6934, 6967, 6975, 6985, 12278, 12368  
\HyC@cmd . . . . . 87, 109, 122  
\HyC@check . . . . . 68, 71, 74  
\HyC@checkcommand . 50, 57, 59  
\HyC@checkFailed . . . . . 146, 157  
\HyC@checkItem . . 132, 133, 134, 135, 138  
\HyC@checklong . . . . . 45, 53  
\HyC@checkOk . . . . . 144, 154  
\HyC@checkPackage . . 12, 16, 18  
\HyC@cmd . 62, 75, 87, 95, 118, 131  
\HyC@date . . . . 11, 15, 23, 29, 31  
\HyC@DeclareRobustCommand . . . . . 114  
\HyC@def . . . . . 125  
\HyC@defcmd . . . . . 47, 54, 93  
\HyC@doCheck . . . . . 99, 130  
\HyC@edef . . . . . 125  
\HyC@getDate . . . . . 12, 14  
\HyC@meaning . . . . . 152, 160  
\HyC@nc@default . . . . 103, 105  
\HyC@nc@noopt . 88, 91, 103, 112, 123, 127  
\HyC@nc@opt . . . . . 88, 101, 123  
\HyC@newcommand . . . . . 86  
\HyC@next . . . . . 48, 55, 60, 83  
\HyC@noValue . 80, 81, 82, 85, 139  
\HyC@optcmd . . . . . 107, 111  
\HyC@org@cmd . . . . . 76  
\HyC@org@optcmd . . . . 80, 111  
\HyC@org@robustcmd . . 81, 120  
\HyC@org@robustoptcmd . . . 82  
\HyC@package . 10, 22, 28, 34, 37, 38  
\HyC@param . . . . . 78, 96, 102  
\HyC@robustcmd . . 115, 120, 121, 122  
\HyC@star . . . . . 67, 70, 94  
\HyC@string . . . 131, 152, 155, 158  
\HyC@Toks . . . 79, 90, 96, 106, 126  
\HyCal@do . . . . . 357, 361  
\HyCal@scan . . . . . 348, 352, 376  
\HyColor@FieldBColor . 4721, 4724  
\HyColor@FieldColor . . . . . 4727  
\HyColor@HyperrefBorderColor . . . . . 2929  
\HyColor@HyperrefColor . . 2889  
\HyColor@UseColor . . 3747, 7495, 7506, 8515, 8526  
\HyField@@PDFChoices . . 4472, 4473, 4488  
\HyField@@SetFlag . . 4167, 4169  
\HyField@@UseFlag . . 4157, 4159  
\HyField@AddToFields . . 11215, 11224, 11307, 11400, 11413, 11440, 11465, 11489, 11511  
\HyField@AdvanceAnnotCount . . 11609, 11639, 11734, 11764, 11793, 11822, 11851, 11878  
\HyField@afields . . 11212, 11225, 11226, 11228, 11247  
\HyField@AnnotCount . . . 11607, 11610, 11613  
\HyField@FlagsAnnot . 4327, 4346, 4360, 4373, 4389, 4421  
\HyField@FlagsCheckBox . . 4359, 11027, 11504, 11873  
\HyField@FlagsChoice . . . 4420, 10906, 11363, 11704  
\HyField@FlagsPushButton . 4345, 10963, 10983, 11008, 11432, 11453, 11483, 11791, 11816, 11847  
\HyField@FlagsRadioButton . 4372, 10902, 11359, 11700  
\HyField@FlagsSubmit . . . 4293, 10984, 11454, 11817  
\HyField@FlagsText . 4388, 10844, 11300, 11633  
\HyField@NewBitsetFlag . . 4125, 4128, 4136  
\HyField@NewFlag . . 4123, 4199, 4200, 4201, 4202, 4203, 4204, 4205, 4206, 4207, 4208, 4209, 4210, 4211, 4212, 4213, 4214, 4215, 4216, 4217, 4218, 4223, 4224, 4225, 4226, 4227, 4228, 4229, 4230, 4231, 4264, 4266, 4267, 4269, 4270, 4272, 4273, 4274, 4275  
\HyField@NewFlagOnly . . . 4127, 4265, 4268, 4271  
\HyField@NewOption . 4124, 4130  
\HyField@PDFAFlagWarning . . . 4233, 4241, 4245, 4249, 4253, 4257, 4261  
\HyField@PDFChoices . . . . 4445, 10941, 11407, 11758  
\HyField@PrintFlags . . 4174, 4320, 4338, 4352, 4365, 4381, 4413, 4438  
\HyField@SetFlag . . . 4166, 4306, 4312, 4317, 4351, 4379  
\HyField@SetKeys . . 4549, 10841, 10873, 10876, 10895, 10951, 10980, 10998, 11024, 11296, 11329, 11332, 11351, 11419, 11450, 11473, 11500, 11629, 11670, 11673, 11692, 11777, 11813, 11837, 11869  
\HyField@TheAnnotCount . 11612, 11643, 11648, 11739, 11751, 11766, 11771, 11798, 11804, 11824, 11829, 11853, 11858, 11882, 11887  
\HyField@UseFlag . . . 4156, 4297, 4298, 4299, 4300, 4301, 4302, 4303, 4304, 4307, 4308, 4309, 4310, 4313, 4314, 4315, 4318, 4329, 4330, 4331, 4332, 4333, 4334, 4335, 4336, 4337, 4348, 4349, 4350, 4362, 4363, 4364, 4375, 4376, 4377, 4378, 4380, 4391, 4392, 4393, 4394, 4395, 4396, 4397, 4398, 4409, 4412, 4423, 4424, 4425, 4426, 4428, 4430, 4431, 4434, 4437  
\HyInd@@@wrrindex . . 6749, 6752, 6783, 6789  
\HyInd@@hyperpage . 6829, 6839  
\HyInd@@wrrindex . . . 6744, 6745  
\HyInd@EncapChar . . 2512, 3349, 6739  
\HyInd@hyperpage . . . 6826, 6828, 6835  
\HyInd@org@wrrindex . 6743, 6747, 6757, 6763, 6765, 6768  
\HyInd@pagelink . 6844, 6850, 6852, 6855  
\HyInd@ParenLeft . . . 6726, 6754, 6791  
\HyInd@ParenRight . . 6727, 6755, 6762, 6792, 6801  
\HyInd@removespaces . 6858, 6861, 6871  
\HyInfo@AddonHandler . . . 3148, 3151  
\HyInfo@AddonList . . 3174, 3175, 3209, 3216  
\HyInfo@Addons . 3195, 3211, 7853, 8703, 9601, 9605  
\HyInfo@AddonUnsupportedtrue . . . . 8247, 9349, 10371  
\HyInfo@do . . . . 3150, 3176, 3199

\HyInfo@GenerateAddons . 3193, 7830, 8679, 9570	4944, 4959, 4975, 5949, 5954, 5964, 5969, 6029, 6032, 6059, 6174, 6177, 6205, 6509, 6516, 6521, 6915, 6923, 6933, 6966, 6974, 6984	6603, 6607, 6609, 7588, 8082, 8154, 8587, 8589, 8846, 9014, 9451, 10314, 10580
\HyInfo@Key . . 3158, 3159, 3167, 3171, 3176, 3179, 3186, 3200, 3204	\hyper@@link . . 3882, 3895, 3932, 3956, 3958, 3982, 6262, 6408, 6409, 6410, 6458, 6460, 6462, 7085, 7100, 7199	\hyper@linkfile . . . . . 3379, 4063, 4952, 4966, 4982, 7630, 8086, 8214, 8591, 8831, 9018, 9976, 10318, 10584
\HyInfo@KeyEscaped . 3157, 3158	\hyper@Qnormalise . . 3851, 3855, 3859	\hyper@linkstart 3376, 4949, 4963, 4979, 5991, 6244, 6251, 6599, 6603, 6607, 6609, 7580, 8069, 8146, 8552, 8589, 8834, 8968, 9441, 10299, 10567
\HyInfo@trapped@false 3098, 3117	\hyper@Qanchor . 4101, 5022, 7577, 8040, 8126, 8417, 8868, 8942, 9411, 10271, 10540	\hyper@linkurl . . . . . 3378, 3904, 4038, 4045, 4066, 4070, 4951, 4965, 4981, 7599, 8087, 8089, 8114, 8184, 8619, 8819, 8832, 9036, 9088, 9536, 9958, 10319, 10323, 10348, 10585, 10587, 10614
\HyInfo@trapped@true 3095, 3116	\hyper@Qanchorend . . . . . 3375, 4931, 4948, 4962, 4978, 5536, 5678, 5740, 5782, 5801, 5825, 5910, 6256, 6281, 6284, 6304, 6437, 6639, 6665, 7579, 8063, 8142, 8424, 8863, 8962, 9430, 10293, 10561, 12274, 12369, 12584, 12611, 12623, 12654, 12708	\hyper@livelink . . . . . 4945, 4970
\HyInfo@trapped@unknown 3101, 3118	\hyper@Qanchorstart . . . . . 3374, 4931, 4947, 4961, 4977, 5536, 5677, 5740, 5779, 5801, 5825, 5910, 6254, 6279, 6284, 6304, 6437, 6639, 6665, 7578, 8054, 8137, 8420, 8853, 8954, 9424, 10284, 10553, 12274, 12369, 12584, 12611, 12623, 12654, 12708	\hyper@makecurrent . 5532, 5556, 5725, 5778, 5800, 5824, 5888, 5986, 6150, 6192
\HyInfo@TrappedUnsupported . . . . . . 3119, 3123, 8250, 9352, 10374	\hyper@Qchars . . 3876, 7602, 8044, 8057, 8076, 8095, 8105, 8118, 8186, 8216, 8821, 8841, 8856, 8872, 8946, 8957, 9039, 9961, 10287, 10306, 10329, 10339, 10352, 10556, 10574, 10594, 10606, 10618	\hyper@Qnormalise . . 3351, 3356, 3820, 3885, 3888, 3901, 3903, 3905, 3926, 4579
\HyLang@addto 2716, 2738, 2769, 2777	\hyper@Qcurrentanchor 9427, 9436, 9448, 9465	\hyper@Qnat@current . . . . . 6245
\HyLang@afrikaans . . . . . 2514	\hyper@Qcurrentlinktype . . . 9449, 9453, 9457	\hyper@Qnatanchorend . . . . 6256
\HyLang@DeclareLang 2730, 2745, 2746, 2747, 2748, 2749, 2750, 2751, 2752, 2753, 2754, 2755, 2756, 2757, 2758, 2759, 2760, 2761, 2762, 2763, 2764, 2765, 2766, 2767	\hyper@Qhash . . 3828, 3829, 3877, 4038, 4050, 4067, 4070, 4898, 8815	\hyper@Qnatanchorstart . . . . 6253
\HyLang@english . . . . . 2532	\hyper@Qimage . 3905, 3906, 8116, 9087, 9535, 10350, 10616	\hyper@Qnatlinkbreak . . . . . 6250
\HyLang@french . . . . . 2550	\hyper@Qlast . . . . . 5038, 5042	\hyper@Qnatlinkend . . . . . 6247
\HyLang@german . . . . . 2568	\hyper@Qlink 3373, 3991, 4945, 4946, 4960, 4970, 4976, 7589, 8113, 8157, 8588, 8812, 9056, 9539, 10347, 10613	\hyper@Qnatlinkstart . . . . . 6242
\HyLang@italian . . . . . 2586	\hyper@Qlink@ . . 3380, 3983, 3985, 4943, 4953, 4957, 4967, 4983	\hyper@Qnormalise . . 3351, 3356, 3820, 3885, 3888, 3901, 3903, 3905, 3926, 4579
\HyLang@magyar . . . . . 2604	\hyper@Qlinkend 3377, 4950, 4964, 4980, 5993, 6248, 6251, 6599,	\hyper@Qpageduration . 7890, 7938, 9247, 9264, 9502, 9532
\HyLang@portuges . . . . . 2622		\hyper@Qpagehidden . . 7914, 7939, 9257, 9265, 9519, 9533
\HyLang@russian . . . . . 2640		\hyper@Qpagetransition 7866, 7937, 9136, 9263, 9485, 9531
\HyLang@spanish . . . . . 2680		\hyper@Qquote . 4900, 8046, 8059, 8073, 8078, 8096, 8106, 8119, 8815, 8825, 8837, 8859, 8876, 10276, 10289, 10303, 10309, 10330, 10340, 10353, 10545, 10557, 10571, 10576, 10596, 10607, 10619
\HyLang@vietnamese . 2698, 2769, 2777		\hyper@Qreadexternallink . . 3993, 4009
\HyLinguex@OrgB . . . . . 727, 731		\hyper@Qrefstepcounter 5511, 5514, 5521
\HyLinguex@OrgC . . . . . 728, 732		\hyper@Qtilde 3837, 3838, 3839, 4899
\HyLinguex@OrgD . . . . . 729, 733		\hyperbaseurl . . 2907, 2908, 4994
\HyLinguex@Restore . . 730, 743, 747, 755, 2234		\hypercalcbp . . . . . 343, 343
\HyOrg@addtoreset . . 6669, 6671, 6698		\hypercalcbpdef . . 345, 382, 3249
\HyOrg@appendix . . . 5548, 5554		\hyperdef . . . . . 3934, 4996
\HyOrg@author . 5063, 5076, 5080		\HyperDestNameFilter . . . . . 3331, 7534, 7556, 8046, 8059,
\HyOrg@float@makebox . . . 6199, 6201		
\HyOrg@hyperpage . . 6729, 6731, 6732		
\HyOrg@languageshorthands 799, 814, 825, 835		
\HyOrg@make@df@tag@@ . 6654		
\HyOrg@make@df@tag@@@ 6655		
\HyOrg@maketitle . . . 6069, 6076, 6081		
\HyOrg@subequations 5853, 5860		
\HyOrg@title . . . 5062, 5067, 5071		
\HyOrg@url . . . . . 3899		
\hyper@Qanchor 3372, 3909, 3911, 3942, 3944, 3977, 3979, 4074,		

8078, 8114, 8363, 8563, 8815,  
 8825, 8842, 8859, 8876, 8947,  
 8958, 9001, 9072, 9824, 9833,  
 10276, 10289, 10309, 10348,  
 10545, 10557, 10576, 10614,  
 12447, 12495, 12511  
 \hypergetpageref . . . . . 5670  
 \hypergetref . . . . . 5669  
 \hyperimage . . . 3905, 4107, 6721  
 \hyperindexformat . . . . . 6728  
 \hyperlink 3881, 4997, 6867, 7005,  
 7013, 7028, 7036, 7046, 7054,  
 7061  
 \hyperlinkfileprefix . . 2910, 2911,  
 2912, 10532  
 \hyperpage 5003, 6729, 6730, 6732,  
 6825  
 \HyperRaiseLinkDefault . . 1966,  
 1975  
 \HyperRaiseLinkHook 1965, 1976  
 \HyperRaiseLinkLength . . 1974,  
 1975, 1978  
 \hyperref . 3914, 4114, 4115, 4999,  
 7157, 7161, 7171, 7185  
 \hypersetup 2273, 2754, 3134, 3350,  
 3352, 4993  
 \hypertarget . . . . . 3907, 4998  
 \HyPL@@@CheckThePage . 5253,  
 5271  
 \HyPL@@@CheckThePage . . 5229,  
 5231  
 \HyPL@Alph . . . . . 5169  
 \HyPL@alph . . . . . 5170  
 \HyPL@arabic . . . . . 5166  
 \HyPL@CheckThePage 5181, 5228  
 \HyPL@Entry . 5415, 5423, 5431,  
 5433  
 \HyPL@EveryPage . . . 5171, 5292  
 \HyPL@Format 5244, 5245, 5246,  
 5247, 5248, 5260  
 \HyPL@found . 5243, 5250, 5254,  
 5261, 5271, 5273  
 \HyPL@Labels . 5160, 5283, 5284,  
 5286, 5288, 5333, 5334, 5426,  
 5434, 5435  
 \HyPL@LastNumber . 5164, 5199,  
 5222  
 \HyPL@LastPrefix . . . 5165, 5193,  
 5224  
 \HyPL@LastType 5163, 5184, 5223  
 \HyPL@page . . 5174, 5176, 5181,  
 5189  
 \HyPL@Prefix . 5189, 5191, 5193,  
 5207, 5210, 5212, 5224, 5238,  
 5276  
 \HyPL@Roman . . . . . 5167  
 \HyPL@roman . . . . . 5168  
 \HyPL@SetPageLabels 5282, 5341,  
 5429  
 \HyPL@StorePageLabel . . . 5207,  
 5209, 5279, 5331, 5410  
 \HyPL@thisLabel 5157, 5159, 5173,  
 5176, 5177  
 \HyPL@Type . . 5179, 5184, 5188,  
 5206, 5214, 5223, 5237, 5275  
 \HyPL@Useless . . . . . 5280, 5286  
 \HyPsd@@@autoref . . 1256, 1258,  
 1261  
 \HyPsd@@@nameref . . 1238, 1240,  
 1243  
 \HyPsd@@@pageref . . 1220, 1222,  
 1225  
 \HyPsd@@@ref . . 1204, 1206, 1209  
 \HyPsd@@@UTFviii@four . . 1841,  
 1844  
 \HyPsd@@AppendItalcorr . 1425  
 \HyPsd@@autoref . . . 1253, 1254  
 \HyPsd@@autorefname 1274, 1277  
 \HyPsd@@ConvertToUnicode . . .  
 . . . . . 1719  
 \HyPsd@@@GetNextTwoTokens . .  
 . . . . . 1717  
 \HyPsd@@@GlyphProcessWarning  
 . . . . . 1595, 1598  
 \HyPsd@@@GreekNum . . 948, 957,  
 1056, 1060, 1064  
 \HyPsd@@@hspace . . . . 1175, 1176  
 \HyPsd@@@LetCommand . . 1298,  
 1319  
 \HyPsd@@@nameref . . . 1235, 1236  
 \HyPsd@@@pageref . . . 1217, 1218  
 \HyPsd@@@ProtectSpacesFi . 1347,  
 1351, 1369, 1375, 1380  
 \HyPsd@@@ref . . . . . 1201, 1202  
 \HyPsd@@@RemoveBraces . . 1393  
 \HyPsd@@@RemoveBracesFi 1390,  
 1393  
 \HyPsd@@@RemoveCmdPrefix . . .  
 . . . . . 1552, 1555  
 \HyPsd@@@ReplaceFi . 1622, 1628,  
 1633  
 \HyPsd@@@UTFviii@four . . 1825,  
 1830  
 \HyPsd@add@accent . . 404, 1164  
 \HyPsd@AfterCountRemove 1438,  
 1509  
 \HyPsd@AfterDimenRemove . . .  
 . . . . . 1444, 1512  
 \HyPsd@AfterSkipRemove . 1450,  
 1524  
 \HyPsd@AMScsfix . 486, 1185,  
 1187  
 \HyPsd@AppendItalcorr . . 1409,  
 1416, 1425  
 \HyPsd@autoref . . . . . 496, 1253  
 \HyPsd@autorefname . 1265, 1271  
 \HyPsd@babel@danish . . . . . 844  
 \HyPsd@babel@dutch . . . . . 850  
 \HyPsd@babel@finnish . . . . . 856  
 \HyPsd@babel@frenchb . . . . . 861  
 \HyPsd@babel@german . . . . . 866  
 \HyPsd@babel@macedonian . 873  
 \HyPsd@babel@ngerman . . . 879  
 \HyPsd@babel@portuges . . . 885  
 \HyPsd@babel@russian . . . . 890  
 \HyPsd@babel@slovene . . . . 896  
 \HyPsd@babel@spanish . . . . 901  
 \HyPsd@babel@swedish . . . . 911  
 \HyPsd@babel@ukrainian . . . 917  
 \HyPsd@babel@usorbian . . . 923  
 \HyPsd@BabelPatch 472, 798, 834  
 \HyPsd@CatcodeWarning . 1454,  
 1471, 1474, 1477, 1480, 1536  
 \HyPsd@Char . . . . . 1721  
 \HyPsd@CharOctByte 1742, 1744,  
 1747, 1756, 1761  
 \HyPsd@CharSurrogate . . . 1736,  
 1753  
 \HyPsd@CharTwoByte 1734, 1741  
 \HyPsd@CheckCatcodes 551, 1431  
 \HyPsd@CJKActiveChars . 1091,  
 1104  
 \HyPsd@CJKhook . . . . . 503, 1073  
 \HyPsd@ConvertToUnicode . 619,  
 1667  
 \HyPsd@DecimalToOctal . . 1083,  
 1112  
 \HyPsd@DefCommand . 534, 535,  
 536, 537, 1287  
 \HyPsd@DisableCommands . 778,  
 780  
 \HyPsd@DoConvert . . 1669, 1679  
 \HyPsd@DoEscape . . . . . 1693  
 \HyPsd@doxspace . . . . . 591, 1640  
 \HyPsd@empty 576, 578, 582, 583,  
 585, 593, 600  
 \HyPsd@end 551, 555, 1348, 1351,  
 1354, 1357, 1360, 1373, 1383,  
 1390, 1393, 1431, 1439, 1445,  
 1451, 1496, 1503, 1509, 1512,  
 1524  
 \HyPsd@endWithElse 1154, 1163  
 \HyPsd@fi . 1365, 1371, 1375, 1381  
 \HyPsd@GetNextTwoTokens 1717  
 \HyPsd@GetOneBye . . . . . 1712  
 \HyPsd@GetTwoBytes . . . . 1708  
 \HyPsd@GLYPHERR 556, 1151,  
 1165, 1172  
 \HyPsd@Gld@GlyphProcess 558, 1583,  
 1596

```

\HyPsd@GlyphProcessWarning .
    . . . . . 1590, 1594

\HyPsd@GobbleFiFi . 1156, 1162
\HyPsd@GreekNum 937, 940, 942
\HyPsd@Greeknumeral . 933, 939
\HyPsd@greeknumeral . . 932, 936
\HyPsd@GreekNumI . . 960, 986,
    1029, 1055
\HyPsd@GreekNumII . 964, 1008,
    1052, 1059
\HyPsd@GreekNumIII 967, 1031,
    1063
\HyPsd@GreekNumIV . 976, 1054
\HyPsd@GreekNumV . . 979, 1058
\HyPsd@GreekNumVI . 981, 1062
\HyPsd@GreekPatch 470, 929, 931
\HyPsd@hspace . . . . . 487, 1175
\HyPsd@hspacetest . . 1178, 1180,
    1183
\HyPsd@ifnextchar 520, 521, 522,
    1324
\HyPsd@Ignorespaces . . 500, 789
\HyPsd@InitUnicode . . . . . 752
\HyPsd@inmathwarn . . 403, 1148
\HyPsd@ITALCORR . . 512, 516,
    1172
\HyPsd@langshort@system . . 805,
    808
\HyPsd@LanguageShorthands . .
    . . . . . 800, 806, 818
\HyPsd@LetCommand . 538, 539,
    1287
\HyPsd@LetUnexpandableSpace
    . . . 507, 508, 509, 510, 1168,
    1171
\HyPsd@LoadStringEnc . . . 2277,
    2297, 2299, 2303, 2305, 5352
\HyPsd@LoadUnicode 2229, 2231,
    2239, 2242, 2244, 2251, 5346
\HyPsd@nameref . . . . . 495, 1235
\HyPsd@pageref . . . . . 494, 1217
\HyPsd@pdfencoding . 620, 2225,
    2227, 2260, 2272, 2275, 2276,
    2281, 2296, 5348, 5350, 5367,
    5370
\HyPsd@pdfencoding@auto . 620,
    2266, 2276, 2293, 5350, 5369
\HyPsd@pdfencoding@pdfdoc . .
    . . . 2259, 2281, 2294
\HyPsd@pdfencoding@unicode . .
    . . 2263, 2295, 5348, 5366
\HyPsd@protected@testopt . 523,
    524, 1328
\HyPsd@ProtectSpaces 544, 1345,
    1366, 1415
\HyPsd@ref . . . . . 493, 1201

```

## I

<code>\if</code> . . . 1197, 1953, 5197, 5205, 5842, 5843, 9210, 9213, 9217, 9221, 9225, 9227, 9229, 12098	<code>\ifFld@password</code> . . . 4401, 11076	<code>\ifHy@pagelabels</code> 275, 5145, 5331, 5409
<code>\ifeqnstar</code> . . . . . 5784, 5792	<code>\ifFld@popdown</code> . . . 4219, 10883, 11339, 11680	<code>\ifHy@pdfa</code> . . . . . 290, 3395, 3724, 4026, 4232, 4744, 4780, 4893, 7560, 7618, 7649, 7685, 8012, 8572, 8600, 8627, 8651, 8983, 9004, 9025, 9044, 9075, 9106, 9122, 9848, 10804, 10954, 11002, 11255, 11423, 11477, 11593, 11781, 11841, 12027, 12100, 12238
<code>\if@files</code> . . . . . 1921, 3970, 5015, 5051, 5411, 5421, 5619, 6291, 6306, 6322, 6334, 6364, 6387, 6414, 6419, 6438, 6777, 12336, 12469, 12538	<code>\ifFld@radio</code> . 10879, 10901, 11125, 11335, 11358, 11676, 11699	<code>\ifHy@pdfmarkerror</code> . . 9695, 9703
<code>\if@hyper@item</code> . . . . . 5496, 5509	<code>\ifFld@readonly</code> . . . 11097, 11107, 11191	<code>\ifHy@pdfpagehidden</code> . 276, 2921, 7918, 9259, 9525
<code>\if@inlabel</code> . . . . . 5899	<code>\ifForm@html</code> . . . . . 4573	<code>\ifHy@pdfstring</code> . . 277, 763, 5501
<code>\if@Localurl</code> . . . . . 8803, 8847	<code>\ifhmode</code> . 2003, 2012, 5867, 5982, 5994, 6120, 6122	<code>\ifHy@plainpages</code> 278, 3462, 5624, 6508
<code>\if@mid@expandable</code> . . . . . 485	<code>\ifHy@activeanchor</code> . . . 247, 4098	<code>\ifHy@psize</code> . . . . . 279
<code>\if@minipage</code> . . . . . 6162, 6233	<code>\ifHy@backref</code> . . 248, 3467, 3803, 4878, 6415, 6451	<code>\ifHy@raiselinks</code> . 280, 8091, 8160, 8189, 8219, 10325, 10589
<code>\if@nmbrlist</code> . . . . . 5483	<code>\ifHy@bookmarks</code> . . . . 249, 3665	<code>\ifHy@seminarslides</code> . . . . . 281
<code>\if@nobreak</code> . . . . . 5915	<code>\ifHy@bookmarksnumbered</code> . 250, 6908, 6959, 12325	<code>\ifHy@setpagesize</code> 282, 7944, 8780, 8915, 10093
<code>\if@skiphyperref</code> . . . . . 5497, 5507	<code>\ifHy@bookmarksopen</code> . 251, 3655	<code>\ifHy@setpdfversion</code> . . 2313, 7403
<code>\if@twocolumn</code> . . . . . 12710	<code>\ifHy@breaklinks</code> 252, 2194, 9442, 9473, 9738, 9749	<code>\ifHy@texht</code> 283, 3764, 3796, 4931, 7068
<code>\if@twoside</code> . . . . . 12698	<code>\ifHy@centerwindow</code> . 253, 7793, 8315, 8723, 9321, 9648, 10432	<code>\ifHy@toolbar</code> . . 284, 7789, 8311, 8719, 9317, 9644, 10428
<code>\ifcase</code> . . . . . 993, 1015, 1038, 1113, 1819, 2263, 2850, 4295, 4400, 4529, 4605, 6595, 6754, 6791, 7020, 7209, 9283, 12037, 12114, 12179, 12214, 12248, 12394	<code>\ifHy@CJKbookmarks</code> . . 254, 502	<code>\ifHy@typexml</code> . . 246, 3472, 3739, 3783, 5016, 12473, 12542
<code>\ifcat</code> 1433, 1460, 1465, 1470, 1473, 1476, 1479, 4085, 4087	<code>\ifHy@colorlinks</code> . 255, 3736, 4883, 10258	<code>\ifHy@unicode</code> . . . . 285, 391, 561, 573, 601, 609, 618, 943, 1086, 1539, 1560, 1573, 1602, 1608, 1851, 2224, 2274, 3039, 5355, 11990
<code>\ifdim</code> . . . . . 1183, 1513, 1517, 1525, 1529, 1985, 2004, 3336, 3621, 7956, 7960, 7965, 7969, 7976, 7979, 7983, 7986, 8783, 8784, 8789, 8790, 8918, 8921, 8925, 8928, 9744, 9755, 10096, 10097, 10102, 10103, 10868, 10907, 10908, 11324, 11364, 11365, 11665, 11705, 11706	<code>\ifHy@displaydoctitle</code> . 289, 7794, 8316, 8724, 9322, 9649, 10433	<code>\ifHy@usehidkey</code> 2917, 7915, 9258, 9520
<code>\ifetex@unexpanded</code> . . . . . 1339	<code>\ifHy@draft</code> . . . . . 256, 3371	<code>\ifHy@usetitle</code> . . . . . 286, 5061
<code>\iffalse</code> . . . . . 665	<code>\ifHy@DvipdfmxOutlineOpen</code> . . . . . 3619, 12513	<code>\ifHy@verbose</code> . . 287, 4175, 6575, 7530
<code>\ifFileExists</code> . . . . . 5046, 10629	<code>\ifHy@escapeform</code> . . . 259, 11949, 11979	<code>\ifHy@windowui</code> . 288, 7791, 8313, 8721, 9319, 9646, 10430
<code>\ifFld@checked</code> 4552, 11189, 12025	<code>\ifHy@figures</code> 260, 3447, 4863, 6718	<code>\ifHyInfo@AddonUnsupported</code> . . . . . 3146, 3160, 3194
<code>\ifFld@comb</code> . . . . . 4399	<code>\ifHy@fitwindow</code> 261, 7792, 8314, 8722, 9320, 9647, 10431	<code>\ifHyPsd@XeTeXBigChars</code> . . 663, 665, 668, 671
<code>\ifFld@combo</code> . 4427, 4432, 10882, 10911, 11338, 11368, 11679, 11709	<code>\ifHy@frenchlinks</code> . . . . 262, 3752	<code>\ifmeasuring@</code> . . . . . 5520, 5533
<code>\ifFld@disabled</code> . . . . 4553, 11190	<code>\ifHy@hyperfootnotes</code> . 263, 5923	<code>\ifnum</code> . . . . . 695, 698, 701, 704, 707, 819, 944, 947, 958, 959, 963, 971, 975, 978, 988, 1010, 1033, 1730, 1733, 1809, 1852, 1855, 1867, 2389, 2392, 2417, 2851, 2852, 3629, 3656, 4454, 4525, 4536, 5180, 5199, 5215, 5311, 7022, 7060, 7399, 7404, 7709, 7716, 7722, 7730, 8540, 8545, 9022,
<code>\ifFld@edit</code> . . . . . 4433	<code>\ifHy@hyperindex</code> 264, 3457, 4873, 6725	
<code>\ifFld@fileselect</code> . . . . . 4402	<code>\ifHy@hypertextnames</code> 265, 5562, 5623, 6507, 6913, 6964	
<code>\ifFld@hidden</code> 10845, 10896, 10964, 10985, 11009, 11028, 11088, 11100, 11110, 11193, 11301, 11353, 11433, 11455, 11484, 11505, 11634, 11694, 11792, 11818, 11848, 11874	<code>\ifHy@implicit</code> . . 266, 3479, 12567	
<code>\ifFld@multiline</code> . . . . 4400, 10833, 11095, 11288, 11621	<code>\ifHy@linktopage</code> 267, 2151, 2161	
<code>\ifFld@multiselect</code> . . . . . 4471	<code>\ifHy@menubar</code> . 268, 7790, 8312, 8720, 9318, 9645, 10429	
	<code>\ifHy@naturalnames</code> . . 269, 5575, 6914, 6965	
	<code>\ifHy@nesting</code> . . 270, 3452, 3908, 3941, 3976, 4083, 4868, 5948, 5963, 6028, 6173	
	<code>\ifHy@newwindow</code> 272, 3286, 9022	
	<code>\ifHy@newwindowset</code> . . 271, 3284	
	<code>\ifHy@next</code> . . . . . 842, 3444, 6742	
	<code>\ifHy@ocgcolorlinks</code> . . 273, 2800, 3722, 3732, 4888, 7398, 7416, 7491, 7499, 8428, 8511, 8519	
	<code>\ifHy@pageanchor</code> 274, 5610, 5622, 5637, 6506	

9134, 9270, 9278, 9280, 9281, 9291, 9294, 9380, 9382, 9482, 10120, 11239, 11399, 11733, 11738, 11749, 11989, 12008, 12037, 12042, 12114, 12120, 12148, 12179, 12185, 12204, 12214, 12219, 12248, 12253, 12282, 12298, 12390, 12460, 12515, 12626, 12644, 12660	<code>\itemautorefname</code> . . . 2517, 2535, 2553, 2571, 2589, 2607, 2625, 2654, 2655, 2683, 2701, 7300, 7301, 7304	<code>\Large</code> . . . . . 451 <code>\large</code> . 454, 7025, 7033, 7043, 7051 <code>\lastbox</code> . . . . . 5902 <code>\lastpage@putlabel</code> . . . . . 5605 <code>\lastskip</code> . 1985, 1989, 1996, 2004, 2008, 2015 <code>\LaTeX</code> . . . 420, 421, 10635, 10636 <code>\LaTeXe</code> . . . . . 421, 10636 <code>\LayoutCheckField</code> . 4819, 11029, 11506, 11879 <code>\LayoutChoiceField</code> . 4816, 10900, 11357, 11698 <code>\LayoutPushButtonField</code> . . 4822, 10958, 10965, 11427, 11434, 11785, 11794 <code>\LayoutTextField</code> . . . 4813, 10847, 11303, 11640 <code>\lccode</code> 694, 1096, 1774, 4704, 6739, 6740 <code>\ldots</code> . . . . . 415 <code>\leavevmode</code> . . . 497, 1963, 3381, 3398, 3438, 4031, 4987, 5981, 6119, 6355, 7160, 7168, 7546, 7603, 7634, 7670, 8090, 8159, 8187, 8217, 8592, 8620, 8813, 8822, 8873, 9019, 9040, 9062, 9093, 9444, 9737, 9962, 9980, 10005, 10324, 10588, 10959, 10966, 11001, 11387, 11408, 11428, 11435, 11456, 11476, 11731, 11762, 11786, 11795, 11820, 11840, 12580 <code>\LetLtxMacro</code> . 4934, 4938, 5004, 5008 <code>\limits</code> . . . . . 3868 <code>\listofslides</code> . . . . . 6994 <code>\listslidenam</code> . 6993, 6996, 6998, 7000 <code>\literalps@out</code> . 1961, 9374, 9379, 9426, 9431, 9447, 9452, 9713, 9724, 9745, 9747, 9756, 9758, 10033, 10116, 10179, 10365 <code>\lower</code> 8094, 8162, 8191, 8221, 9747, 10328, 10592 <code>\lowercase</code> . 714, 1097, 1775, 2027, 2461, 2491, 3094, 3130, 4124, 4125, 4128, 4133, 4157, 4167, 4221, 4277, 4596, 4636, 4639, 4705, 6741, 9481 <code>\slide@flag</code> 7020, 7023, 7041, 7060, 7064 <code>\LT@array</code> . . . . . 5719 <code>\LT@firsthead</code> . . . . . 5733, 5742 <code>\LT@p@ftn</code> . 6000, 6003, 6007, 6021 <code>\LT@p@ftntext</code> . . . . . 5998, 6005 <code>\LT@start</code> . . . . . 5735, 5746 <code>\luatexrevision</code> . . . . . 7753
<code>\ifodd</code> . . . . . 1833, 1838, 6530 <code>\ifpdf</code> . . . . . 2429, 3513, 3575 <code>\ifpdfstringunicode</code> . . . . 396, 399 <code>\ifportrait</code> . . . . . 7955 <code>\ifthenelse</code> . . . . . 6441 <code>\iftrue</code> 668, 1346, 1368, 1632, 12628 <code>\ifvmode</code> . . . . . 1968, 1984, 1993 <code>\ifvoid</code> . . . . . 5733, 5742, 5903 <code>\ifvtexhtml</code> . . . . . 3552, 3581 <code>\ifvtexpdf</code> . . . . . 3592 <code>\ifvtexps</code> . . . . . 3595 <code>\ifxetex</code> 624, 655, 2431, 3038, 3537, 3578, 3620 <code>\ignorespaces</code> . . . 500, 5706, 5862, 6066, 6158, 6169, 6172, 6229, 6237, 6299, 6314, 6330, 6339, 6449, 6893, 6945 <code>\IJ</code> . . . . . 12888, 13570 <code>\ij</code> . . . . . 13097, 13572 <code>\immediate</code> . . . . . 5017, 5018, 5019, 5021, 5053, 5324, 5414, 5422, 5634, 5662, 6294, 6309, 6325, 6335, 6365, 6388, 6414, 6444, 7417, 7432, 7447, 9385, 10117, 11206, 11245, 12380, 12446, 12472, 12474, 12541, 12543 <code>\incr@eqnum</code> . . . . . 5753, 5766 <code>\index</code> . . . . . 489 <code>\indexentry</code> 6780, 6795, 6803, 6807, 6812 <code>\input</code> . . . . . 746, 754, 2233, 2772, 2780, 2787, 3615, 10035, 10118, 10209, 10367 <code>\InputIfFileExists</code> . . 3354, 12465, 12488, 12533, 12535 <code>\inputlineno</code> . . . . 4090, 6578, 7531 <code>\insert</code> . . . . . 6044 <code>\IntCalcAdd</code> . . . . . 1759 <code>\IntCalcDiv</code> . . . . 1743, 1749, 1755 <code>\intcalcDiv</code> . . . . 1750, 1757, 1760 <code>\IntCalcMod</code> . . 1745, 1750, 1751, 1757, 1760, 1762 <code>\intcalcSub</code> . . . . . 1737 <code>\interfootnotelinepenalty</code> . . 6047 <code>\interlinepenalty</code> . . . . . 6047 <code>\item</code> 5478, 5481, 6321, 6333, 6436 <code>\Itemautorefname</code> . . . . . 7300	<code>\itemindent</code> . . . . . 5904 <code>\itshape</code> . . . . . 443  <b>J</b> <code>\j</code> . . . . . 13577, 13762, 13826 <code>\jarr</code> . . . . . 15183 <code>\jeem</code> . . . . . 15155 <code>\jeh</code> . . . . . 15191 <code>\jobname</code> 5018, 5046, 5053, 10629, 12379, 12465, 12472, 12488, 12533, 12535, 12541  <b>K</b> <code>\k</code> . . . 12772, 13114, 13116, 13121, 13123, 13166, 13184, 13203, 13210, 13474, 13476, 13514, 13516, 13561, 13563, 13564, 13699, 13701, 13758, 13760, 14357, 14396, 14399 <code>\kaf</code> . . . . . 15173 <code>\kasra</code> . . . . . 15186 <code>\keepPDF@SetupDoc</code> 10262, 10269 <code>\kern</code> 1442, 1514, 1519, 1531, 5904, 6525, 6526, 6527, 6529, 6530, 6535, 12582 <code>\kernel@ifnextchar</code> . . . . . 521 <code>\kha</code> . . . . . 15157 <code>\KV@Hyp@draft</code> . . . . . 2125 <code>\KV@Hyp@nolinks</code> . . . . . 2125 <code>\kv@key</code> . . 3154, 3157, 3164, 4452, 4455, 4457, 4461, 4465 <code>\kv@parse</code> . . . . . 4451 <code>\kv@parse@normalized</code> 3178, 3185 <code>\kv@processor@default</code> 3181, 3188 <code>\kv@set@family@handler</code> . . 3147 <code>\kv@value</code> . 3152, 4453, 4460, 4461 <code>\kvsetkeys</code> . . . . . 3127  <b>L</b> <code>\L</code> . . . . . 12881, 13601 <code>\l</code> . . . . . 12894, 13603 <code>\l@slide</code> . . 6893, 7003, 7008, 7012, 7019 <code>\l@subslide</code> . 6945, 7008, 7015, 7059 <code>\label</code> . . . . . 488, 6548 <code>\label@hyperref</code> . . . . 3948, 3950 <code>\label@hyperdef</code> . . . . 3934, 3962 <code>\label@hyperref</code> . 3915, 3947, 4111 <code>\labelsep</code> . . . . . 6448 <code>\labelwidth</code> . . . . . 6447 <code>\lam</code> . . . . . 15174 <code>\language@group</code> . . . . . 468 <code>\languageshortands</code> 799, 800, 835 <code>\LARGE</code> . . . . . 450	

<code>\luatexversion</code> . . . . .	7745, 7750		
<b>M</b>			
<code>\m@ne</code> . . . . .	4139, 5650, 5834, 8549, 12535, 12626, 12641		
<code>\make@df@tag@%</code> . . . . .	6654, 6656		
<code>\make@df@tag@%%</code> . . . . .	6655, 6657		
<code>\make@stripped@name</code> . . . . .	5525, 5775, 5797, 5821, 5832		
<code>\makeatletter</code> . . . . .	3, 777, 5045		
<code>\MakeButtonField</code> . . . . .	4829, 10960, 10968, 10987, 11006, 11011, 11429, 11438, 11463, 11481, 11487, 11787, 11790, 11819, 11845, 11849		
<code>\MakeCheckBoxField</code> . . . . .	4826, 11031, 11509, 11876		
<code>\MakeChoiceField</code> . . . . .	4828, 10943, 11411, 11760		
<code>\MakeFieldObject</code> . . . . .	11205, 11264, 11274, 11277		
<code>\MakeLowercase</code> . . . . .	465		
<code>\MakeLowercaseUnsupportedInPdfStrings</code> . . . . .	465		
<code>\MakeRadioField</code> . . . . .	4825, 10931, 11398, 11725		
<code>\makeslideheading</code> . . . . .	6903		
<code>\makeslidesubheading</code> . . . . .	6955		
<code>\maketag@%%</code> . . . . .	6643		
<code>\MakeTextField</code> . . . . .	4827, 10849, 11306, 11637		
<code>\maketitle</code> . . . . .	6069, 6070		
<code>\MakeUppercase</code> . . . . .	464, 6998, 7000, 7151		
<code>\MakeUppercaseUnsupportedInPdfStrings</code> . . . . .	464		
<code>\MathBSuppress</code> . . . . .	8823, 8827		
<code>\mathdisplay</code> . . . . .	5756, 5765		
<code>\mathdisplay@push</code> . . . . .	5754, 5763		
<code>\mathversion</code> . . . . .	459		
<code>\maxdimen</code> . . . . .	2872, 11210		
<code>\MaybeStopEarly</code> . . . . .	331, 2340, 2394, 3483, 3583, 5442		
<code>\mbox</code> . . . . .	498, 6368, 6391, 7501, 8521		
<code>\mddefault</code> . . . . .	5874		
<code>\mdseries</code> . . . . .	442		
<code>\meaning</code> . . . . .	62, 153, 159, 1924, 5085, 5588, 5839, 12499, 12507, 12522		
<code>\measuring@false</code> . . . . .	5520		
<code>\mediaheight</code> . . . . .	8911, 8913, 8919, 8926		
<code>\mediawidth</code> . . . . .	8922, 8929		
<code>\meem</code> . . . . .	15175		
<code>\message</code> . . . . .	7021		
<code>\MessageBreak</code> . . . . .	364, 1545, 1566, 1579, 1602, 1607,		
	1609, 2049, 2050, 2064, 2086, 2089, 2091, 2169, 2170, 2196, 2197, 2246, 2247, 2248, 2286, 2287, 2307, 2317, 2483, 2802, 3042, 3107, 3162, 3163, 3341, 3517, 3518, 3526, 3527, 3541, 3542, 3556, 3557, 3565, 3566, 3726, 4178, 4183, 4192, 4235, 4281, 4405, 4518, 4600, 5150, 5358, 5374, 5613, 6552, 6713, 7550, 8557, 8995, 9066, 9549, 11218, 11220, 12303, 12321, 12382		
<code>\MF</code> . . . . .	424, 10638		
<code>\MP</code> . . . . .	425, 10639		
<code>\multiply</code> . . . . .	7749, 9239, 9274		
<b>N</b>			
<code>\n</code> . . . . .	705		
<code>\name@of@eq</code> . . . . .	5494, 5523		
<code>\name@of@slide</code> . . . . .	5495, 5505		
<code>\nameref</code> . . . . .	495		
<code>\nasb</code> . . . . .	15181		
<code>\netscape</code> . . . . .	8125		
<code>\new@ifnextchar</code> . . . . .	522		
<code>\new@pdfink</code> . . . . .	7529, 7577, 7578		
<code>\new@refstepcounter</code> . . . . .	5748, 5780		
<code>\newblock</code> . . . . .	6452		
<code>\newcommand</code> . . . . .	4, 9, 42, 1962, 4991, 5457, 5460, 5463, 5464, 5465, 5467, 5468, 5469, 5470, 5472, 5473, 5474, 5475, 5476, 5477, 5486, 5487, 5488, 5489, 5490, 5491, 5830, 6681, 6880, 6885, 6886, 12352, 12355, 12360		
<code>\newcount</code> . . . . .	332, 333, 4556, 5161, 10939, 11405, 11607, 11756, 12387		
<code>\newcounter</code> . . . . .	5479, 5924, 8427, 12351		
<code>\newdimen</code> . . . . .	329, 4557, 4558		
<code>\newif</code> . . . . .	246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 663, 842, 2313, 2917, 3146, 3619, 4131, 4219, 4552, 4553, 4573, 5496, 5497, 5520, 5784, 8803, 9695		
<code>\newlabel</code> . . . . .	1927, 3972, 5028, 5029, 5036, 5058, 5635, 5663		
<code>\newlabelxx</code> . . . . .	5030, 5031		
<code>\newlength</code> . . . . .	12573		
<code>\newline</code> . . . . .	418, 5106		
<code>\newname</code> . . . . .	5526, 5776, 5798, 5822, 5835, 5844		
<code>\newsavebox</code> . . . . .	8358, 9732		
<code>\newtie</code> . . . . .	12774, 12775, 13158, 13188, 13207, 13223		
<code>\newtoks</code> . . . . .	90, 4618, 9567, 9765, 9766		
<code>\newwrite</code> . . . . .	5052, 12470, 12539		
<code>\next</code> . . . . .	6442, 6443, 6444, 9202, 9204, 9206		
<code>\nfss@text</code> . . . . .	7075, 7095, 7112, 7226		
<code>\NG</code> . . . . .	13619		
<code>\ng</code> . . . . .	13621		
<code>\noboundary</code> . . . . .	15196		
<code>\nobreak</code> . . . . .	1986, 1994, 2005, 2013, 5982, 6120		
<code>\nobreakspace</code> . . . . .	510, 7163, 7192, 7195		
<code>\noexpand</code> . . . . .	22, 93, 95, 108, 116, 169, 171, 172, 173, 176, 206, 683, 787, 1108, 1293, 1310, 1433, 1788, 1992, 1993, 1994, 1997, 2011, 2012, 2013, 2016, 2733, 2735, 2737, 2738, 2754, 2928, 2929, 2931, 3211, 3862, 3922, 4002, 4085, 4087, 4187, 5253, 5254, 5263, 5265, 5268, 5387, 5647, 5648, 5650, 5676, 5677, 5678, 5679, 5680, 5688, 5689, 5690, 5838, 6001, 6009, 6010, 6011, 6012, 6013, 6015, 6129, 6218, 6293, 6308, 6324, 6673, 6675, 7128, 7129, 7242, 7243, 7248, 7250, 7255, 7256, 7261, 7262, 7752, 8299, 9632, 9699, 10176, 10416, 10875, 10876, 10877, 10878, 11331, 11332, 11333, 11334, 11672, 11673, 11674, 11675, 11951		
<code>\nofrenchguillemets</code> . . . . .	529, 531		
<code>\NoHy@OrgPageRef</code> . . . . .	4938, 4940, 5008, 5010		
<code>\NoHy@OrgRef</code> . . . . .	4934, 4936, 5004, 5006		
<code>\NoHyper</code> . . . . .	4942		
<code>\nohyperpage</code> . . . . .	4986, <u>6824</u> , 6826, 6828		
<code>\nolinkurl</code> . . . . .	3901		
<code>\nolinkurl@</code> . . . . .	3901, 3902		
<code>\NomFancyVerbLineautorefname</code> . . . . .	2672		
<code>\Nomfootnoteautorefname</code> . . . . .	2652		
<code>\Nomtheoremautorefname</code> . . . . .	2676		
<code>\nonumber</code> . . . . .	5809, 5812		
<code>\normalfont</code> . . . . .	437, 5870		
<code>\normalsize</code> . . . . .	455, 6165, 6236		
<code>\NR@gettitle</code> . . . . .	6155		
<code>\null</code> . . . . .	6433, 6441, 7117, 7222		

`\number` . . . . . 961,  
 965, 968, 976, 979, 981, 1734,  
 1792, 1793, 1794, 1795, 1799,  
 1800, 1801, 1802, 1803, 1807,  
 1808, 1809, 1810, 1811, 1812,  
 1813, 1817, 1818, 1819, 1820,  
 1821, 1822, 1825, 1827, 1831,  
 1832, 1834, 1836, 1838, 1841,  
 1845, 1846, 1847, 1848, 1857,  
 1858, 1862, 1863, 1870, 1871,  
 1875, 1878, 1879, 1880, 1890,  
 1892, 1893, 1898, 1900, 1901,  
 1906, 1907, 3231, 3621, 3657,  
 4145, 7410, 7413, 8150, 8164,  
 8165, 8176, 8177, 8193, 8194,  
 8205, 8206, 8223, 8224, 8235,  
 8236  
`\numberline` . . . 6158, 6229, 12326,  
 12330  
`\numberwithin` . . . . . 6678  
`\numexpr` . 1799, 1800, 1801, 1803,  
 1809, 1817, 1818, 1819, 1820,  
 1821, 1822, 1826, 1828, 1832,  
 1834, 1836, 1838, 1842, 1845,  
 1846, 1848, 1857, 1862, 1879,  
 1893, 1901, 1907, 3235  
`\nun` . . . . . 15176

## O

`\O` . . . . . 13014, 13382, 13777  
`\o` . . . . . 13082, 13450, 13779  
`\obeylines` . . . . . 10175  
`\OBJ@acroform` . . . 11261, 11262  
`\OBJ@Helv` . 11242, 11251, 11568  
`\OBJ@OCG@print` . . . 7446, 7449,  
 7457, 7483, 8445, 8447, 8460,  
 8464, 8473, 8502  
`\OBJ@OCG@view` . . . 7431, 7449,  
 7482, 8429, 8431, 8444, 8464,  
 8501  
`\OBJ@OCGs` . . 7452, 7455, 7461,  
 7466, 7471, 8461, 8463, 8467,  
 8471, 8477, 8482, 8487  
`\OBJ@pdfdocencoding` . . . 11240,  
 11549, 11565  
`\OBJ@ZaDb` . 11241, 11250, 11558  
`\OCIRCUMFLEX` . 15019, 15117,  
 15118, 15119, 15120, 15121  
`\ocircumflex` . 15012, 15057, 15058,  
 15059, 15060, 15061  
`\oddsidemargin` . . . . . 6531  
`\OE` . . . . . 12883, 13635  
`\oe` . . . . . 12896, 13637  
`\offinterlineskip` . . . . . 5132  
`\OHORN` . . . 15020, 15122, 15123,  
 15124, 15125, 15126  
`\ohorn` . . 2699, 2706, 15013, 15062,  
 15063, 15064, 15065, 15066

`\oldb` . . . . . 737  
`\oldc` . . . . . 738  
`\oldcontentsline` . 5023, 5026, 5035  
`\oldd` . . . . . 739  
`\oldnewlabel` . . . 5028, 5033, 5036  
`\OMEGA` . . . . . 10634  
`\openout` . 5018, 5053, 12472, 12541  
`\OpMode` . 2389, 2392, 2403, 2417,  
 2420, 9291, 9382, 10120  
`\or` . . . . . 995, 996, 997,  
 998, 999, 1000, 1001, 1002,  
 1003, 1017, 1018, 1019, 1020,  
 1021, 1022, 1023, 1024, 1025,  
 1040, 1041, 1042, 1043, 1044,  
 1045, 1046, 1047, 1048, 1114,  
 1115, 1116, 1117, 1118, 1119,  
 1120, 1121, 1122, 1123, 1124,  
 1125, 1126, 1127, 1128, 1129,  
 1130, 1131, 1132, 1133, 1134,  
 1135, 1136, 1137, 1138, 1139,  
 1140, 1141, 1142, 1143, 1144,  
 1145, 4305, 4311, 4316, 4530,  
 6597, 6601, 7040, 7049, 9284,  
 12395, 12396, 12397, 12398,  
 12399, 12400, 12401, 12402,  
 12403, 12404, 12405, 12406,  
 12407, 12408, 12409, 12410,  
 12411, 12412, 12413, 12414,  
 12415, 12416, 12417, 12418,  
 12419, 12420, 12421, 12422,  
 12423, 12424, 12425, 12426

## P

`\P` . . . . . 414  
`\p@` . 1858, 1863, 4559, 4565, 5876,  
 8100, 8172, 8201, 8231, 9238,  
 10334, 10602, 10870, 11326,  
 11667, 12703, 12704  
`\p@equation` . . . . . 6650  
`\PackageError` . 61, 2245, 3422, 4027,  
 4280, 4404, 4599, 4746, 4782,  
 10955, 11003, 11424, 11478,  
 11782, 11842  
`\PackageInfo` . . . 242, 7394, 7408,  
 11216  
`\PackageWarning` . 240, 2316, 4516  
`\PackageWarningNoLine` . . . 241  
`\pageautorefname` . . . 2530, 2548,  
 2566, 2584, 2602, 2620, 2638,  
 2678, 2696, 2714, 7195, 7317  
`\pagename` . . . . . 7192  
`\pageref` . . . 494, 3493, 3791, 4938,  
 4939, 5008, 5009, 5613, 7181,  
 7185  
`\paperheight` . . . . . 3334, 7960,  
 7962, 7965, 7967, 7979, 7980,  
 8784, 8785, 8918, 8919, 8921,  
 10097, 10098

`\paperwidth` . . . 7956, 7958, 7969,  
 7971, 7976, 7977, 8783, 8785,  
 8922, 10096, 10098  
`\par` . 5868, 6157, 6185, 6227, 6237,  
 6435, 6455  
`\paragraphautorefname` . . . 2526,  
 2544, 2562, 2580, 2598, 2616,  
 2634, 2667, 2669, 2692, 2710,  
 7313  
`\partautorefname` . 2520, 2538, 2556,  
 2574, 2592, 2610, 2628, 2658,  
 2686, 2704, 7307  
`\partnumberline` . . . 12327, 12331  
`\PassOptionsToPackage` . . . 2433,  
 2472, 2476, 2498, 3365, 3608  
`\pdf@addtoks` . . 9768, 9787, 9793,  
 9802, 9809, 9813, 9815, 9817,  
 9819, 9821, 9829, 9838, 9842,  
 9844, 9846, 9849, 9858, 9862,  
 9864, 9866, 9868, 9870, 9872,  
 9874, 9876, 9878, 9880, 9882,  
 9884, 9886, 9888, 9890, 9892,  
 9893, 9894, 9895, 9896, 9897,  
 9898, 9899, 9900, 9901, 9902,  
 9907  
`\pdf@addtoks*` . . 9762, 9772, 9785  
`\pdf@box` . 9732, 9739, 9741, 9743,  
 9744, 9747, 9754  
`\pdf@defaulttoks` . 9699, 9766, 9767,  
 9777  
`\pdf@docset` . . . . . 9567  
`\pdf@endanchor` . 7538, 7577, 7579  
`\pdf@escapestring` . . . . . 7373  
`\PDF@FinishDoc` . 2343, 2344, 2397,  
 2398, 3328, 3383, 3486, 3487,  
 3586, 3587, 4985, 5142, 5143,  
 7828, 8033, 8248, 8677, 8804,  
 9350, 9568, 10372, 10533  
`\pdf@linktype` . 9717, 9721, 9782,  
 9783  
`\pdf@rect` . . . . . 9709, 9723, 9736  
`\PDF@SetupDoc` . . . . 3327, 3382,  
 4905, 4906, 4984, 7759, 8034,  
 8279, 8717, 8805, 9299, 9619,  
 10264, 10403, 10534  
`\PDF@SetupDox` . . . . . 7759  
`\pdf@strcmp` . . . . . 819  
`\pdf@toks` . 9699, 9714, 9725, 9765,  
 9769, 9773  
`\pdf@type` . 9701, 9705, 9714, 9725,  
 9760, 9780  
`\pdfannotlink` . . . . . 7520  
`\pdfbookmark` . 1962, 4990, 4991,  
 12353, 12358, 12363, 12367  
`\pdfcatalog` . 5296, 7453, 7774, 7816,  
 11262  
`\PDFdefaults` . . . . . 9776



<code>\renewcommand</code>	1918, 6200, 6695, 12367	<code>\sffamily</code>	439	<code>\SubmitPObj</code>	11460
<code>\RequirePackage</code>	22, 232, 233, 234, 235, 236, 237, 238, 239, 802, 1338, 1721, 1912, 2298, 3358, 3474, 3475, 3742, 3786, 3804, 3898, 4122, 4974, 5123, 5339, 7320, 8802, 10530, 12377	<code>\shadda</code>	15187	<code>\subparagraphautorefname</code>	2527, 2545, 2563, 2581, 2599, 2617, 2635, 2668, 2670, 2693, 2711, 7314
<code>\RerunFileCheck</code>	12379	<code>\sheen</code>	15163	<code>\subpdfbookmark</code>	12355
<code>\Reset</code>	4810	<code>\shortciteN</code>	6483	<code>\subsection</code>	10357
<code>\reset@font</code>	6368, 6391, 7075, 7095, 7112, 7226	<code>\SK@</code>	7284	<code>\subsectionautorefname</code>	2524, 2542, 2560, 2578, 2596, 2614, 2632, 2665, 2690, 2708, 7311
<code>\revtex@checking</code>	6345	<code>\SK@@ref</code>	7284	<code>\subsubsectionautorefname</code>	2525, 2543, 2561, 2579, 2597, 2615, 2633, 2666, 2691, 2709, 7312
<code>\Rightarrow</code>	7027	<code>\SK@ref</code>	7281	<code>\sukun</code>	15188
<code>\rlap</code>	7503, 8523	<code>\skip@</code>	1451, 1525, 1526, 1529, 1531, 1989, 1995, 2008, 2014	<code>\surd</code>	7035
<code>\rm</code>	448	<code>\slide@cline</code>	7013, 7026, 7034, 7044, 7052		
<code>\rmfamily</code>	438	<code>\Slide@contents</code>	7018		
<code>\Roman</code>	5245	<code>\slide@contents</code>	7011		
<code>\roman</code>	5246	<code>\slide@heading</code>	6889		
<code>\romannumeral</code>	793, 794	<code>\slide@subheading</code>	6942		
<code>\rule</code>	6055	<code>\slide@undottedcline</code>	7004		
		<code>\slidenumberline</code>	7005, 7013, 7027, 7035, 7045, 7053		
<b>S</b>		<code>\SliTeX</code>	423	<b>T</b>	
<code>\sad</code>	15164	<code>\slshape</code>	445	<code>\T</code>	15152
<code>\sbox</code>	4830, 9733, 9741, 11205	<code>\small</code>	457	<code>\t</code>	12773, 13168, 13187, 13206, 13222
<code>\scr@LT@array</code>	5720	<code>\smash</code>	1972	<code>\T@pageref</code>	3777, 3792, 7170
<code>\scriptsize</code>	456	<code>\spacefactor</code>	5982, 5994, 6120, 6122	<code>\T@ref</code>	3772, 3790
<code>\scriptstyle</code>	6358	<code>\special@paper</code>	3330	<code>\T@temp</code>	6346, 6349
<code>\scrollmode</code>	1353, 1378, 1388, 1401, 1493, 1625	<code>\SpecialDvipdfmxOutlineOpen</code>	2364, 2366, 3629	<code>\Ta</code>	15166
<code>\scshape</code>	444	<code>\splitmaxdepth</code>	6049	<code>\taa</code>	15153
<code>\section</code>	6995	<code>\splittopskip</code>	6048	<code>\tableautorefname</code>	2519, 2537, 2555, 2573, 2591, 2609, 2627, 2657, 2685, 2703, 7306
<code>\sectionautorefname</code>	2523, 2541, 2559, 2577, 2595, 2613, 2631, 2660, 2689, 2707, 7310	<code>\SS</code>	13098, 14992	<code>\tagform@</code>	6649
<code>\seen</code>	15162	<code>\ss</code>	2570, 13028, 13113, 13396	<code>\tatweel</code>	15170
<code>\selectfont</code>	3753, 11270	<code>\st@rredfalse</code>	5755, 5764	<code>\tcheh</code>	15190
<code>\setbox</code>	1437, 1443, 1449, 2855, 2861, 4652, 5131, 5902, 7493, 8024, 8092, 8158, 8188, 8218, 8496, 8513, 10326, 10590, 11636, 11724, 11759, 11790, 11819, 11849, 11875	<code>\stepcounter</code>	5510, 5648, 5855, 5983, 6094, 8539, 12337	<code>\TeX</code>	419, 420, 422, 423, 10633, 10635, 10637
<code>\setkeys</code>	2337, 2428, 3045, 3350, 3396, 3607, 3723, 4550, 7400, 9702, 10821, 11061, 11074, 11123, 11166, 11187, 11237, 11578	<code>\stockheight</code>	3334, 7986, 7987, 8790, 8791, 8925, 8926, 10103, 10104	<code>\texorpdfstring</code>	762, 4989
<code>\setlength</code>	368, 369, 1975, 7952, 7953, 7958, 7962, 7967, 7971, 7977, 7980, 7984, 7987, 8919, 8922, 8926, 8929, 9238, 12593, 12668	<code>\stockwidth</code>	7983, 7984, 7879, 8791, 8928, 8929, 10102, 10104	<code>\textacute</code>	12737, 12749, 12761, 12941, 13172, 13191, 13309
<code>\setpdfinkmargin</code>	3218, 3219, 7518	<code>\stop@hyper</code>	4956	<code>\textacutedbl</code>	13841
<code>\settowidth</code>	10867, 11323, 11664	<code>\StringEncodingConvertTest</code>	626, 635	<code>\textaleph</code>	14807
<code>\SetupKeyvalOptions</code>	3359	<code>\strip@period</code>	1931	<code>\textAlpha</code>	995, 13861, 13877
		<code>\strip@prefix</code>	62, 1924, 5085, 5588, 5839, 12499, 12507, 12522	<code>\textalpha</code>	995, 13930, 13940
		<code>\strip@pt</code>	373, 380, 3346, 7958, 7962, 7967, 7971, 9241, 12022, 12134, 12162, 12199, 12247	<code>\textampersand</code>	411, 12808, 13239
		<code>\strip@pt@and@otherjunk</code>	9431, 9452, 9484	<code>\textangstrom</code>	14803
		<code>\strutbox</code>	6049	<code>\textasciicircum</code>	12784, 13180, 13199, 13830
		<code>\sub@label</code>	1918	<code>\textasciicaron</code>	12742, 12754, 12766, 12786, 13177, 13196, 13828
		<code>\subeqnarray</code>	5815, 5817	<code>\textasciicircum</code>	12738, 12750, 12762, 12822, 13173, 13192, 13255
		<code>\subequations</code>	5853, 5854	<code>\textasciidieresis</code>	12740, 12752, 12764, 12918, 13175, 13194, 13286
		<code>\subfig@oldlabel</code>	1920	<code>\textasciigrave</code>	12736, 12748, 12760, 12827, 13171, 13190, 13259
		<code>\Submit</code>	4807		
		<code>\SubmitObject</code>	11460		

<code>\textasciimacron</code> . .	12745, 12757, 12769, 12931, 13182, 13201, 13299	<code>\textdaggerdbl</code> . . . . .	12843, 14693	<code>\textguarani</code> . . . . .	14785
<code>\textasciitilde</code> . .	412, 3839, 12837, 13270	<code>\textdegree</code> . . . . .	12933, 13099, 13301	<code>\textHslash</code> . . . . .	13542
<code>\textasteriskcentered</code> . . . . .	13247	<code>\textDelta</code> . . . . .	998, 13883	<code>\textHslash</code> . . . . .	13544
<code>\textbackslash</code> . .	407, 560, 12820, 13253	<code>\textdelta</code> . . . . .	998, 13946	<code>\textHT</code> . . . . .	12778, 13225
<code>\textbaht</code> . . . . .	14515	<code>\textDigammagreek</code> . . . . .	14005	<code>\texthungarumlaut</code> . . . . .	12792, 13183, 13202, 13840, 13841
<code>\textbar</code> . . . . .	12833, 13266	<code>\textdigammagreek</code> . . . . .	14007	<code>\textinterrobang</code> . . . . .	14709
<code>\textbardbl</code> . . . . .	14677	<code>\textdiscount</code> . . . . .	14717	<code>\textIota</code> . . . . .	1017, 13867, 13893, 13926
<code>\textBeta</code> . . . . .	996, 13879	<code>\textdiv</code> . . . . .	13110, 15003	<code>\textiota</code> . . . . .	1017, 13936, 13956, 13990
<code>\textbeta</code> . . . . .	996, 13113, 13942	<code>\textdivide</code> . . . . .	13080, 13110, 13448, 15003	<code>\textIotadieresis</code> . . . . .	13875, 13925
<code>\textbf</code> . . . . .	431	<code>\textdivorced</code> . . . . .	14983	<code>\textit</code> . . . . .	433
<code>\textbigcircle</code> . . . . .	13189, 13208, 14977	<code>\textdollar</code> . . . . .	409, 12804, 13235	<code>\textKappa</code> . . . . .	1018, 13895
<code>\textblank</code> . . . . .	14825	<code>\textdong</code> . . . . .	14779	<code>\textkappa</code> . . . . .	1018, 13958
<code>\textbraceleft</code> . . . . .	405, 12831, 13264	<code>\textdotaccent</code> . . . . .	12743, 12755, 12767, 12790, 13178, 13197, 13832	<code>\textKoppagreek</code> . . . . .	1025, 14009
<code>\textbraceright</code> . . . . .	406, 12835, 13268	<code>\textdotbelow</code> . . . . .	12747, 12759, 12771, 12814, 13186, 13205, 13851	<code>\textkoppagreek</code> . . . . .	1025, 14011
<code>\textbrokenbar</code> . . . . .	12914, 13282	<code>\textdoublegrave</code> . . . . .	13181, 13200, 13847	<code>\textkra</code> . . . . .	13583
<code>\textbullet</code> . . . . .	12839, 14695	<code>\textdownarrow</code> . . . . .	14815	<code>\textLambda</code> . . . . .	1019, 13897
<code>\textcdot</code> . . . . .	13112, 15005	<code>\texteightinferior</code> . . . . .	14761	<code>\textlambda</code> . . . . .	1019, 13960
<code>\textcedilla</code> . . . . .	12744, 12756, 12768, 12949, 13179, 13198, 13318	<code>\textheightsuperior</code> . . . . .	14729	<code>\textlangle</code> . . . . .	14821
<code>\textcelsius</code> . . . . .	13099, 14787	<code>\textellipsis</code> . . . . .	415, 416, 12845, 14697	<code>\textlatin</code> . . . . .	466, 5576
<code>\textcent</code> . . . . .	12906, 13274	<code>\textemdash</code> . . . . .	594, 12847, 14675	<code>\textlbrackdbl</code> . . . . .	14985
<code>\textChi</code> . . . . .	1045, 13919	<code>\textendash</code> . . . . .	595, 12849, 14673	<code>\textleftarrow</code> . . . . .	14809
<code>\textchi</code> . . . . .	1045, 13984	<code>\textEpsilon</code> . . . . .	999, 13863, 13885	<code>\textless</code> . . . . .	12816, 13249
<code>\textcircled</code> . . . . .	13170, 13189, 13208, 14829, 14831, 14833, 14835, 14837, 14839, 14841, 14843, 14845, 14847, 14849, 14851, 14853, 14855, 14857, 14859, 14861, 14863, 14865, 14867, 14869, 14871, 14873, 14875, 14877, 14879, 14881, 14883, 14885, 14887, 14889, 14891, 14893, 14895, 14897, 14899, 14901, 14903, 14905, 14907, 14909, 14911, 14913, 14915, 14917, 14919, 14921, 14923, 14925, 14927, 14929, 14931, 14933, 14935, 14937, 14939, 14941, 14943, 14945, 14947, 14949, 14951, 14953, 14955, 14957, 14959, 14961, 14963, 14965, 14967, 14969, 14971, 14973	<code>\textepsilon</code> . . . . .	999, 13932, 13948	<code>\textLF</code> . . . . .	12780, 13227
<code>\textcircledP</code> . . . . .	14791	<code>\textequalsuperior</code> . . . . .	14737	<code>\textlira</code> . . . . .	14771
<code>\textcircumflex</code> . . . . .	12788	<code>\textestimated</code> . . . . .	14805	<code>\textlnot</code> . . . . .	12927, 13295
<code>\textcolonmonetary</code> . . . . .	14769	<code>\textEta</code> . . . . .	1002, 13865, 13889	<code>\textlogicalnot</code> . . . . .	12926, 13108, 13294, 15001
<code>\textcolor</code> . . . . .	463, 11236, 11275, 11278, 11577	<code>\texteta</code> . . . . .	1002, 13934, 13952	<code>\textlongs</code> . . . . .	13725, 14657
<code>\textcompwordmark</code> . . . . .	14671	<code>\texteuro</code> . . . . .	12902, 14781	<code>\textlquill</code> . . . . .	14713
<code>\textcopyright</code> . . . . .	12920, 13288	<code>\texttexclamdown</code> . . . . .	598, 906, 12904, 13272	<code>\textmacronbelow</code> . . . . .	12746, 12758, 12770, 12825, 13185, 13204, 13853
<code>\textCR</code> . . . . .	12782, 13229	<code>\textfi</code> . . . . .	596, 12877, 14989	<code>\textmarried</code> . . . . .	14981
<code>\textcurrency</code> . . . . .	12910, 13278	<code>\TextField</code> . . . . .	4792	<code>\textmd</code> . . . . .	432
<code>\textdagger</code> . . . . .	12841, 14691	<code>\textfiveinferior</code> . . . . .	14755	<code>\textmho</code> . . . . .	14801
		<code>\textfivesuperior</code> . . . . .	14723	<code>\textminus</code> . . . . .	12859, 14817
		<code>\textfl</code> . . . . .	597, 12879, 14991	<code>\textminussuperior</code> . . . . .	14735
		<code>\textflorin</code> . . . . .	12851, 13727	<code>\textMu</code> . . . . .	1020, 13899
		<code>\textflq</code> . . . . .	483, 13106, 14999	<code>\textmu</code> . . . . .	1020, 12943, 13312
		<code>\textflqq</code> . . . . .	481, 13104, 14997	<code>\textmugreek</code> . . . . .	13962
		<code>\textfourinferior</code> . . . . .	14753	<code>\textmultiply</code> . . . . .	13012, 13109, 13380, 15002
		<code>\textfoursuperior</code> . . . . .	14721	<code>\textmusicalnote</code> . . . . .	14979
		<code>\textfractionsolidus</code> . . . . .	12853, 14711	<code>\textnaira</code> . . . . .	14773
		<code>\textfrq</code> . . . . .	484, 13107, 15000	<code>\textnapostrophe</code> . . . . .	13617
		<code>\textfrqq</code> . . . . .	482, 13105, 14998	<code>\textneg</code> . . . . .	13108, 15001
		<code>\textGamma</code> . . . . .	997, 13881	<code>\textnewtie</code> . . . . .	13188, 13207, 13849
		<code>\textgamma</code> . . . . .	997, 13944	<code>\textnineinferior</code> . . . . .	14763
		<code>\textglq</code> . . . . .	479, 13102, 14995	<code>\textninesuperior</code> . . . . .	14731
		<code>\textglqq</code> . . . . .	477, 13100, 14993	<code>\textnormal</code> . . . . .	427
		<code>\textgravedbl</code> . . . . .	13843	<code>\textnsuperior</code> . . . . .	14743
		<code>\textgreater</code> . . . . .	12818, 13251	<code>\textNu</code> . . . . .	1021, 13901
		<code>\textgrq</code> . . . . .	480, 13103, 14996	<code>\textnu</code> . . . . .	1021, 13964
		<code>\textgrqq</code> . . . . .	478, 13101, 14994	<code>\textnumeralsign</code> . . . . .	408, 12802, 13233
		<code>\textGslash</code> . . . . .	13746	<code>\textnumeralsigngreek</code> . . . . .	972, 13857
		<code>\textgslash</code> . . . . .	13748		

<code>\textnumeralsignlowergreek</code> . 989, 1011, 1034, 13859	<code>\textRho</code> . . . . . 1040, 13909	<code>\textXi</code> . . . . . 1022, 13903
<code>\textnumero</code> . . . . . 14789	<code>\textrho</code> . . . . . 1040, 13972	<code>\textxi</code> . . . . . 1022, 13966
<code>\textogonek</code> . 12794, 13184, 13203, 13836	<code>\textrightarrow</code> . . . . . 14813	<code>\textyen</code> . . . . . 12912, 13280
<code>\textohm</code> . . . . . 14799	<code>\textring</code> . . . 12741, 12753, 12765, 12796, 13176, 13195, 13834	<code>\textzeroinferior</code> . . . . . 14745
<code>\textOmega</code> . . 1047, 13873, 13923	<code>\textrm</code> . . . . . 428	<code>\textzerosuperior</code> . . . . . 14719
<code>\textomega</code> . . 1047, 13988, 13999	<code>\texttrquill</code> . . . . . 14715	<code>\textZeta</code> . . . . . 1001, 13887
<code>\textOmicron</code> . 1023, 13869, 13905	<code>\textSampigreek</code> . . . 1048, 14013	<code>\textzeta</code> . . . . . 1001, 13950
<code>\textomicron</code> . 1023, 13968, 13994	<code>\textsampigreek</code> . . . 1048, 14015	<code>\TH</code> . . . . . 13026, 13394
<code>\textonehalf</code> . . . . . 12959, 13328	<code>\textsc</code> . . . . . 434	<code>\th</code> . . . . . 13094, 13462
<code>\textoneinferior</code> . . . . . 14747	<code>\textsection</code> . . . . . 12916, 13284	<code>\thaa</code> . . . . . 15154
<code>\textonequarter</code> . . . 12957, 13326	<code>\textservicemark</code> . . . . . 14795	<code>\thebookmark@seq@number</code> 12344
<code>\textonesuperior</code> . . 12951, 13320	<code>\textseveninferior</code> . . . . . 14759	<code>\theequation</code> . . 5525, 5775, 5797, 5821, 5857
<code>\textopenbullet</code> . . . . . 14975	<code>\textsevensuperior</code> . . . . . 14727	<code>\thefootnote</code> . . . . . 5941, 6114
<code>\textordfeminine</code> . . 12922, 13290	<code>\textsf</code> . . . . . 429, 11275, 11278	<code>\theHchapter</code> . . 5467, 5468, 5469, 5470, 5552
<code>\textordmasculine</code> . 12953, 13322	<code>\textSigma</code> . . . . . 1041, 13911	<code>\theHenumi</code> . . . . . 5486
<code>\textparagraph</code> 414, 12945, 13314	<code>\textsigma</code> . . . . . 1041, 13976	<code>\theHenumii</code> . . . . . 5487
<code>\textparenleft</code> . . 602, 603, 12810, 13243	<code>\textsixinferior</code> . . . . . 14757	<code>\theHenumiii</code> . . . . . 5488
<code>\textparenleftinferior</code> . . . . 14765	<code>\textsixsuperior</code> . . . . . 14725	<code>\theHenumiv</code> . . . . . 5489
<code>\textparenleftsuperior</code> . . . 14739	<code>\textsl</code> . . . . . 435	<code>\theHequation</code> . 5457, 5526, 5776, 5798, 5822, 5830, 5857, 5861
<code>\textparenright</code> . . 12812, 13245	<code>\textsterling</code> . . . . 12908, 13276	<code>\theHfigure</code> . . . . . 5464, 5468
<code>\textparenrightinferior</code> . . . 14767	<code>\textStigmagreek</code> . . . 1000, 14001	<code>\theHHfootnote</code> . . . . 5490, 5492
<code>\textparenrightsuperior</code> . . 14741	<code>\textstigmagreek</code> . . . 1000, 14003	<code>\theHHmpfootnote</code> . . . . . 5492
<code>\textpercent</code> . . 410, 12806, 13237	<code>\textsurd</code> . . . . . 14819	<code>\theHitem</code> 5480, 5486, 5487, 5488, 5489
<code>\textperiodcentered</code> 12947, 13112, 13316, 15005	<code>\TextSymbolUnavailable</code> . 12772, 12773, 12775	<code>\theHlisting</code> . . . . . 2831
<code>\textpertenthousand</code> . . . . 14701	<code>\textTau</code> . . . . . 1042, 13913	<code>\theHlstlisting</code> . . . . . 2827
<code>\textperthousand</code> . . 12861, 14699	<code>\texttau</code> . . . . . 1042, 13978	<code>\theHmpfootnote</code> . . . . . 5491
<code>\textpeseta</code> . . . . . 14775	<code>\textTheta</code> . . . . . 1003, 13891	<code>\theHparagraph</code> . . . . 5474, 5475
<code>\textpeso</code> . . . . . 14783	<code>\texttheta</code> . . . . . 1003, 13954	<code>\theHparentequation</code> . 5856, 5861
<code>\textPhi</code> . . . . . 1044, 13917	<code>\textthreeinferior</code> . . . . . 14751	<code>\theHpart</code> . . . . . 5460
<code>\textphi</code> . . . . . 1044, 13982	<code>\textthreequarters</code> . 12961, 13330	<code>\theHsection</code> . . 5457, 5463, 5470, 5472, 5476, 5477, 5551
<code>\textPi</code> . . . . . 1024, 13907	<code>\textthreesuperior</code> . 12939, 13307	<code>\theHslide</code> . . . . . 6880
<code>\textpi</code> . . . . . 1024, 13970	<code>\texttie</code> . . . 13187, 13206, 13855	<code>\theHslidesection</code> 6885, 6887, 6923, 6927
<code>\textplusminus</code> . . 12935, 13111, 13303, 15004	<code>\texttilde</code> . . . 3445, 12739, 12751, 12763, 12798, 13174, 13193, 13838	<code>\theHslidesubsection</code> . 6886, 6974, 6978
<code>\textplussuperior</code> . . . . . 14733	<code>\texttildelow</code> . . . . . 13845	<code>\theHsubequation</code> . . . . . 5830
<code>\textpm</code> . . . . . 13111, 15004	<code>\texttimes</code> . . . . . 13109, 15002	<code>\theHsubparagraph</code> . . . . . 5475
<code>\textPsi</code> . . . . . 1046, 13921	<code>\texttrademark</code> . . . 12875, 14797	<code>\theHsubsection</code> . . . . 5472, 5473
<code>\textpsi</code> . . . . . 1046, 13986	<code>\textTslash</code> . . . . . 13675	<code>\theHsubsubsection</code> . . 5473, 5474
<code>\textquestiondown</code> . . . . 599, 907, 12963, 13332	<code>\texttslash</code> . . . . . 13677	<code>\theHtable</code> . . . . . 5465, 5469
<code>\textquotedbl</code> . . . . 12800, 13231	<code>\texttt</code> . . . . . 430	<code>\theHtheorem</code> . . . . . 5476
<code>\textquotedblleft</code> . . 12865, 13101, 14685, 14994	<code>\texttwoinferior</code> . . . . . 14749	<code>\theHthm</code> . . . . . 5477
<code>\textquotedblright</code> . 12867, 14687	<code>\texttwosuperior</code> . . 12937, 13305	<code>\thelisting</code> . . . . . 2831
<code>\textquoteleft</code> 12869, 13103, 14679, 14996	<code>\textunderscore</code> . 413, 3833, 3834, 3836, 12824, 13257	<code>\thelstlisting</code> . . . . . 2827
<code>\textquoteright</code> . . 12871, 14681	<code>\textup</code> . . . . . 436	<code>\thempfn</code> . 5930, 6011, 6013, 6095, 6107
<code>\textquotesingle</code> . . . . . 13241	<code>\textuparrow</code> . . . . . 14811	<code>\theoremautorefname</code> . 2529, 2547, 2565, 2583, 2601, 2619, 2637, 2675, 2695, 2713, 7316
<code>\texttrbrackdbl</code> . . . . . 14987	<code>\textUpsilon</code> . 1043, 13871, 13915, 13928	<code>\thepage</code> . 1929, 3954, 5151, 5174, 5628, 5636, 5663, 6371, 6394, 6423, 6514, 6587, 6618, 6780,
<code>\textrecipe</code> . . . . . 14793	<code>\textupsilon</code> . . 1043, 13980, 13992, 13997	
<code>\textreferencemark</code> . . . . 14707	<code>\textupsilonacute</code> . . 13938, 13996	
<code>\textregistered</code> . . . 12929, 13297	<code>\textvarsigma</code> . . . . . 13974	
	<code>\textvisiblespace</code> . . . . . 14827	
	<code>\textwon</code> . . . . . 14777	

6797, 6803, 6807, 6814, 7077,  
7097, 7114, 7228

\theslideheading . . . . . 6906

\theslidesection 6894, 6901, 6909,  
6915, 6917, 6919, 6925, 6935

\theslidesubheading . . 6907, 6958

\theslidesubsection . . 6946, 6953,  
6960, 6966, 6968, 6970, 6976,  
6986

\This@name 5504, 5505, 5522, 5523

\thispdfpagelabel . . . . . 5156

\ThisShouldNotHappen . . 11958

\thm@headpunct . . . . . 5875

\thm@headsep . . . . . 5876

\thm@notefont . . . . . 5874

\thm@postskip . . . . . 5880

\thm@preskip . . . . . 5879

\thm@space@setup . . . . . 5877

\thm@swap . . . . . 5873

\thmheadnl . . . . . 5872

\tiny . . . . . 458

\title . . . . . 5062, 5064

\TMP@EnsureCode . . 3684, 3691,  
3692, 3693, 3694, 3695, 3696,  
3697, 3698, 3699, 3700, 3701,  
3702, 3703, 3704, 3705, 3706,  
3707, 3708, 3709, 3710, 3711,  
3712, 3713, 3714, 3715, 3716,  
3717

\tocappendix . . . . . 1190

\tocchapter . . . . . 1189

\toclevel@chapter . . . . . 2818

\toclevel@figure . . . . . 2824

\toclevel@listing . . . . . 2832

\toclevel@lstlisting . . . . . 2828

\toclevel@paragraph . . . . . 2822

\toclevel@part . . . . . 2814, 2816

\toclevel@section . . . . . 2819

\toclevel@subfigure . . . . . 1943

\toclevel@subparagraph . . . 2823

\toclevel@subsection . . . . . 2820

\toclevel@subsubsection . . . 2821

\toclevel@subtable . . . . . 1944

\toclevel@table . . . . . 2825

\tocparagraph . . . . . 1194

\tocpart . . . . . 1188

\tocsection . . . . . 1191

\tocsubsection . . . . . 1192

\tocsubsubsection . . . . . 1193

\toks . . . . . 781,  
782, 783, 3991, 3993, 3995,  
3999, 4004, 7085, 7086, 7088,  
12596, 12601, 12671, 12676

\toks@ . . . . . 171, 208, 347, 350,  
353, 371, 372, 676, 683, 715,  
716, 1075, 1098, 1101, 1102,  
1361, 1362, 2725, 2726, 2728,

3198, 3202, 3203, 3211, 5251,  
5253, 5333, 5335, 5385, 5397,  
5645, 5649, 5686, 5691, 6650,  
6651, 6857, 6862, 6864, 6867,  
12595, 12601, 12670, 12676

\topmargin . . . . . 6526

\trivlist . . . . . 5871

\tryhyper@link . . . . . 3929, 3931

\ttfamily . . . . . 440

\ttl@b . . . . . 5697, 5702

\ttl@gobblecontents . . . . . 5706

\ttl@Hy@PatchSaveWrite . . 5680,  
5684

\ttl@Hy@refstepcounter . . . 5696

\ttl@Hy@saveanchor . . 5675, 5699

\ttl@Hy@SavedCurrentHref 5679,  
5690

\ttl@Hy@steplink . . . . . 5672

\ttl@savewrite . . . . . 5686, 5688

\tw@ . . 12596, 12601, 12671, 12676

\typeout . . . . . 5, 6, 7, 19, 26,  
27, 36, 131, 155, 158, 159, 160,  
2341, 2395, 3480, 3482, 3484,  
3584, 3611, 3613, 4089, 4589,  
6578, 7531, 8885, 8889, 8892,  
8895, 8898, 8901, 8904, 8907,  
10528, 10825, 11039, 11042,  
11045, 11048, 11051, 11054,  
11056, 11057, 11066, 11203,  
11574, 12697, 15199

U

\U . . . 13143, 14048, 14071, 14136,  
14213, 14403, 14405, 14427,  
14429, 14439, 14441

\u . . . 13142, 13180, 13199, 13219,  
13470, 13472, 13506, 13508,  
13526, 13528, 13556, 13558,  
13559, 13627, 13629, 13687,  
13689

\UHORN . . . 15021, 15132, 15133,  
15134, 15135, 15136

\uhorn . . 2699, 2706, 15014, 15072,  
15073, 15074, 15075, 15076

\UnDef . . . . . 10623

\undefined . . . . . 2722

\unhbox . . 5913, 9734, 11647, 11770,  
11803, 11828, 11857, 11886

\unhcopy . . . . . 11748

\unichar . . . . . 1783

\unrestored@protected@xdef 5930,  
5941, 6107, 6114

\unskip . . 5868, 6356, 7160, 7164,  
7168, 7173

\upshape . . . . . 446, 5874

\Url . . . . . 3900

\url . . . . . 3899, 3903

\url@ . . . . . 3903, 3904

\use@file . . 4061, 4063, 4067, 4070

\usepackage . . . . . 2338

\UTFviii@four@octets 1779, 1788

\UTFviii@three@octets . . . . 1778

\UTFviii@two@octets . . . . . 1777

## V

\v . . . 12742, 12754, 12766, 12885,  
12890, 12898, 12900, 13153,  
13177, 13196, 13218, 13490,  
13492, 13494, 13496, 13518,  
13520, 13593, 13595, 13613,  
13615, 13647, 13649, 13663,  
13665, 13671, 13673, 13721,  
13723, 13729, 13731, 13733,  
13735, 13736, 13738, 13740,  
13742, 13744, 13750, 13752,  
13754, 13756, 13762, 13763,  
13806, 13808

\V@@@footnotetext . . . . . 6057

\V@footnotetext . . . . . 6043

\value 6310, 6336, 6530, 6675, 8540,  
8545

\vbox 4825, 4826, 4827, 4828, 5131,  
6524

\vfill . . . . 4825, 4826, 4827, 4828

\voffset . . . . . 6525

\vpageref . . . . . 7173

\vphantom . . . . . 461

\Vr@f . . . . . 7159

\vr@f . . . . . 7167

\vref@pagenum . . . . . 5710

\vref@space . . . . 7160, 7163, 7168

\vskip . . . . . 1995, 1996

\vss . . . . . 6539

\vtex@trans@special . . 9209, 9211,  
9214, 9218, 9222, 9226, 9228,  
9230, 9234, 9240, 9241, 9244

\VTeXInitMediaSize . 8916, 8933

\VTeXOS . . 9279, 9280, 9281, 9283

\VTeXversion . . 5300, 5303, 5306,  
9271, 9275

## W

\waw . . . . . 15178

\wawhamza . . . . . 15147

\wd . . 8164, 8176, 8193, 8205, 8223,  
8235, 11604

\write . . . 5019, 5021, 5414, 5422,  
5634, 5662, 6294, 6309, 6325,  
6335, 6365, 6388, 6414, 6444,  
12474, 12543

\WriteBookmarks . . . . .  
. . . . 3387, 3501, 3653, 3675,  
12280, 12467, 12489, 12490,  
12532, 12536

\wwwbrowser . . . 8125, 8195, 8207

<b>X</b>		8378, 8380, 8381, 8382, 8384, 8385, 8386, 8388, 8389, 8390, 8392, 8393, 8395, 8401, 8410, 9379, 9384, 9388, 9855, 9856, 10874, 10894, 11330, 11350, 11671, 11691, 12600, 12602, 12675, 12677	5719, 5720, 5723, 5731
<code>\x</code> . . .	21, 25, 92, 98, 168, 169, 176, 178, 206, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 370, 375, 678, 681, 685, 690, 722, 791, 797, 1288, 1316, 1726, 1728, 1990, 2000, 2009, 2019, 2070, 2071, 2076, 2092, 2732, 2742, 2843, 2844, 2847, 2848, 2849, 2853, 2856, 2862, 3201, 3207, 3210, 3213, 3334, 3335, 3340, 3341, 3400, 3401, 3402, 3405, 3408, 3411, 3989, 4000, 4004, 4007, 4140, 4154, 4179, 4183, 4186, 4196, 5084, 5085, 5090, 5646, 5653, 5687, 5694, 5721, 5731, 5733, 5746, 6864, 6865, 7087, 7090, 7125, 7126, 7127, 7129, 7131, 7479, 7487, 7747, 7748, 7751, 7753, 7756, 8364, 8365, 8366, 8368, 8369, 8370, 8372, 8373, 8374, 8376, 8377,	<code>\XeTeXrevision</code> . . . . . 3621, 8674 <code>\XeTeXversion</code> . . . . . 3621, 8674 <code>\XR@cdURL</code> . . . . . 1950, 1951 <code>\XR@addURL</code> . . . . . 1950 <code>\XR@ext</code> . . . . . 2178, 2179, 4059, 4062, 5298, 7380, 8032, 8124, 8356, 8801, 10031, 10114, 10173, 10361, 10525 <code>\XR@URL</code> . . . . . 1955 <code>\xspace</code> . . . . . 512, 514	<code>\ya</code> . . . . . <code>\yahamza</code> . . . . .
<b>Y</b>			
<code>\y</code>	693, 696, 699, 702, 705, 708, 717, 2072, 2077, 2082, 2849, 2850, 2851, 2852, 3403, 3406, 3409, 3412, 3414, 3420, 5085, 5093,		
<b>Z</b>			
<code>\z</code> . . . . .	2074, 2075		
<code>\z@</code> . . . . .	654, 694, 819, 971, 988, 1033, 1183, 1437, 1443, 1513, 1517, 1525, 1529, 2004, 2264, 2267, 2366, 2861, 3336, 3629, 5301, 5902, 5903, 6055, 7956, 7965, 7969, 7976, 7979, 7986, 8783, 8784, 8789, 9270, 9294, 9482, 9744, 10096, 10097, 10102, 10863, 11319, 11608, 12008, 12037, 12042, 12120, 12148, 12179, 12204, 12214, 12219, 12253, 12515, 12639		
<code>\za</code> . . . . .			
<code>\zay</code> . . . . .			
<code>\ZWJ</code> . . . . .			