

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

Sebastian Rahtz

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

Heiko Oberdiek

Email: `heiko.oberdiek at gmail.com`

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## 1 Documentation overview for hyperref

The documentation for package hyperref consists of several files:

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

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


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

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

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

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

Source code documentation:

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

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

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

## 2 Contents

<b>1</b>	<b>Documentation overview for hyperref</b>	<b>1</b>
<b>2</b>	<b>Contents</b>	<b>2</b>
<b>3</b>	<b>File hyccheck.tex</b>	<b>7</b>
<b>4</b>	<b>Package options and setup</b>	<b>10</b>
4.1	Save catcodes . . . . .	10
4.2	Version check . . . . .	13
4.3	Checks with regular expressions . . . . .	14
4.4	Compatibility with format dumps . . . . .	15
4.5	Switches . . . . .	15
<b>5</b>	<b>Common help macros</b>	<b>17</b>
5.1	Macros for recursions . . . . .	17
5.2	Babel's protection of shorthand characters . . . . .	17
5.3	Coordinate transformations . . . . .	18
<b>6</b>	<b>Dealing with PDF strings</b>	<b>19</b>
6.1	Description of PDF strings . . . . .	19
6.2	Definition of <code>\pdfstringdef</code> . . . . .	19
6.2.1	Preprocessing . . . . .	20
6.2.2	Expansion . . . . .	25
6.2.3	Postprocessing . . . . .	26
6.3	Encodings . . . . .	30
6.3.1	XeTeX . . . . .	30
6.3.2	Workaround for package linguex . . . . .	32
6.3.3	PD1 encoding . . . . .	32
6.3.4	PU encoding . . . . .	32
6.4	Additional user commands . . . . .	33
6.4.1	<code>\texorpdfstring</code> . . . . .	33
6.4.2	Hooks for <code>\pdfstringdef</code> . . . . .	33
6.5	Help macros for expansion . . . . .	34
6.5.1	<code>\ignorespaces</code> . . . . .	34
6.5.2	Babel languages . . . . .	34
6.5.3	CJK patch . . . . .	39
6.5.4	CJK bookmarks . . . . .	40
6.5.5	CJK unicode . . . . .	41
6.5.6	<code>\@inmathwarn-Patch</code> . . . . .	46
6.5.7	Unexpandable spaces . . . . .	47
6.5.8	Marker for commands . . . . .	47
6.5.9	<code>\hspace fix</code> . . . . .	48
6.5.10	Fix for AMS classes . . . . .	48
6.5.11	Reference commands . . . . .	48
6.5.12	Redefining the defining commands . . . . .	50
6.5.13	<code>\ifnextchar</code> . . . . .	52
6.5.14	<code>\@protected@testoptifnextchar</code> . . . . .	52
6.6	Help macros for postprocessing . . . . .	52
6.6.1	Generic warning. . . . .	52
6.6.2	Protecting spaces . . . . .	52
6.6.3	Remove grouping braces . . . . .	54
6.6.4	Catcode check . . . . .	55

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

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

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

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

### 3 File hyccheck.tex

Many commands of  $\LaTeX$  or other packages cannot be overloaded, but have to be redefined by `hyperref` directly. If these commands change in newer versions, these changes are not noticed by `hyperref`. With this test file this situation can be checked. It defines the command `\checkcommand` that is more powerful than  $\LaTeX$ 's `\CheckCommand`, because it takes `\DeclareRobustCommand` and optional parameters better into account.

```
1 \langle *check\rangle
2 \documentclass{article}
3 \makeatletter
```

`\checklatex` Optional argument: release date of  $\LaTeX$ .

```
4 \newcommand*{\checklatex}[1][]{\%
5 \typeout{}}\%
6 \typeout{* Format: 'LaTeX2e' #1}\%
7 \typeout{\space\space Loaded: '\fmtname' \fmtversion}\%
8 }\%
```

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

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

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

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

`\HyC@checkPackage`

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

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

```

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

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

```

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

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

```

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

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

```

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

`\HyC@noValue`

```

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

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



```

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

```

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

```

90 \newtoks\HyC@Toks

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

```

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

```

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

```

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

```

`\HyC@checkItem` A single check.

```

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

```

`\HyC@string` Some shorthands.

```

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

```

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

```

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

```

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

```

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

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

```

## 4 Package options and setup

### 4.1 Save catcodes

There are many packages that change the standard catcodes.

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

```

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

```

\Hy@SetCatcodes

```

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

```

\Hy@RestoreCatcodes

```

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

```

```

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

```

```

231 \Hy@SetCatcodes

```

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

```

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

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

```

```

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

```

## 4.2 Version check

\Hy@VersionChecked

```

289 \chardef\Hy@VersionChecked=0 %

```

\Hy@VersionCheck

```

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

```

```

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

```

\Hy@@VersionCheck

```

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

```

### 4.3 Checks with regular expressions

```

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

```

```

372 }%
373 }%
374 }

```

## 4.4 Compatibility with format dumps

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

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

```

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

```

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

```

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

```

`\Hy@AtEndOfPackage`

```

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

```

`\Hy@AtBeginDocumentHook`

```

384 \def\Hy@AtBeginDocumentHook{}

```

`\Hy@AtEndOfPackageHook`

```

385 \def\Hy@AtEndOfPackageHook{}

```

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

```

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

```

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

```

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

```

## 4.5 Switches

```

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

```

```

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

```

Defaults for the switches are now set.

```

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

```



```

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

```

## 5 Common help macros

\Hy@StepCount

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

\Hy@GlobalStepCount

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

```

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

```

### 5.1 Macros for recursions

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

```

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

489 \let\Hy@ReturnEnd\@empty
490 \long\def\Hy@ReturnAfterFiFiEnd#1\fi#2\Hy@ReturnEnd{\fi\fi#1}
491 \long\def\Hy@ReturnAfterElseFiFiEnd#1\else#2\Hy@ReturnEnd{\fi\fi#1}

```

### 5.2 Babel's protection of shorthand characters

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

```

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

```

### 5.3 Coordinate transformations

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

`\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`

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

```

520 \setlength{\dimen@}{0.99626401\dimen@}%
521 \edef\x{%
522   \toks@{%
523     \the\toks@
524     \strip@pt\dimen@
525   }%
526   }\x
527   \HyCal@scan#2\@nil
528 }%
529 \else
530 \def\hypercalcbp#1{%
531   \strip@pt\dimexpr 0.99626401\dimexpr #1\relax\relax
532 }%
533 \def\hypercalcbpdef{\def}%
534 \fi

```

## 6 Dealing with PDF strings

The PDF string stuff done by Heiko Oberdiek.

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

### 6.1 Description of PDF strings

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

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

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

### 6.2 Definition of `\pdfstringdef`

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

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

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

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

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

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

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

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

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

```
536 \begingroup
```

### 6.2.1 Preprocessing

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

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

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

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

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

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

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

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

```
541 \edef\3{\string\3}%
```

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

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

```
542 \ifHy@unicode
```

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

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

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

```
546 \HyPsd@UTFviii
```

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

```
548 \else
```

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

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

```
551 \fi
```

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

```
553 \enc@update
```

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

```
554 \let\@inmathwarn\pdfstringdef
```

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

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

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

```
556 \let\add@accent\HyPsd@add@accent
```

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

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

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

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

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

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

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

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

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

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

```

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

```

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

```

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

```

**Package color.**

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

**Upper- and lowercase.**

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

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

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

Disable \cyr, used in russianb.ldf.

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

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

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

**Package german.**

```
643 \let\glqq\textglqq
644 \let\grqq\textgrqq
645 \let\glq\textglq
646 \let\grq\textgrq
647 \let\flqq\textflqq
648 \let\frqq\textfrqq
649 \let\flq\textflq
650 \let\frq\textfrq
```

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

**Package FrenchPro.** This package uses:

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

```
651 \let\if@mid@expandable\@firstoftwo
```

**AMS classes.**

```
652 \HyPsd@AMSclassfix
```

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

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

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

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

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

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

**Miscellaneous commands.**

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

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

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

**Patch for cjk bookmarks.**

```
668 \HyPsd@CJKhook
```

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

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

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

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

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

**Package xspace.**

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



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

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

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

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

\@ifnextchar doesn't work, because it uses stomach commands like \let and \futurelet. But it doesn't break. Whereas \@firstoftwo{#1} gives an error message because \@firstoftwo misses its second argument.

A mimicry of \@ifnextchar only with expandible commands would be very extensive and the result would be only an approximation. So here a cheaper solution follows in order to get rid of the error message at least:

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

Support for package 'xargs':

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

## 6.2.2 Expansion

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

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

**\csname:** First the string is expanded within a \csname and \endcsname. Then the command name is converted to characters with catcode 12 by \string and the first escape character removed by \@gobble. This method has the great *advantage* that stomach tokens that aren't allowed in PDF strings are detected by T<sub>E</sub>X and reported as errors in order to force the user to write correct things. So he get no wrong results by forgetting the proofreading of his text. But the *disadvantage* is that old wrong code cannot be processed without errors. Mainly the error message is very cryptic and for the normal user hard to understand. T<sub>E</sub>X provides no way to catch the error caused by \csname or allows to support the user with a descriptive error message. Therefore the experienced user had to enable this behaviour by an option `exactdef` in previous versions less or equal 6.50.

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

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

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

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

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

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

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

### 6.2.3 Postprocessing

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

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

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

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

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

```

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

```

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

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

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

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

```

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

```

`\HyPsd@CheckCatcodes` should not have removed the tokens with catcode 3, 4, 7, and 8. Because a parameter token (6) would cause too many errors before, there should now be only tokens with catcodes 11 or 12. So I think there is no need for a safety step like:

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

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

```

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

```

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

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

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

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

```

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

```

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

```

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

```

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

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

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

```

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

```

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

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

```

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

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

```

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

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

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

```

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

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

With Unicode the spaces are replaced by their octal sequences.

```

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

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

```

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

### Try conversion back to PDFDocEncoding.

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

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

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

`\Hy@pdfstringdef`

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

## 6.3 Encodings

### 6.3.1 XeTeX

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

```

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

```

```

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

```

### 6.3.2 Workaround for package linguex

```

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

```

### 6.3.3 PD1 encoding

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

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

```

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

```

### 6.3.4 PU encoding

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

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

```

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

```



```

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

```

## 6.4 Additional user commands

### 6.4.1 `\texorpdfstring`

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

```

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

```

### 6.4.2 Hooks for `\pdfstringdef`

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

```

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

```

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

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

```

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

```

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

```

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

```

`\HyPsd@DisableCommands`

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

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

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

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

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

## 6.5 Help macros for expansion

### 6.5.1 `\ignorespaces`

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

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

### 6.5.2 Babel languages

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

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

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

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

```

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

  Nothing to do for english.

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

```

```

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

```

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

```

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

```

```

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

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

```

```

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

```

```

1194 \HyPsd@GreekNumI#1#2#4%
1195 }
1196 \def\HyPsd@GreekNumIII#1#2#3#4#5{%
1197   #1{%
1198     \ifnum#3>\z@
1199       \textnumeralsignlowergreek
1200     \fi
1201   }%
1202   \expandafter#2%
1203   \ifcase#3 %
1204     {}{}%
1205     \or\textrho\textRho
1206     \or\textsigma\textSigma
1207     \or\texttau\textTau
1208     \or\textupsilon\textUpsilon
1209     \or\textphi\textPhi
1210     \or\textchi\textChi
1211     \or\textpsi\textPsi
1212     \or\textomega\textOmega
1213     \or\textsampigreek\textSampigreek
1214   \else
1215     {}{}%
1216   \fi
1217 \HyPsd@GreekNumII#1#2#4#5%
1218 }
1219 \def\HyPsd@GreekNumIV#1#2#3#4#5{%
1220   \HyPsd@GreekNumI\@firstofone#1#2%
1221   \HyPsd@@GreekNum#1{#3#4#5}%
1222 }
1223 \def\HyPsd@GreekNumV#1#2#3#4#5#6{%
1224   \HyPsd@GreekNumII\@firstofone#1#2#3%
1225   \HyPsd@@GreekNum#1{#4#5#6}%
1226 }
1227 \def\HyPsd@GreekNumVI#1#2#3#4#5#6#7{%
1228   \HyPsd@GreekNumIII\@firstofone#1#2#3#4%
1229   \HyPsd@@GreekNum#1{#5#6#7}%
1230 }
1231 \def\HyPsd@SpanishPatch{%
1232   \ltx@ifundefined{es@save@dot}{}%
1233   }{%
1234     \let\.\es@save@dot
1235   }%
1236 }

```

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

-.

```

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

```

### 6.5.3 CJK patch

```

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

```

\HyPsd@CJKhook

```

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

```

#### 6.5.4 CJK bookmarks

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

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

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

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

```

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

```



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

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

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

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

### 6.5.5 CJK unicode

`\HyPsd@CJKhook@unicode`

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

\HyPsd@CJK@Unicode

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

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

```

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

```

```

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

```

```

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

```

```

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

```

### 6.5.6 \@inmathwarn-Patch

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

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

```

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

```

```

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

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

```

\HyPsd@add@accent

```

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

```

### 6.5.7 Unexpandable spaces

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

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

These properties are used in \HyPsd@CheckCatcodes.

```

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

```

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

```

1602 \HyPsd@LetUnexpandableSpace\HyPsd@UnexpandableSpace

```

### 6.5.8 Marker for commands

\HyPsd@XSPACE \HyPsd@ITALCORR \HyPsd@GLYPHERR Some commands and informations cannot be utilized before the string expansion and the checking process. Command names are filtered out, so we need another way to transport the information: An unusual # with catcode 12 marks the beginning of the extra information.

```

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

```

### 6.5.9 \hspace fix

\HyPsd@hspace

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

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

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

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

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

### 6.5.10 Fix for AMS classes

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

### 6.5.11 Reference commands

\HyPsd@href

```
1632 \def\HyPsd@href#1#{\@secondoftwo}
```

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

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

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

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



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

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

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

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

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

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

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

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

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

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

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

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

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

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

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

`\HyPsd@@autorefname`

```

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

```

### 6.5.12 Redefining the defining commands

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

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

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

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

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

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

```

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

```

```

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

```

### 6.5.13 \ifnextchar

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

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

```

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

```

### 6.5.14 \@protected@testoptifnextchar

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

```

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

```

## 6.6 Help macros for postprocessing

### 6.6.1 Generic warning.

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

```

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

```

### 6.6.2 Protecting spaces

```

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

```

1776 {%

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

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

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

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

### Remove mask.

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

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

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

### 6.6.3 Remove grouping braces

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

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

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

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

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

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

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

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

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

```

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

```

#### 6.6.4 Catcode check

##### Check catcodes.

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

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

```

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

```

```

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

```

### Remove counts, dimens, skips.

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

```

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

```

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

```

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

```



```

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

```

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

```

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

```

### Catcode warnings.

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

```

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

```

`\HyPsd@RemoveSpaceWarning`

```

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

```

```

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

```

\HyPsd@ReplaceSpaceWarning

```

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

```

### 6.6.5 Check for wrong glyphs

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

```

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

```

## Spaces.

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

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

### 6.6.6 Replacing tokens

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

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

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

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

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

`\HyPsd@EscapeTeX`

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

```

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

```

### 6.6.7 Support for package xspace

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

```

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

```

### 6.6.8 Converting to Unicode

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

```

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

```

`\HyPsd@ConvertToUnicode`

```

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

```

```

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

```

\HyPsd@DoConvert

```

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

```

\HyPsd@DoEscape

```

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

```

\HyPsd@GetTwoBytes

```

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

```

\HyPsd@GetOneByte

```

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

```

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

```

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

```

\HyPsd@Char

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

### 6.6.9 Support for UTF-8 input encoding

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

This calculation must be done in an expandable context, so we use `eTeX` here for performance reasons. Unhappily the results of divisions are rounded. Thus a circumvention

via `\dimexpr` is used, e.g.:

```

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

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

```

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

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

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

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

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

$$(5)$$

```

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

```

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

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

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

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

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

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

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

$$(12)$$

```

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

```

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

```

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

```

```

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

```



```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

```

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

```

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

```

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

```

## 7 Support of other packages

### 7.1 Class memoir

```

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

```

### 7.2 Package subfigure

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

```

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

```

```

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

```

### 7.3 Package xr and xr-hyper

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

```

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

```

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

```

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

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

```

Providing dummy definitions.

```

2418 \let\literalps@out\@gobble
2419 \newcommand\pdfbookmark[3]{}{}
2420 \def\Acrobatmenu#1#2{\leavevmode#2}
2421 \def\Hy@writebookmark#1#2#3#4#5{}%

```

## 8 Help macros for links

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

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

```

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

```

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

```

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

```

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

```

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

```

```

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

```

## 9 Options

```

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

```

### 9.1 Help macros

\Hy@boolkey

```

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

```

```

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

```

\Hy@WarnOptionValue

```

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

```

\Hy@DisableOption

```

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

```

\Hy@WarnOptionDisabled

```

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

```

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

```

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

```

```

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

```

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

```

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

```

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

```

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

```

`\Hy@UseNameKey`

```

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

```

## 9.2 Defining the options

```

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

```

```

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

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

```

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

```

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

```



```

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

```

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

```

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

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

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

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

```

Determines whether an automatic anchor is put on each page

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

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

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

```

```

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

```

```

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

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

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

```

## 10 Options for different drivers

```

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

```

```

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

```

```

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

```

```

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

```

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

```

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

```

```

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

```

## 11 Options to add extra features

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

```

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

```

The automatic footnote linking can be disabled by option hyperfootnotes.

```

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

```

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

```

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

```

```

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

```

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

```

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

```

Configuration of encap char.

```

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

```

## 12 Language options

The `\autoref` feature depends on the language.

```

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

```



```

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

```

```

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

```

Next commented section for Russian is provided by Olga Lapko.

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

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

is the `\appendixautorefname`.

```
3200 \def\HyLang@russian{%
```

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

```
3201 \def\equationautorefname{\cyr\cyrv\cyrrery\cyrr.}%
```

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

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

```
3203 % \cyr\cyrv\cyrrery\cyrr\cyra\cyrzh\cyre\cyrn\cyri\cyre
```

```
3204 % }%
```

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

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

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

```
3207 }%
```

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

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

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

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

```
3211 % }%
```

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

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

```
3213 % \def\Accfootnoteautorefname{\cyr\cyrs\cyrn\cyro\cyrs\cyrk\cyru}%
```

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

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

```
3215 % \def\itemautorefname{\cyr\cyrp\cyru\cyrn\cyrk\cyrt}%
```

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

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

```
3217 \def\tableautorefname{\cyr\cyrt\cyra\cyrb\cyrl.}%
```

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

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

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

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

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

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

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

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

```
3224 % }%
```

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

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

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

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

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

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

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

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

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

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

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

```
3234 % \def\FancyVerbLineautorefname{\cyr\cyrs\cyrt\cyrr\cyrk.}%
```

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

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

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

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

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

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

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

```

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

```

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

```

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

```

```

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

```

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

```

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

```

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

```

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

```

```

3363 }%
3364 }

```

## 13 Options to change appearance of links

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

```

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

```

## 14 Bookmarking

```

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

```

```

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

```

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

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

```

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

```

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

```

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

```

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

```

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

```



```

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

Option CJKbookmarks enables the patch for CJK bookmarks.

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

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

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

```

## 15 PDF-specific options

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

```

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

```

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

```

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

```

```

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

```

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

```

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

```

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

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

```

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

```

```

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

```

```

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

```

```

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

```

```

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

```

```

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

```

```

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

```



```

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

```

```

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

```

Default values:

```

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

```

```

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

```

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

```

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

```

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

```

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

```

Add option tex4ht if package tex4ht is loaded.

```

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

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

```

After processing options.

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

## 15.1 PDF/A

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

```

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

```

## 15.2 Patch for babel's \texttilde

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

```

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

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

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

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

```

```

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

```

### 15.2.1 Driver loading

```

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

```

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

```

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

```

```

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

```

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

```

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

```



```

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

```

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

```

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

```

```

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

```

## 15.2.2 Bookmarks

```

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

```

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

```

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

```

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

```

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

```

```

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

```

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

```

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

```

```

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

```

```

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

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

```

## 16 User hypertext macros

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

```

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

```

```

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

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

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

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

```

```

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

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

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

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

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

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

```

Option 'page'.

```

4677 \define@key{href}{page}{%
4678   \def\Hy@href@page{#1}%
4679 }

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

```

```

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

```

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

```

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

```

Option ‘pdfremotestartview’.

```

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

```

Option ‘pdfnewwindow’.

```

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

```

Option ‘ismap’.

```

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

```

Option ‘nextactionraw’.

```

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

```



```

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

```

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

```

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

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

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

```

\hyperref is more complicated, as it includes the concept of a category of link, used to make the name. This is not really used in this package. \hyperdef sets up an anchor in the same way. They each have three parameters of category, linkname, and marked text, and \hyperref also has a first parameter of URL. If there is an optional first parameter to \hyperdef, it is the name of a L<sup>A</sup>T<sub>E</sub>X label which can be used in a short form of \hyperref later, to avoid remembering the name and category.

```

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

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

```

```

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

```

We also have a need to give a L<sup>A</sup>T<sub>E</sub>X *label* to a hyper reference, to ease the pain of referring to it later.

```

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

```

## 17 Underlying basic hypertext macros

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

```

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

```

```

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

```

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

```

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

```

Parameters are:

1. The URL or file name
2. The type
3. The internal name
4. The link string

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

```

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

```

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

```

4864 \def\@pdftempwordfile{file}%
4865 \def\@pdftempwordrun{run}%
4866 \def\hyper@readexternallink#1#2#3#4:#5:#6\{#7{%

```

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

```

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

```

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

```

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

```

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

```

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

```

otherwise its a URL

```

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

```

By default, turn run: into file:

```

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

```

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

```

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

```

```

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

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

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

```

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

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

```

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

## 18 Compatibility with the *LaTeX2html* package

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

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

```

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

```

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

```

This is really too much. The  $\LaTeX$ 2html package defines its own `\hyperref` command, with a different syntax. Was this always here? Its weird, anyway. We interpret it in the ‘printed’ way, since we are about fidelity to the page.

```

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

```

## 19 Forms creation

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

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

### 19.1 Field flags

The field flags are organized in a bit set.

```

5016 \RequirePackage{bitset}

```

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

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

```

\HyField@NewFlag  #1: type: F annot flags, Ff field flags
                  #2: PDF name
                  #3: PDF position
5017 \def\HyField@NewFlag#1#2{%
5018   \lowercase{\HyField@NewOption{#2}}%
5019   \lowercase{\HyField@NewBitsetFlag{#2}}{#2}{#1}%
5020 }

```

```

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

```

```

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

```

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

#1: option  
#2: PDF name  
#3: type: F annot flags, Ff field flags  
#4: PDF position

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

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

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

\HyField@@UseFlag

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

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

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

\HyField@@SetFlag

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

\HyField@PrintFlags

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



```

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

```

### 19.1.1 Declarations of field flags

“Table 8.70 Field flags common to all field types”

```

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

```

“Table 8.75 Field flags specific to button fields”

```

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

```

“Table 8.77 Field flags specific to text fields”

```

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

```

“Table 8.79 field flags specific to choice fields”

```

5107 \HyField@NewFlag{Ff}{Combo}{18}
5108 \HyField@NewFlag{Ff}{Edit}{19}
5109 \HyField@NewFlag{Ff}{Sort}{20}
5110 \HyField@NewFlag{Ff}{MultiSelect}{22}% PDF 1.4
5111 % \HyField@NewFlag{Ff}{DoNotSpellCheck}{23}% PDF 1.4
5112 \HyField@NewFlag{Ff}{CommitOnSelChange}{27}% PDF 1.5

```

Signature fields are not supported.

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

```

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

```

```

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

```

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

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

```

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

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

```

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

```

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

```

```

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

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

```

### 19.1.2 Set submit flags

\HyField@FlagsSubmit

```

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

```

```

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

```

### 19.1.3 Set annot flags in fields

\HyField@FlagsAnnot

```

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

```

### 19.1.4 Pushbutton field

\HyField@FlagsPushButton

```

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

```

### 19.1.5 Check box field

\HyField@FlagsCheckBox

```

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

```

```

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

```

### 19.1.6 Radio button field

\HyField@FlagsRadioButton

```

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

```

### 19.1.7 Text fields

\HyField@FlagsText

```

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

```

```

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

```

### 19.1.8 Choice fields

\HyField@FlagsChoice

```

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

```

## 19.2 Choice field

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

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

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

```

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

```

```

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

```

\HyField@@PDFChoices

```

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

```

```

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

```

## 19.3 Forms

\HyField@SetKeys

```

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

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

```



```

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

```

```

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

```

```

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

```

```

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

```

```

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

```

```

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

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

```

```

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

```

Default options for the types of \ChoiceMenu.

```

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

```

## 20 Setup

```

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

```

```

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

```

## 21 Low-level utility macros

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

```

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

```

Support \label before \begin{document}.

```

5872 \def\@currentHref{Doc-Start}
5873 \let\Hy@footnote@currentHref\@empty

```

We give the start of document a special label; this is used in backreferencing-by-section, to allow for cites before any sectioning commands. Set up PDF info.

```

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

```



Ignore star from referencing macros:

## 22 Localized nullifying of package

```

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

```

This package is introduced by Sebastian Rahtz.

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

Some low-level commands:

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

Some top-level commands:

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

Ignore star from referencing macros:

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

## 24 The Mangling Of Aux and Toc Files

Some extra tests so that the hyperref package may be removed or added to a document without having to remove .aux and .toc files (this section is by David Carlisle) All the code is delayed to \begin{document}

```
5986 <*package>
```

5987 \Hy@AtBeginDocument{%

First the code to deal with removing the hyperref package from a document.

Write some stuff into the aux file so if the next run is done without hyperref, then \contentsline and \newlabel are defined to cope with the extra arguments.

```

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

```

But the new aux file will be read again at the end, with the normal definitions expected, so better put things back as they were.

```

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

```

If the document is being run with hyperref put this definition into the aux file, so we can spot it on the next run.

```

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

```

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

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

```

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

```

```

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

```

## 25 Title strings

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

```

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

```

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

```

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

```

```

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

```

Macro `\Hy@UseMaketitleInfos` is used in the driver files, before the information entries are used.

The newline macro `\newline` or `\\` is much more complicate. In the title a good replacement can be a space, but can be already a space after `\\` in the title string. So this space is removed by scanning for the next non-empty argument.

In the macro `\author` the newline can perhaps separate the different authors, so the newline expands here to a comma with space.

The possible arguments such as space or the optional argument after the newline macros are not detected.

```

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

```

## 26 Page numbers

This stuff is done by Heiko Oberdiek.

## 27 Every page

```

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

```

```

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

```

## 27.1 PDF /PageLabels

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

```

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

```

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

```

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

```

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

```

6141 \def\HyPL@Labels{}%

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

```

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

```

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

```

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

```

`\HyPL@@CheckThePage` The first check is, is `\thepage` is defined such as in  $\text{\LaTeX}$ , 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`.

```

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

```

`\HyPL@Format` The help macro `\HyPL@Format` is executed while a `\protected@edef` in the second check method of `\HyPL@@CheckPage`. The first occurrences of, for example, `\arabic{page}` is marked by `\HyPL@found` that is also defined by `\csname`.

```

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

```

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



```

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

```

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

```

6260 \providecommand*{\HyPL@StorePageLabel}[1]{}%

```

`\HyPL@Useless` The `/PageLabels` entry does not make sense, if the absolute page numbers and the page labels are the same. Then `\HyPL@Labels` has the meaning of `\HyPL@Useless`.

```

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

```

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

```

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

```

```

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

```

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

```

6275 \Hy@DisableOption{pdfpagelabels}
6276 \</package>

```

### 27.1.1 pdfTeX and VTeX

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

`\Hy@PutCatalog`

```

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

```

The code for VTeX is more complicate, because it does not allow the direct access to the `/Catalog` object. The command scans its argument and looks for a `/PageLabels` entry.

VTeX 6.59g is the first version, that implements `\special{!pdfpagelabels...}`. For this version `\VTeXversion` reports 660.

```

6284 <*vTeX>

```

```

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

6317 \<*pdftex | vtex>

```

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

```

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

```

Package `atveryend` is used to get behind the final `\clearpage` and to avoid a `\clearpage` in `\AtEndDocument`. Then the PDF catalog entry for `\PageLabels` is set.

```

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

6330 \fi
6331 \</pdftex | vtex>

```

## 27.1.2 xetex

```

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

```

### 27.1.3 pdfmarkbase, dvipdfm, xetex

```

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

```

```

6387 \endgroup
6388 \pdfmarkbase>

\Hy@PutCatalog

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

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

```

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

```

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

```

Write a dummy definition of \HyPL@Entry for the case, that the next run is done without hyperref. A marker for the rerun warning is set and the /PageLabels is written.

```

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

```

\HyPL@Entry

```

6420 \def\HyPL@Entry#1{%
6421   \expandafter\gdef\expandafter\HyPL@Labels\expandafter{%
6422     \HyPL@Labels
6423     #1%
6424   }%
6425 }%

6426 \fi
6427 \pdfmarkbase | dvipdfm | xetex>
6428 <*package>
6429 \MaybeStopEarly

```

## 28 Automated L<sup>A</sup>T<sub>E</sub>X hypertext cross-references

Anything which can be referenced advances some counter; we overload this to put in a hypertext starting point (with no visible anchor), and make a note of that for later use in `\label`. This will fail badly if `\theH<name>` does not expand to a sensible reference. This means that classes or package which introduce new elements need to define an equivalent `\theH<name>` for every `\the<name>`. We do make a trap to make `\theH<name>` be the same as `\arabic{<name>}`, if `\theH<name>` is not defined, but this is not necessarily a good idea. Alternatively, the ‘naturalnames’ option uses whatever L<sup>A</sup>T<sub>E</sub>X provides, which may be useable. But then its up to you to make sure these are legal PDF and HTML names. The ‘hypertextnames=false’ option just makes up arbitrary names.

All the shenanigans is to make sure section numbers etc are always arabic, separated by dots. Who knows how people will set up `\@currentlabel`? If they put spaces in, or brackets (quite legal) then the hypertext processors will get upset.

But this is flaky, and open to abuse. Styles like subeqn will mess it up, for starters. Appendices are an issue, too. We just hope to cover most situations. We can at least cope with the standard sectioning structure, allowing for `\part` and `\chapter`.

Start with a fallback for equations

```

6430 \def\Hy@CounterExists#1{%
6431   \begingroup\expandafter\expandafter\expandafter\endgroup
6432   \expandafter\ifx\csname c@#1\endcsname\relax
6433     \expandafter\@gobble
6434   \else
6435     \begingroup\expandafter\expandafter\expandafter\endgroup
6436     \expandafter\ifx\csname the#1\endcsname\relax
6437       \expandafter\expandafter\expandafter\@gobble
6438     \else
6439       \expandafter\expandafter\expandafter\@firstofone
6440     \fi
6441   \fi
6442 }
6443 \Hy@CounterExists{section}{%
6444   \newcommand\theHequation{\theHsection.\arabic{equation}}}%
6445 }
6446 \Hy@CounterExists{part}{%
6447   \newcommand\theHpart{\arabic{part}}}%
6448 }
6449 \ltx@ifundefined{thechapter}{%
6450   \newcommand\theHsection   {\arabic{section}}}%
6451   \newcommand\theHfigure    {\arabic{figure}}}%
6452   \newcommand\theHtable     {\arabic{table}}}%
6453 }{%
6454   \newcommand\theHchapter   {\arabic{chapter}}}%
6455   \newcommand\theHfigure    {\theHchapter.\arabic{figure}}}%
6456   \newcommand\theHtable     {\theHchapter.\arabic{table}}}%
6457   \newcommand\theHsection   {\theHchapter.\arabic{section}}}%
6458 }
6459 \newcommand\theHsubsection  {\theHsection.\arabic{subsection}}
6460 \newcommand\theHsubsubsection{\theHsubsection.\arabic{subsubsection}}
6461 \newcommand\theHparagraph   {\theHsubsubsection.\arabic{paragraph}}
6462 \newcommand\theHsubparagraph{\theHparagraph.\arabic{subparagraph}}
6463 \newcommand\theHtheorem     {\theHsection.\arabic{theorem}}
6464 \newcommand\theHthm         {\theHsection.\arabic{thm}}

```

Thanks to Greta Meyer (gbd@pop.cwru.edu) for making me realize that enumeration starts at 0 for every list! But `\item` occurs inside `\trivlist`, so check if its a real `\item`

before incrementing counters.

```

6465 \let\H@item\item
6466 \newcounter{Item}
6467 \def\theHItem{\arabic{Item}}
6468 \def\item{%
6469   \@hyper@itemfalse
6470   \ifnmbrlist\@hyper@itemtrue\fi
6471   \H@item
6472 }

6473 \newcommand\theHenumi   {\theHItem}
6474 \newcommand\theHenumii  {\theHItem}
6475 \newcommand\theHenumiii {\theHItem}
6476 \newcommand\theHenumiv  {\theHItem}
6477 \newcommand\theHHfootnote {\arabic{Hfootnote}}
6478 \newcommand\theHmpfootnote{\arabic{mpfootnote}}
6479 \let\theHHmpfootnote\theHHfootnote

```

Tanmoy asked for this default handling of undefined `\theH<name>` situations. It really isn't clear what would be ideal, whether to turn off hyperizing of unknown elements, to pick up the textual definition of the counter, or to default it to something like `\arabic{name}`. We take the latter course, slightly worriedly.

```

6480 \let\H@refstepcounter\refstepcounter
6481 \edef\name@of@eq{equation}%
6482 \edef\name@of@slide{slide}%

```

We do not want the handler for `\refstepcounter` to cut in during the processing of `\item` (we handle that separately), so we provide a bypass conditional.

```

6483 \newif\if@hyper@item
6484 \newif\if@skiphyperref
6485 \@hyper@itemfalse
6486 \@skiphyperreffalse
6487 \def\refstepcounter#1{%
6488   \ifHy@pdfstring
6489   \else
6490     \H@refstepcounter{#1}%
6491     \edef\This@name{#1}%
6492     \ifx\This@name\name@of@slide
6493     \else
6494       \if@skiphyperref
6495       \else
6496         \if@hyper@item
6497           \stepcounter{Item}%
6498           \hyper@refstepcounter{Item}%
6499           \@hyper@itemfalse
6500         \else
6501           \hyper@refstepcounter{#1}%
6502         \fi
6503       \fi
6504     \fi
6505   \fi
6506 }
6507 \let\Hy@saved@refstepcounter\refstepcounter

```

AMS $\LaTeX$  processes all equations twice; we want to make sure that the hyper stuff is not executed twice, so we use the AMS `\ifmeasuring@`, initialized if AMS math is not used.

```

6508 \@ifpackageloaded{amsmath}{-}{\newif\ifmeasuring@\measuring@false}

```

`\hyper@refstepcounter`

```

6509 \def\hyper@refstepcounter#1{%
6510   \edef\This@name{#1}%
6511   \ifx\This@name\name@of@eq
6512     \@ifundefined{theHequation}{%
6513       \make@stripped@name{\theequation}%
6514       \let\theHequation\newname
6515     }{}%
6516   \fi
6517   \@ifundefined{theH#1}{%
6518     \expandafter\def\csname theH#1\endcsname{\arabic{#1}}%
6519   }{}%
6520   \hyper@makecurrent{#1}%
6521   \ifmeasuring@
6522   \else
6523     \Hy@raisedlink{%
6524       \hyper@anchorstart{\@currentHref}\hyper@anchorend
6525     }%
6526   \fi
6527 }

```

After `\appendix` “chapter” (or “section” for classes without chapter) should be replaced by “appendix” to get `\autoref` work. Macro `\Hy@chapapp` contains the current valid name like `\@chapapp`, which cannot be used, because this string depends on the current language.

The “french” package defines counter `\thechapter` by `\newcounterchapter`, if `\@ifundefinedchapter`.

```

6528 \begingroup\expandafter\expandafter\expandafter\endgroup
6529 \expandafter\ifx\csname chapter\endcsname\relax
6530   \def\Hy@chapterstring{section}%
6531 \else
6532   \def\Hy@chapterstring{chapter}%
6533 \fi
6534 \def\Hy@appendixstring{appendix}
6535 \def\Hy@chapapp{\Hy@chapterstring}
6536 \ltx@ifundefined{appendix}{%
6537 }{%
6538   \let\HyOrg@appendix\appendix
6539   \def\appendix{%
6540     \ltx@ifundefined{chapter}%
6541     {\gdef\theHsection{\Alph{section}}}%
6542     {\gdef\theHchapter{\Alph{chapter}}}%
6543     \xdef\Hy@chapapp{\Hy@appendixstring}%
6544     \HyOrg@appendix
6545   }%
6546 }

```

`\Hy@Test@alph`

```

6547 \def\Hy@Test@alph#1{%
6548   \ifcase#1\or
6549     a\or b\or c\or d\or e\or f\or g\or h\or i\or j\or
6550     k\or l\or m\or n\or o\or p\or q\or r\or s\or t\or
6551     u\or v\or w\or x\or y\or z%
6552   \else
6553     \@ctrerr
6554   \fi
6555 }

```

\Hy@Test@Alph

```
6556 \def\Hy@Test@Alph#1{%
6557   \ifcase#1\or
6558     A\or B\or C\or D\or E\or F\or G\or H\or I\or J\or
6559     K\or L\or M\or N\or O\or P\or Q\or R\or S\or T\or
6560     U\or V\or W\or X\or Y\or Z%
6561   \else
6562     \@ctrerr
6563   \fi
6564 }
```

\hyper@makecurrent Because of Babel mucking around, nullify \textlatin when making names. And \@number because of babel's lrbabel.def.

```
6565 \def\hyper@makecurrent#1{%
6566   \begingroup
6567   \edef\Hy@param{#1}%
6568   \ifx\Hy@param\Hy@chapterstring
6569     \let\Hy@param\Hy@chapapp
6570   \fi
6571   \ifHy@hypertextnames
6572     \let\@number\@firstofone
6573     \def\@fnsymbol##1{fnsymbol\number##1}%
6574     \def\@arabic##1{\number##1}%
6575     \ifx\@alph\Hy@Test@alph
6576     \else
6577       \def\@alph{alph\number}%
6578     \fi
6579     \ifx\@Alph\Hy@Test@Alph
6580     \else
6581       \def\@Alph{Alph\number}%
6582     \fi
6583     \ifHy@naturalnames
6584       \let\textlatin\@firstofone
6585       \xdef\HyperGlobalCurrentHref{\csname the#1\endcsname}%
6586     \else
6587       \xdef\HyperGlobalCurrentHref{%
6588         \csname
6589           the%
6590           \expandafter\ifx\csname theH#1\endcsname\relax\else H\fi
6591           #1%
6592         \endcsname
6593       }%
6594     \fi
6595     \xdef\HyperGlobalCurrentHref{%
6596       \Hy@param.\expandafter\strip@prefix\meaning\HyperGlobalCurrentHref
6597     }%
6598   \else
6599     \Hy@GlobalStepCount\Hy@linkcounter
6600     \xdef\HyperGlobalCurrentHref{\Hy@param.\the\Hy@linkcounter}%
6601   \fi
6602 \endgroup
6603 \let\HyperLocalCurrentHref\HyperGlobalCurrentHref
6604 \ifHy@localanchorname
6605   \let\@currentHref\HyperLocalCurrentHref
6606 \else
6607   \global\let\@currentHref\HyperGlobalCurrentHref
6608 \fi
```



```
6609 }
```

```
\Hy@MakeCurrentHref
```

```
6610 \def\Hy@MakeCurrentHref#1{%
6611   \edef\HyperLocalCurrentHref{#1}%
6612   \@onelevel@sanitize\HyperLocalCurrentHref
6613   \global\let\HyperGlobalCurrentHref\HyperLocalCurrentHref
6614   \let\HyperLocalCurrentHref\HyperGlobalCurrentHref
6615   \ifHy@localanchorname
6616     \let\@currentHref\HyperLocalCurrentHref
6617   \else
6618     \global\let\@currentHref\HyperGlobalCurrentHref
6619   \fi
6620 }
```

```
\Hy@MakeCurrentHrefAuto
```

```
6621 \def\Hy@MakeCurrentHrefAuto#1{%
6622   \Hy@GlobalStepCount\Hy@linkcounter
6623   \Hy@MakeCurrentHref{#1.\the\Hy@linkcounter}%
6624 }
```

```
\@currentHlabel \@currentHlabel is only defined for compatibility with package ‘hypdvips’.
```

```
6625 \def\@currentHlabel{\@currentHref}

6626 \@ifpackageloaded{fancyvrb}{%
6627   \@ifpackagelater{fancyvrb}{1998/05/20}{-}{-}%
6628   \def\FV@StepLineNo{%
6629     \FV@SetLineNo
6630     \def\FV@StepLineNo{\H@refstepcounter{FancyVerbLine}}%
6631     \FV@SetLineNo
6632   }%
6633 }%
6634 }{-}
```

## 29 Package lastpage support

Package lastpage directly writes the `\newlabel` command to the aux file. Because package hyperref requires additional arguments, the internal command `\lastpage@putlabel` is redefined. The patch is deferred by `\AtBeginDocument`, because it is possible that package lastpage is loaded after package hyperref. The same algorithm (options `hypertextnames` and `plainpages`) is used to get the page anchor name as in `\Hy@EveryPageAnchor` (see sec. 38). The link will not work if option `pageanchor` is set to false.

```
\lastpage@putlabel
```

```
6635 \Hy@AtBeginDocument{%
6636   \@ifclassloaded{revtex4}{%
6637     \@namedef{ver@lastpage.sty}{1994/06/25}%
6638   }{-}%
6639   \@ifpackageloaded{lastpage}{%
6640     \ifHy@pageanchor
6641     \else
6642       \Hy@WarningNoLine{%
6643         The \string\pageref{LastPage} link doesn’t work\MessageBreak
6644         with disabled option ‘pageanchor’%

```

```

6645 }%
6646 \fi
6647 \def\lastpage@putlabel{%
6648 \addtocounter{page}{-1}%
6649 \if@filesw
6650 \begingroup
6651 \let\@number\@firstofone
6652 \ifHy@pageanchor
6653 \ifHy@hypertexnames
6654 \ifHy@plainpages
6655 \def\Hy@temp{\arabic{page}}%
6656 \else
6657 \Hy@unicodefalse
6658 \pdfstringdef\Hy@temp{\thepage}%
6659 \fi
6660 \else
6661 \def\Hy@temp{\the\Hy@pagecounter}%
6662 \fi
6663 \fi
6664 \immediate\write\@auxout{%
6665 \string\newlabel
6666 {LastPage}{\thepage}{\thepage}%
6667 \ifHy@pageanchor page.\Hy@temp\fi}%
6668 }%
6669 \endgroup
6670 \fi
6671 \addtocounter{page}{1}%
6672 }%
6673 \@ifclassloaded{revtex4}{%
6674 \begingroup
6675 \toks@{\expandafter{\lastpage@putlabel}}%
6676 \edef\x{\endgroup
6677 \def\noexpand\lastpage@putlabel{%
6678 \noexpand\stepcounter{page}%
6679 \the\toks@
6680 \noexpand\addtocounter{page}\noexpand\m@ne
6681 }%
6682 }%
6683 \x
6684 }{}%
6685 }{}%
6686 }
6687 \</package>
6688 \< *check>
6689 \checkpackage{lastpage}[1994/06/25]
6690 \checkcommand\def\lastpage@putlabel{%
6691 \addtocounter{page}{-1}%
6692 \immediate\write\@auxout{%
6693 \string\newlabel{LastPage}{\thepage}{\thepage}%
6694 }%
6695 \addtocounter{page}{1}%
6696 }
6697 \</check>
6698 \< *package>

```

## 30 Package ifthen support

Since version 6.75a this is done in package nameref.

For compatibility `\hypergetref` and `\hypergetpageref` are still provided. But they do not generate warnings, if the reference is undefined.

```
6699 \def\hypergetref#1{\getrefbykeydefault{#1}{}{??}}
6700 \def\hypergetpageref#1{\getrefbykeydefault{#1}{page}{0}}
```

## 31 Package titlesec and titletoc support

This code is contributed by Javier Bezos (Email: jbezos@arrakis.es).

Package titlesec support:

```
6701 \@ifpackageloaded{titlesec}{%
6702   \def\ttl@Hy@steplink#1{%
6703     \Hy@MakeCurrentHrefAuto{#1*}%
6704     \edef\ttl@Hy@saveanchor{%
6705       \noexpand\Hy@raisedlink{%
6706         \noexpand\hyper@anchorstart{\@currentHref}%
6707         \noexpand\hyper@anchorend
6708         \def\noexpand\ttl@Hy@SavedCurrentHref{\@currentHref}%
6709         \noexpand\ttl@Hy@PatchSaveWrite
6710       }%
6711     }%
6712   }%
6713   \def\ttl@Hy@PatchSaveWrite{%
6714     \begingroup
6715     \toks@\expandafter{\ttl@savewrite}%
6716     \edef\x{\endgroup
6717       \def\noexpand\ttl@savewrite{%
6718         \let\noexpand\@currentHref
6719         \noexpand\ttl@Hy@SavedCurrentHref
6720         \the\toks@
6721       }%
6722     }%
6723     \x
6724   }%
6725   \def\ttl@Hy@refstepcounter#1{%
6726     \let\ttl@b\Hy@raisedlink
6727     \def\Hy@raisedlink##1{%
6728       \def\ttl@Hy@saveanchor{\Hy@raisedlink{##1}}%
6729     }%
6730     \refstepcounter{#1}%
6731     \let\Hy@raisedlink\ttl@b
6732   }%
6733 }
```

Package titletoc support:

```
6734 \@ifpackageloaded{titletoc}{%
6735   \def\ttl@gobblecontents#1#2#3#4{\ignorespaces}%
6736 }
```

## 32 Package varioref support

Package nameref uses five arguments for the ref system. Fix provided by Felix Neubauer (felix.neubauer@gmx.net).

```

6737 \def\Hy@varioref@undefined{{??}{??}}{}{}{}
6738 \@ifpackageloaded{varioref}{%
6739   \def\vref@pagenum#1#2{%
6740     \@ifundefined{r@#2}{%
6741       \expandafter\let\csname r@#2\endcsname\Hy@varioref@undefined
6742     }{}%
6743     \edef#1{\getpagerefnumber{#2}}%
6744   }%
6745 }{}

```

Package varioref redefines `\refstepcounter`, thus it needs fixing, if the package is loaded *after* hyperref.

```

6746 \def\Hy@varioref@refstepcounter#1{%
6747   \stepcounter{#1}%
6748   \protected@edef\@currentlabel{%
6749     \csname p@#1\expandafter\endcsname\csname the#1\endcsname
6750   }%
6751 }
6752 \AtBeginDocument{%
6753   \ifx\refstepcounter\Hy@varioref@refstepcounter
6754     \let\H@refstepcounter\refstepcounter
6755     \let\refstepcounter\Hy@saved@refstepcounter
6756   \fi
6757 }

```

### 33 Package longtable support

Sometimes the anchor of the longtable goes to the previous page. Thus the following patch separates the anchor setting and counter incrementation by hyperref's `\refstepcounter` and the anchor setting is moved after `\vskip\LTpre`.

Patch of `\LT@array`: replace `\refstepcounter` by the original `\H@refstepcounter` without anchor generation

```

6758 \@ifpackageloaded{longtable}{%
6759   \begingroup
6760   \def\y{\LT@array}%
6761   \@ifundefined{scr@LT@array}{%
6762     \@ifundefined{adl@LT@array}{\def\y{\adl@LT@array}}%
6763   }{\def\y{\scr@LT@array}}%
6764   \long\def\x\refstepcounter#1#2\@sharp#3#4\@nil{%
6765     \expandafter\endgroup
6766     \expandafter\def\y[##1]##2{%
6767       \H@refstepcounter{#1}%
6768       \hyper@makecurrent{table}%
6769       \let\Hy@LT@currentHref\@currentHref
6770       #2\@sharp###3#4%
6771     }%
6772   }%
6773   \expandafter\expandafter\expandafter\x\y{#1}{#2}\@nil

```

Patch of `\LT@start`: add anchor before first line after `\vskip\LTpre`

```

6774   \begingroup
6775   \def\x#1\ifvoid\LT@foot#2\fi#3\@nil{%
6776     \endgroup
6777     \def\LT@start{%
6778       #1%
6779       \ifvoid\LT@foot#2\fi

```

```

6780 \let\@currentHref\Hy@LT@currentHref
6781 \Hy@raisedlink{%
6782 \hyper@anchorstart{\@currentHref}\hyper@anchorend
6783 }%
6784 #3%
6785 }%
6786 }%
6787 \expandafter\x\LT@start\@nil
6788 }{}

```

## 34 Equations

We want to make the whole equation a target anchor. Overload equation, temporarily reverting to original `\refstepcounter`. If, however, it is in AMS math, we do not do anything, as the tag mechanism is used there (see section 41). The exception is that we move the equation incrementation inside the math environment to avoid specials outside and a wrong vertical spacing of equation environments.

```

6789 \let\new@refstepcounter\refstepcounter
6790 \let\H@equation\equation
6791 \let\H@endequation\endequation

6792 \ifpackageloaded{amsmath}{%
6793 \long\def\Hy@temp{%
6794 \incr@eqnum
6795 \mathdisplay@push
6796 \st@rredfalse \global\@eqnswtrue
6797 \mathdisplay{equation}%
6798 }%
6799 \ifx\Hy@temp\equation
6800 \expandafter\ifx\csname if@fleqn\expandafter\endcsname
6801 \csname iftrue\endcsname
6802 \else
6803 \long\def\equation{%
6804 \mathdisplay@push
6805 \st@rredfalse \global\@eqnswtrue
6806 \mathdisplay{equation}%
6807 \incr@eqnum
6808 }%
6809 \fi
6810 \fi
6811 }{%
6812 \def\equation{%
6813 \let\refstepcounter\H@refstepcounter
6814 \H@equation
6815 \@ifundefined{theHequation}{%
6816 \make@stripped@name{\theequation}%
6817 \let\theHequation\newname
6818 }{}%
6819 \hyper@makecurrent{equation}%
6820 \Hy@raisedlink{\hyper@anchorstart{\@currentHref}}%
6821 \let\refstepcounter\new@refstepcounter
6822 }%
6823 \def\endequation{\Hy@raisedlink{\hyper@anchorend}\H@endequation}%
6824 }

```

My goodness, why can't L<sup>A</sup>T<sub>E</sub>X be consistent? Why is `\eqnarray` set up differently from other objects?

People (you know who you are, Thomas Beuth) sometimes make an eqnarray where *all* the lines end with \notag, so there is no suitable anchor at all. In this case, pass by on the other side.

```

6825 \newif\if@eqnstar
6826 \@eqnstarfalse
6827 \let\H@eqnarray\eqnarray
6828 \let\H@endeqnarray\endeqnarray
6829 \def\eqnarray{%
6830   \let\Hy@reserved@a\relax
6831   \def\@currentHref{}%
6832   \H@eqnarray
6833   \if@eqnstar
6834   \else
6835     \ifx\\ \@currentHref\\%
6836     \else
6837       \ifundefined{theHequation}{%
6838         \make@stripped@name{\theequation}%
6839         \let\theHequation\newname
6840       }{}%
6841       \hyper@makecurrent{equation}%
6842       \hyper@anchorstart{\@currentHref}{ }\hyper@anchorend
6843     \fi
6844   \fi
6845 }
6846 \def\endeqnarray{%
6847   \H@endeqnarray
6848 }

```

This is quite heavy-handed, but it works for now. If its an eqnarray\* we need to disable the hyperref actions. There may well be a cleaner way to trap this. Bill Moss found this.

```

6849 \@namedef{eqnarray*}{%
6850   \def\@eqncr{\nonumber\@seqncr}\@eqnstartrue\eqnarray
6851 }
6852 \@namedef{endeqnarray*}{%
6853   \nonumber\endeqnarray\@eqnstarfalse
6854 }

```

Then again, we have the *subeqnarray* package. Tanmoy provided some code for this:

```

6855 \ltx@ifundefined{subeqnarray}{}{}%
6856 \let\H@subeqnarray\subeqnarray
6857 \let\H@endsubeqnarray\endsubeqnarray
6858 \def\subeqnarray{%
6859   \let\Hy@reserved@a\relax
6860   \H@subeqnarray
6861   \ifundefined{theHequation}{%
6862     \make@stripped@name{\theequation}%
6863     \let\theHequation\newname
6864   }{}%
6865   \hyper@makecurrent{equation}%
6866   \hyper@anchorstart{\@currentHref}{ }\hyper@anchorend
6867 }%
6868 \def\endsubeqnarray{%
6869   \H@endsubeqnarray
6870 }%
6871 \newcommand\theHsubequation{\theHequation\alph{subequation}}%
6872 }

```

The aim of this macro is to produce a sanitized version of its argument, to make it a safe label.

```

6873 \def\make@stripped@name#1{%
6874   \begingroup
6875   \escapechar\m@ne
6876   \global\let\newname\@empty
6877   \protected@edef\Hy@tempa{#1}%
6878   \edef\@tempb{%
6879     \noexpand\@tfor\noexpand\Hy@tempa:=%
6880     \expandafter\strip@prefix\meaning\Hy@tempa
6881   }%
6882   \@tempb\do{%
6883     \if{\Hy@tempa\else
6884     \if}\Hy@tempa\else
6885     \xdef\newname{\newname\Hy@tempa}%
6886     \fi
6887     \fi
6888   }%
6889   \endgroup
6890 }

```

Support for amsmath's subequations:

```

6891 \begingroup\expandafter\expandafter\expandafter\endgroup
6892 \expandafter\ifx\csname subequations\endcsname\relax
6893 \else
6894   \let\HyOrg@subequations\subequations
6895   \def\subequations{%
6896     \stepcounter{equation}%
6897     \protected@edef\theHparentequation{%
6898       \@ifundefined{theHequation}\theequation\theHequation
6899     }%
6900     \addtocounter{equation}{-1}%
6901     \HyOrg@subequations
6902     \def\theHequation{\theHparentequation\alph{equation}}%
6903     \ignorespaces
6904   }%
6905   \fi

```

Support for package amsthm (Daniel Müllner):

```

6906 \@ifpackageloaded{amsthm}{%
6907   \def\@thm#1#2#3{%
6908     \ifhmode
6909       \unskip\unskip\par
6910     \fi
6911     \normalfont
6912     \trivlist
6913     \let\thmheadnl\relax
6914     \let\thm@swap\@gobble
6915     \thm@notefont{\fontseries\mddefault\upshape}%
6916     \thm@headpunct{.}% add period after heading
6917     \thm@headsep 5\p@ plus\p@ minus\p@\relax
6918     \thm@space@setup
6919     #1% style overrides
6920     \@topsep \thm@preskip % used by thm head
6921     \@topsepadd \thm@postskip % used by \endparenv
6922     \def\dth@counter{#2}%
6923     \ifx\@empty\dth@counter
6924       \def\@tempa{%

```

```

6925     \@oparg{\@begintheorem{#3}{}}{}%
6926   }%
6927 \else
6928   \H@refstepcounter{#2}%
6929   \hyper@makecurrent{#2}%
6930   \let\Hy@dth@currentHref\@currentHref
6931   \def\@tempa{%
6932     \@oparg{\@begintheorem{#3}{\csname the#2\endcsname}}{}%
6933   }%
6934   \fi
6935   \@tempa
6936 }%
6937 \dth@everypar={%
6938   \@minipagefalse
6939   \global\@newlistfalse
6940   \@noparitemfalse
6941   \if@inlabel
6942     \global\@inlabelfalse
6943   \begingroup
6944     \setbox\z@\lastbox
6945     \ifvoid\z@
6946       \kern-\itemindent
6947     \fi
6948   \endgroup
6949   \ifx\@empty\dth@counter
6950   \else
6951     \Hy@raisedlink{%
6952       \hyper@anchorstart{%
6953         \ltx@ifundefined{Hy@dth@currentHref}%
6954         \@currentHref\Hy@dth@currentHref
6955       }\hyper@anchorend
6956     }%
6957   \fi
6958   \unhbox\@labels
6959   \fi
6960   \if@nobreak
6961     \@nobreakfalse \clubpenalty\@M
6962   \else
6963     \clubpenalty\@clubpenalty \everypar{}%
6964   \fi
6965 }%
6966 }{}

```

## 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.

```

6967 \ifpackageloaded{tabularx}{\Hy@hyperfootnotesfalse}{}
6968 \ifHy@hyperfootnotes
6969   \newcounter{Hfootnote}%
6970   \let\H@@@footnotetext\@footnotetext
6971   \let\H@@@footnotemark\@footnotemark
6972   \def\@xfootnotenext[#1]{%

```



```

6973 \begingroup
6974 \csname c@\@mpfn\endcsname #1\relax
6975 \unrestored@protected@xdef\@thefnmark{\thempfn}%
6976 \endgroup
6977 \ifx\@footnotetext\@mpfootnotetext
6978 \expandafter\H@\@mpfootnotetext
6979 \else
6980 \expandafter\H@\@footnotetext
6981 \fi
6982 }%
6983 \def\xfootnotemark[#1]{%
6984 \begingroup
6985 \c@footnote #1\relax
6986 \unrestored@protected@xdef\@thefnmark{\thefootnote}%
6987 \endgroup
6988 \H@\@footnotemark
6989 }%
6990 \let\H@\@mpfootnotetext\@mpfootnotetext
6991 \long\def\@mpfootnotetext#1{%
6992 \H@\@mpfootnotetext{%
6993 \ifHy@nesting
6994 \expandafter\hyper@@anchor\expandafter{%
6995 \Hy@footnote@currentHref
6996 }{#1}%
6997 \else
6998 \Hy@raisedlink{%
6999 \expandafter\hyper@@anchor\expandafter{%
7000 \Hy@footnote@currentHref
7001 }{\relax}%
7002 }{#1}%
7003 \fi
7004 }%
7005 }%
7006 \long\def\@footnotetext#1{%
7007 \H@\@footnotetext{%
7008 \ifHy@nesting
7009 \expandafter\hyper@@anchor\expandafter{%
7010 \Hy@footnote@currentHref
7011 }{#1}%
7012 \else
7013 \Hy@raisedlink{%
7014 \expandafter\hyper@@anchor\expandafter{%
7015 \Hy@footnote@currentHref
7016 }{\relax}%
7017 }%
7018 \let\@currentHref\Hy@footnote@currentHref
7019 \let\@currentlabelname\@empty
7020 #1%
7021 \fi
7022 }%
7023 }%

```

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.

```

7024 \def\@footnotemark{%
7025 \leavevmode

```

```

7026 \ifhmode\edef\x@sf{\the\spacefactor}\nobreak\fi
7027 \stepcounter{Hfootnote}%
7028 \global\let\Hy@saved@currentHref\@currentHref
7029 \hyper@makecurrent{Hfootnote}%
7030 \global\let\Hy@footnote@currentHref\@currentHref
7031 \global\let\@currentHref\Hy@saved@currentHref
7032 \hyper@linkstart{link}{\Hy@footnote@currentHref}%
7033 \@makefnmark
7034 \hyper@linkend
7035 \ifhmode\spacefactor\x@sf\fi
7036 \relax
7037 }%

```

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

```

7038 \@ifpackageloaded{longtable}{%
7039 \CheckCommand*{\LT@p@ftntext}[1]{%
7040 \edef\@tempa{%
7041 \the\LT@p@ftn
7042 \noexpand\footnotetext[\the\c@footnote]%
7043 }%
7044 \global\LT@p@ftn\expandafter{\@tempa{#1}}%
7045 }%
7046 \long\def\LT@p@ftntext#1{%
7047 \edef\@tempa{%
7048 \the\LT@p@ftn
7049 \begingroup
7050 \noexpand\c@footnote=\the\c@footnote\relax
7051 \noexpand\protected@xdef\noexpand\@thefnmark{%
7052 \noexpand\thempfn
7053 }%
7054 \noexpand\Hy@LT@footnotetext{%
7055 \Hy@footnote@currentHref
7056 }%
7057 }%
7058 \global\LT@p@ftn\expandafter{%
7059 \@tempa{#1}%
7060 \endgroup
7061 }%
7062 }%
7063 \long\def\Hy@LT@footnotetext#1#2{%
7064 \H@@footnotetext{%
7065 \ifHy@nesting
7066 \hyper@@anchor{#1}{#2}%
7067 \else
7068 \Hy@raisedlink{%
7069 \hyper@@anchor{#1}{\relax}}%
7070 }%
7071 \def\@currentHref{#1}%
7072 \let\@currentlabelname\@empty
7073 #2%
7074 \fi
7075 }%
7076 }%
7077 }{}%

```

Footnotes for fancyvrb (Fix by Manuel Pégourié-Gonnard).

```

7078 \ifpackageloaded{fancyvrb}{%
7079 \def\V@@footnotetext{%
7080 \insert\footins\bgroup
7081 \csname reset@font\endcsname
7082 \footnotesize
7083 \interlinepenalty\interfootnotelinepenalty
7084 \splittopskip\footnotesep
7085 \splitmaxdepth\dp\strutbox
7086 \floatingpenalty \@MM
7087 \hsize\columnwidth
7088 \@parboxrestore
7089 \edef\@currentlabel{\csname p@footnote\endcsname\@thefnmark}%
7090 \@makefnmark}%
7091 \rule{\z@}{\footnotesep}%
7092 \bgroup
7093 \aftergroup\V@@@footnotetext
7094 \Hy@raisedlink{%
7095 \expandafter\hyper@@anchor\expandafter{%
7096 \Hy@footnote@currentHref
7097 }{\relax}%
7098 }%
7099 \let\@currentHref\Hy@footnote@currentHref
7100 \let\@currentlabelname\@empty
7101 \ignorespaces
7102 }%
7103 }{}%
```

KOMA-Script defines `\footref` that uses both `\ref` and `\@footnotemark` resulting in two links, one of them wrong.

```

7104 \def\Hy@temp#1{%
7105 \begingroup
7106 \unrestored@protected\xdef\@thefnmark{\ref{#1}}%
7107 \endgroup
7108 \@footnotemark
7109 }%
7110 \ifx\Hy@temp\footref
7111 \def\footref#1{%
7112 \begingroup
7113 \unrestored@protected\xdef\@thefnmark{\ref{#1}}%
7114 \endgroup
7115 \H@@@footnotemark
7116 }%
7117 \fi
```

But the special footnotes in `\maketitle` are much too hard to deal with properly. Let them revert to plain behaviour. The koma classes add an optional argument.

```

7118 \let\HyOrg@maketitle\maketitle
7119 \def\maketitle{%
7120 \let\Hy@saved@footnotemark\@footnotemark
7121 \let\Hy@saved@footnotetext\@footnotetext
7122 \let\@footnotemark\H@@@footnotemark
7123 \let\@footnotetext\H@@@footnotetext
7124 \@ifnextchar[\Hy@maketitle@optarg[% ]
7125 \HyOrg@maketitle
7126 \Hy@maketitle@end
7127 }%
7128 }%
```

```

7129 \def\Hy@maketitle@optarg[#1]{%
7130   \HyOrg@maketitle[{#1}]%
7131   \Hy@maketitle@end
7132 }%
7133 \def\Hy@maketitle@end{%
7134   \ifx\@footnotemark\H@@footnotemark
7135     \let\@footnotemark\Hy@saved@footnotemark
7136   \fi
7137   \ifx\@footnotetext\H@@footnotetext
7138     \let\@footnotetext\Hy@saved@footnotetext
7139   \fi
7140 }%

```

\realfootnote Does anyone remember the function and purpose of \realfootnote?

```

7141 \def\realfootnote{%
7142   \@ifnextchar[\@xfootnote{%
7143     \stepcounter{\@mpfn}%
7144     \protected@xdef\@thefnmark{\thempfn}%
7145     \H@@@footnotemark\H@@@footnotetext
7146   }%
7147 }%

7148 \fi
7149 \Hy@DisableOption{hyperfootnotes}

7150 </package>
7151 <*check>
7152 \checklatex
7153 \checkcommand\def\@xfootnotenext[#1]{%
7154   \begingroup
7155     \csname c@\@mpfn\endcsname #1\relax
7156     \unrestored@protected@xdef\@thefnmark{\thempfn}%
7157   \endgroup
7158   \@footnotetext
7159 }
7160 \checkcommand\def\@xfootnotemark[#1]{%
7161   \begingroup
7162     \c@footnote #1\relax
7163     \unrestored@protected@xdef\@thefnmark{\thefootnote}%
7164   \endgroup
7165   \@footnotemark
7166 }
7167 \checkcommand\def\@footnotemark{%
7168   \leavevmode
7169   \ifhmode\edef\@x@sf{\the\spacefactor}\nobreak\fi
7170   \@makefnmark
7171   \ifhmode\spacefactor\@x@sf\fi
7172   \relax
7173 }
7174 </check>
7175 <*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.

```

7176 \def\caption{%

```

```

7177 \ifx\@capttype\@undefined
7178 \latexerror{\noexpand\caption outside float}\@ehd
7179 \expandafter\@gobble
7180 \else
7181 \H@refstepcounter\@capttype
7182 \let\Hy@tempa\@caption
7183 \ifundefined{float@caption}{%
7184 }{%
7185 \expandafter\ifx\csname @float@c@\@capttype\endcsname
7186 \float@caption
7187 \let\Hy@tempa\Hy@float@caption
7188 \fi
7189 }%
7190 \expandafter\@firstofone
7191 \fi
7192 {\@dblarg{\Hy@tempa\@capttype}}%
7193 }
7194 \long\def\@caption#1[#2]#3{%
7195 \expandafter\ifx\csname if@capstart\expandafter\endcsname
7196 \csname iftrue\endcsname
7197 \global\let\@currentHref\hc@currentHref
7198 \else
7199 \hyper@makecurrent{\@capttype}%
7200 \fi
7201 \ifundefined{NR@gettitle}{%
7202 \def\@currentlabelname{#2}%
7203 }{%
7204 \NR@gettitle{#2}%
7205 }%
7206 \par\addcontentsline{\csname ext@#1\endcsname}{#1}{%
7207 \protect\numberline{\csname the#1\endcsname}{\ignorespaces #2}%
7208 }%
7209 \begingroup
7210 \@parboxrestore
7211 \if@minipage
7212 \@setminipage
7213 \fi
7214 \normalsize
7215 \expandafter\ifx\csname if@capstart\expandafter\endcsname
7216 \csname iftrue\endcsname
7217 \global\@capstartfalse
7218 \@makecaption{\csname fnum@#1\endcsname}{\ignorespaces#3}%
7219 \else
7220 \@makecaption{\csname fnum@#1\endcsname}{%
7221 \ignorespaces

```

If we cannot have nesting, the anchor is empty.

```

7222 \ifHy@nesting
7223 \expandafter\hyper@@anchor\expandafter{\@currentHref}{#3}%
7224 \else
7225 \Hy@raisedlink{%
7226 \expandafter\hyper@@anchor\expandafter{%
7227 \@currentHref
7228 }{\relax}%
7229 }%
7230 #3%
7231 \fi
7232 }%

```

```

7233 \fi
7234 \par
7235 \endgroup
7236 }

```

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.

```

7237 \let\Hy@float@caption\@caption
7238 \ifpackageloaded{float}{%
7239 \def\Hy@float@caption{%
7240 \ifx\Hy@float@currentHref\@undefined
7241 \hyper@makecurrent{\@capttype}%
7242 \global\let\Hy@float@currentHref\@currentHref
7243 \else
7244 \let\@currentHref\Hy@float@currentHref
7245 \fi
7246 \float@caption
7247 }%
7248 \let\HyOrg@float@makebox\float@makebox
7249 \renewcommand{\float@makebox}[1]{%
7250 \HyOrg@float@makebox{%
7251 #1\relax
7252 \ifx\Hy@float@currentHref\@undefined
7253 \else
7254 \expandafter\hyper@@anchor\expandafter{%
7255 \Hy@float@currentHref
7256 }\relax}%
7257 \global\let\Hy@float@currentHref\@undefined
7258 \fi
7259 }%
7260 }%
7261 }{}

7262 \</package>
7263 \< *check>
7264 \checklatex[1999/06/01 - 2000/06/01]
7265 \checkcommand\def\caption{%
7266 \ifx\@capttype\@undefined
7267 \latex@error{\noexpand\caption outside float}\@ehd
7268 \expandafter\@gobble
7269 \else
7270 \refstepcounter\@capttype
7271 \expandafter\@firstofone
7272 \fi
7273 {\@dblarg{\@caption\@capttype}}%
7274 }
7275 \checkcommand\long\def\@caption#1[#2]#3{%
7276 \par
7277 \addcontentsline{\csname ext@#1\endcsname}{#1}{%
7278 \protect\numberline{\csname the#1\endcsname}{\ignorespaces #2}}%
7279 }%
7280 \begingroup
7281 \@parboxrestore
7282 \if@minipage
7283 \@setminipage
7284 \fi
7285 \normalsize
7286 \@makecaption{\csname fnum@#1\endcsname}{\ignorespaces #3}\par

```

```

7287 \endgroup
7288 }
7289 \</check>
7290 \<*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.

```

7291 \def\hyper@natlinkstart#1{%
7292   \Hy@backout{#1}%
7293   \hyper@linkstart{cite}{cite.#1}%
7294   \def\hyper@nat@current{#1}%
7295 }
7296 \def\hyper@natlinkend{%
7297   \hyper@linkend
7298 }
7299 \def\hyper@natlinkbreak#1#2{%
7300   \hyper@linkend#1\hyper@linkstart{cite}{cite.#2}%
7301 }
7302 \def\hyper@natanchorstart#1{%
7303   \Hy@raisedlink{\hyper@anchorstart{cite.#1}}%
7304 }
7305 \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.

```

7306 \ltx@ifundefined{NAT@parse}{%
7307   \providecommand*\@extra@binfo{}%
7308   \providecommand*\@extra@b@citeb{}%
7309   \def\bibcite#1#2{%
7310     \@newl@bel{b}{#1\@extra@binfo}{%
7311       \hyper@link{cite}{cite.#1\@extra@b@citeb}{#2}%
7312     }%
7313   }%
7314   \gdef\@extra@binfo{}%

```

Package *babel* redefines `\bibcite` with macro `\bbl@cite@choice`. It needs to be overwritten to avoid the warning “Label(s) may have changed.”.

```

7315 \let\Hy@bibcite\bibcite
7316 \begingroup
7317   \ifundefined{bbl@cite@choice}{}%
7318   \g@addto@macro\bbl@cite@choice{%
7319     \let\bibcite\Hy@bibcite
7320   }%
7321 }%
7322 \endgroup

```

\@BIBLABEL is working around a ‘feature’ of RevTeX.

```

7323 \providecommand*{\@BIBLABEL}{\@biblabel}%
7324 \def\@lbibitem[#1]#2{%
7325   \@skiphyperreftrue
7326   \H@item{%
7327     \ifx\Hy@raisedlink\@empty
7328       \hyper@anchorstart{cite.#2\@extra@b@citeb}%
7329       \@BIBLABEL{#1}%
7330       \hyper@anchorend
7331     \else
7332       \Hy@raisedlink{%
7333         \hyper@anchorstart{cite.#2\@extra@b@citeb}\hyper@anchorend
7334       }%
7335       \@BIBLABEL{#1}%
7336     \fi
7337     \hfill
7338   }%
7339   \@skiphyperreffalse
7340   \if@filesw
7341     \begingroup
7342     \let\protect\noexpand
7343     \immediate\write\@auxout{%
7344       \string\bibcite{#2}{#1}%
7345     }%
7346     \endgroup
7347   \fi
7348   \ignorespaces
7349 }%
```

Since \bibitem is doing its own labelling, call the raw version of \item, to avoid extra spurious labels

```

7350 \def\@bibitem#1{%
7351   \@skiphyperreftrue\H@item\@skiphyperreffalse
7352   \Hy@raisedlink{%
7353     \hyper@anchorstart{cite.#1\@extra@b@citeb}\relax\hyper@anchorend
7354   }%
7355   \if@filesw
7356     \begingroup
7357     \let\protect\noexpand
7358     \immediate\write\@auxout{%
7359       \string\bibcite{#1}{\the\value{\@listctr}}%
7360     }%
7361     \endgroup
7362   \fi
7363   \ignorespaces
7364 }%
7365 }{}

7366 \</package>
7367 \<*check>
7368 \checklatex
7369 \checkcommand\def\@lbibitem[#1]#2{%
7370   \item[\@biblabel{#1}\hfill]%
7371   \if@filesw
7372     {%
7373       \let\protect\noexpand
7374       \immediate\write\@auxout{%
7375         \string\bibcite{#2}{#1}%
```



```

7376 }%
7377 }%
7378 \fi
7379 \ignorespaces
7380 }
7381 \checkcommand\def\@bibitem#1{%
7382 \item
7383 \if@filesw
7384 \immediate\write\@auxout{%
7385 \string\bibcite{#1}{\the\value{\@listctr}}}%
7386 }%
7387 \fi
7388 \ignorespaces
7389 }
7390 \</check>
7391 \<*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.

```

7392 \ifclassloaded{revtex}{%
7393 \Hy@Info{*** compatibility with revtex **** }%
7394 \def\revtex@checking#1#2{%
7395 \expandafter\let\expandafter\T@temp\csname b@#1\endcsname
7396 \expandafter\def\csname b@#1\endcsname{#2}%
7397 \@SetMaxRnhefLabel{#1}%
7398 \expandafter\let\csname b@#1\endcsname\T@temp
7399 }%

```

Tanmoy provided this replacement for CITEX. Lord knows what it does. For chapterbib added: extra@b@citeb

```

7400 \ifundefined{CITE}{\def\CITE{\@cite}}{%
7401 \providecommand*\@extra@b@citeb{}%
7402 \def\CITEX[#1]#2{%
7403 \let\@citea\@empty
7404 \leavevmode
7405 \unskip
7406 $\sim$%
7407 \scriptstyle
7408 \CITE{%
7409 \@for\@citeb:=#2\do{%
7410 \@citea
7411 \def\@citea{\penalty\@m\ }%
7412 \edef\@citeb{\expandafter\@firstofone\@citeb}%
7413 \if@filesw
7414 \immediate\write\@auxout{\string\citation{\@citeb}}%
7415 \fi
7416 \ifundefined{b@\@citeb\extra@b@citeb}{%
7417 \mbox{\reset@font\bfseries ?}%
7418 \G@refundefinedtrue
7419 \@latex@warning{%
7420 Citation '\@citeb' on page \thepage \space undefined%
7421 }%
7422 }{%
7423 {\csname b@\@citeb\extra@b@citeb\endcsname}%
7424 }%
7425 }%
7426 }{#1}%

```

```

7427 }$%
7428 }%

```

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.

```

7429 \def\@citex[#1]#2{%
7430   \let\@citea\@empty
7431   \@cite{%
7432     \@for\@citeb:=#2\do{%
7433       \@citea
7434       \def\@citea{\penalty\@m\ }%
7435       \edef\@citeb{\expandafter\@firstofone\@citeb}%
7436       \if@filesw
7437         \immediate\write\@auxout{\string\citation{\@citeb}}%
7438       \fi
7439       \@ifundefined{b@\@citeb\@extra@b@citeb}{%
7440         \mbox{\reset@font\bfseries ?}%
7441         \@latex@warning{
7442           Citation '\@citeb' on page \thepage \space undefined%
7443         }%
7444       }{%
7445         \hbox{\csname b@\@citeb\@extra@b@citeb\endcsname}%
7446       }%
7447     }%
7448   }%
7449   }{#1}%
7450 }%
7451 }{}

```

### 37.1 Package harvard

Override Peter Williams' Harvard package; we have to a) make each of the citation types into a link; b) make each citation write a backref entry, and c) kick off a backreference section for each bibliography entry.

The redefinitions have to be deferred to \begin{document}, because if harvard.sty is loaded and html.sty is present and detects pdfTeX, then hyperref is already loaded at the begin of harvard.sty, and the \newcommand macros causes error messages.

```

7452 \@ifpackageloaded{harvard}{%
7453   \Hy@AtBeginDocument{%
7454     \Hy@Info{*** compatibility with harvard **** }%
7455     \Hy@raiselinksfalse
7456     \def\harvardcite#1#2#3#4{%
7457       \global\@namedef{HAR@fn@#1}{\hyper@link[cite]{}{cite.#1}{#2}}%
7458       \global\@namedef{HAR@an@#1}{\hyper@link[cite]{}{cite.#1}{#3}}%
7459       \global\@namedef{HAR@yr@#1}{\hyper@link[cite]{}{cite.#1}{#4}}%
7460       \global\@namedef{HAR@df@#1}{\csname HAR@fn@#1\endcsname}%
7461     }%
7462     \def\HAR@citetoaux#1{%
7463       \if@filesw\immediate\write\@auxout{\string\citation{#1}}\fi%
7464       \ifHy@backref
7465         \ifx\@empty\@currentlabel
7466         \else
7467           \@bsphack
7468           \if@filesw
7469             \protected@write\@auxout{}{%
7470               \string\@writefile{brf}{%
7471                 \string\backcite{#1}{%

```

```

7472         {\thepage}{\@currentlabel}{\@currentHref}%
7473     }%
7474 }%
7475 }%
7476 \fi
7477 \@esphack
7478 \fi
7479 \fi
7480 }%
7481 \def\harvarditem{%
7482     \@ifnextchar[{\@harvarditem}{\@harvarditem[\null]}%
7483 }%
7484 \def\@harvarditem[#1]#2#3#4#5\par{%
7485     \item[]%
7486     \hyper@anchorstart{cite.#4}\relax\hyper@anchorend
7487 \if@filesw
7488     \begingroup
7489     \def\protect##1{\string ##1\space}%
7490     \ifthenelse{\equal{#1}{\null}}{%
7491         {\def\next{{#4}{#2}{#2}{#3}}}%
7492         {\def\next{{#4}{#2}{#1}{#3}}}%
7493     \immediate\write\@auxout{\string\harvardcite\codeof\next}%
7494 \endgroup
7495 \fi
7496 \protect\hspace*{-\labelwidth}%
7497 \protect\hspace*{-\labelsep}%
7498 \ignorespaces
7499 #5%
7500 \ifHy@backref
7501     \newblock
7502     \backref{\csname br@#4\endcsname}%
7503 \fi
7504 \par
7505 }%

```

\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:

```

7506 \long\def\HAR@checkcitations#1#2#3#4{%
7507     \def\HAR@tempa{\hyper@@link[cite]{\cite.#1}{#2}}%
7508     \expandafter\ifx\csname HAR@fn@#1\endcsname\HAR@tempa
7509     \def\HAR@tempa{\hyper@@link[cite]{\cite.#1}{#3}}%
7510     \expandafter\ifx\csname HAR@an@#1\endcsname\HAR@tempa
7511     \def\HAR@tempa{\hyper@@link[cite]{\cite.#1}{#4}}%
7512     \expandafter\ifx\csname HAR@yr@#1\endcsname\HAR@tempa
7513     \else
7514         \@tempswatrue
7515     \fi
7516     \else
7517         \@tempswatrue
7518     \fi
7519     \else
7520         \@tempswatrue
7521     \fi
7522 }%
7523 }%
7524 }{}

```

## 37.2 Package chicago

The links by `\citeN` and `\shortciteN` should include the closing parentheses.

```
7525 \@ifpackageloaded{chicago}{%
```

`\citeN`

```
7526 \def\citeN{%
7527   \def\@citesep{-1000}%
7528   \def\@cite##1##2{##1}%
7529   \def\citeauthoryear##1##2##3{##1 (##3\@cite@opt)}}%
7530   \@citedata@opt
7531 }%
```

`\shortciteN`

```
7532 \def\shortciteN{%
7533   \def\@citesep{-1000}%
7534   \def\@cite##1##2{##1}%
7535   \def\citeauthoryear##1##2##3{##2 (##3\@cite@opt)}}%
7536   \@citedata@opt
7537 }%
```

`\@citedata@opt`

```
7538 \def\@citedata@opt{%
7539   \let\@cite@opt\@empty
7540   \@ifnextchar [{%
7541     \@tempswatrue
7542     \@citedatax@opt
7543   }{%
7544     \@tempswafalse
7545     \@citedatax[]%
7546   }%
7547 }%
```

`\@citedatax@opt`

```
7548 \def\@citedatax@opt[#1]{%
7549   \def\@cite@opt{, #1}%
7550   \@citedatax[{#1}]%
7551 }%

7552 }{}
```

## 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.

```
7553 \def\Hy@EveryPageAnchor{%
7554   \Hy@DistillerDestFix
7555   \ifHy@pageanchor
7556     \ifHy@hypertextnames
7557       \ifHy@plainpages
7558         \def\Hy@TempPageAnchor{\hyper@@anchor{page.\the\c@page}}%
```

```

7559 \else
7560 \begingroup
7561 \let\@number\@firstofone
7562 \Hy@unicodedefalse
7563 \pdfstringdef\@the@H@page{\thepage}%
7564 \endgroup
7565 \def\Hy@TempPageAnchor{\hyper@@anchor{page.\@the@H@page}}%
7566 \fi
7567 \else
7568 \Hy@GlobalStepCount\Hy@pagecounter
7569 \def\Hy@TempPageAnchor{%
7570 \hyper@@anchor{page.\the\Hy@pagecounter}%
7571 }%
7572 \fi
7573 \vbox to 0pt{%
7574 \kern\voffset
7575 \kern\topmargin
7576 \kern-1bp\relax
7577 \hbox to 0pt{%
7578 \kern\hoffset
7579 \kern\ifodd\value{page}%
7580 \oddsidemargin
7581 \else
7582 \evensidemargin
7583 \fi
7584 \kern-1bp\relax
7585 \Hy@TempPageAnchor\relax
7586 \hss
7587 }%
7588 \vss
7589 }%
7590 \fi
7591 }
7592 \g@addto@macro\Hy@EveryPageBoxHook{%
7593 \Hy@EveryPageAnchor
7594 }

```

## 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.

```

7595 \def\addcontentsline#1#2#3{% toc extension, type, tag
7596 \begingroup
7597 \let\label\@gobble
7598 \ifx\@currentHref\@empty
7599 \Hy@Warning{%
7600 No destination for bookmark of \string\addcontentsline,%
7601 \MessageBreak destination is added%
7602 }%
7603 \phantomsection
7604 \fi
7605 \expandafter\ifx\csname toplevel@#2\endcsname\relax
7606 \begingroup
7607 \def\Hy@tempa{#1}%
7608 \ifx\Hy@tempa\Hy@bookmarkstype

```

```

7609     \Hy@WarningNoLine{%
7610       bookmark level for unknown #2 defaults to 0%
7611     }%
7612   \else
7613     \Hy@Info{bookmark level for unknown #2 defaults to 0}%
7614   \fi
7615 \endgroup
7616 \expandafter\gdef\csname toplevel@#2\endcsname{0}%
7617 \fi
7618 \edef\Hy@toplevel{\csname toplevel@#2\endcsname}%
7619 \Hy@writebookmark{\csname the#2\endcsname}%
7620   {#3}%
7621   {\@currentHref}%
7622   {\Hy@toplevel}%
7623   {#1}%
7624 \ifHy@verbose
7625   \begingroup
7626     \def\Hy@tempa{#3}%
7627     \@onelevel@sanitize\Hy@tempa
7628     \let\temp@online\on@line
7629     \let\on@line\@empty
7630     \Hy@Info{%
7631       bookmark\temp@online:\MessageBreak
7632       thecounter {\csname the#2\endcsname}\MessageBreak
7633       text {\Hy@tempa}\MessageBreak
7634       reference {\@currentHref}\MessageBreak
7635       toplevel {\Hy@toplevel}\MessageBreak
7636       type {#1}%
7637     }%
7638   \endgroup
7639 \fi
7640 \addtocontents{#1}{%
7641   \protect\contentsline{#2}{#3}{\thepage}{\@currentHref}%
7642 }%
7643 \endgroup
7644 }
7645 \def\contentsline#1#2#3#4{%
7646   \ifx\\#4\\%
7647     \csname l@#1\endcsname{#2}{#3}%
7648   \else
7649     \ifcase\Hy@linktoc % none
7650       \csname l@#1\endcsname{#2}{#3}%
7651     \or % section
7652       \csname l@#1\endcsname{%
7653         \hyper@linkstart{link}{#4}{#2}\hyper@linkend
7654       }{#3}%
7655     \or % page
7656       \csname l@#1\endcsname{#2}{#3}%
7657       \hyper@linkstart{link}{#4}{#3}\hyper@linkend
7658     }%
7659   \else % all
7660     \csname l@#1\endcsname{%
7661       \hyper@linkstart{link}{#4}{#2}\hyper@linkend
7662     }{%
7663       \hyper@linkstart{link}{#4}{#3}\hyper@linkend
7664     }%
7665   \fi

```

```

7666 \fi
7667 }

7668 </package>
7669 <*check>
7670 \checklatex
7671 \checkcommand\def\addcontentsline#1#2#3{%
7672 \addtocontents{#1}{\protect\contentsline{#2}{#3}{\thepage}}%
7673 }
7674 \checkcommand\def\contentsline#1{\csname l@#1\endcsname}
7675 </check>
7676 <*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.

```

7677 \let\H@definecounter\@definecounter
7678 \def\@definecounter#1{%
7679 \H@definecounter{#1}%
7680 \expandafter\def\csname theH#1\endcsname{\arabic{#1}}%
7681 }

```

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.

```

7682 \let\H@newctr\@newctr
7683 \def\@newctr#1[#2]{%
7684 \H@newctr#1[{#2}]%
7685 \expandafter\def\csname theH#1\endcsname{%
7686 \csname the\@ifundefined{theH#2}{H}{H}#2\endcsname.\arabic{#1}%
7687 }%
7688 }

```

## 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.

```

7689 \@ifpackageloaded{amsmath}{%
7690 \def\Hy@make@anchor{%
7691 \Hy@MakeCurrentHrefAuto{AMS}%
7692 \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
7693 }%
7694 \def\Hy@make@df@tag@@#1{%
7695 \gdef\df@tag{%
7696 \maketag@@@{\Hy@make@anchor#1}%
7697 \def\@currentlabel{#1}%
7698 }%
7699 }%
7700 \def\Hy@make@df@tag@@@#1{%
7701 \gdef\df@tag{%
7702 \tagform@{\Hy@make@anchor#1}%

```

```

7703 \toks@{\xp{\p@equation{#1}}}%
7704 \edef\@currentlabel{\the\toks@}%
7705 }%
7706 }%
7707 \let\HyOrg@make@df@tag@@\make@df@tag@@
7708 \let\HyOrg@make@df@tag@@@\make@df@tag@@@
7709 \let\make@df@tag@@\Hy@make@df@tag@@
7710 \let\make@df@tag@@@\Hy@make@df@tag@@@
7711 }{}

```

Only play with \seteqlebal if we are using pdfTeX. Other drivers cause problems; requested by Michael Downes (AMS).

```

7712 \ifpackagewith{hyperref}{pdfTeX}{%
7713 \let\H@seteqlabel\@seteqlabel
7714 \def\@seteqlabel#1{%
7715 \H@seteqlabel{#1}%
7716 \xdef\@currentHref{AMS.\the\Hy@linkcounter}%
7717 \Hy@raisedlink{%
7718 \hyper@anchorstart{\@currentHref}\hyper@anchorend
7719 }%
7720 }%
7721 }{}

```

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.

```

7722 \let\HyOrg@addtoreset\@addtoreset
7723 \def\@addtoreset#1#2{%
7724 \HyOrg@addtoreset{#1}{#2}%
7725 \expandafter\xdef\csname theH#1\endcsname{%
7726 \expandafter\noexpand
7727 \csname the\@ifundefined{theH#2}{H#2}\endcsname
7728 .\noexpand\the\noexpand\value{#1}%
7729 }%
7730 }

```

\numberwithin A appropriate definition of hyperref's companion counter (\theH...) is added for correct link names.

```

7731 \</package>
7732 \<check>
7733 \checkpackage{amsmath}[1999/12/14 - 2000/06/06]
7734 \checkcommand\newcommand{\numberwithin}[3][\arabic]{%
7735 \@ifundefined{c@#2}{\@nocounterr{#2}}{%
7736 \@ifundefined{c@#3}{\@nocnterr{#3}}{%
7737 \@addtoreset{#2}{#3}%
7738 \@xp\xdef\csname the#2\endcsname{%

```



```

7739 \exp\@nx\csname the#3\endcsname .\@nx#1{#2}%
7740 }%
7741 }%
7742 }%
7743 }%
7744 \check
7745 \*package
7746 \ifpackageloaded{amsmath}{%
7747 \ifpackagelater{amsmath}{1999/12/14}{%
7748 \renewcommand*{\numberwithin}{3}[\arabic]{%
7749 \ifundefined{c@#2}{\@nocounterr{#2}}{%
7750 \ifundefined{c@#3}{\@nocnterr{#3}}{%
7751 \HyOrg@addtoreset{#2}{#3}%
7752 \exp\xdef\csname the#2\endcsname{%
7753 \exp\@nx\csname the#3\endcsname .\@nx#1{#2}%
7754 }%
7755 \exp\xdef\csname theH#2\endcsname{%
7756 \exp\@nx
7757 \csname the\ifundefined{theH#3}{H#3}\endcsname
7758 .\@nx#1{#2}%
7759 }%
7760 }%
7761 }%
7762 }%
7763 }{%
7764 \Hy@WarningNoLine{%
7765 \string\numberwithin\space of package 'amsmath' %
7766 only fixed\MessageBreak
7767 for version 2000/06/06 v2.12 or newer%
7768 }%
7769 }%
7770 }{}

```

## 42 Included figures

Simply intercept the low level graphics package macro.

```

7771 \ifHy@figures
7772 \let\Hy@Gin@setfile\Gin@setfile
7773 \def\Gin@setfile#1#2#3{%
7774 \hyperimage{#3}{\Hy@Gin@setfile{#1}{#2}{#3}}%
7775 }%
7776 \fi
7777 \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.

```

7778 \ifHy@hyperindex
7779 \def\HyInd@ParenLeft{()}%
7780 \def\HyInd@ParenRight{)}%
7781 \def\hyperindexformat#1#2{%
7782 \let\HyOrg@hyperpage\hyperpage
7783 \let\hyperpage\@firstofone
7784 #1{\HyOrg@hyperpage{#2}}%
7785 \let\hyperpage\HyOrg@hyperpage
7786 }%
7787 \Hy@nextfalse
7788 \@ifpackageloaded{multind}{\Hy@nexttrue}{}%
7789 \@ifpackageloaded{index}{\Hy@nexttrue}{}%
7790 \@ifpackageloaded{amsmidx}{\Hy@nexttrue}{}%
7791 \begingroup
7792 \lccode'\|=\expandafter'\HyInd@EncapChar\relax
7793 \lccode'\|/='\\ \relax
7794 \lowercase{\endgroup
7795 \ifHy@next
7796 \let\HyInd@org@wrindex\@wrindex
7797 \def\@wrindex#1#2{\HyInd@@wrindex{#1}#2||\}%
7798 \def\HyInd@@wrindex#1#2|#3|#4\{%
7799 \ifx\\#3\%
7800 \HyInd@org@wrindex{#1}{#2|hyperpage}%
7801 \else
7802 \HyInd@@@wrindex{#1}{#2}#3\%
7803 \fi
7804 }%
7805 \def\HyInd@@@wrindex#1#2#3#4\{%
7806 \def\Hy@temp@A{#3}%
7807 \ifcase0\ifx\Hy@temp@A\HyInd@ParenLeft 1\fi
7808 \ifx\Hy@temp@A\HyInd@ParenRight 1\fi
7809 \relax
7810 \HyInd@org@wrindex{#1}{%
7811 #2|hyperindexformat{/#3#4}%
7812 }%
7813 \else
7814 \ifx\\#4\%
7815 \ifx\Hy@temp@A\HyInd@ParenRight
7816 \HyInd@org@wrindex{#1}{#2|#3}%
7817 \else
7818 \HyInd@org@wrindex{#1}{#2|#3hyperpage}%
7819 \fi
7820 \else
7821 \HyInd@org@wrindex{#1}{%
7822 #2|#3hyperindexformat{/#4}%
7823 }%
7824 \fi
7825 \fi
7826 }%
7827 \else
7828 \def\@wrindex#1{\@@wrindex#1||\}%
7829 \def\@@wrindex#1|#2|#3\%
7830 \if@filesw
7831 \ifx\\#2\%
7832 \protected@write\@indexfile{}{%

```

```

7833         \string\indexentry{#1|hyperpage}{\thepage}%
7834     }%
7835     \else
7836         \HyInd@@@wrindex{#1}#2\\%
7837     \fi
7838 \fi
7839 \endgroup
7840 \@esphack
7841 }%
7842 \def\HyInd@@@wrindex#1#2#3\\{%
7843     \def\Hy@temp@A{#2}%
7844     \ifcase0\ifx\Hy@temp@A\HyInd@ParenLeft 1\fi
7845         \ifx\Hy@temp@A\HyInd@ParenRight 1\fi
7846         \relax
7847     \protected@write\@indexfile{}{%
7848         \string\indexentry{%
7849             #1|hyperindexformat{/#2#3}%
7850         }{\thepage}%
7851     }%
7852     \else
7853         \ifx\\#3\\%
7854             \ifx\Hy@temp@A\HyInd@ParenRight
7855                 \protected@write\@indexfile{}{%
7856                     \string\indexentry{#1|#2}{\thepage}%
7857                 }%
7858             \else
7859                 \protected@write\@indexfile{}{%
7860                     \string\indexentry{#1|#2hyperpage}{\thepage}%
7861                 }%
7862             \fi
7863         \else
7864             \protected@write\@indexfile{}{%
7865                 \string\indexentry{%
7866                     #1|#2hyperindexformat{/#3}%
7867                 }{\thepage}%
7868             }%
7869         \fi
7870     \fi
7871 }%
7872 \fi
7873 }%
7874 \fi
7875 \Hy@DisableOption{hyperindex}
7876 \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.

```
7877 \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.

```

7878 \def\hyperpage#1{%
7879     \HyInd@hyperpage#1\nohyperpage{}\@nil
7880 }
7881 \def\HyInd@hyperpage#1\nohyperpage#2#3\@nil{%
7882     \HyInd@@@hyperpage{#1}%
7883     #2%

```

```

7884 \def\Hy@temp{#3}%
7885 \ifx\Hy@temp\@empty
7886 \else
7887 \Hy@ReturnAfterFi{%
7888 \HyInd@hyperpage#3\@nil
7889 }%
7890 \fi
7891 }
7892 \def\HyInd@@hyperpage#1{\@hyperpage#1---\}
7893 \def\@hyperpage#1--#2--#3\{%
7894 \ifx\#2\%
7895 \@commahyperpage{#1}%
7896 \else
7897 \HyInd@pagelink{#1}--\HyInd@pagelink{#2}%
7898 \fi
7899 }
7900 \def\@commahyperpage#1{\@commahyperpage#1, ,\}
7901 \def\@commahyperpage#1, #2,#3\{%
7902 \ifx\#2\%
7903 \HyInd@pagelink{#1}%
7904 \else
7905 \HyInd@pagelink{#1}, \HyInd@pagelink{#2}%
7906 \fi
7907 }

```

The argument of `\hyperpage` can be empty. And the line breaking algorithm of `Makeindex` can introduce spaces. So we have to remove them.

```

7908 \def\HyInd@pagelink#1{%
7909 \begingroup
7910 \toks@={}%
7911 \HyInd@removespaces#1 \@nil
7912 \endgroup
7913 }
7914 \def\HyInd@removespaces#1 #2\@nil{%
7915 \toks@=\expandafter{\the\toks@#1}%
7916 \ifx\#2\%
7917 \edef\x{\the\toks@}%
7918 \ifx\x\@empty
7919 \else
7920 \hyperlink{page.\the\toks@}{\the\toks@}%
7921 \fi
7922 \else
7923 \Hy@ReturnAfterFi{%
7924 \HyInd@removespaces#2\@nil
7925 }%
7926 \fi
7927 }

```

## 44 Compatibility with foiltex

```

7928 \@ifclassloaded{foils}{%
7929 \providecommand*\ext@table{lot}%
7930 \providecommand*\ext@figure{lof}%
7931 }{}

```

## 45 Compatibility with seminar slide package

This requires seminar.bg2, version 1.6 or later. Contributions by Denis Girou (denis.girou@idris.fr).

```
7932 \ifclassloaded{seminar}{%
7933   \Hy@seminarslidestrue\newcommand\theHslide{\arabic{slide}}}%
7934 }{%
7935   \Hy@seminarslidesfalse
7936 }
7937 \ifpackageloaded{slidesec}{%
7938   \newcommand\theslide{section} {\arabic{slide}}}%
7939   \newcommand\theslidesubsection{}%
7940   \theHslide{section}.\arabic{slidesubsection}%
7941 }%
7942 \def\slide@heading[#1]#2{%
7943   \H@refstepcounter{slide}{}%
7944   \@addtoreset{slidesubsection}{slide}%
7945   \addtocontents{los}{%
7946     \protect\l@slide{\the\c@slide}{\ignorespaces#1}%
7947     {\@SCTR}{slideheading.\theslide}%
7948   }%
7949   \def\Hy@tempa{#2}%
7950   \ifx\Hy@tempa\@empty
7951   \else
7952     {%
7953       \edef\@currentlabel{%
7954         \csname p@slide\endcsname\theslide
7955       }%
7956       \makeslideheading{#2}%
7957     }%
7958   \fi
7959   \gdef\theslideheading{#1}%
7960   \gdef\theslidesubsection{}%
7961   \ifHy@bookmarksnumbered
7962     \def\Hy@slidetitle{\theslide\space #1}%
7963   \else
7964     \def\Hy@slidetitle{#1}%
7965   \fi
7966   \ifHy@hypertextnames
7967     \ifHy@naturalnames
7968       \hyper@@anchor{slideheading.\theslide}{\relax}%
7969       \Hy@writebookmark
7970         {\theslide}%
7971         {\Hy@slidetitle}%
7972         {slideheading.\theslide}%
7973         {1}%
7974         {toc}%
7975     \else
7976       \hyper@@anchor{slideheading.\theHslide}{\relax}%
7977       \Hy@writebookmark
7978         {\theslide}%
7979         {\Hy@slidetitle}%
7980         {slideheading.\theHslide}%
7981         {1}%
7982         {toc}%
7983     \fi
7984   \else
```

```

7985 \Hy@GlobalStepCount\Hy@linkcounter
7986 \hyper@@anchor{slideheading.\the\Hy@linkcounter}{\relax}%
7987 \Hy@writebookmark
7988 {\theslidesubsection}%
7989 {\Hy@slidetitle}%
7990 {slideheading.\the\Hy@linkcounter}%
7991 {1}%
7992 {toc}%
7993 \fi
7994 }%
7995 \def\slide@subheading[#1]#2{%
7996 \H@refstepcounter{slidesubsection}%
7997 \addtocontents{los}{%
7998 \protect\l@subslide{\the\c@slidesubsection}{\ignorespaces#1}%
7999 {\@SCTR}{slideheading.\theslidesubsection}%
8000 }%
8001 \def\Hy@tempa{#2}%
8002 \ifx\Hy@tempa\@empty
8003 \else
8004 {%
8005 \edef\@currentlabel{%
8006 \csname p@slidesubsection\endcsname\theslidesubsection
8007 }%
8008 \makeslidesubheading{#2}%
8009 }%
8010 \fi
8011 \gdef\theslidesubheading{#1}%
8012 \ifHy@bookmarksnumbered
8013 \def\Hy@slidetitle{\theslidesubsection\space #1}%
8014 \else
8015 \def\Hy@slidetitle{#1}%
8016 \fi
8017 \ifHy@hypertexnames
8018 \ifHy@naturalnames
8019 \hyper@@anchor{slideheading.\theslidesubsection}{\relax}%
8020 \Hy@writebookmark
8021 {\theslidesubsection}%
8022 {\Hy@slidetitle}%
8023 {slideheading.\theslidesubsection}%
8024 {2}%
8025 {toc}%
8026 \else
8027 \hyper@@anchor{slideheading.\theHslidesubsection}{\relax}%
8028 \Hy@writebookmark
8029 {\theslidesubsection}%
8030 {\Hy@slidetitle}%
8031 {slideheading.\theHslidesubsection}%
8032 {2}%
8033 {toc}%
8034 \fi
8035 \else
8036 \Hy@GlobalStepCount\Hy@linkcounter
8037 \hyper@@anchor{slideheading.\the\Hy@linkcounter}{\relax}%
8038 \Hy@writebookmark
8039 {\theslidesubsection}%
8040 {\Hy@slidetitle}%
8041 {slideheading.\the\Hy@linkcounter}%

```

```

8042 {1}%
8043 {toc}%
8044 \fi
8045 }%
8046 \providecommand*{\listslidenam}{List of Slides}%
8047 \def\listofslides{%
8048 \section*{%
8049 \listslidenam
8050 \@mkboth{%
8051 \expandafter\MakeUppercase\listslidenam
8052 }{%
8053 \expandafter\MakeUppercase\listslidenam
8054 }%
8055 }%
8056 \def\l@slide##1##2##3##4{%
8057 \slide@undottedcline{%
8058 \slidenumberline{##3}{\hyperlink{##4}{##2}}}%
8059 }{}%
8060 }%
8061 \let\l@subslide\l@slide
8062 \@startlos
8063 }%
8064 \def\slide@contents{%
8065 \def\l@slide##1##2##3##4{%
8066 \slide@ccline{\slidenumberline{##3}{\hyperlink{##4}{##2}}}{##3}%
8067 }%
8068 \let\l@subslide\@gobblefour
8069 \@startlos
8070 }%
8071 \def\Slide@contents{%
8072 \def\l@slide##1##2##3##4{%
8073 \ifcase\lslide@flag
8074 \message{##1 ** \the\c@slidesection}%
8075 \ifnum##1>\c@slidesection
8076 \def\lslide@flag{1}%
8077 {%
8078 \large
8079 \slide@ccline{%
8080 \slidenumberline{$\rightarrow\bullet$}%
8081 {\hyperlink{##4}{##2}}}%
8082 }{##3}%
8083 }%
8084 \else
8085 {%
8086 \large
8087 \slide@ccline{%
8088 \slidenumberline{$\surd\;\bullet$}%
8089 {\hyperlink{##4}{##2}}}%
8090 }{##3}%
8091 }%
8092 \fi
8093 \or
8094 \def\lslide@flag{2}%
8095 {%
8096 \large
8097 \slide@ccline{%
8098 \slidenumberline{$\bullet$}%

```

```

8099         {\hyperlink{##4}{##2}}%
8100     }{##3}%
8101 }%
8102 \or
8103 {%
8104     \large
8105     \slide@cline{%
8106         \slidenumberline{$\bullet$}%
8107         {\hyperlink{##4}{##2}}%
8108     }{##3}%
8109 }%
8110 \fi
8111 }%
8112 \def\l@subslide##1##2##3##4{%
8113     \ifnum\lslide@flag=1 %
8114         \@undottedtocline{2}{3.8em}{3.2em}{\hyperlink{##4}{##2}}{}%
8115     \fi
8116 }%
8117 \def\lslide@flag{0}%
8118 \@startlos
8119 }%
8120 }{}

```

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.)

```

8121 \ifHy@texht
8122   \expandafter\endinput
8123 \fi
8124 \let\real@setref\@setref
8125 \def\@setref#1#2#3{% csname, extract group, refname
8126   \ifx#1\relax
8127     \protect\G@refundefinedtrue
8128     \nfss@text{\reset@font\bfseries ??}%
8129     \@latex@warning{%
8130       Reference ‘#3’ on page \thepage \space undefined%
8131     }%
8132   \else
8133     \expandafter\Hy@setref@link#1\@empty\@empty\@nil{#2}%
8134   \fi
8135 }

```

\Hy@setref@link extracts the reference information entries, because \hyper@@link does not expand arguments for the automatic link type detection.

```

8136 \def\Hy@setref@link#1#2#3#4#5#6\@nil#7{%
8137   \begingroup
8138     \toks0={\hyper@@link{#5}{#4}}%
8139     \toks1=\expandafter{#7{#1}{#2}{#3}{#4}{#5}}%
8140     \edef\x{\endgroup
8141       \the\toks0 {\the\toks1 }%
8142     }%
8143   \x
8144 }
8145 \def\@pagesetref#1#2#3{% csname, extract macro, ref
8146   \ifx#1\relax
8147     \protect\G@refundefinedtrue
8148     \nfss@text{\reset@font\bfseries ??}%
8149     \@latex@warning{%

```



```

8150   Reference '#3' on page \thepage \space undefined%
8151   }%
8152 \else
8153   \protect\hyper@@link
8154   {\expandafter\@fifthoffive#1}%
8155   {page.\expandafter\@secondoffive#1}%
8156   {\expandafter\@secondoffive#1}%
8157 \fi
8158 }

8159 </package>
8160 <*check>
8161 \checklatex
8162 \checkcommand\def\@setref#1#2#3{%
8163   \ifx#1\relax
8164     \protect\G@refundefinedtrue
8165     \nfss@text{\reset@font\bfseries ??}%
8166     \@latex@warning{%
8167       Reference '#3' on page \thepage \space undefined%
8168     }%
8169   \else
8170     \expandafter#2#1\null
8171   \fi
8172 }
8173 </check>
8174 <*package>

```

Now some extended referencing. `\ref*` and `\pageref*` are not linked, and `\autoref` prefixes with a tag based on the type.

```

8175 \def\HyRef@StarSetRef#1{%
8176   \begingroup
8177   \Hy@safe@activetrue
8178   \edef\x{#1}%
8179   \@onelevel@sanitize\x
8180   \edef\x{\endgroup
8181     \noexpand\HyRef@@StarSetRef
8182     \expandafter\noexpand\csname r@\x\endcsname{\x}%
8183   }%
8184   \x
8185 }
8186 \def\HyRef@@StarSetRef#1#2#3{%
8187   \ifx#1\@undefined
8188     \let#1\relax
8189   \fi
8190   \real@setref#1#3{#2}%
8191 }
8192 \def\@refstar#1{%
8193   \HyRef@StarSetRef{#1}\@firstoffive
8194 }
8195 \def\@pagerefstar#1{%
8196   \HyRef@StarSetRef{#1}\@secondoffive
8197 }
8198 \def\@namerefstar#1{%
8199   \HyRef@StarSetRef{#1}\@thirdoffive
8200 }
8201 \Hy@AtBeginDocument{%
8202   \@ifpackageloaded{varioref}{%
8203     \def\@Refstar#1{%

```

```

8204 \HyRef@StarSetRef{#1}\HyRef@MakeUppercaseFirstOfFive
8205 }%
8206 \def\HyRef@MakeUppercaseFirstOfFive#1#2#3#4#5{%
8207 \MakeUppercase#1%
8208 }%
8209 \DeclareRobustCommand*\Ref{%
8210 \@ifstar\@Refstar\HyRef@Ref
8211 }%
8212 \def\HyRef@Ref#1{%
8213 \hyperref[{#1}]{\Ref*{#1}}%
8214 }%
8215 \def\vr@f#1{%
8216 \leavevmode\unskip\vref@space
8217 \hyperref[{#1}]{%
8218 \Ref*{#1}%
8219 \let\vref@space\nobreakspace
8220 \@vpageref\unskip}{#1}%
8221 }%
8222 }%
8223 \def\vr@f#1{%
8224 \leavevmode\unskip\vref@space
8225 \begingroup
8226 \let\T@pageref\@pagerefstar
8227 \hyperref[{#1}]{%
8228 \ref*{#1}%
8229 \vpageref\unskip}{#1}%
8230 }%
8231 \endgroup
8232 }%
8233 }{}%
8234 }
8235 \DeclareRobustCommand*\autopageref{%
8236 \@ifstar{%
8237 \HyRef@autopagerefname\pageref*%
8238 }\HyRef@autopageref
8239 }
8240 \def\HyRef@autopageref#1{%
8241 \hyperref[{#1}]{\HyRef@autopagerefname\pageref*{#1}}%
8242 }
8243 \def\HyRef@autopagerefname{%
8244 \ltx@ifundefined{pageautorefname}{%
8245 \ltx@ifundefined{pagename}{%
8246 \Hy@Warning{No autoref name for 'page'}%
8247 }{%
8248 \pagename\nobreakspace
8249 }%
8250 }{}%
8251 \pageautorefname\nobreakspace
8252 }%
8253 }
8254 \DeclareRobustCommand*\autoref{%
8255 \@ifstar{\HyRef@autoref@gobbletwo}{\HyRef@autoref\hyper@link}%
8256 }
8257 \def\HyRef@autoref#1#2{%
8258 \begingroup
8259 \Hy@safe@activetrue
8260 \expandafter\HyRef@autosetref\csname r@#2\endcsname{#2}{#1}%

```

```

8261 \endgroup
8262 }
8263 \def\HyRef@autosetref#1#2#3{% link command, csname, refname
8264 \HyRef@ShowKeysRef{#2}%
8265 \ifcase 0\ifx#1\relax 1\fi\ifx#1\Hy@varioref@undefined 1\fi\relax
8266 \edef\HyRef@thisref{%
8267 \expandafter\@fourthoffive#1\@empty\@empty\@empty
8268 }%
8269 \expandafter\HyRef@testreftype\HyRef@thisref.\\%
8270 \Hy@safe@activesfalse
8271 #3{%
8272 \expandafter\@fifthoffive#1\@empty\@empty\@empty
8273 }{%
8274 \expandafter\@fourthoffive#1\@empty\@empty\@empty
8275 }{%
8276 \HyRef@currentHtag
8277 \expandafter\@firstoffive#1\@empty\@empty\@empty
8278 \null
8279 }%
8280 \else
8281 \protect\G@refundefinedtrue
8282 \nfss@text{\reset@font\bfseries ??}%
8283 \@latex@warning{%
8284 Reference '#2' on page \thepage\space undefined%
8285 }%
8286 \fi
8287 }
8288 \def\HyRef@testreftype#1.#2\\{%
8289 \ltx@ifundefined{#1autorefname}{%
8290 \ltx@ifundefined{#1name}{%
8291 \HyRef@StripStar#1\*\@nil{#1}%
8292 \ltx@ifundefined{\HyRef@name autorefname}{%
8293 \ltx@ifundefined{\HyRef@name name}{%
8294 \def\HyRef@currentHtag{%
8295 \Hy@Warning{No autoref name for '#1'}%
8296 }{%
8297 \edef\HyRef@currentHtag{%
8298 \expandafter\noexpand\csname\HyRef@name name\endcsname
8299 \noexpand~%
8300 }%
8301 }%
8302 }{%
8303 \edef\HyRef@currentHtag{%
8304 \expandafter\noexpand
8305 \csname\HyRef@name autorefname\endcsname
8306 \noexpand~%
8307 }%
8308 }%
8309 }{%
8310 \edef\HyRef@currentHtag{%
8311 \expandafter\noexpand\csname#1name\endcsname
8312 \noexpand~%
8313 }%
8314 }%
8315 }{%
8316 \edef\HyRef@currentHtag{%
8317 \expandafter\noexpand\csname#1autorefname\endcsname

```

```

8318     \noexpand~%
8319   }%
8320 }%
8321 }
8322 \def\HyRef@StripStar#1*\#2\@nil#3{%
8323   \def\HyRef@name{#2}%
8324   \ifx\HyRef@name\HyRef@CaseStar
8325     \def\HyRef@name{#1}%
8326   \else
8327     \def\HyRef@name{#3}%
8328   \fi
8329 }
8330 \def\HyRef@CaseStar{*\\}
8331 \def\HyRef@currentHtag{}

```

Support for package showkeys.

\HyRef@ShowKeysRef

```

8332 \let\HyRef@ShowKeysRef\@gobble
8333 \def\HyRef@ShowKeysInit{%
8334   \begingroup\expandafter\expandafter\expandafter\endgroup
8335   \expandafter\ifx\csname SK@@label\endcsname\relax
8336   \else
8337     \ifx\SK@ref\@empty
8338     \else
8339       \def\HyRef@ShowKeysRef{%
8340         \SK@\SK@@ref
8341       }%
8342     \fi
8343   \fi
8344 }
8345 \@ifpackageloaded{showkeys}{%
8346   \HyRef@ShowKeysInit
8347 }{%
8348   \Hy@AtBeginDocument{%
8349     \@ifpackageloaded{showkeys}{%
8350       \HyRef@ShowKeysInit
8351     }{%
8352     }%
8353 }

```

Defaults for the names that \autoref uses.

```

8354 \providecommand*{\AMSautorefname}{\equationautorefname}
8355 \providecommand*{\Hfootnoteautorefname}{\footnoteautorefname}
8356 \providecommand*{\Itemautorefname}{\itemautorefname}
8357 \providecommand*{\itemautorefname}{item}
8358 \providecommand*{\equationautorefname}{Equation}
8359 \providecommand*{\footnoteautorefname}{footnote}
8360 \providecommand*{\itemautorefname}{item}
8361 \providecommand*{\figureautorefname}{Figure}
8362 \providecommand*{\tableautorefname}{Table}
8363 \providecommand*{\partautorefname}{Part}
8364 \providecommand*{\appendixautorefname}{Appendix}
8365 \providecommand*{\chapterautorefname}{chapter}
8366 \providecommand*{\sectionautorefname}{section}
8367 \providecommand*{\subsectionautorefname}{subsection}
8368 \providecommand*{\subsubsectionautorefname}{subsubsection}
8369 \providecommand*{\paragraphautorefname}{paragraph}

```

```

8370 \providecommand*\subparagraphautorefname{subparagraph}
8371 \providecommand*\FancyVerbLineautorefname{line}
8372 \providecommand*\theoremautorefname{Theorem}
8373 \providecommand*\pageautorefname{page}
8374 \end{package}

```

## 46 Configuration files

### 46.1 PS/PDF strings

Some drivers write PS or PDF strings. These strings are delimited by parentheses, therefore a lonely unmatched parenthesis must be avoided to avoid PS or PDF syntax errors. Also the backslash character itself has to be protected.

`\Hy@pstringdef` Therefore such strings should be passed through `\Hy@pstringdef`. The first argument holds a macro for the result, the second argument is the string that needs protecting. Since version 1.30.0 pdf<sub>T</sub>E<sub>X</sub> offers `\pdfescapestring`.

```

8375 < *pdfTex | dvipdfm | xetex | vtex | pdfmarkbase | dviwindo >
8376 \begingroup\expandafter\expandafter\expandafter\endgroup
8377 \expandafter\ifx\csname pdf@escapestring\endcsname\relax
8378   \begingroup
8379     \catcode'\=0 %
8380     \@makeother\%
8381     |@firstofone{ |endgroup
8382     |def|Hy@pstringdef#1#2{%
8383       |begingroup
8384         |edef~{|string~}%
8385         |xdef|Hy@gtemp{#2}%
8386       |endgroup
8387       |let#1|Hy@gtemp
8388       |@onelevel@sanitize#1%
8389       |edef#1{|expandafter|Hy@ExchangeBackslash#1\|@nil}%
8390       |edef#1{|expandafter|Hy@ExchangeLeftParenthesis#1(|@nil}%
8391       |edef#1{|expandafter|Hy@ExchangeRightParenthesis#1)|@nil}%
8392     }%
8393     |def|Hy@ExchangeBackslash#1\#2|@nil{%
8394       #1%
8395       |ifx|\#2\|%%
8396       |else
8397         \|%
8398         |Hy@ReturnAfterFi{%
8399           |Hy@ExchangeBackslash#2|@nil
8400         }%
8401       |fi
8402     }%
8403   }%
8404   \def\Hy@ExchangeLeftParenthesis#1(#2\@nil{%
8405     #1%
8406     \ifx\#2\|%
8407     \else
8408       \@backslashchar(%
8409       \Hy@ReturnAfterFi{%
8410         \Hy@ExchangeLeftParenthesis#2\@nil
8411       }%
8412     \|
8413   }%

```

```

8414 \def\Hy@ExchangeRightParenthesis#1)#2\@nil{%
8415   #1%
8416   \ifx\#2\%
8417   \else
8418     \@backslashchar)%
8419     \Hy@ReturnAfterFi{%
8420       \Hy@ExchangeRightParenthesis#2\@nil
8421     }%
8422   \fi
8423 }%
8424 \else
8425 \def\Hy@pstringdef#1#2{%
8426   \begingroup
8427     \edef~{\string~}%
8428     \xdef\Hy@gtemp{\pdf@escapestring{#2}}%
8429   \endgroup
8430   \let#1\Hy@gtemp
8431 }%
8432 \fi
8433 \pdfTeX | dvipdfm | xetex | vtex | pdfmarkbase | dviwindo)

```

## 46.2 pdftex

```

8434 <*pdftex>
8435 \providecommand*{\XR@ext}{pdf}
8436 \Hy@setbreaklinks{true}
8437 \def\HyPat@ObjRef{%
8438   [0-9]*[1-9][0-9]* 0 R%
8439 }

```

This driver is for Han The Thanh's T<sub>E</sub>X variant which produces PDF directly. This has new primitives to do PDF things, which usually translate almost directly to PDF code, so there is a lot of flexibility which we do not at present harness.

Set PDF version if requested by option `pdfversion`.

- pdfT<sub>E</sub>X 1.10a, 2003-01-16: `\pdfoptionpdfminorversion`
- pdfT<sub>E</sub>X 1.30, 2005-08-081: `\pdfminorversion`

```

8440 \let\Hy@pdfminorversion\relax
8441 \begingroup\expandafter\expandafter\expandafter\endgroup
8442 \expandafter\ifx\csname pdfminorversion\endcsname\relax
8443   \begingroup\expandafter\expandafter\expandafter\endgroup
8444   \expandafter\ifx\csname pdfoptionpdfminorversion\endcsname\relax
8445     \else
8446       \def\Hy@pdfminorversion{\pdfoptionpdfminorversion}%
8447     \fi
8448   \else
8449     \def\Hy@pdfminorversion{\pdfminorversion}%
8450   \fi
8451 \@ifundefined{Hy@pdfminorversion}{%
8452   \PackageInfo{hyperref}{%
8453     PDF version is not set, because pdfTeX is too old (<1.10a)%
8454   }%
8455 }{%
8456   \ifHy@ocgcolorlinks
8457     \ifnum\Hy@pdfminorversion<5 %
8458       \kvsetkeys{Hyp}{pdfversion=1.5}%
8459     \fi

```

```

8460 \fi
8461 \ifHy@setpdfversion
8462 \ifnum\Hy@pdfminorversion=\Hy@pdfversion\relax
8463 \else
8464 \Hy@pdfminorversion=\Hy@pdfversion\relax
8465 \fi
8466 \PackageInfo{hyperref}{%
8467 \expandafter\string\Hy@pdfminorversion
8468 :=\number\Hy@pdfversion\space
8469 }%
8470 \fi
8471 \edef\Hy@pdfversion{\number\Hy@pdfminorversion}%
8472 }
8473 \Hy@DisableOption{pdfversion}%

8474 \ifHy@ocgcolorlinks
8475 \pdf@ifdraftmode{ }{%
8476 \immediate\pdfobj{%
8477 <<%
8478 /Type/OCG%
8479 /Name(View)%
8480 /Usage<<%
8481 /Print<<%
8482 /PrintState/OFF%
8483 >>%
8484 /View<<%
8485 /ViewState/ON%
8486 >>%
8487 >>%
8488 >>%
8489 }%
8490 \edef\OBJ@OCG@view{\the\pdflastobj\space 0 R}%
8491 \immediate\pdfobj{%
8492 <<%
8493 /Type/OCG%
8494 /Name(Print)%
8495 /Usage<<%
8496 /Print<<%
8497 /PrintState/ON%
8498 >>%
8499 /View<<%
8500 /ViewState/OFF%
8501 >>%
8502 >>%
8503 >>%
8504 }%
8505 \edef\OBJ@OCG@print{\the\pdflastobj\space 0 R}%
8506 \immediate\pdfobj{%
8507 [%
8508 \OBJ@OCG@view\space\OBJ@OCG@print
8509 ]%
8510 }%
8511 \edef\OBJ@OCGs{\the\pdflastobj\space 0 R}%
8512 \pdfcatalog{%
8513 /OCProperties<<%
8514 /OCGs \OBJ@OCGs
8515 /D<<%
8516 /OFF[\OBJ@OCG@print]%

```

```

8517      /AS[%
8518      <<%
8519      /Event/View%
8520      /OCGs \OBJ@OCGs
8521      /Category[/View]%
8522      >>%
8523      <<%
8524      /Event/Print%
8525      /OCGs \OBJ@OCGs
8526      /Category[/Print]%
8527      >>%
8528      <<%
8529      /Event/Export%
8530      /OCGs \OBJ@OCGs
8531      /Category[/Print]%
8532      >>%
8533      ]%
8534      >>%
8535      >>%
8536      }%
8537      \beginngroup
8538      \edef\x{\endgroup
8539      \pdfpageresources{%
8540      /Properties<<%
8541      /OCView \OBJ@OCG@view
8542      /OCPrint \OBJ@OCG@print
8543      >>%
8544      }%
8545      }%
8546      \x
8547      }%
8548      \Hy@AtBeginDocument{%
8549      \def\Hy@colorlink#1{%
8550      \beginngroup
8551      \ifHy@ocgcolorlinks
8552      \def\Hy@ocgcolor{#1}%
8553      \setbox0=\hbox\bgroup\color@beginngroup
8554      \else
8555      \HyColor@UseColor#1%
8556      \fi
8557      }%
8558      \def\Hy@endcolorlink{%
8559      \ifHy@ocgcolorlinks
8560      \color@endgroup\egroup
8561      \mbox{%
8562      \pdfliteral page{/OC/OCPrint BDC}%
8563      \rlap{\copy0}%
8564      \pdfliteral page{EMC/OC/OCView BDC}%
8565      \beginngroup
8566      \expandafter\HyColor@UseColor\Hy@ocgcolor
8567      \box0 %
8568      \endgroup
8569      \pdfliteral page{EMC}%
8570      }%
8571      \fi
8572      \endgroup
8573      }%

```



```

8574 }%
8575 \else
8576 \Hy@DisableOption{ocgcolorlinks}%
8577 \fi

```

First, allow for some changes and additions to pdftex syntax:

```

8578 \def\setpdfinkmargin#1{\pdfinkmargin#1}
8579 \ifx\pdfstartlink\@undefined% less than version 14
8580 \let\pdfstartlink\pdfannotlink
8581 \let\pdfinkmargin\@tempdima
8582 \let\pdfxform\pdfform
8583 \let\pdflastxform\pdfastform
8584 \let\pdfrefxform\pdfrefform
8585 \else
8586 \pdfinkmargin1pt %
8587 \fi

```

First set up the default linking

```

8588 \providecommand*\@pdfview{XYZ}

```

First define the anchors:

```

8589 \Hy@WrapperDef\new@pdfink#1{%
8590 \ifhmode
8591 \savesf\spacefactor
8592 \fi
8593 \Hy@SaveLastskip
8594 \Hy@VerboseAnchor{#1}%
8595 \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
8596 \Hy@DestName\Hy@pstringDest\@pdfview
8597 \Hy@RestoreLastskip
8598 \ifhmode
8599 \spacefactor\@savesf
8600 \fi
8601 }
8602 \let\pdf@endanchor\@empty

```

`\Hy@DestName` Wrap the call of `\pdfdest` name in `\Hy@DestName`. Then it can easier be caught by package `hypdestopt`.

```

8603 \def\Hy@DestName#1#2{%
8604 \pdfdest name{#1}#2\relax
8605 }

```

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.

```

8606 \providecommand*\@pdfborder{0 0 1}
8607 \providecommand*\@pdfborderstyle{}
8608 \def\Hy@undefinedname{UNDEFINED}
8609 \def\find@pdfink#1#2{%
8610 \leavevmode
8611 \protected@edef\Hy@testname{#2}%
8612 \ifx\Hy@testname\@empty
8613 \Hy@Warning{%
8614 Empty destination name,\MessageBreak
8615 using '\Hy@undefinedname'%
8616 }%
8617 \let\Hy@testname\Hy@undefinedname

```

```

8618 \else
8619 \Hy@pstringdef\Hy@testname{%
8620 \expandafter\HyperDestNameFilter\expandafter{\Hy@testname}%
8621 }%
8622 \fi
8623 \Hy@StartlinkName{%
8624 \ifHy@pdfa /F 4\fi
8625 \Hy@setpdfborder
8626 \ifx\@pdfhighlight\@empty
8627 \else
8628 /H\@pdfhighlight
8629 \fi
8630 \ifx\CurrentBorderColor\relax
8631 \else
8632 /C[\CurrentBorderColor]%
8633 \fi
8634 }\Hy@testname
8635 \expandafter\Hy@colorlink\csname @#1color\endcsname
8636 }
8637 \def\Hy@StartlinkName#1#2{%
8638 \pdfstartlink attr{#1}goto name{#2}\relax
8639 }
8640 \def\close@pdfink{%
8641 \Hy@endcolorlink
8642 \Hy@VerboseLinkStop
8643 \pdfendlink
8644 }
8645 \def\hyper@anchor#1{%
8646 \new@pdfink{#1}\anchor@spot\pdf@endanchor
8647 }
8648 \def\hyper@anchorstart#1{%
8649 \new@pdfink{#1}%
8650 \Hy@activeanchortrue
8651 }
8652 \def\hyper@anchorend{%
8653 \pdf@endanchor
8654 \Hy@activeanchorfalse
8655 }
8656 \def\hyper@linkstart#1#2{%
8657 \Hy@VerboseLinkStart{#1}{#2}%
8658 \ltx@ifundefined{@#1bordercolor}{%
8659 \let\CurrentBorderColor\relax
8660 }{%
8661 \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
8662 }%
8663 \find@pdfink{#1}{#2}%
8664 }
8665 \def\hyper@linkend{\close@pdfink}
8666 \def\hyper@link#1#2#3{%
8667 \Hy@VerboseLinkStart{#1}{#2}%
8668 \ltx@ifundefined{@#1bordercolor}{%
8669 \let\CurrentBorderColor\relax
8670 }{%
8671 \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
8672 }%
8673 \find@pdfink{#1}{#2}#3%
8674 \close@pdfink

```

```

8675 }
8676 \let\CurrentBorderColor\@linkbordercolor
8677 \def\hyper@linkurl#1#2{%
8678   \begingroup
8679     \Hy@pstringdef\Hy@pstringURI{#2}%
8680     \hyper@chars
8681     \leavevmode
8682     \pdfstartlink
8683     attr{%
8684       \Hy@setpdfborder
8685       \ifx\@pdfhighlight\@empty
8686       \else
8687         /H\@pdfhighlight
8688       \fi
8689       \ifx\@urlbordercolor\relax
8690       \else
8691         /C[\@urlbordercolor]%
8692       \fi
8693     }%
8694     user{%
8695       /Subtype/Link%
8696       \ifHy@pdfa /F 4\fi
8697       /A<<%
8698       /Type/Action%
8699       /S/URI%
8700       /URI(\Hy@pstringURI)%
8701       \ifHy@href@ismap
8702         /IsMap true%
8703       \fi
8704       \Hy@href@nextactionraw
8705     >>%
8706   }%
8707   \relax
8708   \Hy@colorlink\@urlcolor#1%
8709   \close@pdfink
8710 \endgroup
8711 }
8712 \def\hyper@linkfile#1#2#3{% anchor text, filename, linkname
8713   \begingroup
8714     \def\Hy@pstringF{#2}%
8715     \Hy@CleanupFile\Hy@pstringF
8716     \Hy@pstringdef\Hy@pstringF\Hy@pstringF
8717     \Hy@pstringdef\Hy@pstringD{#3}%
8718     \Hy@MakeRemoteAction
8719     \leavevmode
8720     \pdfstartlink
8721     attr{%
8722       \Hy@setpdfborder
8723       \ifx\@pdfhighlight\@empty
8724       \else
8725         /H\@pdfhighlight
8726       \fi
8727       \ifx\@filebordercolor\relax
8728       \else
8729         /C[\@filebordercolor]%
8730       \fi
8731     }%

```

```

8732     user {%
8733         /Subtype/Link%
8734         \ifHy@pdfa /F 4\fi
8735         /A<<%
8736         /F(\Hy@pstringF)%
8737         /S/GoToR%
8738         \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}

```

```

8739     \ifx\#3\%
8740         /D[\Hy@href@page\@pdfremotestartview]%
8741     \else
8742         /D(\Hy@pstringD)%
8743     \fi
8744     \Hy@href@nextactionraw
8745     >>%
8746     }%
8747     \relax
8748     \Hy@colorlink\@filecolor#1%
8749     \close@pdflink
8750 \endgroup
8751 }
8752 \def\@hyper@launch run:#1\#2#3{% filename, anchor text linkname
8753 \begingroup
8754   \Hy@pstringdef\Hy@pstringF{#1}%
8755   \Hy@pstringdef\Hy@pstringP{#3}%
8756   \leavevmode
8757   \pdfstartlink
8758   attr{%
8759     \Hy@setpdfborder
8760     \ifx\@pdfhighlight\@empty
8761     \else
8762       /H\@pdfhighlight
8763     \fi
8764     \ifx\@runbordercolor\relax
8765     \else
8766       /C[\@runbordercolor]%
8767     \fi
8768   }%
8769   user {%
8770     /Subtype/Link%
8771     \ifHy@pdfa /F 4\fi
8772     /A<<%
8773     /F(\Hy@pstringF)%
8774     /S/Launch%
8775     \Hy@SetNewWindow
8776     \ifx\#3\%
8777     \else

```

```

8778         /Win<</P(\Hy@pstringP)/F(\Hy@pstringF)>>%
8779     \fi
8780     \Hy@href@nextactionraw
8781     >>%
8782 }%
8783 \relax
8784 \Hy@colorlink\@runcolor#2%
8785 \close@pdflink
8786 \endgroup
8787 }

```

\@pdfproducer

```

8788 \ifx\@pdfproducer\relax
8789 \begingroup\expandafter\expandafter\expandafter\endgroup
8790 \expandafter\ifx\csname luatexversion\endcsname\relax
8791 \def\@pdfproducer{pdfTeX}%
8792 \ifx\eTeXversion\@undefined
8793 \else
8794 \ifx\eTeXversion\relax
8795 \else
8796 \ifnum\eTeXversion>0 %
8797 \def\@pdfproducer{pdfTeX}%
8798 \fi
8799 \fi
8800 \fi
8801 \ifx\pdfTeXversion\@undefined
8802 \else
8803 \ifnum\pdfTeXversion<100 %
8804 \edef\@pdfproducer{%
8805 \@pdfproducer
8806 \the\pdfTeXversion.\pdfTeXrevision
8807 }%
8808 \else
8809 \ifnum\pdfTeXversion<130 %
8810 \edef\@pdfproducer{%
8811 \@pdfproducer-%
8812 \expandafter\@car\the\pdfTeXversion\@empty\@nil.%
8813 \expandafter\@cdr\the\pdfTeXversion\@empty\@nil.%
8814 \pdfTeXrevision
8815 }%
8816 \else
8817 \ifnum\pdfTeXversion<140 %
8818 \else
8819 \def\@pdfproducer{pdfTeX}%
8820 \fi
8821 \edef\@pdfproducer{%
8822 \@pdfproducer-%
8823 \expandafter\@car\the\pdfTeXversion\@empty\@nil.%
8824 \expandafter\@cdr\the\pdfTeXversion\@empty\@nil.%
8825 \pdfTeXrevision
8826 }%
8827 \fi
8828 \fi
8829 \fi
8830 \else
8831 \begingroup
8832 \count@=\luatexversion

```

```

8833 \divide\count@ by 100 %
8834 \edef\x{\the\count@}%
8835 \count@=-\x\relax
8836 \multiply\count@ by 100 %
8837 \advance\count@ by \luatexversion
8838 \edef\x{\endgroup
8839 \def\noexpand\@pdfproducer{%
8840 LuaTeX-\x.\the\count@.\luatexrevision
8841 }%
8842 }%
8843 \x
8844 \fi
8845 \fi

```

\PDF@SetupDox

```

8846 \def\PDF@SetupDoc{%
8847 \ifx\@pdfpagescrop\@empty
8848 \else
8849 \edef\process@me{%
8850 \pdfpagesattr={%
8851 /CropBox[\@pdfpagescrop]%
8852 \expandafter\ifx\expandafter\\\the\pdfpagesattr\\%
8853 \else
8854 ^^J\the\pdfpagesattr
8855 \fi
8856 }%
8857 }%
8858 \process@me
8859 \fi
8860 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
8861 \pdfcatalog{%
8862 /PageMode/\@pdfpagemode
8863 \ifx\@baseurl\@empty
8864 \else
8865 /URI<</Base(\Hy@pstringB)>>%
8866 \fi
8867 }%
8868 \ifx\@pdfstartpage\@empty
8869 \else
8870 \ifx\@pdfstartview\@empty
8871 \else
8872 openaction goto page\@pdfstartpage{\@pdfstartview}%
8873 \fi
8874 \fi
8875 \edef\Hy@temp{%
8876 \ifHy@toolbar\else /HideToolbar true\fi
8877 \ifHy@menubar\else /HideMenubar true\fi
8878 \ifHy>windowui\else /HideWindowUI true\fi
8879 \ifHy@fitwindow /FitWindow true\fi
8880 \ifHy@centerwindow /CenterWindow true\fi
8881 \ifHy@displaydoctitle /DisplayDocTitle true\fi
8882 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
8883 \Hy@UseNameKey{Direction}\@pdfdirection
8884 \Hy@UseNameKey{ViewArea}\@pdfviewarea
8885 \Hy@UseNameKey{ViewClip}\@pdfviewclip
8886 \Hy@UseNameKey{PrintArea}\@pdfprintarea
8887 \Hy@UseNameKey{PrintClip}\@pdfprintclip

```

```

8888 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
8889 \Hy@UseNameKey{Duplex}\@pdfduplex
8890 \ifx\@pdfpicktraybypdfsize\@empty
8891 \else
8892 /PickTrayByPDFSize \@pdfpicktraybypdfsize
8893 \fi
8894 \ifx\@pdfprintpagerange\@empty
8895 \else
8896 /PrintPageRange[\@pdfprintpagerange]%
8897 \fi
8898 \ifx\@pdfnumcopies\@empty
8899 \else
8900 /NumCopies \@pdfnumcopies
8901 \fi
8902 }%
8903 \pdfcatalog{%
8904 \ifx\Hy@temp\@empty
8905 \else
8906 /ViewerPreferences<<\Hy@temp>>%
8907 \fi
8908 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
8909 \ifx\@pdflang\@empty
8910 \else
8911 /Lang(\@pdflang)%
8912 \fi
8913 }%
8914 }

```

\PDF@FinishDoc

```

8915 \def\PDF@FinishDoc{%
8916 \pdf@ifdraftmode{ }{%
8917 \Hy@UseMaketitleInfos
8918 \HyInfo@GenerateAddons
8919 \pdfinfo{%
8920 /Author(\@pdfauthor)%
8921 /Title(\@pdftitle)%
8922 /Subject(\@pdfsubject)%
8923 /Creator(\@pdfcreator)%
8924 \ifx\@pdfcreationdate\@empty
8925 \else
8926 /CreationDate(\@pdfcreationdate)%
8927 \fi
8928 \ifx\@pdfmoddate\@empty
8929 \else
8930 /ModDate(\@pdfmoddate)%
8931 \fi
8932 \ifx\@pdfproducer\relax
8933 \else
8934 /Producer(\@pdfproducer)%
8935 \fi
8936 /Keywords(\@pdfkeywords)%
8937 \ifx\@pdftrapped\@empty
8938 \else
8939 /Trapped/\@pdftrapped
8940 \fi
8941 \HyInfo@Addons
8942 }%

```

```

8943 }%
8944 \Hy@DisableOption{pdfauthor}%
8945 \Hy@DisableOption{pdftitle}%
8946 \Hy@DisableOption{pdfsubject}%
8947 \Hy@DisableOption{pdfcreator}%
8948 \Hy@DisableOption{pdfcreationdate}%
8949 \Hy@DisableOption{pdfmoddate}%
8950 \Hy@DisableOption{pdfproducer}%
8951 \Hy@DisableOption{pdfkeywords}%
8952 \Hy@DisableOption{pdftrapped}%
8953 \Hy@DisableOption{pdfinfo}%
8954 }

```

`\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`.

```

8955 \def\hyper@pagetransition{%
8956 \ifx\@pdfpagetransition\relax
8957 \else
8958 \expandafter\Hy@RemoveTransPageAttr
8959 \the\pdfpageattr^^J/Trans{>>\END
8960 \ifx\@pdfpagetransition\@empty
8961 \else
8962 \edef\@processme{%
8963 \global\pdfpageattr{%
8964 \the\pdfpageattr
8965 ^^J/Trans << /S /\@pdfpagetransition\space >>%
8966 }%
8967 }%
8968 \@processme
8969 \fi
8970 \fi
8971 }

```

`\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.

```

8972 \gdef\Hy@RemoveTransPageAttr#1^^J/Trans#2#3>>#4\END{%
8973 \ifx\#2\%
8974 \global\pdfpageattr{#1}%
8975 \else
8976 \Hy@RemoveTransPageAttr#1#4\END
8977 \fi
8978 }

```

`\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`.

```

8979 \def\hyper@pageduration{%
8980 \ifx\@pdfpageduration\relax
8981 \else
8982 \expandafter
8983 \Hy@RemoveDurPageAttr\the\pdfpageattr^^J/Dur{ } \END
8984 \ifx\@pdfpageduration\@empty
8985 \else
8986 \edef\@processme{%

```



```

8987 \global\pdfpageattr{%
8988 \the\pdfpageattr
8989 ^^J/Dur \@pdfpageduration\space
8990 }%
8991 }%
8992 \@processme
8993 \fi
8994 \fi
8995 }

```

`\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.

```

8996 \gdef\Hy@RemoveDurPageAttr#1^^J/Dur#2#3 #4\END{%
8997 \ifx\#2\%
8998 \global\pdfpageattr{#1}%
8999 \else
9000 \Hy@RemoveDurPageAttr#1#4\END
9001 \fi
9002 }

```

`\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).

```

9003 \def\hyper@pagehidden{%
9004 \ifHy@useHidKey
9005 \expandafter
9006 \Hy@RemoveHidPageAttr\the\pdfpageattr^^J/Hid{} \END
9007 \ifHy@pdfpagehidden
9008 \edef\@processme{%
9009 \global\pdfpageattr{%
9010 \the\pdfpageattr
9011 ^^J/Hid true % SPACE
9012 }%
9013 }%
9014 \@processme
9015 \fi
9016 \fi
9017 }

```

`\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.

```

9018 \gdef\Hy@RemoveHidPageAttr#1^^J/Hid#2#3 #4\END{%
9019 \ifx\#2\%
9020 \global\pdfpageattr{#1}%
9021 \else
9022 \Hy@RemoveHidPageAttr#1#4\END
9023 \fi
9024 }

9025 \pdf@ifdraftmode{}{%
9026 \g@addto@macro\Hy@EveryPageHook{%
9027 \hyper@pagetransition
9028 \hyper@pageduration

```

```

9029 \hyper@pagehidden
9030 }%
9031 }

```

Also XeTeX support `\pdfpagewidth` and `\pdfpageheight`, but it does not provide `\pdfhorigin` and `\pdfvorigin`.

```

9032 </pdftex>
9033 <*pdftex | xetex>
9034 \Hy@AtBeginDocument{%
9035   \ifHy@setpagesize
9036     \expandafter\@firstofone
9037   \else
9038     \expandafter\@gobble
9039   \fi
9040   {%
9041     \@ifclassloaded{seminar}{%
9042 <*pdftex>
9043   \setlength{\pdfhorigin}{1truein}%
9044   \setlength{\pdfvorigin}{1truein}%
9045 </pdftex>
9046   \ifportrait
9047     \ifdim\paperwidth=\z@
9048     \else
9049       \setlength{\pdfpagewidth}{\strip@pt\paperwidth truept}%
9050     \fi
9051     \ifdim\paperheight=\z@
9052     \else
9053       \setlength{\pdfpageheight}{\strip@pt\paperheight truept}%
9054     \fi
9055   \else
9056     \ifdim\paperheight=\z@
9057     \else
9058       \setlength{\pdfpagewidth}{\strip@pt\paperheight truept}%
9059     \fi
9060     \ifdim\paperwidth=\z@
9061     \else
9062       \setlength{\pdfpageheight}{\strip@pt\paperwidth truept}%
9063     \fi
9064   \fi
9065 }{%
9066   \ltx@ifundefined{stockwidth}{%
9067     \ifdim\paperwidth>\z@
9068     \setlength{\pdfpagewidth}{\paperwidth}%
9069   \fi
9070   \ifdim\paperheight>\z@
9071     \setlength{\pdfpageheight}{\paperheight}%
9072   \fi
9073 }{%
9074   \ifdim\stockwidth>\z@
9075     \setlength{\pdfpagewidth}{\stockwidth}%
9076   \fi
9077   \ifdim\stockheight>\z@
9078     \setlength{\pdfpageheight}{\stockheight}%
9079   \fi
9080 }%
9081 }%
9082 }%
9083 \Hy@DisableOption{setpagesize}%

```

```

9084 }
9085 </pdfTeX | xetex>
9086 <*pdfTeX>
9087 \def\Acrobatmenu#1#2{%
9088   \Hy@Acrobatmenu{#1}{#2}{%
9089     \pdfstartlink
9090     attr{%
9091       \Hy@setpdfborder
9092       \ifx\@pdfhighlight\@empty
9093       \else
9094         /H\@pdfhighlight
9095       \fi
9096       \ifx\@menubordercolor\relax
9097       \else
9098         /C[\@menubordercolor]%
9099       \fi
9100     }%
9101     user{%
9102       /Subtype/Link%
9103       \ifHy@pdfa /F 4\fi
9104       /A<<%
9105       /S/Named%
9106       /N/#1%
9107       \Hy@href@nextactionraw
9108     >>%
9109     }%
9110     \relax
9111     \Hy@colorlink\@menucolor#2%
9112     \close@pdflink
9113   }%
9114 }

```

#### 46.2.1 Fix for problem with different nesting levels

`\AtBeginShipoutFirst` adds an additional box layer around the first output page. This disturbs pdf<sub>T</sub>E<sub>X</sub>'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 pdf<sub>T</sub>E<sub>X</sub>—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`.

```

9115 \def\Hy@FixNotFirstPage{%
9116   \gdef\Hy@FixNotFirstPage{%
9117     \setbox\AtBeginShipoutBox=\hbox{%
9118       \copy\AtBeginShipoutBox
9119     }%
9120   }%
9121 }
9122 \AtBeginShipout{\Hy@FixNotFirstPage}
9123 </pdfTeX>

```

### 46.3 hypertex

The Hyper<sub>T</sub>E<sub>X</sub> specification (this is borrowed from an article by Arthur Smith) says that conformant viewers/translators must recognize the following set of `\special` commands:

**href:** html:<a href = "href\_string">

**name:** html:<a name = "name\_string">

**end:** html:</a>

**image:** html:<img src = "href\_string">

**base\_name:** html:<base href = "href\_string">

The *href*, *name* and *end* commands are used to do the basic hypertext operations of establishing links between sections of documents. The *image* command is intended (as with current html viewers) to place an image of arbitrary graphical format on the page in the current location. The *base\_name* command is be used to communicate to the *dvi* viewer the full (URL) location of the current document so that files specified by relative URL's may be retrieved correctly.

The *href* and *name* commands must be paired with an *end* command later in the T<sub>E</sub>X file — the T<sub>E</sub>X commands between the two ends of a pair form an *anchor* in the document. In the case of an *href* command, the *anchor* is to be highlighted in the *dvi* viewer, and when clicked on will cause the scene to shift to the destination specified by *href\_string*. The *anchor* associated with a name command represents a possible location to which other hypertext links may refer, either as local references (of the form href="#name\_string" with the *name\_string* identical to the one in the name command) or as part of a URL (of the form URL#name\_string). Here *href\_string* is a valid URL or local identifier, while *name\_string* could be any string at all: the only caveat is that “” characters should be escaped with a backslash (\), and if it looks like a URL name it may cause problems.

```
9124 (*hypertext)
9125 \providecommand*{\XR@ext}{dvi}
9126 \def\PDF@FinishDoc{}
9127 \def\PDF@SetupDoc{%
9128   \ifx\@baseurl\@empty
9129   \else
9130     \special{html:<base href="\@baseurl">}%
9131   \fi
9132 }
9133 \Hy@WrapperDef\hyper@anchor#1{%
9134   \Hy@SaveLastskip
9135   \Hy@VerboseAnchor{#1}%
9136   \begingroup
9137     \let\protect=\string
9138     \hyper@chars
9139     \special{html:<a name=%
9140       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
9141   \endgroup
9142   \Hy@activeanchortrue
9143   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
9144   \special{html:</a>}%
9145   \Hy@activeanchorfalse
9146   \Hy@RestoreLastskip
9147 }
9148 \Hy@WrapperDef\hyper@anchorstart#1{%
9149   \Hy@SaveLastskip
9150   \Hy@VerboseAnchor{#1}%
9151   \begingroup
9152     \hyper@chars
9153     \special{html:<a name=%
```

```

9154 \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
9155 \endgroup
9156 \Hy@activeanchortrue
9157 }
9158 \def\hyper@anchorend{%
9159 \special{html:</a>}%
9160 \Hy@activeanchorfalse
9161 \Hy@RestoreLastskip
9162 }
9163 \def\@urlltype{url}
9164 \def\hyper@linkstart#1#2{%
9165 \Hy@VerboseLinkStart{#1}{#2}%
9166 \expandafter\Hy@colorlink\csname @#1color\endcsname
9167 \def\Hy@tempa{#1}%
9168 \ifx\Hy@tempa\@urlltype
9169 \special{html:<a href=\hyper@quote#2\hyper@quote>}%
9170 \else
9171 \begingroup
9172 \hyper@chars
9173 \special{html:<a href=%
9174 \hyper@quote\#\HyperDestNameFilter{#2}\hyper@quote>}%
9175 \endgroup
9176 \fi
9177 }
9178 \def\hyper@linkend{%
9179 \special{html:</a>}%
9180 \Hy@endcolorlink
9181 }
9182 \def\hyper@linkfile#1#2#3{%
9183 \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\#3\\\else\##3\fi}%
9184 }
9185 \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.

```

9186 \leavevmode
9187 \ifHy@raiselinks
9188 \Hy@SaveSpaceFactor
9189 \Hy@SaveSavedSpaceFactor
9190 \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
9191 \Hy@RestoreSavedSpaceFactor
9192 \@linkdim\dp\@tempboxa
9193 \lower\@linkdim\hbox{%
9194 \hyper@chars
9195 \special{html:<a href=\hyper@quote#2\hyper@quote>}%
9196 }%
9197 \Hy@colorlink\@urllcolor
9198 \Hy@RestoreSpaceFactor
9199 #1%
9200 \Hy@SaveSpaceFactor
9201 \@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).

```

9202 \advance\@linkdim by -6.5\p@
9203 \raise\@linkdim\hbox{\special{html:</a>}}%
9204 \Hy@endcolorlink

```

```

9205 \Hy@RestoreSpaceFactor
9206 \else
9207 \begingroup
9208 \hyper@chars
9209 \special{html:<a href=\hyper@quote#2\hyper@quote>}%
9210 \Hy@colorlink\@urlcolor#1%
9211 \special{html:</a>}%
9212 \Hy@endcolorlink
9213 \endgroup
9214 \fi
9215 }

```

Very poor implementation of \hyper@link without considering #1.

```

9216 \def\hyper@link#1#2#3{%
9217 \Hy@VerboseLinkStart{#1}{#2}%
9218 \hyper@linkurl{#3}{\# \Hy@HyperDestNameFilter{#2}}%
9219 }

9220 \def\hyper@image#1#2{%
9221 \begingroup
9222 \hyper@chars
9223 \special{html:<img src=\hyper@quote#1\hyper@quote>}%
9224 \endgroup
9225 }
9226 </hypertex>
9227 <*dviwindo>

```

## 46.4 dviwindo

[This was developed by David Carlisle]. Within a file dviwindo hyperlinking is used, for external URL's a call to \wwwbrowser is made. (You can define this command before or after loading the hyperref package if the default c:/netscape/netscape is not suitable) Dviwindo could in fact handle external links to dvi files on the same machine without calling a web browser, but that would mean parsing the URL to recognise such, and this is currently not done.

This was more or less blindly copied from the hypertex cfg. For dviwindo, L<sup>A</sup>T<sub>E</sub>X must specify the size of the active area for links. For some hooks this information is available but for some, the start and end of the link are specified separately in which case a fixed size area of 10000000sp wide by \baselineskip high is used.

```

9228 \providecommand*\XR@ext{dvi}
9229 \providecommand*\wwwbrowser{c:\string\netscape\string\netscape}
9230 \Hy@WrapperDef\hyper@anchor#1{%
9231 \Hy@SaveLastskip
9232 \Hy@VerboseAnchor{#1}%
9233 \begingroup
9234 \let\protect=\string
9235 \special{mark: #1}%
9236 \endgroup
9237 \Hy@activeanchortrue
9238 \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
9239 \Hy@activeanchorfalsetrue
9240 \Hy@RestoreLastskip
9241 }
9242 \Hy@WrapperDef\hyper@anchorstart#1{%
9243 \Hy@SaveLastskip
9244 \Hy@VerboseAnchor{#1}%
9245 \special{mark: #1}%

```

```

9246 \Hy@activeanchortrue
9247 }
9248 \def\hyper@anchorend{%
9249 \Hy@activeanchorfalse
9250 \Hy@RestoreLastskip
9251 }
9252 \def\hyper@linkstart#1#2{%
9253 \Hy@VerboseLinkStart{#1}{#2}%
9254 \expandafter\Hy@colorlink\csname @#1color\endcsname
9255 \special{button: %
9256 10000000 %
9257 \number\baselineskip\space
9258 #2%
9259 }%
9260 }
9261 \def\hyper@linkend{%
9262 \Hy@endcolorlink
9263 }
9264 \def\hyper@link#1#2#3{%
9265 \Hy@VerboseLinkStart{#1}{#2}%
9266 \leavevmode
9267 \ifHy@raiselinks
9268 \Hy@SaveSpaceFactor
9269 \Hy@SaveSavedSpaceFactor
9270 \sbox\@tempboxa{\Hy@RestoreSpaceFactor#3}%
9271 \Hy@RestoreSavedSpaceFactor
9272 \@linkdim\dp\@tempboxa
9273 \lower\@linkdim\hbox{%
9274 \special{button: %
9275 \number\wd\@tempboxa\space
9276 \number\ht\@tempboxa\space
9277 #2%
9278 }%
9279 \expandafter\Hy@colorlink\csname @#1color\endcsname
9280 \Hy@RestoreSpaceFactor
9281 #3%
9282 \Hy@SaveSpaceFactor
9283 \Hy@endcolorlink
9284 }%
9285 \@linkdim\ht\@tempboxa
9286 \advance\@linkdim by -6.5\p@
9287 \raise\@linkdim\hbox{}}%
9288 \Hy@RestoreSpaceFactor
9289 \else
9290 \special{button: %
9291 \number\wd\@tempboxa\space
9292 \number\ht\@tempboxa\space
9293 #2%
9294 }%
9295 \expandafter\Hy@colorlink\csname @#1color\endcsname
9296 #3%
9297 \Hy@endcolorlink
9298 \fi
9299 }
9300 \def\hyper@linkurl#1#2{%
9301 \begingroup
9302 \hyper@chars

```

```

9303 \leavevmode
9304 \ifHy@raiselinks
9305 \Hy@SaveSpaceFactor
9306 \Hy@SaveSavedSpaceFactor
9307 \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
9308 \Hy@RestoreSavedSpaceFactor
9309 \@linkdim\dp\@tempboxa
9310 \lower\@linkdim\hbox{%
9311 \special{button: %
9312 \number\wd\@tempboxa\space
9313 \number\ht\@tempboxa\space
9314 launch: \wwwbrowser\space
9315 #2%
9316 }%
9317 \Hy@colorlink\@urlcolor
9318 \Hy@RestoreSpaceFactor
9319 #1%
9320 \Hy@SaveSpaceFactor
9321 \Hy@endcolorlink
9322 }%
9323 \@linkdim\ht\@tempboxa
9324 \advance\@linkdim by -6.5\p@
9325 \raise\@linkdim\hbox{}%
9326 \Hy@RestoreSpaceFactor
9327 \else
9328 \special{button: %
9329 \number\wd\@tempboxa\space
9330 \number\ht\@tempboxa\space
9331 launch: \wwwbrowser\space
9332 #2%
9333 }%
9334 \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
9335 \fi
9336 \endgroup
9337 }
9338 \def\hyper@linkfile#1#2#3{%
9339 \begingroup
9340 \hyper@chars
9341 \leavevmode
9342 \ifHy@raiselinks
9343 \Hy@SaveSpaceFactor
9344 \Hy@SaveSavedSpaceFactor
9345 \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
9346 \Hy@RestoreSavedSpaceFactor
9347 \@linkdim\dp\@tempboxa
9348 \lower\@linkdim\hbox{%
9349 \special{button: %
9350 \number\wd\@tempboxa\space
9351 \number\ht\@tempboxa\space
9352 #3,%
9353 file: #2%
9354 }%
9355 \Hy@colorlink\@filecolor
9356 \Hy@RestoreSpaceFactor
9357 #1%
9358 \Hy@SaveSpaceFactor
9359 \Hy@endcolorlink

```



```

9360     }%
9361     \@linkdim\ht\@tempboxa
9362     \advance\@linkdim by -6.5\p@
9363     \raise\@linkdim\hbox{}%
9364     \Hy@RestoreSpaceFactor
9365   \else
9366     \special{button: %
9367       \number\wd\@tempboxa\space
9368       \number\ht\@tempboxa\space
9369       #3,%
9370       file: #2%
9371     }%
9372     \Hy@colorlink\@filecolor#1\Hy@endcolorlink
9373   \fi
9374 \endgroup
9375 }
9376 \ifx\@pdfproducer\relax
9377   \def\@pdfproducer{dviwindo + Distiller}%
9378 \fi
9379 \HyInfo@AddonUnsupportedtrue
9380 \def\PDF@FinishDoc{%
9381   \Hy@UseMaketitleInfos
9382   \HyInfo@TrappedUnsupported
9383   \special{PDF: Keywords \@pdfkeywords}%
9384   \special{PDF: Title \@pdftitle}%
9385   \special{PDF: Creator \@pdfcreator}%
9386   \ifx\@pdfcreationdate\@empty
9387   \else
9388     \special{PDF: CreationDate \@pdfcreationdate}%
9389   \fi
9390   \ifx\@pdfmoddate\@empty
9391   \else
9392     \special{PDF: ModDate \@pdfmoddate}%
9393   \fi
9394   \special{PDF: Author \@pdfauthor}%
9395   \ifx\@pdfproducer\relax
9396   \else
9397     \special{PDF: Producer \@pdfproducer}%
9398   \fi
9399   \special{PDF: Subject \@pdfsubject}%
9400   \Hy@DisableOption{pdfauthor}%
9401   \Hy@DisableOption{pdftitle}%
9402   \Hy@DisableOption{pdfsubject}%
9403   \Hy@DisableOption{pdfcreator}%
9404   \Hy@DisableOption{pdfcreationdate}%
9405   \Hy@DisableOption{pdfmoddate}%
9406   \Hy@DisableOption{pdfproducer}%
9407   \Hy@DisableOption{pdfkeywords}%
9408   \Hy@DisableOption{pdftrapped}%
9409   \Hy@DisableOption{pdfinfo}%
9410 }
9411 \def\PDF@SetupDoc{%
9412   \ifx\@baseurl\@empty
9413   \else
9414     \special{PDF: Base \@baseurl}%
9415   \fi
9416   \ifx\@pdfpagescrop\@empty\else

```

```

9417 \special{PDF: BBox \@pdfpagescrop}%
9418 \fi
9419 \def\Hy@temp{}%
9420 \ifx\@pdfstartpage\@empty
9421 \else
9422 \ifx\@pdfstartview\@empty
9423 \else
9424 \edef\Hy@temp{%
9425     ,Page=\@pdfstartpage
9426     ,View=\@pdfstartview
9427 }%
9428 \fi
9429 \fi
9430 \edef\Hy@temp{%
9431 \noexpand\pdfmark{%
9432     pdfmark=/DOCVIEW,%
9433     PageMode=/\@pdfpagemode
9434     \Hy@temp
9435 }%
9436 }%
9437 \Hy@temp
9438 \ifx\@pdfpagescrop\@empty
9439 \else
9440 \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
9441 \fi
9442 \edef\Hy@temp{%
9443 \ifHy@toolbar\else /HideToolbar true\fi
9444 \ifHy@menubar\else /HideMenubar true\fi
9445 \ifHy>windowui\else /HideWindowUI true\fi
9446 \ifHy@fitwindow /FitWindow true\fi
9447 \ifHy@centerwindow /CenterWindow true\fi
9448 \ifHy@displaydoctitle /DisplayDocTitle true\fi
9449 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
9450 \Hy@UseNameKey{Direction}\@pdfdirection
9451 \Hy@UseNameKey{ViewArea}\@pdfviewarea
9452 \Hy@UseNameKey{ViewClip}\@pdfviewclip
9453 \Hy@UseNameKey{PrintArea}\@pdfprintarea
9454 \Hy@UseNameKey{PrintClip}\@pdfprintclip
9455 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
9456 \Hy@UseNameKey{Duplex}\@pdfduplex
9457 \ifx\@pdfpicktraybypdfsize\@empty
9458 \else
9459 /PickTrayByPDFSize \@pdfpicktraybypdfsize
9460 \fi
9461 \ifx\@pdfprintpagerange\@empty
9462 \else
9463 /PrintPageRange[\@pdfprintpagerange]%
9464 \fi
9465 \ifx\@pdfnumcopies\@empty
9466 \else
9467 /NumCopies \@pdfnumcopies
9468 \fi
9469 }%
9470 \pdfmark{pdfmark=/PUT,%
9471 Raw={%
9472 \string{Catalog}\string}<<%
9473 \ifx\Hy@temp\@empty

```

```

9474 \else
9475 /ViewerPreferences<<\Hy@temp>>%
9476 \fi
9477 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
9478 \ifx\@pdflang\@empty
9479 \else
9480 /Lang(\@pdflang)%
9481 \fi
9482 >>%
9483 }%
9484 }%
9485 }
9486 </dviwindo>
9487 <*dvipdfm | xetex>

```

## 46.5 dvipdfm/xetex dvi to PDF converter

Provided by Mark Wicks (mwicks@kettering.edu)

```

9488 \providecommand*{\XR@ext}{pdf}
9489 \Hy@setbreaklinks{true}
9490 \def\HyPat@ObjRef{%
9491 @[\ ]+%
9492 }
9493 \newsavebox{\pdfm@box}
9494 \def\@pdfm@mark#1{\special{pdf:#1}}
9495 \Hy@WrapperDef\@pdfm@dest#1{%
9496 \Hy@SaveLastskip
9497 \Hy@VerboseAnchor{#1}%
9498 \begingroup
9499 \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
9500 \def\x{XYZ}%
9501 \ifx\x\@pdfview
9502 \def\x{XYZ @xpos @ypos null}%
9503 \else
9504 \def\x{FitH}%
9505 \ifx\x\@pdfview
9506 \def\x{FitH @ypos}%
9507 \else
9508 \def\x{FitBH}%
9509 \ifx\x\@pdfview
9510 \def\x{FitBH @ypos}%
9511 \else
9512 \def\x{FitV}%
9513 \ifx\x\@pdfview
9514 \def\x{FitV @xpos}%
9515 \else
9516 \def\x{FitBV}%
9517 \ifx\x\@pdfview
9518 \def\x{FitBV @xpos}%
9519 \else
9520 \def\x{Fit}%
9521 \ifx\x\@pdfview
9522 \let\x\@pdfview
9523 \else
9524 \def\x{FitB}%
9525 \ifx\x\@pdfview
9526 \let\x\@pdfview

```

```

9527         \else
9528         \def\x{FitR}%
9529         \ifx\x\@pdfview
9530         \Hy@Warning{'pdfview=FitR' is not supported}%
9531         \def\x{XYZ @xpos @ypos null}%
9532         \else
9533         \@onelevel@sanitize\@pdfview
9534         \Hy@Warning{%
9535             Unknown value '\@pdfview' for pdfview%
9536         }%
9537         \def\x{XYZ @xpos @ypos null}%
9538         \fi
9539     \fi
9540 \fi
9541 \fi
9542 \fi
9543 \fi
9544 \fi
9545 \fi
9546 \@pdfm@mark{dest (\Hy@pstringDest) [@thispage /\x]}%
9547 \endgroup
9548 \Hy@RestoreLastskip
9549 }
9550 \providecommand*\@pdfview{XYZ}
9551 \providecommand*\@pdfborder{0 0 1}
9552 \providecommand*\@pdfborderstyle{}
9553 \def\hyper@anchor#1{%
9554     \@pdfm@dest{#1}%
9555 }
9556 \def\hyper@anchorstart#1{%
9557     \Hy@activeanchortrue
9558     \@pdfm@dest{#1}%
9559 }
9560 \def\hyper@anchorend{%
9561     \Hy@activeanchorfalse
9562 }
9563 \newcounter{Hy@AnnotLevel}
9564 \ifHy@ocgcolorlinks
9565     \def\OBJ@OCG@view{@OCG@view}%
9566     \@pdfm@mark{%
9567         obj \OBJ@OCG@view <<%
9568         /Type/OCG%
9569         /Name(View)%
9570         /Usage<<%
9571         /Print<<%
9572         /PrintState/OFF%
9573         >>%
9574         /View<<%
9575         /ViewState/ON%
9576         >>%
9577         >>%
9578         >>%
9579     }%
9580     \@pdfm@mark{close \OBJ@OCG@view}%
9581     \def\OBJ@OCG@print{@OCG@print}%
9582     \@pdfm@mark{%
9583         obj \OBJ@OCG@print <<%

```

```

9584     /Type/OCG%
9585     /Name(Print)%
9586     /Usage<<%
9587         /Print<<%
9588             /PrintState/ON%
9589         >>%
9590     /View<<%
9591         /ViewState/OFF%
9592     >>%
9593 >>%
9594 >>%
9595 }%
9596 \@pdfm@mark{close \OBJ@OCG@print}%
9597 \def\OBJ@OCGs{@OCGs}%
9598 \@pdfm@mark{%
9599     obj \OBJ@OCGs [%
9600         \OBJ@OCG@view\space\OBJ@OCG@print
9601     ]%
9602 }%
9603 \@pdfm@mark{close \OBJ@OCGs}%
9604 \@pdfm@mark{%
9605     put @catalog <<%
9606         /OCProperties<<%
9607             /OCGs \OBJ@OCGs
9608             /D<<%
9609                 /OFF[\OBJ@OCG@print]%
9610                 /AS[%
9611                     <<%
9612                         /Event/View%
9613                         /OCGs \OBJ@OCGs
9614                         /Category[/View]%
9615                     >>%
9616                     <<%
9617                         /Event/Print%
9618                         /OCGs \OBJ@OCGs
9619                         /Category[/Print]%
9620                     >>%
9621                     <<%
9622                         /Event/Export%
9623                         /OCGs \OBJ@OCGs
9624                         /Category[/Print]%
9625                     >>%
9626                 ]%
9627             >>%
9628         >>%
9629     >>%
9630 }%
9631 \AtBeginShipout{%
9632     \setbox\AtBeginShipoutBox=\hbox{%
9633         \copy\AtBeginShipoutBox
9634         \@pdfm@mark{%
9635             put @resources <<%
9636                 /Properties<<%
9637                     /OCView \OBJ@OCG@view
9638                     /OCPrint \OBJ@OCG@print
9639                 >>%
9640             >>%

```

```

9641 }%
9642 }%
9643 }%
9644 \Hy@AtBeginDocument{%
9645 \def\Hy@colorlink#1{%
9646 \begingroup
9647 \ifHy@ocgcolorlinks
9648 \def\Hy@ocgcolor{#1}%
9649 \setbox0=\hbox\bgroup\color@begingroup
9650 \else
9651 \HyColor@UseColor#1%
9652 \fi
9653 }%
9654 \def\Hy@endcolorlink{%
9655 \ifHy@ocgcolorlinks
9656 \color@endgroup\egroup
9657 \mbox{%
9658 \@pdfm@mark{content /OC/OCPrint BDC}%
9659 \rlap{\copy0}%
9660 \@pdfm@mark{content EMC/OC/OCView BDC}%
9661 \begingroup
9662 \expandafter\HyColor@UseColor\Hy@ocgcolor
9663 \box0 %
9664 \endgroup
9665 \@pdfm@mark{content EMC}%
9666 }%
9667 \fi
9668 \endgroup
9669 }%
9670 }%
9671 \else
9672 \Hy@DisableOption{ocgcolorlinks}%
9673 \fi

9674 \def\Hy@BeginAnnot#1{%
9675 \stepcounter{Hy@AnnotLevel}%
9676 \ifnum\value{Hy@AnnotLevel}=\@ne
9677 #1%
9678 \fi
9679 }
9680 \def\Hy@EndAnnot{%
9681 \ifnum\value{Hy@AnnotLevel}=\@ne
9682 \Hy@endcolorlink
9683 \@pdfm@mark{eann}%
9684 \fi
9685 \addtocounter{Hy@AnnotLevel}\m@ne
9686 }

9687 \def\Hy@undefinedname{UNDEFINED}
9688 \def\hyper@linkstart#1#2{%
9689 \Hy@VerboseLinkStart{#1}{#2}%
9690 \Hy@BeginAnnot{%
9691 \protected@edef\Hy@testname{#2}%
9692 \ifx\Hy@testname\@empty
9693 \Hy@Warning{%
9694 Empty destination name,\MessageBreak
9695 using '\Hy@undefinedname'%
9696 }%
9697 \let\Hy@testname\Hy@undefinedname

```

```

9698 \else
9699 \Hy@pstringdef\Hy@testname{%
9700 \expandafter\HyperDestNameFilter\expandafter{%
9701 \Hy@testname
9702 }%
9703 }%
9704 \fi
9705 \@pdfm@mark{%
9706 bann<<%
9707 /Type/Annot%
9708 /Subtype/Link%
9709 \ifHy@pdfa /F 4\fi
9710 \Hy@setpdfborder
9711 \expandafter\ifx\csname @#1bordercolor\endcsname\relax
9712 \else
9713 /C[\csname @#1bordercolor\endcsname]%
9714 \fi
9715 /A<<%
9716 /S/GoTo%
9717 /D(\Hy@testname)%
9718 \Hy@href@nextactionraw
9719 >>%
9720 >>%
9721 }%
9722 \expandafter\Hy@colorlink\csname @#1color\endcsname
9723 }%
9724 }
9725 \def\hyper@linkend{\Hy@EndAnnot}%
9726 \def\hyper@link#1#2#3{%
9727 \hyper@linkstart{#1}{#2}#3\hyper@linkend
9728 }
9729 \def\hyper@linkfile#1#2#3{%
9730 \leavevmode
9731 \Hy@BeginAnnot{%
9732 \def\Hy@pstringF{#2}%
9733 \Hy@CleanupFile\Hy@pstringF
9734 \Hy@pstringdef\Hy@pstringF\Hy@pstringF
9735 \Hy@pstringdef\Hy@pstringD{#3}%
9736 \Hy@MakeRemoteAction
9737 \@pdfm@mark{%
9738 bann<<%
9739 /Type/Annot%
9740 /Subtype/Link%
9741 \ifHy@pdfa /F 4\fi
9742 \Hy@setpdfborder
9743 \ifx\@filebordercolor\relax
9744 \else
9745 /C[\@filebordercolor]%
9746 \fi
9747 /A<<%
9748 /S/GoToR%
9749 /F(\Hy@pstringF)%
9750 /D%
9751 \ifx\\#3\\%
9752 [\Hy@href@page\@pdfremotestartview]%
9753 \else
9754 (\Hy@pstringD)%

```

```

9755      \fi
9756      \Hy@SetNewWindow
9757      \Hy@href@nextactionraw
9758      >>%
9759      >>%
9760      }%
9761      \Hy@colorlink\@filecolor
9762      }%
9763      #1%
9764      \Hy@endAnnot
9765      }
9766      \def\hyper@linkurl#1#2{%
9767      \leavevmode
9768      \Hy@BeginAnnot{%
9769      \Hy@pstringdef\Hy@pstringURI{#2}%
9770      \@pdfm@mark{%
9771      bann<<%
9772      /Type/Annot%
9773      /Subtype/Link%
9774      \ifHy@pdfa /F 4\fi
9775      \Hy@setpdfborder
9776      \ifx\@urlbordercolor\relax
9777      \else
9778      /C[\@urlbordercolor]%
9779      \fi
9780      /A<<%
9781      /S/URI%
9782      /URI(\Hy@pstringURI)%
9783      \ifHy@href@ismap
9784      /IsMap true%
9785      \fi
9786      \Hy@href@nextactionraw
9787      >>%
9788      >>%
9789      }%
9790      \Hy@colorlink\@urlcolor
9791      }%
9792      #1%
9793      \Hy@endAnnot
9794      }
9795      \def\Acrobatmenu#1#2{%
9796      \Hy@Acrobatmenu{#1}{#2}{%
9797      \Hy@BeginAnnot{%
9798      \@pdfm@mark{%
9799      bann<<%
9800      /Type/Annot%
9801      /Subtype/Link%
9802      \ifHy@pdfa /F 4\fi
9803      /A<<%
9804      /S/Named%
9805      /N/#1%
9806      \Hy@href@nextactionraw
9807      >>%
9808      \Hy@setpdfborder
9809      \ifx\@menubordercolor\relax
9810      \relax
9811      /C[\@menubordercolor]%

```



```

9812     \fi
9813     >>%
9814   }%
9815   \Hy@colorlink\@menucolor
9816 }%
9817 #2%
9818 \Hy@EndAnnot
9819 }%
9820 }
9821 \ifx\@pdfproducer\relax
9822 \def\@pdfproducer{dvipdfm}%

```

Detect XeTeX. However, but xdvipdfmx will overwrite it in the final PDF file.

```

9823 \begingroup\expandafter\expandafter\expandafter\endgroup
9824 \expandafter\ifx\cscname XeTeXversion\endcsname\relax
9825 \else
9826 \edef\@pdfproducer{XeTeX \the\XeTeXversion\XeTeXrevision}%
9827 \fi
9828 \fi
9829 \def\PDF@FinishDoc{%
9830 \Hy@UseMaketitleInfos
9831 \HyInfo@GenerateAddons
9832 \@pdfm@mark{%
9833   docinfo<<%
9834   /Title(\@pdftitle)%
9835   /Subject(\@pdfsubject)%
9836   /Creator(\@pdfcreator)%
9837   \ifx\@pdfcreationdate\@empty
9838   \else
9839     /CreationDate(\@pdfcreationdate)%
9840   \fi
9841   \ifx\@pdfmoddate\@empty
9842   \else
9843     /ModDate(\@pdfmoddate)%
9844   \fi
9845   /Author(\@pdfauthor)%
9846   \ifx\@pdfproducer\relax
9847   \else
9848     /Producer(\@pdfproducer)%
9849   \fi
9850   /Keywords(\@pdfkeywords)%
9851   \ifx\@pdftrapped\@empty
9852   \else
9853     /Trapped/\@pdftrapped
9854   \fi
9855   \HyInfo@Addons
9856   >>%
9857 }%
9858 \Hy@DisableOption{pdfauthor}%
9859 \Hy@DisableOption{pdftitle}%
9860 \Hy@DisableOption{pdfsubject}%
9861 \Hy@DisableOption{pdfcreator}%
9862 \Hy@DisableOption{pdfcreationdate}%
9863 \Hy@DisableOption{pdfmoddate}%
9864 \Hy@DisableOption{pdfproducer}%
9865 \Hy@DisableOption{pdfkeywords}%
9866 \Hy@DisableOption{pdftrapped}%
9867 \Hy@DisableOption{pdfinfo}%

```

```

9868 }
9869 \def\PDF@SetupDoc{%
9870   \edef\Hy@temp{%
9871     \ifHy@toolbar\else /HideToolbar true\fi
9872     \ifHy@menubar\else /HideMenubar true\fi
9873     \ifHy>windowui\else /HideWindowUI true\fi
9874     \ifHy@fitwindow /FitWindow true\fi
9875     \ifHy@centerwindow /CenterWindow true\fi
9876     \ifHy@displaydoctitle /DisplayDocTitle true\fi
9877     \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
9878     \Hy@UseNameKey{Direction}\@pdfdirection
9879     \Hy@UseNameKey{ViewArea}\@pdfviewarea
9880     \Hy@UseNameKey{ViewClip}\@pdfviewclip
9881     \Hy@UseNameKey{PrintArea}\@pdfprintarea
9882     \Hy@UseNameKey{PrintClip}\@pdfprintclip
9883     \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
9884     \Hy@UseNameKey{Duplex}\@pdfduplex
9885     \ifx\@pdfpicktraybypdfsize\@empty
9886     \else
9887       /PickTrayByPDFSize \@pdfpicktraybypdfsize
9888     \fi
9889     \ifx\@pdfprintpagerange\@empty
9890     \else
9891       /PrintPageRange[\@pdfprintpagerange]%
9892     \fi
9893     \ifx\@pdfnumcopies\@empty
9894     \else
9895       /NumCopies \@pdfnumcopies
9896     \fi
9897   }%
9898   \Hy@pstringdef\Hy@pstringB{\@baseurl}%
9899   \@pdfm@mark{%
9900     docview<<%
9901     \ifx\@pdfstartpage\@empty
9902     \else
9903       \ifx\@pdfstartview\@empty
9904       \else
9905         /OpenAction[page\@pdfstartpage\@pdfstartview]%
9906       \fi
9907     \fi
9908     \ifx\@baseurl\@empty
9909     \else
9910       /URI<</Base(\Hy@pstringB)>>%
9911     \fi
9912     /PageMode/\@pdfpagemode
9913     \ifx\Hy@temp\@empty
9914     \else
9915       /ViewerPreferences<<\Hy@temp>>%
9916     \fi
9917     \Hy@UseNameKey{PageLayout}\@pdfpagelayout
9918     \ifx\@pdflang\@empty
9919     \else
9920       /Lang(\@pdflang)%
9921     \fi
9922   >>%
9923 }%
9924 \ifx\@pdfpagescrop\@empty

```

```

9925 \else
9926 \pdfmark{put @pages <</CropBox[\pdfpagescrop]>>}%
9927 \fi
9928 }
9929 </dvipdfm | xetex>

```

Xe<sub>T</sub>E<sub>X</sub> uses pdf<sub>T</sub>E<sub>X</sub>'s method `\pdfpagewidth` and `\pdfpageheight` for setting the paper size.

```

9930 <*dvipdfm>
9931 \AtBeginShipoutFirst{%
9932 \ifHy@setpagesize
9933 \begingroup
9934 \ifundefined{stockwidth}{%
9935 \ifdim\paperwidth>\z@
9936 \ifdim\paperheight>\z@
9937 \special{papersize=\the\paperwidth,\the\paperheight}%
9938 \fi
9939 \fi
9940 }{%
9941 \ifdim\stockwidth>\z@
9942 \ifdim\stockheight>\z@
9943 \special{papersize=\the\stockwidth,\the\stockheight}%
9944 \fi
9945 \fi
9946 }%
9947 \endgroup
9948 \fi
9949 \Hy@DisableOption{setpagesize}%
9950 }
9951 </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.

```

9952 <*vtexhtml>
9953 \providecommand*{\XR@ext}{htm}
9954 \RequirePackage{vtexhtml}
9955 \newif\if@Localurl
9956 \def\PDF@FinishDoc{}
9957 \def\PDF@SetupDoc{%
9958 \ifx\@baseurl\@empty
9959 \else
9960 \special{!direct <base href="\@baseurl">}%
9961 \fi
9962 }
9963 \def\@urltype{url}
9964 \def\hyper@link#1#2#3{%
9965 \Hy@VerboseLinkStart{#1}{#2}%
9966 \leavevmode
9967 \special{!direct <a href=%
9968 \hyper@quote\hyper@hash\HyperDestNameFilter{#2}\hyper@quote>}%
9969 #3%
9970 \special{!direct </a>}%
9971 }
9972 \def\hyper@linkurl#1#2{%
9973 \begingroup

```

```

9974 \hyper@chars
9975 \leavevmode
9976 \MathBSuppress=1\relax
9977 \special{!direct <a href=%
9978 \hyper@quote\HyperDestNameFilter{#2}\hyper@quote>}%
9979 #1%
9980 \MathBSuppress=0\relax
9981 \special{!direct </a>}%
9982 \endgroup
9983 }
9984 \def\hyper@linkfile#1#2#3{%
9985 \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\else\##3\fi}%
9986 }
9987 \def\hyper@linkstart#1#2{%
9988 \Hy@VerboseLinkStart{#1}{#2}%
9989 \def\Hy@tempa{#1}\ifx\Hy@tempa\@urltype
9990 \@Localurltrue
9991 \special{!direct <a href=\hyper@quote#2\hyper@quote>}%
9992 \else
9993 \@Localurlfalse
9994 \begingroup
9995 \hyper@chars
9996 \special{!aref \HyperDestNameFilter{#2}}%
9997 \endgroup
9998 \fi
9999 }
10000 \def\hyper@linkend{%
10001 \if@Localurl
10002 \special{!endaref}%
10003 \else
10004 \special{!direct </a>}%
10005 \fi
10006 }
10007 \Hy@WrapperDef\hyper@anchorstart#1{%
10008 \Hy@SaveLastskip
10009 \Hy@VerboseAnchor{#1}%
10010 \begingroup
10011 \hyper@chars
10012 \special{!aname #1}%
10013 \special{!direct <a name=%
10014 \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
10015 \endgroup
10016 \Hy@Activeanchortrue
10017 }
10018 \def\hyper@anchorend{%
10019 \special{!direct </a>}%
10020 \Hy@Activeanchorfalse
10021 \Hy@RestoreLastskip
10022 }
10023 \Hy@WrapperDef\hyper@anchor#1{%
10024 \Hy@SaveLastskip
10025 \Hy@VerboseAnchor{#1}%
10026 \begingroup
10027 \let\protect=\string
10028 \hyper@chars
10029 \leavevmode
10030 \special{!aname #1}%

```

```

10031 \special{!direct <a name=%
10032 \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
10033 \endgroup
10034 \Hy@activeanchortrue
10035 \bgroup\anchor@spot\egroup
10036 \special{!direct </a>}%
10037 \Hy@activeanchorfalse
10038 \Hy@RestoreLastskip
10039 }
10040 \def\@Form[#1]{%
10041 \Hy@Message{Sorry, TeXpider does not yet support FORMs}%
10042 }
10043 \def\@endForm{}
10044 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
10045 \Hy@Message{Sorry, TeXpider does not yet support FORM gauges}%
10046 }
10047 \def\@TextField[#1]#2{% parameters, label
10048 \Hy@Message{Sorry, TeXpider does not yet support FORM text fields}%
10049 }
10050 \def\@CheckBox[#1]#2{% parameters, label
10051 \Hy@Message{Sorry, TeXpider does not yet support FORM checkboxes}%
10052 }
10053 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
10054 \Hy@Message{Sorry, TeXpider does not yet support FORM choice menus}%
10055 }
10056 \def\@PushButton[#1]#2{% parameters, label
10057 \Hy@Message{Sorry, TeXpider does not yet support FORM pushbuttons}%
10058 }
10059 \def\@Reset[#1]#2{%
10060 \Hy@Message{Sorry, TeXpider does not yet support FORMs}%
10061 }
10062 \def\@Submit[#1]#2{%
10063 \Hy@Message{Sorry, TeXpider does not yet support FORMs}%
10064 }
10065 </vtexhtml>
10066 <*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.

```

10067 \ifx\mediaheight\@undefined
10068 \else
10069 \ifx\mediaheight\relax
10070 \else
10071 \ifHy@setpagesize
10072 \providecommand*{\VTeXInitMediaSize}{%
10073 \ltx@ifundefined{stockwidth}{%
10074 \ifdim\paperheight>0pt %
10075 \setlength\mediaheight\paperheight
10076 \fi
10077 \ifdim\paperheight>0pt %
10078 \setlength\mediawidth\paperwidth
10079 \fi
10080 }{%
10081 \ifdim\stockheight>0pt %
10082 \setlength\mediaheight\stockheight
10083 \fi

```

```

10084      \ifdim\stockwidth>0pt %
10085      \setlength\mediawidth\stockwidth
10086      \fi
10087    }%
10088  }%
10089  \Hy@AtBeginDocument{\VTeXInitMediaSize}%
10090  \fi
10091  \Hy@DisableOption{setpagesize}%
10092  \fi
10093  \fi

```

Older versions of VTeX require xyz in lower case.

```

10094 \providecommand*\@pdfview{xyz}
10095 \providecommand*\@pdfborder{0 0 1}
10096 \providecommand*\@pdfborderstyle{}
10097 \let\CurrentBorderColor\@linkbordercolor
10098 \Hy@WrapperDef\hyper@anchor#1{%
10099   \Hy@SaveLastskip
10100   \Hy@VerboseAnchor{#1}%
10101   \begingroup
10102     \let\protect=\string
10103     \hyper@chars
10104     \special{!aname \HyperDestNameFilter{#1};\@pdfview}%
10105   \endgroup
10106   \Hy@activeanchortrue
10107   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
10108   \Hy@activeanchorfalse
10109   \Hy@RestoreLastskip
10110 }
10111 \Hy@WrapperDef\hyper@anchorstart#1{%
10112   \Hy@SaveLastskip
10113   \Hy@VerboseAnchor{#1}%
10114   \begingroup
10115     \hyper@chars
10116     \special{!aname \HyperDestNameFilter{#1};\@pdfview}%
10117   \endgroup
10118   \Hy@activeanchortrue
10119 }
10120 \def\hyper@anchorend{%
10121   \Hy@activeanchorfalse
10122   \Hy@RestoreLastskip
10123 }
10124 \def\@urltype{url}
10125 \def\Hy@undefinedname{UNDEFINED}
10126 \def\hyper@linkstart#1#2{%
10127   \Hy@VerboseLinkStart{#1}{#2}%
10128   \Hy@pstringdef\Hy@pstringURI{#2}%
10129   \expandafter\Hy@colorlink\csname @#1color\endcsname
10130   \ltx@ifundefined{@#1bordercolor}{%
10131     \let\CurrentBorderColor\relax
10132   }{%
10133     \edef\CurrentBorderColor{%
10134       \csname @#1bordercolor\endcsname
10135     }%
10136   }%
10137   \def\Hy@tempa{#1}%
10138   \ifx\Hy@tempa\@urltype
10139     \special{!%

```

```

10140   aref <u=/Type/Action/S/URI/URI(\Hy@pstringURI)%
10141     \ifHy@href@ismap
10142       /IsMap true%
10143     \fi
10144     \Hy@href@nextactionraw
10145   >,%
10146   a=<%
10147     \ifHy@pdfa /F 4\fi
10148     \Hy@setpdfborder
10149     \ifx\CurrentBorderColor\relax
10150     \else
10151       /C [\CurrentBorderColor]%
10152     \fi
10153   >%
10154 }%
10155 \else
10156 \protected@edef\Hy@testname{#2}%
10157 \ifx\Hy@testname\@empty
10158   \Hy@Warning{%
10159     Empty destination name,\MessageBreak
10160     using '\Hy@undefinedname'%
10161   }%
10162   \let\Hy@testname\Hy@undefinedname
10163 \fi
10164 \special{!%
10165   aref \expandafter\HyperDestNameFilter
10166     \expandafter{\Hy@testname};%
10167   a=<%
10168     \ifHy@pdfa /F 4\fi
10169     \Hy@setpdfborder
10170     \ifx\CurrentBorderColor\relax
10171     \else
10172       /C [\CurrentBorderColor]%
10173     \fi
10174   >%
10175 }%
10176 \fi
10177 }
10178 \def\hyper@linkend{%
10179 \special{!endaref}%
10180 \Hy@endcolorlink
10181 }
10182 \def\hyper@linkfile#1#2#3{%
10183 \leavevmode
10184 \def\Hy@pstringF{#2}%
10185 \Hy@CleanupFile\Hy@pstringF
10186 \special{!%
10187   aref <%
10188     \ifnum\Hy@VTeXversion>753 \ifHy@newwindow n\fi\fi
10189   f=\Hy@pstringF>#3;%
10190   a=<%
10191     \ifHy@pdfa /F 4\fi
10192     \Hy@setpdfborder
10193     \ifx\@filebordercolor\relax
10194     \else
10195       /C [\@filebordercolor]%
10196     \fi

```

```

10197 >%
10198 }%
10199 \Hy@colorlink\@filecolor#1\Hy@endcolorlink
10200 \special{!endaref}%
10201 }
10202 \def\hyper@linkurl#1#2{%
10203 \begingroup
10204 \Hy@pstringdef\Hy@pstringURI{#2}%
10205 \hyper@chars
10206 \leavevmode
10207 \special{!%
10208   aref <u=/Type/Action/S/URI/URI(\Hy@pstringURI)%
10209     \ifHy@href@ismap
10210       /IsMap true%
10211     \fi
10212     \Hy@href@nextactionraw
10213   >,%
10214   a=<%
10215     \ifHy@pdfa /F 4\fi
10216     \Hy@setpdfborder
10217     \ifx\@urlbordercolor\relax
10218     \else
10219       /C [\@urlbordercolor]%
10220     \fi
10221   >%
10222 }%
10223 \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
10224 \special{!endaref}%
10225 \endgroup
10226 }
10227 \def\hyper@link#1#2#3{%
10228 \Hy@VerboseLinkStart{#1}{#2}%
10229 \ltx@ifundefined{@#1bordercolor}{%
10230 \let\CurrentBorderColor\relax
10231 }{%
10232 \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
10233 }%
10234 \leavevmode
10235 \protected@edef\Hy@testname{#2}%
10236 \ifx\Hy@testname\@empty
10237 \Hy@Warning{%
10238   Empty destination name,\MessageBreak
10239   using '\Hy@undefinedname'%
10240 }%
10241 \let\Hy@testname\Hy@undefinedname
10242 \fi
10243 \special{!%
10244   aref \expandafter\HyperDestNameFilter
10245     \expandafter{\Hy@testname};%
10246   a=<%
10247     \ifHy@pdfa /F 4\fi
10248     \Hy@setpdfborder
10249     \ifx\CurrentBorderColor\relax
10250     \else
10251       /C [\CurrentBorderColor]%
10252     \fi
10253   >%

```



```

10254 }%
10255 \expandafter
10256 \Hy@colorlink\csname @#1color\endcsname#3\Hy@endcolorlink
10257 \special{!endaref}%
10258 }
10259 \def\hyper@image#1#2{%
10260 \hyper@linkurl{#2}{#1}%
10261 }
10262 \def\@hyper@launch run:#1\#2#3{%
10263 \Hy@pstringdef\Hy@pstringF{#1}%
10264 \Hy@pstringdef\Hy@pstringP{#3}%
10265 \leavevmode
10266 \special{!aref %
10267 <u=%
10268 /Type/Action%
10269 /S/Launch%
10270 /F(\Hy@pstringF)%
10271 \Hy@SetNewWindow
10272 \ifx\#3\%
10273 \else
10274 /Win<</F(\Hy@pstringF)/P(\Hy@pstringP)>>%
10275 \fi
10276 \Hy@href@nextactionraw
10277 >,%
10278 a=<%
10279 \ifHy@pdfa /F 4\fi
10280 \Hy@setpdfborder
10281 \ifx\@runbordercolor\relax
10282 \else
10283 /C[\@runbordercolor]%
10284 \fi
10285 >%
10286 }%
10287 \Hy@colorlink\@runcolor#2\Hy@endcolorlink
10288 \special{!endaref}%
10289 }
10290 \def\Acrobatmenu#1#2{%
10291 \Hy@Acrobatmenu{#1}{#2}{%
10292 \special{!%
10293 aref <u=/S /Named /N /#1>,%
10294 a=<%
10295 \ifHy@pdfa /F 4\fi
10296 \Hy@setpdfborder
10297 \ifx\@menubordercolor\relax
10298 \else
10299 /C[\@menubordercolor]%
10300 \fi
10301 >%
10302 }%
10303 \Hy@colorlink\@menucolor#2\Hy@endcolorlink
10304 \special{!endaref}%
10305 }%
10306 }

```

The following code (transition effects) is made by Alex Kostin.

The code below makes sense for  $\text{\texttt{V\TeX}}$  7.02 or later.

Please never use  $\text{\texttt{@\ifundefined{VTeXversion}\{..\}\{...\}}}$  globally.

```

10307 \ifnum\Hy@VTeXversion<702 %

```

```

10308 \else
10309   \def\hyper@pagetransition{%
10310     \ifx\@pdfpagetransition\relax
10311       \else
10312         \ifx\@pdfpagetransition\@empty

```

Standard incantation.

1. Does an old entry have to be deleted? 2. If 1=yes, how to delete?

```

10313   \else
10314     \hvtex@parse@trans\@pdfpagetransition
10315   \fi
10316 \fi
10317 }%

```

I have to write an “honest” parser to convert raw PDF code into V<sub>T</sub><sub>E</sub>X \special.  
(AVK)

Syntax of V<sub>T</sub><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:

```

10318 \def\hvtex@trans@effect@Blinds{\def\hvtex@trans@code{B}}%
10319 \def\hvtex@trans@effect@Box{\def\hvtex@trans@code{X}}%
10320 \def\hvtex@trans@effect@Dissolve{\def\hvtex@trans@code{D}}%
10321 \def\hvtex@trans@effect@Glitter{\def\hvtex@trans@code{G}}%
10322 \def\hvtex@trans@effect@Split{\def\hvtex@trans@code{S}}%
10323 \def\hvtex@trans@effect@Wipe{\def\hvtex@trans@code{W}}%
10324 \def\hvtex@trans@effect@R{\def\hvtex@trans@code{R}}%

```

Optional parameters:

```

10325 \def\hvtex@par@dimension{/Dm}%
10326 \def\hvtex@par@direction{/Di}%
10327 \def\hvtex@par@duration{/D}%
10328 \def\hvtex@par@motion{/M}%

```

Tokenizer:

```

10329 \def\hvtex@gettoken{%
10330   \expandafter\hvtex@gettoken@\hvtex@buffer\@nil
10331 }%

```

Notice that tokens in the input buffer must be space delimited.

```

10332 \def\hvtex@gettoken@#1 #2\@nil{%
10333   \edef\hvtex@token{#1}%
10334   \edef\hvtex@buffer{#2}%
10335 }%
10336 \def\hvtex@parse@trans#1{%

```

Initializing code:

```
10337 \let\hvtex@trans@code\@empty
10338 \let\hvtex@param@dimension\@empty
10339 \let\hvtex@param@direction\@empty
10340 \let\hvtex@param@duration\@empty
10341 \let\hvtex@param@motion\@empty
10342 \edef\hvtex@buffer{#1\space}%
```

First token is the PDF transition name without escape.

```
10343 \hvtex@gettoken
10344 \ifx\hvtex@token\@empty
```

Leading space(s)?

```
10345 \ifx\hvtex@buffer\@empty
```

The buffer is empty, nothing to do.

```
10346 \else
10347 \hvtex@gettoken
10348 \fi
10349 \fi
10350 \csname hvtex@trans@effect@\hvtex@token\endcsname
```

Now is time to parse optional parameters.

```
10351 \hvtex@trans@params
10352 }%
```

Reentrant macro to parse optional parameters.

```
10353 \def\hvtex@trans@params{%
10354 \ifx\hvtex@buffer\@empty
10355 \else
10356 \hvtex@gettoken
10357 \let\hvtex@trans@par\hvtex@token
10358 \ifx\hvtex@buffer\@empty
10359 \else
10360 \hvtex@gettoken
10361 \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.

```
10362 \let\hvtex@param@duration\hvtex@token
10363 \else \ifx\hvtex@trans@par\hvtex@par@motion
```

/M can be either /I or /O

```
10364 \expandafter\edef\expandafter\hvtex@param@motion
10365 \expandafter{\expandafter\@gobble\hvtex@token}%
10366 \else \ifx\hvtex@trans@par\hvtex@par@dimension
```

/Dm can be either /H or /V

```
10367 \expandafter\edef\expandafter\hvtex@param@dimension
10368 \expandafter{\expandafter\@gobble\hvtex@token}%
10369 \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).

```
10370 \let\hvtex@param@direction\hvtex@token
10371 \fi\fi\fi\fi
10372 \fi
10373 \fi
10374 \ifx\hvtex@buffer\@empty
10375 \let\next\hvtex@produce@trans
10376 \else
10377 \let\next\hvtex@trans@params
```

```

10378   \fi
10379   \next
10380 }%

```

Merge <transition\_effect> and issue the special when possible. Too lazy to validate optional parameters.

```

10381 \def\hvtex@produce@trans{%
10382   \let\vtex@trans@special\@empty
10383   \if S\hvtex@trans@code
10384     \edef\vtex@trans@special{\hvtex@trans@code
10385       \hvtex@param@dimension\hvtex@param@motion}%
10386   \else\if B\hvtex@trans@code
10387     \edef\vtex@trans@special{%
10388       \hvtex@trans@code\hvtex@param@dimension
10389     }%
10390   \else\if X\hvtex@trans@code
10391     \edef\vtex@trans@special{%
10392       \hvtex@trans@code\hvtex@param@motion
10393     }%
10394   \else\if W\hvtex@trans@code
10395     \edef\vtex@trans@special{%
10396       \hvtex@trans@code\hvtex@param@direction
10397     }%
10398   \else\if D\hvtex@trans@code
10399     \let\vtex@trans@special\hvtex@trans@code
10400   \else\if R\hvtex@trans@code
10401     \let\vtex@trans@special\hvtex@trans@code
10402   \else\if G\hvtex@trans@code
10403     \edef\vtex@trans@special{%
10404       \hvtex@trans@code\hvtex@param@direction
10405     }%
10406   \fi\fi\fi\fi\fi\fi
10407   \ifx\vtex@trans@special\@empty
10408     \else
10409       \ifx\hvtex@param@duration\@empty
10410         \else
10411           \setlength{\dimen@}{\hvtex@param@duration\p@}%

```

I'm not guilty of possible overflow.

```

10412   \multiply\dimen@\@m
10413   \edef\vtex@trans@special{%
10414     \vtex@trans@special,\strip@pt\dimen@
10415   }%
10416   \fi

```

And all the mess is just for this.

```

10417   \special{!trans \vtex@trans@special}%
10418   \fi
10419 }%

10420 \def\hyper@pageduration{%
10421   \ifx\@pdfpageduration\relax
10422   \else
10423     \ifx\@pdfpageduration\@empty
10424       \special{!duration-}%
10425     \else
10426       \special{!duration \@pdfpageduration}%
10427   \fi
10428 }%

```

```

10429 }%
10430 \def\hyper@pagehidden{%
10431   \ifHy@useHidKey
10432     \special{!hidden\ifHy@pdfpagehidden +\else -\fi}%
10433   \fi
10434 }%
10435 \g@addto@macro\Hy@EveryPageBoxHook{%
10436   \hyper@pagetransition
10437   \hyper@pageduration
10438   \hyper@pagehidden
10439 }%
10440 \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

```

10441 \ifx\@pdfproducer\relax
10442   \def\@pdfproducer{VTeX}%
10443   \ifnum\Hy@VTeXversion>\z@
10444     \count@\VTeXversion
10445     \divide\count@ 100 %
10446     \edef\@pdfproducer{\@pdfproducer\space v\the\count@}%
10447     \multiply\count@ -100 %
10448     \advance\count@\VTeXversion
10449     \edef\@pdfproducer{%
10450       \@pdfproducer
10451       .\ifnum\count@<10 0\fi\the\count@
10452       \ifx\VTeXOS\@undefined\else
10453         \ifnum\VTeXOS>0 %
10454           \ifnum\VTeXOS<6 %
10455             \space(%
10456             \ifcase\VTeXOS
10457               \or Windows\or Linux\or OS/2\or MacOS\or MacOS/X%
10458             \fi
10459             )%
10460           \fi
10461         \fi
10462       \fi
10463       ,\space
10464       \ifnum\OpMode=\@ne PDF\else PS\fi
10465       \space backend%
10466       \ifx\gexmode\@undefined\else
10467         \ifnum\gexmode>\z@\space with GeX\fi
10468       \fi
10469     }%
10470   \fi
10471 \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).

```

10472 \def\PDF@SetupDoc{%
10473   \ifx\@pdfpagescrop\@empty
10474   \else
10475     \special{!pdfinfo b=<\@pdfpagescrop>}%
10476   \fi
10477   \ifx\@pdfstartpage\@empty
10478   \else
10479     \ifx\@pdfstartview\@empty
10480     \else
10481       \special{!onopen Page\@pdfstartpage}%
10482     \fi
10483   \fi
10484   \special{!pdfinfo p=</\@pdfpagemode>}%
10485   \ifx\@baseurl\@empty
10486   \else
10487     \special{!pdfinfo u=<<</Base (\@baseurl)>>>}%
10488   \fi
10489   \special{!pdfinfo v=<<<%
10490     \ifHy@toolbar\else /HideToolbar true\fi
10491     \ifHy@menubar\else /HideMenubar true\fi
10492     \ifHy>windowui\else /HideWindowUI true\fi
10493     \ifHy@fitwindow /FitWindow true\fi
10494     \ifHy@centerwindow /CenterWindow true\fi
10495     \ifHy@displaydoctitle /DisplayDocTitle true\fi
10496     \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
10497     \Hy@UseNameKey{Direction}\@pdfdirection
10498     \Hy@UseNameKey{ViewArea}\@pdfviewarea
10499     \Hy@UseNameKey{ViewClip}\@pdfviewclip
10500     \Hy@UseNameKey{PrintArea}\@pdfprintarea
10501     \Hy@UseNameKey{PrintClip}\@pdfprintclip
10502     \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
10503     \Hy@UseNameKey{Duplex}\@pdfduplex
10504     \ifx\@pdfpicktraybypdfsize\@empty
10505     \else
10506       /PickTrayByPDFSize \@pdfpicktraybypdfsize
10507     \fi
10508     \ifx\@pdfprintpagerange\@empty
10509     \else
10510       /PrintPageRange[\@pdfprintpagerange]%
10511     \fi
10512     \ifx\@pdfnumcopies\@empty
10513     \else
10514       /NumCopies \@pdfnumcopies

```

```

10515 \fi
10516 >>>}%
10517 \ifx\@pdfpagelayout\@empty
10518 \else
10519 \special{!pdfinfo l=</\@pdfpagelayout\space>}%
10520 \fi
10521 }%
10522 \HyInfo@AddonUnsupportedtrue
10523 \def\PDF@FinishDoc{%
10524 \Hy@UseMaketitleInfos
10525 \HyInfo@TrappedUnsupported
10526 \special{!pdfinfo a=<\@pdfauthor>}%
10527 \special{!pdfinfo t=<\@pdftitle>}%
10528 \special{!pdfinfo s=<\@pdfsubject>}%
10529 \special{!pdfinfo c=<\@pdfcreator>}%
10530 \ifx\@pdfproducer\relax
10531 \else
10532 \special{!pdfinfo r=<\@pdfproducer>}%
10533 \fi
10534 \special{!pdfinfo k=<\@pdfkeywords>}%
10535 \Hy@DisableOption{pdfauthor}%
10536 \Hy@DisableOption{pdftitle}%
10537 \Hy@DisableOption{pdfsubject}%
10538 \Hy@DisableOption{pdfcreator}%
10539 \Hy@DisableOption{pdfcreationdate}%
10540 \Hy@DisableOption{pdfmoddate}%
10541 \Hy@DisableOption{pdfproducer}%
10542 \Hy@DisableOption{pdfkeywords}%
10543 \Hy@DisableOption{pdftrapped}%
10544 \Hy@DisableOption{pdfinfo}%
10545 }
10546 </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.

```

10547 <dviwindo>\def\literalps@out#1{\special{ps:#1}}%
10548 <package>\providecommand*{\Hy@DistillerDestFix}{%
10549 <*pdfmark | dviwindo>
10550 \def\Hy@DistillerDestFix{%
10551 \begingroup
10552 \let\x\literalps@out

```

The fix has to be passed unchanged through GeX, if VTeX in PostScript mode with GeX is used.

```

10553 \ifnum \@ifundefined{OpMode}{0}{%
10554 \ifundefined{gexmode}{0}{%
10555 \ifnum\gexmode>0 \OpMode\else 0\fi
10556 }}>1 %

```

```

10557 \def\x##1{%
10558 \immediate\special{!=##1}%
10559 }%
10560 \fi
10561 \x{%
10562 /product where{%
10563 pop %
10564 product(Distiller)search{%
10565 pop pop pop %
10566 version(.)search{%
10567 exch pop exch pop%
10568 (3011)eq{%
10569 gsave %
10570 newpath 0 0 moveto closepath clip%
10571 /Courier findfont 10 scalefont setfont %
10572 72 72 moveto(.)show %
10573 grestore%
10574 }if%
10575 }{pop}ifelse%
10576 }{pop}ifelse%
10577 }if%
10578 }%
10579 \endgroup
10580 }
10581 </pdfmark | dviwindo>

```

## 46.8 Direct pdfmark support

Drivers that load pdfmark.def have to provide the correct macro definitions of

\@pdfproducer	for document information
\literalps@out	PostScript output
\headerps@out	PostScript output that goes in the header area

and the correct definitions of the following PostScript procedures:

H.S	start of anchor, link or rect
#1 H.A	end of anchor, argument=baselineskip in pt
#1 H.L	end of link, argument=baselineskip in pt
H.R	end of rect
H.B	raw rect code

```

10582 <*pdfmark>
10583 \Hy@breaklinks@unsupported
10584 \def\HyPat@ObjRef{%
10585 \[{\^{}+}\}%
10586 }
10587 \Hy@WrapperDef\hyper@anchor#1{%
10588 \Hy@SaveLastskip
10589 \Hy@VerboseAnchor{#1}%
10590 \begingroup
10591 \pdfmark[\anchor@spot]{%
10592 pdfmark=/DEST,%
10593 linktype=anchor,%
10594 View=/\@pdfview \@pdfviewparams,%
10595 DestAnchor={#1}%
10596 }%
10597 \endgroup

```



```

10598 \Hy@RestoreLastskip
10599 }
10600 \ltx@ifundefined{hyper@anchorstart}{\endinput}
10601 \Hy@WrapperDef\hyper@anchorstart#1{%
10602 \Hy@SaveLastskip
10603 \Hy@VerboseAnchor{#1}%
10604 \literals@out{H.S}%
10605 \Hy@AllowHyphens
10606 \xdef\hyper@currentanchor{#1}%
10607 \Hy@activeanchortrue
10608 }
10609 \def\hyper@anchorend{%
10610 \literals@out{\strip@pt@and@otherjunk\baselineskip\space H.A}%
10611 \pdfmark{%
10612 pdfmark=/DEST,%
10613 linktype=anchor,%
10614 View=/\@pdfview \@pdfviewparams,%
10615 DestAnchor=\hyper@currentanchor,%
10616 }%
10617 \Hy@activeanchorfalse
10618 \Hy@RestoreLastskip
10619 }
10620 \def\hyper@linkstart#1#2{%
10621 \Hy@VerboseLinkStart{#1}{#2}%
10622 \ifHy@breaklinks
10623 \else
10624 \leavevmode
10625 \ifmmode
10626 \def\Hy@LinkMath{$}%
10627 \else
10628 \def\Hy@LinkMath{}%
10629 \fi
10630 \Hy@SaveSpaceFactor
10631 \hbox\bgroup
10632 \Hy@RestoreSpaceFactor
10633 \Hy@LinkMath
10634 \fi
10635 \expandafter\Hy@colorlink\csname @#1color\endcsname
10636 \literals@out{H.S}%
10637 \Hy@AllowHyphens
10638 \xdef\hyper@currentanchor{#2}%
10639 \gdef\hyper@currentlinktype{#1}%
10640 }
10641 \def\hyper@linkend{%
10642 \literals@out{\strip@pt@and@otherjunk\baselineskip\space H.L}%
10643 \ltx@ifundefined{@\hyper@currentlinktype bordercolor}{%
10644 \let\Hy@tempcolor\relax
10645 }{%
10646 \edef\Hy@tempcolor{%
10647 \csname @\hyper@currentlinktype bordercolor\endcsname
10648 }%
10649 }%
10650 \pdfmark{%
10651 pdfmark=/ANN,%
10652 linktype=link,%
10653 Subtype=/Link,%
10654 PDFAMlags=4,%

```

```

10655   Dest=\hyper@currentanchor,%
10656   AcroHighlight=\@pdfhighlight,%
10657   Border=\@pdfborder,%
10658   BorderStyle=\@pdfborderstyle,%
10659   Color=\Hy@tempcolor,%
10660   Raw=H.B%
10661 }%
10662 \Hy@endcolorlink
10663 \ifHy@breaklinks
10664 \else
10665   \Hy@LinkMath
10666   \Hy@SaveSpaceFactor
10667 \egroup
10668   \Hy@RestoreSpaceFactor
10669 \fi
10670 }

```

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.

```

10671 \begingroup
10672   \catcode'P=12 %
10673   \catcode'T=12 %
10674   \lowercase{\endgroup
10675   \gdef\rem@ptetc#1.#2PT#3!{#1\ifnum#2>\z@.#2\fi}%
10676 }
10677 \def\strip@pt@and@otherjunk#1{\expandafter\rem@ptetc\the#1!}

```

`\hyper@pagetransition`

```

10678 \def\hyper@pagetransition{%
10679   \ifx\@pdfpagetransition\relax
10680   \else
10681     \ifx\@pdfpagetransition\@empty
10682       % 1. Does an old entry have to be deleted?
10683       % 2. If 1=yes, how to delete?
10684     \else
10685       \pdfmark{%
10686         pdfmark=/PUT,%
10687         Raw={%
10688           \string{ThisPage\string}%
10689           <</Trans << /S /\@pdfpagetransition\space >> >>%
10690         }%
10691       }%
10692     \fi
10693   \fi
10694 }

```

`\hyper@pageduration`

```

10695 \def\hyper@pageduration{%
10696   \ifx\@pdfpageduration\relax
10697   \else
10698     \ifx\@pdfpageduration\@empty
10699       % 1. Does an old entry have to be deleted?
10700       % 2. If 1=yes, how to delete?
10701     \else
10702       \pdfmark{%
10703         pdfmark=/PUT,%

```

```

10704     Raw={%
10705         \string{ThisPage\string}%
10706         <</Dur \@pdfpageduration>>%
10707     }%
10708 }%
10709 \fi
10710 \fi
10711 }

```

\hyper@pagehidden

```

10712 \def\hyper@pagehidden{%
10713     \ifHy@useHidKey
10714         \pdfmark{%
10715             pdfmark=/PUT,%
10716             Raw={%
10717                 \string{ThisPage\string}%
10718                 <</Hid \ifHy@pdfpagehidden true\else false\fi>>%
10719             }%
10720         }%
10721     \fi
10722 }

10723 \g@addto@macro\Hy@EveryPageBoxHook{%
10724     \hyper@pagetransition
10725     \hyper@pageduration
10726     \hyper@pagehidden
10727 }

10728 \def\hyper@image#1#2{%
10729     \hyper@linkurl{#2}{#1}%
10730 }
10731 \def\Hy@undefinedname{UNDEFINED}
10732 \def\hyper@link#1#2#3{%
10733     \Hy@VerboseLinkStart{#1}{#2}%
10734     \ltx@ifundefined{@#1bordercolor}{%
10735         \let\Hy@tempcolor\relax
10736     }{%
10737         \edef\Hy@tempcolor{\csname @#1bordercolor\endcsname}%
10738     }%
10739     \begingroup
10740     \protected@edef\Hy@testname{#2}%
10741     \ifx\Hy@testname\@empty
10742         \Hy@Warning{%
10743             Empty destination name,\MessageBreak
10744             using '\Hy@undefinedname'%
10745         }%
10746         \let\Hy@testname\Hy@undefinedname
10747     \fi
10748     \pdfmark[{#3}]{%
10749         Color=\Hy@tempcolor,%
10750         linktype={#1},%
10751         AcroHighlight=\@pdfhighlight,%
10752         Border=\@pdfborder,%
10753         BorderStyle=\@pdfborderstyle,%
10754         pdfmark=/ANN,%
10755         Subtype=/Link,%
10756         PDFAFlags=4,%
10757         Dest=\Hy@testname

```

```

10758 }%
10759 \endgroup
10760 }
10761 \newtoks\pdf@docset
10762 \def\PDF@FinishDoc{%
10763   \Hy@UseMaketitleInfos
10764   \HyInfo@GenerateAddons
10765   \let\Hy@temp\@empty
10766   \ifx\@pdfcreationdate\@empty
10767   \else
10768     \def\Hy@temp{CreationDate=\@pdfcreationdate,}%
10769   \fi
10770   \ifx\@pdfmoddate\@empty
10771   \else
10772     \expandafter\def\expandafter\Hy@temp\expandafter{%
10773       \Hy@temp
10774       ModDate=\@pdfmoddate,%
10775     }%
10776   \fi
10777   \ifx\@pdfproducer\relax
10778   \else
10779     \expandafter\def\expandafter\Hy@temp\expandafter{%
10780       \Hy@temp
10781       Producer=\@pdfproducer,%
10782     }%
10783   \fi
10784   \expandafter
10785   \pdfmark\expandafter{%
10786     \Hy@temp
10787     pdfmark=/DOCINFO,%
10788     Title=\@pdftitle,%
10789     Subject=\@pdfsubject,%
10790     Creator=\@pdfcreator,%
10791     Author=\@pdfauthor,%
10792     Keywords=\@pdfkeywords,%
10793     Trapped=\@pdftrapped
10794   }%
10795   \ifx\HyInfo@Addons\@empty
10796   \else
10797     \pdfmark{%
10798       pdfmark=/DOCINFO,%
10799       Raw={\HyInfo@Addons}%
10800     }%
10801   \fi
10802   \Hy@DisableOption{pdfauthor}%
10803   \Hy@DisableOption{pdftitle}%
10804   \Hy@DisableOption{pdfsubject}%
10805   \Hy@DisableOption{pdfcreator}%
10806   \Hy@DisableOption{pdfcreationdate}%
10807   \Hy@DisableOption{pdfmoddate}%
10808   \Hy@DisableOption{pdfproducer}%
10809   \Hy@DisableOption{pdfkeywords}%
10810   \Hy@DisableOption{pdftrapped}%
10811   \Hy@DisableOption{pdfinfo}%
10812 }
10813 \def\PDF@SetupDoc{%
10814   \def\Hy@temp{}%

```

```

10815 \ifx\@pdfstartpage\@empty
10816 \else
10817 \ifx\@pdfstartview\@empty
10818 \else
10819 \edef\Hy@temp{%
10820   ,Page=\@pdfstartpage
10821   ,View=\@pdfstartview
10822 }%
10823 \fi
10824 \fi
10825 \edef\Hy@temp{%
10826 \noexpand\pdfmark{%
10827   pdfmark=/DOCVIEW,%
10828   PageMode=/\@pdfpagemode
10829   \Hy@temp
10830 }%
10831 }%
10832 \Hy@temp
10833 \ifx\@pdfpagescrop\@empty
10834 \else
10835 \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
10836 \fi
10837 \edef\Hy@temp{%
10838   \ifHy@toolbar\else /HideToolbar true\fi
10839   \ifHy@menubar\else /HideMenubar true\fi
10840   \ifHy>windowui\else /HideWindowUI true\fi
10841   \ifHy@fitwindow /FitWindow true\fi
10842   \ifHy@centerwindow /CenterWindow true\fi
10843   \ifHy@displaydoctitle /DisplayDocTitle true\fi
10844   \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
10845   \Hy@UseNameKey{Direction}\@pdfdirection
10846   \Hy@UseNameKey{ViewArea}\@pdfviewarea
10847   \Hy@UseNameKey{ViewClip}\@pdfviewclip
10848   \Hy@UseNameKey{PrintArea}\@pdfprintarea
10849   \Hy@UseNameKey{PrintClip}\@pdfprintclip
10850   \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
10851   \Hy@UseNameKey{Duplex}\@pdfduplex
10852   \ifx\@pdfpicktraybypdfsize\@empty
10853   \else
10854     /PickTrayByPDFSize \@pdfpicktraybypdfsize
10855   \fi
10856   \ifx\@pdfprintpagerange\@empty
10857   \else
10858     /PrintPageRange[\@pdfprintpagerange]%
10859   \fi
10860   \ifx\@pdfnumcopies\@empty
10861   \else
10862     /NumCopies \@pdfnumcopies
10863   \fi
10864 }%
10865 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
10866 \pdfmark{%
10867   pdfmark=/PUT,%
10868   Raw={%
10869     \string{Catalog\string}<<%
10870     \ifx\Hy@temp\@empty
10871     \else

```

```

10872      /ViewerPreferences<<\Hy@temp>>%
10873    \fi
10874    \Hy@UseNameKey{PageLayout}\@pdfpagelayout
10875    \ifx\@pdflang\@empty
10876    \else
10877      /Lang(\@pdflang)%
10878    \fi
10879    \ifx\@baseurl\@empty
10880    \else
10881      /URI<</Base(\Hy@pstringB)>>%
10882    \fi
10883    >>%
10884  }%
10885 }%
10886 }
10887 </pdfmark>
10888 <*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.

```

10889 \newif\ifHy@pdfmarkerror
10890 \def\pdfmark{\@ifnextchar[{\pdfmark@}{\pdfmark@[]}}
10891 \def\pdfmark@[#1]#2{%
10892   \Hy@pdfmarkerrorfalse
10893   \edef\@processme{\noexpand\pdf@toks={\the\pdf@defaulttoks}}%
10894   \@processme
10895   \let\pdf@type\relax
10896   \kvsetkeys{PDF}{#2}%
10897   \ifHy@pdfmarkerror
10898   \else
10899     \ifx\pdf@type\relax
10900       \Hy@WarningNoLine{no pdfmark type specified in #2!!}%
10901       \ifx\#1\%
10902       \else
10903         \pdf@rect{#1}%
10904       \fi
10905     \else
10906       \ifx\#1\%
10907       \literalps@out{%
10908         [\the\pdf@toks\space\pdf@type\space pdfmark%
10909       }%
10910     \else
10911       \ltx@ifundefined{@pdf@linktype color}{%
10912         \Hy@colorlink\@linkcolor
10913       }{%
10914         \expandafter\Hy@colorlink
10915           \csname @\pdf@linktype color\endcsname
10916       }%
10917       \pdf@rect{#1}%
10918       \literalps@out{%
10919         [\the\pdf@toks\space\pdf@type\space pdfmark%
10920       }%
10921       \Hy@endcolorlink
10922     \fi

```

```

10923   \fi
10924   \fi
10925 }

```

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}

```

```

10926 \newsavebox{\pdf@box}
10927 \providecommand*{\Hy@setouterhbox}{\sbox}
10928 \providecommand*{\Hy@breaklinksunhbox}{\unhbox}
10929 \def\Hy@DEST{/DEST}
10930 \def\pdf@rect#1{%
10931   \begingroup
10932   \chardef\x=1 %
10933   \def\Hy@temp{#1}%
10934   \ifx\Hy@temp\ltx@empty
10935     \chardef\x=0 %
10936   \else
10937     \def\y{\anchor@spot}%
10938     \ifx\Hy@temp\y
10939       \def\y{\relax}%
10940       \ifx\anchor@spot\y
10941         \chardef\x=0 %
10942       \fi
10943     \fi
10944   \fi
10945   \expandafter\endgroup
10946   \ifcase\x
10947     \literalps@out{H.S}%
10948     \literalps@out{H.R}%
10949   \else
10950     \leavevmode
10951     \Hy@SaveSpaceFactor
10952     \ifmmode
10953       \def\Hy@LinkMath{$}%
10954     \else
10955       \def\Hy@LinkMath{}%
10956     \fi
10957     \ifHy@breaklinks
10958       \Hy@setouterhbox\pdf@box{%
10959         \Hy@RestoreSpaceFactor
10960         \Hy@LinkMath
10961         \Hy@AllowHyphens#1%
10962         \Hy@LinkMath
10963         \Hy@SaveSpaceFactor
10964       }%
10965     \else
10966       \sbox\pdf@box{%
10967         \Hy@RestoreSpaceFactor
10968         \Hy@LinkMath

```

```

10969      #1%
10970      \Hy@LinkMath
10971      \Hy@SaveSpaceFactor
10972    }%
10973    \fi
10974    \dimen@ \ht \pdf@box
10975    \ifdim \dp \pdf@box = \z@
10976      \literalps@out{H.S}%
10977    \else
10978      \lower \dp \pdf@box \hbox{\literalps@out{H.S}}%
10979    \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...).

```

10980    \ifHy@breaklinks
10981      \expandafter \Hy@breaklinksunhbox
10982    \else
10983      \expandafter \box
10984    \fi
10985    \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

10986    \ifdim \dimen@ = \z@
10987      \literalps@out{H.R}%
10988    \else
10989      \raise \dimen@ \hbox{\literalps@out{H.R}}%
10990    \fi
10991    \Hy@RestoreSpaceFactor
10992  \fi
10993  \ifx \pdf@type \Hy@DEST
10994  \else
10995    \pdf@addtoksx{H.B}%
10996  \fi
10997 }

```

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.

```

10998 \newtoks \pdf@toks
10999 \newtoks \pdf@defaulttoks
11000 \pdf@defaulttoks={}%
11001 \def \pdf@addtoks #1 #2 {%
11002   \edef \@processme {\pdf@toks {\the \pdf@toks / #2 #1}}%
11003   \@processme
11004 }
11005 \def \pdf@addtoksx #1 {%
11006   \edef \@processme {\pdf@toks {\the \pdf@toks \space #1}}%
11007   \@processme
11008 }
11009 \def \PDFdefaults #1 {%
11010   \pdf@defaulttoks={#1}%
11011 }

```

This is the list of allowed keys. See the Acrobat manual for an explanation.

```

11012 % what is the type of pdfmark?

```



```

11013 \define@key{PDF}{pdfmark}{\def\pdf@type{#1}}
11014 % what is the link type?
11015 \define@key{PDF}{linktype}{\def\pdf@linktype{#1}}
11016 \def\pdf@linktype{link}
11017 % parameter is a stream of PDF
11018 \define@key{PDF}{Raw}{\pdf@addtoksx{#1}}
11019 % parameter is a name
11020 \define@key{PDF}{Action}{\pdf@addtoks{#1}{Action}}
11021 % parameter is a array
11022 \define@key{PDF}{Border}{%
11023   \edef\Hy@temp{#1}%
11024   \ifx\Hy@temp\@empty
11025     \else
11026       \pdf@addtoks{[#1]\Hy@BorderArrayPatch}{Border}% hash-ok
11027   \fi
11028 }
11029 \let\Hy@BorderArrayPatch\@empty
11030 % parameter is a dictionary
11031 \define@key{PDF}{BorderStyle}{%
11032   \edef\Hy@temp{#1}%
11033   \ifx\Hy@temp\@empty
11034     \else
11035       \pdf@addtoks{<<#1>>}{BS}%
11036   \fi
11037 }
11038 % parameter is a array
11039 \define@key{PDF}{Color}{%
11040   \ifx\relax#1\relax
11041     \else
11042       \pdf@addtoks{[#1]}{Color}% hash-ok
11043   \fi
11044 }
11045 % parameter is a string
11046 \define@key{PDF}{Contents}{\pdf@addtoks{(#1)}{Contents}}
11047 % parameter is a integer
11048 \define@key{PDF}{Count}{\pdf@addtoks{#1}{Count}}
11049 % parameter is a array
11050 \define@key{PDF}{CropBox}{\pdf@addtoks{[#1]}{CropBox}}% hash-ok
11051 % parameter is a string
11052 \define@key{PDF}{DOSFile}{\pdf@addtoks{(#1)}{DOSFile}}
11053 % parameter is a string or file
11054 \define@key{PDF}{DataSource}{\pdf@addtoks{(#1)}{DataSource}}
11055 % parameter is a destination
11056 \define@key{PDF}{Dest}{%
11057   \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
11058   \ifx\Hy@pstringDest\@empty
11059     \Hy@pdfmarkerrortrue
11060     \Hy@Warning{Destination with empty name ignored}%
11061   \else
11062     \pdf@addtoks{(\Hy@pstringDest) cvn}{Dest}%
11063   \fi
11064 }
11065 \define@key{PDF}{DestAnchor}{%
11066   \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
11067   \ifx\Hy@pstringDest\@empty
11068     \Hy@pdfmarkerrortrue
11069     \Hy@Warning{Destination with empty name ignored}%

```

```

11070 \else
11071 \pdf@addtoks{(\Hy@pstringDest) cvn}{Dest}%
11072 \fi
11073 }
11074 % parameter is a string
11075 \define@key{PDF}{Dir}{\pdf@addtoks{(#1)}{Dir}}
11076 % parameter is a string
11077 \define@key{PDF}{File}{\pdf@addtoks{(#1)}{File}}
11078 % parameter is a int
11079 \define@key{PDF}{Flags}{\pdf@addtoks{#1}{Flags}}
11080 \define@key{PDF}{PDFAFlags}{%
11081 \ifHy@pdfa
11082 \pdf@addtoks{#1}{F}%
11083 \fi
11084 }
11085 % parameter is a name
11086 \define@key{PDF}{AcroHighlight}{%
11087 \begingroup
11088 \edef\x{#1}%
11089 \expandafter\endgroup\ifx\x\@empty
11090 \else
11091 \pdf@addtoks{#1}{H}%
11092 \fi
11093 }
11094 % parameter is a string
11095 \define@key{PDF}{ID}{\pdf@addtoks{[#1]}{ID}}% hash-ok
11096 % parameter is a string
11097 \define@key{PDF}{MacFile}{\pdf@addtoks{(#1)}{MacFile}}
11098 % parameter is a string
11099 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
11100 % parameter is a string
11101 \define@key{PDF}{Op}{\pdf@addtoks{(#1)}{Op}}
11102 % parameter is a Boolean
11103 \define@key{PDF}{Open}{\pdf@addtoks{#1}{Open}}
11104 % parameter is a integer or name
11105 \define@key{PDF}{Page}{\pdf@addtoks{#1}{Page}}
11106 % parameter is a name
11107 \define@key{PDF}{PageMode}{\pdf@addtoks{#1}{PageMode}}
11108 % parameter is a string
11109 \define@key{PDF}{Params}{\pdf@addtoks{(#1)}{Params}}
11110 % parameter is a array
11111 \define@key{PDF}{Rect}{\pdf@addtoks{[#1]}{Rect}}% hash-ok
11112 % parameter is a integer
11113 \define@key{PDF}{SrcPg}{\pdf@addtoks{#1}{SrcPg}}
11114 % parameter is a name
11115 \define@key{PDF}{Subtype}{\pdf@addtoks{#1}{Subtype}}
11116 % parameter is a string
11117 \define@key{PDF}{Title}{\pdf@addtoks{(#1)}{Title}}
11118 % parameter is a string
11119 \define@key{PDF}{Unix}{\pdf@addtoks{(#1)}{Unix}}
11120 % parameter is a string
11121 \define@key{PDF}{UnixFile}{\pdf@addtoks{(#1)}{UnixFile}}
11122 % parameter is an array
11123 \define@key{PDF}{View}{\pdf@addtoks{[#1]}{View}}% hash-ok
11124 % parameter is a string
11125 \define@key{PDF}{WinFile}{\pdf@addtoks{(#1)}{WinFile}}

```

These are the keys used in the DOCINFO section.

```

11126 \define@key{PDF}{Author}{\pdf@addtoks{(#1)}{Author}}
11127 \define@key{PDF}{Creator}{\pdf@addtoks{(#1)}{Creator}}
11128 \define@key{PDF}{CreationDate}{\pdf@addtoks{(#1)}{CreationDate}}
11129 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
11130 \define@key{PDF}{Producer}{\pdf@addtoks{(#1)}{Producer}}
11131 \define@key{PDF}{Subject}{\pdf@addtoks{(#1)}{Subject}}
11132 \define@key{PDF}{Keywords}{\pdf@addtoks{(#1)}{Keywords}}
11133 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
11134 \define@key{PDF}{Base}{\pdf@addtoks{(#1)}{Base}}
11135 \define@key{PDF}{URI}{\pdf@addtoks{(#1)}{URI}}
11136 \define@key{PDF}{Trapped}{%
11137   \edef\Hy@temp{#1}%
11138   \ifx\Hy@temp\@empty
11139     \else
11140       \pdf@addtoks{/#1}{Trapped}%
11141     \fi
11142 }
11143
11144 \pdfmarkbase)
11145 (*pdfmark)
11146 \def\Acrobatmenu#1#2{%
11147   \Hy@Acrobatmenu{#1}{#2}{%
11148     \pdfmark[{#2}]{%
11149       linktype=menu,%
11150       pdfmark=/ANN,%
11151       AcroHighlight=\@pdfhighlight,%
11152       Border=\@pdfborder,%
11153       BorderStyle=\@pdfborderstyle,%
11154       Action={<< /Subtype /Named /N /#1 >>},%
11155       Subtype=/Link,%
11156       PDFAFlags=4%
11157     }%
11158   }%
11159 }

```

And now for some useful examples:

```

11160 \def\PDFNextPage{\@ifnextchar[{\PDFNextPage@}{\PDFNextPage@[]}}
11161 \def\PDFNextPage@[#1]#2{%
11162   \pdfmark[{#2}]{%
11163     #1,%
11164     Border=\@pdfborder,%
11165     BorderStyle=\@pdfborderstyle,%
11166     Color=.2 .1 .5,%
11167     pdfmark=/ANN,%
11168     Subtype=/Link,%
11169     PDFAFlags=4,%
11170     Page=/Next%
11171   }%
11172 }
11173 \def\PDFPreviousPage{%
11174   \@ifnextchar[{\PDFPreviousPage@}{\PDFPreviousPage@[]}%
11175 }
11176 \def\PDFPreviousPage@[#1]#2{%
11177   \pdfmark[{#2}]{%
11178     #1,%
11179     Border=\@pdfborder,%
11180     BorderStyle=\@pdfborderstyle,%
11181     Color=.4 .4 .1,%

```

```

11182 pdfmark=/ANN,%
11183 Subtype=/Link,%
11184 PDFAFlags=4,%
11185 Page=/Prev%
11186 }%
11187 }
11188 \def\PDFOpen#1{%
11189 \pdfmark{#1,pdfmark=/DOCVIEW}%
11190 }

```

This will only work if you use Distiller 2.1 or higher.

```

11191 \def\hyper@linkurl#1#2{%
11192 \begingroup
11193 \Hy@pstringdef\Hy@pstringURI{#2}%
11194 \hyper@chars
11195 \leavevmode
11196 \pdfmark[{#1}]{%
11197 pdfmark=/ANN,%
11198 linktype=url,%
11199 AcroHighlight=\@pdfhighlight,%
11200 Border=\@pdfborder,%
11201 BorderStyle=\@pdfborderstyle,%
11202 Color=\@urlbordercolor,%
11203 Action={<<%
11204 /Subtype/URI%
11205 /URI(\Hy@pstringURI)%
11206 \ifHy@href@ismap
11207 /IsMap true%
11208 \fi
11209 >>},%
11210 Subtype=/Link,%
11211 PDFAFlags=4%
11212 }%
11213 \endgroup
11214 }
11215 \def\hyper@linkfile#1#2#3{%
11216 \begingroup
11217 \def\Hy@pstringF{#2}%
11218 \Hy@CleanupFile\Hy@pstringF
11219 \Hy@pstringdef\Hy@pstringF\Hy@pstringF
11220 \Hy@pstringdef\Hy@pstringD{#3}%
11221 \Hy@MakeRemoteAction
11222 \leavevmode
11223 \pdfmark[{#1}]{%
11224 pdfmark=/ANN,%
11225 Subtype=/Link,%
11226 PDFAFlags=4,%
11227 AcroHighlight=\@pdfhighlight,%
11228 Border=\@pdfborder,%
11229 BorderStyle=\@pdfborderstyle,%
11230 linktype=file,%
11231 Color=\@filebordercolor,%
11232 Action={%
11233 <<%
11234 /S/GoToR%
11235 \Hy@SetNewWindow
11236 /F(\Hy@pstringF)%
11237 /D%

```

```

11238     \ifx\|#3\|%
11239     [\Hy@href@page\@pdfremotestartview]%
11240     \else
11241     (\Hy@pstringD)cvn%
11242     \fi
11243     \Hy@href@nextactionraw
11244     >>%
11245     }%
11246     }%
11247     \endgroup
11248 }
11249 \def\@hyper@launch run:#1\|#2#3{%
11250     \begingroup
11251     \Hy@pstringdef\Hy@pstringF{#1}%
11252     \Hy@pstringdef\Hy@pstringP{#3}%
11253     \leavevmode
11254     \pdfmark[{#2}]{%
11255         pdfmark=/ANN,%
11256         Subtype=/Link,%
11257         PDFAFlags=4,%
11258         AcroHighlight=\@pdfhighlight,%
11259         Border=\@pdfborder,%
11260         BorderStyle=\@pdfborderstyle,%
11261         linktype=run,%
11262         Color=\@runbordercolor,%
11263         Action={%
11264             <<%
11265             /S/Launch%
11266             \Hy@SetNewWindow
11267             /F(\Hy@pstringF)%
11268             \ifx\|#3\|%
11269             \else
11270             /Win<</P(\Hy@pstringP)/F(\Hy@pstringF)>>%
11271             \fi
11272             \Hy@href@nextactionraw
11273             >>%
11274             }%
11275             }%
11276         \endgroup
11277     }
11278 }</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.

```

11279 < *dvips>
11280 \providecommand*{\XR@ext}{pdf}
11281 \def\Hy@raisedlink{}
11282 \def\literalps@out#1{\special{ps:SDict begin #1 end}}%
11283 \def\headerps@out#1{\special{! #1}}%
11284 \input{pdfmark.def}%
11285 \ifx\@pdfproducer\relax

```

```

11286 \def\@pdfproducer{dvips + Distiller}%
11287 \fi
11288 \providecommand*\@pdfborder{0 0 1}
11289 \providecommand*\@pdfborderstyle{}
11290 \providecommand*\@pdfview{XYZ}
11291 \providecommand*\@pdfviewparams{ H.V}
11292 \def\Hy@BorderArrayPatch{BorderArrayPatch}

11293 \g@addto@macro\Hy@FirstPageHook{%
11294 \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.

```

11295 /DvipsToPDF{72.27 mul Resolution div} def%
11296 /PDFToDvips{72.27 div Resolution mul} def%
11297 /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.

```

11298 /BorderArrayPatch{%
11299 [exch{%
11300 dup dup type/integertype eq exch type/realtype eq or%
11301 {BPToDvips}if%
11302 }forall]%
11303 }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.

```

11304 /HyperBorder {1 PDFToDvips} def%
11305 /H.V {pdf@hoff pdf@voff null} def%
11306 /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

```

11307 /H.S {%
11308 currentpoint %
11309 HyperBorder add /pdf@lly exch def %
11310 dup DvipsToPDF 72 add /pdf@hoff exch def %
11311 HyperBorder sub /pdf@llx exch def%
11312 } def%

```

The calculation of upper left *y* is done without raising the point in T<sub>E</sub>X, by simply adding on the current \baselineskip to the current *y*. This is usually too much, so we remove a notional 2 points.

We have to see what the current baselineskip is, and convert it to the dvips coordinate system.

Argument: baselineskip in pt. The  $x$  and  $y$  coordinates of the current point, minus the baselineskip

```

11313 /H.L {%
11314 2 sub dup%
11315 /HyperBasePt exch def %
11316 PDFToDvips /HyperBaseDvips exch def %
11317 currentpoint %
11318 HyperBaseDvips sub /pdf@ury exch def%
11319 /pdf@urx exch def%
11320 } def%
11321 /H.A {%
11322 H.L %
11323 % | /pdf@voff| = the distance from the top of the page to a point
11324 % | \baselineskip| above the current point in PDF coordinates
11325 currentpoint exch pop %
11326 vsize 72 sub exch DvipsToPDF %
11327 HyperBasePt sub % baseline skip
11328 sub /pdf@voff exch def%
11329 } def%
11330 /H.R {%
11331 currentpoint %
11332 HyperBorder sub /pdf@ury exch def %
11333 HyperBorder add /pdf@urx exch def %
11334 % | /pdf@voff| = the distance from the top of the page to the current point, in
11335 % PDF coordinates
11336 currentpoint exch pop vsize 72 sub %
11337 exch DvipsToPDF sub /pdf@voff exch def%
11338 } def%
11339 }%
11340 }
11341 \AtBeginShipoutFirst{%
11342 \ifHy@setpagesize
11343 \begingroup
11344 \@ifundefined{stockwidth}{%
11345 \ifdim\paperwidth>\z@
11346 \ifdim\paperheight>\z@
11347 \special{papersize=\the\paperwidth,\the\paperheight}%
11348 \fi
11349 \fi
11350 }{%
11351 \ifdim\stockwidth>\z@
11352 \ifdim\stockheight>\z@
11353 \special{papersize=\the\stockwidth,\the\stockheight}%
11354 \fi
11355 \fi
11356 }%
11357 \endgroup
11358 \fi
11359 \Hy@DisableOption{setpagesize}%
11360 }
11361 \</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.

```

11362 <*vtexpdfmark>
11363 \providecommand*{\XR@ext}{pdf}
11364 \def\Hy@raisedlink{}
11365 \def\literalps@out#1{\special{pS:#1}}%
11366 \def\headerps@out#1{\immediate\special{pS:#1}}%
11367 \input{pdfmark.def}%
11368 \ifx\@pdfproducer\relax
11369 \ifnum\OpMode=\@ne
11370 \def\@pdfproducer{VTeX}%
11371 \else
11372 \def\@pdfproducer{VTeX + Distiller}%
11373 \fi
11374 \fi
11375 \providecommand*\@pdfborder{0 0 1}
11376 \providecommand*\@pdfborderstyle{}
11377 \providecommand*\@pdfview{XYZ}
11378 \providecommand*\@pdfviewparams{ H.V}
11379 \g@addto@macro\Hy@FirstPageHook{%
11380 \headerps@out{%
11381 /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.

```

11382 /HyperBorder {1} def%
11383 /H.V {pdf@hoff pdf@voff null} def%
11384 /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:  $\text{pdf@lly} = Y_c - \text{HyperBorder}$ ,  $\text{pdf@hoff} = X_c + 72$ ,  $\text{pdf@llx} = X_c - \text{HyperBorder}$

```

11385 /H.S {%
11386 currentpoint %
11387 HyperBorder sub%
11388 /pdf@lly exch def %
11389 dup 72 add /pdf@hoff exch def %
11390 HyperBorder sub%
11391 /pdf@llx exch def%
11392 } def%

```

The  $x$  and  $y$  coordinates of the current point, minus the `\baselineskip`:  $\text{pdf@ury} = Y_c + \text{HyperBasePt} + \text{HyperBorder}$ ,  $\text{pdf@urx} = X_c + \text{HyperBorder}$

```

11393 /H.L {%
11394 2 sub%
11395 /HyperBasePt exch def %
11396 currentpoint %
11397 HyperBasePt add HyperBorder add%
11398 /pdf@ury exch def %
11399 HyperBorder add%
11400 /pdf@urx exch def%
11401 } def%
11402 /H.A {%
11403 H.L %
11404 currentpoint exch pop %
11405 vsize 72 sub exch %
11406 HyperBasePt add add%
11407 /pdf@voff exch def%
11408 } def%

```



$\text{pdf@ury} = Y_c + \text{HyperBorder}$ ,  $\text{pdf@urx} = X_c + \text{HyperBorder}$

```

11409 /H.R. {%
11410   currentpoint %
11411   HyperBorder add%
11412 /pdf@ury exch def %
11413 HyperBorder add%
11414 /pdf@urx exch def %
11415 currentpoint exch pop vsize 72 sub add%
11416 /pdf@voff exch def%
11417 } def%
11418 }%
11419 }
11420 </vtxpdfmark>

```

## 46.11 Textures

```

11421 <*textures>
11422 \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.

```

11423 \begingroup
11424 \obeylines %
11425 \gdef\Hy@ps@CR{\noexpand
11426 }%
11427 \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`.

```

11428 \def\literalps@out#1{%
11429   \special{postscript 0 0 transform}%
11430   \special{rawpostscript itransform moveto\Hy@ps@CR #1}%
11431 }%
11432 %

```

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.

```

11433 \def\headerps@out#1{%
11434   \special{%
11435     prepostscript TeXdict begin\Hy@ps@CR
11436     #1\Hy@ps@CR
11437     end%

```

```

11438 }%
11439 }%
11440 %

```

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.

```

11441 \g@addto@macro\Hy@FirstPageHook{%
11442   \headerps@out{%
11443     /betterpdfmark {%
11444       systemdict begin %
11445         dup /BP eq%
11446         {cleartomark gsave nulldevice []}%
11447         {dup /EP eq%
11448           {cleartomark cleartomark grestore}%
11449           {cleartomark}%
11450         }ifelse%
11451       }ifelse %
11452     end%
11453   }def\Hy@ps@CR
11454   ___pdfmark___ not{/pdfmark /betterpdfmark load def}if%
11455 }% end of \headerps@out
11456 }% end of \AtBeginShipoutFirst
11457 %
11458 \input{pdfmark.def}%
11459 %
11460 \ifx\@pdfproducer\relax
11461   \def\@pdfproducer{Textures + Distiller}%
11462 \fi
11463 \providecommand*\@pdfborder{0 0 1}
11464 \providecommand*\@pdfborderstyle{}
11465 \providecommand*\@pdfview{XYZ}
11466 \providecommand*\@pdfviewparams{ H.V}
11467 %

```

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  $\TeX$ .

```

11468 \Hy@AtBeginDocument{%
11469   \headerps@out{%

```

Textures lives in normal points, I think. So conversion from one coordinate system to another involves doing nothing.

```

11470   /vsize {\Hy@pageheight} def%
11471   /DvipsToPDF {} def%
11472   /PDFToDvips {} def%
11473   /BPTToDvips {} def%
11474   /HyperBorder { 1 PDFToDvips } def\Hy@ps@CR
11475   /H.V {pdf@hoff pdf@voff null} def\Hy@ps@CR
11476   /H.B {/Rect[pdf@llx pdf@lly pdf@urx pdf@ury]} def\Hy@ps@CR
11477   /H.S {%
11478     currentpoint %
11479     HyperBorder add /pdf@lly exch def %
11480     dup DvipsToPDF 72 add /pdf@hoff exch def %
11481     HyperBorder sub /pdf@llx exch def%
11482   } def\Hy@ps@CR
11483   /H.L {%

```

```

11484     2 sub %
11485     PDFToDvips /HyperBase exch def %
11486     currentpoint %
11487     HyperBase sub /pdf@ury exch def%
11488     /pdf@urx exch def%
11489     } def\Hy@ps@CR
11490     /H.A {%
11491         H.L %
11492         currentpoint exch pop %
11493         vsize 72 sub exch DvipsToPDF %
11494         HyperBase sub % baseline skip
11495         sub /pdf@voff exch def%
11496     } def\Hy@ps@CR
11497     /H.R {%
11498         currentpoint %
11499         HyperBorder sub /pdf@ury exch def %
11500         HyperBorder add /pdf@urx exch def %
11501         currentpoint exch pop vsize 72 sub %
11502         exch DvipsToPDF sub /pdf@voff exch def%
11503     } def\Hy@ps@CR
11504 }%
11505 }

11506 \Hy@AtBeginDocument{%
11507   \ifHy@colorlinks
11508     \headerps@out{/PDFBorder{/Border [0 0 0]}def}%
11509   \fi
11510 }

```

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.

```

11511 \expandafter\let\expandafter\keepPDF@SetupDoc
11512 \csname PDF@SetupDoc\endcsname
11513 \def\PDF@SetupDoc{%
11514   \ifx\@baseurl\@empty
11515     \else
11516       \special{html:<base href="\@baseurl">}%
11517     \fi
11518   \keepPDF@SetupDoc
11519 }

11520 \Hy@WrapperDef\hyper@anchor#1{%
11521   \Hy@SaveLastskip
11522   \Hy@VerboseAnchor{#1}%
11523   \begingroup
11524     \let\protect=\string
11525     \special{html:<a name=%
11526       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
11527   \endgroup
11528   \Hy@activeanchortrue
11529   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
11530   \special{html:</a>}%
11531   \Hy@activeanchorfalse
11532   \Hy@RestoreLastskip
11533 }

11534 \Hy@WrapperDef\hyper@anchorstart#1{%
11535   \Hy@SaveLastskip
11536   \Hy@VerboseAnchor{#1}%
11537   \begingroup

```

```

11538 \hyper@chars
11539 \special{html:<a name=%
11540 \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
11541 \endgroup
11542 \Hy@activeanchortrue
11543 }
11544 \def\hyper@anchorend{%
11545 \special{html:</a>}%
11546 \Hy@activeanchorfalse
11547 \Hy@RestoreLastskip
11548 }
11549 \def\@urlltype{url}
11550 \def\hyper@linkstart#1#2{%
11551 \Hy@VerboseLinkStart{#1}{#2}%
11552 \expandafter\Hy@colorlink\csname @#1color\endcsname
11553 \def\Hy@tempa{#1}%
11554 \ifx\Hy@tempa\@urlltype
11555 \special{html:<a href=\hyper@quote#2\hyper@quote>}%
11556 \else
11557 \begingroup
11558 \hyper@chars
11559 \special{%
11560 html:<a href=%
11561 \hyper@quote\#\HyperDestNameFilter{#2}\hyper@quote>%
11562 }%
11563 \endgroup
11564 \fi
11565 }
11566 \def\hyper@linkend{%
11567 \special{html:</a>}%
11568 \Hy@endcolorlink
11569 }
11570 \def\hyper@linkfile#1#2#3{%
11571 \hyper@linkurl{#1}{%
11572 \Hy@linkfileprefix#2\ifx\\#3\\else\##3\fi
11573 }%
11574 }
11575 \def\hyper@linkurl#1#2{%
11576 \leavevmode
11577 \ifHy@raiselinks
11578 \Hy@SaveSpaceFactor
11579 \Hy@SaveSavedSpaceFactor
11580 \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
11581 \Hy@RestoreSavedSpaceFactor
11582 \@linkdim\dp\@tempboxa
11583 \lower\@linkdim\hbox{%
11584 \hyper@chars
11585 \special{html:<a href=\hyper@quote#2\hyper@quote>}%
11586 }%
11587 \Hy@colorlink\@urllcolor
11588 \Hy@RestoreSpaceFactor
11589 #1%
11590 \Hy@SaveSpaceFactor
11591 \@linkdim\ht\@tempboxa
11592 \advance\@linkdim by -6.5\p@
11593 \raise\@linkdim\hbox{\special{html:</a>}}%
11594 \Hy@endcolorlink

```

```

11595 \Hy@RestoreSpaceFactor
11596 \else
11597 \begingroup
11598 \hyper@chars
11599 \special{html:<a href=\hyper@quote#2\hyper@quote>}%
11600 \Hy@colorlink\@urlcolor#1%
11601 \special{html:</a>}%
11602 \Hy@endcolorlink
11603 \endgroup
11604 \fi
11605 }

```

Very poor implementation of \hyper@link without considering #1.

```

11606 \def\hyper@link#1#2#3{%
11607 \Hy@VerboseLinkStart{#1}{#2}%
11608 \hyper@linkurl{#3}{\# \Hy@HyperDestNameFilter{#2}}%
11609 }
11610 \def\hyper@image#1#2{%
11611 \begingroup
11612 \hyper@chars
11613 \special{html:<img src=\hyper@quote#1\hyper@quote>}%
11614 \endgroup
11615 }
11616 </textures>

```

## 46.12 dvipsone

```

11617 % \subsection{dvipsone driver}
11618 % Over-ride the default setup macro in pdfmark driver to use Y\&Y
11619 % |\special| commands.
11620 (*dvipsone)
11621 \providecommand*\XR@ext}{pdf}
11622 \def\Hy@raisedlink{}
11623 \providecommand*\@pdfborder{0 0 1}
11624 \providecommand*\@pdfborderstyle{}
11625 \def\literalps@out#1{\special{ps:#1}}%
11626 \def\headerps@out#1{\special{headertext=#1}}%
11627 \input{pdfmark.def}%
11628 \ifx\@pdfproducer\relax
11629 \def\@pdfproducer{dvipsone + Distiller}%
11630 \fi
11631 \HyInfo@AddonUnsupportedtrue
11632 \def\PDF@FinishDoc{%
11633 \Hy@UseMaketitleInfos
11634 \HyInfo@TrappedUnsupported
11635 \special{PDF: Keywords \@pdfkeywords}%
11636 \special{PDF: Title \@pdftitle}%
11637 \special{PDF: Creator \@pdfcreator}%
11638 \ifx\@pdfcreationdate\@empty
11639 \else
11640 \special{PDF: CreationDate \@pdfcreationdate}%
11641 \fi
11642 \ifx\@pdfmoddate\@empty
11643 \else
11644 \special{PDF: ModDate \@pdfmoddate}%
11645 \fi
11646 \special{PDF: Author \@pdfauthor}%
11647 \ifx\@pdfproducer\relax

```

```

11648 \else
11649 \special{PDF: Producer \@pdfproducer}%
11650 \fi
11651 \special{PDF: Subject \@pdfsubject}%
11652 \Hy@DisableOption{pdfauthor}%
11653 \Hy@DisableOption{pdftitle}%
11654 \Hy@DisableOption{pdfsubject}%
11655 \Hy@DisableOption{pdfcreator}%
11656 \Hy@DisableOption{pdfcreationdate}%
11657 \Hy@DisableOption{pdfmoddate}%
11658 \Hy@DisableOption{pdfproducer}%
11659 \Hy@DisableOption{pdfkeywords}%
11660 \Hy@DisableOption{pdftrapped}%
11661 \Hy@DisableOption{pdfinfo}%
11662 }
11663 \def\PDF@SetupDoc{%
11664 \def\Hy@temp{}%
11665 \ifx\@pdfstartpage\@empty
11666 \else
11667 \ifx\@pdfstartview\@empty
11668 \else
11669 \edef\Hy@temp{%
11670 ,Page=\@pdfstartpage
11671 ,View=\@pdfstartview
11672 }%
11673 \fi
11674 \fi
11675 \edef\Hy@temp{%
11676 \noexpand\pdfmark{%
11677 pdfmark=/DOCVIEW,%
11678 PageMode=/\@pdfpagemode
11679 \Hy@temp
11680 }%
11681 }%
11682 \Hy@temp
11683 \ifx\@pdfpagescrop\@empty
11684 \else
11685 \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
11686 \fi
11687 \edef\Hy@temp{%
11688 \ifHy@toolbar\else /HideToolbar true\fi
11689 \ifHy@menubar\else /HideMenubar true\fi
11690 \ifHy>windowui\else /HideWindowUI true\fi
11691 \ifHy@fitwindow /FitWindow true\fi
11692 \ifHy@centerwindow /CenterWindow true\fi
11693 \ifHy@displaydoctitle /DisplayDocTitle true\fi
11694 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
11695 \Hy@UseNameKey{Direction}\@pdfdirection
11696 \Hy@UseNameKey{ViewArea}\@pdfviewarea
11697 \Hy@UseNameKey{ViewClip}\@pdfviewclip
11698 \Hy@UseNameKey{PrintArea}\@pdfprintarea
11699 \Hy@UseNameKey{PrintClip}\@pdfprintclip
11700 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
11701 \Hy@UseNameKey{Duplex}\@pdfduplex
11702 \ifx\@pdfpicktraybypdfsize\@empty
11703 \else
11704 /PickTrayByPDFSize \@pdfpicktraybypdfsize

```

```

11705 \fi
11706 \ifx\@pdfprintpagerange\@empty
11707 \else
11708   /PrintPageRange[\@pdfprintpagerange]%
11709 \fi
11710 \ifx\@pdfnumcopies\@empty
11711 \else
11712   /NumCopies \@pdfnumcopies
11713 \fi
11714 }%
11715 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
11716 \pdfmark{%
11717   pdfmark=/PUT,%
11718   Raw={%
11719     \string{Catalog\string}<<%
11720     \ifx\Hy@temp\@empty
11721     \else
11722       /ViewerPreferences<<\Hy@temp>>%
11723     \fi
11724     \Hy@UseNameKey{PageLayout}\@pdfpagelayout
11725     \ifx\@pdflang\@empty
11726     \else
11727       /Lang(\@pdflang)%
11728     \fi
11729     \ifx\@baseurl\@empty
11730     \else
11731       /URI<</Base(\Hy@pstringB)>>%
11732     \fi
11733     >>%
11734   }%
11735 }%
11736 }
11737 \providecommand*\@pdfview{XYZ}
11738 \providecommand*\@pdfviewparams{ %
11739   gsave revscl currentpoint grestore %
11740   72 add exch pop null exch null%
11741 }
11742 \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  $\TeX$ .

```

11743 \g@addto@macro\Hy@FirstPageHook{%
11744   \headerps@out{%

```

dvipsone lives in scaled points; does this mean 65536 or 65781?

```

11745   /DvipsToPDF { 65781 div } def%
11746   /PDFToDvips { 65781 mul } def%
11747   /BPToDvips{65781 mul}def%
11748   /HyperBorder { 1 PDFToDvips } def%
11749   /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.

```

11750   /BorderArrayPatch{%
11751     [exch{%

```

```

11752      dup dup type/integertype eq exch type/realtype eq or%
11753      {BPToDvips}if%
11754    }forall}%
11755  }def%
11756  /H.S {%
11757    currentpoint %
11758    HyperBorder add /pdf@lly exch def %
11759    dup DvipsToPDF 72 add /pdf@hoff exch def %
11760    HyperBorder sub /pdf@llx exch def%
11761  } def%
11762  /H.L {%
11763    2 sub %
11764    PDFToDvips /HyperBase exch def %
11765    currentpoint %
11766    HyperBase sub /pdf@ury exch def%
11767    /pdf@urx exch def%
11768  } def%
11769  /H.A {%
11770    H.L %
11771    currentpoint exch pop %
11772    HyperBase sub % baseline skip
11773    DvipsToPDF /pdf@voff exch def%
11774  } def%
11775  /H.R {%
11776    currentpoint %
11777    HyperBorder sub /pdf@ury exch def %
11778    HyperBorder add /pdf@urx exch def %
11779    currentpoint exch pop DvipsToPDF /pdf@voff exch def%
11780  } def%
11781  }%
11782 }
11783 </dvipsone>

```

## 46.13 TeX4ht

```

11784 <*tex4ht>
11785 \providecommand*{\XR@ext}{html}
11786 \def\Hy@raisedlink{}
11787 \ifpackageloaded{tex4ht}{%
11788   \Hy@InfoNoLine{tex4ht is already loaded}%
11789 }{%
11790   \RequirePackage[hTeX4ht]{tex4ht}%
11791 }
11792 \hyperlinkfileprefix{}
11793 \def\PDF@FinishDoc{}
11794 \def\PDF@SetupDoc{%
11795   \ifx\@baseurl\@empty
11796   \else
11797     \special{t4ht=<base href="\@baseurl">}%
11798   \fi
11799 }
11800 \Hy@WrapperDef\hyper@anchor#1{%
11801   \Hy@SaveLastskip
11802   \Hy@VerboseAnchor{#1}%
11803   \begingroup
11804     \let\protect=\string
11805     \special{t4ht=<a name=%
11806       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%

```



```

11807 \endgroup
11808 \Hy@activeanchortrue
11809 \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
11810 \special{t4ht=</a>}%
11811 \Hy@activeanchorfalse
11812 \Hy@RestoreLastskip
11813 }
11814 \Hy@WrapperDef\hyper@anchorstart#1{%
11815 \Hy@SaveLastskip
11816 \Hy@VerboseAnchor{#1}%
11817 \begingroup
11818 \hyper@chars\special{t4ht=<a name=%
11819 \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
11820 \endgroup
11821 \Hy@activeanchortrue
11822 }
11823 \def\hyper@anchorend{%
11824 \special{t4ht=</a>}%
11825 \Hy@activeanchorfalse
11826 \Hy@RestoreLastskip
11827 }
11828 \def\@urlltype{url}
11829 \def\hyper@linkstart#1#2{%
11830 \Hy@VerboseLinkStart{#1}{#2}%
11831 \expandafter\Hy@colorlink\csname @#1color\endcsname
11832 \def\Hy@tempa{#1}%
11833 \ifx\Hy@tempa\@urlltype
11834 \special{t4ht=<a href=\hyper@quote#2\hyper@quote>}%
11835 \else
11836 \begingroup
11837 \hyper@chars
11838 \special{t4ht=<a href=%
11839 \hyper@quote\#\HyperDestNameFilter{#2}\hyper@quote>}%
11840 \endgroup
11841 \fi
11842 }
11843 \def\hyper@linkend{%
11844 \special{t4ht=</a>}%
11845 \Hy@endcolorlink
11846 }
11847 \def\hyper@linkfile#1#2#3{%
11848 \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\else\##3\fi}%
11849 }
11850 \def\hyper@linkurl#1#2{%
11851 \leavevmode
11852 \ifHy@raiselinks
11853 \Hy@SaveSpaceFactor
11854 \Hy@SaveSavedSpaceFactor
11855 \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
11856 \Hy@RestoreSavedSpaceFactor
11857 \@linkdim\dp\@tempboxa
11858 \lower\@linkdim\hbox{%
11859 \begingroup
11860 \hyper@chars
11861 \special{%
11862 t4ht=<a href=\hyper@quote#2\hyper@quote>%
11863 }%

```

```

11864 \endgroup
11865 }%
11866 \Hy@colorlink\@urlcolor
11867 \Hy@RestoreSpaceFactor
11868 #1%
11869 \Hy@SaveSpaceFactor
11870 \Hy@endcolorlink
11871 \@linkdim\ht\@tempboxa
11872 \advance\@linkdim by -6.5\p@
11873 \raise\@linkdim\hbox{\special{t4ht=</a>}}%
11874 \Hy@RestoreSpaceFactor
11875 \else
11876 \begingroup
11877 \hyper@chars
11878 \special{t4ht=<a href=\hyper@quote#2\hyper@quote>}%
11879 \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
11880 \special{t4ht=</a>}%
11881 \endgroup
11882 \fi
11883 }

```

Poor implementation of \hyper@link without considering #1.

```

11884 \def\hyper@link#1#2#3{%
11885 \Hy@VerboseLinkStart{#1}{#2}%
11886 \hyper@linkurl{#3}{\#\HyperDestNameFilter{#2}}%
11887 }
11888 \def\hyper@image#1#2{%
11889 \begingroup
11890 \hyper@chars
11891 \special{t4ht=<img src=\hyper@quote#1\hyper@quote>}%
11892 \endgroup
11893 }
11894 \let\autoref\ref
11895 \ifx \rEfLiNK \UnDef
11896 \def\rEfLiNK #1#2{#2}%
11897 \fi
11898 \def\backref#1{}

```

Fix for tex4ht.

```

11899 \AtBeginDocument{%
11900 \expandafter\let\expandafter\Hy@OrgMakeLabel\csname Make:Label\endcsname
11901 \expandafter\def\csname Make:Label\endcsname#1#2{%
11902 \ifhmode
11903 \Hy@SaveSpaceFactor
11904 \else
11905 \global\Hy@SavedSpaceFactor=1000 %
11906 \fi
11907 \Hy@OrgMakeLabel{#1}{%
11908 \Hy@RestoreSpaceFactor
11909 #2%
11910 \Hy@SaveSpaceFactor
11911 }%
11912 \Hy@RestoreSpaceFactor
11913 }%
11914 }
11915 </tex4ht>
11916 <*tex4htcfg>
11917 \IfFileExists{\jobname.cfg}{\endinput}{}
11918 \Preamble{html}

```

```

11919 \begin{document}%
11920 \EndPreamble
11921 \def\TeX{\TeX}
11922 \def\OMEGA{\Omega}
11923 \def\LaTeX{\LaTeX}
11924 \def\LaTeXe{\LaTeX2e}
11925 \def\TeX{e-\TeX}
11926 \def\MF{Metafont}
11927 \def\MP{MetaPost}
11928 \</tex4htcfg>

```

## 47 Driver-specific form support

### 47.1 pdfmarks

```

11929 \<*pdfmark>
11930 \long\def\@Form[#1]{%
11931 \g@addto@macro\Hy@FirstPageHook{%
11932 \headerps@out{%
11933 [%
11934 /_objdef{pdfDocEncoding}%
11935 /type/dict%
11936 /OBJ pdfmark%
11937 [%
11938 {pdfDocEncoding}%
11939 <<%
11940 /Type/Encoding%
11941 /Differences[%
11942 24/breve/caron/circumflex/dotaccent/hungarumlaut/ogonek/ring%
11943 /tilde %
11944 39/quotesingle %
11945 96/grave %
11946 128/bullet/dagger/daggerdbl/ellipsis/emdash/endash/florin%
11947 /fraction/guilsinglleft/guilsinglright/minus/perthousand%
11948 /quotedblbase/quotedblleft/quotedblright/quoteleft%
11949 /quoteright/quotesinglbase/trademark/fi/fl/Lslash/OE/Scaron%
11950 /Ydieresis/Zcaron/dotlessi/lslash/oe/scaron/zcaron %
11951 164/currency %
11952 166/brokenbar %
11953 168/dieresis/copyright/ordfeminine %
11954 172/logicalnot/.notdef/registered/macron/degree/plusminus%
11955 /twosuperior/threesuperior/acute/mu %
11956 183/periodcentered/cedilla/onesuperior/ordmasculine %
11957 188/onequarter/onehalf/threequarters %
11958 192/Agrave/Aacute/Acircumflex/Atilde/Adieresis/Aring/AE%
11959 /Ccedilla/Egrave/Eacute/Ecircumflex/Edieresis/Igrave%
11960 /Iacute/Icircumflex/Idieresis/Eth/Ntilde/Ograve/Oacute%
11961 /Ocircumflex/Otilde/Odieresis/multiply/Oslash/Ugrave%
11962 /Uacute/Ucircumflex/Udieresis/Yacute/Thorn/germandbls%
11963 /agrave/aacute/acircumflex/atilde/adieresis/aring/ae%
11964 /ccedilla/egrave/eacute/ecircumflex/edieresis/igrave%
11965 /iacute/icircumflex/idieresis/eth/ntilde/ograde/oacute%
11966 /ocircumflex/otilde/odieresis/divide/oslash/ugrave/uacute%
11967 /ucircumflex/udieresis/yacute/thorn/ydieresis%
11968 ]%
11969 >>%
11970 /PUT pdfmark%
11971 [%

```

```

11972  /__objdef{ZaDb}%
11973  /type/dict%
11974  /OBJ pdfmark%
11975  [%
11976   {ZaDb}%
11977   <<%
11978    /Type/Font%
11979    /Subtype/Type1%
11980    /Name/ZaDb%
11981    /BaseFont/ZapfDingbats%
11982   >>%
11983  /PUT pdfmark%
11984  [%
11985   /__objdef{Helv}%
11986   /type/dict%
11987   /OBJ pdfmark%
11988   [%
11989    {Helv}%
11990    <<%
11991     /Type/Font%
11992     /Subtype/Type1%
11993     /Name/Helv%
11994     /BaseFont/Helvetica%
11995     /Encoding{pdfDocEncoding}%
11996    >>%
11997   /PUT pdfmark%
11998   [%
11999   /__objdef{aform}%
12000   /type/dict%
12001   /OBJ pdfmark%
12002   [%
12003   /__objdef{afields}%
12004   /type/array%
12005   /OBJ pdfmark%
12006   {%
12007   [%
12008    /BBox[0 0 100 100]%
12009    /__objdef{Check}%
12010   /BP pdfmark %
12011   1 0 0 setrgbcolor%
12012   /ZapfDingbats 80 selectfont %
12013   20 20 moveto%
12014   (4)show%
12015   [/EP pdfmark%
12016   [%
12017    /BBox[0 0 100 100]%
12018    /__objdef{Cross}%
12019   /BP pdfmark %
12020   1 0 0 setrgbcolor%
12021   /ZapfDingbats 80 selectfont %
12022   20 20 moveto%
12023   (8)show%
12024   [/EP pdfmark%
12025   [%
12026    /BBox[0 0 250 100]%
12027    /__objdef{Submit}%
12028   /BP pdfmark %

```

```

12029 0.6 setgray %
12030 0 0 250 100 rectfill %
12031 1 setgray %
12032 2 2 moveto %
12033 2 98 lineto %
12034 248 98 lineto %
12035 246 96 lineto %
12036 4 96 lineto %
12037 4 4 lineto %
12038 fill %
12039 0.34 setgray %
12040 248 98 moveto %
12041 248 2 lineto %
12042 2 2 lineto %
12043 4 4 lineto %
12044 246 4 lineto %
12045 246 96 lineto %
12046 fill%
12047 /Helvetica 76 selectfont %
12048 0 setgray %
12049 8 22.5 moveto%
12050 (Submit)show%
12051 [/EP pdfmark%
12052 [%
12053 /BBox[0 0 250 100]%
12054 /_objdef{SubmitP}%
12055 /BP pdfmark %
12056 0.6 setgray %
12057 0 0 250 100 rectfill %
12058 0.34 setgray %
12059 2 2 moveto %
12060 2 98 lineto %
12061 248 98 lineto %
12062 246 96 lineto %
12063 4 96 lineto %
12064 4 4 lineto %
12065 fill %
12066 1 setgray %
12067 248 98 moveto %
12068 248 2 lineto %
12069 2 2 lineto %
12070 4 4 lineto %
12071 246 4 lineto %
12072 246 96 lineto %
12073 fill%
12074 /Helvetica 76 selectfont %
12075 0 setgray %
12076 10 20.5 moveto%
12077 (Submit)show%
12078 [/EP pdfmark%
12079 } ?pdfmark%
12080 [%
12081 {aform}%
12082 <<%
12083 /Fields{afields}%
12084 /DR<<%
12085 /Font<<%

```

```

12086      /ZaDb{ZaDb}%
12087      /Helv{Helv}%
12088      >>%
12089  >>%
12090  /DA(/Helv 10 Tf 0 g)%
12091  /CO{corder}%
12092  \ifHy@pdfa
12093  \else
12094    \ifHyField@NeedAppearances
12095      /NeedAppearances true%
12096    \fi
12097  \fi
12098  >>%
12099  /PUT pdfmark%
12100 [%
12101 {Catalog}%
12102 <<%
12103   /AcroForm{aform}%
12104 >>%
12105 /PUT pdfmark%
12106 [%
12107  /__objdef{corder}%
12108  /type/array%
12109 /OBJ pdfmark% dps
12110 }]%
12111 \kvsetkeys{Form}{#1}%
12112 }
12113 \def\@endForm{}
12114 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
12115 \Hy@Message{Sorry, pdfmark drivers do not support FORM gauges}%
12116 }
12117 \def\@TextField[#1]#2{% parameters, label
12118 \def\Fld@name{#2}%
12119 \def\Fld@default{}%
12120 \let\Fld@value\@empty
12121 \def\Fld@width{\DefaultWidthofText}%
12122 \def\Fld@height{%
12123 \ifFld@multiline
12124   \DefaultHeightofTextMultiline
12125 \else
12126   \DefaultHeightofText
12127 \fi
12128 }%
12129 \begingroup
12130 \expandafter\HyField@SetKeys\expandafter{%
12131 \DefaultOptionsofText,#1%
12132 }%
12133 \HyField@FlagsText
12134 \ifFld@hidden\def\Fld@width{1sp}\fi
12135 \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
12136 \LayoutTextField{#2}{%
12137 \Hy@escapeform\PDFForm@Text
12138 \pdfmark[\MakeTextField{\Fld@width}{\Fld@height}]{%
12139 pdfmark=/ANN,Raw={\PDFForm@Text}%
12140 }%
12141 }%
12142 \endgroup

```

```

12143 }
12144 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
12145   \def\Fld@name{#2}%
12146   \let\Fld@default\relax
12147   \let\Fld@value\relax
12148   \def\Fld@width{\DefaultWidthofChoiceMenu}%
12149   \def\Fld@height{\DefaultHeightofChoiceMenu}%
12150   \begingroup
12151     \Fld@menulength=0 %
12152     \@tempdima\z@
12153     \@for\@curropt:=#3\do{%
12154       \expandafter\Fld@checkequals\@curropt==\%
12155       \Hy@StepCount\Fld@menulength
12156       \settowidth{\@tempdimb}{\@currDisplay}%
12157       \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
12158     }%
12159     \advance\@tempdima by 15\p@
12160     \begingroup
12161       \HyField@SetKeys{#1}%
12162     \edef\x{\endgroup
12163       \noexpand\expandafter
12164       \noexpand\HyField@SetKeys
12165       \noexpand\expandafter{%
12166         \expandafter\noexpand\csname DefaultOptionsof%
12167           \ifFld@radio
12168             Radio%
12169           \else
12170             \ifFld@combo
12171               \ifFld@popdown
12172                 PopdownBox%
12173               \else
12174                 ComboBox%
12175             \fi
12176           \else
12177             ListBox%
12178           \fi
12179         \fi
12180       \endcsname
12181     }%
12182   }\x
12183   \HyField@SetKeys{#1}%
12184   \ifFld@hidden\def\Fld@width{1sp}\fi
12185   \ifx\Fld@value\relax
12186     \let\Fld@value\Fld@default
12187   \fi
12188   \LayoutChoiceField{#2}{%
12189     \ifFld@radio
12190       \HyField@FlagsRadioButton
12191       \@@Radio{#3}%
12192     \else
12193       \begingroup
12194       \HyField@FlagsChoice
12195       \ifdim\Fld@width<\@tempdima
12196         \ifdim\@tempdima<1cm\@tempdima1cm\fi
12197       \edef\Fld@width{\the\@tempdima}%
12198       \fi
12199       \ifFld@combo

```

```

12200         \else
12201         \@tempdima=\the\Fld@menulength\Fld@charsize
12202         \advance\@tempdima by \Fld@borderwidth bp %
12203         \advance\@tempdima by \Fld@borderwidth bp %
12204         \edef\Fld@height{\the\@tempdima}%
12205         \fi
12206         \@@ListBox{#3}%
12207     \endgroup
12208 \fi
12209 }%
12210 \endgroup
12211 }
12212 \def\@@Radio#1{%
12213     \Fld@listcount=0 %
12214     \EdefEscapeName\Fld@default{\Fld@default}%
12215     \@for\@curropt:=#1\do{%
12216         \expandafter\Fld@checkequals\@curropt==\%
12217         \EdefEscapeName\@currValue{\@currValue}%
12218         \Hy@StepCount\Fld@listcount
12219         \@currDisplay\space
12220         \Hy@escapeform\PDFForm@Radio
12221         \pdfmark[\MakeRadioField{\Fld@width}{\Fld@height}]{%
12222             pdfmark=/ANN,%
12223             Raw={%
12224                 \PDFForm@Radio /AP <</N <</\@currValue\space {Check}>> >>%
12225             }%
12226         } % deliberate space between radio buttons
12227     }%
12228 }
12229 \newcount\Fld@listcount
12230 \def\@@ListBox#1{%
12231     \HyField@PDFChoices{#1}%
12232     \Hy@escapeform\PDFForm@List
12233     \pdfmark[\MakeChoiceField{\Fld@width}{\Fld@height}]{%
12234         pdfmark=/ANN,Raw={\PDFForm@List}%
12235     }%
12236 }
12237 \def\@PushButton[#1]#2{% parameters, label
12238     \def\Fld@name{#2}%
12239     \begingroup
12240     \expandafter\HyField@SetKeys\expandafter{%
12241         \DefaultOptionsofPushButton,#1%
12242     }%
12243     \ifHy@pdfa
12244         \Hy@Error{%
12245             PDF/A: Push button with JavaScript is prohibited%
12246         }\@ehc
12247         \LayoutPushButtonField{%
12248             \leavevmode
12249             \MakeButtonField{#2}%
12250         }%
12251     \else
12252         \HyField@FlagsPushButton
12253         \ifFld@hidden\def\Fld@width{1sp}\fi
12254         \LayoutPushButtonField{%
12255             \leavevmode
12256             \Hy@escapeform\PDFForm@Push

```



```

12257     \pdfmark[\MakeButtonField{#2}]{%
12258     pdfmark=/ANN,Raw={\PDFForm@Push}%
12259     }%
12260 }%
12261 \fi
12262 \endgroup
12263 }
12264 \def\@Submit[#1]#2{%
12265 \def\Fld@width{\DefaultWidthofSubmit}%
12266 \def\Fld@height{\DefaultHeightofSubmit}%
12267 \begingroup
12268 \expandafter\HyField@SetKeys\expandafter{%
12269 \DefaultOptionsofSubmit,#1%
12270 }%
12271 \HyField@FlagsPushButton
12272 \HyField@FlagsSubmit
12273 \ifFld@hidden\def\Fld@width{1sp}\fi
12274 \Hy@escapeform\PDFForm@Submit
12275 \pdfmark[\MakeButtonField{#2}]{%
12276 pdfmark=/ANN,%
12277 Raw={\PDFForm@Submit /AP << /N {Submit} /D {SubmitP} >>}%
12278 }%
12279 \endgroup
12280 }
12281 \def\@Reset[#1]#2{%
12282 \def\Fld@width{\DefaultWidthofReset}%
12283 \def\Fld@height{\DefaultHeightofReset}%
12284 \begingroup
12285 \expandafter\HyField@SetKeys\expandafter{%
12286 \DefaultOptionsofReset,#1%
12287 }%
12288 \leavevmode
12289 \ifHy@pdfa
12290 \Hy@Error{%
12291 PDF/A: Reset action is prohibited%
12292 }\@ehc
12293 \MakeButtonField{#2}%
12294 \else
12295 \HyField@FlagsPushButton
12296 \ifFld@hidden\def\Fld@width{1sp}\fi
12297 \Hy@escapeform\PDFForm@Reset
12298 \pdfmark[\MakeButtonField{#2}]{%
12299 pdfmark=/ANN,Raw={\PDFForm@Reset}%
12300 }%
12301 \fi
12302 \endgroup
12303 }%
12304 \def\@CheckBox[#1]#2{% parameters, label
12305 \def\Fld@name{#2}%
12306 \def\Fld@default{0}%
12307 \begingroup
12308 \def\Fld@width{\DefaultWidthofCheckBox}%
12309 \def\Fld@height{\DefaultHeightofCheckBox}%
12310 \expandafter\HyField@SetKeys\expandafter{%
12311 \DefaultOptionsofCheckBox,#1%
12312 }%
12313 \HyField@FlagsCheckBox

```

```

12314 \ifFld@hidden\def\Fld@width{1sp}\fi
12315 \LayoutCheckField{#2}{%
12316 \Hy@escapeform\PDFForm@Check
12317 \pdfmark[\MakeCheckField{\Fld@width}{\Fld@height}]{%
12318 pdfmark=/ANN,Raw={\PDFForm@Check}%
12319 }%
12320 }%
12321 \endgroup
12322 }
12323 \pdfmark>

```

## 47.2 HyperTeX

```

12324 <*hypertex>
12325 \def\@Form[#1]{\Hy@Message{Sorry, HyperTeX does not support FORMs}}
12326 \def\@endForm{}
12327 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
12328 \Hy@Message{Sorry, HyperTeX does not support FORM gauges}%
12329 }
12330 \def\@TextField[#1]#2{% parameters, label
12331 \Hy@Message{Sorry, HyperTeX does not support FORM text fields}%
12332 }
12333 \def\@CheckBox[#1]#2{% parameters, label
12334 \Hy@Message{Sorry, HyperTeX does not support FORM checkboxes}%
12335 }
12336 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
12337 \Hy@Message{Sorry, HyperTeX does not support FORM choice menus}%
12338 }
12339 \def\@PushButton[#1]#2{% parameters, label
12340 \Hy@Message{Sorry, HyperTeX does not support FORM pushbuttons}%
12341 }
12342 \def\@Reset[#1]#2{\Hy@Message{Sorry, HyperTeX does not support FORMs}}
12343 \def\@Submit[#1]#2{\Hy@Message{Sorry, HyperTeX does not support FORMs}}
12344 </hypertex>

```

## 47.3 TeX4ht

```

12345 <*tex4ht>
12346 \def\@Form[#1]{%
12347 \kvsetkeys{Form}{#1}%
12348 \HCode{<form action="\Form@action" method="\Form@method">}%
12349 }
12350 \def\@endForm{\HCode{</form>}}
12351 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
12352 \Hy@Message{Sorry, TeX4ht does not support gauges}%
12353 }
12354 \def\@TextField[#1]#2{% parameters, label
12355 \let\Hy@reserved@a\@empty
12356 \def\Fld@name{#2}%
12357 \def\Fld@default{}%
12358 \bgroup
12359 \Field@toks={ }%
12360 \kvsetkeys{Field}{#1}%
12361 \HCode{<label for="\Fld@name">#2</label>}%
12362 \ifFld@password
12363 \@@PasswordField
12364 \else
12365 \@@TextField
12366 \fi

```

```

12367 \egroup
12368 }
12369 \def\@@PasswordField{%
12370 \HCode{%
12371   <input type="password" %
12372   id="\Fld@name" %
12373   name="\Fld@name" %
12374   \ifFld@hidden type="hidden" \fi
12375   value="\Fld@default" %
12376   \the\Field@toks
12377   >%
12378 }%
12379 }
12380 \def\@@TextField{%
12381 \ifFld@multiline
12382 \HCode{<textarea %
12383   \ifFld@readonly readonly \fi
12384   id="\Fld@name" %
12385   name="\Fld@name" %
12386   \ifFld@hidden type="hidden" \fi
12387   \the\Field@toks>%
12388 }%
12389 \Fld@default
12390 \HCode{</textarea>}%
12391 \else
12392 \HCode{<input type="text" %
12393   \ifFld@readonly readonly \fi
12394   id="\Fld@name" %
12395   name="\Fld@name" %
12396   \ifFld@hidden type="hidden" \fi
12397   value="\Fld@default" %
12398   \the\Field@toks>%
12399 }%
12400 \fi
12401 }
12402 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
12403 \def\Fld@name{#2}%
12404 \def\Fld@default{#3}%
12405 \let\Hy@reserved@a\relax
12406 \begingroup
12407 \expandafter\Fld@findlength#3\\%
12408 \Field@toks={ }%
12409 \kvsetkeys{Field}{#1}%
12410 #2%
12411 \ifFld@radio
12412 \expandafter\@@Radio#3\\%
12413 \else
12414 \expandafter\@@Menu#3\\%
12415 \fi
12416 \endgroup
12417 }
12418 \def\Fld@findlength#1\\{%
12419 \Fld@menulength=0 %
12420 \@for\@currupt:=#1\do{\Hy@StepCount\Fld@menulength}%
12421 }
12422 \def\@@Menu#1\\{%
12423 \HCode{<select size="\the\Fld@menulength" %

```

```

12424     name="\Fld@name" %
12425     \the\Field@toks>%
12426 }%
12427 \@for\@curropt:=#1\do{%
12428     \expandafter\Fld@checkequals\@curropt==\\%
12429     \HCode{<option %
12430         \ifx\@curropt\Fld@default selected \fi
12431         value="\@currValue">\@currDisplay</option>%
12432     }%
12433 }%
12434 \HCode{</select>}}%
12435 }
12436 \def\@@Radio#1\\{%
12437     \@for\@curropt:=#1\do{%
12438         \expandafter\Fld@checkequals\@curropt==\\%
12439         \HCode{<input type="radio" %
12440             \ifx\@curropt\Fld@default checked \fi
12441             name="\Fld@name" %
12442             value="\@currValue" %
12443             \the\Field@toks>%
12444         }%
12445         \@currDisplay
12446     }%
12447 }
12448 \def\@PushButton[#1]#2{% parameters, label
12449     \def\Fld@name{#2}%
12450     \bgroup
12451     \Field@toks={ }%
12452     \kvsetkeys{Field}{#1}%
12453     \HCode{<input type="button" %
12454         name="\Fld@name" %
12455         value="#2" %
12456         \the\Field@toks>%
12457     }%
12458     \HCode{</button>}}%
12459     \egroup
12460 }
12461 \def\@Submit[#1]#2{%
12462     \HCode{<button type="submit">#2</button>}}%
12463 }
12464 \def\@Reset[#1]#2{%
12465     \HCode{<button type="reset">#2</button>}}%
12466 }
12467 \def\@CheckBox[#1]#2{% parameters, label
12468     \let\Hy@reserved@a\@empty
12469     \def\Fld@name{#2}%
12470     \def\Fld@default{0}%
12471     \bgroup
12472     \Field@toks={ }%
12473     \kvsetkeys{Field}{#1}%
12474     \HCode{<input type="checkbox" %
12475         \ifFld@checked checked \fi
12476         \ifFld@disabled disabled \fi
12477         \ifFld@readonly readonly \fi
12478         name="\Fld@name" %
12479         \ifFld@hidden type="hidden" \fi
12480         value="\Fld@default" %

```

```

12481 \the\Field@toks>%
12482 #2%
12483 }%
12484 \egroup
12485 }
12486 </tex4ht>

```

## 47.4 pdfTeX

```

12487 <*pdfTeX>
12488 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
12489 \Hy@Message{Sorry, pdfTeX does not support FORM gauges}%
12490 }
12491 \def\MakeFieldObject#1#2{\sbox0{#1}%
12492 \immediate\pdfxform0 %
12493 \expandafter\edef\csname #2Object\endcsname{%
12494 \the\pdfastxform\space 0 R%
12495 }%
12496 % \hbox to 0pt{\hskip-\maxdimen{\pdfrefxform \the\pdfastxform}}%
12497 }%
12498 \def\HyField@afields{}
12499 \begingroup\expandafter\expandafter\expandafter\endgroup
12500 \expandafter\ifx\csname pdfastlink\endcsname\relax
12501 \let\HyField@AddToFields\relax
12502 \PackageInfo{hyperref}{%
12503 You need pdfTeX 1.40.0 for setting the /Fields entry.%
12504 \MessageBreak
12505 Adobe Reader/Acrobat accepts an empty /Field array,%
12506 \MessageBreak
12507 but other PDF viewers might complain%
12508 }%
12509 \else
12510 \def\HyField@AuxAddToFields#1{%
12511 \def\HyField@AfterAuxOpen{\Hy@AtBeginDocument}%
12512 \Hy@AtBeginDocument{%
12513 \if@filesw
12514 \immediate\write\@mainaux{%
12515 \string\providecommand\string\HyField@AuxAddToFields[1]{}%
12516 }%
12517 \fi
12518 \let\HyField@AfterAuxOpen\@firstofone
12519 \def\HyField@AuxAddToFields#1{%
12520 \xdef\HyField@afields{%
12521 \ifx\HyField@afields\@empty
12522 \else
12523 \HyField@afields
12524 \space
12525 \fi
12526 #1 0 R%
12527 }%
12528 }%
12529 }%
12530 \def\HyField@AddToFields{%
12531 \expandafter\HyField@@AddToFields\expandafter{%
12532 \the\pdfastlink
12533 }%
12534 }%
12535 \def\HyField@@AddToFields#1{%

```

```

12536 \HyField@AfterAuxOpen{%
12537 \if@filesw
12538 \write\@mainaux{%
12539 \string\HyField@AuxAddToFields{#1}%
12540 }%
12541 \fi
12542 }%
12543 }%
12544 \fi
12545 \def\@Form[#1]{%
12546 \@ifundefined{textcolor}{\let\textcolor\@gobble}{}%
12547 \kvsetkeys{Form}{#1}%
12548 \pdf@ifdraftmode{}{%
12549 \Hy@FormObjects
12550 \ifnum\pdfTeXversion>13 %
12551 \pdfrefobj\OBJ@pdfdocencoding
12552 \pdfrefobj\OBJ@ZaDb
12553 \pdfrefobj\OBJ@Helv
12554 \fi
12555 \AtVeryEndDocument{%
12556 \immediate\pdfobj{%
12557 <<%
12558 /Fields[\HyField@afields]%
12559 /DR<<%
12560 /Font<<%
12561 /ZaDb \OBJ@ZaDb\space 0 R%
12562 /Helv \OBJ@Helv\space 0 R%
12563 >>%
12564 >>%
12565 /DA(/Helv 10 Tf 0 g)%
12566 \ifHy@pdfa
12567 \else
12568 \ifHyField@NeedAppearances
12569 /NeedAppearances true%
12570 \fi
12571 \fi
12572 >>%
12573 }%
12574 \edef\OBJ@acroform{\the\pdfastobj}%
12575 \pdfcatalog{/AcroForm \OBJ@acroform\space 0 R}%
12576 }%
12577 }%
12578 \MakeFieldObject{%

Same as \ding{123} of package pifont.
12579 \begingroup
12580 \fontfamily{pzd}%
12581 \fontencoding{U}%
12582 \fontseries{m}%
12583 \fontshape{n}%
12584 \selectfont
12585 \char123 %
12586 \endgroup
12587 }{Ding}%
12588 \MakeFieldObject{%
12589 \fbox{\textcolor{yellow}{\textsf{Submit}}}%
12590 }{Submit}%
12591 \MakeFieldObject{%

```

```

12592 \fbox{\textcolor{yellow}{\textsf{SubmitP}}}%
12593 }{SubmitP}%
12594 }
12595 \def\@endForm{}
12596 \def\@TextField[#1]#2{% parameters, label
12597 \def\Fld@name{#2}%
12598 \def\Fld@default{}%
12599 \let\Fld@value\@empty
12600 \def\Fld@width{\DefaultWidthofText}%
12601 \def\Fld@height{%
12602 \ifFld@multiline
12603 \DefaultHeightofTextMultiline
12604 \else
12605 \DefaultHeightofText
12606 \fi
12607 }%
12608 \begingroup
12609 \expandafter\HyField@SetKeys\expandafter{%
12610 \DefaultOptionsofText,#1%
12611 }%
12612 \PDFForm@Name
12613 \HyField@FlagsText
12614 \ifFld@hidden\def\Fld@width{1sp}\fi
12615 \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
12616 \LayoutTextField{#2}{%
12617 \Hy@escapeform\PDFForm@Text
12618 \pdfstartlink user {\PDFForm@Text}\relax
12619 \MakeTextField{\Fld@width}{\Fld@height}\pdfendlink
12620 \HyField@AddToFields
12621 }%
12622 \endgroup
12623 }
12624 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
12625 \def\Fld@name{#2}%
12626 \let\Fld@default\relax
12627 \let\Fld@value\relax
12628 \def\Fld@width{\DefaultWidthofChoiceMenu}%
12629 \def\Fld@height{\DefaultHeightofChoiceMenu}%
12630 \begingroup
12631 \Fld@menulength=0 %
12632 \@tempdima\z@
12633 \@for\@curropt:=#3\do{%
12634 \expandafter\Fld@checkequals\@curropt==\%
12635 \Hy@StepCount\Fld@menulength
12636 \settowidth{\@tempdimb}{\@currDisplay}%
12637 \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
12638 }%
12639 \advance\@tempdima by 15\p@
12640 \begingroup
12641 \HyField@SetKeys{#1}%
12642 \edef\x{\endgroup
12643 \noexpand\expandafter
12644 \noexpand\HyField@SetKeys
12645 \noexpand\expandafter{%
12646 \expandafter\noexpand\curname DefaultOptionsof%
12647 \ifFld@radio
12648 Radio%

```

```

12649     \else
12650     \ifFld@combo
12651     \ifFld@popdown
12652     PopdownBox%
12653     \else
12654     ComboBox%
12655     \fi
12656     \else
12657     ListBox%
12658     \fi
12659     \fi
12660     \endcsname
12661     }%
12662 } \x
12663 \HyField@SetKeys{#1}%
12664 \PDFForm@Name
12665 \ifFld@hidden\def\Fld@width{1sp}\fi
12666 \ifx\Fld@value\relax
12667     \let\Fld@value\Fld@default
12668 \fi
12669 \LayoutChoiceField{#2}{%
12670     \ifFld@radio
12671     \HyField@FlagsRadioButton
12672     \@@Radio{#3}%
12673     \else
12674     \begingroup
12675     \HyField@FlagsChoice
12676     \ifdim\Fld@width<\@tempdima
12677     \ifdim\@tempdima<1cm\@tempdima1cm\fi
12678     \edef\Fld@width{\the\@tempdima}%
12679     \fi
12680     \ifFld@combo
12681     \else
12682     \@tempdima=\the\Fld@menulength\Fld@charsize
12683     \advance\@tempdima by \Fld@borderwidth bp %
12684     \advance\@tempdima by \Fld@borderwidth bp %
12685     \edef\Fld@height{\the\@tempdima}%
12686     \fi
12687     \@@ListBox{#3}%
12688     \endgroup
12689     \fi
12690     }%
12691 \endgroup
12692 }
12693 \def\@@Radio#1{%
12694     \Fld@listcount=0 %
12695     \EdefEscapeName\Fld@default{\Fld@default}%
12696     \@for\@curropt=#1\do{%
12697         \expandafter\Fld@checkequals\@curropt==\%
12698         \EdefEscapeName\@currValue{\@currValue}%
12699         \Hy@StepCount\Fld@listcount
12700         \@currDisplay\space
12701         \leavevmode
12702         \Hy@escapeform\PDFForm@Radio
12703         \pdfstartlink user {%
12704             \PDFForm@Radio
12705             /AP<<%

```



```

12706      /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.
12707      /\@currValue\space \DingObject
12708      >>%
12709      >>%
12710      }%
12711      \relax
12712      \MakeRadioField{\Fld@width}{\Fld@height}\pdfendlink
12713      \ifnum\Fld@listcount=1 %
12714      \HyField@AddToFields
12715      \fi
12716      \space % deliberate space between radio buttons
12717      }%
12718      }
12719      \newcount\Fld@listcount
12720      \def\@@ListBox#1{%
12721      \HyField@PDFChoices{#1}%
12722      \leavevmode
12723      \Hy@escapeform\PDFForm@List
12724      \pdfstartlink user {\PDFForm@List}\relax
12725      \MakeChoiceField{\Fld@width}{\Fld@height}%
12726      \pdfendlink
12727      \HyField@AddToFields
12728      }
12729      \def\@PushButton[#1]#2{% parameters, label
12730      \def\Fld@name{#2}%
12731      \begingroup
12732      \expandafter\HyField@SetKeys\expandafter{%
12733      \DefaultOptionsofPushButton,#1%
12734      }%
12735      \PDFForm@Name
12736      \ifHy@pdfa
12737      \Hy@Error{%
12738      PDF/A: Push button with JavaScript is prohibited%
12739      }\@ehc
12740      \LayoutPushButtonField{%
12741      \leavevmode
12742      \MakeButtonField{#2}%
12743      }%
12744      \else
12745      \HyField@FlagsPushButton
12746      \ifFld@hidden\def\Fld@width{1sp}\fi
12747      \LayoutPushButtonField{%
12748      \leavevmode
12749      \Hy@escapeform\PDFForm@Push
12750      \pdfstartlink user {\PDFForm@Push}\relax
12751      \MakeButtonField{#2}%
12752      \pdfendlink
12753      \HyField@AddToFields
12754      }%
12755      \fi
12756      \endgroup
12757      }
12758      \def\@Submit[#1]#2{%
12759      \def\Fld@width{\DefaultWidthofSubmit}%

```

```

12760 \def\Fld@height{\DefaultHeightofSubmit}%
12761 \begingroup
12762 \expandafter\HyField@SetKeys\expandafter{%
12763   \DefaultOptionsofSubmit,#1%
12764 }%
12765 \HyField@FlagsPushButton
12766 \HyField@FlagsSubmit
12767 \ifFld@hidden\def\Fld@width{1sp}\fi
12768 \leavevmode
12769 \Hy@escapeform\PDFForm@Submit
12770 \pdfstartlink user {%
12771   \PDFForm@Submit
12772   /AP<</N \SubmitObject/D \SubmitPObject>>%
12773 }%
12774 \relax
12775 \MakeButtonField{#2}%
12776 \pdfendlink
12777 \HyField@AddToFields
12778 \endgroup
12779 }
12780 \def\@Reset[#1]#2{%
12781   \def\Fld@width{\DefaultWidthofReset}%
12782   \def\Fld@height{\DefaultHeightofReset}%
12783   \begingroup
12784     \expandafter\HyField@SetKeys\expandafter{%
12785       \DefaultOptionsofReset,#1%
12786     }%
12787     \leavevmode
12788     \ifHy@pdfa
12789       \Hy@Error{%
12790         PDF/A: Reset action is prohibited%
12791       }\@ehc
12792       \MakeButtonField{#2}%
12793     \else
12794       \HyField@FlagsPushButton
12795       \ifFld@hidden\def\Fld@width{1sp}\fi
12796       \Hy@escapeform\PDFForm@Reset
12797       \pdfstartlink user {\PDFForm@Reset}\relax
12798       \MakeButtonField{#2}%
12799       \pdfendlink
12800       \HyField@AddToFields
12801     \fi
12802   \endgroup
12803 }
12804 \def\@CheckBox[#1]#2{% parameters, label
12805   \def\Fld@name{#2}%
12806   \def\Fld@default{0}%
12807   \begingroup
12808     \def\Fld@width{\DefaultWidthofCheckBox}%
12809     \def\Fld@height{\DefaultHeightofCheckBox}%
12810     \expandafter\HyField@SetKeys\expandafter{%
12811       \DefaultOptionsofCheckBox,#1%
12812     }%
12813     \PDFForm@Name
12814     \HyField@FlagsCheckBox
12815     \ifFld@hidden\def\Fld@width{1sp}\fi
12816     \LayoutCheckField{#2}{%

```

```

12817 \Hy@escapeform\PDFForm@Check
12818 \pdfstartlink user {\PDFForm@Check}\relax
12819 \MakeCheckField{\Fld@width}{\Fld@height}%
12820 \pdfendlink
12821 \HyField@AddToFields
12822 }%
12823 \endgroup
12824 }
12825 \def\Hy@FormObjects{%
12826 \pdfobj {%
12827 <<%
12828 /Type/Encoding%
12829 /Differences%
12830 24/breve/caron/circumflex/dotaccent/hungarumlaut/ogonek%
12831 /ring/tilde %
12832 39/quotesingle %
12833 96/grave %
12834 128/bullet/dagger/daggerdbl/ellipsis/emdash/endash/florin%
12835 /fraction/guilsinglleft/guilsinglright/minus/perthousand%
12836 /quotedblbase/quotedblleft/quotedblright/quoteleft%
12837 /quoteright/quotesinglbase/trademark/fi/fl/Lslash/OE%
12838 /Scaron/Ydieresis/Zcaron/dotlessi/lslash/oe/scaron/zcaron %
12839 164/currency %
12840 166/brokenbar %
12841 168/dieresis/copyright/ordfeminine %
12842 172/logicalnot/.notdef/registered/macron/degree/plusminus%
12843 /twosuperior/threesuperior/acute/mu %
12844 183/periodcentered/cedilla/onesuperior/ordmasculine %
12845 188/onequarter/onehalf/threequarters %
12846 192/Agrave/Aacute/Acircumflex/Atilde/Adieresis/Aring/AE%
12847 /Ccedilla/Egrave/Eacute/Ecircumflex/Edieresis/Igrave%
12848 /Iacute/Icircumflex/Idieresis/Eth/Ntilde/Ograve/Oacute%
12849 /Ocircumflex/Otilde/Odieresis/multiply/Oslash/Ugrave%
12850 /Uacute/Ucircumflex/Udieresis/Yacute/Thorn/germandbls%
12851 /agrave/aacute/acircumflex/atilde/adieresis/aring/ae%
12852 /ccedilla/egrave/eacute/ecircumflex/edieresis/igrave%
12853 /iacute/icircumflex/idieresis/eth/ntilde/ograde/oacute%
12854 /ocircumflex/otilde/odieresis/divide/oslash/ugrave%
12855 /uacute/ucircumflex/udieresis/yacute/thorn/ydieresis%
12856 ]%
12857 >>%
12858 }%
12859 \xdef\OBJ@pdfdocencoding{\the\pdflastobj}%
12860 \pdfobj{%
12861 <<%
12862 /Type/Font%
12863 /Subtype/Type1%
12864 /Name/ZaDb%
12865 /BaseFont/ZapfDingbats%
12866 >>%
12867 }%
12868 \xdef\OBJ@ZaDb{\the\pdflastobj}%
12869 \pdfobj{%
12870 <<%
12871 /Type/Font%
12872 /Subtype/Type1%
12873 /Name/Helv%

```

```

12874 /BaseFont/Helvetica%
12875 /Encoding \OBJ@pdfdocencoding\space 0 R%
12876 >>%
12877 }%
12878 \xdef\OBJ@Helv{\the\pdfastobj}%
12879 \global\let\Hy@FormObjects\relax
12880 }
12881 \pdfTeX

```

## 47.5 dvipdfm, xetex

D. P. Story adapted the pdf<sub>T</sub>E<sub>X</sub> forms part for dvipdfm, of which version 0.12.7b or higher is required because of a bug.

```
12882 \dvipdfm | xetex
```

\@Gauge

```

12883 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
12884 \Hy@Message{Sorry, dvipdfm/XeTeX does not support FORM gauges}%
12885 }

```

\@Form

```

12886 \def\@Form[#1]{%
12887 \ifundefined{textcolor}{\let\textcolor\@gobble}{}%
12888 \kvsetkeys{Form}{#1}%
12889 \Hy@FormObjects
12890 \@pdfm@mark{obj @afields []}%
12891 \@pdfm@mark{obj @corder []}%
12892 \@pdfm@mark{%
12893 obj @aform <<%
12894 /Fields @afields%
12895 /DR<<%
12896 /Font<<%
12897 /ZaDb @OBJZaDb%
12898 /Helv @OBJHelv%
12899 >>%
12900 >>%
12901 /DA(/Helv 10 Tf 0 g)%
12902 /CO @corder%
12903 \ifHy@pdfa
12904 \else
12905 \ifHyField@NeedAppearances
12906 /NeedAppearances true%
12907 \fi
12908 \fi
12909 >>%
12910 }%
12911 \@pdfm@mark{put @catalog <</AcroForm @aform>>}%
12912 }

```

\@endForm

```
12913 \def\@endForm{}
```

\dvipdfm@setdim \dvipdfm@setdim sets dimensions for ann using \pdfm@box.

```

12914 \def\dvipdfm@setdim{%
12915 height \the\ht\pdfm@box\space
12916 width \the\wd\pdfm@box\space
12917 depth \the\dp\pdfm@box\space
12918 }

```

\HyField@AnnotCount

```
12919 \newcount\HyField@AnnotCount
12920 \HyField@AnnotCount=\z@
```

\HyField@AdvanceAnnotCount

```
12921 \def\HyField@AdvanceAnnotCount{%
12922   \global\advance\HyField@AnnotCount\@ne
12923 }
```

\HyField@TheAnnotCount

```
12924 \def\HyField@TheAnnotCount{%
12925   \the\HyField@AnnotCount
12926 }
```

\@TextField

```
12927 \def\@TextField[#1]#2{% parameters, label
12928   \def\Fld@name{#2}%
12929   \def\Fld@default{}%
12930   \let\Fld@value\@empty
12931   \def\Fld@width{\DefaultWidthofText}%
12932   \def\Fld@height{%
12933     \ifFld@multiline
12934       \DefaultHeightofTextMultiline
12935     \else
12936       \DefaultHeightofText
12937     \fi
12938   }%
12939   \begingroup
12940     \expandafter\HyField@SetKeys\expandafter{%
12941       \DefaultOptionsofText,#1%
12942     }%
12943     \PDFForm@Name
12944     \HyField@FlagsText
12945     \ifFld@hidden\def\Fld@width{1sp}\fi
12946     \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
12947     \setbox\pdfm@box=\hbox{%
12948       \MakeTextField{\Fld@width}{\Fld@height}%
12949     }%
12950     \HyField@AdvanceAnnotCount
12951     \LayoutTextField{#2}{%
12952       \Hy@escapeform\PDFForm@Text
12953       \@pdfm@mark{%
12954         ann @text\HyField@TheAnnotCount\space
12955         \dvipdfm@setdim << \PDFForm@Text >>%
12956       }%
12957     }%
12958     \unhbox\pdfm@box
12959     \@pdfm@mark{put @afields @text\HyField@TheAnnotCount}%
12960     % record in @afields array
12961   \endgroup
12962 }
```

\@ChoiceMenu

```
12963 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
12964   \def\Fld@name{#2}%
12965   \let\Fld@default\relax
```

```

12966 \let\Fld@value\relax
12967 \def\Fld@width{\DefaultWidthofChoiceMenu}%
12968 \def\Fld@height{\DefaultHeightofChoiceMenu}%
12969 \begingroup
12970 \Fld@menulength=0 %
12971 \@tempdima\z@
12972 \@for\@curropt:=#3\do{%
12973   \expandafter\Fld@checkequals\@curropt==\%
12974   \Hy@StepCount\Fld@menulength
12975   \settowidth{\@tempdimb}{\@currDisplay}%
12976   \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
12977 }%
12978 \advance\@tempdima by 15\p@
12979 \begingroup
12980 \HyField@SetKeys{#1}%
12981 \edef\x{\endgroup
12982   \noexpand\expandafter
12983   \noexpand\HyField@SetKeys
12984   \noexpand\expandafter{%
12985     \expandafter\noexpand\csname DefaultOptionsof%
12986       \ifFld@radio
12987         Radio%
12988       \else
12989         \ifFld@combo
12990           \ifFld@popdown
12991             PopdownBox%
12992           \else
12993             ComboBox%
12994           \fi
12995         \else
12996           ListBox%
12997         \fi
12998       \fi
12999     \endcsname
13000   }%
13001 }\x
13002 \HyField@SetKeys{#1}%
13003 \PDFForm@Name
13004 \ifFld@hidden\def\Fld@width{1sp}\fi
13005 \ifx\Fld@value\relax
13006   \let\Fld@value\Fld@default
13007 \fi
13008 \LayoutChoiceField{#2}{%
13009   \ifFld@radio
13010     \HyField@FlagsRadioButton
13011     \@@Radio{#3}%
13012   \else
13013     \begingroup
13014     \HyField@FlagsChoice
13015     \ifdim\Fld@width<\@tempdima
13016       \ifdim\@tempdima<1cm\@tempdima1cm\fi
13017       \edef\Fld@width{\the\@tempdima}%
13018     \fi
13019     \ifFld@combo
13020     \else
13021       \@tempdima=\the\Fld@menulength\Fld@charsize
13022       \advance\@tempdima by \Fld@borderwidth bp %

```

```

13023         \advance\@tempdima by \Fld@borderwidth bp %
13024         \edef\Fld@height{\the\@tempdima}%
13025         \fi
13026         \@@Listbox{#3}%
13027     \endgroup
13028     \fi
13029 }%
13030 \endgroup
13031 }

```

#### \@@Radio

```

13032 \def\@@Radio#1{%
13033     \Fld@listcount=0 %
13034     \edef\EscapeName\Fld@default{\Fld@default}%
13035     \setbox\pdfm@box=\hbox{%
13036         \MakeRadioField{\Fld@width}{\Fld@height}%
13037     }%
13038     \@for\@curropt:=#1\do{%
13039         \expandafter\Fld@checkequals\@curropt==\%
13040         \edef\EscapeName\@currValue{\@currValue}%
13041         \Hy@StepCount\Fld@listcount
13042         \@currDisplay\space
13043         \leavevmode
13044         \Hy@escapeform\PDFForm@Radio
13045         \ifnum\Fld@listcount=1 %
13046             \HyField@AdvanceAnnotCount
13047         \fi
13048         \@pdfm@mark{%
13049             ann %
13050             \ifnum\Fld@listcount=1 %
13051                 @radio\HyField@TheAnnotCount%
13052             \space
13053             \fi
13054             \dvi pdfm@setdim
13055             <<%
13056             \PDFForm@Radio
13057             /AP<</N<</\@currValue /null>>>>%
13058             >>%
13059         }%
13060         \unhcopy\pdfm@box\space% deliberate space between radio buttons
13061         \ifnum\Fld@listcount=1 %
13062             \@pdfm@mark{%
13063                 put @afields @radio\HyField@TheAnnotCount
13064             }%
13065         \fi
13066     }%
13067 }

```

#### \Fld@listcount

```

13068 \newcount\Fld@listcount

```

#### \@@Listbox

```

13069 \def\@@Listbox#1{%
13070     \HyField@PDFChoices{#1}%
13071     \setbox\pdfm@box=\hbox{%
13072         \MakeChoiceField{\Fld@width}{\Fld@height}%
13073     }%

```

```

13074 \leavevmode
13075 \Hy@escapeform\PDFForm@List
13076 \HyField@AdvanceAnnotCount
13077 \@pdfm@mark{%
13078   ann @list\HyField@TheAnnotCount\space
13079   \dvipdfm@setdim
13080   <<\PDFForm@List>>%
13081 }%
13082 \unhbox\pdfm@box
13083 \@pdfm@mark{put @afields @list\HyField@TheAnnotCount}%
13084 }

```

#### \@PushButton

```

13085 \def\@PushButton[#1]#2{% parameters, label
13086   \def\Fld@name{#2}%
13087   \begingroup
13088     \expandafter\HyField@SetKeys\expandafter{%
13089       \DefaultOptionsofPushButton,#1%
13090     }%
13091     \PDFForm@Name
13092     \ifHy@pdfa
13093       \Hy@Error{%
13094         PDF/A: Push button with JavaScript is prohibited%
13095       }\@ehc
13096       \LayoutPushButtonField{%
13097         \leavevmode
13098         \MakeButtonField{#2}%
13099       }%
13100     \else
13101       \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
13102       \HyField@FlagsPushButton
13103       \ifFld@hidden\def\Fld@width{1sp}\fi
13104       \HyField@AdvanceAnnotCount
13105       \LayoutPushButtonField{%
13106         \leavevmode
13107         \Hy@escapeform\PDFForm@Push
13108         \@pdfm@mark{%
13109           ann @push\HyField@TheAnnotCount\space
13110           \dvipdfm@setdim
13111           <<\PDFForm@Push>>%
13112         }%
13113       }%
13114       \unhbox\pdfm@box
13115       \@pdfm@mark{put @afields @push\HyField@TheAnnotCount}%
13116     \fi
13117   \endgroup
13118 }

```

#### \@Submit

```

13119 \def\@Submit[#1]#2{%
13120   \def\Fld@width{\DefaultWidthofSubmit}%
13121   \def\Fld@height{\DefaultHeightofSubmit}%
13122   \begingroup
13123     \expandafter\HyField@SetKeys\expandafter{%
13124       \DefaultOptionsofSubmit,#1%
13125     }%
13126     \HyField@FlagsPushButton

```



```

13127 \HyField@FlagsSubmit
13128 \ifFld@hidden\def\Fld@width{1sp}\fi
13129 \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}}%
13130 \leavevmode
13131 \Hy@escapeform\PDFForm@Submit
13132 \HyField@AdvanceAnnotCount
13133 \@pdfm@mark{%
13134   ann @submit\HyField@TheAnnotCount\space
13135   \dvipdfm@setdim
13136   <<\PDFForm@Submit>>%
13137 }%
13138 \unhbox\pdfm@box%
13139 \@pdfm@mark{put @afields @submit\HyField@TheAnnotCount}%
13140 \endgroup
13141 }

```

#### \@Reset

```

13142 \def\@Reset[#1]#2{%
13143   \def\Fld@width{\DefaultWidthofReset}%
13144   \def\Fld@height{\DefaultHeightofReset}%
13145   \begingroup
13146     \expandafter\HyField@SetKeys\expandafter{%
13147       \DefaultOptionsofReset,#1%
13148     }%
13149     \leavevmode
13150     \ifHy@pdfa
13151       \Hy@Error{%
13152         PDF/A: Reset action is prohibited%
13153       }\@ehc
13154       \MakeButtonField{#2}%
13155     \else
13156       \HyField@FlagsPushButton
13157       \ifFld@hidden\def\Fld@width{1sp}\fi
13158       \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}}%
13159       \Hy@escapeform\PDFForm@Reset
13160       \HyField@AdvanceAnnotCount
13161       \@pdfm@mark{%
13162         ann @reset\HyField@TheAnnotCount\space
13163         \dvipdfm@setdim
13164         <<\PDFForm@Reset>>%
13165       }%
13166       \unhbox\pdfm@box
13167       \@pdfm@mark{put @afields @reset\HyField@TheAnnotCount}%
13168     \fi
13169   \endgroup
13170 }

```

#### \@CheckBox

```

13171 \def\@CheckBox[#1]#2{% parameters, label
13172   \def\Fld@name{#2}%
13173   \def\Fld@default{0}%
13174   \begingroup
13175     \def\Fld@width{\DefaultWidthofCheckBox}%
13176     \def\Fld@height{\DefaultHeightofCheckBox}%
13177     \expandafter\HyField@SetKeys\expandafter{%
13178       \DefaultOptionsofCheckBox,#1%
13179     }%

```

```

13180 \PDFForm@Name
13181 \HyField@FlagsCheckBox
13182 \ifFld@hidden\def\Fld@width{1sp}\fi
13183 \setbox\pdfm@box=\hbox{%
13184   \MakeCheckField{\Fld@width}{\Fld@height}%
13185 }%
13186 \HyField@AdvanceAnnotCount
13187 \LayoutCheckField{#2}{%
13188   \Hy@escapeform\PDFForm@Check
13189   \@pdfm@mark{%
13190     ann @check\HyField@TheAnnotCount\space
13191     \dvipdfm@setdim
13192     <<\PDFForm@Check>>%
13193   }%
13194   \unhbox\pdfm@box
13195   \@pdfm@mark{put @afields @check\HyField@TheAnnotCount}%
13196 }%
13197 \endgroup
13198 }

13199 \def\Hy@FormObjects{%
13200   \@pdfm@mark{obj @OBJpdfdocencoding%
13201     <<%
13202       /Type/Encoding%
13203       /Differences[%
13204         24/breve/caron/circumflex/dotaccent/hungarumlaut/ogonek/ring/tilde %
13205         39/quotesingle %
13206         96/grave %
13207         128/bullet/dagger/daggerdbl/ellipsis/emdash/endash/florin%
13208         /fraction/guilsinglleft/guilsinglright/minus/perthousand%
13209         /quotedblbase/quotedblleft/quotedblright/quoteleft/quoteright%
13210         /quotesinglbase/trademark/fi/fl/Lslash/OE/Scaron/Ydieresis%
13211         /Zcaron/dotlessi/lslash/oe/scaron/zcaron %
13212         164/currency %
13213         166/brokenbar %
13214         168/dieresis/copyright/ordfeminine %
13215         172/logicalnot/.notdef/registered/macron/degree/plusminus%
13216         /twosuperior/threesuperior/acute/mu %
13217         183/periodcentered/cedilla/onesuperior/ordmasculine %
13218         188/onequarter/onehalf/threequarters %
13219         192/Agrave/Aacute/Acircumflex/Atilde/Adieresis/Aring/AE%
13220         /Ccedilla/Egrave/Eacute/Ecircumflex/Edieresis/Igrave/Iacute%
13221         /Icircumflex/Idieresis/Eth/Ntilde/Ograve/Oacute/Ocircumflex%
13222         /Otilde/Odieresis/multiply/Oslash/Ugrave/Uacute/Ucircumflex%
13223         /Udieresis/Yacute/Thorn/germandbls/agrave/aacute/acircumflex%
13224         /atilde/adieresis/aring/ae/ccedilla/egrave/eacute%
13225         /ecircumflex/edieresis/igrave/iacute/icircumflex/idieresis%
13226         /eth/ntilde/ograde/oacute/ocircumflex/otilde/odieresis%
13227         /divide/oslash/ugrave/uacute/ucircumflex/udieresis/yacute%
13228         /thorn/ydieresis%
13229       ]%
13230     >>%
13231   }%
13232   \@pdfm@mark{obj @OBJZaDb%
13233     <<%
13234       /Type/Font%
13235       /Subtype/Type1%
13236       /Name/ZaDb%

```

```

13237 /BaseFont/ZapfDingbats%
13238 >>%
13239 }%
13240 \@pdfm@mark{obj @OBJHelv%
13241 <<%
13242 /Type/Font%
13243 /Subtype/Type1%
13244 /Name/Helv%
13245 /BaseFont/Helvetica%
13246 /Encoding @OBJpdfdocencoding%
13247 >>%
13248 }%
13249 \global\let\Hy@FormObjects\relax
13250 }
13251 </dvipdfm | xetex>

```

## 47.6 Common forms part

```
13252 <*pdfform>
```

\Hy@escapestring

```

13253 \begingroup\expandafter\expandafter\expandafter\endgroup
13254 \expandafter\ifx\csname pdfescapestring\endcsname\relax
13255 \let\Hy@escapestring\@firstofone
13256 \def\Hy@escapeform#1{%
13257 \ifHy@escapeform
13258 \def\Hy@escapestring##1{%
13259 \noexpand\Hy@escapestring{\noexpand##1}%
13260 }%
13261 \edef\Hy@temp{#1}%
13262 \expandafter\Hy@@@escapeform\Hy@temp\Hy@escapestring{}\@nil
13263 \def\Hy@escapestring##1{%
13264 \@ifundefined{Hy@esc@\string##1}{%
13265 ##1%
13266 \ThisShouldNotHappen
13267 }{%
13268 \csname Hy@esc@\string##1\endcsname
13269 }%
13270 }%
13271 \else
13272 \let\Hy@escapestring\@firstofone
13273 \fi
13274 }%
13275 \def\Hy@@@escapeform#1\Hy@escapestring#2#3\@nil{%
13276 \ifx\#3\%
13277 \else
13278 \expandafter
13279 \Hy@pstringdef\csname Hy@esc@\string#2\endcsname{#2}%
13280 \Hy@ReturnAfterFi{%
13281 \Hy@@@escapeform#3\@nil
13282 }%
13283 \fi
13284 }%
13285 \else
13286 \def\Hy@escapeform#1{%
13287 \ifHy@escapeform
13288 \let\Hy@escapestring\pdfescapestring

```

```

13289 \else
13290 \let\Hy@escapestring\@firstofone
13291 \fi
13292 }%
13293 \Hy@escapeform{}}%
13294 \fi

```

#### \PDFForm@Name

```

13295 \def\PDFForm@Name{%
13296 \PDFForm@@Name\Fld@name
13297 \ifx\Fld@altname\relax
13298 \else
13299 \PDFForm@@Name\Fld@altname
13300 \fi
13301 \ifx\Fld@mappingname\relax
13302 \else
13303 \PDFForm@@Name\Fld@mappingname
13304 \fi
13305 }

```

#### \PDFForm@@Name

```

13306 \def\PDFForm@@Name#1{%
13307 \begingroup
13308 \ifnum\Hy@pdfversion<5 % implementation note 117, PDF spec 1.7
13309 \ifHy@unicode
13310 \Hy@unicodedefalse
13311 \fi
13312 \fi
13313 \HyPsd@XeTeXBigCharstrue
13314 \pdfstringdef\Hy@gtemp#1%
13315 \endgroup
13316 \let#1\Hy@gtemp
13317 }

```

#### \Fld@additionalactions

```

13318 \def\Fld@@additionalactions{%
K input (keystroke) format
13319 \ifx\Fld@keystroke@code\@empty
13320 \else
13321 /K<</S/JavaScript/JS(\Hy@escapestring{\Fld@keystroke@code})>>%
13322 \fi
F display format
13323 \ifx\Fld@format@code\@empty
13324 \else
13325 /F<</S/JavaScript/JS(\Hy@escapestring{\Fld@format@code})>>%
13326 \fi
V validation
13327 \ifx\Fld@validate@code\@empty
13328 \else
13329 /V<</S/JavaScript/JS(\Hy@escapestring{\Fld@validate@code})>>%
13330 \fi
C calculation
13331 \ifx\Fld@calculate@code\@empty
13332 \else

```

```

13333 /C<</S/JavaScript/JS(\Hy@escapestring{\Fld@calculate@code})>>%
13334 \fi

Fo receiving the input focus
13335 \ifx\Fld@onfocus@code\@empty
13336 \else
13337 /Fo<</S/JavaScript/JS(\Hy@escapestring{\Fld@onfocus@code})>>%
13338 \fi

Bl loosing the input focus (blurred)
13339 \ifx\Fld@onblur@code\@empty
13340 \else
13341 /Bl<</S/JavaScript/JS(\Hy@escapestring{\Fld@onblur@code})>>%
13342 \fi

D pressing the mouse button (down)
13343 \ifx\Fld@onmousedown@code\@empty
13344 \else
13345 /D<</S/JavaScript/JS(\Hy@escapestring{\Fld@onmousedown@code})>>%
13346 \fi

U releasing the mouse button (up)
13347 \ifx\Fld@onmouseup@code\@empty
13348 \else
13349 /U<</S/JavaScript/JS(\Hy@escapestring{\Fld@onmouseup@code})>>%
13350 \fi

E cursor enters the annotation's active area.
13351 \ifx\Fld@onenter@code\@empty
13352 \else
13353 /E<</S/JavaScript/JS(\Hy@escapestring{\Fld@onenter@code})>>%
13354 \fi

X cursor exits the annotation's active area.
13355 \ifx\Fld@onexit@code\@empty
13356 \else
13357 /X<</S/JavaScript/JS(\Hy@escapestring{\Fld@onexit@code})>>%
13358 \fi
13359 }

13360 \def\Fld@additionalactions{%
13361 \if\Fld@@additionalactions-%
13362 \else
13363 \ifHy@pdfa
13364 \else
13365 /AA<<\Fld@@additionalactions>>%
13366 \fi
13367 \fi
13368 }

\Fld@annotnames
13369 \def\Fld@annotnames{%
13370 /T(\Fld@name)%
13371 \ifx\Fld@altname\relax
13372 \else
13373 /TU(\Fld@altname)%
13374 \fi
13375 \ifx\Fld@mappingname\relax
13376 \else
13377 /TM(\Fld@mappingname)%
13378 \fi

```

13379 }

## \PDFForm@Check

```
13380 \def\PDFForm@Check{%
13381   /Subtype/Widget%
13382   \Fld@annotflags
13383   \Fld@annotnames
13384   /FT/Btn%
13385   \Fld@flags
13386   /Q \Fld@align
13387   /BS<</W \Fld@borderwidth /S/\Fld@borderstyle>>%
13388   /MK<<%
13389     \ifnum\Fld@rotation=\z@
13390     \else
13391       /R \Fld@rotation
13392     \fi
13393     \ifx\Fld@bordercolor\relax
13394     \else
13395       /BC[\Fld@bordercolor]%
13396     \fi
13397     \ifx\Fld@bcolor\relax
13398     \else
13399       /BG[\Fld@bcolor]%
13400     \fi
13401     /CA(\Hy@escapestring{\Fld@cbsymbol})%
13402   >>%
13403   /DA(/ZaDb \strip@pt\Fld@charsize\space Tf%
13404     \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
13405   /H/P%
13406   \ifFld@checked /V/Yes\else /V/Off\fi
13407   \Fld@additionalactions
13408 }
```

## \PDFForm@Push

```
13409 \ifHy@pdfa
13410 \else
13411   \def\PDFForm@Push{%
13412     /Subtype/Widget%
13413     \Fld@annotflags
13414     \Fld@annotnames
13415     /FT/Btn%
13416     \Fld@flags
13417     /H/P%
13418     /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
13419     \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
13420       \ifx\Fld@bordercolor\relax\else 1\fi
13421       \space
13422     \else
13423       /MK<<%
13424       \ifnum\Fld@rotation=\z@
13425       \else
13426         /R \Fld@rotation
13427       \fi
13428       \ifx\Fld@bordercolor\relax
13429       \else
13430         /BC[\Fld@bordercolor]%
13431       \fi
```

```

13432     >>%
13433     \fi
13434     /A<</S/JavaScript/JS(\Hy@escapestring{\Fld@onclick@code})>>%
13435     \Fld@additionalactions
13436   }%
13437 \fi

```

#### \PDFForm@List

```

13438 \def\PDFForm@List{%
13439   /Subtype/Widget%
13440   \Fld@annotflags
13441   \Fld@annotnames
13442   /FT/Ch%
13443   \Fld@flags
13444   /Q \Fld@align
13445   /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
13446   \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
13447     \ifx\Fld@bordercolor\relax\else 1\fi
13448     \ifx\Fld@bcolor\relax \else 1\fi
13449     \space
13450   \else
13451     /MK<<%
13452     \ifnum\Fld@rotation=\z@
13453     \else
13454       /R \Fld@rotation
13455     \fi
13456     \ifx\Fld@bordercolor\relax
13457     \else
13458       /BC[\Fld@bordercolor]%
13459     \fi
13460     \ifx\Fld@bcolor\relax
13461     \else
13462       /BG[\Fld@bcolor]%
13463     \fi
13464   >>%
13465   \fi
13466   /DA(/Helv \strip@pt\Fld@charsize\space Tf%
13467     \ifx\Fld@color@empty\else\space\Fld@color\fi)%
13468   \Fld@choices
13469   \Fld@additionalactions
13470 }

```

#### \PDFForm@Radio

```

13471 \def\PDFForm@Radio{%
13472   /Subtype/Widget%
13473   \Fld@annotflags
13474   \Fld@annotnames
13475   /FT/Btn%
13476   \Fld@flags
13477   /H/P%
13478   /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
13479   /MK<<%
13480   \ifnum\Fld@rotation=\z@
13481   \else
13482     /R \Fld@rotation
13483   \fi
13484   \ifx\Fld@bordercolor\relax

```

```

13485 \else
13486 /BC[\Fld@bordercolor]%
13487 \fi
13488 \ifx\Fld@bcolor\relax
13489 \else
13490 /BG[\Fld@bcolor]%
13491 \fi
13492 /CA[\Fld@radiosymbol]%
13493 >>%
13494 /DA(/ZaDb \strip@pt\Fld@charsize\space Tf%
13495 \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
13496 \ifx\@currValue\Fld@default
13497 /V/\Fld@default
13498 /DV/\Fld@default
13499 \else
13500 /V/Off%
13501 /DV/Off%
13502 \fi
13503 \Fld@additionalactions
13504 }

```

\PDFForm@Text

```

13505 \def\PDFForm@Text{%
13506 /Subtype/Widget%
13507 \Fld@annotflags
13508 \Fld@annotnames
13509 /FT/Tx%
13510 \Fld@flags
13511 /Q \Fld@align
13512 /BS<</W \Fld@borderwidth\space /S /\Fld@borderstyle>>%
13513 \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
13514 \ifx\Fld@bordercolor\relax\else 1\fi
13515 \ifx\Fld@bcolor\relax \else 1\fi
13516 \space
13517 \else
13518 /MK<<%
13519 \ifnum\Fld@rotation=\z@
13520 \else
13521 /R \Fld@rotation
13522 \fi
13523 \ifx\Fld@bordercolor\relax
13524 \else
13525 /BC[\Fld@bordercolor]%
13526 \fi
13527 \ifx\Fld@bcolor\relax
13528 \else
13529 /BG[\Fld@bcolor]%
13530 \fi
13531 >>%
13532 \fi
13533 /DA(/Helv \strip@pt\Fld@charsize\space Tf%
13534 \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
13535 /DV(\Hy@escapestring{\Fld@default})%
13536 /V(\Hy@escapestring{\Fld@value})%
13537 \Fld@additionalactions
13538 \ifnum\Fld@maxlen>\z@/MaxLen \Fld@maxlen \fi
13539 }

```



\PDFForm@Submit

```
13540 \def\PDFForm@Submit{%
13541   /Subtype/Widget%
13542   \Fld@annotflags
13543   \Fld@annotnames
13544   /FT/Btn%
13545   \Fld@flags
13546   /H/P%
13547   /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
13548   \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
13549     \ifx\Fld@bordercolor\relax\else 1\fi
13550     \space
13551   \else
13552     /MK<<%
13553     \ifnum\Fld@rotation=\z@
13554     \else
13555       /R \Fld@rotation
13556     \fi
13557     \ifx\Fld@bordercolor\relax
13558     \else
13559       /BC[\Fld@bordercolor]%
13560     \fi
13561   >>%
13562 \fi
13563 /A<<%
13564 /S/SubmitForm%
13565 /F<<%
13566   /FS/URL%
13567   /F(\Hy@escapestring{\Form@action})%
13568 >>%
13569 \Fld@submitflags
13570 >>%
13571 \Fld@additionalactions
13572 }
```

\PDFForm@Reset

```
13573 \ifHy@pdfa
13574 \else
13575   \def\PDFForm@Reset{%
13576     /Subtype/Widget%
13577     \Fld@annotflags
13578     \Fld@annotnames
13579     /FT/Btn%
13580     \Fld@flags
13581     /H/P%
13582     /DA(/Helv \strip@pt\Fld@charsize\space Tf 0 0 1 rg)%
13583     \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
13584       \ifx\Fld@bordercolor\relax\else 1\fi
13585       \space
13586     \else
13587       /MK<<%
13588       \ifnum\Fld@rotation=\z@
13589       \else
13590         /R \Fld@rotation
13591       \fi
13592       \ifx\Fld@bordercolor\relax
13593       \else
```

```

13594      /BC[\Fld@bordercolor]%
13595      \fi
13596 %      /CA (Clear)
13597 %      /AC (Done)
13598      >>%
13599      \fi
13600      /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
13601      /A<</S/ResetForm>>%
13602      \Fld@additionalactions
13603      }%
13604 \fi

13605 </pdfform>
13606 <*package>

```

## 48 Bookmarks in the PDF file

This was originally developed by Yannis Haralambous (it was the separate `repere.sty`); it needed the `repere` or `makebook.pl` post-processor to work properly. Now redundant, as it is done entirely in L<sup>A</sup>T<sub>E</sub>X macros.

To write out the current section title, and its rationalized number, we have to intercept the `\@sect` command, which is rather dangerous. But how else to see the information we need? We do the *same* for `\@ssect`, giving anchors to unnumbered sections. This allows things like bibliographies to get bookmarks when used with a manual `\addcontentsline`

```

13607 \def\phantomsection{%
13608   \Hy@MakeCurrentHrefAuto{section*}%
13609   \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
13610 }
13611 </package>

```

### 48.1 Bookmarks

```

13612 <*outlines>

```

This section was written by Heiko Oberdiek; the code replaces an earlier version by David Carlisle.

The first part of bookmark code is in section 6. Further documentation is available as paper and slides of the talk, that Heiko Oberdiek has given at the EuroTeX'99 meeting in Heidelberg. See `paper.pdf` and `slides.pdf` in the `doc` directory of `hyperref`.

When using the right-to-left typesetting based on  $\varepsilon$ -T<sub>E</sub>X, the order of the `\BOOKMARK` commands written to the `\@outlinefile` could appear wrong, because of mis-feature of  $\varepsilon$ -T<sub>E</sub>X's implementation (that it processes the shipped out lines left-to-right, instead of the order in which they appear in the document). The wrong order will appear when the file contains two bookmarks on the same line typeset right-to-left.

To work around this problem, the `bookmark@seq@number` counter is used to write the bookmark's sequential number into a comment in the `\@outlinefile`, which could be used to post-process it to achieve the proper ordering of `\BOOKMARK` commands in that file.

```

13613 \def\Hy@writebookmark#1#2#3#4#5{%
13614   % section number, text, label, level, file
13615   \ifx\WriteBookmarks\relax%
13616   \else
13617     \ifnum#4>\Hy@bookmarksdepth\relax
13618     \else
13619       \@@writetorep{#1}{#2}{#3}{#4}{#5}%

```

```

13620 \fi
13621 \fi
13622 }
13623 \def\Hy@currentbookmarklevel{0}
13624 \def\Hy@numberline#1{#1 }
13625 \def\@@writetorep#1#2#3#4#5{%
13626 \begingroup
13627 \edef\Hy@tempa{#5}%
13628 \ifx\Hy@tempa\Hy@bookmarkstype
13629 \edef\Hy@level{#4}%
13630 \ifx\Hy@levelcheck Y%
13631 \@tempcnta\Hy@level\relax
13632 \advance\@tempcnta by -1 %
13633 \ifnum\Hy@currentbookmarklevel<\@tempcnta
13634 \advance\@tempcnta by -\Hy@currentbookmarklevel\relax
13635 \advance\@tempcnta by 1 %
13636 \Hy@Warning{%
13637 Difference (\the\@tempcnta) between bookmark levels is %
13638 greater \MessageBreak than one, level fixed%
13639 }%
13640 \@tempcnta\Hy@currentbookmarklevel
13641 \advance\@tempcnta by 1 %
13642 \edef\Hy@level{\the\@tempcnta}%
13643 \fi
13644 \else
13645 \global\let\Hy@levelcheck Y%
13646 \fi
13647 \global\let\Hy@currentbookmarklevel\Hy@level
13648 \@tempcnta\Hy@level\relax
13649 \expandafter\edef\csname Parent\Hy@level\endcsname{#3}%
13650 \advance\@tempcnta by -1 %
13651 \edef\Hy@tempa{#3}%
13652 \edef\Hy@tempb{\csname Parent\the\@tempcnta\endcsname}%
13653 \ifx\Hy@tempa\Hy@tempb
13654 \Hy@Warning{%
13655 The anchor of a bookmark and its parent's must not%
13656 \MessageBreak be the same. Added a new anchor%
13657 }%
13658 \phantomsection
13659 \fi
13660 \ifHy@bookmarksnumbered
13661 \let\numberline\Hy@numberline
13662 \let\booknumberline\Hy@numberline
13663 \let\partnumberline\Hy@numberline
13664 \let\chapternumberline\Hy@numberline
13665 \else
13666 \let\numberline\@gobble
13667 \let\booknumberline\@gobble
13668 \let\partnumberline\@gobble
13669 \let\chapternumberline\@gobble
13670 \fi
13671 \HyPsd@XeTeXBigCharstrue
13672 \pdfstringdef\Hy@tempa{#2}%
13673 \HyPsd@SanitizeForOutFile\Hy@tempa
13674 \if@filesw
13675 \stepcounter{bookmark@seq@number}%
13676 \ifundefined{outlinefile}{%

```

```

13677     }{%
13678         \protected@write\@outlinefile{}{%
13679             \protect\BOOKMARK
13680             [\Hy@level][\@bookmarkopenstatus{\Hy@level}]{#3}%
13681             {\Hy@tempa}{\Hy@tempb}%
13682             \@percentchar\space\thebookmark@seq@number
13683         }%
13684     }%
13685     \fi
13686     \fi
13687 \endgroup
13688 }
13689 \newcounter{bookmark@seq@number}

13690 \begingroup
13691 \lccode'('= '{%
13692 \lccode'('= '}%
13693 \lccode'1=\z@
13694 \lccode'2=\z@
13695 \lccode'3=\z@
13696 \lccode'5=\z@
13697 \lccode'7=\z@
13698 \lccode'\#=\z@
13699 \lccode'\'=\z@
13700 \lccode'\{=\z@
13701 \lccode'\}=\z@
13702 \lowercase{%
13703 \endgroup
13704 \def\HyPsd@SanitizeForOutFile#1{%
13705     \@onelevel@sanitize\Hy@tempa
13706     \escapechar'\%
13707     \edef\Hy@tempa{%
13708         \expandafter\HyPsd@SanitizeOut@BraceLeft\Hy@tempa(\@nil
13709     }%
13710     \edef\Hy@tempa{%
13711         \expandafter\HyPsd@SanitizeOut@BraceRight\Hy@tempa)\@nil
13712     }%
13713 }%
13714 \def\HyPsd@SanitizeOut@BraceLeft#1(#2\@nil{%
13715     #1%
13716     \ifx\#2\\%
13717         \expandafter\ltx@gobble
13718     \else
13719         \expandafter\ltx@firstofone
13720     \fi
13721     {%
13722         \string\173%
13723         \HyPsd@SanitizeOut@BraceLeft#2\@nil
13724     }%
13725 }%
13726 \def\HyPsd@SanitizeOut@BraceRight#1)#2\@nil{%
13727     #1%
13728     \ifx\#2\\%
13729         \expandafter\ltx@gobble
13730     \else
13731         \expandafter\ltx@firstofone
13732     \fi
13733     {%

```

```

13734 \string\175%
13735 \HyPsd@SanitizeOut@BraceRight#2\@nil
13736 }%
13737 }%
13738 }

```

In the call of \BOOKMARK the braces around #4 are omitted, because it is not likely, that the level number contains ].

```

13739 \newcommand{\currentpdfbookmark}{%
13740 \pdfbookmark{\Hy@currentbookmarklevel}%
13741 }
13742 \newcommand{\subpdfbookmark}{%
13743 \@tempcnta\Hy@currentbookmarklevel
13744 \Hy@StepCount\@tempcnta
13745 \expandafter\pdfbookmark\expandafter[\the\@tempcnta]%
13746 }
13747 \newcommand{\belowpdfbookmark}[2]{%
13748 \@tempcnta\Hy@currentbookmarklevel
13749 \Hy@StepCount\@tempcnta
13750 \expandafter\pdfbookmark\expandafter[\the\@tempcnta]{#1}{#2}%
13751 \advance\@tempcnta by -1 %
13752 \xdef\Hy@currentbookmarklevel{\the\@tempcnta}%
13753 }

```

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.

```

13754 \renewcommand{\pdfbookmark}[3][0]{%
13755 \Hy@writebookmark}{#2}{#3.#1}{#1}{toc}%
13756 \hyper@anchorstart{#3.#1}\hyper@anchorend
13757 }
13758 \def\BOOKMARK{%
13759 \@ifnextchar[{\@BOOKMARK}{\@@BOOKMARK[1][-]}%
13760 }
13761 \def\@BOOKMARK[#1]{%
13762 \@ifnextchar[{\@@BOOKMARK[{#1}]}{\@@BOOKMARK[{#1}][-]}%
13763 }

```

The macros for calculating structure of outlines are derived from those by Petr Olsak used in the texinfo pdf macros.

#### 48.1.1 Rerun warning

\Hy@OutlineRerunCheck

```

13764 \RequirePackage{rerunfilecheck}[2009/12/10]
13765 \def\Hy@OutlineRerunCheck{%
13766 \RerunFileCheck{\jobname.out}{%
13767 \immediate\closeout\@outlinefile
13768 }{%
13769 Rerun to get outlines right\MessageBreak
13770 or use package ‘bookmark’%
13771 }%
13772 }

```

#### 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.

```
13773 \*vtex\
```

```
13774 \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.

```
13775 \begingroup
13776 \catcode'\'=12 %
13777 \ifnum\Hy@VTeXversion<650 %
13778 \catcode'\ "=12 %
13779 \gdef\hv@pdf@char#1#2#3{%
13780 \char
13781 \ifcase'#1#2#3 %
13782 "00\or"01\or"02\or"03\or"04\or"05\or"06\or"07%
13783 \or"08\or"09\or"0A\or"0B\or"0C\or"0D\or"0E\or"0F%
13784 \or"10\or"11\or"12\or"13\or"14\or"15\or"16\or"17%
13785 \or"18\or"19\or"1A\or"1B\or"1C\or"1D\or"1E\or"1F%
13786 \or"20\or"21\or"22\or"23\or"24\or"25\or"26\or"27%
13787 \or"28\or"29\or"2A\or"2B\or"2C\or"2D\or"2E\or"2F%
13788 \or"30\or"31\or"32\or"33\or"34\or"35\or"36\or"37%
13789 \or"38\or"39\or"3A\or"3B\or"3C\or"3D\or"3E\or"3F%
13790 \or"40\or"41\or"42\or"43\or"44\or"45\or"46\or"47%
13791 \or"48\or"49\or"4A\or"4B\or"4C\or"4D\or"4E\or"4F%
13792 \or"50\or"51\or"52\or"53\or"54\or"55\or"56\or"57%
13793 \or"58\or"59\or"5A\or"5B\or"5C\or"5D\or"5E\or"5F%
13794 \or"60\or"61\or"62\or"63\or"64\or"65\or"66\or"67%
13795 \or"68\or"69\or"6A\or"6B\or"6C\or"6D\or"6E\or"6F%
13796 \or"70\or"71\or"72\or"73\or"74\or"75\or"76\or"77%
13797 \or"78\or"79\or"7A\or"7B\or"7C\or"7D\or"7E\or"7F%
13798 \or"80\or"81\or"82\or"83\or"84\or"85\or"86\or"87%
13799 \or"88\or"89\or"8A\or"8B\or"8C\or"8D\or"8E\or"8F%
13800 \or"90\or"91\or"92\or"93\or"94\or"95\or"96\or"97%
13801 \or"98\or"99\or"9A\or"9B\or"9C\or"9D\or"9E\or"9F%
13802 \or"A0\or"A1\or"A2\or"A3\or"A4\or"A5\or"A6\or"A7%
13803 \or"A8\or"A9\or"AA\or"AB\or"AC\or"AD\or"AE\or"AF%
13804 \or"B0\or"B1\or"B2\or"B3\or"B4\or"B5\or"B6\or"B7%
13805 \or"B8\or"B9\or"BA\or"BB\or"BC\or"BD\or"BE\or"BF%
13806 \or"C0\or"C1\or"C2\or"C3\or"C4\or"C5\or"C6\or"C7%
13807 \or"C8\or"C9\or"CA\or"CB\or"CC\or"CD\or"CE\or"CF%
13808 \or"D0\or"D1\or"D2\or"D3\or"D4\or"D5\or"D6\or"D7%
13809 \or"D8\or"D9\or"DA\or"DB\or"DC\or"DD\or"DE\or"DF%
13810 \or"E0\or"E1\or"E2\or"E3\or"E4\or"E5\or"E6\or"E7%
13811 \or"E8\or"E9\or"EA\or"EB\or"EC\or"ED\or"EE\or"EF%
13812 \or"F0\or"F1\or"F2\or"F3\or"F4\or"F5\or"F6\or"F7%
13813 \or"F8\or"F9\or"FA\or"FB\or"FC\or"FD\or"FE\or"FF%
13814 \fi
13815 }%
13816 \else
13817 \gdef\hv@pdf@char{\char'}%
13818 \fi
13819 \endgroup
```

\@@BOOKMARK

```
13820 \def\@@BOOKMARK[#1][#2]#3#4#5{%
```

```

13821 \expandafter\edef\csname @count@#3\endcsname{%
13822   \the\@serial@counter
13823 }%
13824 \edef\@mycount{\the\@serial@counter}%
13825 \Hy@StepCount\@serial@counter
13826 \edef\@parcount{%
13827   \expandafter\ifx\csname @count@#5\endcsname\relax
13828     0%
13829   \else
13830     \csname @count@#5\endcsname
13831   \fi
13832 }%
13833 \immediate\special{%
13834   !outline \HyperDestNameFilter{#3};p=\@parcount,i=\@mycount,%
13835   s=\ifx#2-c\else o\fi,t=#4%
13836 }%
13837 }%

```

\ReadBookmarks

```

13838 \def\ReadBookmarks{%
13839   \begingroup
13840   \def\0{\hv@pdf@char 0}%
13841   \def\1{\hv@pdf@char 1}%
13842   \def\2{\hv@pdf@char 2}%
13843   \def\3{\hv@pdf@char 3}%
13844   \def\{({}%
13845   \def\)}{)%
13846   \def\do##1{%
13847     \ifnum\catcode'##1=\active
13848       \@makeother##1%
13849     \else
13850       \ifnum\catcode'##1=6 %
13851         \@makeother##1%
13852       \fi
13853     \fi
13854   }%
13855   \dospecials
13856   \Hy@safe@activetrue
13857   \InputIfFileExists{\jobname.out}{\}{}%
13858 \endgroup
13859 \ifx\WriteBookmarks\relax
13860 \else
13861   \if@filesw
13862     \newwrite\@outlinefile
13863     \Hy@OutlineRerunCheck
13864     \immediate\openout\@outlinefile=\jobname.out\relax
13865     \ifHy@typexml
13866       \immediate\write\@outlinefile{<relaxxml>\relax}%
13867     \fi
13868   \fi
13869 \fi
13870 }
13871 </vtex>
13872 <!*vtex>
13873 \def\ReadBookmarks{%
13874   \pdf@ifdraftmode{\}{%

```

```

13875 \begingroup
13876 \def\do##1{%
13877 \ifnum\catcode'##1=\active
13878 \@makeother##1%
13879 \else
13880 \ifnum\catcode'##1=6 %
13881 \@makeother##1%
13882 \fi
13883 \fi
13884 }%
13885 \dospecials
13886 \Hy@safe@activetrue
13887 \escapechar='\'%
13888 \def\@@BOOKMARK[##1][##2]###3###4###5{%
13889 \calc@bm@number{##5}%
13890 }%
13891 \InputIfFileExists{\jobname.out}{\relax}{\relax}%
13892 \ifx\WriteBookmarks\relax
13893 \global\let\WriteBookmarks\relax
13894 \fi
13895 \def\@@BOOKMARK[##1][##2]###3###4###5{%
13896 \def\Hy@temp{##4}%
13897 \pdfmark{
13898 \Hy@pstringdef\Hy@pstringName{\HyperDestNameFilter{##3}}%
13899 \Hy@OutlineName{\Hy@pstringName{
13900 ##2\check@bm@number{##3}}%
13901 }{%
13902 \expandafter\strip@prefix\meaning\Hy@temp
13903 }%
13904 \pdfmark}
13905 \pdfmark{
13906 \pdfmark=/OUT,%
13907 pdfmark=OUT,%
13908 Count={##2\check@bm@number{##3}},%
13909 Dest={##3},%
13910 Title=\expandafter\strip@prefix\meaning\Hy@temp
13911 }%
13912 \pdfmark}
13913 \dviopdfm | xetex)
13914 \Hy@pstringdef\Hy@pstringName{\HyperDestNameFilter{##3}}%
13915 \pdfm@mark{%
13916 outline \ifHy@DvipdfmxOutlineOpen
13917 [%
13918 \ifnum##21>\z@
13919 \else
13920 -%
13921 \fi
13922 ] %
13923 \fi
13924 ##1<<%
13925 /Title(\expandafter\strip@prefix\meaning\Hy@temp)%
13926 /A<<%
13927 /S/GoTo%
13928 /D(\Hy@pstringName)%
13929 >>%
13930 >>%
13931 }%

```



```

13932 </dvipdfm | xetex>
13933 }%
13934 \begingroup
13935 \def\WriteBookmarks{0}%
13936 \InputIfFileExists{\jobname.out}{-}{-}%
13937 \endgroup
13938 %{\escapechar\m@ne\InputIfFileExists{\jobname.out}{-}{-}}%
13939 \endgroup
13940 }%
13941 \ifx\WriteBookmarks\relax
13942 \else
13943 \if@filesw
13944 \newwrite\@outlinefile
13945 \Hy@OutlineRerunCheck
13946 \immediate\openout\@outlinefile=\jobname.out\relax
13947 \ifHy@typexml
13948 \immediate\write\@outlinefile{<relaxxml>\relax}%
13949 \fi
13950 \fi
13951 \fi
13952 }
13953 <*pdfTex>
13954 \def\Hy@OutlineName#1#2#3#4{%
13955 \pdfoutline goto name{#2}count#3{#4}%
13956 }
13957 </pdfTex>
13958 \def\check@bm@number#1{%
13959 \expandafter\ifx\csname B_#1\endcsname\relax
13960 0%
13961 \else
13962 \csname B_#1\endcsname
13963 \fi
13964 }
13965 \def\calc@bm@number#1{%
13966 \@tempcnta=\check@bm@number{#1}\relax
13967 \advance\@tempcnta by 1 %
13968 \expandafter\xdef\csname B_#1\endcsname{\the\@tempcnta}%
13969 }
13970 </!vtex>

13971 \ifHy@implicit
13972 \else
13973 \expandafter\endinput
13974 \fi

13975 </outlines>
13976 <*outlines | hypertex>

13977 \newlength\Hy@SectionHShift
13978 \def\Hy@SectionAnchorHref#1{%
13979 \ifx\protect\@typeset@protect
13980 \Hy@@@SectionAnchor{#1}%
13981 \fi
13982 }
13983 \DeclareRobustCommand*\Hy@@@SectionAnchor}[1]{%
13984 \leavevmode
13985 \hbox to 0pt{%
13986 \kern-\Hy@SectionHShift
13987 \Hy@raisedlink{%

```

```

13988 \hyper@anchorstart{#1}\hyper@anchorend
13989 }%
13990 \hss
13991 }%
13992 }
13993 \let\H@old@ssect\@ssect
13994 \def\@ssect#1#2#3#4#5{%
13995 \Hy@MakeCurrentHrefAuto{section*}%
13996 \setlength{\Hy@SectionHShift}{#1}%
13997 \begingroup
13998 \toks@{\H@old@ssect{#1}{#2}{#3}{#4}}%
13999 \toks\tw@\expandafter{%
14000 \expandafter\Hy@SectionAnchorHref\expandafter{\@currentHref}%
14001 #5%
14002 }%
14003 \edef\x{\endgroup
14004 \the\toks@\the\toks\tw@}%
14005 }\x
14006 }
14007 \let\H@old@schapter\@schapter
14008 \def\@schapter#1{%
14009 \begingroup
14010 \let\@mkboth\@gobbletwo
14011 \Hy@MakeCurrentHrefAuto{\Hy@chapapp*}%
14012 \Hy@raisedlink{%
14013 \hyper@anchorstart{\@currentHref}\hyper@anchorend
14014 }%
14015 \endgroup
14016 \H@old@schapter{#1}%
14017 }

```

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:

```

14018 \ltx@ifundefined{@chapter}{%}{%
14019 \let\Hy@org@chapter\@chapter
14020 \def\@chapter{%
14021 \def\Hy@next{%
14022 \Hy@MakeCurrentHrefAuto{\Hy@chapapp*}%
14023 \Hy@raisedlink{%
14024 \hyper@anchorstart{\@currentHref}\hyper@anchorend
14025 }%
14026 }%
14027 \ifnum\c@secnumdepth>\m@ne
14028 \ltx@ifundefined{if@mainmatter}%
14029 \iftrue{\csname if@mainmatter\endcsname}%
14030 \let\Hy@next\relax
14031 \fi
14032 \fi
14033 \Hy@next
14034 \Hy@org@chapter
14035 }%
14036 }
14037 \let\H@old@part\@part
14038 \begingroup\expandafter\expandafter\expandafter\endgroup
14039 \expandafter\ifx\csname chapter\endcsname\relax
14040 \let\Hy@secnum@part\z@

```

```

14041 \else
14042   \let\Hy@secnum@part\m@ne
14043 \fi
14044 \def\@part{%
14045   \ifnum\Hy@secnum@part>\c@secnumdepth
14046     \phantomsection
14047   \fi
14048   \H@old@part
14049 }

14050 \let\H@old@spart\@spart
14051 \def\@spart#1{%
14052   \Hy@MakeCurrentHrefAuto{part*}%
14053   \Hy@raisedlink{%
14054     \hyper@anchorstart{\@currentHref}\hyper@anchorend
14055   }%
14056   \H@old@spart{#1}%
14057 }
14058 \let\H@old@sect\@sect
14059 \def\@sect#1#2#3#4#5#6[#7]#8{%
14060   \ifnum #2>\c@secnumdepth
14061     \expandafter\@firstoftwo
14062   \else
14063     \expandafter\@secondoftwo
14064   \fi
14065   {%
14066     \Hy@MakeCurrentHrefAuto{section*}%
14067     \setlength{\Hy@SectionHShift}{#3}%
14068     \begingroup
14069     \toks@{\H@old@sect{#1}{#2}{#3}{#4}{#5}{#6}{#7}}%
14070     \toks\tw@\expandafter{%
14071       \expandafter\Hy@SectionAnchorHref\expandafter{\@currentHref}%
14072       #8%
14073     }%
14074     \edef\x{\endgroup
14075       \the\toks@{\the\toks\tw@}}%
14076     }\x
14077   }{%
14078     \H@old@sect{#1}{#2}{#3}{#4}{#5}{#6}{#7}{#8}%
14079   }%
14080 }

14081 </outlines | hypertex>
14082 <*outlines>

14083 \expandafter\def\csname Parent-4\endcsname{}
14084 \expandafter\def\csname Parent-3\endcsname{}
14085 \expandafter\def\csname Parent-2\endcsname{}
14086 \expandafter\def\csname Parent-1\endcsname{}
14087 \expandafter\def\csname Parent0\endcsname{}
14088 \expandafter\def\csname Parent1\endcsname{}
14089 \expandafter\def\csname Parent2\endcsname{}
14090 \expandafter\def\csname Parent3\endcsname{}
14091 \expandafter\def\csname Parent4\endcsname{}

14092 </outlines>

```

## 49 Compatibility with koma-script classes

14093 ⟨\*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.

```
14094 \def\Hy@tempa{%
14095   \def\@addchap{##1}##2{%
14096     \typeout{##2}%
14097     \if@twoside
14098       \@mkboth{##1}{}%
14099     \else
14100       \@mkboth{}{##1}%
14101     \fi
14102     \addtocontents{lof}{\protect\addvspace{10\p@}}%
14103     \addtocontents{lot}{\protect\addvspace{10\p@}}%
14104     \Hy@MakeCurrentHrefAuto{\Hy@chapapp*}%
14105     \Hy@raisedlink{%
14106       \hyper@anchorstart{\@currentHref}\hyper@anchorend
14107     }%
14108     \if@twocolumn
14109       \@topnewpage[\@makeschapterhead{##2}]%
14110     \else
14111       \@makeschapterhead{##2}%
14112       \@afterheading
14113     \fi
14114     \addcontentsline{toc}{chapter}{##1}%
14115   }%
14116 }
14117 \ifclassloaded{scrbook}{%
14118   \ifclasslater{scrbook}{2001/01/01}{%
14119     \let\Hy@tempa\@empty
14120   }{}%
14121 }{%
14122   \ifclassloaded{scrreprt}{%
14123     \ifclasslater{scrreprt}{2001/01/01}{%
14124       \let\Hy@tempa\@empty
14125     }{}%
14126   }{%
14127     \let\Hy@tempa\@empty
14128   }%
14129 }%
14130 \Hy@tempa
14131 ⟨/outlines | hypertex⟩
```

## 50 Encoding definition files for encodings of PDF strings

This was contributed by Heiko Oberdiek.

### 50.1 PD1 encoding

```
14132 ⟨*pd1enc⟩
14133 \DeclareFontEncoding{PD1}{}{}

Accents
14134 \DeclareTextAccent{\'}{PD1}{\textasciigrave}
14135 \DeclareTextAccent{\'}{PD1}{\textacute}
14136 \DeclareTextAccent{\^}{PD1}{\textasciicircum}
```

```

14137 \DeclareTextAccent{\~}{PD1}{\texttilde}
14138 \DeclareTextAccent{\"}{PD1}{\textasciidieresis}
14139 \DeclareTextAccent{\r}{PD1}{\textring}
14140 \DeclareTextAccent{\v}{PD1}{\textasciicaron}
14141 \DeclareTextAccent{\.}{PD1}{\textdotaccent}
14142 \DeclareTextAccent{\c}{PD1}{\textcedilla}
14143 \DeclareTextAccent{\=}{PD1}{\textasciimacron}
14144 \DeclareTextAccent{\b}{PD1}{\textmacronbelow}
14145 \DeclareTextAccent{\d}{PD1}{\textdotbelow}
14146 \DeclareTextCompositeCommand{\'}{PD1}{\@empty}{\textasciigrave}
14147 \DeclareTextCompositeCommand{\'}{PD1}{\@empty}{\textacute}
14148 \DeclareTextCompositeCommand{\~}{PD1}{\@empty}{\textasciicircum}
14149 \DeclareTextCompositeCommand{\~}{PD1}{\@empty}{\texttilde}
14150 \DeclareTextCompositeCommand{\"}{PD1}{\@empty}{\textasciidieresis}
14151 \DeclareTextCompositeCommand{\r}{PD1}{\@empty}{\textring}
14152 \DeclareTextCompositeCommand{\v}{PD1}{\@empty}{\textasciicaron}
14153 \DeclareTextCompositeCommand{\.}{PD1}{\@empty}{\textdotaccent}
14154 \DeclareTextCompositeCommand{\c}{PD1}{\@empty}{\textcedilla}
14155 \DeclareTextCompositeCommand{\=}{PD1}{\@empty}{\textasciimacron}
14156 \DeclareTextCompositeCommand{\b}{PD1}{\@empty}{\textmacronbelow}
14157 \DeclareTextCompositeCommand{\d}{PD1}{\@empty}{\textdotbelow}
14158 \DeclareTextCompositeCommand{\'}{PD1}{\ }{\textasciigrave}
14159 \DeclareTextCompositeCommand{\'}{PD1}{\ }{\textacute}
14160 \DeclareTextCompositeCommand{\~}{PD1}{\ }{\textasciicircum}
14161 \DeclareTextCompositeCommand{\~}{PD1}{\ }{\texttilde}
14162 \DeclareTextCompositeCommand{\"}{PD1}{\ }{\textasciidieresis}
14163 \DeclareTextCompositeCommand{\r}{PD1}{\ }{\textring}
14164 \DeclareTextCompositeCommand{\v}{PD1}{\ }{\textasciicaron}
14165 \DeclareTextCompositeCommand{\.}{PD1}{\ }{\textdotaccent}
14166 \DeclareTextCompositeCommand{\c}{PD1}{\ }{\textcedilla}
14167 \DeclareTextCompositeCommand{\=}{PD1}{\ }{\textasciimacron}
14168 \DeclareTextCompositeCommand{\b}{PD1}{\ }{\textmacronbelow}
14169 \DeclareTextCompositeCommand{\d}{PD1}{\ }{\textdotbelow}
14170 \DeclareTextCommand{\k}{PD1}[1]{\TextSymbolUnavailable{\k{#1}}{#1}}
14171 \DeclareTextCommand{\t}{PD1}[1]{\TextSymbolUnavailable{\t{#1}}{#1}}
14172 \DeclareTextCommand{\newtie}{PD1}[1]{%
14173   \TextSymbolUnavailable{\newtie{#1}}{#1}%
14174 }

```

Special white space escape characters not for use in bookmarks but for other PDF strings.

```

14175 % U+0009 (CHARACTER TABULATION)
14176 \DeclareTextCommand{\textHT}{PD1}{\011}% U+0009
14177 % U+000A (LINE FEED)
14178 \DeclareTextCommand{\textLF}{PD1}{\012}% U+000A
14179 % U+000D (CARRIAGE RETURN)
14180 \DeclareTextCommand{\textCR}{PD1}{\015}% U+000D

```

Accent glyph names

```

14181 % U+02D8 BREVE; breve
14182 \DeclareTextCommand{\textasciibreve}{PD1}{\030}% U+02D8
14183 % U+02C7 CARON; caron
14184 \DeclareTextCommand{\textasciicaron}{PD1}{\031}% U+02C7
14185 % U+02C6 MODIFIER LETTER CIRCUMFLEX ACCENT; circumflex
14186 \DeclareTextCommand{\textcircumflex}{PD1}{\032}% U+02C6
14187 % U+02D9 DOT ABOVE; dotaccent
14188 \DeclareTextCommand{\textdotaccent}{PD1}{\033}% U+02D9
14189 % U+02DD DOUBLE ACUTE ACCENT; hungarumlaut
14190 \DeclareTextCommand{\texthungarumlaut}{PD1}{\034}% U+02DD
14191 % U+02DB OGONEK; ogonek

```

14192 \DeclareTextCommand{\textogonek}{PD1}{\035}% U+02DB  
14193 % U+02DA RING ABOVE; ring  
14194 \DeclareTextCommand{\textring}{PD1}{\036}% U+02DA  
14195 % U+02DC SMALL TILDE; ilde, \*tilde  
14196 \DeclareTextCommand{\texttilde}{PD1}{\037}% U+02DC  
\040: U+0020 SPACE; \*space, spacehackarabic  
\041: U+0021 EXCLAMATION MARK; exclam  
14197 % U+0022 QUOTATION MARK; quotedbl  
14198 \DeclareTextCommand{\textquotedbl}{PD1}{\string"}% \042 U+0022  
14199 % U+0023 NUMBER SIGN; numbersign  
14200 \DeclareTextCommand{\textnumbersign}{PD1}{\043}% U+0023  
14201 % U+0024 DOLLAR SIGN; dollar  
14202 \DeclareTextCommand{\textdollar}{PD1}{\044}% U+0024  
14203 % U+0025 PERCENT SIGN; percent  
14204 \DeclareTextCommand{\textpercent}{PD1}{\045}% U+0025  
14205 % U+0026 AMPERSAND; ampersand  
14206 \DeclareTextCommand{\textampersand}{PD1}{\046}% U+0026  
\047: U+0027 APOSTROPHE; quotesingle  
  
14207 % U+0028 LEFT PARENTHESIS; parenleft  
14208 \DeclareTextCommand{\textparenleft}{PD1}{\string\(% \050 U+0028  
14209 % U+0029 RIGHT PARENTHESIS; parenright  
14210 \DeclareTextCommand{\textparenright}{PD1}{\string\)% \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  
14211 % U+002E FULL STOP; period  
14212 \DeclareTextCommand{\textdotbelow}{PD1}{.}% \056 U+002E  
\057: U+002F SOLIDUS; slash  
\060: U+0030 DIGIT ZERO; zero  
...  
\071: U+0039 DIGIT NINE; nine  
\072: U+003A COLON; colon  
\073: U+003B SEMICOLON; semicolon  
14213 % U+003C LESS-THAN SIGN; less  
14214 \DeclareTextCommand{\textless}{PD1}{<}% \074 U+003C  
\075: U+003D EQUALS SIGN; equal  
14215 % U+003E GREATER-THAN SIGN; greater  
14216 \DeclareTextCommand{\textgreater}{PD1}{>}% \076 U+003E  
\077: U+003F QUESTION MARK; question  
\100: U+0040 COMMERCIAL AT; at  
\101: U+0041 LATIN CAPITAL LETTER A; A  
...  
\132: U+005A LATIN CAPITAL LETTER Z; Z  
\133: U+005B LEFT SQUARE BRACKET; bracketleft  
14217 % U+005C REVERSE SOLIDUS; backslash  
14218 \DeclareTextCommand{\textbackslash}{PD1}{\134}% U+005C  
\135: U+005D RIGHT SQUARE BRACKET; bracketright  
14219 % U+005E CIRCUMFLEX ACCENT; asciicircum  
14220 \DeclareTextCommand{\textasciicircum}{PD1}{\136}% U+005E  
14221 % U+005F LOW LINE; underscore  
14222 \DeclareTextCommand{\textunderscore}{PD1}{\137}% U+005F

14223 \DeclareTextCommand{\textmacronbelow}{PD1}{\137}% U+005F  
 14224 % U+0060 GRAVE ACCENT; grave  
 14225 \DeclareTextCommand{\textasciigrave}{PD1}{\140}% U+0060  
 \141: U+0061 LATIN SMALL LETTER A; a  
 ...  
 \150: U+0068 LATIN SMALL LETTER H; h  
 14226 % U+0069 LATIN SMALL LETTER I; i  
 14227 \DeclareTextCompositeCommand{\.}{PD1}{i}{i}% \151 U+0069  
 \152: U+006A LATIN SMALL LETTER J; j  
 ...  
 \172: U+007A LATIN SMALL LETTER Z; z  
 14228 % U+007B LEFT CURLY BRACKET; braceleft  
 14229 \DeclareTextCommand{\textbraceleft}{PD1}{\173}% U+007B  
 14230 % U+007C VERTICAL LINE; \*bar, verticalbar  
 14231 \DeclareTextCommand{\textbar}{PD1}{|}% U+007C  
 14232 % U+007D RIGHT CURLY BRACKET; braceright  
 14233 \DeclareTextCommand{\textbraceright}{PD1}{\175}% U+007D  
 14234 % U+007E TILDE; asciitilde  
 14235 \DeclareTextCommand{\textasciitilde}{PD1}{\176}% U+007E  
 Slot \177 (0x7F) is undefined in PDFDocEncoding.  
 14236 % U+2022 BULLET; bullet  
 14237 \DeclareTextCommand{\textbullet}{PD1}{\200}% U+2022  
 14238 % U+2020 DAGGER; dagger  
 14239 \DeclareTextCommand{\textdagger}{PD1}{\201}% U+2020  
 14240 % U+2021 DOUBLE DAGGER; daggerdbl  
 14241 \DeclareTextCommand{\textdaggerdbl}{PD1}{\202}% U+2021  
 14242 % U+2026 HORIZONTAL ELLIPSIS; ellipsis  
 14243 \DeclareTextCommand{\textellipsis}{PD1}{\203}% U+2026  
 14244 % U+2014 EM DASH; emdash  
 14245 \DeclareTextCommand{\textemdash}{PD1}{\204}% U+2014  
 14246 % U+2013 EN DASH; endash  
 14247 \DeclareTextCommand{\textendash}{PD1}{\205}% U+2013  
 14248 % U+0192 LATIN SMALL LETTER F WITH HOOK; florin  
 14249 \DeclareTextCommand{\textflorin}{PD1}{\206}% U+0192  
 14250 % U+2044 FRACTION SLASH; fraction  
 14251 \DeclareTextCommand{\textfractionsolidus}{PD1}{\207}% U+2044  
 14252 % U+2039 SINGLE LEFT-POINTING ANGLE QUOTATION MARK; guil-  
 lingleft  
 14253 \DeclareTextCommand{\guilsingleft}{PD1}{\210}% U+2039  
 14254 % U+203A SINGLE RIGHT-POINTING ANGLE QUOTATION MARK; guil-  
 lingright  
 14255 \DeclareTextCommand{\guilsingright}{PD1}{\211}% U+203A  
 14256 % U+2212 MINUS SIGN; minus  
 14257 \DeclareTextCommand{\textminus}{PD1}{\212}% U+2212  
 14258 % U+2030 PER MILLE SIGN; perthousand  
 14259 \DeclareTextCommand{\textperthousand}{PD1}{\213}% U+2030  
 14260 % U+201E DOUBLE LOW-9 QUOTATION MARK; quotedblbase  
 14261 \DeclareTextCommand{\quotedblbase}{PD1}{\214}% U+201E  
 14262 % U+201C LEFT DOUBLE QUOTATION MARK; quotedblleft  
 14263 \DeclareTextCommand{\textquotedblleft}{PD1}{\215}% U+201C  
 14264 % U+201D RIGHT DOUBLE QUOTATION MARK; quotedblright  
 14265 \DeclareTextCommand{\textquotedblright}{PD1}{\216}% U+201D  
 14266 % U+2018 LEFT SINGLE QUOTATION MARK; quoteleft  
 14267 \DeclareTextCommand{\textquoteleft}{PD1}{\217}% U+2018  
 14268 % U+2019 RIGHT SINGLE QUOTATION MARK; quoteright  
 14269 \DeclareTextCommand{\textquoteright}{PD1}{\220}% U+2019

14270 % U+201A SINGLE LOW-9 QUOTATION MARK; quotesinglbase  
 14271 \DeclareTextCommand{\quotesinglbase}{PD1}{\221}% U+201A  
 14272 % U+2122 TRADE MARK SIGN; trademark  
 14273 \DeclareTextCommand{\texttrademark}{PD1}{\222}% U+2122  
 14274 % U+FB01 LATIN SMALL LIGATURE FI; fi  
 14275 \DeclareTextCommand{\textfi}{PD1}{\223}% U+FB01  
 14276 % U+FB02 LATIN SMALL LIGATURE FL; fl  
 14277 \DeclareTextCommand{\textfl}{PD1}{\224}% U+FB02  
 14278 % U+0141 LATIN CAPITAL LETTER L WITH STROKE; Lslash  
 14279 \DeclareTextCommand{\L}{PD1}{\225}% U+0141  
 14280 % U+0152 LATIN CAPITAL LIGATURE OE; OE  
 14281 \DeclareTextCommand{\OE}{PD1}{\226}% U+0152  
 14282 % U+0160 LATIN CAPITAL LETTER S WITH CARON; Scaron  
 14283 \DeclareTextCompositeCommand{\v}{PD1}{S}{\227}% U+0160  
 14284 % U+0178 LATIN CAPITAL LETTER Y WITH DIAERESIS; Ydieresis  
 14285 \DeclareTextCompositeCommand{"}{PD1}{Y}{\230}% U+0178  
 14286 \DeclareTextCommand{\IJ}{PD1}{\230}  
 14287 % U+017D LATIN CAPITAL LETTER Z WITH CARON; Zcaron  
 14288 \DeclareTextCompositeCommand{\v}{PD1}{Z}{\231}% U+017D  
 14289 % U+0131 LATIN SMALL LETTER DOTLESS I; dotlessi  
 14290 \DeclareTextCommand{\i}{PD1}{\232}% U+0131  
 14291 % U+0142 LATIN SMALL LETTER L WITH STROKE; lslash  
 14292 \DeclareTextCommand{\l}{PD1}{\233}% U+0142  
 14293 % U+0153 LATIN SMALL LIGATURE OE; oe  
 14294 \DeclareTextCommand{\oe}{PD1}{\234}% U+0153  
 14295 % U+0161 LATIN SMALL LETTER S WITH CARON; scaron  
 14296 \DeclareTextCompositeCommand{\v}{PD1}{s}{\235}% U+0161  
 14297 % U+017E LATIN SMALL LETTER Z WITH CARON; zcaron  
 14298 \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.

14299 % U+20AC EURO SIGN; \*Euro, euro  
 14300 \DeclareTextCommand{\texteuro}{PD1}{\240}% U+20AC  
 14301 % U+00A1 INVERTED EXCLAMATION MARK; exclamdown  
 14302 \DeclareTextCommand{\textexclamdown}{PD1}{\241}% U+00A1  
 14303 % U+00A2 CENT SIGN; cent  
 14304 \DeclareTextCommand{\textcent}{PD1}{\242}% U+00A2  
 14305 % U+00A3 POUND SIGN; sterling  
 14306 \DeclareTextCommand{\textsterling}{PD1}{\243}% U+00A3  
 14307 % U+00A4 CURRENCY SIGN; currency  
 14308 \DeclareTextCommand{\textcurrency}{PD1}{\244}% U+00A4  
 14309 % U+00A5 YEN SIGN; yen  
 14310 \DeclareTextCommand{\textyen}{PD1}{\245}% U+00A5  
 14311 % U+00A6 BROKEN BAR; brokenbar  
 14312 \DeclareTextCommand{\textbrokenbar}{PD1}{\246}% U+00A6  
 14313 % U+00A7 SECTION SIGN; section  
 14314 \DeclareTextCommand{\textsection}{PD1}{\247}% U+00A7  
 14315 % U+00A8 DIAERESIS; dieresis  
 14316 \DeclareTextCommand{\textasciidieresis}{PD1}{\250}% U+00A8  
 14317 % U+00A9 COPYRIGHT SIGN; copyright  
 14318 \DeclareTextCommand{\textcopyright}{PD1}{\251}% U+00A9  
 14319 % U+00AA FEMININE ORDINAL INDICATOR; ordfeminine  
 14320 \DeclareTextCommand{\textordfeminine}{PD1}{\252}% U+00AA  
 14321 % U+00AB LEFT-POINTING DOUBLE ANGLE QUOTATION MARK; guille-  
 motleft  
 14322 \DeclareTextCommand{\guillemotleft}{PD1}{\253}% U+00AB  
 14323 % U+00AC NOT SIGN; logicalnot



14324 \DeclareTextCommand{\textlogicalnot}{PD1}{\254}% U+00AC  
14325 \DeclareTextCommand{\textlnot}{PD1}{\254}% logical not  
No glyph \255 in PDFDocEncoding.  
14326 % U+00AE REGISTERED SIGN; registered  
14327 \DeclareTextCommand{\textregistered}{PD1}{\256}% U+00AE  
14328 % U+00AF MACRON; \*macron, overscore  
14329 \DeclareTextCommand{\textasciimacron}{PD1}{\257}% U+00AF  
14330 % U+00B0 DEGREE SIGN; degree  
14331 \DeclareTextCommand{\textdegree}{PD1}{\260}% U+00B0  
14332 % U+00B1 PLUS-MINUS SIGN; plusminus  
14333 \DeclareTextCommand{\textplusminus}{PD1}{\261}% U+00B1  
14334 % U+00B2 SUPERSCRIPT TWO; twosuperior  
14335 \DeclareTextCommand{\texttwosuperior}{PD1}{\262}% U+00B2  
14336 % U+00B3 SUPERSCRIPT THREE; threesuperior  
14337 \DeclareTextCommand{\textthreesuperior}{PD1}{\263}% U+00B3  
14338 % U+00B4 ACUTE ACCENT; acute  
14339 \DeclareTextCommand{\textacute}{PD1}{\264}% U+00B4  
14340 % U+00B5 MICRO SIGN; mu, mu1  
14341 \DeclareTextCommand{\textmu}{PD1}{\265}% U+00B5  
14342 % U+00B6 PILCROW SIGN; paragraph  
14343 \DeclareTextCommand{\textparagraph}{PD1}{\266}% U+00B6  
14344 % U+00B7 MIDDLE DOT; middot, \*periodcentered  
14345 \DeclareTextCommand{\textperiodcentered}{PD1}{\267}% U+00B7  
14346 % U+00B8 CEDILLA; cedilla  
14347 \DeclareTextCommand{\textcedilla}{PD1}{\270}% U+00B8  
14348 % U+00B9 SUPERSCRIPT ONE; onesuperior  
14349 \DeclareTextCommand{\textonesuperior}{PD1}{\271}% U+00B9  
14350 % U+00BA MASCULINE ORDINAL INDICATOR; ordmasculine  
14351 \DeclareTextCommand{\textordmasculine}{PD1}{\272}% U+00BA  
14352 % U+00BB RIGHT-POINTING DOUBLE ANGLE QUOTATION MARK; guille-  
motright  
14353 \DeclareTextCommand{\guillemotright}{PD1}{\273}% U+00BB  
14354 % U+00BC VULGAR FRACTION ONE QUARTER; onequarter  
14355 \DeclareTextCommand{\textonequarter}{PD1}{\274}% U+00BC  
14356 % U+00BD VULGAR FRACTION ONE HALF; onehalf  
14357 \DeclareTextCommand{\textonehalf}{PD1}{\275}% U+00BD  
14358 % U+00BE VULGAR FRACTION THREE QUARTERS; threequarters  
14359 \DeclareTextCommand{\textthreequarters}{PD1}{\276}% U+00BE  
14360 % U+00BF INVERTED QUESTION MARK; questiondown  
14361 \DeclareTextCommand{\textquestiondown}{PD1}{\277}% U+00BF  
14362 % U+00C0 LATIN CAPITAL LETTER A WITH GRAVE; Agrave  
14363 \DeclareTextCompositeCommand{\`}{PD1}{A}{\300}% U+00C0  
14364 % U+00C1 LATIN CAPITAL LETTER A WITH ACUTE; Aacute  
14365 \DeclareTextCompositeCommand{\'}{PD1}{A}{\301}% U+00C1  
14366 % U+00C2 LATIN CAPITAL LETTER A WITH CIRCUMFLEX; Acircumflex  
14367 \DeclareTextCompositeCommand{\^}{PD1}{A}{\302}% U+00C2  
14368 % U+00C3 LATIN CAPITAL LETTER A WITH TILDE; Atilde  
14369 \DeclareTextCompositeCommand{\~}{PD1}{A}{\303}% U+00C3  
14370 % U+00C4 LATIN CAPITAL LETTER A WITH DIAERESIS; Adieresis  
14371 \DeclareTextCompositeCommand{\"}{PD1}{A}{\304}% U+00C4  
14372 % U+00C5 LATIN CAPITAL LETTER A WITH RING ABOVE; Aring  
14373 \DeclareTextCompositeCommand{\r}{PD1}{A}{\305}% U+00C5  
14374 % U+00C6 LATIN CAPITAL LETTER AE; AE  
14375 \DeclareTextCommand{\AE}{PD1}{\306}% U+00C6  
14376 % U+00C7 LATIN CAPITAL LETTER C WITH CEDILLA; Ccedilla  
14377 \DeclareTextCompositeCommand{\c}{PD1}{C}{\307}% U+00C7  
14378 % U+00C8 LATIN CAPITAL LETTER E WITH GRAVE; Egrave

14379 \DeclareTextCompositeCommand{\'}{PD1}{E}{\310}% U+00C8  
14380 % U+00C9 LATIN CAPITAL LETTER E WITH ACUTE; Eacute  
14381 \DeclareTextCompositeCommand{\'}{PD1}{E}{\311}% U+00C9  
14382 % U+00CA LATIN CAPITAL LETTER E WITH CIRCUMFLEX; Ecircumflex  
14383 \DeclareTextCompositeCommand{\^}{PD1}{E}{\312}% U+00CA  
14384 % U+00CB LATIN CAPITAL LETTER E WITH DIAERESIS; Edieresis  
14385 \DeclareTextCompositeCommand{\"}{PD1}{E}{\313}% U+00CB  
14386 % U+00CC LATIN CAPITAL LETTER I WITH GRAVE; Igrave  
14387 \DeclareTextCompositeCommand{\'}{PD1}{I}{\314}% U+00CC  
14388 % U+00CD LATIN CAPITAL LETTER I WITH ACUTE; Iacute  
14389 \DeclareTextCompositeCommand{\'}{PD1}{I}{\315}% U+00CD  
14390 % U+00CE LATIN CAPITAL LETTER I WITH CIRCUMFLEX; Icircumflex  
14391 \DeclareTextCompositeCommand{\^}{PD1}{I}{\316}% U+00CE  
14392 % U+00CF LATIN CAPITAL LETTER I WITH DIAERESIS; Idieresis  
14393 \DeclareTextCompositeCommand{\"}{PD1}{I}{\317}% U+00CF  
14394 % U+00D0 LATIN CAPITAL LETTER ETH; Eth  
14395 \DeclareTextCommand{\DH}{PD1}{\320}% U+00D0  
14396 \DeclareTextCommand{\DJ}{PD1}{\320}% U+00D0  
14397 % U+00D1 LATIN CAPITAL LETTER N WITH TILDE; Ntilde  
14398 \DeclareTextCompositeCommand{\~}{PD1}{N}{\321}% U+00D1  
14399 % U+00D2 LATIN CAPITAL LETTER O WITH GRAVE; Ograve  
14400 \DeclareTextCompositeCommand{\'}{PD1}{O}{\322}% U+00D2  
14401 % U+00D3 LATIN CAPITAL LETTER O WITH ACUTE; Oacute  
14402 \DeclareTextCompositeCommand{\'}{PD1}{O}{\323}% U+00D3  
14403 % U+00D4 LATIN CAPITAL LETTER O WITH CIRCUMFLEX; Ocircumflex  
14404 \DeclareTextCompositeCommand{\^}{PD1}{O}{\324}% U+00D4  
14405 % U+00D5 LATIN CAPITAL LETTER O WITH TILDE; Otilde  
14406 \DeclareTextCompositeCommand{\~}{PD1}{O}{\325}% U+00D5  
14407 % U+00D6 LATIN CAPITAL LETTER O WITH DIAERESIS; Odieresis  
14408 \DeclareTextCompositeCommand{\"}{PD1}{O}{\326}% U+00D6  
14409 % U+00D7 MULTIPLICATION SIGN; multiply  
14410 \DeclareTextCommand{\textmultiply}{PD1}{\327}% U+00D7  
14411 % U+00D8 LATIN CAPITAL LETTER O WITH STROKE; Oslash  
14412 \DeclareTextCommand{\O}{PD1}{\330}% U+00D8  
14413 % U+00D9 LATIN CAPITAL LETTER U WITH GRAVE; Ugrave  
14414 \DeclareTextCompositeCommand{\'}{PD1}{U}{\331}% U+00D9  
14415 % U+00DA LATIN CAPITAL LETTER U WITH ACUTE; Uacute  
14416 \DeclareTextCompositeCommand{\'}{PD1}{U}{\332}% U+00DA  
14417 % U+00DB LATIN CAPITAL LETTER U WITH CIRCUMFLEX; Ucircumflex  
14418 \DeclareTextCompositeCommand{\^}{PD1}{U}{\333}% U+00DB  
14419 % U+00DC LATIN CAPITAL LETTER U WITH DIAERESIS; Udieresis  
14420 \DeclareTextCompositeCommand{\"}{PD1}{U}{\334}% U+00DC  
14421 % U+00DD LATIN CAPITAL LETTER Y WITH ACUTE; Yacute  
14422 \DeclareTextCompositeCommand{\'}{PD1}{Y}{\335}% U+00DD  
14423 % U+00DE LATIN CAPITAL LETTER THORN; Thorn  
14424 \DeclareTextCommand{\TH}{PD1}{\336}% U+00DE  
14425 % U+00DF LATIN SMALL LETTER SHARP S; germandbls  
14426 \DeclareTextCommand{\ss}{PD1}{\337}% U+00DF  
14427 % U+00E0 LATIN SMALL LETTER A WITH GRAVE; agrave  
14428 \DeclareTextCompositeCommand{\'}{PD1}{a}{\340}% U+00E0  
14429 % U+00E1 LATIN SMALL LETTER A WITH ACUTE; aacute  
14430 \DeclareTextCompositeCommand{\'}{PD1}{a}{\341}% U+00E1  
14431 % U+00E2 LATIN SMALL LETTER A WITH CIRCUMFLEX; acircumflex  
14432 \DeclareTextCompositeCommand{\^}{PD1}{a}{\342}% U+00E2  
14433 % U+00E3 LATIN SMALL LETTER A WITH TILDE; atilde  
14434 \DeclareTextCompositeCommand{\~}{PD1}{a}{\343}% U+00E3  
14435 % U+00E4 LATIN SMALL LETTER A WITH DIAERESIS; adieresis

14436 \DeclareTextCompositeCommand{"}{PD1}{a}{\344}% U+00E4  
14437 % U+00E5 LATIN SMALL LETTER A WITH RING ABOVE; aring  
14438 \DeclareTextCompositeCommand{r}{PD1}{a}{\345}% U+00E5  
14439 % U+00E6 LATIN SMALL LETTER AE; ae  
14440 \DeclareTextCommand{ae}{PD1}{\346}% U+00E6  
14441 % U+00E7 LATIN SMALL LETTER C WITH CEDILLA; ccedilla  
14442 \DeclareTextCompositeCommand{c}{PD1}{c}{\347}% U+00E7  
14443 % U+00E8 LATIN SMALL LETTER E WITH GRAVE; egrave  
14444 \DeclareTextCompositeCommand{'}{PD1}{e}{\350}% U+00E8  
14445 % U+00E9 LATIN SMALL LETTER E WITH ACUTE; eacute  
14446 \DeclareTextCompositeCommand{'}{PD1}{e}{\351}% U+00E9  
14447 % U+00EA LATIN SMALL LETTER E WITH CIRCUMFLEX; ecircumflex  
14448 \DeclareTextCompositeCommand{^}{PD1}{e}{\352}% U+00EA  
14449 % U+00EB LATIN SMALL LETTER E WITH DIAERESIS; edieresis  
14450 \DeclareTextCompositeCommand{"}{PD1}{e}{\353}% U+00EB  
14451 % U+00EC LATIN SMALL LETTER I WITH GRAVE; igrave  
14452 \DeclareTextCompositeCommand{'}{PD1}{i}{\354}% U+00EC  
14453 \DeclareTextCompositeCommand{'}{PD1}{i}{\354}% U+00EC  
14454 % U+00ED LATIN SMALL LETTER I WITH ACUTE; iacute  
14455 \DeclareTextCompositeCommand{'}{PD1}{i}{\355}% U+00ED  
14456 \DeclareTextCompositeCommand{'}{PD1}{i}{\355}% U+00ED  
14457 % U+00EE LATIN SMALL LETTER I WITH CIRCUMFLEX; icircumflex  
14458 \DeclareTextCompositeCommand{^}{PD1}{i}{\356}% U+00EE  
14459 \DeclareTextCompositeCommand{^}{PD1}{i}{\356}% U+00EE  
14460 % U+00EF LATIN SMALL LETTER I WITH DIAERESIS; idieresis  
14461 \DeclareTextCompositeCommand{"}{PD1}{i}{\357}% U+00EF  
14462 \DeclareTextCompositeCommand{"}{PD1}{i}{\357}% U+00EF  
14463 % U+00F0 LATIN SMALL LETTER ETH; eth  
14464 \DeclareTextCommand{dh}{PD1}{\360}% U+00F0  
14465 % U+00F1 LATIN SMALL LETTER N WITH TILDE; ntilde  
14466 \DeclareTextCompositeCommand{~}{PD1}{n}{\361}% U+00F1  
14467 % U+00F2 LATIN SMALL LETTER O WITH GRAVE; ograve  
14468 \DeclareTextCompositeCommand{'}{PD1}{o}{\362}% U+00F2  
14469 % U+00F3 LATIN SMALL LETTER O WITH ACUTE; oacute  
14470 \DeclareTextCompositeCommand{'}{PD1}{o}{\363}% U+00F3  
14471 % U+00F4 LATIN SMALL LETTER O WITH CIRCUMFLEX; ocircumflex  
14472 \DeclareTextCompositeCommand{^}{PD1}{o}{\364}% U+00F4  
14473 % U+00F5 LATIN SMALL LETTER O WITH TILDE; otilde  
14474 \DeclareTextCompositeCommand{~}{PD1}{o}{\365}% U+00F5  
14475 % U+00F6 LATIN SMALL LETTER O WITH DIAERESIS; odieresis  
14476 \DeclareTextCompositeCommand{"}{PD1}{o}{\366}% U+00F6  
14477 % U+00F7 DIVISION SIGN; divide  
14478 \DeclareTextCommand{\textdivide}{PD1}{\367}% U+00F7  
14479 % U+00F8 LATIN SMALL LETTER O WITH STROKE; oslash  
14480 \DeclareTextCommand{o}{PD1}{\370}% U+00F8  
14481 % U+00F9 LATIN SMALL LETTER U WITH GRAVE; ugrave  
14482 \DeclareTextCompositeCommand{'}{PD1}{u}{\371}% U+00F9  
14483 % U+00FA LATIN SMALL LETTER U WITH ACUTE; uacute  
14484 \DeclareTextCompositeCommand{'}{PD1}{u}{\372}% U+00FA  
14485 % U+00FB LATIN SMALL LETTER U WITH CIRCUMFLEX; ucircumflex  
14486 \DeclareTextCompositeCommand{^}{PD1}{u}{\373}% U+00FB  
14487 % U+00FC LATIN SMALL LETTER U WITH DIAERESIS; udieresis  
14488 \DeclareTextCompositeCommand{"}{PD1}{u}{\374}% U+00FC  
14489 % U+00FD LATIN SMALL LETTER Y WITH ACUTE; yacute  
14490 \DeclareTextCompositeCommand{'}{PD1}{y}{\375}% U+00FD  
14491 % U+00FE LATIN SMALL LETTER THORN; thorn  
14492 \DeclareTextCommand{th}{PD1}{\376}% U+00FE

```

14493 % U+00FF LATIN SMALL LETTER Y WITH DIAERESIS; ydieresis
14494 \DeclareTextCompositeCommand{"}{PD1}{y}{\377}% U+00FF
14495 \DeclareTextCommand{ij}{PD1}{\377}% U+00FF

```

Glyphs that consist of several characters.

```

14496 \DeclareTextCommand{\SS}{PD1}{SS}
14497 \DeclareTextCommand{\textcelsius}{PD1}{\textdegree C}

```

Aliases (german.sty)

```

14498 \DeclareTextCommand{\textglqq}{PD1}{\quotedblbase}
14499 \DeclareTextCommand{\textgrqq}{PD1}{\textquotedblleft}
14500 \DeclareTextCommand{\textglq}{PD1}{\quotesinglbase}
14501 \DeclareTextCommand{\textgrq}{PD1}{\textquoteleft}
14502 \DeclareTextCommand{\textflqq}{PD1}{\guillemotleft}
14503 \DeclareTextCommand{\textfrqq}{PD1}{\guillemotright}
14504 \DeclareTextCommand{\textflq}{PD1}{\guilsinglleft}
14505 \DeclareTextCommand{\textfrq}{PD1}{\guilsinglright}

```

Aliases (math names)

```

14506 \DeclareTextCommand{\textneg}{PD1}{\textlogicalnot}
14507 \DeclareTextCommand{\texttimes}{PD1}{\textmultiply}
14508 \DeclareTextCommand{\textdiv}{PD1}{\textdivide}
14509 \DeclareTextCommand{\textpm}{PD1}{\textplusminus}
14510 \DeclareTextCommand{\textcdot}{PD1}{\textperiodcentered}
14511 \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).

```

14512 \DeclareTextCompositeCommand{\k}{PD1}{a}{a}% aogonek
14513 \DeclareTextCompositeCommand{\'}{PD1}{c}{c}% cacute
14514 \DeclareTextCompositeCommand{\k}{PD1}{e}{e}% eogonek
14515 \DeclareTextCompositeCommand{\'}{PD1}{n}{n}% nacute
14516 \DeclareTextCompositeCommand{\'}{PD1}{s}{s}% sacute
14517 \DeclareTextCompositeCommand{\'}{PD1}{z}{z}% zacute
14518 \DeclareTextCompositeCommand{\.}{PD1}{z}{z}% zdot
14519 \DeclareTextCompositeCommand{\k}{PD1}{A}{A}% Aogonek
14520 \DeclareTextCompositeCommand{\'}{PD1}{C}{C}% Cacute
14521 \DeclareTextCompositeCommand{\k}{PD1}{E}{E}% Eogonek
14522 \DeclareTextCompositeCommand{\'}{PD1}{N}{N}% Nacute
14523 \DeclareTextCompositeCommand{\'}{PD1}{S}{S}% Sacute
14524 \DeclareTextCompositeCommand{\'}{PD1}{Z}{Z}% Zacute
14525 \DeclareTextCompositeCommand{\.}{PD1}{Z}{Z}% Zdot
14526 </pd1enc>

```

## 50.2 PU encoding

```

14527 <*puenc>
14528 \DeclareFontEncoding{PU}{-}{-}

```

### 50.2.1 NFSS2 accents

```

14529 % U+0300 COMBINING GRAVE ACCENT; gravecmb, *gravecomb
14530 \DeclareTextCommand{\'}{PU}[1]{\#1\83\000}% U+0300
14531 % U+0301 COMBINING ACUTE ACCENT; acutecmb, *acutecomb
14532 \DeclareTextCommand{\'}{PU}[1]{\#1\83\001}% U+0301
14533 % U+0302 COMBINING CIRCUMFLEX ACCENT; circumflexcmb
14534 \DeclareTextCommand{\^}{PU}[1]{\#1\83\002}% U+0302
14535 % U+0303 COMBINING TILDE; tildecmb, *tildecmb
14536 \DeclareTextCommand{\~}{PU}[1]{\#1\83\003}% U+0303
14537 % U+0304 COMBINING MACRON; macroncmb

```

14538 \DeclareTextCommand{\=}{PU}[1]{#1\83\004}% U+0304  
 14539 % U+0306 COMBINING BREVE; brevecmb  
 14540 \DeclareTextCommand{\u}{PU}[1]{#1\83\006}% U+0306  
 14541 \DeclareTextCommand{\U}{PU}[1]{#1\83\006}% U+0306  
 14542 % U+0307 COMBINING DOT ABOVE; dotaccentcmb  
 14543 \DeclareTextCommand{\.}{PU}[1]{#1\83\007}% U+0307  
 14544 % U+0308 COMBINING DIAERESIS; dieresiscmb  
 14545 \DeclareTextCommand{\"}{PU}[1]{#1\83\010}% U+0308  
 14546 % U+030A COMBINING RING ABOVE; ringcmb  
 14547 \DeclareTextCommand{\r}{PU}[1]{#1\83\012}% U+030A  
 14548 % U+030B COMBINING DOUBLE ACUTE ACCENT; hungarumlautcmb  
 14549 \DeclareTextCommand{\H}{PU}[1]{#1\83\013}% U+030B  
 14550 % U+030C COMBINING CARON; caroncmb  
 14551 \DeclareTextCommand{\v}{PU}[1]{#1\83\014}% U+030C  
 14552 % U+030F COMBINING DOUBLE GRAVE ACCENT; dblgravecmb  
 14553 \DeclareTextCommand{\G}{PU}[1]{#1\83\017}% U+030F  
 14554 \DeclareTextCommand{\C}{PU}[1]{#1\83\017}% U+030F  
 14555 % U+0311 COMBINING INVERTED BREVE; breveinvertedcmb  
 14556 \DeclareTextCommand{\newtie}{PU}[1]{#1\83\021}% U+0311  
 14557 % U+0323 COMBINING DOT BELOW; dotbelowcmb, \*dotbelowcomb  
 14558 \DeclareTextCommand{\d}{PU}[1]{#1\83\043}% U+0323  
 14559 % U+0331 COMBINING MACRON BELOW; macronbelowcmb  
 14560 \DeclareTextCommand{\b}{PU}[1]{#1\83\061}% U+0331  
 14561 % U+0327 COMBINING CEDILLA; cedillacmb  
 14562 \DeclareTextCommand{\c}{PU}[1]{#1\83\047}% U+0327  
 14563 % U+0328 COMBINING OGONEK; ogonekcmb  
 14564 \DeclareTextCommand{\k}{PU}[1]{#1\83\050}% U+0328  
 14565 % U+0361 COMBINING DOUBLE INVERTED BREVE; breveinverteddoublecmb  
 14566 \DeclareTextCommand{\t}{PU}[1]{#1\83\141}% U+0361  
 14567 % U+20DD COMBINING ENCLOSING CIRCLE  
 14568 \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.

14569 \DeclareTextCompositeCommand{\'}{PU}{\@empty}{\textasciigrave}  
 14570 \DeclareTextCompositeCommand{\'}{PU}{\@empty}{\textacute}  
 14571 \DeclareTextCompositeCommand{\~}{PU}{\@empty}{\textasciicircum}  
 14572 \DeclareTextCompositeCommand{\-}{PU}{\@empty}{\texttilde}  
 14573 \DeclareTextCompositeCommand{\"}{PU}{\@empty}{\textasciidieresis}  
 14574 \DeclareTextCompositeCommand{\r}{PU}{\@empty}{\textring}  
 14575 \DeclareTextCompositeCommand{\v}{PU}{\@empty}{\textasciicaron}  
 14576 \DeclareTextCompositeCommand{\.}{PU}{\@empty}{\textdotaccent}  
 14577 \DeclareTextCompositeCommand{\c}{PU}{\@empty}{\textcedilla}  
 14578 \DeclareTextCompositeCommand{\u}{PU}{\@empty}{\textasciibreve}  
 14579 \DeclareTextCompositeCommand{\G}{PU}{\@empty}{\textdoublegrave}  
 14580 \DeclareTextCompositeCommand{\=}{PU}{\@empty}{\textasciimacron}  
 14581 \DeclareTextCompositeCommand{\H}{PU}{\@empty}{\texthungarumlaut}  
 14582 \DeclareTextCompositeCommand{\k}{PU}{\@empty}{\textogonek}  
 14583 \DeclareTextCompositeCommand{\b}{PU}{\@empty}{\textmacronbelow}  
 14584 \DeclareTextCompositeCommand{\d}{PU}{\@empty}{\textdotbelow}  
 14585 \DeclareTextCompositeCommand{\t}{PU}{\@empty}{\texttie}  
 14586 \DeclareTextCompositeCommand{\newtie}{PU}{\@empty}{\textnewtie}  
 14587 \DeclareTextCompositeCommand{\textcircled}{PU}{\@empty}{\textbigcircle}  
 14588 \DeclareTextCompositeCommand{\'}{PU}{\ }{\textasciigrave}  
 14589 \DeclareTextCompositeCommand{\'}{PU}{\ }{\textacute}  
 14590 \DeclareTextCompositeCommand{\~}{PU}{\ }{\textasciicircum}  
 14591 \DeclareTextCompositeCommand{\-}{PU}{\ }{\texttilde}  
 14592 \DeclareTextCompositeCommand{\"}{PU}{\ }{\textasciidieresis}

```

14593 \DeclareTextCompositeCommand{\r}{PU}{\ }{\textring}
14594 \DeclareTextCompositeCommand{\v}{PU}{\ }{\textasciicaron}
14595 \DeclareTextCompositeCommand{\.}{PU}{\ }{\textdotaccent}
14596 \DeclareTextCompositeCommand{\c}{PU}{\ }{\textcedilla}
14597 \DeclareTextCompositeCommand{\u}{PU}{\ }{\textasciibreve}
14598 \DeclareTextCompositeCommand{\G}{PU}{\ }{\textdoublegrave}
14599 \DeclareTextCompositeCommand{\=}{PU}{\ }{\textasciimacron}
14600 \DeclareTextCompositeCommand{\H}{PU}{\ }{\texthungarumlaut}
14601 \DeclareTextCompositeCommand{\k}{PU}{\ }{\textogonek}
14602 \DeclareTextCompositeCommand{\b}{PU}{\ }{\textmacronbelow}
14603 \DeclareTextCompositeCommand{\d}{PU}{\ }{\textdotbelow}
14604 \DeclareTextCompositeCommand{\t}{PU}{\ }{\texttie}
14605 \DeclareTextCompositeCommand{\newtie}{PU}{\ }{\textnewtie}
14606 \DeclareTextCompositeCommand{\textcircled}{PU}{\ }{\textbigcircle}

```

Accents for capitals (see encoding TS1)

```

14607 \DeclareTextCommand{\capitalcedilla}{PU}[1]{\c{#1}}
14608 \DeclareTextCommand{\capitalogonek}{PU}[1]{\k{#1}}
14609 \DeclareTextCommand{\capitalgrave}{PU}[1]{\`{#1}}
14610 \DeclareTextCommand{\capitalacute}{PU}[1]{\'{#1}}
14611 \DeclareTextCommand{\capitalcircumflex}{PU}[1]{\^{#1}}
14612 \DeclareTextCommand{\capitaltilde}{PU}[1]{\~{#1}}
14613 \DeclareTextCommand{\capitaldieresis}{PU}[1]{\\"{#1}}
14614 \DeclareTextCommand{\capitalhungarumlaut}{PU}[1]{\H{#1}}
14615 \DeclareTextCommand{\capitalring}{PU}[1]{\r{#1}}
14616 \DeclareTextCommand{\capitalcaron}{PU}[1]{\v{#1}}
14617 \DeclareTextCommand{\capitalbreve}{PU}[1]{\u{#1}}
14618 \DeclareTextCommand{\capitalmacron}{PU}[1]{\={#1}}
14619 \DeclareTextCommand{\capitaldotaccent}{PU}[1]{\.{#1}}
14620 \DeclareTextCommand{\capitaltie}{PU}[1]{\t{#1}}
14621 \DeclareTextCommand{\capitalnewtie}{PU}[1]{\newtie{#1}}

```

## 50.2.2 Basic Latin: U+0000 to U+007F

Special white space escape characters.

```

14622 % U+0009 (CHARACTER TABULATION)
14623 \DeclareTextCommand{\textHT}{PU}{\80\011}% U+0009
14624 % U+000A (LINE FEED)
14625 \DeclareTextCommand{\textLF}{PU}{\80\012}% U+000A
14626 % U+000D (CARRIAGE RETURN)
14627 \DeclareTextCommand{\textCR}{PU}{\80\015}% U+000D

\80\040: U+0020 SPACE; space, spacehackarabic
\80\041: U+0021 EXCLAMATION MARK; exclam

14628 % U+0022 QUOTATION MARK; quotedbl
14629 \DeclareTextCommand{\textquotedbl}{PU}{\string"}% \80\042 U+0022
14630 % U+0023 NUMBER SIGN; numbersign
14631 \DeclareTextCommand{\textnumbersign}{PU}{\80\043}% U+0023
14632 % U+0024 DOLLAR SIGN; dollar
14633 \DeclareTextCommand{\textdollar}{PU}{\80\044}% U+0024
14634 % U+0025 PERCENT SIGN; percent
14635 \DeclareTextCommand{\textpercent}{PU}{\80\045}% U+0025
14636 % U+0026 AMPERSAND; ampersand
14637 \DeclareTextCommand{\textampersand}{PU}{\80\046}% U+0026
14638 % U+0027 APOSTROPHE; quotesingle
14639 \DeclareTextCommand{\textquotesingle}{PU}{\80\047}% U+0027
14640 % U+0028 LEFT PARENTHESIS; parenleft
14641 \DeclareTextCommand{\textparenleft}{PU}{\80\050}% U+0028
14642 % U+0029 RIGHT PARENTHESIS; parenright

```

14643 \DeclareTextCommand{\textparenright}{PU}{\80\051}% U+0029  
 14644 % U+002A ASTERISK; asterisk  
 14645 \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  
 14646 % U+003C LESS-THAN SIGN; less  
 14647 \DeclareTextCommand{\textless}{PU}{<}% \80\074 U+003C  
 \80\075: U+003D EQUALS SIGN; equal  
 14648 % U+003E GREATER-THAN SIGN; greater  
 14649 \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  
 14650 % U+005C REVERSE SOLIDUS; backslash  
 14651 \DeclareTextCommand{\textbackslash}{PU}{\80\134}% U+005C  
 \80\135: U+005D RIGHT SQUARE BRACKET; bracketright  
 14652 % U+005E CIRCUMFLEX ACCENT; asciicircum  
 14653 \DeclareTextCommand{\textasciicircum}{PU}{\80\136}% U+005E  
 14654 % U+005F LOW LINE; underscore  
 14655 \DeclareTextCommand{\textunderscore}{PU}{\80\137}% U+005F  
 14656 % U+0060 GRAVE ACCENT; grave  
 14657 \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  
 14658 % U+0069 LATIN SMALL LETTER I; i  
 14659 \DeclareTextCompositeCommand{\.}{PU}{i}% \80\151 U+0069  
 14660 \DeclareTextCompositeCommand{\.}{PU}{i}% \80\151 U+0069  
 \80\152: U+006A LATIN SMALL LETTER J; j  
 ...  
 \80\172: U+007A LATIN SMALL LETTER Z; z  
 14661 % U+007B LEFT CURLY BRACKET; braceleft  
 14662 \DeclareTextCommand{\textbraceleft}{PU}{\80\173}% U+007B  
 14663 % U+007C VERTICAL LINE; \*bar, verticalbar  
 14664 \DeclareTextCommand{\textbar}{PU}{|}% \80\174 U+007C  
 14665 % U+007D RIGHT CURLY BRACKET; braceright  
 14666 \DeclareTextCommand{\textbraceright}{PU}{\80\175}% U+007D  
 14667 % U+007E TILDE; asciitilde  
 14668 \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  
14669 % U+00A1 INVERTED EXCLAMATION MARK; exclamdown  
14670 \DeclareTextCommand{\textexclamdown}{PU}{\80\241}% U+00A1  
14671 % U+00A2 CENT SIGN; cent  
14672 \DeclareTextCommand{\textcent}{PU}{\80\242}% U+00A2  
14673 % U+00A3 POUND SIGN; sterling  
14674 \DeclareTextCommand{\textsterling}{PU}{\80\243}% U+00A3  
14675 % U+00A4 CURRENCY SIGN; currency  
14676 \DeclareTextCommand{\textcurrency}{PU}{\80\244}% U+00A4  
14677 % U+00A5 YEN SIGN; yen  
14678 \DeclareTextCommand{\textyen}{PU}{\80\245}% U+00A5  
14679 % U+00A6 BROKEN BAR; brokenbar  
14680 \DeclareTextCommand{\textbrokenbar}{PU}{\80\246}% U+00A6  
14681 % U+00A7 SECTION SIGN; section  
14682 \DeclareTextCommand{\textsection}{PU}{\80\247}% U+00A7  
14683 % U+00A8 DIAERESIS; dieresis  
14684 \DeclareTextCommand{\textasciidieresis}{PU}{\80\250}% U+00A8  
14685 % U+00A9 COPYRIGHT SIGN; copyright  
14686 \DeclareTextCommand{\textcopyright}{PU}{\80\251}% U+00A9  
14687 % U+00AA FEMININE ORDINAL INDICATOR; ordfeminine  
14688 \DeclareTextCommand{\textordfeminine}{PU}{\80\252}% U+00AA  
14689 % U+00AB LEFT-POINTING DOUBLE ANGLE QUOTATION MARK; guillemotleft  
14690 \DeclareTextCommand{\guillemotleft}{PU}{\80\253}% U+00AB  
14691 % U+00AC NOT SIGN; logicalnot  
14692 \DeclareTextCommand{\textlogicalnot}{PU}{\80\254}% U+00AC  
14693 \DeclareTextCommand{\textlnot}{PU}{\80\254}% U+00AC  
\\80\255: U+00AD SOFT HYPHEN; sfthyphen, softthyphen  
14694 % U+00AE REGISTERED SIGN; registered  
14695 \DeclareTextCommand{\textregistered}{PU}{\80\256}% U+00AE  
14696 % U+00AF MACRON; \*macron, overscore  
14697 \DeclareTextCommand{\textasciimacron}{PU}{\80\257}% U+00AF  
14698 % U+00B0 DEGREE SIGN; degree  
14699 \DeclareTextCommand{\textdegree}{PU}{\80\260}% U+00B0  
14700 % U+00B1 PLUS-MINUS SIGN; plusminus  
14701 \DeclareTextCommand{\textplusminus}{PU}{\80\261}% U+00B1  
14702 % U+00B2 SUPERScript TWO; twosuperior  
14703 \DeclareTextCommand{\texttwosuperior}{PU}{\80\262}% U+00B2  
14704 % U+00B3 SUPERScript THREE; threesuperior  
14705 \DeclareTextCommand{\textthreesuperior}{PU}{\80\263}% U+00B3  
14706 % U+00B4 ACUTE ACCENT; acute  
14707 \DeclareTextCommand{\textacute}{PU}{\80\264}% U+00B4  
14708 \DeclareTextCommand{\textasciiacute}{PU}{\80\264}% U+00B4  
14709 % U+00B5 MICRO SIGN; mu, mul  
14710 \DeclareTextCommand{\textmu}{PU}{\80\265}% U+00B5  
14711 % U+00B6 PILCROW SIGN; paragraph  
14712 \DeclareTextCommand{\textparagraph}{PU}{\80\266}% U+00B6  
14713 % U+00B7 MIDDLE DOT; middot, \*periodcentered  
14714 \DeclareTextCommand{\textperiodcentered}{PU}{\80\267}% U+00B7  
14715 % U+00B8 CEDILLA; cedilla  
14716 \DeclareTextCommand{\textcedilla}{PU}{\80\270}% U+00B8  
14717 % U+00B9 SUPERScript ONE; onesuperior  
14718 \DeclareTextCommand{\textonesuperior}{PU}{\80\271}% U+00B9  
14719 % U+00BA MASCULINE ORDINAL INDICATOR; ordmasculine  
14720 \DeclareTextCommand{\textordmasculine}{PU}{\80\272}% U+00BA



14721 % U+00BB RIGHT-POINTING DOUBLE ANGLE QUOTATION MARK; guillemotright  
 14722 \DeclareTextCommand{\guillemotright}{PU}{\80\273}% U+00BB  
 14723 % U+00BC VULGAR FRACTION ONE QUARTER; onequarter  
 14724 \DeclareTextCommand{\textonequarter}{PU}{\80\274}% U+00BC  
 14725 % U+00BD VULGAR FRACTION ONE HALF; onehalf  
 14726 \DeclareTextCommand{\textonehalf}{PU}{\80\275}% U+00BD  
 14727 % U+00BE VULGAR FRACTION THREE QUARTERS; threequarters  
 14728 \DeclareTextCommand{\textthreequarters}{PU}{\80\276}% U+00BE  
 14729 % U+00BF INVERTED QUESTION MARK; questiondown  
 14730 \DeclareTextCommand{\textquestiondown}{PU}{\80\277}% U+00BF  
 14731 % U+00C0 LATIN CAPITAL LETTER A WITH GRAVE; Agrave  
 14732 \DeclareTextCompositeCommand{\`}{PU}{A}{\80\300}% U+00C0  
 14733 % U+00C1 LATIN CAPITAL LETTER A WITH ACUTE; Aacute  
 14734 \DeclareTextCompositeCommand{\'}{PU}{A}{\80\301}% U+00C1  
 14735 % U+00C2 LATIN CAPITAL LETTER A WITH CIRCUMFLEX; Acircumflex  
 14736 \DeclareTextCompositeCommand{\^}{PU}{A}{\80\302}% U+00C2  
 14737 % U+00C3 LATIN CAPITAL LETTER A WITH TILDE; Atilde  
 14738 \DeclareTextCompositeCommand{\~}{PU}{A}{\80\303}% U+00C3  
 14739 % U+00C4 LATIN CAPITAL LETTER A WITH DIAERESIS; Adieresis  
 14740 \DeclareTextCompositeCommand{\"}{PU}{A}{\80\304}% U+00C4  
 14741 % U+00C5 LATIN CAPITAL LETTER A WITH RING ABOVE; Aring  
 14742 \DeclareTextCompositeCommand{\r}{PU}{A}{\80\305}% U+00C5  
 14743 % U+00C6 LATIN CAPITAL LETTER AE; AE  
 14744 \DeclareTextCommand{\AE}{PU}{\80\306}% U+00C6  
 14745 % U+00C7 LATIN CAPITAL LETTER C WITH CEDILLA; Ccedilla  
 14746 \DeclareTextCompositeCommand{\c}{PU}{C}{\80\307}% U+00C7  
 14747 % U+00C8 LATIN CAPITAL LETTER E WITH GRAVE; Egrave  
 14748 \DeclareTextCompositeCommand{\`}{PU}{E}{\80\310}% U+00C8  
 14749 % U+00C9 LATIN CAPITAL LETTER E WITH ACUTE; Eacute  
 14750 \DeclareTextCompositeCommand{\'}{PU}{E}{\80\311}% U+00C9  
 14751 % U+00CA LATIN CAPITAL LETTER E WITH CIRCUMFLEX; Ecircumflex  
 14752 \DeclareTextCompositeCommand{\^}{PU}{E}{\80\312}% U+00CA  
 14753 % U+00CB LATIN CAPITAL LETTER E WITH DIAERESIS; Edieresis  
 14754 \DeclareTextCompositeCommand{\"}{PU}{E}{\80\313}% U+00CB  
 14755 % U+00CC LATIN CAPITAL LETTER I WITH GRAVE; Igrave  
 14756 \DeclareTextCompositeCommand{\`}{PU}{I}{\80\314}% U+00CC  
 14757 % U+00CD LATIN CAPITAL LETTER I WITH ACUTE; Iacute  
 14758 \DeclareTextCompositeCommand{\'}{PU}{I}{\80\315}% U+00CD  
 14759 % U+00CE LATIN CAPITAL LETTER I WITH CIRCUMFLEX; Icircumflex  
 14760 \DeclareTextCompositeCommand{\^}{PU}{I}{\80\316}% U+00CE  
 14761 % U+00CF LATIN CAPITAL LETTER I WITH DIAERESIS; Idieresis  
 14762 \DeclareTextCompositeCommand{\"}{PU}{I}{\80\317}% U+00CF  
 14763 % U+00D0 LATIN CAPITAL LETTER ETH; Eth  
 14764 \DeclareTextCommand{\DH}{PU}{\80\320}% U+00D0  
 14765 % U+00D1 LATIN CAPITAL LETTER N WITH TILDE; Ntilde  
 14766 \DeclareTextCompositeCommand{\~}{PU}{N}{\80\321}% U+00D1  
 14767 % U+00D2 LATIN CAPITAL LETTER O WITH GRAVE; Ograve  
 14768 \DeclareTextCompositeCommand{\`}{PU}{O}{\80\322}% U+00D2  
 14769 % U+00D3 LATIN CAPITAL LETTER O WITH ACUTE; Oacute  
 14770 \DeclareTextCompositeCommand{\'}{PU}{O}{\80\323}% U+00D3  
 14771 % U+00D4 LATIN CAPITAL LETTER O WITH CIRCUMFLEX; Ocircumflex  
 14772 \DeclareTextCompositeCommand{\^}{PU}{O}{\80\324}% U+00D4  
 14773 % U+00D5 LATIN CAPITAL LETTER O WITH TILDE; Otilde  
 14774 \DeclareTextCompositeCommand{\~}{PU}{O}{\80\325}% U+00D5  
 14775 % U+00D6 LATIN CAPITAL LETTER O WITH DIAERESIS; Odieresis  
 14776 \DeclareTextCompositeCommand{\"}{PU}{O}{\80\326}% U+00D6

14777 % U+00D7 MULTIPLICATION SIGN; multiply  
14778 \DeclareTextCommand{\textmultiply}{PU}{\80\327}% U+00D7  
14779 % U+00D8 LATIN CAPITAL LETTER O WITH STROKE; Oslash  
14780 \DeclareTextCommand{\O}{PU}{\80\330}% U+00D8  
14781 % U+00D9 LATIN CAPITAL LETTER U WITH GRAVE; Ugrave  
14782 \DeclareTextCompositeCommand{\`}{PU}{U}{\80\331}% U+00D9  
14783 % U+00DA LATIN CAPITAL LETTER U WITH ACUTE; Uacute  
14784 \DeclareTextCompositeCommand{\'}{PU}{U}{\80\332}% U+00DA  
14785 % U+00DB LATIN CAPITAL LETTER U WITH CIRCUMFLEX; Ucircumflex  
14786 \DeclareTextCompositeCommand{\^}{PU}{U}{\80\333}% U+00DB  
14787 % U+00DC LATIN CAPITAL LETTER U WITH DIAERESIS; Udieresis  
14788 \DeclareTextCompositeCommand{\"}{PU}{U}{\80\334}% U+00DC  
14789 % U+00DD LATIN CAPITAL LETTER Y WITH ACUTE; Yacute  
14790 \DeclareTextCompositeCommand{\'}{PU}{Y}{\80\335}% U+00DD  
14791 % U+00DE LATIN CAPITAL LETTER THORN; Thorn  
14792 \DeclareTextCommand{\TH}{PU}{\80\336}% U+00DE  
14793 % U+00DF LATIN SMALL LETTER SHARP S; germandbls  
14794 \DeclareTextCommand{\ss}{PU}{\80\337}% U+00DF  
14795 % U+00E0 LATIN SMALL LETTER A WITH GRAVE; agrave  
14796 \DeclareTextCompositeCommand{\`}{PU}{a}{\80\340}% U+00E0  
14797 % U+00E1 LATIN SMALL LETTER A WITH ACUTE; aacute  
14798 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\341}% U+00E1  
14799 % U+00E2 LATIN SMALL LETTER A WITH CIRCUMFLEX; acircumflex  
14800 \DeclareTextCompositeCommand{\^}{PU}{a}{\80\342}% U+00E2  
14801 % U+00E3 LATIN SMALL LETTER A WITH TILDE; atilde  
14802 \DeclareTextCompositeCommand{\~}{PU}{a}{\80\343}% U+00E3  
14803 % U+00E4 LATIN SMALL LETTER A WITH DIAERESIS; adieresis  
14804 \DeclareTextCompositeCommand{\"}{PU}{a}{\80\344}% U+00E4  
14805 % U+00E5 LATIN SMALL LETTER A WITH RING ABOVE; aring  
14806 \DeclareTextCompositeCommand{\r}{PU}{a}{\80\345}% U+00E5  
14807 % U+00E6 LATIN SMALL LETTER AE; ae  
14808 \DeclareTextCommand{\ae}{PU}{\80\346}% U+00E6  
14809 % U+00E7 LATIN SMALL LETTER C WITH CEDILLA; ccedilla  
14810 \DeclareTextCompositeCommand{\c}{PU}{c}{\80\347}% U+00E7  
14811 % U+00E8 LATIN SMALL LETTER E WITH GRAVE; egrave  
14812 \DeclareTextCompositeCommand{\`}{PU}{e}{\80\350}% U+00E8  
14813 % U+00E9 LATIN SMALL LETTER E WITH ACUTE; eacute  
14814 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\351}% U+00E9  
14815 % U+00EA LATIN SMALL LETTER E WITH CIRCUMFLEX; ecircumflex  
14816 \DeclareTextCompositeCommand{\^}{PU}{e}{\80\352}% U+00EA  
14817 % U+00EB LATIN SMALL LETTER E WITH DIAERESIS; edieresis  
14818 \DeclareTextCompositeCommand{\"}{PU}{e}{\80\353}% U+00EB  
14819 % U+00EC LATIN SMALL LETTER I WITH GRAVE; igrave  
14820 \DeclareTextCompositeCommand{\`}{PU}{i}{\80\354}% U+00EC  
14821 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\354}% U+00EC  
14822 % U+00ED LATIN SMALL LETTER I WITH ACUTE; iacute  
14823 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\355}% U+00ED  
14824 \DeclareTextCompositeCommand{\~}{PU}{i}{\80\355}% U+00ED  
14825 % U+00EE LATIN SMALL LETTER I WITH CIRCUMFLEX; icircumflex  
14826 \DeclareTextCompositeCommand{\^}{PU}{i}{\80\356}% U+00EE  
14827 \DeclareTextCompositeCommand{\^}{PU}{i}{\80\356}% U+00EE  
14828 % U+00EF LATIN SMALL LETTER I WITH DIAERESIS; idieresis  
14829 \DeclareTextCompositeCommand{\"}{PU}{i}{\80\357}% U+00EF  
14830 \DeclareTextCompositeCommand{\"}{PU}{i}{\80\357}% U+00EF  
14831 % U+00F0 LATIN SMALL LETTER ETH; eth  
14832 \DeclareTextCommand{\dh}{PU}{\80\360}% U+00F0  
14833 % U+00F1 LATIN SMALL LETTER N WITH TILDE; ntilde

14834 \DeclareTextCompositeCommand{\~}{PU}{n}{\80\361}% U+00F1  
 14835 % U+00F2 LATIN SMALL LETTER O WITH GRAVE; ograve  
 14836 \DeclareTextCompositeCommand{\`}{PU}{o}{\80\362}% U+00F2  
 14837 % U+00F3 LATIN SMALL LETTER O WITH ACUTE; oacute  
 14838 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\363}% U+00F3  
 14839 % U+00F4 LATIN SMALL LETTER O WITH CIRCUMFLEX; ocircumflex  
 14840 \DeclareTextCompositeCommand{\^}{PU}{o}{\80\364}% U+00F4  
 14841 % U+00F5 LATIN SMALL LETTER O WITH TILDE; otilde  
 14842 \DeclareTextCompositeCommand{\~}{PU}{o}{\80\365}% U+00F5  
 14843 % U+00F6 LATIN SMALL LETTER O WITH DIAERESIS; odieresis  
 14844 \DeclareTextCompositeCommand{\"}{PU}{o}{\80\366}% U+00F6  
 14845 % U+00F7 DIVISION SIGN; divide  
 14846 \DeclareTextCommand{\textdivide}{PU}{\80\367}% U+00F7  
 14847 % U+00F8 LATIN SMALL LETTER O WITH STROKE; oslash  
 14848 \DeclareTextCommand{\o}{PU}{\80\370}% U+00F8  
 14849 % U+00F9 LATIN SMALL LETTER U WITH GRAVE; ugrave  
 14850 \DeclareTextCompositeCommand{\`}{PU}{u}{\80\371}% U+00F9  
 14851 % U+00FA LATIN SMALL LETTER U WITH ACUTE; uacute  
 14852 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\372}% U+00FA  
 14853 % U+00FB LATIN SMALL LETTER U WITH CIRCUMFLEX; ucircumflex  
 14854 \DeclareTextCompositeCommand{\^}{PU}{u}{\80\373}% U+00FB  
 14855 % U+00FC LATIN SMALL LETTER U WITH DIAERESIS; udieresis  
 14856 \DeclareTextCompositeCommand{\"}{PU}{u}{\80\374}% U+00FC  
 14857 % U+00FD LATIN SMALL LETTER Y WITH ACUTE; yacute  
 14858 \DeclareTextCompositeCommand{\'}{PU}{y}{\80\375}% U+00FD  
 14859 % U+00FE LATIN SMALL LETTER THORN; thorn  
 14860 \DeclareTextCommand{\th}{PU}{\80\376}% U+00FE  
 14861 % U+00FF LATIN SMALL LETTER Y WITH DIAERESIS; ydieresis  
 14862 \DeclareTextCompositeCommand{\"}{PU}{y}{\80\377}% U+00FF

## 50.2.4 Latin Extended-A: U+0080 to U+017F

14863 % U+0100 LATIN CAPITAL LETTER A WITH MACRON; Amacron  
 14864 \DeclareTextCompositeCommand{\=}{PU}{A}{\81\000}% U+0100  
 14865 % U+0101 LATIN SMALL LETTER A WITH MACRON; amacron  
 14866 \DeclareTextCompositeCommand{\=}{PU}{a}{\81\001}% U+0101  
 14867 % U+0102 LATIN CAPITAL LETTER A WITH BREVE; Abreve  
 14868 \DeclareTextCompositeCommand{\u}{PU}{A}{\81\002}% U+0102  
 14869 % U+0103 LATIN SMALL LETTER A WITH BREVE; abreve  
 14870 \DeclareTextCompositeCommand{\u}{PU}{a}{\81\003}% U+0103  
 14871 % U+0104 LATIN CAPITAL LETTER A WITH OGONEK; Aogonek  
 14872 \DeclareTextCompositeCommand{\k}{PU}{A}{\81\004}% U+0104  
 14873 % U+0105 LATIN SMALL LETTER A WITH OGONEK; aogonek  
 14874 \DeclareTextCompositeCommand{\k}{PU}{a}{\81\005}% U+0105  
 14875 % U+0106 LATIN CAPITAL LETTER C WITH ACUTE; Cacute  
 14876 \DeclareTextCompositeCommand{\'}{PU}{C}{\81\006}% U+0106  
 14877 % U+0107 LATIN SMALL LETTER C WITH ACUTE; cacute  
 14878 \DeclareTextCompositeCommand{\'}{PU}{c}{\81\007}% U+0107  
 14879 % U+0108 LATIN CAPITAL LETTER C WITH CIRCUMFLEX; Ccircumflex  
 14880 \DeclareTextCompositeCommand{\^}{PU}{C}{\81\010}% U+0108  
 14881 % U+0109 LATIN SMALL LETTER C WITH CIRCUMFLEX; ccircumflex  
 14882 \DeclareTextCompositeCommand{\^}{PU}{c}{\81\011}% U+0109  
 14883 % U+010A LATIN CAPITAL LETTER C WITH DOT ABOVE; Cdot, Cdotaccent  
 14884 \DeclareTextCompositeCommand{\.}{PU}{C}{\81\012}% U+010A  
 14885 % U+010B LATIN SMALL LETTER C WITH DOT ABOVE; cdot, cdotaccent  
 14886 \DeclareTextCompositeCommand{\.}{PU}{c}{\81\013}% U+010B  
 14887 % U+010C LATIN CAPITAL LETTER C WITH CARON; Ccaron

14888 \DeclareTextCompositeCommand{\v}{PU}{C}{\81\014}% U+010C  
14889 % U+010D LATIN SMALL LETTER C WITH CARON; ccaron  
14890 \DeclareTextCompositeCommand{\v}{PU}{c}{\81\015}% U+010D  
14891 % U+010E LATIN CAPITAL LETTER D WITH CARON; Dcaron  
14892 \DeclareTextCompositeCommand{\v}{PU}{D}{\81\016}% U+010E  
14893 % U+010F LATIN SMALL LETTER D WITH CARON; dcaron  
14894 \DeclareTextCompositeCommand{\v}{PU}{d}{\81\017}% U+010F  
14895 % U+0110 LATIN CAPITAL LETTER D WITH STROKE; Dcroat, Dslash  
14896 \DeclareTextCommand{\DJ}{PU}{\81\020}% U+0110  
14897 % U+0111 LATIN SMALL LETTER D WITH STROKE; dcroat, dmacron  
14898 \DeclareTextCommand{\dj}{PU}{\81\021}% U+0111  
14899 % U+0112 LATIN CAPITAL LETTER E WITH MACRON; Emacron  
14900 \DeclareTextCompositeCommand{\=}{PU}{E}{\81\022}% U+0112  
14901 % U+0113 LATIN SMALL LETTER E WITH MACRON; emacron  
14902 \DeclareTextCompositeCommand{\=}{PU}{e}{\81\023}% U+0113  
14903 % U+0114 LATIN CAPITAL LETTER E WITH BREVE; Ebreve  
14904 \DeclareTextCompositeCommand{\u}{PU}{E}{\81\024}% U+0114  
14905 % U+0115 LATIN SMALL LETTER E WITH BREVE; ebreve  
14906 \DeclareTextCompositeCommand{\u}{PU}{e}{\81\025}% U+0115  
14907 % U+0116 LATIN CAPITAL LETTER E WITH DOT ABOVE; Edot, Edotaccent  
14908 \DeclareTextCompositeCommand{\.}{PU}{E}{\81\026}% U+0116  
14909 % U+0117 LATIN SMALL LETTER E WITH DOT ABOVE; edot, edotaccent  
14910 \DeclareTextCompositeCommand{\.}{PU}{e}{\81\027}% U+0117  
14911 % U+0118 LATIN CAPITAL LETTER E WITH OGONEK; Eogonek  
14912 \DeclareTextCompositeCommand{\k}{PU}{E}{\81\030}% U+0118  
14913 % U+0119 LATIN SMALL LETTER E WITH OGONEK; eogonek  
14914 \DeclareTextCompositeCommand{\k}{PU}{e}{\81\031}% U+0119  
14915 % U+011A LATIN CAPITAL LETTER E WITH CARON; Ecaron  
14916 \DeclareTextCompositeCommand{\v}{PU}{E}{\81\032}% U+011A  
14917 % U+011B LATIN SMALL LETTER E WITH CARON; ecaron  
14918 \DeclareTextCompositeCommand{\v}{PU}{e}{\81\033}% U+011B  
14919 % U+011C LATIN CAPITAL LETTER G WITH CIRCUMFLEX; Gcircumflex  
14920 \DeclareTextCompositeCommand{\^}{PU}{G}{\81\034}% U+011C  
14921 % U+011D LATIN SMALL LETTER G WITH CIRCUMFLEX; gcircumflex  
14922 \DeclareTextCompositeCommand{\^}{PU}{g}{\81\035}% U+011D  
14923 % U+011E LATIN CAPITAL LETTER G WITH BREVE; Gbreve  
14924 \DeclareTextCompositeCommand{\u}{PU}{G}{\81\036}% U+011E  
14925 % U+011F LATIN SMALL LETTER G WITH BREVE; gbreve  
14926 \DeclareTextCompositeCommand{\u}{PU}{g}{\81\037}% U+011F  
14927 % U+0120 LATIN CAPITAL LETTER G WITH DOT ABOVE; Gdot, Gdotaccent  
14928 \DeclareTextCompositeCommand{\.}{PU}{G}{\81\040}% U+0120  
14929 % U+0121 LATIN SMALL LETTER G WITH DOT ABOVE; gdot, gdotaccent  
14930 \DeclareTextCompositeCommand{\.}{PU}{g}{\81\041}% U+0121  
14931 % U+0122 LATIN CAPITAL LETTER G WITH CEDILLA; Gcedilla, Gcommaaccent  
14932 \DeclareTextCompositeCommand{\c}{PU}{G}{\81\042}% U+0122  
14933 % U+0123 LATIN SMALL LETTER G WITH CEDILLA; gcedilla, gcommaaccent  
14934 \DeclareTextCompositeCommand{\c}{PU}{g}{\81\043}% U+0123  
14935 % U+0124 LATIN CAPITAL LETTER H WITH CIRCUMFLEX; Hcircumflex  
14936 \DeclareTextCompositeCommand{\^}{PU}{H}{\81\044}% U+0124  
14937 % U+0125 LATIN SMALL LETTER H WITH CIRCUMFLEX; hcircumflex  
14938 \DeclareTextCompositeCommand{\^}{PU}{h}{\81\045}% U+0125  
14939 % U+0126 LATIN CAPITAL LETTER H WITH STROKE; Hbar  
14940 \DeclareTextCommand{\textHslash}{PU}{\81\046}% U+0126  
14941 % U+0127 LATIN SMALL LETTER H WITH STROKE; hbar  
14942 \DeclareTextCommand{\texthslash}{PU}{\81\047}% U+0127  
14943 % U+0128 LATIN CAPITAL LETTER I WITH TILDE; Itilde

14944 \DeclareTextCompositeCommand{\~}{PU}{I}{\81\050}% U+0128  
 14945 % U+0129 LATIN SMALL LETTER I WITH TILDE; itilde  
 14946 \DeclareTextCompositeCommand{\-}{PU}{i}{\81\051}% U+0129  
 14947 \DeclareTextCompositeCommand{\-}{PU}{i}{\81\051}% U+0129  
 14948 % U+012A LATIN CAPITAL LETTER I WITH MACRON; Imacron  
 14949 \DeclareTextCompositeCommand{\=}{PU}{I}{\81\052}% U+012A  
 14950 % U+012B LATIN SMALL LETTER I WITH MACRON; imacron  
 14951 \DeclareTextCompositeCommand{\=}{PU}{i}{\81\053}% U+012B  
 14952 \DeclareTextCompositeCommand{\=}{PU}{i}{\81\053}% U+012B  
 14953 % U+012C LATIN CAPITAL LETTER I WITH BREVE; Ibreve  
 14954 \DeclareTextCompositeCommand{\u}{PU}{I}{\81\054}% U+012C  
 14955 % U+012D LATIN SMALL LETTER I WITH BREVE; ibreve  
 14956 \DeclareTextCompositeCommand{\u}{PU}{i}{\81\055}% U+012D  
 14957 \DeclareTextCompositeCommand{\u}{PU}{i}{\81\055}% U+012D  
 14958 % U+012E LATIN CAPITAL LETTER I WITH OGONEK; Iogonek  
 14959 \DeclareTextCompositeCommand{\k}{PU}{I}{\81\056}% U+012E  
 14960 % U+012F LATIN SMALL LETTER I WITH OGONEK; iogonek  
 14961 \DeclareTextCompositeCommand{\k}{PU}{i}{\81\057}% U+012F  
 14962 \DeclareTextCompositeCommand{\k}{PU}{i}{\81\057}% U+012F  
 14963 % U+0130 LATIN CAPITAL LETTER I WITH DOT ABOVE; Idot, Idotaccent  
 14964 \DeclareTextCompositeCommand{\.}{PU}{I}{\81\060}% U+0130  
 14965 % U+0131 LATIN SMALL LETTER DOTLESS I; dotlessi  
 14966 \DeclareTextCommand{\i}{PU}{\81\061}% U+0131  
 14967 % U+0132 LATIN CAPITAL LIGATURE IJ; IJ  
 14968 \DeclareTextCommand{\IJ}{PU}{\81\062}% U+0132  
 14969 % U+0133 LATIN SMALL LIGATURE IJ; ij  
 14970 \DeclareTextCommand{\ij}{PU}{\81\063}% U+0133  
 14971 % U+0134 LATIN CAPITAL LETTER J WITH CIRCUMFLEX; Jcircumflex  
 14972 \DeclareTextCompositeCommand{\^}{PU}{J}{\81\064}% U+0134  
 14973 % U+0135 LATIN SMALL LETTER J WITH CIRCUMFLEX; jcircumflex  
 14974 \DeclareTextCompositeCommand{\^}{PU}{j}{\81\065}% U+0135  
 14975 \DeclareTextCompositeCommand{\^}{PU}{j}{\81\065}% U+0135  
 14976 % U+0136 LATIN CAPITAL LETTER K WITH CEDILLA; Kcedilla, Kcommaac-  
 cent  
 14977 \DeclareTextCompositeCommand{\c}{PU}{K}{\81\066}% U+0136  
 14978 % U+0137 LATIN SMALL LETTER K WITH CEDILLA; kcedilla, kcommaaccent  
 14979 \DeclareTextCompositeCommand{\c}{PU}{k}{\81\067}% U+0137

The canonical name of U+0138, small letter kra, would be \textkgreenlandic, following the glyph naming convention. However latex/base/inputenc.dtx has choosen \textkra.

14980 % U+0138 LATIN SMALL LETTER KRA; kgreenlandic  
 14981 \DeclareTextCommand{\textkra}{PU}{\81\070}% U+0138  
 14982 % U+0139 LATIN CAPITAL LETTER L WITH ACUTE; Lacute  
 14983 \DeclareTextCompositeCommand{\'}{PU}{L}{\81\071}% U+0139  
 14984 % U+013A LATIN SMALL LETTER L WITH ACUTE; lacute  
 14985 \DeclareTextCompositeCommand{\'}{PU}{l}{\81\072}% U+013A  
 14986 % U+013B LATIN CAPITAL LETTER L WITH CEDILLA; Lcedilla, Lcommaac-  
 cent  
 14987 \DeclareTextCompositeCommand{\c}{PU}{L}{\81\073}% U+013B  
 14988 % U+013C LATIN SMALL LETTER L WITH CEDILLA; lcedilla, lcommaaccent  
 14989 \DeclareTextCompositeCommand{\c}{PU}{l}{\81\074}% U+013C  
 14990 % U+013D LATIN CAPITAL LETTER L WITH CARON; Lcaron  
 14991 \DeclareTextCompositeCommand{\v}{PU}{L}{\81\075}% U+013D  
 14992 % U+013E LATIN SMALL LETTER L WITH CARON; lcaron  
 14993 \DeclareTextCompositeCommand{\v}{PU}{l}{\81\076}% U+013E

There seems to be no variants of letters ‘L’ and ‘I’ with a dot above (reasonable). Therefore the \. accent is reused instead of making a separate accent macro \textmiddledot.

14994 % U+013F LATIN CAPITAL LETTER L WITH MIDDLE DOT; Ldot, Ldotaccent  
14995 \DeclareTextCompositeCommand{\.}{PU}{L}{\81\077}% U+013F  
14996 % U+0140 LATIN SMALL LETTER L WITH MIDDLE DOT; ldot, ldotaccent  
14997 \DeclareTextCompositeCommand{\.}{PU}{l}{\81\100}% U+0140  
14998 % U+0141 LATIN CAPITAL LETTER L WITH STROKE; Lslash  
14999 \DeclareTextCommand{\L}{PU}{\81\101}% U+0141  
15000 % U+0142 LATIN SMALL LETTER L WITH STROKE; lslash  
15001 \DeclareTextCommand{\l}{PU}{\81\102}% U+0142  
15002 % U+0143 LATIN CAPITAL LETTER N WITH ACUTE; Nacute  
15003 \DeclareTextCompositeCommand{\' }{PU}{N}{\81\103}% U+0143  
15004 % U+0144 LATIN SMALL LETTER N WITH ACUTE; nacute  
15005 \DeclareTextCompositeCommand{\' }{PU}{n}{\81\104}% U+0144  
15006 % U+0145 LATIN CAPITAL LETTER N WITH CEDILLA; Ncedilla, Ncommaaccent  
15007 \DeclareTextCompositeCommand{\c}{PU}{N}{\81\105}% U+0145  
15008 % U+0146 LATIN SMALL LETTER N WITH CEDILLA; ncedilla, ncommaaccent  
15009 \DeclareTextCompositeCommand{\c}{PU}{n}{\81\106}% U+0146  
15010 % U+0147 LATIN CAPITAL LETTER N WITH CARON; Ncaron  
15011 \DeclareTextCompositeCommand{\v}{PU}{N}{\81\107}% U+0147  
15012 % U+0148 LATIN SMALL LETTER N WITH CARON; ncaron  
15013 \DeclareTextCompositeCommand{\v}{PU}{n}{\81\110}% U+0148  
15014 % U+0149 LATIN SMALL LETTER N PRECEDED BY APOSTROPHE; napostrophe, quoterightn  
15015 \DeclareTextCommand{\textnapostrophe}{PU}{\81\111}% U+0149  
15016 % U+014A LATIN CAPITAL LETTER ENG; Eng  
15017 \DeclareTextCommand{\NG}{PU}{\81\112}% U+014A  
15018 % U+014B LATIN SMALL LETTER ENG; eng  
15019 \DeclareTextCommand{\ng}{PU}{\81\113}% U+014B  
15020 % U+014C LATIN CAPITAL LETTER O WITH MACRON; Omacron  
15021 \DeclareTextCompositeCommand{\=}{PU}{O}{\81\114}% U+014C  
15022 % U+014D LATIN SMALL LETTER O WITH MACRON; omacron  
15023 \DeclareTextCompositeCommand{\=}{PU}{o}{\81\115}% U+014D  
15024 % U+014E LATIN CAPITAL LETTER O WITH BREVE; Obreve  
15025 \DeclareTextCompositeCommand{\u}{PU}{O}{\81\116}% U+014E  
15026 % U+014F LATIN SMALL LETTER O WITH BREVE; obreve  
15027 \DeclareTextCompositeCommand{\u}{PU}{o}{\81\117}% U+014F  
15028 % U+0150 LATIN CAPITAL LETTER O WITH DOUBLE ACUTE; Odblacut  
15029 \DeclareTextCompositeCommand{\H}{PU}{O}{\81\120}% U+0150  
15030 % U+0151 LATIN SMALL LETTER O WITH DOUBLE ACUTE; odblacut, ohungarumlaut  
15031 \DeclareTextCompositeCommand{\H}{PU}{o}{\81\121}% U+0151  
15032 % U+0152 LATIN CAPITAL LIGATURE OE; OE  
15033 \DeclareTextCommand{\OE}{PU}{\81\122}% U+0152  
15034 % U+0153 LATIN SMALL LIGATURE OE; oe  
15035 \DeclareTextCommand{\oe}{PU}{\81\123}% U+0153  
15036 % U+0154 LATIN CAPITAL LETTER R WITH ACUTE; Racute  
15037 \DeclareTextCompositeCommand{\' }{PU}{R}{\81\124}% U+0154  
15038 % U+0155 LATIN SMALL LETTER R WITH ACUTE; racute  
15039 \DeclareTextCompositeCommand{\' }{PU}{r}{\81\125}% U+0155  
15040 % U+0156 LATIN CAPITAL LETTER R WITH CEDILLA; Rcedilla, Rcommaaccent  
15041 \DeclareTextCompositeCommand{\c}{PU}{R}{\81\126}% U+0156  
15042 % U+0157 LATIN SMALL LETTER R WITH CEDILLA; rcedilla, rcommaaccent  
15043 \DeclareTextCompositeCommand{\c}{PU}{r}{\81\127}% U+0157

15044 % U+0158 LATIN CAPITAL LETTER R WITH CARON; Rcaron  
15045 \DeclareTextCompositeCommand{\v}{PU}{R}{\81\130}% U+0158  
15046 % U+0159 LATIN SMALL LETTER R WITH CARON; rcaron  
15047 \DeclareTextCompositeCommand{\v}{PU}{r}{\81\131}% U+0159  
15048 % U+015A LATIN CAPITAL LETTER S WITH ACUTE; Sacute  
15049 \DeclareTextCompositeCommand{\'}{PU}{S}{\81\132}% U+015A  
15050 % U+015B LATIN SMALL LETTER S WITH ACUTE; sacute  
15051 \DeclareTextCompositeCommand{\'}{PU}{s}{\81\133}% U+015B  
15052 % U+015C LATIN CAPITAL LETTER S WITH CIRCUMFLEX; Scircumflex  
15053 \DeclareTextCompositeCommand{\^}{PU}{S}{\81\134}% U+015C  
15054 % U+015D LATIN SMALL LETTER S WITH CIRCUMFLEX; scircumflex  
15055 \DeclareTextCompositeCommand{\^}{PU}{s}{\81\135}% U+015D  
15056 % U+015E LATIN CAPITAL LETTER S WITH CEDILLA; Scedilla  
15057 \DeclareTextCompositeCommand{\c}{PU}{S}{\81\136}% U+015E  
15058 % U+015F LATIN SMALL LETTER S WITH CEDILLA; scedilla  
15059 \DeclareTextCompositeCommand{\c}{PU}{s}{\81\137}% U+015F  
15060 % U+0160 LATIN CAPITAL LETTER S WITH CARON; Scaron  
15061 \DeclareTextCompositeCommand{\v}{PU}{S}{\81\140}% U+0160  
15062 % U+0161 LATIN SMALL LETTER S WITH CARON; scaron  
15063 \DeclareTextCompositeCommand{\v}{PU}{s}{\81\141}% U+0161  
15064 % U+0162 LATIN CAPITAL LETTER T WITH CEDILLA; Tcedilla, Tcommaac-  
cent  
15065 \DeclareTextCompositeCommand{\c}{PU}{T}{\81\142}% U+0162  
15066 % U+0163 LATIN SMALL LETTER T WITH CEDILLA; tcedilla, tcommaaccent  
15067 \DeclareTextCompositeCommand{\c}{PU}{t}{\81\143}% U+0163  
15068 % U+0164 LATIN CAPITAL LETTER T WITH CARON; Tcaron  
15069 \DeclareTextCompositeCommand{\v}{PU}{T}{\81\144}% U+0164  
15070 % U+0165 LATIN SMALL LETTER T WITH CARON; tcaron  
15071 \DeclareTextCompositeCommand{\v}{PU}{t}{\81\145}% U+0165  
15072 % U+0166 LATIN CAPITAL LETTER T WITH STROKE; Tbar  
15073 \DeclareTextCommand{\textTslash}{PU}{\81\146}% U+0166  
15074 % U+0167 LATIN SMALL LETTER T WITH STROKE; tbar  
15075 \DeclareTextCommand{\texttslash}{PU}{\81\147}% U+0167  
15076 % U+0168 LATIN CAPITAL LETTER U WITH TILDE; Utilde  
15077 \DeclareTextCompositeCommand{\~}{PU}{U}{\81\150}% U+0168  
15078 % U+0169 LATIN SMALL LETTER U WITH TILDE; utilde  
15079 \DeclareTextCompositeCommand{\~}{PU}{u}{\81\151}% U+0169  
15080 % U+016A LATIN CAPITAL LETTER U WITH MACRON; Umacron  
15081 \DeclareTextCompositeCommand{\=}{PU}{U}{\81\152}% U+016A  
15082 % U+016B LATIN SMALL LETTER U WITH MACRON; umacron  
15083 \DeclareTextCompositeCommand{\=}{PU}{u}{\81\153}% U+016B  
15084 % U+016C LATIN CAPITAL LETTER U WITH BREVE; Ubreve  
15085 \DeclareTextCompositeCommand{\u}{PU}{U}{\81\154}% U+016C  
15086 % U+016D LATIN SMALL LETTER U WITH BREVE; ubreve  
15087 \DeclareTextCompositeCommand{\u}{PU}{u}{\81\155}% U+016D  
15088 % U+016E LATIN CAPITAL LETTER U WITH RING ABOVE; Uring  
15089 \DeclareTextCompositeCommand{\r}{PU}{U}{\81\156}% U+016E  
15090 % U+016F LATIN SMALL LETTER U WITH RING ABOVE; uring  
15091 \DeclareTextCompositeCommand{\r}{PU}{u}{\81\157}% U+016F  
15092 % U+0170 LATIN CAPITAL LETTER U WITH DOUBLE ACUTE; Udbla-  
cute, Uhungarumlaut  
15093 \DeclareTextCompositeCommand{\H}{PU}{U}{\81\160}% U+0170  
15094 % U+0171 LATIN SMALL LETTER U WITH DOUBLE ACUTE; udblacute, uhun-  
garumlaut  
15095 \DeclareTextCompositeCommand{\H}{PU}{u}{\81\161}% U+0171  
15096 % U+0172 LATIN CAPITAL LETTER U WITH OGONEK; Uogonek  
15097 \DeclareTextCompositeCommand{\k}{PU}{U}{\81\162}% U+0172

15098 % U+0173 LATIN SMALL LETTER U WITH OGONEK; uogonek  
 15099 \DeclareTextCompositeCommand{\k}{PU}{u}{\81\163}% U+0173  
 15100 % U+0174 LATIN CAPITAL LETTER W WITH CIRCUMFLEX; Wcircumflex  
 15101 \DeclareTextCompositeCommand{\^}{PU}{W}{\81\164}% U+0174  
 15102 % U+0175 LATIN SMALL LETTER W WITH CIRCUMFLEX; wcircumflex  
 15103 \DeclareTextCompositeCommand{\^}{PU}{w}{\81\165}% U+0175  
 15104 % U+0176 LATIN CAPITAL LETTER Y WITH CIRCUMFLEX; Ycircumflex  
 15105 \DeclareTextCompositeCommand{\^}{PU}{Y}{\81\166}% U+0176  
 15106 % U+0177 LATIN SMALL LETTER Y WITH CIRCUMFLEX; ycircumflex  
 15107 \DeclareTextCompositeCommand{\^}{PU}{y}{\81\167}% U+0177  
 15108 % U+0178 LATIN CAPITAL LETTER Y WITH DIAERESIS; Ydieresis  
 15109 \DeclareTextCompositeCommand{"}{PU}{Y}{\81\170}% U+0178  
 15110 % U+0179 LATIN CAPITAL LETTER Z WITH ACUTE; Zacute  
 15111 \DeclareTextCompositeCommand{\'}{PU}{Z}{\81\171}% U+0179  
 15112 % U+017A LATIN SMALL LETTER Z WITH ACUTE; zacute  
 15113 \DeclareTextCompositeCommand{\'}{PU}{z}{\81\172}% U+017A  
 15114 % U+017B LATIN CAPITAL LETTER Z WITH DOT ABOVE; Zdot, Zdotaccent  
 15115 \DeclareTextCompositeCommand{.}{PU}{Z}{\81\173}% U+017B  
 15116 % U+017C LATIN SMALL LETTER Z WITH DOT ABOVE; zdot, zdotaccent  
 15117 \DeclareTextCompositeCommand{.}{PU}{z}{\81\174}% U+017C  
 15118 % U+017D LATIN CAPITAL LETTER Z WITH CARON; Zcaron  
 15119 \DeclareTextCompositeCommand{\v}{PU}{Z}{\81\175}% U+017D  
 15120 % U+017E LATIN SMALL LETTER Z WITH CARON; zcaron  
 15121 \DeclareTextCompositeCommand{\v}{PU}{z}{\81\176}% U+017E  
 15122 % U+017F LATIN SMALL LETTER LONG S; longs, slong  
 15123 \DeclareTextCommand{\textlongS}{PU}{\81\177}% U+017F

## 50.2.5 Latin Extended-B: U+0180 to U+024F

15124 % U+0192 LATIN SMALL LETTER F WITH HOOK; florin  
 15125 \DeclareTextCommand{\textflorin}{PU}{\81\222}% U+0192  
 15126 % U+01CD LATIN CAPITAL LETTER A WITH CARON; Acaron  
 15127 \DeclareTextCompositeCommand{\v}{PU}{A}{\81\315}% U+01CD  
 15128 % U+01CE LATIN SMALL LETTER A WITH CARON; acaron  
 15129 \DeclareTextCompositeCommand{\v}{PU}{a}{\81\316}% U+01CE  
 15130 % U+01CF LATIN CAPITAL LETTER I WITH CARON; Icaron  
 15131 \DeclareTextCompositeCommand{\v}{PU}{I}{\81\317}% U+01CF  
 15132 % U+01D0 LATIN SMALL LETTER I WITH CARON; icaron  
 15133 \DeclareTextCompositeCommand{\v}{PU}{i}{\81\320}% U+01D0  
 15134 \DeclareTextCompositeCommand{\v}{PU}{i}{\81\320}% U+01D0  
 15135 % U+01D1 LATIN CAPITAL LETTER O WITH CARON; Ocaron  
 15136 \DeclareTextCompositeCommand{\v}{PU}{O}{\81\321}% U+01D1  
 15137 % U+01D2 LATIN SMALL LETTER O WITH CARON; ocaron  
 15138 \DeclareTextCompositeCommand{\v}{PU}{o}{\81\322}% U+01D2  
 15139 % U+01D3 LATIN CAPITAL LETTER U WITH CARON; Ucaron  
 15140 \DeclareTextCompositeCommand{\v}{PU}{U}{\81\323}% U+01D3  
 15141 % U+01D4 LATIN SMALL LETTER U WITH CARON; ucaron  
 15142 \DeclareTextCompositeCommand{\v}{PU}{u}{\81\324}% U+01D4  
 15143 % U+01E4 LATIN CAPITAL LETTER G WITH STROKE; Gstroke  
 15144 \DeclareTextCommand{\textGslash}{PU}{\81\344}% U+01E4  
 15145 % U+01E5 LATIN SMALL LETTER G WITH STROKE; gstroke  
 15146 \DeclareTextCommand{\textgslash}{PU}{\81\345}% U+01E5  
 15147 % U+01E6 LATIN CAPITAL LETTER G WITH CARON; Gcaron  
 15148 \DeclareTextCompositeCommand{\v}{PU}{G}{\81\346}% U+01E6  
 15149 % U+01E7 LATIN SMALL LETTER G WITH CARON; gcaron  
 15150 \DeclareTextCompositeCommand{\v}{PU}{g}{\81\347}% U+01E7  
 15151 % U+01E8 LATIN CAPITAL LETTER K WITH CARON; Kcaron  
 15152 \DeclareTextCompositeCommand{\v}{PU}{K}{\81\350}% U+01E8



15153 % U+01E9 LATIN SMALL LETTER K WITH CARON; kcaron  
15154 \DeclareTextCompositeCommand{\v}{PU}{k}{\81\351}% U+01E9  
15155 % U+01EA LATIN CAPITAL LETTER O WITH OGONEK; Oogonek  
15156 \DeclareTextCompositeCommand{\k}{PU}{O}{\81\352}% U+01EA  
15157 % U+01EB LATIN SMALL LETTER O WITH OGONEK; oogonek  
15158 \DeclareTextCompositeCommand{\k}{PU}{o}{\81\353}% U+01EB  
15159 % U+01F0 LATIN SMALL LETTER J WITH CARON; jcaron  
15160 \DeclareTextCompositeCommand{\v}{PU}{j}{\81\360}% U+01F0  
15161 \DeclareTextCompositeCommand{\v}{PU}{j}{\81\360}% U+01F0  
15162 % U+01F4 LATIN CAPITAL LETTER G WITH ACUTE; Gacute  
15163 \DeclareTextCompositeCommand{\'}{PU}{G}{\81\364}% U+01F4  
15164 % U+01F5 LATIN SMALL LETTER G WITH ACUTE; gacute  
15165 \DeclareTextCompositeCommand{\'}{PU}{g}{\81\365}% U+01F5  
15166 % U+01F8 LATIN CAPITAL LETTER N WITH GRAVE  
15167 \DeclareTextCompositeCommand{\'}{PU}{N}{\81\370}% U+01F8  
15168 % U+01F9 LATIN SMALL LETTER N WITH GRAVE  
15169 \DeclareTextCompositeCommand{\'}{PU}{n}{\81\371}% U+01F9  
15170 % U+01FC LATIN CAPITAL LETTER AE WITH ACUTE; AEacute  
15171 \DeclareTextCompositeCommand{\'}{PU}{AE}{\81\374}% U+01FC  
15172 % U+01FD LATIN SMALL LETTER AE WITH ACUTE; aeacute  
15173 \DeclareTextCompositeCommand{\'}{PU}{ae}{\81\375}% U+01FD  
15174 % U+01FE LATIN CAPITAL LETTER O WITH STROKE AND ACUTE; \*Oslasha-  
acute, Ostrokeacut  
15175 \DeclareTextCompositeCommand{\'}{PU}{O}{\81\376}% U+01FE  
15176 % U+01FF LATIN SMALL LETTER O WITH STROKE AND ACUTE; \*oslasha-  
acute, ostrokeacute  
15177 \DeclareTextCompositeCommand{\'}{PU}{o}{\81\377}% U+01FF  
15178 % U+0200 LATIN CAPITAL LETTER A WITH DOUBLE GRAVE; Adblgrave  
15179 \DeclareTextCompositeCommand{\G}{PU}{A}{\82\000}% U+0200  
15180 % U+0201 LATIN SMALL LETTER A WITH DOUBLE GRAVE; adblgrave  
15181 \DeclareTextCompositeCommand{\G}{PU}{a}{\82\001}% U+0201  
15182 % U+0204 LATIN CAPITAL LETTER E WITH DOUBLE GRAVE; Edblgrave  
15183 \DeclareTextCompositeCommand{\G}{PU}{E}{\82\004}% U+0204  
15184 % U+0205 LATIN SMALL LETTER E WITH DOUBLE GRAVE; edblgrave  
15185 \DeclareTextCompositeCommand{\G}{PU}{e}{\82\005}% U+0205  
15186 % U+0208 LATIN CAPITAL LETTER I WITH DOUBLE GRAVE; Idblgrave  
15187 \DeclareTextCompositeCommand{\G}{PU}{I}{\82\010}% U+0208  
15188 % U+0209 LATIN SMALL LETTER I WITH DOUBLE GRAVE; idblgrave  
15189 \DeclareTextCompositeCommand{\G}{PU}{i}{\82\011}% U+0209  
15190 \DeclareTextCompositeCommand{\G}{PU}{i}{\82\011}% U+0209  
15191 % U+020C LATIN CAPITAL LETTER O WITH DOUBLE GRAVE; Odblgrave  
15192 \DeclareTextCompositeCommand{\G}{PU}{O}{\82\014}% U+020C  
15193 % U+020D LATIN SMALL LETTER O WITH DOUBLE GRAVE; odblgrave  
15194 \DeclareTextCompositeCommand{\G}{PU}{o}{\82\015}% U+020D  
15195 % U+0210 LATIN CAPITAL LETTER R WITH DOUBLE GRAVE; Rdblgrave  
15196 \DeclareTextCompositeCommand{\G}{PU}{R}{\82\020}% U+0210  
15197 % U+0211 LATIN SMALL LETTER R WITH DOUBLE GRAVE; rdblgrave  
15198 \DeclareTextCompositeCommand{\G}{PU}{r}{\82\021}% U+0211  
15199 % U+0214 LATIN CAPITAL LETTER U WITH DOUBLE GRAVE; Udblgrave  
15200 \DeclareTextCompositeCommand{\G}{PU}{U}{\82\024}% U+0214  
15201 % U+0215 LATIN SMALL LETTER U WITH DOUBLE GRAVE; udblgrave  
15202 \DeclareTextCompositeCommand{\G}{PU}{u}{\82\025}% U+0215  
15203 % U+021E LATIN CAPITAL LETTER H WITH CARON  
15204 \DeclareTextCompositeCommand{\v}{PU}{H}{\82\036}% U+021E  
15205 % U+021F LATIN SMALL LETTER H WITH CARON  
15206 \DeclareTextCompositeCommand{\v}{PU}{h}{\82\037}% U+021F  
15207 % U+0226 LATIN CAPITAL LETTER A WITH DOT ABOVE

15208 \DeclareTextCompositeCommand{\.}{PU}{A}{\82\046}% U+0226  
 15209 % U+0227 LATIN SMALL LETTER A WITH DOT ABOVE  
 15210 \DeclareTextCompositeCommand{\.}{PU}{a}{\82\047}% U+0227  
 15211 % U+0228 LATIN CAPITAL LETTER E WITH CEDILLA  
 15212 \DeclareTextCompositeCommand{\c}{PU}{E}{\82\050}% U+0228  
 15213 % U+0229 LATIN SMALL LETTER E WITH CEDILLA  
 15214 \DeclareTextCompositeCommand{\c}{PU}{e}{\82\051}% U+0229  
 15215 % U+022E LATIN CAPITAL LETTER O WITH DOT ABOVE  
 15216 \DeclareTextCompositeCommand{\.}{PU}{O}{\82\056}% U+022E  
 15217 % U+022F LATIN SMALL LETTER O WITH DOT ABOVE  
 15218 \DeclareTextCompositeCommand{\.}{PU}{o}{\82\057}% U+022F  
 15219 % U+0232 LATIN CAPITAL LETTER Y WITH MACRON  
 15220 \DeclareTextCompositeCommand{\=}{PU}{Y}{\82\062}% U+0232  
 15221 % U+0233 LATIN SMALL LETTER Y WITH MACRON  
 15222 \DeclareTextCompositeCommand{\=}{PU}{y}{\82\063}% U+0233  
 15223 % U+0237 LATIN SMALL LETTER DOTLESS J  
 15224 \DeclareTextCommand{\j}{PU}{\82\067}% U+0237

## 50.2.6 Spacing Modifier Letters: U+02B0 to U+02FF

15225 % U+02C7 CARON; caron  
 15226 \DeclareTextCommand{\textasciicaron}{PU}{\82\307}% U+02C7  
 15227 % U+02D8 BREVE; breve  
 15228 \DeclareTextCommand{\textasciibreve}{PU}{\82\330}% U+02D8  
 15229 % U+02D9 DOT ABOVE; dotaccent  
 15230 \DeclareTextCommand{\textdotaccent}{PU}{\82\331}% U+02D9  
 15231 % U+02DA RING ABOVE; ring  
 15232 \DeclareTextCommand{\textring}{PU}{\82\332}% U+02DA  
 15233 % U+02DB OGONEK; ogonek  
 15234 \DeclareTextCommand{\textogonek}{PU}{\82\333}% U+02DB  
 15235 % U+02DC SMALL TILDE; ilde, \*tilde  
 15236 \DeclareTextCommand{\texttilde}{PU}{\82\334}% U+02DC  
 15237 % U+02DD DOUBLE ACUTE ACCENT; hungarumlaut  
 15238 \DeclareTextCommand{\texthungarumlaut}{PU}{\82\335}% U+02DD  
 15239 \DeclareTextCommand{\textacutedbl}{PU}{\texthungarumlaut}% U+02DD  
 15240 % U+02F5 MODIFIER LETTER MIDDLE DOUBLE GRAVE ACCENT  
 15241 \DeclareTextCommand{\textgravedbl}{PU}{\82\365}% U+02F5  
 15242 % U+02F7 MODIFIER LETTER LOW TILDE  
 15243 \DeclareTextCommand{\texttildelow}{PU}{\82\367}% U+02F7

## 50.2.7 Combining Diacritical Marks: U+0300 to U+036F

15244 % U+030F COMBINING DOUBLE GRAVE ACCENT; dblgravecmb  
 15245 \DeclareTextCommand{\textdoublegrave}{PU}{\83\017}% U+030F  
 15246 % U+0311 COMBINING INVERTED BREVE; breveinvertedcmb  
 15247 \DeclareTextCommand{\textnewtie}{PU}{\83\021}% U+0311  
 15248 % U+0323 COMBINING DOT BELOW; dotbelowcmb, \*dotbelowcomb  
 15249 \DeclareTextCommand{\textdotbelow}{PU}{\83\043}% U+0323  
 15250 % U+0331 COMBINING MACRON BELOW; macronbelowcmb  
 15251 \DeclareTextCommand{\textmacronbelow}{PU}{\83\061}% U+0331  
 15252 % U+0361 COMBINING DOUBLE INVERTED BREVE; breveinverteddoublecmb  
 15253 \DeclareTextCommand{\texttie}{PU}{\83\141}% U+0361

## 50.2.8 Greek and Coptic: U+0370 to U+03FF

15254 % U+0374 GREEK NUMERAL SIGN; numeralsigngreek  
 15255 \DeclareTextCommand{\textnumeralsigngreek}{PU}{\83\164}% U+0374  
 15256 % U+0375 GREEK LOWER NUMERAL SIGN; numeralsignlowergreek  
 15257 \DeclareTextCommand{\textnumeralsignlowergreek}{PU}{\83\165}% U+0375  
 15258 % U+0386 GREEK CAPITAL LETTER ALPHA WITH TONOS; Alphanos

15259 \DeclareTextCompositeCommand{'}{PU}{\textAlpha}{\83\206}% U+0386  
15260 % U+0388 GREEK CAPITAL LETTER EPSILON WITH TONOS; Epsilontonos  
15261 \DeclareTextCompositeCommand{'}{PU}{\textEpsilon}{\83\210}% U+0388  
15262 % U+0389 GREEK CAPITAL LETTER ETA WITH TONOS; Etatonos  
15263 \DeclareTextCompositeCommand{'}{PU}{\textEta}{\83\211}% U+0389  
15264 % U+038A GREEK CAPITAL LETTER IOTA WITH TONOS; Iotatonos  
15265 \DeclareTextCompositeCommand{'}{PU}{\textIota}{\83\212}% U+038A  
15266 % U+038C GREEK CAPITAL LETTER OMICRON WITH TONOS; Omi-  
crintonos  
15267 \DeclareTextCompositeCommand{'}{PU}{\textOmicron}{\83\214}% U+038C  
15268 % U+038E GREEK CAPITAL LETTER UPSILON WITH TONOS; Upsilonontonos  
15269 \DeclareTextCompositeCommand{'}{PU}{\textUpsilon}{\83\216}% U+038E  
15270 % U+038F GREEK CAPITAL LETTER OMEGA WITH TONOS; Omegatonos  
15271 \DeclareTextCompositeCommand{'}{PU}{\textOmega}{\83\217}% U+038F  
15272 % U+0390 GREEK SMALL LETTER IOTA WITH DIALYTIKA AND TONOS; io-  
tadiesisistonos  
15273 \DeclareTextCompositeCommand{'}{PU}{\textIotadiesis}{\83\220}% U+0390  
15274 % U+0391 GREEK CAPITAL LETTER ALPHA; Alpha  
15275 \DeclareTextCommand{\textAlpha}{PU}{\83\221}% U+0391  
15276 % U+0392 GREEK CAPITAL LETTER BETA; Beta  
15277 \DeclareTextCommand{\textBeta}{PU}{\83\222}% U+0392  
15278 % U+0393 GREEK CAPITAL LETTER GAMMA; Gamma  
15279 \DeclareTextCommand{\textGamma}{PU}{\83\223}% U+0393  
15280 % U+0394 GREEK CAPITAL LETTER DELTA; Deltagreek, \*Delta  
15281 \DeclareTextCommand{\textDelta}{PU}{\83\224}% U+0394  
15282 % U+0395 GREEK CAPITAL LETTER EPSILON; Epsilon  
15283 \DeclareTextCommand{\textEpsilon}{PU}{\83\225}% U+0395  
15284 % U+0396 GREEK CAPITAL LETTER ZETA; Zeta  
15285 \DeclareTextCommand{\textZeta}{PU}{\83\226}% U+0396  
15286 % U+0397 GREEK CAPITAL LETTER ETA; Eta  
15287 \DeclareTextCommand{\textEta}{PU}{\83\227}% U+0397  
15288 % U+0398 GREEK CAPITAL LETTER THETA; Theta  
15289 \DeclareTextCommand{\textTheta}{PU}{\83\230}% U+0398  
15290 % U+0399 GREEK CAPITAL LETTER IOTA; Iota  
15291 \DeclareTextCommand{\textIota}{PU}{\83\231}% U+0399  
15292 % U+039A GREEK CAPITAL LETTER KAPPA; Kappa  
15293 \DeclareTextCommand{\textKappa}{PU}{\83\232}% U+039A  
15294 % U+039B GREEK CAPITAL LETTER LAMDA; Lambda  
15295 \DeclareTextCommand{\textLambda}{PU}{\83\233}% U+039B  
15296 % U+039C GREEK CAPITAL LETTER MU; Mu  
15297 \DeclareTextCommand{\textMu}{PU}{\83\234}% U+039C  
15298 % U+039D GREEK CAPITAL LETTER NU; Nu  
15299 \DeclareTextCommand{\textNu}{PU}{\83\235}% U+039D  
15300 % U+039E GREEK CAPITAL LETTER XI; Xi  
15301 \DeclareTextCommand{\textXi}{PU}{\83\236}% U+039E  
15302 % U+039F GREEK CAPITAL LETTER OMICRON; Omicron  
15303 \DeclareTextCommand{\textOmicron}{PU}{\83\237}% U+039F  
15304 % U+03A0 GREEK CAPITAL LETTER PI; Pi  
15305 \DeclareTextCommand{\textPi}{PU}{\83\240}% U+03A0  
15306 % U+03A1 GREEK CAPITAL LETTER RHO; Rho  
15307 \DeclareTextCommand{\textRho}{PU}{\83\241}% U+03A1  
15308 % U+03A3 GREEK CAPITAL LETTER SIGMA; Sigma  
15309 \DeclareTextCommand{\textSigma}{PU}{\83\243}% U+03A3  
15310 % U+03A4 GREEK CAPITAL LETTER TAU; Tau  
15311 \DeclareTextCommand{\textTau}{PU}{\83\244}% U+03A4  
15312 % U+03A5 GREEK CAPITAL LETTER UPSILON; Upsilon  
15313 \DeclareTextCommand{\textUpsilon}{PU}{\83\245}% U+03A5

15314 % U+03A6 GREEK CAPITAL LETTER PHI; Phi  
 15315 \DeclareTextCommand{\textPhi}{PU}{\83\246}% U+03A6  
 15316 % U+03A7 GREEK CAPITAL LETTER CHI; Chi  
 15317 \DeclareTextCommand{\textChi}{PU}{\83\247}% U+03A7  
 15318 % U+03A8 GREEK CAPITAL LETTER PSI; Psi  
 15319 \DeclareTextCommand{\textPsi}{PU}{\83\250}% U+03A8  
 15320 % U+03A9 GREEK CAPITAL LETTER OMEGA; Omegagreek, \*Omega  
 15321 \DeclareTextCommand{\textOmega}{PU}{\83\251}% U+03A9  
 15322 % U+03AA GREEK CAPITAL LETTER IOTA WITH DIALYTIKA; Iotadieresis  
 15323 \DeclareTextCommand{\textIotadieresis}{PU}{\83\252}% U+03AA  
 15324 \DeclareTextCompositeCommand{"}{PU}{\textIota}{\83\252}% U+03AA  
 15325 % U+03AB GREEK CAPITAL LETTER UPSILON WITH DIALYTIKA; Up-  
 silondieresis  
 15326 \DeclareTextCompositeCommand{"}{PU}{\textUpsilon}{\83\253}% U+03AB  
 15327 % U+03AC GREEK SMALL LETTER ALPHA WITH TONOS; alphanos  
 15328 \DeclareTextCompositeCommand{'}{PU}{\textalpha}{\83\254}% U+03AC  
 15329 % U+03AD GREEK SMALL LETTER EPSILON WITH TONOS; epsilonos  
 15330 \DeclareTextCompositeCommand{'}{PU}{\textepsilon}{\83\255}% U+03AD  
 15331 % U+03AE GREEK SMALL LETTER ETA WITH TONOS; etanos  
 15332 \DeclareTextCompositeCommand{'}{PU}{\texteta}{\83\256}% U+03AE  
 15333 % U+03AF GREEK SMALL LETTER IOTA WITH TONOS; iotanos  
 15334 \DeclareTextCompositeCommand{'}{PU}{\textiota}{\83\257}% U+03AF  
 15335 % U+03B0 GREEK SMALL LETTER UPSILON WITH DIALYTIKA AND TONOS; up-  
 silondieresis  
 15336 \DeclareTextCompositeCommand{"}{PU}{\textupsilon}{\83\260}% U+03B0  
 15337 % U+03B1 GREEK SMALL LETTER ALPHA; alpha  
 15338 \DeclareTextCommand{\textalpha}{PU}{\83\261}% U+03B1  
 15339 % U+03B2 GREEK SMALL LETTER BETA; beta  
 15340 \DeclareTextCommand{\textbeta}{PU}{\83\262}% U+03B2  
 15341 % U+03B3 GREEK SMALL LETTER GAMMA; gamma  
 15342 \DeclareTextCommand{\textgamma}{PU}{\83\263}% U+03B3  
 15343 % U+03B4 GREEK SMALL LETTER DELTA; delta  
 15344 \DeclareTextCommand{\textdelta}{PU}{\83\264}% U+03B4  
 15345 % U+03B5 GREEK SMALL LETTER EPSILON; epsilon  
 15346 \DeclareTextCommand{\textepsilon}{PU}{\83\265}% U+03B5  
 15347 % U+03B6 GREEK SMALL LETTER ZETA; zeta  
 15348 \DeclareTextCommand{\textzeta}{PU}{\83\266}% U+03B6  
 15349 % U+03B7 GREEK SMALL LETTER ETA; eta  
 15350 \DeclareTextCommand{\texteta}{PU}{\83\267}% U+03B7  
 15351 % U+03B8 GREEK SMALL LETTER THETA; theta  
 15352 \DeclareTextCommand{\texttheta}{PU}{\83\270}% U+03B8  
 15353 % U+03B9 GREEK SMALL LETTER IOTA; iota  
 15354 \DeclareTextCommand{\textiota}{PU}{\83\271}% U+03B9  
 15355 % U+03BA GREEK SMALL LETTER KAPPA; kappa  
 15356 \DeclareTextCommand{\textkappa}{PU}{\83\272}% U+03BA  
 15357 % U+03BB GREEK SMALL LETTER LAMDA; lambda  
 15358 \DeclareTextCommand{\textlambda}{PU}{\83\273}% U+03BB  
 15359 % U+03BC GREEK SMALL LETTER MU; mugreek, \*mu  
 15360 \DeclareTextCommand{\textmugreek}{PU}{\83\274}% U+03BC  
 15361 % U+03BD GREEK SMALL LETTER NU; nu  
 15362 \DeclareTextCommand{\textnu}{PU}{\83\275}% U+03BD  
 15363 % U+03BE GREEK SMALL LETTER XI; xi  
 15364 \DeclareTextCommand{\textxi}{PU}{\83\276}% U+03BE  
 15365 % U+03BF GREEK SMALL LETTER OMICRON; omicron  
 15366 \DeclareTextCommand{\textomicron}{PU}{\83\277}% U+03BF  
 15367 % U+03C0 GREEK SMALL LETTER PI; pi  
 15368 \DeclareTextCommand{\textpi}{PU}{\83\300}% U+03C0

15369 % U+03C1 GREEK SMALL LETTER RHO; rho  
 15370 \DeclareTextCommand{\textrho}{PU}{\83\301}% U+03C1  
 15371 % U+03C2 GREEK SMALL LETTER FINAL SIGMA; \*sigma1, sigmafinal  
 15372 \DeclareTextCommand{\textvarsigma}{PU}{\83\302}% U+03C2  
 15373 % U+03C3 GREEK SMALL LETTER SIGMA; sigma  
 15374 \DeclareTextCommand{\textsigma}{PU}{\83\303}% U+03C3  
 15375 % U+03C4 GREEK SMALL LETTER TAU; tau  
 15376 \DeclareTextCommand{\texttau}{PU}{\83\304}% U+03C4  
 15377 % U+03C5 GREEK SMALL LETTER UPSILON; upsilon  
 15378 \DeclareTextCommand{\textupsilon}{PU}{\83\305}% U+03C5  
 15379 % U+03C6 GREEK SMALL LETTER PHI; phi  
 15380 \DeclareTextCommand{\textphi}{PU}{\83\306}% U+03C6  
 15381 % U+03C7 GREEK SMALL LETTER CHI; chi  
 15382 \DeclareTextCommand{\textchi}{PU}{\83\307}% U+03C7  
 15383 % U+03C8 GREEK SMALL LETTER PSI; psi  
 15384 \DeclareTextCommand{\textpsi}{PU}{\83\310}% U+03C8  
 15385 % U+03C9 GREEK SMALL LETTER OMEGA; omega  
 15386 \DeclareTextCommand{\textomega}{PU}{\83\311}% U+03C9  
 15387 % U+03CA GREEK SMALL LETTER IOTA WITH DIALYTIKA; iotadieresis  
 15388 \DeclareTextCompositeCommand{"}{PU}{\textiota}{\83\312}% U+03CA  
 15389 % U+03CB GREEK SMALL LETTER UPSILON WITH DIALYTIKA; up-  
 silondieresis  
 15390 \DeclareTextCompositeCommand{"}{PU}{\textupsilon}{\83\313}% U+03CB  
 15391 % U+03CC GREEK SMALL LETTER OMICRON WITH TONOS; omicrontonos  
 15392 \DeclareTextCompositeCommand{'}{PU}{\textomicron}{\83\314}% U+03CC  
 15393 % U+03CD GREEK SMALL LETTER UPSILON WITH TONOS; upsilontonos  
 15394 \DeclareTextCommand{\textupsilonacute}{PU}{\83\315}% U+03CD  
 15395 \DeclareTextCompositeCommand{'}{PU}{\textupsilon}{\83\315}% U+03CD  
 15396 % U+03CE GREEK SMALL LETTER OMEGA WITH TONOS; omegatonos  
 15397 \DeclareTextCompositeCommand{'}{PU}{\textomega}{\83\316}% U+03CE  
 15398 % U+03DA GREEK LETTER STIGMA; Stigmagreek  
 15399 \DeclareTextCommand{\textStigmagreek}{PU}{\83\332}% U+03DA  
 15400 % U+03DB GREEK SMALL LETTER STIGMA  
 15401 \DeclareTextCommand{\textstigmagreek}{PU}{\83\333}% U+03DB  
 15402 % U+03DC GREEK LETTER DIGAMMA; Digammagreek  
 15403 \DeclareTextCommand{\textDigammagreek}{PU}{\83\334}% U+03DC  
 15404 % U+03DD GREEK SMALL LETTER DIGAMMA  
 15405 \DeclareTextCommand{\textdigammagreek}{PU}{\83\335}% U+03DD  
 15406 % U+03DE GREEK LETTER KOPPA; Koppagreek  
 15407 \DeclareTextCommand{\textKoppagreek}{PU}{\83\336}% U+03DE  
 15408 % U+03DF GREEK SMALL LETTER KOPPA  
 15409 \DeclareTextCommand{\textkoppagreek}{PU}{\83\337}% U+03DF  
 15410 % U+03E0 GREEK LETTER SAMPI; Sampigreek  
 15411 \DeclareTextCommand{\textSampigreek}{PU}{\83\340}% U+03E0  
 15412 % U+03E1 GREEK SMALL LETTER SAMPI  
 15413 \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.

15414 % U+0400 CYRILLIC CAPITAL LETTER IE WITH GRAVE  
 15415 \DeclareTextCompositeCommand{'}{PU}{\CYRE}{\84\000}% U+0400  
 15416 % U+0401 CYRILLIC CAPITAL LETTER IO; Iocyrillic, \*afii10023  
 15417 \DeclareTextCommand{\CYRYO}{PU}{\84\001}% U+0401  
 15418 \DeclareTextCompositeCommand{"}{PU}{\CYRE}{\84\001}% ???  
 15419 % U+0402 CYRILLIC CAPITAL LETTER DJE; Djecyrillic, \*afii10051  
 15420 \DeclareTextCommand{\CYRDJE}{PU}{\84\002}% U+0402

15421 % U+0403 CYRILLIC CAPITAL LETTER GJE; Gjecyrillic, \*afii10052  
 15422 \DeclareTextCompositeCommand{\'}{PU}{\CYRG}{\84\003}% U+0403  
 15423 % U+0404 CYRILLIC CAPITAL LETTER UKRAINIAN IE; Ecyrillic, \*afii10053  
 15424 \DeclareTextCommand{\CYRIE}{PU}{\84\004}% U+0404  
 15425 % U+0405 CYRILLIC CAPITAL LETTER DZE; Dzecyrillic, \*afii10054  
 15426 \DeclareTextCommand{\CYRDZE}{PU}{\84\005}% U+0405  
 15427 % U+0406 CYRILLIC CAPITAL LETTER BYELORUSSIAN-UKRAINIAN I; Icyril-  
 lic, \*afii10055  
 15428 \DeclareTextCommand{\CYRII}{PU}{\84\006}% U+0406  
 15429 % U+0407 CYRILLIC CAPITAL LETTER YI; Yicyrillic, \*afii10056  
 15430 \DeclareTextCommand{\CYRYI}{PU}{\84\007}% U+0407  
 15431 \DeclareTextCompositeCommand{\"}{PU}{\CYRII}{\84\007}% U+0407  
 15432 % U+0408 CYRILLIC CAPITAL LETTER JE; Jecyrillic, \*afii10057  
 15433 \DeclareTextCommand{\CYRJE}{PU}{\84\010}% U+0408  
 15434 % U+0409 CYRILLIC CAPITAL LETTER LJE; Ljecyrillic, \*afii10058  
 15435 \DeclareTextCommand{\CYRLJE}{PU}{\84\011}% U+0409  
 15436 % U+040A CYRILLIC CAPITAL LETTER NJE; Njecyrillic, \*afii10059  
 15437 \DeclareTextCommand{\CYRNJE}{PU}{\84\012}% U+040A  
 15438 % U+040B CYRILLIC CAPITAL LETTER TSHE; Tshecyrillic, \*afii10060  
 15439 \DeclareTextCommand{\CYRTSHE}{PU}{\84\013}% U+040B  
 15440 % U+040C CYRILLIC CAPITAL LETTER KJE; Kjecyrillic, \*afii10061  
 15441 \DeclareTextCompositeCommand{\'}{PU}{\CYRK}{\84\014}% U+040C  
 15442 % U+040D CYRILLIC CAPITAL LETTER I WITH GRAVE  
 15443 \DeclareTextCompositeCommand{\`}{PU}{\CYRI}{\84\015}% U+040D  
 15444 % U+040E CYRILLIC CAPITAL LETTER SHORT U; Ushortcyrillic, \*afii10062  
 15445 \DeclareTextCommand{\CYRUSHRT}{PU}{\84\016}% U+040E  
 15446 \DeclareTextCompositeCommand{\U}{PU}{\CYRU}{\84\016}% U+040E  
 15447 % U+040F CYRILLIC CAPITAL LETTER DZHE; Dzhecyrillic, \*afii10145  
 15448 \DeclareTextCommand{\CYRDZHE}{PU}{\84\017}% U+040F  
 15449 % U+0410 CYRILLIC CAPITAL LETTER A; Acyrillic, \*afii10017  
 15450 \DeclareTextCommand{\CYRA}{PU}{\84\020}% U+0410  
 15451 % U+0411 CYRILLIC CAPITAL LETTER BE; Becyrillic, \*afii10018  
 15452 \DeclareTextCommand{\CYRB}{PU}{\84\021}% U+0411  
 15453 % U+0412 CYRILLIC CAPITAL LETTER VE; Vecyrillic, \*afii10019  
 15454 \DeclareTextCommand{\CYRV}{PU}{\84\022}% U+0412  
 15455 % U+0413 CYRILLIC CAPITAL LETTER GHE; Gecyrillic, \*afii10020  
 15456 \DeclareTextCommand{\CYRG}{PU}{\84\023}% U+0413  
 15457 % U+0414 CYRILLIC CAPITAL LETTER DE; Decyrillic, \*afii10021  
 15458 \DeclareTextCommand{\CYRD}{PU}{\84\024}% U+0414  
 15459 % U+0415 CYRILLIC CAPITAL LETTER IE; Iecyrillic, \*afii10022  
 15460 \DeclareTextCommand{\CYRE}{PU}{\84\025}% U+0415  
 15461 % U+0416 CYRILLIC CAPITAL LETTER ZHE; Zhecyrillic, \*afii10024  
 15462 \DeclareTextCommand{\CYRZH}{PU}{\84\026}% U+0416  
 15463 % U+0417 CYRILLIC CAPITAL LETTER ZE; Zecyrillic, \*afii10025  
 15464 \DeclareTextCommand{\CYRZ}{PU}{\84\027}% U+0417  
 15465 % U+0418 CYRILLIC CAPITAL LETTER I; Iicyrillic, \*afii10026  
 15466 \DeclareTextCommand{\CYRI}{PU}{\84\030}% U+0418  
 15467 % U+0419 CYRILLIC CAPITAL LETTER SHORT I; Iishortcyrillic, \*afii10027  
 15468 \DeclareTextCommand{\CYRISHRT}{PU}{\84\031}% U+0419  
 15469 \DeclareTextCompositeCommand{\U}{PU}{\CYRI}{\84\031}% U+0419  
 15470 % U+041A CYRILLIC CAPITAL LETTER KA; Kacyrillic, \*afii10028  
 15471 \DeclareTextCommand{\CYRK}{PU}{\84\032}% U+041A  
 15472 % U+041B CYRILLIC CAPITAL LETTER EL; Elcyrillic, \*afii10029  
 15473 \DeclareTextCommand{\CYRL}{PU}{\84\033}% U+041B  
 15474 % U+041C CYRILLIC CAPITAL LETTER EM; Emcyrillic, \*afii10030  
 15475 \DeclareTextCommand{\CYRM}{PU}{\84\034}% U+041C  
 15476 % U+041D CYRILLIC CAPITAL LETTER EN; Encyrillic, \*afii10031

15477 \DeclareTextCommand{\CYRN}{PU}{\84\035}% U+041D  
15478 % U+041E CYRILLIC CAPITAL LETTER O; Ocyrillic, \*afii10032  
15479 \DeclareTextCommand{\CYRO}{PU}{\84\036}% U+041E  
15480 % U+041F CYRILLIC CAPITAL LETTER PE; Pecyrillic, \*afii10033  
15481 \DeclareTextCommand{\CYRP}{PU}{\84\037}% U+041F  
15482 % U+0420 CYRILLIC CAPITAL LETTER ER; Ercyrillic, \*afii10034  
15483 \DeclareTextCommand{\CYRR}{PU}{\84\040}% U+0420  
15484 % U+0421 CYRILLIC CAPITAL LETTER ES; Escyrillic, \*afii10035  
15485 \DeclareTextCommand{\CYRS}{PU}{\84\041}% U+0421  
15486 % U+0422 CYRILLIC CAPITAL LETTER TE; Tecyrillic, \*afii10036  
15487 \DeclareTextCommand{\CYRT}{PU}{\84\042}% U+0422  
15488 % U+0423 CYRILLIC CAPITAL LETTER U; Ucyrillic, \*afii10037  
15489 \DeclareTextCommand{\CYRU}{PU}{\84\043}% U+0423  
15490 % U+0424 CYRILLIC CAPITAL LETTER EF; Efcyrillic, \*afii10038  
15491 \DeclareTextCommand{\CYRF}{PU}{\84\044}% U+0424  
15492 % U+0425 CYRILLIC CAPITAL LETTER HA; Khacyrillic, \*afii10039  
15493 \DeclareTextCommand{\CYRH}{PU}{\84\045}% U+0425  
15494 % U+0426 CYRILLIC CAPITAL LETTER TSE; Tsecyrillic, \*afii10040  
15495 \DeclareTextCommand{\CYRC}{PU}{\84\046}% U+0426  
15496 % U+0427 CYRILLIC CAPITAL LETTER CHE; Checyrillic, \*afii10041  
15497 \DeclareTextCommand{\CYRCH}{PU}{\84\047}% U+0427  
15498 % U+0428 CYRILLIC CAPITAL LETTER SHA; Shacyrillic, \*afii10042  
15499 \DeclareTextCommand{\CYRSH}{PU}{\84\050}% U+0428  
15500 % U+0429 CYRILLIC CAPITAL LETTER SHCHA; Shchacyrillic, \*afii10043  
15501 \DeclareTextCommand{\CYRSHCH}{PU}{\84\051}% U+0429  
15502 % U+042A CYRILLIC CAPITAL LETTER HARD SIGN; Hardsigncyrillic, \*afii10044  
15503 \DeclareTextCommand{\CYRHRDSN}{PU}{\84\052}% U+042A  
15504 % U+042B CYRILLIC CAPITAL LETTER YERU; Yericyrillic, \*afii10045  
15505 \DeclareTextCommand{\CYRERY}{PU}{\84\053}% U+042B  
15506 % U+042C CYRILLIC CAPITAL LETTER SOFT SIGN; Softsigncyrillic, \*afii10046  
15507 \DeclareTextCommand{\CYRSFTSN}{PU}{\84\054}% U+042C  
15508 % U+042D CYRILLIC CAPITAL LETTER E; Ereversedcyrillic, \*afii10047  
15509 \DeclareTextCommand{\CYREREV}{PU}{\84\055}% U+042D  
15510 % U+042E CYRILLIC CAPITAL LETTER YU; IUcyrillic, \*afii10048  
15511 \DeclareTextCommand{\CYRYU}{PU}{\84\056}% U+042E  
15512 % U+042F CYRILLIC CAPITAL LETTER YA; IAcyrillic, \*afii10049  
15513 \DeclareTextCommand{\CYRYA}{PU}{\84\057}% U+042F  
15514 % U+0430 CYRILLIC SMALL LETTER A; acyrillic, \*afii10065  
15515 \DeclareTextCommand{\cyra}{PU}{\84\060}% U+0430  
15516 % U+0431 CYRILLIC SMALL LETTER BE; \*afii10066, becyrillic  
15517 \DeclareTextCommand{\cyrb}{PU}{\84\061}% U+0431  
15518 % U+0432 CYRILLIC SMALL LETTER VE; \*afii10067, vecyrillic  
15519 \DeclareTextCommand{\cyrv}{PU}{\84\062}% U+0432  
15520 % U+0433 CYRILLIC SMALL LETTER GHE; \*afii10068, gecyrillic  
15521 \DeclareTextCommand{\cyrg}{PU}{\84\063}% U+0433  
15522 % U+0434 CYRILLIC SMALL LETTER DE; \*afii10069, decyrillic  
15523 \DeclareTextCommand{\cyrd}{PU}{\84\064}% U+0434  
15524 % U+0435 CYRILLIC SMALL LETTER IE; \*afii10070, iecyrillic  
15525 \DeclareTextCommand{\cyre}{PU}{\84\065}% U+0435  
15526 % U+0436 CYRILLIC SMALL LETTER ZHE; \*afii10072, zhecyrillic  
15527 \DeclareTextCommand{\cyrz}{PU}{\84\066}% U+0436  
15528 % U+0437 CYRILLIC SMALL LETTER ZE; \*afii10073, zecyrillic  
15529 \DeclareTextCommand{\cyrz}{PU}{\84\067}% U+0437  
15530 % U+0438 CYRILLIC SMALL LETTER I; \*afii10074, iicyrillic  
15531 \DeclareTextCommand{\cyri}{PU}{\84\070}% U+0438  
15532 % U+0439 CYRILLIC SMALL LETTER SHORT I; \*afii10075, iishortcyrillic  
15533 \DeclareTextCommand{\cyrishrt}{PU}{\84\071}% U+0439

15534 \DeclareTextCompositeCommand{\U}{PU}{\cyri}{\84\071}% U+0439  
15535 % U+043A CYRILLIC SMALL LETTER KA; \*afii10076, kacyrillic  
15536 \DeclareTextCommand{\cyrk}{PU}{\84\072}% U+043A  
15537 % U+043B CYRILLIC SMALL LETTER EL; \*afii10077, elcyrillic  
15538 \DeclareTextCommand{\cyrI}{PU}{\84\073}% U+043B  
15539 % U+043C CYRILLIC SMALL LETTER EM; \*afii10078, emcyrillic  
15540 \DeclareTextCommand{\cyrm}{PU}{\84\074}% U+043C  
15541 % U+043D CYRILLIC SMALL LETTER EN; \*afii10079, encyrillic  
15542 \DeclareTextCommand{\cyrn}{PU}{\84\075}% U+043D  
15543 % U+043E CYRILLIC SMALL LETTER O; \*afii10080, ocyrillic  
15544 \DeclareTextCommand{\cyro}{PU}{\84\076}% U+043E  
15545 % U+043F CYRILLIC SMALL LETTER PE; \*afii10081, pecyrillic  
15546 \DeclareTextCommand{\cyrp}{PU}{\84\077}% U+043F  
15547 % U+0440 CYRILLIC SMALL LETTER ER; \*afii10082, ercyrillic  
15548 \DeclareTextCommand{\cyrr}{PU}{\84\100}% U+0440  
15549 % U+0441 CYRILLIC SMALL LETTER ES; \*afii10083, escyrillic  
15550 \DeclareTextCommand{\cyrS}{PU}{\84\101}% U+0441  
15551 % U+0442 CYRILLIC SMALL LETTER TE; \*afii10084, tecyrillic  
15552 \DeclareTextCommand{\cyrt}{PU}{\84\102}% U+0442  
15553 % U+0443 CYRILLIC SMALL LETTER U; \*afii10085, ucyrillic  
15554 \DeclareTextCommand{\cyrU}{PU}{\84\103}% U+0443  
15555 % U+0444 CYRILLIC SMALL LETTER EF; \*afii10086, efcyrillic  
15556 \DeclareTextCommand{\cyrf}{PU}{\84\104}% U+0444  
15557 % U+0445 CYRILLIC SMALL LETTER HA; \*afii10087, khacyrillic  
15558 \DeclareTextCommand{\cyrh}{PU}{\84\105}% U+0445  
15559 % U+0446 CYRILLIC SMALL LETTER TSE; \*afii10088, tsecyrillic  
15560 \DeclareTextCommand{\cyrc}{PU}{\84\106}% U+0446  
15561 % U+0447 CYRILLIC SMALL LETTER CHE; \*afii10089, checyrillic  
15562 \DeclareTextCommand{\cyrch}{PU}{\84\107}% U+0447  
15563 % U+0448 CYRILLIC SMALL LETTER SHA; \*afii10090, shacyrillic  
15564 \DeclareTextCommand{\cyrsh}{PU}{\84\110}% U+0448  
15565 % U+0449 CYRILLIC SMALL LETTER SHCHA; \*afii10091, shchacyrillic  
15566 \DeclareTextCommand{\cyrshch}{PU}{\84\111}% U+0449  
15567 % U+044A CYRILLIC SMALL LETTER HARD SIGN; \*afii10092, hardsigncyrillic  
15568 \DeclareTextCommand{\cyhrdsn}{PU}{\84\112}% U+044A  
15569 % U+044B CYRILLIC SMALL LETTER YERU; \*afii10093, yericyrillic  
15570 \DeclareTextCommand{\cyrery}{PU}{\84\113}% U+044B  
15571 % U+044C CYRILLIC SMALL LETTER SOFT SIGN; \*afii10094, softsigncyrillic  
15572 \DeclareTextCommand{\cyrSftsn}{PU}{\84\114}% U+044C  
15573 % U+044D CYRILLIC SMALL LETTER E; \*afii10095, ereversedcyrillic  
15574 \DeclareTextCommand{\cyrerev}{PU}{\84\115}% U+044D  
15575 % U+044E CYRILLIC SMALL LETTER YU; \*afii10096, iucyrillic  
15576 \DeclareTextCommand{\cyrYU}{PU}{\84\116}% U+044E  
15577 % U+044F CYRILLIC SMALL LETTER YA; \*afii10097, iacyrillic  
15578 \DeclareTextCommand{\cyrya}{PU}{\84\117}% U+044F  
15579 % U+0450 CYRILLIC SMALL LETTER IE WITH GRAVE  
15580 \DeclareTextCompositeCommand{\'}{PU}{\cyre}{\84\120}% U+0450  
15581 % U+0451 CYRILLIC SMALL LETTER IO; \*afii10071, iocyrillic  
15582 \DeclareTextCommand{\cyryo}{PU}{\84\121}% U+0451  
15583 \DeclareTextCompositeCommand{\"}{PU}{\cyre}{\84\121}% U+0451  
15584 % U+0452 CYRILLIC SMALL LETTER DJE; \*afii10099, djecyrillic  
15585 \DeclareTextCommand{\cyrdje}{PU}{\84\122}% U+0452  
15586 % U+0453 CYRILLIC SMALL LETTER GJE; \*afii10100, gjecyrillic  
15587 \DeclareTextCompositeCommand{\`}{PU}{\cyrG}{\84\123}% U+0453  
15588 % U+0454 CYRILLIC SMALL LETTER UKRAINIAN IE; \*afii10101, ecyrillic  
15589 \DeclareTextCommand{\cyrie}{PU}{\84\124}% U+0454  
15590 % U+0455 CYRILLIC SMALL LETTER DZE; \*afii10102, dzecyrillic



15591 \DeclareTextCommand{\cyrdze}{PU}{\84\125}% U+0455  
 15592 % U+0456 CYRILLIC SMALL LETTER BYELORUSSIAN-UKRAINIAN I; \*afii10103, icyril-  
 lic  
 15593 \DeclareTextCommand{\cyrii}{PU}{\84\126}% U+0456  
 15594 % U+0457 CYRILLIC SMALL LETTER YI; \*afii10104, yicyrillic  
 15595 \DeclareTextCommand{\cyryi}{PU}{\84\127}% U+0457  
 15596 \DeclareTextCompositeCommand{"}{PU}{\cyrii}{\84\127}% U+0457  
 15597 % U+0458 CYRILLIC SMALL LETTER JE; \*afii10105, jecyrillic  
 15598 \DeclareTextCommand{\cyrje}{PU}{\84\130}% U+0458  
 15599 % U+0459 CYRILLIC SMALL LETTER LJE; \*afii10106, ljecyrillic  
 15600 \DeclareTextCommand{\cyrlje}{PU}{\84\131}% U+0459  
 15601 % U+045A CYRILLIC SMALL LETTER NJE; \*afii10107, njecyrillic  
 15602 \DeclareTextCommand{\cyrnje}{PU}{\84\132}% U+045A  
 15603 % U+045B CYRILLIC SMALL LETTER TSHE; \*afii10108, tshecyrillic  
 15604 \DeclareTextCommand{\cyrtshe}{PU}{\84\133}% U+045B  
 15605 % U+045C CYRILLIC SMALL LETTER KJE; \*afii10109, kjecyrillic  
 15606 \DeclareTextCompositeCommand{\'}{PU}{\cyrk}{\84\134}% U+045C  
 15607 % U+045D CYRILLIC SMALL LETTER I WITH GRAVE  
 15608 \DeclareTextCompositeCommand{\'}{PU}{\cyri}{\84\135}% U+045D  
 15609 % U+045E CYRILLIC SMALL LETTER SHORT U; \*afii10110, ushortcyrillic  
 15610 \DeclareTextCommand{\cyrushrt}{PU}{\84\136}% U+045E  
 15611 \DeclareTextCompositeCommand{\U}{PU}{\curu}{\84\136}% U+045E  
 15612 % U+045F CYRILLIC SMALL LETTER DZHE; \*afii10193, dzhecyrillic  
 15613 \DeclareTextCommand{\cyrdzhe}{PU}{\84\137}% U+045F  
 15614 % U+0460 CYRILLIC CAPITAL LETTER OMEGA; Omegacyrillic  
 15615 \DeclareTextCommand{\CYROMEGA}{PU}{\84\140}% U+0460  
 15616 % U+0461 CYRILLIC SMALL LETTER OMEGA; omegacyrillic  
 15617 \DeclareTextCommand{\cyromega}{PU}{\84\141}% U+0461  
 15618 % U+0462 CYRILLIC CAPITAL LETTER YAT; Yatcyrillic, \*afii10146  
 15619 \DeclareTextCommand{\CYRYAT}{PU}{\84\142}% U+0462  
 15620 % U+0463 CYRILLIC SMALL LETTER YAT; \*afii10194, yatcyrillic  
 15621 \DeclareTextCommand{\cyryat}{PU}{\84\143}% U+0463  
 15622 % U+0464 CYRILLIC CAPITAL LETTER IOTIFIED E; Eiotifiedcyrillic  
 15623 \DeclareTextCommand{\CYRIOTE}{PU}{\84\144}% U+0464  
 15624 % U+0465 CYRILLIC SMALL LETTER IOTIFIED E; eiotifiedcyrillic  
 15625 \DeclareTextCommand{\cyriote}{PU}{\84\145}% U+0465  
 15626 % U+0466 CYRILLIC CAPITAL LETTER LITTLE YUS; Yuslittlecyrillic  
 15627 \DeclareTextCommand{\CYRLYUS}{PU}{\84\146}% U+0466  
 15628 % U+0467 CYRILLIC SMALL LETTER LITTLE YUS; yuslittlecyrillic  
 15629 \DeclareTextCommand{\cyrlyus}{PU}{\84\147}% U+0467  
 15630 % U+0468 CYRILLIC CAPITAL LETTER IOTIFIED LITTLE YUS; Yuslittleio-  
 tifiedcyrillic  
 15631 \DeclareTextCommand{\CYRIOTLYUS}{PU}{\84\150}% U+0468  
 15632 % U+0469 CYRILLIC SMALL LETTER IOTIFIED LITTLE YUS; yuslittleioti-  
 fiedcyrillic  
 15633 \DeclareTextCommand{\cyriotlyus}{PU}{\84\151}% U+0469  
 15634 % U+046A CYRILLIC CAPITAL LETTER BIG YUS; Yusbigcyrillic  
 15635 \DeclareTextCommand{\CYRBYUS}{PU}{\84\152}% U+046A  
 15636 % U+046B CYRILLIC SMALL LETTER BIG YUS; yusbigcyrillic  
 15637 \DeclareTextCommand{\cyrbyus}{PU}{\84\153}% U+046B  
 15638 % U+046C CYRILLIC CAPITAL LETTER IOTIFIED BIG YUS; Yusbigiotified-  
 cyrillic  
 15639 \DeclareTextCommand{\CYRIOTBYUS}{PU}{\84\154}% U+046C  
 15640 % U+046D CYRILLIC SMALL LETTER IOTIFIED BIG YUS; yusbigiotifiedcyril-  
 lic  
 15641 \DeclareTextCommand{\cyriotbyus}{PU}{\84\155}% U+046D  
 15642 % U+046E CYRILLIC CAPITAL LETTER KSI; Ksicyrillic

15643 \DeclareTextCommand{\CYRKSI}{PU}{\84\156}% U+046E  
 15644 % U+046F CYRILLIC SMALL LETTER KSI; ksicyrillic  
 15645 \DeclareTextCommand{\cyrksi}{PU}{\84\157}% U+046F  
 15646 % U+0470 CYRILLIC CAPITAL LETTER PSI; Psicyrillic  
 15647 \DeclareTextCommand{\CYRPSI}{PU}{\84\160}% U+0470  
 15648 % U+0471 CYRILLIC SMALL LETTER PSI; psicyrillic  
 15649 \DeclareTextCommand{\cyrpsi}{PU}{\84\161}% U+0471  
 15650 % U+0472 CYRILLIC CAPITAL LETTER FITA; Fitacyrillic, \*afii10147  
 15651 \DeclareTextCommand{\CYRFITA}{PU}{\84\162}% U+0472  
 15652 % U+0473 CYRILLIC SMALL LETTER FITA; \*afii10195, fitacyrillic  
 15653 \DeclareTextCommand{\cyrfita}{PU}{\84\163}% U+0473  
 15654 % U+0474 CYRILLIC CAPITAL LETTER IZHITSA; Izhitsacyrillic, \*afii10148  
 15655 \DeclareTextCommand{\CYRIZH}{PU}{\84\164}% U+0474  
 15656 % U+0475 CYRILLIC SMALL LETTER IZHITSA; \*afii10196, izhitsacyrillic  
 15657 \DeclareTextCommand{\cyrizh}{PU}{\84\165}% U+0475  
 15658 % U+0476 CYRILLIC CAPITAL LETTER IZHITSA WITH DOUBLE GRAVE AC-  
 CENT; Izhitsadblgravecyrillic  
 15659 \DeclareTextCompositeCommand{\C}{PU}{\CYRIZH}{\84\166}% U+0476  
 15660 % U+0477 CYRILLIC SMALL LETTER IZHITSA WITH DOUBLE GRAVE AC-  
 CENT; izhitsadblgravecyrillic  
 15661 \DeclareTextCompositeCommand{\C}{PU}{\cyrizh}{\84\167}% U+0477  
 15662 % U+0478 CYRILLIC CAPITAL LETTER UK; Ukcyrillic  
 15663 \DeclareTextCommand{\CYRUK}{PU}{\84\170}% U+0478  
 15664 % U+0479 CYRILLIC SMALL LETTER UK; ukcyrillic  
 15665 \DeclareTextCommand{\cyruk}{PU}{\84\171}% U+0479  
 15666 % U+047A CYRILLIC CAPITAL LETTER ROUND OMEGA; Omegaroundcyril-  
 lic  
 15667 \DeclareTextCommand{\CYROMEGARND}{PU}{\84\172}% U+047A  
 15668 % U+047B CYRILLIC SMALL LETTER ROUND OMEGA; omegaroundcyrillic  
 15669 \DeclareTextCommand{\cyromegarnd}{PU}{\84\173}% U+047B  
 15670 % U+047C CYRILLIC CAPITAL LETTER OMEGA WITH TITLO; Omegatitlo-  
 cyrillic  
 15671 \DeclareTextCommand{\CYROMEGATITLO}{PU}{\84\174}% U+047C  
 15672 % U+047D CYRILLIC SMALL LETTER OMEGA WITH TITLO; omegatitlo-  
 cyrillic  
 15673 \DeclareTextCommand{\cyromegatitlo}{PU}{\84\175}% U+047D  
 15674 % U+047E CYRILLIC CAPITAL LETTER OT; Otcyrillic  
 15675 \DeclareTextCommand{\CYROT}{PU}{\84\176}% U+047E  
 15676 % U+047F CYRILLIC SMALL LETTER OT; otcyrillic  
 15677 \DeclareTextCommand{\cyrot}{PU}{\84\177}% U+047F  
 15678 % U+0480 CYRILLIC CAPITAL LETTER KOPPA; Koppacyrillic  
 15679 \DeclareTextCommand{\CYRKOPPA}{PU}{\84\200}% U+0480  
 15680 % U+0481 CYRILLIC SMALL LETTER KOPPA; koppacyrillic  
 15681 \DeclareTextCommand{\cyrkoppa}{PU}{\84\201}% U+0481  
 15682 % U+0482 CYRILLIC THOUSANDS SIGN; thousandcyrillic  
 15683 \DeclareTextCommand{\cyrthousands}{PU}{\84\202}% U+0482  
 \84\203: U+0483 COMBINING CYRILLIC TITLO; titlocyrillicmb  
 \84\204: U+0484 COMBINING CYRILLIC PALATALIZATION; palatalizationcyril-  
 licmb  
 \84\205: U+0485 COMBINING CYRILLIC DASIA PNEUMATA; dasiapneumata-  
 cyrillicmb  
 \84\206: U+0486 COMBINING CYRILLIC PSILI PNEUMATA; psilipneumatacyril-  
 licmb  
 \84\207: U+0487 COMBINING CYRILLIC POKRYTIE  
 \84\210: U+0488 COMBINING CYRILLIC HUNDRED THOUSANDS SIGN  
 \84\211: U+0489 COMBINING CYRILLIC MILLIONS SIGN

15684 % U+048A CYRILLIC CAPITAL LETTER SHORT I WITH TAIL  
 15685 \DeclareTextCommand{\CYRISHRTDSC}{PU}{\84\212}% U+048A  
 15686 % U+048B CYRILLIC SMALL LETTER SHORT I WITH TAIL  
 15687 \DeclareTextCommand{\cyrishrtdsc}{PU}{\84\213}% U+048B  
 15688 % U+048C CYRILLIC CAPITAL LETTER SEMISOFT SIGN  
 15689 \DeclareTextCommand{\CYRSEMISFTSN}{PU}{\84\214}% U+048C  
 15690 % U+048D CYRILLIC SMALL LETTER SEMISOFT SIGN  
 15691 \DeclareTextCommand{\cyrsemisftsn}{PU}{\84\215}% U+048D  
 15692 % U+048E CYRILLIC CAPITAL LETTER ER WITH TICK  
 15693 \DeclareTextCommand{\CYRRTICK}{PU}{\84\216}% U+048E  
 15694 % U+048F CYRILLIC SMALL LETTER ER WITH TICK  
 15695 \DeclareTextCommand{\cyrrtick}{PU}{\84\217}% U+048F  
 15696 % U+0490 CYRILLIC CAPITAL LETTER GHE WITH UPTURN; Gheupturn-  
 cyrillic, \*afii10050  
 15697 \DeclareTextCommand{\CYRGUP}{PU}{\84\220}% U+0490  
 15698 % U+0491 CYRILLIC SMALL LETTER GHE WITH UPTURN; \*afii10098, ghe-  
 upturncyrillic  
 15699 \DeclareTextCommand{\cyrgup}{PU}{\84\221}% U+0491  
 15700 % U+0492 CYRILLIC CAPITAL LETTER GHE WITH STROKE; Ghestroke-  
 cyrillic  
 15701 \DeclareTextCommand{\CYRGHCRS}{PU}{\84\222}% U+0492  
 15702 % U+0493 CYRILLIC SMALL LETTER GHE WITH STROKE; ghestrokecyrillic  
 15703 \DeclareTextCommand{\cyrghcrs}{PU}{\84\223}% U+0493  
 15704 % U+0494 CYRILLIC CAPITAL LETTER GHE WITH MIDDLE HOOK; Ghemid-  
 dlehookcyrillic  
 15705 \DeclareTextCommand{\CYRGHK}{PU}{\84\224}% U+0494  
 15706 % U+0495 CYRILLIC SMALL LETTER GHE WITH MIDDLE HOOK; ghemid-  
 dlehookcyrillic  
 15707 \DeclareTextCommand{\cyrghk}{PU}{\84\225}% U+0495  
 15708 % U+0496 CYRILLIC CAPITAL LETTER ZHE WITH DESCENDER; Zhedescen-  
 dercyrillic  
 15709 \DeclareTextCommand{\CYRZHDSC}{PU}{\84\226}% U+0496  
 15710 % U+0497 CYRILLIC SMALL LETTER ZHE WITH DESCENDER; zhedescen-  
 dercyrillic  
 15711 \DeclareTextCommand{\cyrzhdsc}{PU}{\84\227}% U+0497  
 15712 % U+0498 CYRILLIC CAPITAL LETTER ZE WITH DESCENDER; Zedescen-  
 dercyrillic  
 15713 \DeclareTextCommand{\CYRZDSC}{PU}{\84\230}% U+0498  
 15714 \DeclareTextCompositeCommand{\c}{PU}{\CYRZ}{\84\230}% U+0498  
 15715 % U+0499 CYRILLIC SMALL LETTER ZE WITH DESCENDER; zedescender-  
 cyrillic  
 15716 \DeclareTextCommand{\cyrzdesc}{PU}{\84\231}% U+0499  
 15717 \DeclareTextCompositeCommand{\c}{PU}{\cyrz}{\84\231}% U+0499  
 15718 % U+049A CYRILLIC CAPITAL LETTER KA WITH DESCENDER; Kadescen-  
 dercyrillic  
 15719 \DeclareTextCommand{\CYRKDSC}{PU}{\84\232}% U+049A  
 15720 % U+049B CYRILLIC SMALL LETTER KA WITH DESCENDER; kadescender-  
 cyrillic  
 15721 \DeclareTextCommand{\cyrkdsc}{PU}{\84\233}% U+049B  
 15722 % U+049C CYRILLIC CAPITAL LETTER KA WITH VERTICAL STROKE; Kaver-  
 ticalstrokecyrillic  
 15723 \DeclareTextCommand{\CYRKVCRS}{PU}{\84\234}% U+049C  
 15724 % U+049D CYRILLIC SMALL LETTER KA WITH VERTICAL STROKE; kaver-  
 ticalstrokecyrillic  
 15725 \DeclareTextCommand{\cyrkvcrs}{PU}{\84\235}% U+049D  
 15726 % U+049E CYRILLIC CAPITAL LETTER KA WITH STROKE; Kastrokecyrillic  
 15727 \DeclareTextCommand{\CYRKHCRS}{PU}{\84\236}% U+049E

15728 % U+049F CYRILLIC SMALL LETTER KA WITH STROKE; kastrokecyrillic  
 15729 \DeclareTextCommand{\cyrkhcrs}{PU}{\84\237}% U+049F  
 15730 % U+04A0 CYRILLIC CAPITAL LETTER BASHKIR KA; Kabashkircyrillic  
 15731 \DeclareTextCommand{\CYRKBEAK}{PU}{\84\240}% U+04A0  
 15732 % U+04A1 CYRILLIC SMALL LETTER BASHKIR KA; kabashkircyrillic  
 15733 \DeclareTextCommand{\cyrkbeak}{PU}{\84\241}% U+04A1  
 15734 % U+04A2 CYRILLIC CAPITAL LETTER EN WITH DESCENDER; Endescen-  
 dercyrillic  
 15735 \DeclareTextCommand{\CYRNDSC}{PU}{\84\242}% U+04A2  
 15736 % U+04A3 CYRILLIC SMALL LETTER EN WITH DESCENDER; endescender-  
 cyrillic  
 15737 \DeclareTextCommand{\cyrndsc}{PU}{\84\243}% U+04A3  
 15738 % U+04A4 CYRILLIC CAPITAL LIGATURE EN GHE; Enghecyrillic  
 15739 \DeclareTextCommand{\CYRNG}{PU}{\84\244}% U+04A4  
 15740 % U+04A5 CYRILLIC SMALL LIGATURE EN GHE; enghecyrillic  
 15741 \DeclareTextCommand{\cyrng}{PU}{\84\245}% U+04A5  
 15742 % U+04A6 CYRILLIC CAPITAL LETTER PE WITH MIDDLE HOOK; Pemid-  
 dlehookcyrillic  
 15743 \DeclareTextCommand{\CYRPHK}{PU}{\84\246}% U+04A6  
 15744 % U+04A7 CYRILLIC SMALL LETTER PE WITH MIDDLE HOOK; pemiddle-  
 hookcyrillic  
 15745 \DeclareTextCommand{\cyrphk}{PU}{\84\247}% U+04A7  
 15746 % U+04A8 CYRILLIC CAPITAL LETTER ABKHASIAN HA; Haabkhasiancyril-  
 lic  
 15747 \DeclareTextCommand{\CYRABHHA}{PU}{\84\250}% U+04A8  
 15748 % U+04A9 CYRILLIC SMALL LETTER ABKHASIAN HA; haabkhasiancyrillic  
 15749 \DeclareTextCommand{\cyrabhha}{PU}{\84\251}% U+04A9  
 15750 % U+04AA CYRILLIC CAPITAL LETTER ES WITH DESCENDER; Esdescen-  
 dercyrillic  
 15751 \DeclareTextCommand{\CYRSDSC}{PU}{\84\252}% U+04AA  
 15752 \DeclareTextCompositeCommand{\CYRSDSC}{PU}{\CYRS}{\84\252}% U+04AA  
 15753 % U+04AB CYRILLIC SMALL LETTER ES WITH DESCENDER; esdescender-  
 cyrillic  
 15754 \DeclareTextCommand{\cyrsdsc}{PU}{\84\253}% U+04AB  
 15755 \DeclareTextCompositeCommand{\k}{PU}{\cyr}{\84\253}% U+04AB  
 15756 % U+04AC CYRILLIC CAPITAL LETTER TE WITH DESCENDER; Tedescen-  
 dercyrillic  
 15757 \DeclareTextCommand{\CYRTDSC}{PU}{\84\254}% U+04AC  
 15758 % U+04AD CYRILLIC SMALL LETTER TE WITH DESCENDER; tedescender-  
 cyrillic  
 15759 \DeclareTextCommand{\cyrtdsc}{PU}{\84\255}% U+04AD  
 15760 % U+04AE CYRILLIC CAPITAL LETTER STRAIGHT U; Ustraightcyrillic  
 15761 \DeclareTextCommand{\CYRY}{PU}{\84\256}% U+04AE  
 15762 % U+04AF CYRILLIC SMALL LETTER STRAIGHT U; ustraightcyrillic  
 15763 \DeclareTextCommand{\cyr}{PU}{\84\257}% U+04AF  
 15764 % U+04B0 CYRILLIC CAPITAL LETTER STRAIGHT U WITH STROKE; Us-  
 traightstrokecyrillic  
 15765 \DeclareTextCommand{\CYRYHCRS}{PU}{\84\260}% U+04B0  
 15766 % U+04B1 CYRILLIC SMALL LETTER STRAIGHT U WITH STROKE; us-  
 traightstrokecyrillic  
 15767 \DeclareTextCommand{\cyrhcrs}{PU}{\84\261}% U+04B1  
 15768 % U+04B2 CYRILLIC CAPITAL LETTER HA WITH DESCENDER; Hadescen-  
 dercyrillic  
 15769 \DeclareTextCommand{\CYRHDSC}{PU}{\84\262}% U+04B2  
 15770 % U+04B3 CYRILLIC SMALL LETTER HA WITH DESCENDER; hadescender-  
 cyrillic  
 15771 \DeclareTextCommand{\cyrhdsc}{PU}{\84\263}% U+04B3

15772 % U+04B4 CYRILLIC CAPITAL LIGATURE TE TSE; Tetsecyrillic  
 15773 \DeclareTextCommand{\CYRTETSE}{PU}{\84\264}% U+04B4  
 15774 % U+04B5 CYRILLIC SMALL LIGATURE TE TSE; tetsecyrillic  
 15775 \DeclareTextCommand{\cyrtetse}{PU}{\84\265}% U+04B5  
 15776 % U+04B6 CYRILLIC CAPITAL LETTER CHE WITH DESCENDER; Chedescendercyrillic  
 15777 \DeclareTextCommand{\CYRCHRDSC}{PU}{\84\266}% U+04B6  
 15778 % U+04B7 CYRILLIC SMALL LETTER CHE WITH DESCENDER; chedescendercyrillic  
 15779 \DeclareTextCommand{\cyrchrdsc}{PU}{\84\267}% U+04B7  
 15780 % U+04B8 CYRILLIC CAPITAL LETTER CHE WITH VERTICAL STROKE; Chev-  
 erticalstrokecyrillic  
 15781 \DeclareTextCommand{\CYRCHVCRS}{PU}{\84\270}% U+04B8  
 15782 % U+04B9 CYRILLIC SMALL LETTER CHE WITH VERTICAL STROKE; chev-  
 erticalstrokecyrillic  
 15783 \DeclareTextCommand{\cyrchvcrs}{PU}{\84\271}% U+04B9  
 15784 % U+04BA CYRILLIC CAPITAL LETTER SHHA; Shhacyrillic  
 15785 \DeclareTextCommand{\CYRSHHA}{PU}{\84\272}% U+04BA  
 15786 % U+04BB CYRILLIC SMALL LETTER SHHA; shhacyrillic  
 15787 \DeclareTextCommand{\cyrshha}{PU}{\84\273}% U+04BB  
 15788 % U+04BC CYRILLIC CAPITAL LETTER ABKHASIAN CHE; Cheabkhasian-  
 cyrillic  
 15789 \DeclareTextCommand{\CYRABHCH}{PU}{\84\274}% U+04BC  
 15790 % U+04BD CYRILLIC SMALL LETTER ABKHASIAN CHE; cheabkhasiancyril-  
 lic  
 15791 \DeclareTextCommand{\cyrabhch}{PU}{\84\275}% U+04BD  
 15792 % U+04BE CYRILLIC CAPITAL LETTER ABKHASIAN CHE WITH DESCEN-  
 DER; Chedescenderabkhasiancyrillic  
 15793 \DeclareTextCommand{\CYRABHCHDSC}{PU}{\84\276}% U+04BE  
 15794 \DeclareTextCompositeCommand{\k}{PU}{\CYRABHCH}{\84\276}% U+04BE  
 15795 % U+04BF CYRILLIC SMALL LETTER ABKHASIAN CHE WITH DESCEN-  
 DER; chedescenderabkhasiancyrillic  
 15796 \DeclareTextCommand{\cyrabhchdsc}{PU}{\84\277}% U+04BF  
 15797 \DeclareTextCompositeCommand{\k}{PU}{\cyrabhch}{\84\277}% U+04BF  
 15798 % U+04C0 CYRILLIC LETTER PALOCHKA; palochkacyrillic  
 15799 \DeclareTextCommand{\CYRpalochka}{PU}{\84\300}% U+04C0  
 15800 % U+04C1 CYRILLIC CAPITAL LETTER ZHE WITH BREVE; Zhebrevecyrillic  
 15801 \DeclareTextCompositeCommand{\U}{PU}{\CYRZH}{\84\301}% U+04C1  
 15802 % U+04C2 CYRILLIC SMALL LETTER ZHE WITH BREVE; zhebrevecyrillic  
 15803 \DeclareTextCompositeCommand{\U}{PU}{\cyrzh}{\84\302}% U+04C2  
 15804 % U+04C3 CYRILLIC CAPITAL LETTER KA WITH HOOK; Kahookcyrillic  
 15805 \DeclareTextCommand{\CYRKHK}{PU}{\84\303}% U+04C3  
 15806 % U+04C4 CYRILLIC SMALL LETTER KA WITH HOOK; kahookcyrillic  
 15807 \DeclareTextCommand{\cyrkhk}{PU}{\84\304}% U+04C4  
 15808 % U+04C5 CYRILLIC CAPITAL LETTER EL WITH TAIL  
 15809 \DeclareTextCommand{\CYRLDSC}{PU}{\84\305}% U+04C5  
 15810 % U+04C6 CYRILLIC SMALL LETTER EL WITH TAIL  
 15811 \DeclareTextCommand{\cyrldsc}{PU}{\84\306}% U+04C6  
 15812 % U+04C7 CYRILLIC CAPITAL LETTER EN WITH HOOK; Enhookcyrillic  
 15813 \DeclareTextCommand{\CYRNHK}{PU}{\84\307}% U+04C7  
 15814 % U+04C8 CYRILLIC SMALL LETTER EN WITH HOOK; enhookcyrillic  
 15815 \DeclareTextCommand{\cyrnhk}{PU}{\84\310}% U+04C8  
 15816 % U+04CB CYRILLIC CAPITAL LETTER KHAKASSIAN CHE; Chekhakassian-  
 cyrillic  
 15817 \DeclareTextCommand{\CYRCHLDSC}{PU}{\84\313}% U+04CB  
 15818 % U+04CC CYRILLIC SMALL LETTER KHAKASSIAN CHE; chekhakassian-  
 cyrillic

15819 \DeclareTextCommand{\cyrchldsc}{PU}{\84\314}% U+04CC  
15820 % U+04CD CYRILLIC CAPITAL LETTER EM WITH TAIL  
15821 \DeclareTextCommand{\CYRMDSC}{PU}{\84\315}% U+04CD  
15822 % U+04CE CYRILLIC SMALL LETTER EM WITH TAIL  
15823 \DeclareTextCommand{\cyrmdsc}{PU}{\84\316}% U+04CE  
\84\317: U+04CF CYRILLIC SMALL LETTER PALOCHKA  
15824 % U+04D0 CYRILLIC CAPITAL LETTER A WITH BREVE; Abrevacyrillic  
15825 \DeclareTextCompositeCommand{\U}{PU}{\CYRA}{\84\320}% U+04D0  
15826 % U+04D1 CYRILLIC SMALL LETTER A WITH BREVE; abrevacyrillic  
15827 \DeclareTextCompositeCommand{\U}{PU}{\cyra}{\84\321}% U+04D1  
15828 % U+04D2 CYRILLIC CAPITAL LETTER A WITH DIAERESIS; Adieresiscyrillic  
15829 \DeclareTextCompositeCommand{\U}{PU}{\CYRA}{\84\322}% U+04D2  
15830 % U+04D3 CYRILLIC SMALL LETTER A WITH DIAERESIS; adieresiscyrillic  
15831 \DeclareTextCompositeCommand{\U}{PU}{\cyra}{\84\323}% U+04D3  
15832 % U+04D4 CYRILLIC CAPITAL LIGATURE A IE; Aiecyrillic  
15833 \DeclareTextCommand{\CYRAE}{PU}{\84\324}% U+04D4  
15834 % U+04D5 CYRILLIC SMALL LIGATURE A IE; aiecyrillic  
15835 \DeclareTextCommand{\cyrae}{PU}{\84\325}% U+04D5  
15836 % U+04D6 CYRILLIC CAPITAL LETTER IE WITH BREVE; Iebrevacyrillic  
15837 \DeclareTextCompositeCommand{\U}{PU}{\CYRE}{\84\326}% U+04D6  
15838 % U+04D7 CYRILLIC SMALL LETTER IE WITH BREVE; iebrevacyrillic  
15839 \DeclareTextCompositeCommand{\U}{PU}{\cyre}{\84\327}% U+04D7  
15840 % U+04D8 CYRILLIC CAPITAL LETTER SCHWA; Schwacyrillic  
15841 \DeclareTextCommand{\CYRSCHWA}{PU}{\84\330}% U+04D8  
15842 % U+04D9 CYRILLIC SMALL LETTER SCHWA; \*afii10846, schwacyrillic  
15843 \DeclareTextCommand{\cyrschwa}{PU}{\84\331}% U+04D9  
15844 % U+04DA CYRILLIC CAPITAL LETTER SCHWA WITH DIAERESIS; Schwadiere-  
15845 \DeclareTextCompositeCommand{\U}{PU}{\CYRSCHWA}{\84\332}% U+04DA  
15846 % U+04DB CYRILLIC SMALL LETTER SCHWA WITH DIAERESIS; schwadiere-  
15847 \DeclareTextCompositeCommand{\U}{PU}{\cyrschwa}{\84\333}% U+04DB  
15848 % U+04DC CYRILLIC CAPITAL LETTER ZHE WITH DIAERESIS; Zhediere-  
15849 \DeclareTextCompositeCommand{\U}{PU}{\CYRZH}{\84\334}% U+04DC  
15850 % U+04DD CYRILLIC SMALL LETTER ZHE WITH DIAERESIS; zhedieres-  
15851 \DeclareTextCompositeCommand{\U}{PU}{\cyrzh}{\84\335}% U+04DD  
15852 % U+04DE CYRILLIC CAPITAL LETTER ZE WITH DIAERESIS; Zedieres-  
15853 \DeclareTextCompositeCommand{\U}{PU}{\CYRZ}{\84\336}% U+04DE  
15854 % U+04DF CYRILLIC SMALL LETTER ZE WITH DIAERESIS; zedierescyrillic  
15855 \DeclareTextCompositeCommand{\U}{PU}{\cyrz}{\84\337}% U+04DF  
15856 % U+04E0 CYRILLIC CAPITAL LETTER ABKHASIAN DZE; Dzeabkhasian-  
15857 \DeclareTextCommand{\CYRABHDZE}{PU}{\84\340}% U+04E0  
15858 % U+04E1 CYRILLIC SMALL LETTER ABKHASIAN DZE; dzeabkhasiancyrillic  
15859 \DeclareTextCommand{\cyrabhdze}{PU}{\84\341}% U+04E1  
15860 % U+04E2 CYRILLIC CAPITAL LETTER I WITH MACRON; Imacroncyrillic  
15861 \DeclareTextCompositeCommand{\U}{PU}{\CYRI}{\84\342}% U+04E2  
15862 % U+04E3 CYRILLIC SMALL LETTER I WITH MACRON; imacroncyrillic  
15863 \DeclareTextCompositeCommand{\U}{PU}{\cyri}{\84\343}% U+04E3  
15864 % U+04E4 CYRILLIC CAPITAL LETTER I WITH DIAERESIS; Idieresiscyrillic  
15865 \DeclareTextCompositeCommand{\U}{PU}{\CYRI}{\84\344}% U+04E4  
15866 % U+04E5 CYRILLIC SMALL LETTER I WITH DIAERESIS; idieresiscyrillic  
15867 \DeclareTextCompositeCommand{\U}{PU}{\cyri}{\84\345}% U+04E5

15868 % U+04E6 CYRILLIC CAPITAL LETTER O WITH DIAERESIS; Odieresiscyrillic  
 15869 \DeclareTextCompositeCommand{"}{PU}{\CYRO}{\84\346}% U+04E6  
 15870 % U+04E7 CYRILLIC SMALL LETTER O WITH DIAERESIS; odieresiscyrillic  
 15871 \DeclareTextCompositeCommand{"}{PU}{\cyro}{\84\347}% U+04E7  
 15872 % U+04E8 CYRILLIC CAPITAL LETTER BARRED O; Obarredcyrillic  
 15873 \DeclareTextCommand{\CYROTLD}{PU}{\84\350}% U+04E8  
 15874 % U+04E9 CYRILLIC SMALL LETTER BARRED O; obarredcyrillic  
 15875 \DeclareTextCommand{\cyrotld}{PU}{\84\351}% U+04E9  
 15876 % U+04EA CYRILLIC CAPITAL LETTER BARRED O WITH DIAERESIS; Obarreddieresiscyrillic  
 15877 \DeclareTextCompositeCommand{"}{PU}{\CYROTLD}{\84\352}% U+04EA  
 15878 % U+04EB CYRILLIC SMALL LETTER BARRED O WITH DIAERESIS; obarreddieresiscyrillic  
 15879 \DeclareTextCompositeCommand{"}{PU}{\cyrotld}{\84\353}% U+04EB  
 15880 % U+04EC CYRILLIC CAPITAL LETTER E WITH DIAERESIS  
 15881 \DeclareTextCompositeCommand{"}{PU}{\CYREREV}{\84\354}% U+04EC  
 15882 % U+04ED CYRILLIC SMALL LETTER E WITH DIAERESIS  
 15883 \DeclareTextCompositeCommand{"}{PU}{\cyreref}{\84\355}% U+04ED  
 15884 % U+04EE CYRILLIC CAPITAL LETTER U WITH MACRON; Umacroncyrillic  
 15885 \DeclareTextCompositeCommand{=}{PU}{\CYRU}{\84\356}% U+04EE  
 15886 % U+04EF CYRILLIC SMALL LETTER U WITH MACRON; umacroncyrillic  
 15887 \DeclareTextCompositeCommand{=}{PU}{\cyru}{\84\357}% U+04EF  
 15888 % U+04F0 CYRILLIC CAPITAL LETTER U WITH DIAERESIS; Udieresiscyrillic  
 15889 \DeclareTextCompositeCommand{"}{PU}{\CYRU}{\84\360}% U+04F0  
 15890 % U+04F1 CYRILLIC SMALL LETTER U WITH DIAERESIS; udieresiscyrillic  
 15891 \DeclareTextCompositeCommand{"}{PU}{\cyru}{\84\361}% U+04F1  
 15892 % U+04F2 CYRILLIC CAPITAL LETTER U WITH DOUBLE ACUTE; Uhungarumlautcyrillic  
 15893 \DeclareTextCompositeCommand{H}{PU}{\CYRU}{\84\362}% U+04F2  
 15894 % U+04F3 CYRILLIC SMALL LETTER U WITH DOUBLE ACUTE; uhungarumlautcyrillic  
 15895 \DeclareTextCompositeCommand{H}{PU}{\cyru}{\84\363}% U+04F3  
 15896 % U+04F4 CYRILLIC CAPITAL LETTER CHE WITH DIAERESIS; Chedieresiscyrillic  
 15897 \DeclareTextCompositeCommand{"}{PU}{\CYRCH}{\84\364}% U+04F4  
 15898 % U+04F5 CYRILLIC SMALL LETTER CHE WITH DIAERESIS; chedieresiscyrillic  
 15899 \DeclareTextCompositeCommand{"}{PU}{\cyrch}{\84\365}% U+04F5  
 15900 % U+04F6 CYRILLIC CAPITAL LETTER GHE WITH DESCENDER  
 15901 \DeclareTextCommand{\CYRGDSC}{PU}{\84\366}% U+04F6  
 15902 % U+04F7 CYRILLIC SMALL LETTER GHE WITH DESCENDER  
 15903 \DeclareTextCommand{\cyrgdsc}{PU}{\84\367}% U+04F7  
 15904 % U+04F8 CYRILLIC CAPITAL LETTER YERU WITH DIAERESIS; Yerudieresiscyrillic  
 15905 \DeclareTextCompositeCommand{"}{PU}{\CYRERY}{\84\370}% U+04F8  
 15906 % U+04F9 CYRILLIC SMALL LETTER YERU WITH DIAERESIS; yerudieresiscyrillic  
 15907 \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  
 15908 % U+04FC CYRILLIC CAPITAL LETTER HA WITH HOOK  
 15909 \DeclareTextCommand{\CYRHHK}{PU}{\84\374}% U+04FC  
 15910 % U+04FD CYRILLIC SMALL LETTER HA WITH HOOK  
 15911 \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

15912 % U+0E3F THAI CURRENCY SYMBOL BAHT; bahtthai  
 15913 \DeclareTextCommand{\textbaht}{PU}{\9016\077}% U+0E3F

### 50.2.11 Latin Extended Additional: U+1E00 to U+1EFF

15914 % U+1E02 LATIN CAPITAL LETTER B WITH DOT ABOVE; Bdotaccent  
 15915 \DeclareTextCompositeCommand{\.}{PU}{B}{\9036\002}% U+1E02  
 15916 % U+1E03 LATIN SMALL LETTER B WITH DOT ABOVE; bdotaccent  
 15917 \DeclareTextCompositeCommand{\.}{PU}{b}{\9036\003}% U+1E03  
 15918 % U+1E06 LATIN CAPITAL LETTER B WITH LINE BELOW; Blinebelow  
 15919 \DeclareTextCompositeCommand{\b}{PU}{B}{\9036\006}% U+1E06  
 15920 % U+1E07 LATIN SMALL LETTER B WITH LINE BELOW; blinebelow  
 15921 \DeclareTextCompositeCommand{\b}{PU}{b}{\9036\007}% U+1E07  
 15922 % U+1E0A LATIN CAPITAL LETTER D WITH DOT ABOVE; Ddotaccent  
 15923 \DeclareTextCompositeCommand{\.}{PU}{D}{\9036\012}% U+1E0A  
 15924 % U+1E0B LATIN SMALL LETTER D WITH DOT ABOVE; ddotaccent  
 15925 \DeclareTextCompositeCommand{\.}{PU}{d}{\9036\013}% U+1E0B  
 15926 % U+1E0E LATIN CAPITAL LETTER D WITH LINE BELOW; Dlinebelow  
 15927 \DeclareTextCompositeCommand{\b}{PU}{D}{\9036\016}% U+1E0E  
 15928 % U+1E0F LATIN SMALL LETTER D WITH LINE BELOW; dlinebelow  
 15929 \DeclareTextCompositeCommand{\b}{PU}{d}{\9036\017}% U+1E0F  
 15930 % U+1E10 LATIN CAPITAL LETTER D WITH CEDILLA; Dcedilla  
 15931 \DeclareTextCompositeCommand{\c}{PU}{D}{\9036\020}% U+1E10  
 15932 % U+1E11 LATIN SMALL LETTER D WITH CEDILLA; dcedilla  
 15933 \DeclareTextCompositeCommand{\c}{PU}{d}{\9036\021}% U+1E11  
 15934 % U+1E1E LATIN CAPITAL LETTER F WITH DOT ABOVE; Fdotaccent  
 15935 \DeclareTextCompositeCommand{\.}{PU}{F}{\9036\036}% U+1E1E  
 15936 % U+1E1F LATIN SMALL LETTER F WITH DOT ABOVE; fdotaccent  
 15937 \DeclareTextCompositeCommand{\.}{PU}{f}{\9036\037}% U+1E1F  
 15938 % U+1E20 LATIN CAPITAL LETTER G WITH MACRON; Gmacron  
 15939 \DeclareTextCompositeCommand{\=}{PU}{G}{\9036\040}% U+1E20  
 15940 % U+1E21 LATIN SMALL LETTER G WITH MACRON; gmacron  
 15941 \DeclareTextCompositeCommand{\=}{PU}{g}{\9036\041}% U+1E21  
 15942 % U+1E22 LATIN CAPITAL LETTER H WITH DOT ABOVE; Hdotaccent  
 15943 \DeclareTextCompositeCommand{\.}{PU}{H}{\9036\042}% U+1E22  
 15944 % U+1E23 LATIN SMALL LETTER H WITH DOT ABOVE; hdotaccent  
 15945 \DeclareTextCompositeCommand{\.}{PU}{h}{\9036\043}% U+1E23  
 15946 % U+1E26 LATIN CAPITAL LETTER H WITH DIAERESIS; Hdieresis  
 15947 \DeclareTextCompositeCommand{\"}{PU}{H}{\9036\046}% U+1E26  
 15948 % U+1E27 LATIN SMALL LETTER H WITH DIAERESIS; hdieresis  
 15949 \DeclareTextCompositeCommand{\"}{PU}{h}{\9036\047}% U+1E27  
 15950 % U+1E28 LATIN CAPITAL LETTER H WITH CEDILLA; Hcedilla  
 15951 \DeclareTextCompositeCommand{\c}{PU}{H}{\9036\050}% U+1E28  
 15952 % U+1E29 LATIN SMALL LETTER H WITH CEDILLA; hcedilla  
 15953 \DeclareTextCompositeCommand{\c}{PU}{h}{\9036\051}% U+1E29  
 15954 % U+1E30 LATIN CAPITAL LETTER K WITH ACUTE; Kacute  
 15955 \DeclareTextCompositeCommand{\'}{PU}{K}{\9036\060}% U+1E30  
 15956 % U+1E31 LATIN SMALL LETTER K WITH ACUTE; kacute  
 15957 \DeclareTextCompositeCommand{\'}{PU}{k}{\9036\061}% U+1E31  
 15958 % U+1E34 LATIN CAPITAL LETTER K WITH LINE BELOW; Klinebelow  
 15959 \DeclareTextCompositeCommand{\b}{PU}{K}{\9036\064}% U+1E34  
 15960 % U+1E35 LATIN SMALL LETTER K WITH LINE BELOW; klinebelow  
 15961 \DeclareTextCompositeCommand{\b}{PU}{k}{\9036\065}% U+1E35



15962 % U+1E3A LATIN CAPITAL LETTER L WITH LINE BELOW; Llinebelow  
 15963 \DeclareTextCompositeCommand{\b}{PU}{L}{\9036\072}% U+1E3A  
 15964 % U+1E3B LATIN SMALL LETTER L WITH LINE BELOW; llinebelow  
 15965 \DeclareTextCompositeCommand{\b}{PU}{l}{\9036\073}% U+1E3B  
 15966 % U+1E3E LATIN CAPITAL LETTER M WITH ACUTE; Macute  
 15967 \DeclareTextCompositeCommand{\'}{PU}{M}{\9036\076}% U+1E3E  
 15968 % U+1E3F LATIN SMALL LETTER M WITH ACUTE; macute  
 15969 \DeclareTextCompositeCommand{\'}{PU}{m}{\9036\077}% U+1E3F  
 15970 % U+1E40 LATIN CAPITAL LETTER M WITH DOT ABOVE; Mdotaccent  
 15971 \DeclareTextCompositeCommand{\.}{PU}{M}{\9036\100}% U+1E40  
 15972 % U+1E41 LATIN SMALL LETTER M WITH DOT ABOVE; mdotaccent  
 15973 \DeclareTextCompositeCommand{\.}{PU}{m}{\9036\101}% U+1E41  
 15974 % U+1E44 LATIN CAPITAL LETTER N WITH DOT ABOVE; Ndotaccent  
 15975 \DeclareTextCompositeCommand{\.}{PU}{N}{\9036\104}% U+1E44  
 15976 % U+1E45 LATIN SMALL LETTER N WITH DOT ABOVE; ndotaccent  
 15977 \DeclareTextCompositeCommand{\.}{PU}{n}{\9036\105}% U+1E45  
 15978 % U+1E48 LATIN CAPITAL LETTER N WITH LINE BELOW; Nlinebelow  
 15979 \DeclareTextCompositeCommand{\b}{PU}{N}{\9036\110}% U+1E48  
 15980 % U+1E49 LATIN SMALL LETTER N WITH LINE BELOW; nlinebelow  
 15981 \DeclareTextCompositeCommand{\b}{PU}{n}{\9036\111}% U+1E49  
 15982 % U+1E54 LATIN CAPITAL LETTER P WITH ACUTE; Pacute  
 15983 \DeclareTextCompositeCommand{\'}{PU}{P}{\9036\124}% U+1E54  
 15984 % U+1E55 LATIN SMALL LETTER P WITH ACUTE; pacute  
 15985 \DeclareTextCompositeCommand{\'}{PU}{p}{\9036\125}% U+1E55  
 15986 % U+1E56 LATIN CAPITAL LETTER P WITH DOT ABOVE; Pdotaccent  
 15987 \DeclareTextCompositeCommand{\.}{PU}{P}{\9036\126}% U+1E56  
 15988 % U+1E57 LATIN SMALL LETTER P WITH DOT ABOVE; pdotaccent  
 15989 \DeclareTextCompositeCommand{\.}{PU}{p}{\9036\127}% U+1E57  
 15990 % U+1E58 LATIN CAPITAL LETTER R WITH DOT ABOVE; Rdotaccent  
 15991 \DeclareTextCompositeCommand{\.}{PU}{R}{\9036\130}% U+1E58  
 15992 % U+1E59 LATIN SMALL LETTER R WITH DOT ABOVE; rdotaccent  
 15993 \DeclareTextCompositeCommand{\.}{PU}{r}{\9036\131}% U+1E59  
 15994 % U+1E5E LATIN CAPITAL LETTER R WITH LINE BELOW; Rlinebelow  
 15995 \DeclareTextCompositeCommand{\b}{PU}{R}{\9036\136}% U+1E5E  
 15996 % U+1E5F LATIN SMALL LETTER R WITH LINE BELOW; rlinebelow  
 15997 \DeclareTextCompositeCommand{\b}{PU}{r}{\9036\137}% U+1E5F  
 15998 % U+1E60 LATIN CAPITAL LETTER S WITH DOT ABOVE; Sdotaccent  
 15999 \DeclareTextCompositeCommand{\.}{PU}{S}{\9036\140}% U+1E60  
 16000 % U+1E61 LATIN SMALL LETTER S WITH DOT ABOVE; sdotaccent  
 16001 \DeclareTextCompositeCommand{\.}{PU}{s}{\9036\141}% U+1E61  
 16002 % U+1E6E LATIN CAPITAL LETTER T WITH LINE BELOW; Tlinebelow  
 16003 \DeclareTextCompositeCommand{\b}{PU}{T}{\9036\156}% U+1E6E  
 16004 % U+1E6F LATIN SMALL LETTER T WITH LINE BELOW; tlinebelow  
 16005 \DeclareTextCompositeCommand{\b}{PU}{t}{\9036\157}% U+1E6F  
 16006 % U+1E7C LATIN CAPITAL LETTER V WITH TILDE; Vtilde  
 16007 \DeclareTextCompositeCommand{\~}{PU}{V}{\9036\174}% U+1E7C  
 16008 % U+1E7D LATIN SMALL LETTER V WITH TILDE; vtilde  
 16009 \DeclareTextCompositeCommand{\~}{PU}{v}{\9036\175}% U+1E7D  
 16010 % U+1E80 LATIN CAPITAL LETTER W WITH GRAVE; Wgrave  
 16011 \DeclareTextCompositeCommand{\'}{PU}{W}{\9036\200}% U+1E80  
 16012 % U+1E81 LATIN SMALL LETTER W WITH GRAVE; wgrave  
 16013 \DeclareTextCompositeCommand{\'}{PU}{w}{\9036\201}% U+1E81  
 16014 % U+1E82 LATIN CAPITAL LETTER W WITH ACUTE; Wacute  
 16015 \DeclareTextCompositeCommand{\'}{PU}{W}{\9036\202}% U+1E82  
 16016 % U+1E83 LATIN SMALL LETTER W WITH ACUTE; wacute  
 16017 \DeclareTextCompositeCommand{\'}{PU}{w}{\9036\203}% U+1E83  
 16018 % U+1E84 LATIN CAPITAL LETTER W WITH DIAERESIS; Wdieresis

16019 \DeclareTextCompositeCommand{"}{PU}{W}{\9036\204}% U+1E84  
16020 % U+1E85 LATIN SMALL LETTER W WITH DIAERESIS; wdieresis  
16021 \DeclareTextCompositeCommand{"}{PU}{w}{\9036\205}% U+1E85  
16022 % U+1E86 LATIN CAPITAL LETTER W WITH DOT ABOVE; Wdotaccent  
16023 \DeclareTextCompositeCommand{.}{PU}{W}{\9036\206}% U+1E86  
16024 % U+1E87 LATIN SMALL LETTER W WITH DOT ABOVE; wdotaccent  
16025 \DeclareTextCompositeCommand{.}{PU}{w}{\9036\207}% U+1E87  
16026 % U+1E8A LATIN CAPITAL LETTER X WITH DOT ABOVE; Xdotaccent  
16027 \DeclareTextCompositeCommand{.}{PU}{X}{\9036\212}% U+1E8A  
16028 % U+1E8B LATIN SMALL LETTER X WITH DOT ABOVE; xdotaccent  
16029 \DeclareTextCompositeCommand{.}{PU}{x}{\9036\213}% U+1E8B  
16030 % U+1E8C LATIN CAPITAL LETTER X WITH DIAERESIS; Xdieresis  
16031 \DeclareTextCompositeCommand{"}{PU}{X}{\9036\214}% U+1E8C  
16032 % U+1E8D LATIN SMALL LETTER X WITH DIAERESIS; xdieresis  
16033 \DeclareTextCompositeCommand{"}{PU}{x}{\9036\215}% U+1E8D  
16034 % U+1E8E LATIN CAPITAL LETTER Y WITH DOT ABOVE; Ydotaccent  
16035 \DeclareTextCompositeCommand{.}{PU}{Y}{\9036\216}% U+1E8E  
16036 % U+1E8F LATIN SMALL LETTER Y WITH DOT ABOVE; ydotaccent  
16037 \DeclareTextCompositeCommand{.}{PU}{y}{\9036\217}% U+1E8F  
16038 % U+1E90 LATIN CAPITAL LETTER Z WITH CIRCUMFLEX; Zcircumflex  
16039 \DeclareTextCompositeCommand{^}{PU}{Z}{\9036\220}% U+1E90  
16040 % U+1E91 LATIN SMALL LETTER Z WITH CIRCUMFLEX; zcircumflex  
16041 \DeclareTextCompositeCommand{^}{PU}{z}{\9036\221}% U+1E91  
16042 % U+1E94 LATIN CAPITAL LETTER Z WITH LINE BELOW; Zlinebelow  
16043 \DeclareTextCompositeCommand{\b}{PU}{Z}{\9036\224}% U+1E94  
16044 % U+1E95 LATIN SMALL LETTER Z WITH LINE BELOW; zlinebelow  
16045 \DeclareTextCompositeCommand{\b}{PU}{z}{\9036\225}% U+1E95  
16046 % U+1E96 LATIN SMALL LETTER H WITH LINE BELOW; hlinebelow  
16047 \DeclareTextCompositeCommand{\b}{PU}{h}{\9036\226}% U+1E96  
16048 % U+1E97 LATIN SMALL LETTER T WITH DIAERESIS; tdieresis  
16049 \DeclareTextCompositeCommand{"}{PU}{t}{\9036\227}% U+1E97  
16050 % U+1E98 LATIN SMALL LETTER W WITH RING ABOVE; wring  
16051 \DeclareTextCompositeCommand{\r}{PU}{w}{\9036\230}% U+1E98  
16052 % U+1E99 LATIN SMALL LETTER Y WITH RING ABOVE; yring  
16053 \DeclareTextCompositeCommand{\r}{PU}{y}{\9036\231}% U+1E99  
16054 % U+1E9B LATIN SMALL LETTER LONG S WITH DOT ABOVE; slongdotac-  
cent  
16055 \DeclareTextCompositeCommand{.}{PU}{\textlongs}{\9036\233}% U+1E9B  
16056 % U+1EBC LATIN CAPITAL LETTER E WITH TILDE; Etilde  
16057 \DeclareTextCompositeCommand{\~}{PU}{E}{\9036\274}% U+1EBC  
16058 % U+1EBD LATIN SMALL LETTER E WITH TILDE; etilde  
16059 \DeclareTextCompositeCommand{\~}{PU}{e}{\9036\275}% U+1EBD  
16060 % U+1EF2 LATIN CAPITAL LETTER Y WITH GRAVE; Ygrave  
16061 \DeclareTextCompositeCommand{`}{PU}{Y}{\9036\362}% U+1EF2  
16062 % U+1EF3 LATIN SMALL LETTER Y WITH GRAVE; ygrave  
16063 \DeclareTextCompositeCommand{`}{PU}{y}{\9036\363}% U+1EF3  
16064 % U+1EF8 LATIN CAPITAL LETTER Y WITH TILDE; Ytilde  
16065 \DeclareTextCompositeCommand{\~}{PU}{Y}{\9036\370}% U+1EF8  
16066 % U+1EF9 LATIN SMALL LETTER Y WITH TILDE; ytilde  
16067 \DeclareTextCompositeCommand{\~}{PU}{y}{\9036\371}% U+1EF9

## 50.2.12 General Punctuation: U+2000 to U+206F

16068 % U+200C ZERO WIDTH NON-JOINER; \*afii61664, zerowidthnonjoiner  
16069 \DeclareTextCommand{\textcompwordmark}{PU}{\9040\014}% U+200C  
16070 % U+2013 EN DASH; endash  
16071 \DeclareTextCommand{\textendash}{PU}{\9040\023}% U+2013  
16072 % U+2014 EM DASH; emdash

16073 \DeclareTextCommand{\textemdash}{PU}{\9040\024}% U+2014  
 16074 % U+2016 DOUBLE VERTICAL LINE; dblverticalbar  
 16075 \DeclareTextCommand{\textbardbl}{PU}{\9040\026}% U+2016  
 16076 % U+2018 LEFT SINGLE QUOTATION MARK; quoteleft  
 16077 \DeclareTextCommand{\textquoteleft}{PU}{\9040\030}% U+2018  
 16078 % U+2019 RIGHT SINGLE QUOTATION MARK; quoteright  
 16079 \DeclareTextCommand{\textquoteright}{PU}{\9040\031}% U+2019  
 16080 % U+201A SINGLE LOW-9 QUOTATION MARK; quotesinglbase  
 16081 \DeclareTextCommand{\quotesinglbase}{PU}{\9040\032}% U+201A  
 16082 % U+201C LEFT DOUBLE QUOTATION MARK; quotedblleft  
 16083 \DeclareTextCommand{\textquotedblleft}{PU}{\9040\034}% U+201C  
 16084 % U+201D RIGHT DOUBLE QUOTATION MARK; quotedblright  
 16085 \DeclareTextCommand{\textquotedblright}{PU}{\9040\035}% U+201D  
 16086 % U+201E DOUBLE LOW-9 QUOTATION MARK; quotedblbase  
 16087 \DeclareTextCommand{\quotedblbase}{PU}{\9040\036}% U+201E  
 16088 % U+2020 DAGGER; dagger  
 16089 \DeclareTextCommand{\textdagger}{PU}{\9040\040}% U+2020  
 16090 % U+2021 DOUBLE DAGGER; daggerdbl  
 16091 \DeclareTextCommand{\textdaggerdbl}{PU}{\9040\041}% U+2021  
 16092 % U+2022 BULLET; bullet  
 16093 \DeclareTextCommand{\textbullet}{PU}{\9040\042}% U+2022  
 16094 % U+2026 HORIZONTAL ELLIPSIS; ellipsis  
 16095 \DeclareTextCommand{\textellipsis}{PU}{\9040\046}% U+2026  
 16096 % U+2030 PER MILLE SIGN; perthousand  
 16097 \DeclareTextCommand{\textperthousand}{PU}{\9040\060}% U+2030  
 16098 % U+2031 PER TEN THOUSAND SIGN  
 16099 \DeclareTextCommand{\textpertenthousand}{PU}{\9040\061}% U+2031  
 16100 % U+2039 SINGLE LEFT-POINTING ANGLE QUOTATION MARK; guil-  
 ingleft  
 16101 \DeclareTextCommand{\guilsingleft}{PU}{\9040\071}% U+2039  
 16102 % U+203A SINGLE RIGHT-POINTING ANGLE QUOTATION MARK; guil-  
 singright  
 16103 \DeclareTextCommand{\guilsingright}{PU}{\9040\072}% U+203A  
 16104 % U+203B REFERENCE MARK; referencemark  
 16105 \DeclareTextCommand{\textreferencemark}{PU}{\9040\073}% U+203B  
 16106 % U+203D INTERROBANG  
 16107 \DeclareTextCommand{\textinterrobang}{PU}{\9040\075}% U+203D  
 16108 % U+2044 FRACTION SLASH; fraction  
 16109 \DeclareTextCommand{\textfractionsolidus}{PU}{\9040\104}% U+2044  
 16110 % U+2045 LEFT SQUARE BRACKET WITH QUILL  
 16111 \DeclareTextCommand{\textlquill}{PU}{\9040\105}% U+2045  
 16112 % U+2046 RIGHT SQUARE BRACKET WITH QUILL  
 16113 \DeclareTextCommand{\textrquill}{PU}{\9040\106}% U+2046  
 16114 % U+2052 COMMERCIAL MINUS SIGN  
 16115 \DeclareTextCommand{\textdiscount}{PU}{\9040\122}% U+2052

### 50.2.13 Superscripts and Subscripts: U+2070 to U+209F

16116 % U+2070 SUPERSCRIPT ZERO; zerosuperior  
 16117 \DeclareTextCommand{\textzerosuperior}{PU}{\9040\160}% U+2070  
 16118 % U+2074 SUPERSCRIPT FOUR; foursuperior  
 16119 \DeclareTextCommand{\textfoursuperior}{PU}{\9040\164}% U+2074  
 16120 % U+2075 SUPERSCRIPT FIVE; fivesuperior  
 16121 \DeclareTextCommand{\textfivesuperior}{PU}{\9040\165}% U+2075  
 16122 % U+2076 SUPERSCRIPT SIX; sixsuperior  
 16123 \DeclareTextCommand{\textsixsuperior}{PU}{\9040\166}% U+2076  
 16124 % U+2077 SUPERSCRIPT SEVEN; sevensuperior  
 16125 \DeclareTextCommand{\textsevensuperior}{PU}{\9040\167}% U+2077

16126 % U+2078 SUPERSCRIPT EIGHT; eightsuperior  
 16127 \DeclareTextCommand{\texteightsuperior}{PU}{\9040\170}% U+2078  
 16128 % U+2079 SUPERSCRIPT NINE; ninesuperior  
 16129 \DeclareTextCommand{\textninesuperior}{PU}{\9040\171}% U+2079  
 16130 % U+207A SUPERSCRIPT PLUS SIGN; plussuperior  
 16131 \DeclareTextCommand{\textplussuperior}{PU}{\9040\172}% U+207A  
 16132 % U+207B SUPERSCRIPT MINUS  
 16133 \DeclareTextCommand{\textminussuperior}{PU}{\9040\173}  
 16134 % U+207C SUPERSCRIPT EQUALS SIGN; equalsuperior  
 16135 \DeclareTextCommand{\textequalsuperior}{PU}{\9040\174}  
 16136 % U+207D SUPERSCRIPT LEFT PARENTHESIS; parenleftsuperior  
 16137 \DeclareTextCommand{\textparenleftsuperior}{PU}{\9040\175}  
 16138 % U+207E SUPERSCRIPT RIGHT PARENTHESIS; parenrightsuperior  
 16139 \DeclareTextCommand{\textparenrightsuperior}{PU}{\9040\176}  
 16140 % U+207F SUPERSCRIPT LATIN SMALL LETTER N; nsuperior  
 16141 \DeclareTextCommand{\textnsuperior}{PU}{\9040\177}  
 16142 % U+2080 SUBSCRIPT ZERO; zeroinferior  
 16143 \DeclareTextCommand{\textzeroinferior}{PU}{\9040\200}% U+2080  
 16144 % U+2081 SUBSCRIPT ONE; oneinferior  
 16145 \DeclareTextCommand{\textoneinferior}{PU}{\9040\201}% U+2081  
 16146 % U+2082 SUBSCRIPT TWO; twoinferior  
 16147 \DeclareTextCommand{\texttwoinferior}{PU}{\9040\202}% U+2082  
 16148 % U+2083 SUBSCRIPT THREE; threeinferior  
 16149 \DeclareTextCommand{\textthreeinferior}{PU}{\9040\203}% U+2083  
 16150 % U+2084 SUBSCRIPT FOUR; fourinferior  
 16151 \DeclareTextCommand{\textfourinferior}{PU}{\9040\204}% U+2084  
 16152 % U+2085 SUBSCRIPT FIVE; fiveinferior  
 16153 \DeclareTextCommand{\textfiveinferior}{PU}{\9040\205}% U+2085  
 16154 % U+2086 SUBSCRIPT SIX; sixinferior  
 16155 \DeclareTextCommand{\textsixinferior}{PU}{\9040\206}% U+2086  
 16156 % U+2087 SUBSCRIPT SEVEN; seveninferior  
 16157 \DeclareTextCommand{\textseveninferior}{PU}{\9040\207}% U+2087  
 16158 % U+2088 SUBSCRIPT EIGHT; eightinferior  
 16159 \DeclareTextCommand{\texteightinferior}{PU}{\9040\210}% U+2088  
 16160 % U+2089 SUBSCRIPT NINE; nineinferior  
 16161 \DeclareTextCommand{\textnineinferior}{PU}{\9040\211}% U+2089  
 16162 % U+208D SUBSCRIPT LEFT PARENTHESIS; parenleftinferior  
 16163 \DeclareTextCommand{\textparenleftinferior}{PU}{\9040\215}% U+208D  
 16164 % U+208E SUBSCRIPT RIGHT PARENTHESIS; parenrightinferior  
 16165 \DeclareTextCommand{\textparenrightinferior}{PU}{\9040\216}% U+208E

#### 50.2.14 Currency Symbols: U+20A0 to U+20CF

16166 % U+20A1 COLON SIGN; \*colonmonetary, colonsign  
 16167 \DeclareTextCommand{\textcolonmonetary}{PU}{\9040\241}% U+20A1  
 16168 % U+20A4 LIRA SIGN; afii08941, \*lira  
 16169 \DeclareTextCommand{\textlira}{PU}{\9040\244}% U+20A4  
 16170 % U+20A6 NAIRA SIGN  
 16171 \DeclareTextCommand{\textnaira}{PU}{\9040\246}% U+20A6  
 16172 % U+20A7 PESETA SIGN; peseta  
 16173 \DeclareTextCommand{\textpeseta}{PU}{\9040\247}% U+20A7  
 16174 % U+20A9 WON SIGN; won  
 16175 \DeclareTextCommand{\textwon}{PU}{\9040\251}% U+20A9  
 16176 % U+20AB DONG SIGN; dong  
 16177 \DeclareTextCommand{\textdong}{PU}{\9040\253}% U+20AB  
 16178 % U+20AC EURO SIGN; \*Euro, euro  
 16179 \DeclareTextCommand{\texteuro}{PU}{\9040\254}% U+20AC  
 16180 % U+20B1 PESO SIGN

16181 \DeclareTextCommand{\textpeso}{PU}{\9040\261}% U+20B1  
 16182 % U+20B2 GUARANI SIGN  
 16183 \DeclareTextCommand{\textguarani}{PU}{\9040\262}% U+20B2

### 50.2.15 Letterlike Symbols: U+2100 to U+214F

16184 % U+2103 DEGREE CELSIUS; centigrade  
 16185 \DeclareTextCommand{\textcelsius}{PU}{\9041\003}% U+2103  
 16186 % U+2116 NUMERO SIGN; \*afi61352, numero  
 16187 \DeclareTextCommand{\textnumero}{PU}{\9041\026}% U+2116  
 16188 % U+2117 SOUND RECORDING COPYRIGHT  
 16189 \DeclareTextCommand{\textcircledP}{PU}{\9041\027}% U+2117  
 16190 % U+211E PRESCRIPTION TAKE; prescription  
 16191 \DeclareTextCommand{\textrecipe}{PU}{\9041\036}% U+211E  
 16192 % U+2120 SERVICE MARK  
 16193 \DeclareTextCommand{\textservicemark}{PU}{\9041\040}% U+2120  
 16194 % U+2122 TRADE MARK SIGN; trademark  
 16195 \DeclareTextCommand{\texttrademark}{PU}{\9041\042}% U+2122  
 16196 % U+2126 OHM SIGN; Ohm, Omega  
 16197 \DeclareTextCommand{\textohm}{PU}{\9041\046}% U+2126  
 16198 % U+2127 INVERTED OHM SIGN  
 16199 \DeclareTextCommand{\textmho}{PU}{\9041\047}% U+2127  
 16200 % U+212B ANGSTROM SIGN; angstrom  
 16201 \DeclareTextCommand{\textangstrom}{PU}{\9041\053}% U+212B  
 16202 % U+212E ESTIMATED SYMBOL; estimated  
 16203 \DeclareTextCommand{\textestimated}{PU}{\9041\056}% U+212E  
 16204 % U+2135 ALEF SYMBOL; aleph  
 16205 \DeclareTextCommand{\textaleph}{PU}{\9041\065}% U+2135

### 50.2.16 Arrows: U+2190 to U+21FF

16206 % U+2190 LEFTWARDS ARROW; arrowleft  
 16207 \DeclareTextCommand{\textleftarrow}{PU}{\9041\220}% U+2190  
 16208 % U+2191 UPWARDS ARROW; arrowup  
 16209 \DeclareTextCommand{\textuparrow}{PU}{\9041\221}% U+2191  
 16210 % U+2192 RIGHTWARDS ARROW; arrowright  
 16211 \DeclareTextCommand{\textrightarrow}{PU}{\9041\222}% U+2192  
 16212 % U+2193 DOWNWARDS ARROW; arrowdown  
 16213 \DeclareTextCommand{\textdownarrow}{PU}{\9041\223}% U+2193

### 50.2.17 Mathematical Operators: U+2200 to U+22FF

16214 % U+2212 MINUS SIGN; minus  
 16215 \DeclareTextCommand{\textminus}{PU}{\9042\022}% U+2212  
 16216 % U+221A SQUARE ROOT; radical  
 16217 \DeclareTextCommand{\textsurd}{PU}{\9042\032}% U+221A

### 50.2.18 Miscellaneous Technical: U+2300 to U+23FF

16218 % U+2329 LEFT-POINTING ANGLE BRACKET; angleleft  
 16219 \DeclareTextCommand{\textlangle}{PU}{\9043\051}% U+2329  
 16220 % U+232A RIGHT-POINTING ANGLE BRACKET; angleright  
 16221 \DeclareTextCommand{\textrangle}{PU}{\9043\052}% U+232A

### 50.2.19 Control Pictures: U+2400 to U+243F

16222 % U+2422 BLANK SYMBOL  
 16223 \DeclareTextCommand{\textblank}{PU}{\9044\042}% U+2422  
 16224 % U+2423 OPEN BOX; blank  
 16225 \DeclareTextCommand{\textvisiblespace}{PU}{\9044\043}% U+2423

### 50.2.20 Enclosed Alphanumerics: U+2460 to U+24FF

16226 % U+2460 CIRCLED DIGIT ONE; onecircle  
 16227 \DeclareTextCompositeCommand{\textcircled}{PU}{1}{\9044\140}% U+2460  
 16228 % U+2461 CIRCLED DIGIT TWO; twocircle  
 16229 \DeclareTextCompositeCommand{\textcircled}{PU}{2}{\9044\141}% U+2461  
 16230 % U+2462 CIRCLED DIGIT THREE; threecircle  
 16231 \DeclareTextCompositeCommand{\textcircled}{PU}{3}{\9044\142}% U+2462  
 16232 % U+2463 CIRCLED DIGIT FOUR; fourcircle  
 16233 \DeclareTextCompositeCommand{\textcircled}{PU}{4}{\9044\143}% U+2463  
 16234 % U+2464 CIRCLED DIGIT FIVE; fivecircle  
 16235 \DeclareTextCompositeCommand{\textcircled}{PU}{5}{\9044\144}% U+2464  
 16236 % U+2465 CIRCLED DIGIT SIX; sixcircle  
 16237 \DeclareTextCompositeCommand{\textcircled}{PU}{6}{\9044\145}% U+2465  
 16238 % U+2466 CIRCLED DIGIT SEVEN; sevenscircle  
 16239 \DeclareTextCompositeCommand{\textcircled}{PU}{7}{\9044\146}% U+2466  
 16240 % U+2467 CIRCLED DIGIT EIGHT; eightcircle  
 16241 \DeclareTextCompositeCommand{\textcircled}{PU}{8}{\9044\147}% U+2467  
 16242 % U+2468 CIRCLED DIGIT NINE; ninecircle  
 16243 \DeclareTextCompositeCommand{\textcircled}{PU}{9}{\9044\150}% U+2468  
 16244 % U+2469 CIRCLED NUMBER TEN; tencircle  
 16245 \DeclareTextCompositeCommand{\textcircled}{PU}{10}{\9044\151}% U+2469  
 16246 % U+246A CIRCLED NUMBER ELEVEN; elevencircle  
 16247 \DeclareTextCompositeCommand{\textcircled}{PU}{11}{\9044\152}% U+246A  
 16248 % U+246B CIRCLED NUMBER TWELVE; twelvecircle  
 16249 \DeclareTextCompositeCommand{\textcircled}{PU}{12}{\9044\153}% U+246B  
 16250 % U+246C CIRCLED NUMBER THIRTEEN; thirteencircle  
 16251 \DeclareTextCompositeCommand{\textcircled}{PU}{13}{\9044\154}% U+246C  
 16252 % U+246D CIRCLED NUMBER FOURTEEN; fourteencircle  
 16253 \DeclareTextCompositeCommand{\textcircled}{PU}{14}{\9044\155}% U+246D  
 16254 % U+246E CIRCLED NUMBER FIFTEEN; fifteencircle  
 16255 \DeclareTextCompositeCommand{\textcircled}{PU}{15}{\9044\156}% U+246E  
 16256 % U+246F CIRCLED NUMBER SIXTEEN; sixteencircle  
 16257 \DeclareTextCompositeCommand{\textcircled}{PU}{16}{\9044\157}% U+246F  
 16258 % U+2470 CIRCLED NUMBER SEVENTEEN; seventeencircle  
 16259 \DeclareTextCompositeCommand{\textcircled}{PU}{17}{\9044\160}% U+2470  
 16260 % U+2471 CIRCLED NUMBER EIGHTEEN; eighteencircle  
 16261 \DeclareTextCompositeCommand{\textcircled}{PU}{18}{\9044\161}% U+2471  
 16262 % U+2472 CIRCLED NUMBER NINETEEN; nineteencircle  
 16263 \DeclareTextCompositeCommand{\textcircled}{PU}{19}{\9044\162}% U+2472  
 16264 % U+2473 CIRCLED NUMBER TWENTY; twentycircle  
 16265 \DeclareTextCompositeCommand{\textcircled}{PU}{20}{\9044\163}% U+2473  
 16266 % U+24B6 CIRCLED LATIN CAPITAL LETTER A; Acircle  
 16267 \DeclareTextCompositeCommand{\textcircled}{PU}{A}{\9044\266}% U+24B6  
 16268 % U+24B7 CIRCLED LATIN CAPITAL LETTER B; Bcircle  
 16269 \DeclareTextCompositeCommand{\textcircled}{PU}{B}{\9044\267}% U+24B7  
 16270 % U+24B8 CIRCLED LATIN CAPITAL LETTER C; Ccircle  
 16271 \DeclareTextCompositeCommand{\textcircled}{PU}{C}{\9044\270}% U+24B8  
 16272 % U+24B9 CIRCLED LATIN CAPITAL LETTER D; Dcircle  
 16273 \DeclareTextCompositeCommand{\textcircled}{PU}{D}{\9044\271}% U+24B9  
 16274 % U+24BA CIRCLED LATIN CAPITAL LETTER E; Ecircle  
 16275 \DeclareTextCompositeCommand{\textcircled}{PU}{E}{\9044\272}% U+24BA  
 16276 % U+24BB CIRCLED LATIN CAPITAL LETTER F; Fcircle  
 16277 \DeclareTextCompositeCommand{\textcircled}{PU}{F}{\9044\273}% U+24BB  
 16278 % U+24BC CIRCLED LATIN CAPITAL LETTER G; Gcircle  
 16279 \DeclareTextCompositeCommand{\textcircled}{PU}{G}{\9044\274}% U+24BC  
 16280 % U+24BD CIRCLED LATIN CAPITAL LETTER H; Hcircle  
 16281 \DeclareTextCompositeCommand{\textcircled}{PU}{H}{\9044\275}% U+24BD  
 16282 % U+24BE CIRCLED LATIN CAPITAL LETTER I; Icircle

16283 \DeclareTextCompositeCommand{\textcircled}{PU}{I}{\9044\276}% U+24BE  
 16284 % U+24BF CIRCLED LATIN CAPITAL LETTER J; Jcircle  
 16285 \DeclareTextCompositeCommand{\textcircled}{PU}{J}{\9044\277}% U+24BF  
 16286 % U+24C0 CIRCLED LATIN CAPITAL LETTER K; Kcircle  
 16287 \DeclareTextCompositeCommand{\textcircled}{PU}{K}{\9044\300}% U+24C0  
 16288 % U+24C1 CIRCLED LATIN CAPITAL LETTER L; Lcircle  
 16289 \DeclareTextCompositeCommand{\textcircled}{PU}{L}{\9044\301}% U+24C1  
 16290 % U+24C2 CIRCLED LATIN CAPITAL LETTER M; Mcircle  
 16291 \DeclareTextCompositeCommand{\textcircled}{PU}{M}{\9044\302}% U+24C2  
 16292 % U+24C3 CIRCLED LATIN CAPITAL LETTER N; Ncircle  
 16293 \DeclareTextCompositeCommand{\textcircled}{PU}{N}{\9044\303}% U+24C3  
 16294 % U+24C4 CIRCLED LATIN CAPITAL LETTER O; Ocircle  
 16295 \DeclareTextCompositeCommand{\textcircled}{PU}{O}{\9044\304}% U+24C4  
 16296 % U+24C5 CIRCLED LATIN CAPITAL LETTER P; Pcircle  
 16297 \DeclareTextCompositeCommand{\textcircled}{PU}{P}{\9044\305}% U+24C5  
 16298 % U+24C6 CIRCLED LATIN CAPITAL LETTER Q; Qcircle  
 16299 \DeclareTextCompositeCommand{\textcircled}{PU}{Q}{\9044\306}% U+24C6  
 16300 % U+24C7 CIRCLED LATIN CAPITAL LETTER R; Rcircle  
 16301 \DeclareTextCompositeCommand{\textcircled}{PU}{R}{\9044\307}% U+24C7  
 16302 % U+24C8 CIRCLED LATIN CAPITAL LETTER S; Scircle  
 16303 \DeclareTextCompositeCommand{\textcircled}{PU}{S}{\9044\310}% U+24C8  
 16304 % U+24C9 CIRCLED LATIN CAPITAL LETTER T; Tcircle  
 16305 \DeclareTextCompositeCommand{\textcircled}{PU}{T}{\9044\311}% U+24C9  
 16306 % U+24CA CIRCLED LATIN CAPITAL LETTER U; Ucircle  
 16307 \DeclareTextCompositeCommand{\textcircled}{PU}{U}{\9044\312}% U+24CA  
 16308 % U+24CB CIRCLED LATIN CAPITAL LETTER V; Vcircle  
 16309 \DeclareTextCompositeCommand{\textcircled}{PU}{V}{\9044\313}% U+24CB  
 16310 % U+24CC CIRCLED LATIN CAPITAL LETTER W; Wcircle  
 16311 \DeclareTextCompositeCommand{\textcircled}{PU}{W}{\9044\314}% U+24CC  
 16312 % U+24CD CIRCLED LATIN CAPITAL LETTER X; Xcircle  
 16313 \DeclareTextCompositeCommand{\textcircled}{PU}{X}{\9044\315}% U+24CD  
 16314 % U+24CE CIRCLED LATIN CAPITAL LETTER Y; Ycircle  
 16315 \DeclareTextCompositeCommand{\textcircled}{PU}{Y}{\9044\316}% U+24CE  
 16316 % U+24CF CIRCLED LATIN CAPITAL LETTER Z; Zcircle  
 16317 \DeclareTextCompositeCommand{\textcircled}{PU}{Z}{\9044\317}% U+24CF  
 16318 % U+24D0 CIRCLED LATIN SMALL LETTER A; acircle  
 16319 \DeclareTextCompositeCommand{\textcircled}{PU}{a}{\9044\320}% U+24D0  
 16320 % U+24D1 CIRCLED LATIN SMALL LETTER B; bcircle  
 16321 \DeclareTextCompositeCommand{\textcircled}{PU}{b}{\9044\321}% U+24D1  
 16322 % U+24D2 CIRCLED LATIN SMALL LETTER C; ccircle  
 16323 \DeclareTextCompositeCommand{\textcircled}{PU}{c}{\9044\322}% U+24D2  
 16324 % U+24D3 CIRCLED LATIN SMALL LETTER D; dcircle  
 16325 \DeclareTextCompositeCommand{\textcircled}{PU}{d}{\9044\323}% U+24D3  
 16326 % U+24D4 CIRCLED LATIN SMALL LETTER E; ecircle  
 16327 \DeclareTextCompositeCommand{\textcircled}{PU}{e}{\9044\324}% U+24D4  
 16328 % U+24D5 CIRCLED LATIN SMALL LETTER F; fcircle  
 16329 \DeclareTextCompositeCommand{\textcircled}{PU}{f}{\9044\325}% U+24D5  
 16330 % U+24D6 CIRCLED LATIN SMALL LETTER G; gcircle  
 16331 \DeclareTextCompositeCommand{\textcircled}{PU}{g}{\9044\326}% U+24D6  
 16332 % U+24D7 CIRCLED LATIN SMALL LETTER H; hcircle  
 16333 \DeclareTextCompositeCommand{\textcircled}{PU}{h}{\9044\327}% U+24D7  
 16334 % U+24D8 CIRCLED LATIN SMALL LETTER I; icircle  
 16335 \DeclareTextCompositeCommand{\textcircled}{PU}{i}{\9044\330}% U+24D8  
 16336 % U+24D9 CIRCLED LATIN SMALL LETTER J; jcircle  
 16337 \DeclareTextCompositeCommand{\textcircled}{PU}{j}{\9044\331}% U+24D9  
 16338 % U+24DA CIRCLED LATIN SMALL LETTER K; kcircle  
 16339 \DeclareTextCompositeCommand{\textcircled}{PU}{k}{\9044\332}% U+24DA

16340 % U+24DB CIRCLED LATIN SMALL LETTER L; lcircle  
 16341 \DeclareTextCompositeCommand{\textcircled}{PU}{l}{\9044\333}% U+24DB  
 16342 % U+24DC CIRCLED LATIN SMALL LETTER M; mcircle  
 16343 \DeclareTextCompositeCommand{\textcircled}{PU}{m}{\9044\334}% U+24DC  
 16344 % U+24DD CIRCLED LATIN SMALL LETTER N; ncircle  
 16345 \DeclareTextCompositeCommand{\textcircled}{PU}{n}{\9044\335}% U+24DD  
 16346 % U+24DE CIRCLED LATIN SMALL LETTER O; ocircle  
 16347 \DeclareTextCompositeCommand{\textcircled}{PU}{o}{\9044\336}% U+24DE  
 16348 % U+24DF CIRCLED LATIN SMALL LETTER P; pcircle  
 16349 \DeclareTextCompositeCommand{\textcircled}{PU}{p}{\9044\337}% U+24DF  
 16350 % U+24E0 CIRCLED LATIN SMALL LETTER Q; qcircle  
 16351 \DeclareTextCompositeCommand{\textcircled}{PU}{q}{\9044\340}% U+24E0  
 16352 % U+24E1 CIRCLED LATIN SMALL LETTER R; rcircle  
 16353 \DeclareTextCompositeCommand{\textcircled}{PU}{r}{\9044\341}% U+24E1  
 16354 % U+24E2 CIRCLED LATIN SMALL LETTER S; scircle  
 16355 \DeclareTextCompositeCommand{\textcircled}{PU}{s}{\9044\342}% U+24E2  
 16356 % U+24E3 CIRCLED LATIN SMALL LETTER T; tcircle  
 16357 \DeclareTextCompositeCommand{\textcircled}{PU}{t}{\9044\343}% U+24E3  
 16358 % U+24E4 CIRCLED LATIN SMALL LETTER U; ucircle  
 16359 \DeclareTextCompositeCommand{\textcircled}{PU}{u}{\9044\344}% U+24E4  
 16360 % U+24E5 CIRCLED LATIN SMALL LETTER V; vcircle  
 16361 \DeclareTextCompositeCommand{\textcircled}{PU}{v}{\9044\345}% U+24E5  
 16362 % U+24E6 CIRCLED LATIN SMALL LETTER W; wcircle  
 16363 \DeclareTextCompositeCommand{\textcircled}{PU}{w}{\9044\346}% U+24E6  
 16364 % U+24E7 CIRCLED LATIN SMALL LETTER X; xcircle  
 16365 \DeclareTextCompositeCommand{\textcircled}{PU}{x}{\9044\347}% U+24E7  
 16366 % U+24E8 CIRCLED LATIN SMALL LETTER Y; ycircle  
 16367 \DeclareTextCompositeCommand{\textcircled}{PU}{y}{\9044\350}% U+24E8  
 16368 % U+24E9 CIRCLED LATIN SMALL LETTER Z; zcircle  
 16369 \DeclareTextCompositeCommand{\textcircled}{PU}{z}{\9044\351}% U+24E9  
 16370 % U+24EA CIRCLED DIGIT ZERO  
 16371 \DeclareTextCompositeCommand{\textcircled}{PU}{0}{\9044\352}% U+24EA

### 50.2.21 Box Drawing: U+2500 to U+257F

16372 % U+25E6 WHITE BULLET; \*openbullet, whitebullet  
 16373 \DeclareTextCommand{\textopenbullet}{PU}{\9045\346}% U+25E6  
 16374 % U+25EF LARGE CIRCLE; largecircle  
 16375 \DeclareTextCommand{\textbigcircle}{PU}{\9045\357}% U+25EF

### 50.2.22 Miscellaneous Symbols: U+2600 to U+26FF

16376 % U+266A EIGHTH NOTE; musicalnote  
 16377 \DeclareTextCommand{\textmusicalnote}{PU}{\9046\152}% U+266A  
 16378 % U+26AD MARRIAGE SYMBOL  
 16379 \DeclareTextCommand{\textmarried}{PU}{\9046\255}% U+26AD  
 16380 % U+26AE DIVORCE SYMBOL  
 16381 \DeclareTextCommand{\textdivorced}{PU}{\9046\256}% U+26AE

### 50.2.23 Miscellaneous Mathematical Symbols-A: U+27C0 to U+27EF

16382 % U+27E6 MATHEMATICAL LEFT WHITE SQUARE BRACKET  
 16383 \DeclareTextCommand{\textlbrackdbl}{PU}{\9047\346}% U+27E6  
 16384 % U+27E7 MATHEMATICAL RIGHT WHITE SQUARE BRACKET  
 16385 \DeclareTextCommand{\textrbrackdbl}{PU}{\9047\347}% U+27E7

### 50.2.24 Alphabetic Presentation Forms: U+FB00 to U+FB4F

16386 % U+FB01 LATIN SMALL LIGATURE FI; fi  
 16387 \DeclareTextCommand{\textfi}{PU}{\9373\001}% U+FB01  
 16388 % U+FB02 LATIN SMALL LIGATURE FL; fl



```
16389 \DeclareTextCommand{\textfl}{PU}{\9373\002}% U+FB02
```

### 50.2.25 Miscellaneous

```
16390 \DeclareTextCommand{\SS}{PU}{SS}
```

### 50.2.26 Aliases

Aliases (german.sty)

```
16391 \DeclareTextCommand{\textglqq}{PU}{\quotedblbase}
16392 \DeclareTextCommand{\textgrqq}{PU}{\textquotedblleft}
16393 \DeclareTextCommand{\textglq}{PU}{\quotesinglbase}
16394 \DeclareTextCommand{\textgrq}{PU}{\textquoteleft}
16395 \DeclareTextCommand{\textflqq}{PU}{\guillemotleft}
16396 \DeclareTextCommand{\textfrqq}{PU}{\guillemotright}
16397 \DeclareTextCommand{\textflq}{PU}{\guilsinglleft}
16398 \DeclareTextCommand{\textfrq}{PU}{\guilsinglright}
```

Aliases (math names)

```
16399 \DeclareTextCommand{\textneg}{PU}{\textlogicalnot}
16400 \DeclareTextCommand{\texttimes}{PU}{\textmultiply}
16401 \DeclareTextCommand{\textdiv}{PU}{\textdivide}
16402 \DeclareTextCommand{\textpm}{PU}{\textplusminus}
16403 \DeclareTextCommand{\textcdot}{PU}{\textperiodcentered}
16404 \puenc
```

## 50.3 PU encoding, additions for VnTeX

This file is provided by Han The Thanh.

```
16405 \*puvncnc
16406 \DeclareTextCommand{\abreve}{PU}{\81\003}
16407 \DeclareTextCommand{\acircumflex}{PU}{\80\342}
16408 \DeclareTextCommand{\dj}{PU}{\81\021}
16409 \DeclareTextCommand{\ecircumflex}{PU}{\80\352}
16410 \DeclareTextCommand{\ocircumflex}{PU}{\80\364}
16411 \DeclareTextCommand{\ohorn}{PU}{\81\241}
16412 \DeclareTextCommand{\uhorn}{PU}{\81\260}
16413 \DeclareTextCommand{\ABREVE}{PU}{\81\002}
16414 \DeclareTextCommand{\ACIRCUMFLEX}{PU}{\80\302}
16415 \DeclareTextCommand{\DJ}{PU}{\81\020}
16416 \DeclareTextCommand{\ECIRCUMFLEX}{PU}{\80\312}
16417 \DeclareTextCommand{\OCIRCUMFLEX}{PU}{\80\324}
16418 \DeclareTextCommand{\OHORN}{PU}{\81\240}
16419 \DeclareTextCommand{\UHORN}{PU}{\81\257}
16420 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\341}
16421 \DeclareTextCompositeCommand{\d}{PU}{a}{\9036\241}
16422 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\340}
16423 \DeclareTextCompositeCommand{\h}{PU}{a}{\9036\243}
16424 \DeclareTextCompositeCommand{\~}{PU}{a}{\80\343}
16425 \DeclareTextCompositeCommand{\'}{PU}{\abreve}{\9036\257}
16426 \DeclareTextCompositeCommand{\d}{PU}{\abreve}{\9036\267}
16427 \DeclareTextCompositeCommand{\'}{PU}{\abreve}{\9036\261}
16428 \DeclareTextCompositeCommand{\h}{PU}{\abreve}{\9036\263}
16429 \DeclareTextCompositeCommand{\~}{PU}{\abreve}{\9036\265}
16430 \DeclareTextCompositeCommand{\'}{PU}{\acircumflex}{\9036\245}
16431 \DeclareTextCompositeCommand{\d}{PU}{\acircumflex}{\9036\255}
16432 \DeclareTextCompositeCommand{\'}{PU}{\acircumflex}{\9036\247}
```

16433 \DeclareTextCompositeCommand{\h}{PU}{\acircumflex}{\9036\251}  
16434 \DeclareTextCompositeCommand{\~}{PU}{\acircumflex}{\9036\253}  
16435 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\351}  
16436 \DeclareTextCompositeCommand{\d}{PU}{e}{\9036\271}  
16437 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\350}  
16438 \DeclareTextCompositeCommand{\h}{PU}{e}{\9036\273}  
16439 \DeclareTextCompositeCommand{\~}{PU}{e}{\9036\275}  
16440 \DeclareTextCompositeCommand{\'}{PU}{\ecircumflex}{\9036\277}  
16441 \DeclareTextCompositeCommand{\d}{PU}{\ecircumflex}{\9036\307}  
16442 \DeclareTextCompositeCommand{\'}{PU}{\ecircumflex}{\9036\301}  
16443 \DeclareTextCompositeCommand{\h}{PU}{\ecircumflex}{\9036\303}  
16444 \DeclareTextCompositeCommand{\~}{PU}{\ecircumflex}{\9036\305}  
16445 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\355}  
16446 \DeclareTextCompositeCommand{\d}{PU}{i}{\9036\313}  
16447 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\354}  
16448 \DeclareTextCompositeCommand{\h}{PU}{i}{\9036\311}  
16449 \DeclareTextCompositeCommand{\~}{PU}{i}{\81\051}  
16450 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\363}  
16451 \DeclareTextCompositeCommand{\d}{PU}{o}{\9036\315}  
16452 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\362}  
16453 \DeclareTextCompositeCommand{\h}{PU}{o}{\9036\317}  
16454 \DeclareTextCompositeCommand{\~}{PU}{o}{\80\365}  
16455 \DeclareTextCompositeCommand{\'}{PU}{\ocircumflex}{\9036\321}  
16456 \DeclareTextCompositeCommand{\d}{PU}{\ocircumflex}{\9036\331}  
16457 \DeclareTextCompositeCommand{\'}{PU}{\ocircumflex}{\9036\323}  
16458 \DeclareTextCompositeCommand{\h}{PU}{\ocircumflex}{\9036\325}  
16459 \DeclareTextCompositeCommand{\~}{PU}{\ocircumflex}{\9036\327}  
16460 \DeclareTextCompositeCommand{\'}{PU}{\ohorn}{\9036\333}  
16461 \DeclareTextCompositeCommand{\d}{PU}{\ohorn}{\9036\343}  
16462 \DeclareTextCompositeCommand{\'}{PU}{\ohorn}{\9036\335}  
16463 \DeclareTextCompositeCommand{\h}{PU}{\ohorn}{\9036\337}  
16464 \DeclareTextCompositeCommand{\~}{PU}{\ohorn}{\9036\341}  
16465 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\372}  
16466 \DeclareTextCompositeCommand{\d}{PU}{u}{\9036\345}  
16467 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\371}  
16468 \DeclareTextCompositeCommand{\h}{PU}{u}{\9036\347}  
16469 \DeclareTextCompositeCommand{\~}{PU}{u}{\81\151}  
16470 \DeclareTextCompositeCommand{\'}{PU}{\uhorn}{\9036\351}  
16471 \DeclareTextCompositeCommand{\d}{PU}{\uhorn}{\9036\361}  
16472 \DeclareTextCompositeCommand{\'}{PU}{\uhorn}{\9036\353}  
16473 \DeclareTextCompositeCommand{\h}{PU}{\uhorn}{\9036\355}  
16474 \DeclareTextCompositeCommand{\~}{PU}{\uhorn}{\9036\357}  
16475 \DeclareTextCompositeCommand{\'}{PU}{y}{\80\375}  
16476 \DeclareTextCompositeCommand{\d}{PU}{y}{\9036\365}  
16477 \DeclareTextCompositeCommand{\'}{PU}{y}{\9036\363}  
16478 \DeclareTextCompositeCommand{\h}{PU}{y}{\9036\367}  
16479 \DeclareTextCompositeCommand{\~}{PU}{y}{\9036\371}  
16480 \DeclareTextCompositeCommand{\'}{PU}{A}{\80\301}  
16481 \DeclareTextCompositeCommand{\d}{PU}{A}{\9036\240}  
16482 \DeclareTextCompositeCommand{\'}{PU}{A}{\80\300}  
16483 \DeclareTextCompositeCommand{\h}{PU}{A}{\9036\242}  
16484 \DeclareTextCompositeCommand{\~}{PU}{A}{\80\303}  
16485 \DeclareTextCompositeCommand{\'}{PU}{\ABREVE}{\9036\256}  
16486 \DeclareTextCompositeCommand{\d}{PU}{\ABREVE}{\9036\266}  
16487 \DeclareTextCompositeCommand{\'}{PU}{\ABREVE}{\9036\260}  
16488 \DeclareTextCompositeCommand{\h}{PU}{\ABREVE}{\9036\262}  
16489 \DeclareTextCompositeCommand{\~}{PU}{\ABREVE}{\9036\264}

```

16490 \DeclareTextCompositeCommand{'}{PU}{\ACIRCUMFLEX}{\9036\244}
16491 \DeclareTextCompositeCommand{d}{PU}{\ACIRCUMFLEX}{\9036\254}
16492 \DeclareTextCompositeCommand{'}{PU}{\ACIRCUMFLEX}{\9036\246}
16493 \DeclareTextCompositeCommand{h}{PU}{\ACIRCUMFLEX}{\9036\250}
16494 \DeclareTextCompositeCommand{~}{PU}{\ACIRCUMFLEX}{\9036\252}
16495 \DeclareTextCompositeCommand{'}{PU}{E}{\80\311}
16496 \DeclareTextCompositeCommand{d}{PU}{E}{\9036\270}
16497 \DeclareTextCompositeCommand{'}{PU}{E}{\80\310}
16498 \DeclareTextCompositeCommand{h}{PU}{E}{\9036\272}
16499 \DeclareTextCompositeCommand{~}{PU}{E}{\9036\274}
16500 \DeclareTextCompositeCommand{'}{PU}{\ECIRCUMFLEX}{\9036\276}
16501 \DeclareTextCompositeCommand{d}{PU}{\ECIRCUMFLEX}{\9036\306}
16502 \DeclareTextCompositeCommand{'}{PU}{\ECIRCUMFLEX}{\9036\300}
16503 \DeclareTextCompositeCommand{h}{PU}{\ECIRCUMFLEX}{\9036\302}
16504 \DeclareTextCompositeCommand{~}{PU}{\ECIRCUMFLEX}{\9036\304}
16505 \DeclareTextCompositeCommand{'}{PU}{I}{\80\315}
16506 \DeclareTextCompositeCommand{d}{PU}{I}{\9036\312}
16507 \DeclareTextCompositeCommand{'}{PU}{I}{\80\314}
16508 \DeclareTextCompositeCommand{h}{PU}{I}{\9036\310}
16509 \DeclareTextCompositeCommand{~}{PU}{I}{\81\050}
16510 \DeclareTextCompositeCommand{'}{PU}{O}{\80\323}
16511 \DeclareTextCompositeCommand{d}{PU}{O}{\9036\314}
16512 \DeclareTextCompositeCommand{'}{PU}{O}{\80\322}
16513 \DeclareTextCompositeCommand{h}{PU}{O}{\9036\316}
16514 \DeclareTextCompositeCommand{~}{PU}{O}{\80\325}
16515 \DeclareTextCompositeCommand{'}{PU}{\OCIRCUMFLEX}{\9036\320}
16516 \DeclareTextCompositeCommand{d}{PU}{\OCIRCUMFLEX}{\9036\330}
16517 \DeclareTextCompositeCommand{'}{PU}{\OCIRCUMFLEX}{\9036\322}
16518 \DeclareTextCompositeCommand{h}{PU}{\OCIRCUMFLEX}{\9036\324}
16519 \DeclareTextCompositeCommand{~}{PU}{\OCIRCUMFLEX}{\9036\326}
16520 \DeclareTextCompositeCommand{'}{PU}{\OHORN}{\9036\332}
16521 \DeclareTextCompositeCommand{d}{PU}{\OHORN}{\9036\342}
16522 \DeclareTextCompositeCommand{'}{PU}{\OHORN}{\9036\334}
16523 \DeclareTextCompositeCommand{h}{PU}{\OHORN}{\9036\336}
16524 \DeclareTextCompositeCommand{~}{PU}{\OHORN}{\9036\340}
16525 \DeclareTextCompositeCommand{'}{PU}{U}{\80\332}
16526 \DeclareTextCompositeCommand{d}{PU}{U}{\9036\344}
16527 \DeclareTextCompositeCommand{'}{PU}{U}{\80\331}
16528 \DeclareTextCompositeCommand{h}{PU}{U}{\9036\346}
16529 \DeclareTextCompositeCommand{~}{PU}{U}{\81\150}
16530 \DeclareTextCompositeCommand{'}{PU}{\UHORN}{\9036\350}
16531 \DeclareTextCompositeCommand{d}{PU}{\UHORN}{\9036\360}
16532 \DeclareTextCompositeCommand{'}{PU}{\UHORN}{\9036\352}
16533 \DeclareTextCompositeCommand{h}{PU}{\UHORN}{\9036\354}
16534 \DeclareTextCompositeCommand{~}{PU}{\UHORN}{\9036\356}
16535 \DeclareTextCompositeCommand{'}{PU}{Y}{\80\335}
16536 \DeclareTextCompositeCommand{d}{PU}{Y}{\9036\364}
16537 \DeclareTextCompositeCommand{'}{PU}{Y}{\9036\362}
16538 \DeclareTextCompositeCommand{h}{PU}{Y}{\9036\366}
16539 \DeclareTextCompositeCommand{~}{PU}{Y}{\9036\370}
16540 </puvnenc>

```

## 50.4 PU encoding, additions for Arabi

This file is provided and maintained by Youssef Jabri.

```
16541 <*puarenc>
```

16542 \DeclareTextCommand{\hamza}{PU}{\86\041}% 0621;afi57409;ARABIC LETTER HAMZA

16543 \DeclareTextCommand{\alefmadda}{PU}{\86\042}% 0622;afi57410;ARABIC LETTER ALEF WITH MADDA ABOVE

16544 \DeclareTextCommand{\alefhamza}{PU}{\86\043}% 0623;afi57411;ARABIC LETTER ALEF WITH HAMZA ABOVE

16545 \DeclareTextCommand{\wawhamza}{PU}{\86\044}% 0624;afi57412;ARABIC LETTER WAW WITH HAMZA ABOVE

16546 \DeclareTextCommand{\aleflowerhamza}{PU}{\86\045}% 0625;afi57413;ARABIC LETTER ALEF WITH HAMZA BELOW

16547 \DeclareTextCommand{\yahamza}{PU}{\86\046}% 0626;afi57414;ARABIC LETTER YEH WITH HAMZA ABOVE

16548 \DeclareTextCommand{\alef}{PU}{\86\047}% 0627;afi57415;ARABIC LETTER ALEF

16549 \DeclareTextCommand{\baa}{PU}{\86\050}% 0628;afi57416;ARABIC LETTER BEH

16550 \DeclareTextCommand{\T}{PU}{\86\051}% 0629;afi57417;ARABIC LETTER TEH MARBUTA

16551 \DeclareTextCommand{\taa}{PU}{\86\052}% 062A;afi57418;ARABIC LETTER TEH

16552 \DeclareTextCommand{\thaa}{PU}{\86\053}% 062B;afi57419;ARABIC LETTER THEH

16553 \DeclareTextCommand{\jeem}{PU}{\86\054}% 062C;afi57420;ARABIC LETTER JEEM

16554 \DeclareTextCommand{\Haa}{PU}{\86\055}% 062D;afi57421;ARABIC LETTER HAH

16555 \DeclareTextCommand{\kha}{PU}{\86\056}% 062E;afi57422;ARABIC LETTER KHAH

16556 \DeclareTextCommand{\dal}{PU}{\86\057}% 062F;afi57423;ARABIC LETTER DAL

16557 \DeclareTextCommand{\dhal}{PU}{\86\060}% 0630;afi57424;ARABIC LETTER THAL

16558 \DeclareTextCommand{\ra}{PU}{\86\061}% 0631;afi57425;ARABIC LETTER REH

16559 \DeclareTextCommand{\zay}{PU}{\86\062}% 0632;afi57426;ARABIC LETTER ZAIN

16560 \DeclareTextCommand{\seen}{PU}{\86\063}% 0633;afi57427;ARABIC LETTER SEEN

16561 \DeclareTextCommand{\sheen}{PU}{\86\064}% 0634;afi57428;ARABIC LETTER SHEEN

16562 \DeclareTextCommand{\sad}{PU}{\86\065}% 0635;afi57429;ARABIC LETTER SAD

16563 \DeclareTextCommand{\dad}{PU}{\86\066}% 0636;afi57430;ARABIC LETTER DAD

16564 \DeclareTextCommand{\Ta}{PU}{\86\067}% 0637;afi57431;ARABIC LETTER TAH

16565 \DeclareTextCommand{\za}{PU}{\86\070}% 0638;afi57432;ARABIC LETTER ZAH

16566 \DeclareTextCommand{\ayn}{PU}{\86\071}% 0639;afi57433;ARABIC LETTER AIN

16567 \DeclareTextCommand{\ghayn}{PU}{\86\072}% 063A;afi57434;ARABIC LETTER GHAIN

16568 \DeclareTextCommand{\tatweel}{PU}{\86\100}% 0640;afi57440;ARABIC TATWEEL

16569 \DeclareTextCommand{\fa}{PU}{\86\101}% 0641;afi57441;ARABIC LETTER FEH

16570 \DeclareTextCommand{\qaf}{PU}{\86\102}% 0642;afi57442;ARABIC LETTER QAF

16571 \DeclareTextCommand{\kaf}{PU}{\86\103}% 0643;afi57443;ARABIC LETTER KAF

16572 \DeclareTextCommand{\lam}{PU}{\86\104}% 0644;afi57444;ARABIC LETTER LAM

16573 \DeclareTextCommand{\meem}{PU}{\86\105}% 0645;afi57445;ARABIC LETTER MEEM

16574 \DeclareTextCommand{\nun}{PU}{\86\106}% 0646;afi57446;ARABIC LETTER NOON

16575 \DeclareTextCommand{\ha}{PU}{\86\107}% 0647;afi57470;ARABIC LETTER HEH

16576 \DeclareTextCommand{\waw}{PU}{\86\110}% 0648;afi57448;ARABIC LETTER WAW

16577 \DeclareTextCommand{\alefmaqsura}{PU}{\86\111}% 0649;afi57449;ARABIC LETTER ALEF MAKSURA

16578 \DeclareTextCommand{\ya}{PU}{\86\112}% 064A;afi57450;ARABIC LETTER YEH

16579 \DeclareTextCommand{\nasb}{PU}{\86\113}% 064B;afi57451;ARABIC FATHATAN

16580 \DeclareTextCommand{\raff}{PU}{\86\114}% 064C;afi57452;ARABIC DAMMATAN

16581 \DeclareTextCommand{\jarr}{PU}{\86\115}% 064D;afi57453;ARABIC KASRATAN

16582 \DeclareTextCommand{\fatha}{PU}{\86\116}% 064E;afi57454;ARABIC FATHA

16583 \DeclareTextCommand{\damma}{PU}{\86\117}% 064F;afi57455;ARABIC DAMMA

16584 \DeclareTextCommand{\kasra}{PU}{\86\120}% 0650;afi57456;ARABIC KASRA

16585 \DeclareTextCommand{\shadda}{PU}{\86\121}% 0651;afi57457;ARABIC SHADDA

16586 \DeclareTextCommand{\sukun}{PU}{\86\122}% 0652;afi57458;ARABIC SUKUN

Farsi

```
16587 \DeclareTextCommand{\peh}{PU}{\86\176}% 067E;afi57506;ARABIC LETTER PEH
16588 \DeclareTextCommand{\tcheh}{PU}{\86\206}% 0686;afi57507;ARABIC LET-
TER TCHEH
16589 \DeclareTextCommand{\jeh}{PU}{\86\230}% 0698;afi57508;ARABIC LETTER JEH
16590 \DeclareTextCommand{\farsikaf}{PU}{\86\251}% 06A9???;afi????;FARSI LET-
TER KAF
16591 \DeclareTextCommand{\gaf}{PU}{\86\257}% 06AF;afi57509;ARABIC LETTER GAF
16592 \DeclareTextCommand{\farsiya}{PU}{\86\314}% 06CC;afi????;FARSI LET-
TER YEH

16593 \DeclareTextCommand{\ZWNJ}{PU}{\9040\014}% 200C;ZWNJ%
16594 \DeclareTextCommand{\noboundary}{PU}{\86\325}% 200D;ZWJ
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```

## 51 End of file hyccheck.tex

```
16596 <*check>
16597 \typeout{}
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16599 \end{document}
16600 </check>
```

## 52 Index

Numbers written in *italic* refer to the page where the corresponding entry is described; numbers underlined refer to the code line of the definition; numbers in *roman* refer to the code lines where the entry is used.

Symbols		
\!	195, 220, 2073	
\"	202, 227, 3171, 13778, 14138, 14150, 14162, 14285, 14371, 14385, 14393, 14408, 14420, 14436, 14450, 14461, 14462, 14476, 14488, 14494, 14545, 14573, 14592, 14613, 14740, 14754, 14762, 14776, 14788, 14804, 14818, 14829, 14830, 14844, 14856, 14862, 15109, 15324, 15326, 15336, 15388, 15390, 15418, 15431, 15583, 15596, 15829, 15831, 15845, 15847, 15849, 15851, 15853, 15855, 15865, 15867, 15869, 15871, 15877, 15879, 15881, 15883, 15889, 15891, 15897, 15899, 15905, 15907, 15947, 15949, 16019, 16021, 16031, 16033, 16049	15259, 15261, 15263, 15265, 15267, 15269, 15271, 15273, 15328, 15330, 15332, 15334, 15392, 15395, 15397, 15422, 15441, 15587, 15606, 15955, 15957, 15967, 15969, 15983, 15985, 16015, 16017, 16420, 16425, 16430, 16435, 16440, 16445, 16450, 16455, 16460, 16465, 16470, 16475, 16480, 16485, 16490, 16495, 16500, 16505, 16510, 16515, 16520, 16525, 16530, 16535
\#	560, 2158, 2159, 4549, 4560, 4562, 4578, 4610, 4670, 8393, 8395, 9174, 9183, 9218, 9985, 11561, 11572, 11608, 11839, 11848, 11886, 13698	\( 190, 215, 336, 766, 769, 771, 2075, 13844, 14208
\\$	184, 209, 335, 561, 4551, 4669	\) 191, 216, 337, 738, 744, 747, 2076, 13845, 14210
\%	562, 2073, 2133, 2134, 4548, 4557, 4559, 4611, 8395	\* 339
\&	185, 210, 563, 4552, 4563, 4565, 11618	\+ 200, 225, 340
\'	203, 228, 3111, 3125, 3166, 3168, 3169, 3170, 3171, 3176, 3177, 3179, 3184, 3190, 3194, 3195, 3198, 3241, 3242, 3247, 3248, 3249, 3250, 3251, 3252, 3253, 3254, 3256, 3260, 3273, 13776, 14135, 14147, 14159, 14365, 14381, 14389, 14402, 14416, 14422, 14430, 14446, 14455, 14456, 14470, 14484, 14490, 14513, 14515, 14516, 14517, 14520, 14522, 14523, 14524, 14532, 14570, 14589, 14610, 14734, 14750, 14758, 14770, 14784, 14790, 14798, 14814, 14823, 14824, 14838, 14852, 14858, 14876, 14878, 14983, 14985, 15003, 15005, 15037, 15039, 15049, 15051, 15111, 15113, 15163, 15165, 15171, 15173, 15175, 15177,	\- 201, 226
		\. 198, 223, 333, 1234, 3495, 3895, 14141, 14153, 14165, 14227, 14518, 14525, 14543, 14576, 14595, 14619, 14659, 14660, 14884, 14886, 14908, 14910, 14928, 14930, 14964, 14995, 14997, 15115, 15117, 15208, 15210, 15216, 15218, 15915, 15917, 15923, 15925, 15935, 15937, 15943, 15945, 15971, 15973, 15975, 15977, 15987, 15989, 15991, 15993, 15999, 16001, 16023, 16025, 16027, 16029, 16035, 16037, 16055
		\/ 194, 219, 680, 681, 682, 749, 1858, 7793
		\: 189, 214
		\; 199, 224, 8088
		\< 196, 221
		\= 167, 173, 180, 183, 14143, 14155, 14167, 14538, 14580, 14599, 14618, 14864, 14866, 14900, 14902, 14949, 14951, 14952, 15021, 15023, 15081, 15083, 15220, 15222, 15861, 15863, 15885, 15887, 15939, 15941
		\> 197, 222
		\? 341
		\@ 3162
		\@@@ 2389
		\@@@BOOKMARK 13759, 13762, 13820, 13888, 13895
		\@@ListBox 12206, 12230, 12687, 12720, 13026, 13069
		\@@Menu 12414, 12422
		\@@PasswordField 12363, 12369
		\@@Radio 12191, 12212, 12412, 12436, 12672, 12693, 13011, 13032
		\@@TextField 12365, 12380
		\@@commahyperpage 7900, 7901
		\@@hyper@readexternallink 4859, 4861
		\@@hyperref 4772, 4773
		\@@latextohtmlX 2990, 5007
		\@@wrindex 7828, 7829
		\@@writetorep 13619, 13625
		\@Alph 6579, 6581
		\@BIBLABEL 7323, 7329, 7335
		\@BOOKMARK 13759, 13761
		\@CITE 7400, 7408
		\@CITEX 7402
		\@CheckBox 5770, 10050, 12304, 12333, 12467, 12804, 13171
		\@ChoiceMenu 5767, 10053, 12144, 12336, 12402, 12624, 12963
		\@Form 5465, 10040, 11930, 12325, 12346, 12545, 12886
		\@Gauge 5776, 10044, 12114, 12327, 12351, 12488, 12883
		\@Localurfalse 9993
		\@Localurtrue 9990
		\@M 1140, 2446, 4656, 6961
		\@MM 7086
		\@PackageError 277
		\@PackageInfo 280
		\@PackageInfoNoLine 281
		\@PackageWarning 278
		\@PackageWarningNoLine 279
		\@PushButton 5773, 10056, 12237, 12339, 12448, 12729, 13085
		\@Refstar 8203, 8210
		\@Reset 5782, 10059, 12281, 12342, 12464, 12780, 13142
		\@Roman 642
		\@SCTR 7947, 7999
		\@SetMaxRnhefLabel 7397
		\@Submit 5779, 10062, 12264, 12343, 12461, 12758, 13119
		\@TextField 5764, 10047, 12117, 12330, 12354, 12596, 12927
		\@addchap 14095
		\@addtoreset 7722, 7723, 7737, 7944

<code>\@afterheading</code> . . . . .	14112	<code>\@currValue</code> . . . . .	5555, 5557, 12217, 12224, 12431, 12442, 12698, 12707, 13040, 13057, 13496	1220, 1224, 1228, 1566, 3873, 4375, 5431, 5437, 5669, 6439, 6572, 6584, 6651, 7190, 7271, 7412, 7435, 7561, 7783, 9036, 12518, 13255, 13272, 13290	
<code>\@alph</code> . . . . .	6575, 6577	<code>\@currentHlabel</code> . . . . .	6625	<code>\@firstoftwo</code> . . . . .	651, 932, 1102, 1774, 5962, 14061
<code>\@anchorcolor</code> . . . . .	9143, 9238, 10107, 11529, 11809	<code>\@currentHref</code> . . . . .	2391, 5872, 6524, 6605, 6607, 6616, 6618, 6625, 6706, 6708, 6718, 6769, 6780, 6782, 6820, 6831, 6835, 6842, 6866, 6930, 6954, 7018, 7028, 7030, 7031, 7071, 7099, 7197, 7223, 7227, 7242, 7244, 7472, 7598, 7621, 7634, 7641, 7692, 7716, 7718, 13609, 14000, 14013, 14024, 14054, 14071, 14106	<code>\@fnsymbol</code> . . . . .	6573
<code>\@arabic</code> . . . . .	1110, 1115, 1119, 6574	<code>\@currentlabel</code> . . . . .	6748, 7089, 7465, 7472, 7697, 7704, 7953, 8005	<code>\@footnotemark</code> . . . . .	6971, 7024, 7108, 7120, 7122, 7134, 7135, 7165, 7167
<code>\@auxout</code> . . . . .	2383, 4817, 5992, 5994, 6664, 6692, 7343, 7358, 7374, 7384, 7414, 7437, 7463, 7469, 7493	<code>\@currentlabelname</code> . . . . .	2381, 7019, 7072, 7100, 7202	<code>\@footnotetext</code> . . . . .	6970, 6977, 7006, 7121, 7123, 7137, 7138, 7158
<code>\@backslashchar</code> . . . . .	862, 865, 868, 1364, 2035, 2039, 2042, 2180, 2197, 2203, 2207, 2215, 4573, 8408, 8418	<code>\@currentlabstr</code> . . . . .	2380, 2388	<code>\@for</code> . . . . .	3514, 5073, 7409, 7432, 12153, 12215, 12420, 12427, 12437, 12633, 12696, 12972, 13038
<code>\@baseurl</code> . . . . .	3481, 3483, 4917, 8860, 8863, 9128, 9130, 9412, 9414, 9898, 9908, 9958, 9960, 10485, 10487, 10865, 10879, 11514, 11516, 11715, 11729, 11795, 11797	<code>\@dblarg</code> . . . . .	2508, 7192, 7273	<code>\@fourthoffive</code> . . . . .	4487, 4805, 8267, 8274
<code>\@begintheorem</code> . . . . .	6925, 6932	<code>\@definecounter</code> . . . . .	7677, 7678	<code>\@gobble</code> . . . . .	49, 56, 117, 584, 585, 586, 587, 624, 625, 626, 627, 654, 655, 656, 665, 667, 826, 939, 974, 985, 1126, 1130, 1133, 1503, 1564, 1583, 1596, 1600, 1663, 1726, 1727, 1734, 1739, 1753, 1758, 2361, 2418, 2677, 2689, 3861, 4046, 4048, 4100, 4539, 5416, 5659, 5926, 5930, 5948, 5950, 5966, 5967, 5970, 5971, 5973, 6418, 6433, 6437, 6914, 7179, 7268, 7597, 8332, 9038, 10365, 10368, 12546, 12887, 13666, 13667, 13668, 13669
<code>\@bibitem</code> . . . . .	7350, 7381	<code>\@ehc</code> . . . . .	2737, 2848, 2873, 2906, 2944, 2951, 2962, 2968, 4098, 4718, 4881, 5177, 5301, 5497, 5530, 5706, 5755, 12246, 12292, 12739, 12791, 13095, 13153	<code>\@gobblefour</code> . . . . .	590, 690, 1260, 1261, 1262, 3680, 8068
<code>\@biblabel</code> . . . . .	7323, 7370	<code>\@ehd</code> . . . . .	63, 296, 302, 317, 7178, 7267	<code>\@gobbleopt</code> . . . . .	5973, 5975
<code>\@bookmarkopenstatus</code> . . . . .	4373, 4390, 13680	<code>\@endForm</code> . . . . .	5466, 10043, 12113, 12326, 12350, 12595, 12913	<code>\@gobbletwo</code> . . . . .	588, 658, 683, 691, 692, 839, 1259, 1681, 1758, 1762, 2562, 3678, 3679, 4050, 5362, 5952, 5961, 5969, 5973, 8255, 14010
<code>\@bookmarksopenlevel</code> . . . . .	3444, 3446, 4376	<code>\@endparentv</code> . . . . .	6921	<code>\@harvarditem</code> . . . . .	7482, 7484
<code>\@bsphack</code> . . . . .	2376, 4810, 7467	<code>\@eqnocr</code> . . . . .	6850	<code>\@hyper@anchor</code> . . . . .	4967, 4968
<code>\@capstartfalse</code> . . . . .	7217	<code>\@eqnstarfalse</code> . . . . .	6826, 6853	<code>\@hyper@itemfalse</code> . . . . .	6469, 6485, 6499
<code>\@caption</code> . . . . .	7182, 7194, 7237, 7273, 7275	<code>\@eqnstartrue</code> . . . . .	6850	<code>\@hyper@itemtrue</code> . . . . .	6470
<code>\@capytype</code> . . . . .	2385, 7177, 7181, 7185, 7192, 7199, 7241, 7266, 7270, 7273	<code>\@eqnswtrue</code> . . . . .	6796, 6805	<code>\@hyper@launch</code> . . . . .	4887, 4896, 8752, 10262, 11249
<code>\@car</code> . . . . .	1646, 1662, 1680, 1700, 3423, 5083, 8812, 8823	<code>\@esphack</code> . . . . .	2397, 4821, 7477, 7840	<code>\@hyper@linkfile</code> . . . . .	4868, 4871, 4875, 4907
<code>\@cdr</code> . . . . .	8813, 8824	<code>\@extra@b@citeb</code> . . . . .	7308, 7311, 7328, 7333, 7353, 7401, 7423, 7439, 7446	<code>\@hyper@readexternallink</code> . . . . .	4862, 4866
<code>\@chapter</code> . . . . .	14019, 14020	<code>\@extra@b@info</code> . . . . .	7307, 7310, 7314	<code>\@hyperdef</code> . . . . .	4780, 4781
<code>\@cite</code> . . . . .	7400, 7431, 7528, 7534	<code>\@fifthoffive</code> . . . . .	4058, 4488, 4804, 8154, 8272	<code>\@hyperpage</code> . . . . .	7892, 7893
<code>\@cite@opt</code> . . . . .	7529, 7535, 7539, 7549	<code>\@filebordercolor</code> . . . . .	3984, 8727, 8729, 9743, 9745, 10193, 10195, 11231	<code>\@hyperref</code> . . . . .	4761, 4772
<code>\@citea</code> . . . . .	7403, 7410, 7411, 7430, 7433, 7434	<code>\@filecolor</code> . . . . .	3473, 8748, 9355, 9372, 9761, 10199	<code>\@ifclasslater</code> . . . . .	14118, 14123
<code>\@citeb</code> . . . . .	7409, 7412, 7414, 7416, 7420, 7423, 7432, 7435, 7437, 7439, 7443, 7446	<code>\@firstoffive</code> . . . . .	4484, 4493, 8193, 8277		
<code>\@citebordercolor</code> . . . . .	3986	<code>\@firstofone</code> . . . . .	591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 631, 822, 976, 987,		
<code>\@citedata@opt</code> . . . . .	7530, 7536, 7538				
<code>\@citedatax</code> . . . . .	7545, 7550				
<code>\@citedatax@opt</code> . . . . .	7542, 7548				
<code>\@citeseppen</code> . . . . .	7527, 7533				
<code>\@citex</code> . . . . .	7429				
<code>\@clubpenalty</code> . . . . .	6963				
<code>\@commahyperpage</code> . . . . .	7895, 7900				
<code>\@ctrerr</code> . . . . .	6553, 6562				
<code>\@currDisplay</code> . . . . .	5553, 12156, 12219, 12431, 12445, 12636, 12700, 12975, 13042				

<code>\@ifclassloaded</code> . 2368, 4515, 6636, 6673, 7392, 7928, 7932, 9041, 14117, 14122	<code>\@listctr</code> . . . . . 7359, 7385	<code>\@nocnterr</code> . . . . . 7736, 7750
<code>\@ifnextchar</code> . . . . 12, 88, 103, 123, 684, 4663, 4761, 4780, 4829, 5465, 5764, 5767, 5770, 5773, 5776, 5779, 5782, 5973, 6045, 6054, 7124, 7142, 7482, 7540, 10890, 11160, 11174, 13759, 13762	<code>\@cm</code> . . . . . 1123, 7411, 7434, 10412	<code>\@nocounterr</code> . . . . . 7735, 7749
<code>\@ifpackagelater</code> . . . 233, 252, 996, 2399, 6627, 7747	<code>\@mainaux</code> 5990, 5991, 6401, 6409, 12514, 12538	<code>\@noparitemfalse</code> . . . . . 6940
<code>\@ifpackageloaded</code> . 513, 892, 995, 2371, 2789, 3400, 3404, 4037, 4203, 6508, 6626, 6639, 6701, 6734, 6738, 6758, 6792, 6906, 6967, 7038, 7078, 7238, 7452, 7525, 7689, 7746, 7788, 7789, 7790, 7937, 8202, 8345, 8349, 11787	<code>\@makecaption</code> . 7218, 7220, 7286	<code>\@number</code> . . . . . 6572, 6651, 7561
<code>\@ifpackagewith</code> . 3291, 4038, 7712	<code>\@makefnmark</code> . . . . . 7033, 7170	<code>\@cnx</code> . . . . . 7739, 7753, 7756, 7758
<code>\@ifstar</code> 66, 4510, 4513, 4522, 4526, 5907, 5911, 5979, 5983, 8210, 8236, 8255	<code>\@makefntext</code> . . . . . 7090	<code>\@onelevel@sanitize</code> . . 2555, 2559, 2771, 3422, 4075, 4105, 4126, 4629, 4929, 4932, 4945, 4959, 5173, 5409, 5493, 6262, 6264, 6612, 7627, 8179, 9533, 13705
<code>\@ifundefined</code> . . 34, 375, 911, 919, 935, 938, 2539, 2651, 2719, 2803, 3309, 3345, 3353, 3360, 3373, 3421, 4010, 5172, 5492, 6371, 6512, 6517, 6740, 6761, 6762, 6815, 6837, 6861, 6898, 7183, 7201, 7317, 7400, 7416, 7439, 7686, 7727, 7735, 7736, 7749, 7750, 7757, 8451, 9934, 10553, 10554, 11344, 12546, 12887, 13264, 13676	<code>\@makeother</code> . . . . . 166, 167, 179, 180, 182, 183, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 4563, 8380, 13848, 13851, 13878, 13881	<code>\@oparg</code> . . . . . 6925, 6932
<code>\@indexfile</code> 7832, 7847, 7855, 7859, 7864	<code>\@makeschapterhead</code> 14109, 14111	<code>\@outlinefile</code> . 13678, 13767, 13862, 13864, 13866, 13944, 13946, 13948
<code>\@inlabelfalse</code> . . . . . 6942	<code>\@mem@titleref</code> . . . . . 4522	<code>\@pagerefstar</code> . . . 4513, 8195, 8226
<code>\@inmathwarn</code> . . . . . 554, 555	<code>\@mem@titleref@nolink</code> . . . . 4522	<code>\@pagesetref</code> . . . . . 8145
<code>\@inpen@undefined@</code> . . . . 2235	<code>\@menubordercolor</code> . . . . . 3983, 9096, 9098, 9809, 9811, 10297, 10299	<code>\@parboxrestore</code> . 7088, 7210, 7281
<code>\@labels</code> . . . . . 6958	<code>\@menucolor</code> . . 9111, 9815, 10303	<code>\@parcount</code> . . . . . 13826, 13834
<code>\@latex@</code> . . . . . 6076, 6077	<code>\@minipagefalse</code> . . . . . 6938	<code>\@part</code> . . . . . 14037, 14044
<code>\@latex@error</code> . . . . . 7178, 7267	<code>\@mkboth</code> 658, 8050, 14010, 14098, 14100	<code>\@pdfauthor</code> 3696, 3989, 8920, 9394, 9845, 10526, 10791, 11646
<code>\@latex@warning</code> 4799, 7419, 7442, 8129, 8149, 8166, 8283	<code>\@mpfn</code> . . . . . 6974, 7143, 7155	<code>\@pdfborder</code> . . . . . 3541, 3542, 3543, 3550, 3554, 3577, 3579, 4456, 8606, 9551, 10095, 10657, 10752, 11152, 11164, 11179, 11200, 11228, 11259, 11288, 11375, 11463, 11623
<code>\@lbibitem</code> . . . . . 7324, 7369	<code>\@mpfootnotetext</code> 6977, 6990, 6991	<code>\@pdfborderstyle</code> . . . . . 3558, 3559, 3560, 3569, 3573, 3581, 3583, 4457, 5621, 8607, 9552, 10096, 10658, 10753, 11153, 11165, 11180, 11201, 11229, 11260, 11289, 11376, 11464, 11624
<code>\@linkbordercolor</code> . . . 3981, 8676, 10097	<code>\@mycount</code> . . . . . 13824, 13834	<code>\@pdfcreationdate</code> . . . . . 3713, 3992, 8924, 8926, 9386, 9388, 9837, 9839, 10766, 10768, 11638, 11640
<code>\@linkcolor</code> . . . . . 10912	<code>\@namedef</code> 1240, 2813, 2814, 2815, 2816, 2817, 2818, 2819, 2820, 3300, 3312, 5183, 5184, 5185, 5186, 5508, 5509, 6637, 6849, 6852, 7457, 7458, 7459, 7460	<code>\@pdfcreator</code> . . . . . 3708, 3991, 8923, 9385, 9836, 10529, 10790, 11637
<code>\@linkdim</code> . . . . . 480, 9192, 9193, 9201, 9202, 9203, 9272, 9273, 9285, 9286, 9287, 9309, 9310, 9323, 9324, 9325, 9347, 9348, 9361, 9362, 9363, 11582, 11583, 11591, 11592, 11593, 11857, 11858, 11871, 11872, 11873	<code>\@namerefstar</code> . . . . . 4526, 8198	<code>\@pdfdirection</code> . 8883, 9450, 9878, 10497, 10845, 11695
	<code>\@nameuse</code> . 2385, 2810, 5189, 5500	<code>\@pdfduplex</code> . . 8889, 9456, 9884, 10503, 10851, 11701
	<code>\@ne</code> . . . . . 1109, 2756, 2894, 4361, 4688, 9676, 9681, 10464, 11369, 12922	<code>\@pdfhighlight</code> . . . . . 3533, 3987, 8626, 8628, 8687, 8723, 8725, 8760, 8762, 9092, 9094, 10656, 10751, 11151, 11199, 11227, 11258
	<code>\@newctr</code> . . . . . 7682, 7683	<code>\@pdfhightlight</code> . . . . . 8685
	<code>\@newl@bel</code> . . . . . 6039, 7310	<code>\@pdfkeywords</code> . . . . . 3732, 3995, 8936, 9383, 9850, 10534, 10792, 11635
	<code>\@newlistfalse</code> . . . . . 6939	<code>\@pdflang</code> . . . . 3973, 4002, 8909, 8911, 9478, 9480, 9918, 9920,
	<code>\@nil</code> . . . . . 307, 324, 499, 503, 508, 512, 527, 1558, 1561, 1569, 1646, 1664, 1682, 1698, 1700, 1703, 1706, 1709, 2244, 2246, 2262, 2264, 3423, 4595, 4599, 4604, 4934, 4942, 4948, 4950, 5083, 5650, 5653, 5672, 6064, 6067, 6074, 6076, 6077, 6162, 6209, 6210, 6212, 6235, 6252, 6306, 6308, 6764, 6773, 6775, 6787, 7879, 7881, 7888, 7911, 7914, 7924, 8133, 8136, 8291, 8322, 8404, 8410, 8414, 8420, 8812, 8813, 8823, 8824, 10330, 10332, 13262, 13275, 13281, 13708, 13711, 13714, 13723, 13726, 13735	
	<code>\@nobreakfalse</code> . . . . . 6036, 6961	



10875, 10877, 11725, 11727  
 \@pdfm@dest . . . 9495, 9554, 9558  
 \@pdfm@mark . . . . . 6389, 9494,  
 9546, 9566, 9580, 9582, 9596,  
 9598, 9603, 9604, 9634, 9658,  
 9660, 9665, 9683, 9705, 9737,  
 9770, 9798, 9832, 9899, 9926,  
 12890, 12891, 12892, 12911,  
 12953, 12959, 13048, 13062,  
 13077, 13083, 13108, 13115,  
 13133, 13139, 13161, 13167,  
 13189, 13195, 13200, 13232,  
 13240, 13915  
 \@pdfmoddate . 3719, 3993, 8928,  
 8930, 9390, 9392, 9841, 9843,  
 10770, 10774, 11642, 11644  
 \@pdfnonfullscreenpagemode . . .  
 . . . 8882, 9449, 9877, 10496,  
 10844, 11694  
 \@pdfnumcopies . . . . . 8898,  
 8900, 9465, 9467, 9893, 9895,  
 10512, 10514, 10860, 10862,  
 11710, 11712  
 \@pdfpageduration . . . . .  
 . . . 3491, 8980, 8984, 8989,  
 10421, 10423, 10426, 10696,  
 10698, 10706  
 \@pdfpagelayout 8908, 9477, 9917,  
 10517, 10519, 10874, 11724  
 \@pdfpagemode 4191, 4192, 4386,  
 4387, 4396, 4397, 8862, 9433,  
 9912, 10484, 10828, 11678  
 \@pdfpagescrop . . . . .  
 3927, 3997, 8847, 8851, 9416,  
 9417, 9438, 9440, 9924, 9926,  
 10473, 10475, 10833, 10835,  
 11683, 11685  
 \@pdfpagetransition . . . . .  
 . . . 3487, 8956, 8960, 8965,  
 10310, 10312, 10314, 10679,  
 10681, 10689  
 \@pdfpicktraybypdfsize . . . 8890,  
 8892, 9457, 9459, 9885, 9887,  
 10504, 10506, 10852, 10854,  
 11702, 11704  
 \@pdfprintarea . 8886, 9453, 9881,  
 10500, 10848, 11698  
 \@pdfprintclip . 8887, 9454, 9882,  
 10501, 10849, 11699  
 \@pdfprintpagerange . . . . .  
 . . . . . 3648, 4001, 8894,  
 8896, 9461, 9463, 9889, 9891,  
 10508, 10510, 10856, 10858,  
 11706, 11708  
 \@pdfprintscaling 8888, 9455, 9883,  
 10502, 10850, 11700  
 \@pdfproducer . . . . .  
 . . . . . 3702, 3990, 8788, 8932,  
 8934, 9376, 9377, 9395, 9397,  
 9821, 9822, 9826, 9846, 9848,  
 10441, 10442, 10446, 10449,  
 10450, 10530, 10532, 10777,  
 10781, 11285, 11286, 11368,  
 11370, 11372, 11460, 11461,  
 11628, 11629, 11647, 11649  
 \@pdfremotestartview 3899, 3901,  
 3902, 3903, 3914, 3918, 3920,  
 3921, 3923, 3999, 8740, 9752,  
 11239  
 \@pdfstartpage . . . . .  
 . . . . . 3882, 3884, 4000, 8868,  
 8872, 9420, 9425, 9901, 9905,  
 10477, 10481, 10815, 10820,  
 11665, 11670  
 \@pdfstartview . . . . .  
 . . . . . 3889, 3891, 3998, 8870,  
 8872, 9422, 9426, 9903, 9905,  
 10479, 10817, 10821, 11667,  
 11671  
 \@pdfsubject . . . . .  
 3726, 3994, 8922, 9399, 9835,  
 10528, 10789, 11651  
 \@pdftempa . . . . 4873, 4874, 4877  
 \@pdftempwordfile . . . 4864, 4874  
 \@pdftempwordrun . . 4865, 4877  
 \@pdftitle 3690, 3988, 8921, 9384,  
 9834, 10527, 10788, 11636  
 \@pdftrapped . . 3737, 3740, 3743,  
 3752, 3761, 3996, 8937, 8939,  
 9851, 9853, 10793  
 \@pdfview . . . . . 3863,  
 8588, 8596, 9501, 9505, 9509,  
 9513, 9517, 9521, 9522, 9525,  
 9526, 9529, 9533, 9535, 9550,  
 10094, 10104, 10116, 10594,  
 10614, 11290, 11377, 11465,  
 11737  
 \@pdfviewarea . 8884, 9451, 9879,  
 10498, 10846, 11696  
 \@pdfviewclip . 8885, 9452, 9880,  
 10499, 10847, 11697  
 \@pdfviewparams . . . . 3865, 3867,  
 10594, 10614, 11291, 11378,  
 11466, 11738  
 \@percentchar . 4558, 4559, 4611,  
 13682  
 \@processme . . 5541, 5542, 8962,  
 8968, 8986, 8992, 9008, 9014,  
 10893, 10894, 11002, 11003,  
 11006, 11007  
 \@protected@testopt . . . . . 687  
 \@protected@testopt@xargs . 688  
 \@refstar . . . . . 4510, 8192  
 \@runbordercolor 3985, 8764, 8766,  
 10281, 10283, 11262  
 \@runcolor . . . . . 8784, 10287  
 \@safe@activesfalse . . . . 640, 4490  
 \@safe@activetrue . . . . 639, 4489  
 \@savsf . . . . . 8591, 8599  
 \@schapter . . . . . 14007, 14008  
 \@secondoffive . 4059, 4485, 4498,  
 8155, 8156, 8196  
 \@secondoftwo . . . 628, 930, 1105,  
 1632, 1772, 4058, 4059, 14063  
 \@sect . . . . . 14058, 14059  
 \@seqncr . . . . . 6850  
 \@serial@counter . . 13774, 13822,  
 13824, 13825  
 \@seteqlabel . . . . . 7713, 7714  
 \@setminipage . . . . . 7212, 7283  
 \@setref . . 4493, 4498, 8124, 8125,  
 8162  
 \@sharp . . . . . 6764, 6770  
 \@skiphyperreffalse . . 6486, 7339,  
 7351  
 \@skiphyperreftrue . . . 7325, 7351  
 \@spaces . . . . . 284  
 \@spart . . . . . 14050, 14051  
 \@ssect . . . . . 13993, 13994  
 \@startlos . . . . . 8062, 8069, 8118  
 \@starttoc . . . . . 6024  
 \@tempa . 6924, 6931, 6935, 7040,  
 7044, 7047, 7059  
 \@tempb . . . . . 6878, 6882  
 \@tempboxa 9190, 9192, 9201, 9270,  
 9272, 9275, 9276, 9285, 9291,  
 9292, 9307, 9309, 9312, 9313,  
 9323, 9329, 9330, 9345, 9347,  
 9350, 9351, 9361, 9367, 9368,  
 11580, 11582, 11591, 11855,  
 11857, 11871  
 \@tempcnta . 13631, 13632, 13633,  
 13634, 13635, 13637, 13640,  
 13641, 13642, 13648, 13650,  
 13652, 13743, 13744, 13745,  
 13748, 13749, 13750, 13751,  
 13752, 13966, 13967, 13968  
 \@tempdima . . . . .  
 2449, 5804, 5805, 5806, 5807,  
 5808, 5809, 5810, 5811, 8581,  
 12152, 12157, 12159, 12195,  
 12196, 12197, 12201, 12202,  
 12203, 12204, 12632, 12637,  
 12639, 12676, 12677, 12678,  
 12682, 12683, 12684, 12685,  
 12971, 12976, 12978, 13015,  
 13016, 13017, 13021, 13022,  
 13023, 13024  
 \@tempdimb 12156, 12157, 12636,  
 12637, 12975, 12976

<code>\@tempswafalse</code> . . . . .	7544	14922, 14936, 14938, 14972,	14448, 14450, 14452, 14453,
<code>\@tempswatru</code> 7514, 7517, 7520,		14974, 14975, 15053, 15055,	14455, 14456, 14458, 14459,
7541		15101, 15103, 15105, 15107,	14461, 14462, 14464, 14466,
<code>\@temptokena</code> . 3278, 3283, 3286,		16039, 16041	14468, 14470, 14472, 14474,
3288	<code>\_</code> . 187, 212, 565, 4550, 4567, 4568		14476, 14478, 14480, 14482,
<code>\@tfor</code> . . . . .	6879	<code>\'</code> . . . . . 166, 172, 179, 182,	14484, 14486, 14488, 14490,
<code>\@the@H@page</code> . . . . .	7563, 7565	3125, 3259, 3262, 3264, 3272,	14492, 14494, 14495, 14568,
<code>\@thefnmark</code> . . 6975, 6986, 7051,		13699, 14134, 14146, 14158,	14732, 14734, 14736, 14738,
7089, 7106, 7113, 7144, 7156,		14363, 14379, 14387, 14400,	14740, 14742, 14744, 14746,
7163		14414, 14428, 14444, 14452,	14748, 14750, 14752, 14754,
<code>\@thirdoffive</code> . . . . .	4486, 8199	14453, 14468, 14482, 14530,	14756, 14758, 14760, 14762,
<code>\@thm</code> . . . . .	6907	14569, 14588, 14609, 14732,	14764, 14766, 14768, 14770,
<code>\@topnewpage</code> . . . . .	14109	14748, 14756, 14768, 14782,	14772, 14774, 14776, 14778,
<code>\@topsep</code> . . . . .	6920	14796, 14812, 14820, 14821,	14780, 14782, 14784, 14786,
<code>\@topsepadd</code> . . . . .	6921	14836, 14850, 15167, 15169,	14788, 14790, 14792, 14794,
<code>\@typeset@protect</code> . . . . .	13979	15415, 15443, 15580, 15608,	14796, 14798, 14800, 14802,
<code>\@undefined</code> . . 388, 391, 693, 3282,		16011, 16013, 16061, 16063,	14804, 14806, 14808, 14810,
5963, 5998, 6011, 6023, 6224,		16422, 16427, 16432, 16437,	14812, 14814, 14816, 14818,
6242, 6287, 7177, 7240, 7252,		16442, 16447, 16452, 16457,	14820, 14821, 14823, 14824,
7257, 7266, 8187, 8579, 8792,		16462, 16467, 16472, 16477,	14826, 14827, 14829, 14830,
8801, 10067, 10452, 10466		16482, 16487, 16492, 16497,	14832, 14834, 14836, 14838,
<code>\@undottedtocline</code> . . . . .	8114	16502, 16507, 16512, 16517,	14840, 14842, 14844, 14846,
<code>\@unprocessedoptions</code> . . . .	4336	16522, 16527, 16532, 16537	14848, 14850, 14852, 14854,
<code>\@urlbordercolor</code> . . . . .		<code>\ </code> 188, 213, 338, 1981, 2074, 2115,	14856, 14858, 14860, 14862,
3982, 8689, 8691, 9776, 9778,		3071, 4025, 7792, 8379, 8389	15127, 15129, 15131, 15133,
10217, 10219, 11202	<code>\~</code> . . . . . 564, 1278, 2223, 3183,		15134, 15136, 15138, 15140,
<code>\@urlcolor</code> . . . . .	8708,	3191, 3192, 3193, 4119, 4571,	15142, 15144, 15146, 15148,
9197, 9210, 9317, 9334, 9790,		14137, 14149, 14161, 14369,	15150, 15152, 15154, 15156,
10223, 11587, 11600, 11866,		14398, 14406, 14434, 14466,	15158, 15160, 15161, 15163,
11879		14474, 14536, 14572, 14591,	15165, 15167, 15169, 15171,
<code>\@urltype</code> . 9163, 9168, 9963, 9989,		14612, 14738, 14766, 14774,	15173, 15175, 15177, 15226,
10124, 10138, 11549, 11554,		14802, 14834, 14842, 14944,	15228, 15230, 15232, 15234,
11828, 11833		14946, 14947, 15077, 15079,	15236, 15238, 15241, 15243,
<code>\@vpageref</code> . . . . .	8220	16007, 16009, 16057, 16059,	15368, 15370, 15372, 15374,
<code>\@whilenum</code> . . . . .	1276	16065, 16067, 16424, 16429,	15376, 15378, 15380, 15382,
<code>\@wrindex</code> . . . . .	7796, 7797, 7828	16434, 16439, 16444, 16449,	15384, 15386, 15388, 15390,
<code>\@writefile</code> . . . . .	7470	16454, 16459, 16464, 16469,	15392, 15394, 15395, 15397,
<code>\@x@sf</code> . . . . .	7026, 7035, 7169, 7171	16474, 16479, 16484, 16489,	15399, 15401, 15403, 15405,
<code>\@xfootnote</code> . . . . .	7142	16494, 16499, 16504, 16509,	15407, 15409, 15411, 15413,
<code>\@xfootnotemark</code> . . . .	6983, 7160	16514, 16519, 16524, 16529,	15799, 15801, 15803, 15805,
<code>\@xfootnotenext</code> . . . .	6972, 7153	16534, 16539	15807, 15809, 15811, 15813,
<code>\@xp</code> 7703, 7738, 7739, 7752, 7753,			15815, 15817, 15819, 15821,
7755, 7756	<b>Numbers</b>		15823, 15825, 15827, 15829,
<code>\[</code> . . 192, 217, 334, 3547, 3565, 4730	<code>\3</code> . . . . . 541, 1322, 1323,		15831, 15833, 15835, 15837,
<code>\{</code> 342, 364, 557, 2075, 10585, 13700	1324, 1325, 1326, 1327, 1328,		15839, 15841, 15843, 15845,
<code>\}</code> 343, 369, 558, 2076, 10585, 13701	1329, 1438, 1439, 1440, 1441,		15847, 15849, 15851, 15853,
<code>\]</code> . . . . . 193, 218	1442, 1443, 1444, 1445, 2337,		15855, 15857, 15859, 15861,
<code>\^</code> . . . . . 186, 211, 332, 2173,	13843, 14363, 14365, 14367,		15863, 15865, 15867, 15869,
2174, 3189, 4546, 4547, 4555,	14369, 14371, 14373, 14375,		15871, 15873, 15875, 15877,
14136, 14148, 14160, 14367,	14377, 14379, 14381, 14383,		15879, 15881, 15883, 15885,
14383, 14391, 14404, 14418,	14385, 14387, 14389, 14391,		15887, 15889, 15891, 15893,
14432, 14448, 14458, 14459,	14393, 14395, 14396, 14398,		15895, 15897, 15899, 15901,
14472, 14486, 14534, 14571,	14400, 14402, 14404, 14406,		15903, 15905, 15907, 15909,
14590, 14611, 14736, 14752,	14408, 14410, 14412, 14414,		15911, 16061, 16063, 16065,
14760, 14772, 14786, 14800,	14416, 14418, 14420, 14422,		16067, 16287, 16289, 16291,
14816, 14826, 14827, 14840,	14424, 14426, 14428, 14430,		16293, 16295, 16297, 16299,
14854, 14880, 14882, 14920,	14432, 14434, 14436, 14438,		16301, 16303, 16305, 16307,
	14440, 14442, 14444, 14446,		

16309, 16311, 16313, 16315, 16317, 16319, 16321, 16323, 16325, 16327, 16329, 16331, 16333, 16335, 16337, 16339, 16341, 16343, 16345, 16347, 16349, 16351, 16353, 16355, 16357, 16359, 16361, 16363, 16365, 16367, 16369, 16371, 16373, 16375, 16383, 16385, 16407, 16409, 16410, 16414, 16416, 16417, 16420, 16422, 16424, 16435, 16437, 16441, 16442, 16443, 16444, 16445, 16446, 16447, 16448, 16450, 16451, 16452, 16453, 16454, 16455, 16456, 16457, 16458, 16459, 16460, 16461, 16462, 16463, 16464, 16465, 16466, 16467, 16468, 16470, 16471, 16472, 16473, 16474, 16475, 16476, 16477, 16478, 16479, 16480, 16482, 16484, 16495, 16497, 16501, 16502, 16503, 16504, 16505, 16506, 16507, 16508, 16510, 16511, 16512, 16513, 16514, 16515, 16516, 16517, 16518, 16519, 16520, 16521, 16522, 16523, 16524, 16525, 16526, 16527, 16528, 16530, 16531, 16532, 16533, 16534, 16535, 16536, 16537, 16538, 16539, 16592, 16594	16095, 16097, 16099, 16101, 16103, 16105, 16107, 16109, 16111, 16113, 16115, 16117, 16119, 16121, 16123, 16125, 16127, 16129, 16131, 16133, 16135, 16137, 16139, 16141, 16143, 16145, 16147, 16149, 16151, 16153, 16155, 16157, 16159, 16161, 16163, 16165, 16167, 16169, 16171, 16173, 16175, 16177, 16179, 16181, 16183, 16185, 16187, 16189, 16191, 16193, 16195, 16197, 16199, 16201, 16203, 16205, 16207, 16209, 16211, 16213, 16215, 16217, 16219, 16221, 16223, 16225, 16227, 16229, 16231, 16233, 16235, 16237, 16239, 16241, 16243, 16245, 16247, 16249, 16251, 16253, 16255, 16257, 16259, 16261, 16263, 16265, 16267, 16269, 16271, 16273, 16275, 16277, 16279, 16281, 16283, 16285, 16287, 16289, 16291, 16293, 16295, 16297, 16299, 16301, 16303, 16305, 16307, 16309, 16311, 16313, 16315, 16317, 16319, 16321, 16323, 16325, 16327, 16329, 16331, 16333, 16335, 16337, 16339, 16341, 16343, 16345, 16347, 16349, 16351, 16353, 16355, 16357, 16359, 16361, 16363, 16365, 16367, 16369, 16371, 16373, 16375, 16377, 16379, 16381, 16383, 16385, 16387, 16389, 16421, 16423, 16425, 16426, 16427, 16428, 16429, 16430, 16431, 16432, 16433, 16434, 16436, 16438, 16439, 16440, 16441, 16442, 16443, 16444, 16446, 16448, 16451, 16453, 16455, 16456, 16457, 16458, 16459, 16460, 16461, 16462, 16463, 16464, 16466, 16468, 16470, 16471, 16472, 16473, 16474, 16475, 16476, 16477, 16478, 16479, 16480, 16481, 16482, 16483, 16484, 16485, 16486, 16487, 16488, 16489, 16490, 16491, 16492, 16493, 16494, 16496, 16498, 16499, 16500, 16501, 16502, 16503, 16504, 16506, 16508, 16511, 16513, 16515, 16516, 16517, 16518, 16519, 16520, 16521, 16522, 16523, 16524, 16526, 16527, 16528, 16529, 16530, 16531, 16532, 16533, 16534, 16535, 16536, 16537, 16538, 16539, 16592, 16594	16528, 16530, 16531, 16532, 16533, 16534, 16536, 16537, 16538, 16539, 16593
\9 . . . . . 544, 1342, 1345, 1376, 2265, 2280, 2289, 2317, 2337, 14568, 15913, 15915, 15917, 15919, 15921, 15923, 15925, 15927, 15929, 15931, 15933, 15935, 15937, 15939, 15941, 15943, 15945, 15947, 15949, 15951, 15953, 15955, 15957, 15959, 15961, 15963, 15965, 15967, 15969, 15971, 15973, 15975, 15977, 15979, 15981, 15983, 15985, 15987, 15989, 15991, 15993, 15995, 15997, 15999, 16001, 16003, 16005, 16007, 16009, 16011, 16013, 16015, 16017, 16019, 16021, 16023, 16025, 16027, 16029, 16031, 16033, 16035, 16037, 16039, 16041, 16043, 16045, 16047, 16049, 16051, 16053, 16055, 16057, 16059, 16061, 16063, 16065, 16067, 16069, 16071, 16073, 16075, 16077, 16079, 16081, 16083, 16085, 16087, 16089, 16091, 16093,		
		\_ . . . . . 345, 672, 3206, 3209, 3895, 7411, 7434, 14158, 14159, 14160, 14161, 14162, 14163, 14164, 14165, 14166, 14167, 14168, 14169, 14588, 14589, 14590, 14591, 14592, 14593, 14594, 14595, 14596, 14597, 14598, 14599, 14600, 14601, 14602, 14603, 14604, 14605, 14606
		A
		\ABREVE . . 16413, 16485, 16486, 16487, 16488, 16489
		\abreve 16406, 16425, 16426, 16427, 16428, 16429
		\AccFancyVerbLineautorefname . . . . . . 3233
		\Accfootnoteautorefname . . 3213
		\Acctheoremautorefname . . 3237
		\ACIRCUMFLEX . 16414, 16490, 16491, 16492, 16493, 16494
		\acircumflex . . 3264, 16407, 16430, 16431, 16432, 16433, 16434
		\Acrobatmenu . 2420, 4055, 5960, 9087, 9795, 10290, 11146
		\active . . . . . 1256, 1263, 4547, 4548, 4549, 4550, 4551, 4552, 4555, 4557, 4560, 4568, 13847, 13877
		\add@accent . . . . . 556
		\addcontentsline 7206, 7277, 7595, 7600, 7671, 14114
		\addtocontents 7640, 7672, 7945, 7997, 14102, 14103
		\addtocounter . 6648, 6671, 6680, 6691, 6695, 6900, 9685
		\addvspace . . . . . 14102, 14103
		\adl@LT@array . . . . . 6762
		\advance . . . . . 478, 479, 1277, 4696, 5033, 5361, 5407, 5805, 5806, 5809, 5810, 6179, 8837, 9202, 9286, 9324, 9362, 10448, 11592, 11872, 12159, 12202, 12203, 12639, 12683, 12684, 12922, 12978, 13022, 13023, 13632, 13634, 13635, 13641, 13650, 13751, 13967
		\AE . . . . . 14375, 14744, 15171
		\ae . . . . . 14440, 14808, 15173
		\afterassignment 1870, 1876, 1882
		\AfterBeginDocument . . 375, 389
		\aftergroup . . . . . 7093

<code>\alef</code> . . . . .	16548	<code>\BeforeTeXIVht</code> . . . . .	2855	<code>\capitaldotaccent</code> . . . . .	14619	
<code>\alefhamza</code> . . . . .	16544	<code>\begin</code> . . . . .	11919, 16598	<code>\capitalgrave</code> . . . . .	14609	
<code>\aleflowerhamza</code> . . . . .	16546	<code>\belowpdfbookmark</code> . . . . .	13747	<code>\capitalhungarumlaut</code> . . . . .	14614	
<code>\alefmadda</code> . . . . .	16543	<code>\bfseries</code> . . . . .	606, 7417, 7440, 8128, 8148, 8165, 8282	<code>\capitalmacron</code> . . . . .	14618	
<code>\alefmaqsura</code> . . . . .	16577	<code>\bgroup</code> . . . . .	681, 4663, 7080, 7092, 8553, 9649, 10035, 10631, 12358, 12450, 12471	<code>\capitalnewtie</code> . . . . .	14621	
<code>\Alph</code> . . . . .	6228, 6541, 6542	<code>\bibcite</code> . . . . .	7309, 7315, 7319, 7344, 7359, 7375, 7385	<code>\capitalogonek</code> . . . . .	14608	
<code>\alph</code> . . . . .	6229, 6871, 6902	<code>\bitsetGetDec</code> . . . . .	5085, 5218, 5236, 5250, 5263, 5279, 5311, 5336	<code>\capitalring</code> . . . . .	14615	
<code>\AMSautorefname</code> . . . . .	8354	<code>\bitsetGetHex</code> . . . . .	5086	<code>\capitaltie</code> . . . . .	14620	
<code>\anchor@spot</code> . . . . .	4972, 4985, 4992, 4998, 5000, 8646, 9143, 9238, 10035, 10107, 10591, 10937, 10940, 11529, 11809	<code>\bitsetGetSetBitList</code> . . . . .	5074	<code>\capitaltilde</code> . . . . .	14612	
<code>\appendix</code> . . . . .	6538, 6539	<code>\bitsetIsEmpty</code> . . . . .	5215, 5233, 5247, 5260, 5276, 5308, 5333	<code>\caption</code> . . . . .	7176, 7178, 7265, 7267	
<code>\appendixautorefname</code> . . . . .	3081, 3099, 3117, 3135, 3153, 3171, 3189, 3221, 3222, 3247, 3265, 8364	<code>\bitsetReset</code> . . . . .	5188, 5222, 5241, 5255, 5268, 5284, 5316	<code>\catcode</code> . . . . .	172, 173, 184, 185, 186, 187, 206, 819, 820, 956, 1256, 1263, 1981, 1982, 2115, 2116, 2172, 2173, 2174, 4406, 4408, 4546, 4547, 4548, 4549, 4550, 4551, 4552, 4555, 4557, 4560, 4568, 4578, 4669, 4670, 8379, 10672, 10673, 13776, 13778, 13847, 13850, 13877, 13880	
<code>\arabic</code> . . . . .	6225, 6444, 6447, 6450, 6451, 6452, 6454, 6455, 6456, 6457, 6459, 6460, 6461, 6462, 6463, 6464, 6467, 6477, 6478, 6518, 6655, 7680, 7686, 7734, 7748, 7933, 7938, 7940	<code>\bitsetSetValue</code> . . . . .	5054, 5064	<code>\cf@encoding</code> . . . . .	1581	
<code>\AtBeginDocument</code> . . . . .	376, 5996, 6752, 11899	<code>\BOOKMARK</code> . . . . .	13679, 13758	<code>\chapterautorefname</code> . . . . .	3082, 3100, 3118, 3136, 3154, 3172, 3190, 3219, 3248, 3266, 8365	
<code>\AtBeginShipout</code> . . . . .	6108, 9122, 9631	<code>\booknumberline</code> . . . . .	13662, 13667	<code>\chapternumberline</code> . . . . .	13664, 13669	
<code>\AtBeginShipoutBox</code> . . . . .	6112, 6115, 9117, 9118, 9632, 9633	<code>\box</code> . . . . .	5812, 6115, 8567, 9663, 10983	<code>\char</code> . . . . .	12585, 13780, 13817	
<code>\AtBeginShipoutFirst</code> . . . . .	6119, 9931, 11341, 11456	<code>\bullet</code> . . . . .	8080, 8088, 8098, 8106	<code>\chardef</code> . . . . .	289, 322, 2641, 2642, 2643, 2644, 2894, 2896, 4331, 4361, 10932, 10935, 10941	
<code>\AtEndDocument</code> . . . . .	6010	<b>C</b>			<code>\check@bm@number</code> . . . . .	13900, 13908, 13958, 13966
<code>\AtEndOfPackage</code> . . . . .	386	<code>\C</code> . . . . .	14554, 15659, 15661	<code>\CheckBox</code> . . . . .	5769	
<code>\AtVeryEndDocument</code> . . . . .	6327, 12555	<code>\c</code> . . . . .	894, 898, 904, 3183, 3191, 3192, 3193, 6067, 6074, 14142, 14154, 14166, 14377, 14442, 14562, 14577, 14596, 14607, 14746, 14810, 14932, 14934, 14977, 14979, 14987, 14989, 15007, 15009, 15041, 15043, 15057, 15059, 15065, 15067, 15212, 15214, 15714, 15717, 15931, 15933, 15951, 15953	<code>\checkcommand</code> . . . . .	7039	
<code>\author</code> . . . . .	6044, 6054	<code>\c@footnote</code> . . . . .	6985, 7042, 7050, 7162	<code>\checkcommand</code> . . . . .	42, 6690, 7153, 7160, 7167, 7265, 7275, 7369, 7381, 7671, 7674, 7734, 8162	
<code>\autopageref</code> . . . . .	4190, 8235	<code>\c@Hy@tempcnt</code> . . . . .	4681, 4682, 4688, 4696	<code>\checklatex</code> . . . . .	4, 7152, 7264, 7368, 7670, 8161	
<code>\autoref</code> . . . . .	662, 4189, 8254, 11894	<code>\c@page</code> . . . . .	6161, 6179, 6180, 6184, 6196, 6198, 6203, 6210, 6212, 6214, 6243, 7558	<code>\checkpackage</code> . . . . .	9, 6689, 7733	
<code>\ayn</code> . . . . .	16566	<code>\c@secnumdepth</code> . . . . .	14027, 14045, 14060	<code>\ChoiceBox</code> . . . . .	5411	
<b>B</b>		<code>\c@slidesection</code> . . . . .	7946, 8074, 8075	<code>\ChoiceMenu</code> . . . . .	5766	
<code>\b</code> . . . . .	893, 897, 903, 14144, 14156, 14168, 14560, 14583, 14602, 15919, 15921, 15927, 15929, 15959, 15961, 15963, 15965, 15979, 15981, 15995, 15997, 16003, 16005, 16043, 16045, 16047	<code>\c@slidesubsection</code> . . . . .	7998	<code>\citation</code> . . . . .	7414, 7437, 7463	
<code>\baa</code> . . . . .	16549	<code>\c@tocdepth</code> . . . . .	3414, 3419	<code>\citeauthoryear</code> . . . . .	7529, 7535	
<code>\back@none</code> . . . . .	3016, 3026, 3039	<code>\calc@bm@number</code> . . . . .	13889, 13965	<code>\citeN</code> . . . . .	7526	
<code>\back@page</code> . . . . .	3018, 3031	<code>\calculate@pdfview</code> . . . . .	3859, 3862	<code>\CJK@char</code> . . . . .	1259	
<code>\back@section</code> . . . . .	3017, 3023, 3029, 3035	<code>\capitalacute</code> . . . . .	14610	<code>\CJK@charx</code> . . . . .	1260	
<code>\back@slide</code> . . . . .	3019, 3028	<code>\capitalbreve</code> . . . . .	14617	<code>\CJK@CJK</code> . . . . .	1248	
<code>\backcite</code> . . . . .	7471	<code>\capitalcaron</code> . . . . .	14616	<code>\CJK@eight</code> . . . . .	1459, 1462, 1576	
<code>\backref</code> . . . . .	7502, 11898	<code>\capitalcedilla</code> . . . . .	14607	<code>\CJK@five</code> . . . . .	1459, 1461, 1576	
<code>\baselineskip</code> . . . . .	2423, 5818, 5819, 5820, 5821, 5822, 5823, 9257, 10610, 10642, 11324	<code>\capitalcircumflex</code> . . . . .	14611	<code>\CJK@four</code> . . . . .	1458, 1461, 1575	
<code>\bbl@cite@choice</code> . . . . .	7318	<code>\capitaldieresis</code> . . . . .	14613	<code>\CJK@hundred</code> . . . . .	1525	

\CJK@punctchar	1261	\cyrabhchdsc	15796	\cyrhdsc	15771
\CJK@punctcharx	1262	\CYRABHDZE	15857	\CYRHHK	15909
\CJK@seven	1459, 1462, 1576	\cyrabhdze	15859	\cyrhkh	15911
\CJK@six	1459, 1462, 1576	\CYRABHHA	15747	\CYRHRDSN	15503
\CJK@ten	1460, 1461, 1462, 1463, 1540	\cyrabhha	15749	\cyrhrdsn	15568
\CJK@tenthousand	1473, 1494	\CYRAE	15833	\CYRI	15443, 15466, 15469, 15861, 15865
\CJK@thousand	1510	\cyrac	15835	\cyri	3203, 3206, 3210, 3216, 3221, 3223, 15531, 15534, 15608, 15863, 15867
\CJK@three	1458, 1461, 1575	\CYRB	15452	\CYRIE	15424
\CJK@two	1458, 1460, 1575	\cyrb	3217, 15517	\cyrie	15589
\CJK@zero	1458, 1476, 1493, 1497, 1513, 1528, 1550	\CYRBYUS	15635	\CYRII	15428, 15431
\CJKdigits	1335	\cyrbyus	15637	\cyril	15593, 15596
\CJKkern	1247	\CYRC	15495	\CYRIOTBYUS	15639
\CJKnumber	1334	\cyrcc	15560	\cyrriotbyus	15641
\close@pdfink	8640, 8665, 8674, 8709, 8749, 8785, 9112	\CYRCH	15497, 15897	\CYRIOTE	15623
\closeout	5990, 13767	\cyrch	3209, 3210, 3218, 15562, 15899	\cyrriote	15625
\clubpenalty	6961, 6963	\CYRCHLDSC	15817	\CYRIOTLYUS	15631
\codeof	7493	\cyrchldsc	15819	\cyrriotlyus	15633
\color@begingroup	8553, 9649	\CYRCHRDSC	15777	\CYRISHRT	15468
\color@endgroup	8560, 9656	\cyrchrdsc	15779	\cyrishrt	15533
\columnwidth	7087	\CYRCHVCRS	15781	\CYRISHRTDSC	15685
\comma@entry	5402, 5409, 5411	\cyrchvcrs	15783	\cyrishrtdsc	15687
\comma@parse	5401	\CYRD	15458	\CYRIZH	15655, 15659
\contentsline	5999, 6000, 6012, 7641, 7645, 7672, 7674	\cyrd	3206, 3209, 3220, 3225, 3226, 15523	\cyrizh	15657, 15661
\copy	8563, 9118, 9633, 9659	\CYRDJE	15420	\CYRJE	15433
\count@	858, 860, 861, 864, 867, 870, 873, 1275, 1276, 1277, 1278, 1871, 3430, 3431, 3436, 3437, 5032, 5033, 5048, 5344, 5359, 5361, 5385, 5407, 5423, 8832, 8833, 8834, 8835, 8836, 8837, 8840, 10444, 10445, 10446, 10447, 10448, 10451	\cyrdje	15585	\cyrje	15598
\CurrentBorderColor	8630, 8632, 8659, 8661, 8669, 8671, 8676, 10097, 10131, 10133, 10149, 10151, 10170, 10172, 10230, 10232, 10249, 10251	\CYRDZE	15426	\CYRK	15441, 15471
\currentpdfbookmark	13739	\cyrdze	15591	\cyrk	3212, 3213, 3215, 3229, 3230, 3232, 3233, 3234, 15536, 15606
\curu	15611	\CYRDZHE	15448	\CYRKBEAK	15731
\cyr	641, 3201, 3203, 3206, 3209, 3212, 3213, 3214, 3215, 3216, 3217, 3218, 3219, 3220, 3221, 3223, 3225, 3226, 3227, 3228, 3229, 3230, 3231, 3232, 3233, 3234, 3235, 3236, 3237, 3238	\cyrdzhe	15613	\cyrkbeak	15733
\CYRA	15450, 15825, 15829	\CYRE	15415, 15418, 15460, 15837	\CYRKDSC	15719
\cyra	3203, 3210, 3212, 3217, 3220, 3225, 3226, 3232, 3236, 15515, 15827, 15831	\cyre	3203, 3209, 3210, 3223, 3235, 3236, 3237, 15525, 15580, 15583, 15839	\cyrkdsc	15721
\CYRABHCH	15789, 15794	\cyreref	15883	\CYRKHCRS	15727
\cyrabhch	15791, 15797	\CYREREV	15509, 15881	\cyrkhcrs	15729
\CYRABHCHDSC	15793	\cyrerev	15574	\CYRKHK	15805
		\CYRERY	15505, 15905	\cyrkhk	15807
		\cyrery	3201, 3203, 15570, 15907	\CYRKOPPA	15679
		\CYRF	15491	\cyrkoppa	15681
		\cyrf	15556	\CYRKSI	15643
		\CYRFITA	15651	\cyrksi	15645
		\cyrfita	15653	\CYRKVCRS	15723
		\CYRG	15422, 15456	\cyrkvcrs	15725
		\cyrg	3219, 15521, 15587	\CYRL	15473
		\CYRGDSC	15901	\cyrl	3217, 3219, 3221, 3223, 15538
		\cyrgdsc	15903	\CYRLDSC	15809
		\CYRGHCRS	15701	\cyrlldsc	15811
		\cyrghcrs	15703	\CYRLJE	15435
		\CYRGHK	15705	\cyrlje	15600
		\cyrghk	15707	\CYRLYUS	15627
		\CYRGUP	15697	\cyrlyus	15629
		\cyrgup	15699	\CYRM	15475
		\CYRH	15493	\cyrm	3206, 3210, 3236, 3237, 15540
		\cyrh	15558		
		\CYRHDSC	15769		







3196, 3231, 3234, 3254, 3272, 8371  
 \farsikaf ..... 16590  
 \farsiya ..... 16592  
 \fatha ..... 16582  
 \fbox ..... 12589, 12592  
 \Field@addtoks 5540, 5571, 5574, 5725, 5748  
 \Field@boolkey 5027, 5115, 5534, 5564, 5567  
 \Field@toks ... 5538, 5539, 5541, 12359, 12376, 12387, 12398, 12408, 12425, 12443, 12451, 12456, 12472, 12481  
 \Field@Width ..... 5451, 5597  
 \figureautorefname ... 3078, 3096, 3114, 3132, 3150, 3168, 3186, 3216, 3244, 3262, 8361  
 \filename@area ..... 4913  
 \filename@base ..... 4913  
 \filename@ext . 4910, 4911, 4913, 4914  
 \filename@parse ..... 4909  
 \find@pdfink ... 8609, 8663, 8673  
 \Fld@@additionalactions . 13318, 13361, 13365  
 \Fld@@@DingDef . 5650, 5653, 5672  
 \Fld@additionalactions ... 13318, 13407, 13435, 13469, 13503, 13537, 13571, 13602  
 \Fld@align ... 5455, 5637, 13386, 13444, 13511  
 \Fld@altname . 5587, 5589, 13297, 13299, 13371, 13373  
 \Fld@annotflags 5234, 5236, 13382, 13413, 13440, 13473, 13507, 13542, 13577  
 \Fld@annotnames . 13369, 13383, 13414, 13441, 13474, 13508, 13543, 13578  
 \Fld@bcolor ... 5457, 5679, 13397, 13399, 13460, 13462, 13488, 13490, 13515, 13527, 13529  
 \fld@bcolor ..... 13448  
 \Fld@bordercolor ... 5458, 5682, 13393, 13395, 13420, 13428, 13430, 13447, 13456, 13458, 13484, 13486, 13514, 13523, 13525, 13549, 13557, 13559, 13584, 13592, 13594  
 \Fld@bordersep ..... 5459, 5631  
 \Fld@borderstyle ..... 5461, 5615, 5616, 5617, 5627, 13387, 13418, 13445, 13478, 13512, 13547, 13600  
 \Fld@borderwidth ... 5460, 5612, 5802, 5805, 5806, 5809, 5810, 12202, 12203, 12683, 12684, 13022, 13023, 13387, 13418, 13445, 13478, 13512, 13547, 13600  
 \Fld@calculate@code 5690, 13331, 13333  
 \Fld@cbsymbol 5462, 5643, 13401  
 \Fld@charsize . 5452, 5453, 5609, 12201, 12682, 13021, 13403, 13466, 13494, 13533, 13582  
 \Fld@checkedfalse ..... 5448  
 \Fld@checkequals ... 5552, 12154, 12216, 12428, 12438, 12634, 12697, 12973, 13039  
 \Fld@choices . 5341, 5349, 5351, 5355, 5364, 5372, 5377, 5425, 5427, 5435, 5436, 13468  
 \Fld@color ... 5456, 5685, 13404, 13467, 13495, 13534  
 \Fld@default ..... 5366, 5369, 5371, 5634, 12119, 12135, 12146, 12186, 12214, 12306, 12357, 12375, 12389, 12397, 12404, 12430, 12440, 12470, 12480, 12598, 12615, 12626, 12667, 12695, 12806, 12929, 12946, 12965, 13006, 13034, 13173, 13496, 13497, 13498, 13535  
 \Fld@DingDef . 5643, 5646, 5648  
 \Fld@disabledfalse ..... 5449  
 \Fld@export 5179, 5182, 5189, 5481  
 \Fld@findlength ... 12407, 12418  
 \Fld@flags ..... 5248, 5250, 5261, 5263, 5277, 5279, 5309, 5311, 5334, 5336, 13385, 13416, 13443, 13476, 13510, 13545, 13580  
 \Fld@format@code . 5688, 13323, 13325  
 \Fld@getmethodfalse ..... 5501  
 \Fld@getmethodtrue ..... 5503  
 \Fld@height . 5606, 12122, 12138, 12149, 12204, 12221, 12233, 12266, 12283, 12309, 12317, 12601, 12619, 12629, 12685, 12712, 12725, 12760, 12782, 12809, 12819, 12932, 12948, 12968, 13024, 13036, 13072, 13121, 13144, 13176, 13184  
 \Fld@hiddenfalse ..... 5137  
 \Fld@hiddentrue ..... 5138  
 \Fld@invisiblefalse ..... 5133  
 \Fld@invisibletrue ..... 5134  
 \Fld@keystroke@code 5691, 13319, 13321  
 \Fld@listcount ... 12213, 12218, 12229, 12694, 12699, 12713, 12719, 13033, 13041, 13045, 13050, 13061, 13068  
 \Fld@loc ..... 5561  
 \Fld@mappingname . 5591, 5593, 13301, 13303, 13375, 13377  
 \Fld@maxlen . 5454, 5600, 13538  
 \Fld@menulength .... 5450, 5603, 12151, 12155, 12201, 12419, 12420, 12423, 12631, 12635, 12682, 12970, 12974, 13021  
 \Fld@name . 5585, 12118, 12145, 12238, 12305, 12356, 12361, 12372, 12373, 12384, 12385, 12394, 12395, 12403, 12424, 12441, 12449, 12454, 12469, 12478, 12597, 12625, 12730, 12805, 12928, 12964, 13086, 13172, 13296, 13370  
 \Fld@norotatefalse ..... 5150  
 \Fld@norotatetrue ..... 5149  
 \Fld@noviewfalse ..... 5153  
 \Fld@noviewtrue ..... 5154  
 \Fld@nozoomfalse ..... 5146  
 \Fld@nozoomtrue ..... 5145  
 \Fld@onblur@code . 5693, 13339, 13341  
 \Fld@onclick@code ... 5687, 5759, 13434  
 \Fld@onenter@code . 5696, 13351, 13353  
 \Fld@onexit@code . 5697, 13355, 13357  
 \Fld@onfocus@code . 5692, 13335, 13337  
 \Fld@onmousedown@code . 5694, 13343, 13345  
 \Fld@onmouseup@code ... 5695, 13347, 13349  
 \Fld@printfalse ..... 5142  
 \Fld@printtrue ..... 5141  
 \Fld@radiosymbol ... 5463, 5646, 13492  
 \Fld@rotation . 5464, 5676, 13389, 13391, 13419, 13424, 13426, 13446, 13452, 13454, 13480, 13482, 13513, 13519, 13521, 13548, 13553, 13555, 13583, 13588, 13590  
 \Fld@submitflags .... 5216, 5218, 13569  
 \Fld@temp 5649, 5651, 5654, 5655, 5664, 5665  
 \Fld@validate@code . 5689, 13327, 13329



\Fld@value	5367, 5374, 5376, 5640, 12120, 12135, 12147, 12185, 12186, 12599, 12615, 12627, 12666, 12667, 12930, 12946, 12966, 13005, 13006, 13536
\Fld@width	.. 5596, 12121, 12134, 12138, 12148, 12184, 12195, 12197, 12221, 12233, 12253, 12265, 12273, 12282, 12296, 12308, 12314, 12317, 12600, 12614, 12619, 12628, 12665, 12676, 12678, 12712, 12725, 12746, 12759, 12767, 12781, 12795, 12808, 12815, 12819, 12931, 12945, 12948, 12967, 13004, 13015, 13017, 13036, 13072, 13103, 13120, 13128, 13143, 13157, 13175, 13182, 13184
\float@caption	..... 7186, 7246
\float@makebox	..... 7248, 7249
\floatingpenalty	..... 7086
\flq	..... 649
\flqq	..... 647
\fmtname	..... 7
\fmtversion	..... 7
\fontencoding	545, 549, 584, 12581
\fontfamily	..... 585, 12580
\fontseries	..... 586, 6915, 12582
\fontshape	..... 587, 4472, 12583
\fontsize	..... 588
\footins	..... 7080
\footnote	..... 5003
\footnoteautorefname	3076, 3094, 3112, 3130, 3148, 3166, 3184, 3205, 3208, 3242, 3260, 8355, 8359
\footnotesep	..... 7084, 7091
\footnotesize	..... 617, 7082
\footnotetext	..... 7042
\footref	..... 7110, 7111
\Form	..... 5465
\Form@action	5475, 12348, 13567
\Form@boolkey	..... 5469
\Form@htmlfalse	.... 5468, 5487
\Form@htmltrue	..... 5480
\Form@method	5499, 5507, 12348
\frq	..... 650
\frqq	..... 648
\futurelet	..... 702, 1600
\FV@SetLineNo	..... 6629
\FV@StepLineNo	6628, 6630, 6631
<b>G</b>	
\G	... 14553, 14579, 14598, 15179, 15181, 15183, 15185, 15187, 15189, 15190, 15192, 15194, 15196, 15198, 15200, 15202
\g@addto@macro	..... 6122, 6273, 7318, 7592, 9026, 10435, 10723, 11293, 11379, 11441, 11743, 11931
\G@refundefinedtrue	. 4798, 7418, 7441, 8127, 8147, 8164, 8281
\gaf	..... 16591
\Gauge	..... 5775
\GenericError	..... 690, 3680
\GenericInfo	..... 692, 3678
\GenericWarning	. 283, 691, 3679
\getpagerefnumber	..... 6743
\getrefbykeydefault	. 6699, 6700
\gexmode	... 10466, 10467, 10555
\ghayn	..... 16567
\Gin@setfile	..... 7772, 7773
\glossary	..... 656
\glq	..... 645
\glqq	..... 643
\Greeknumeral	..... 1098
\greeknumeral	..... 1097
\grq	..... 646
\grqq	..... 644
\guill@spacing	..... 1027
\guillemotleft	. 1067, 14322, 14502, 14690, 16395
\guillemotright	1068, 14353, 14503, 14722, 16396
\guilsinglleft	14253, 14504, 16101, 16397
\guilsinglright	14255, 14505, 16103, 16398
<b>H</b>	
\H	... 14549, 14581, 14600, 14614, 15029, 15031, 15093, 15095, 15893, 15895
\h	3263, 16423, 16428, 16433, 16438, 16443, 16448, 16453, 16458, 16463, 16468, 16473, 16478, 16483, 16488, 16493, 16498, 16503, 16508, 16513, 16518, 16523, 16528, 16533, 16538
\H@@footnotemark	. 6971, 6988, 7115, 7122, 7134, 7145
\H@@footnotetext	... 6970, 6980, 7007, 7064, 7123, 7137, 7145
\H@@mpfootnotetext	. 6978, 6990, 6992
\H@definecounter	... 7677, 7679
\H@endeqnarray	... 6828, 6847
\H@endequation	... 6791, 6823
\H@endsubeqnarray	. 6857, 6869
\H@eqnarray	..... 6827, 6832
\H@equation	..... 6790, 6814
\H@item	. 6465, 6471, 7326, 7351
\H@newctr	..... 7682, 7684
\H@old@part	..... 14037, 14048
\H@old@schapter	... 14007, 14016
\H@old@ssect	14058, 14069, 14078
\H@old@spart	.... 14050, 14056
\H@old@ssect	..... 13993, 13998
\H@refstepcounter	... 6480, 6490, 6630, 6754, 6767, 6813, 6928, 7181, 7943, 7996
\H@seteqlabel	..... 7713, 7715
\H@subeqnarray	.... 6856, 6860
\ha	..... 16575
\Haa	..... 16554
\halign	..... 665
\hamza	..... 16542
\HAR@checkcitations	..... 7506
\HAR@citetoaux	..... 7462
\HAR@tempa	. 7507, 7508, 7509, 7510, 7511, 7512
\harvardcite	..... 7456, 7493
\harvarditem	..... 7481
\hbox	..... 1869, 1875, 1881, 2453, 3429, 3435, 4948, 4950, 5597, 5796, 5797, 5798, 5799, 7446, 7577, 8553, 9117, 9193, 9203, 9273, 9287, 9310, 9325, 9348, 9363, 9632, 9649, 10631, 10978, 10989, 11583, 11593, 11858, 11873, 12496, 12947, 13035, 13071, 13101, 13129, 13158, 13183, 13985
\hc@currentHref	..... 7197
\HCode	12348, 12350, 12361, 12370, 12382, 12390, 12392, 12423, 12429, 12434, 12439, 12453, 12458, 12462, 12465, 12474
\headerps@out	6374, 11283, 11294, 11366, 11380, 11433, 11442, 11455, 11469, 11508, 11626, 11744, 11932
\hfill	5796, 5797, 5798, 5799, 7337, 7370
\Hfootnoteautorefname	... 8355
\hhyperref	..... 5008
\hoffset	..... 7578
\hphantom	..... 627
\href	. 657, 4660, 5002, 5003, 5968
\href@	..... 4663, 4666, 4671
\href@split	..... 4671, 4672
\hsize	..... 7087
\hskip	1880, 1958, 2494, 2495, 4657, 5802, 12496
\hspace	..... 653, 7496, 7497
\hss	..... 7586, 13990
\ht	..... 5804, 5807, 9201, 9276, 9285, 9292, 9313, 9323, 9330, 9351, 9361, 9368, 10974, 11591, 11871, 12915

\htmladdimg . . . . .	5001	\Hy@@escapeform . 13262, 13275,	\Hy@bookmarkstrue . . . . .	444
\htmladdnormallink . . . . .	5002	13281	\Hy@bookmarkstype . 3449, 3451,	
\htmladdnormallinkfoot . . . . .	5003	\Hy@@SectionAnchor 13980, 13983	7608, 13628	
\htmlref . . . . .	5004	\Hy@@temp 3459, 3461, 5699, 5701	\Hy@boolkey . . . . .	2508, 2601, 2604,
\Huge . . . . .	614	\Hy@@VersionCheck . . . . .	2607, 2628, 2631, 2634, 2665,	
\huge . . . . .	618	\Hy@abspage . . . . .	2668, 2671, 2688, 2692, 2695,	
\Hurl . . . . .	4746, 4748, 4750	6142, 6207, 6323,	2698, 2701, 2704, 2707, 2710,	
\hv@pdf@char 13775, 13840, 13841,		6400	3011, 3014, 3069, 3366, 3369,	
13842, 13843		\Hy@Acrobatmenu . . . . .	3384, 3409, 3412, 3453, 3456,	
\hvtex@buffer 10330, 10334, 10342,		4071, 4112,	3508, 3657, 3929, 3932, 3935,	
10345, 10354, 10358, 10374		9088, 9796, 10291, 11147	3938, 3941, 3944, 3947, 3955,	
\hvtex@gettoken . . . . .	10329, 10343,	\Hy@activeanchorfalse 4543, 8654,	3976, 3979, 6341	
10347, 10356, 10360		9145, 9160, 9239, 9249, 9561,	\Hy@BorderArrayPatch . . . . .	11026,
\hvtex@gettoken@ . . . . .	10330, 10332	10020, 10037, 10108, 10121,	11029, 11292, 11742	
\hvtex@par@dimension . . . . .	10325,	10617, 11531, 11546, 11811,	\Hy@breaklinks@unsupported . . . . .	2676, 10583
10366		11825	\Hy@breaklinksfalse . . . . .	445
\hvtex@par@direction . . . . .	10326,	\Hy@activeanchortrue . . . . .	\Hy@breaklinksunhbox . . . . .	10928,
10369		8650,	10981	
\hvtex@par@duration 10327, 10361		9142, 9156, 9237, 9246, 9557,	\Hy@CatcodeWrapper 4401, 4460,	
\hvtex@par@motion 10328, 10363		10016, 10034, 10106, 10118,	4504, 4533	
\hvtex@param@dimension 10338,		10607, 11528, 11542, 11808,	\Hy@centerwindowfalse . . . . .	446
10367, 10385, 10388		11821	\Hy@chapapp . . . . .	6535, 6543, 6569,
\hvtex@param@direction . . . . .	10339,	\Hy@ActiveCarriageReturn 4579,	14011, 14022, 14104	
10370, 10396, 10404		4582	\Hy@chapterstring . . . . .	6530, 6532,
\hvtex@param@duration . . . . .	10340,	\Hy@AllowHyphens . 4653, 10605,	6535, 6568	
10362, 10409, 10411		10637, 10961	\Hy@CheckOptionValue . . . . .	2552,
\hvtex@param@motion . . . . .	10341,	\Hy@AnchorName . . . . .	2589	
10364, 10385, 10392		4783, 4785,	\Hy@CJKbookmarksfalse . . . . .	447
\hvtex@parse@trans 10314, 10336		4788, 4790, 4812, 4814, 4818,	\Hy@cjkpu . . . . .	1269, 1271, 1292
\hvtex@produce@trans . . . . .	10375,	4823, 4825	\Hy@CleanupFile 4946, 8715, 9733,	
10381		\Hy@appendixstring . 6534, 6543	10185, 11218	
\hvtex@token 10333, 10344, 10350,		\Hy@AtBeginDocument . . . . .	\Hy@colorlink . . . . .	4464,
10357, 10362, 10365, 10368,		378, 1006, 2728, 2788, 2859,	4472, 4476, 8549, 8635, 8708,	
10370		2934, 2990, 3371, 4008, 4044,	8748, 8784, 9111, 9143, 9166,	
\hvtex@trans@code 10318, 10319,		4182, 4188, 4287, 4440, 4530,	9197, 9210, 9238, 9254, 9279,	
10320, 10321, 10322, 10323,		5874, 5987, 6407, 6635, 7453,	9295, 9317, 9334, 9355, 9372,	
10324, 10337, 10383, 10384,		8201, 8348, 8548, 9034, 9644,	9645, 9722, 9761, 9790, 9815,	
10386, 10388, 10390, 10392,		10089, 11468, 11506, 12511,	10107, 10129, 10199, 10223,	
10394, 10396, 10398, 10399,		12512	10256, 10287, 10303, 10635,	
10400, 10401, 10402, 10404		\Hy@AtBeginDocumentHook 379,	10912, 10914, 11529, 11552,	
\hvtex@trans@effect@Blinds 10318		384, 390, 391	11587, 11600, 11809, 11831,	
\hvtex@trans@effect@Box . . . . .	10319	\Hy@AtEndOfPackage . 381, 901,	11866, 11879	
\hvtex@trans@effect@Dissolve . . . . .	10320	2369, 3344, 3352, 3359, 4170,	\Hy@ColorList . . . . .	3513, 3514
\hvtex@trans@effect@Glitter . . . . .	10321	4196, 4202, 4392	\Hy@CounterExists . . . . .	6430, 6443,
\hvtex@trans@effect@R . . . . .	10324	\Hy@AtEndOfPackageHook . 382,	6446	
\hvtex@trans@effect@Split 10322		385, 387, 388	\Hy@currentbookmarklevel 13623,	
\hvtex@trans@effect@Wipe 10323		\Hy@author . . . . .	13633, 13634, 13640, 13647,	
\hvtex@trans@par . . . . .	10357, 10361,	\Hy@babelnormalise . 4761, 4763	13740, 13743, 13748, 13752	
10363, 10366, 10369		\Hy@backout . . . . .	\Hy@defaultdriver . . . . .	4276, 4301,
\hvtex@trans@params . . . . .	10351,	4539, 5926, 5930,	4311, 4322	
10353, 10377		7292	\Hy@DefFormAction . . . . .	5473, 5475
\Hy@boolkey . . . . .	2508, 2509	\Hy@backreffalse 441, 3040, 3062,	\Hy@DefNameKey . . . . .	2581, 3534,
\Hy@@CleanupFile . . . . .	4948, 4950	4194	3586, 3594, 3602, 3606, 3613,	
\Hy@@DefNameKey . . . . .	2582, 2584	\Hy@backreftrue 3033, 3037, 3059	3620, 3627, 3634, 3638, 3643,	
		\Hy@BeginAnnot 9674, 9690, 9731,	3650, 3964	
		9768, 9797	\Hy@DEST . . . . .	10929, 10993
		\Hy@bibcite . . . . .		
		7315, 7319		
		\Hy@bookmarksdepth 3414, 3419,		
		3431, 3437, 13617		
		\Hy@bookmarksnumberedfalse . . . . .		
		442		
		\Hy@bookmarksopenfalse . . . . .		
		443		

\Hy@DestName . . . . .	8596, 8603	9334, 9359, 9372, 9654, 9682,	\Hy@FormObjects .	12549, 12825,
\Hy@DisableOption . . . . .	2538,	10107, 10180, 10199, 10223,		12879, 12889, 13199, 13249
	4064, 4065, 4066, 4068, 4175,	10256, 10287, 10303, 10662,	\Hy@Gin@setfile . . . . .	7772, 7774
	4201, 4338, 4339, 4340, 4341,	10921, 11529, 11568, 11594,	\Hy@GlobalStepCount	479, 6207,
	4342, 4343, 4344, 4345, 4346,	11602, 11809, 11845, 11870,		6599, 6622, 7568, 7985, 8036
	4347, 4348, 4349, 4350, 4351,	11879	\Hy@gttemp . . . . .	816, 817, 4134,
	4352, 4353, 4354, 4355, 4400,	\Hy@EndWrap .		4140, 4142, 5371, 5372, 5376,
	4453, 4481, 4482, 4541, 4542,	4402, 4404, 4405,		5377, 5388, 5402, 8428, 8430,
	5878, 5879, 5880, 5881, 5882,	4438		13314, 13316
	5883, 5884, 5885, 5886, 5887,	\Hy@Error 277, 293, 299, 313, 2732,	\Hy@href . . . . .	4663, 4665
	5888, 5889, 5890, 5891, 5892,	2845, 2870, 2903, 2941, 2948,	\Hy@href@nextactionraw . .	4700,
	5893, 5894, 5895, 5896, 5897,	2959, 2965, 4096, 4714, 4879,		4723, 4725, 4726, 4728, 4733,
	5898, 5899, 5900, 5901, 6080,	5174, 5298, 5494, 5526, 5704,		4737, 4739, 8704, 8744, 8780,
	6275, 7149, 7777, 7875, 7876,	5753, 12244, 12290, 12737,		9107, 9718, 9757, 9786, 9806,
	8473, 8576, 8944, 8945, 8946,	12789, 13093, 13151		10144, 10212, 10276, 11243,
	8947, 8948, 8949, 8950, 8951,	\Hy@escapeform . .		11272
	8952, 8953, 9083, 9400, 9401,	12232, 12256, 12274, 12297,	\Hy@href@page	4678, 4680, 4684,
	9402, 9403, 9404, 9405, 9406,	12316, 12617, 12702, 12723,		4685, 4687, 4694, 4697, 8740,
	9407, 9408, 9409, 9672, 9858,	12749, 12769, 12796, 12817,		9752, 11239
	9859, 9860, 9861, 9862, 9863,	12952, 13044, 13075, 13107,	\Hy@hyperfootnotesfalse . .	6967
	9864, 9865, 9866, 9867, 9949,	13131, 13159, 13188, 13256,	\Hy@hyperfootnotesttrue . . .	451
	10091, 10535, 10536, 10537,	13286, 13293	\Hy@hyperindextrue . . . . .	452
	10538, 10539, 10540, 10541,	\Hy@escapeformfalse . . . . .		452
	10542, 10543, 10544, 10802,	448	\Hy@hypertextnamesfalse . .	2373
	10803, 10804, 10805, 10806,	\Hy@escapestring . .	\Hy@hypertextnamestrue . . .	453
	10807, 10808, 10809, 10810,	13253, 13321,	\Hy@IfStringEndsWith	4914, 4926
	10811, 11359, 11652, 11653,	13325, 13329, 13333, 13337,	\Hy@imPLICITtrue . . . . .	454
	11654, 11655, 11656, 11657,	13341, 13345, 13349, 13353,	\Hy@Info . .	280, 2527, 4145, 4147,
	11658, 11659, 11660, 11661	13357, 13401, 13434, 13535,		4150, 4152, 4155, 4157, 4160,
\Hy@displaydoctitlefalse . . .	476	13536, 13567		4162, 4165, 4167, 4385, 4391,
\Hy@DistillerDestFix	7554, 10548,	\Hy@EveryPageAnchor		4469, 4474, 4478, 4622, 4649,
	10550	7553, 7593		5081, 5835, 5837, 5840, 5842,
\Hy@draftfalse . . . . .	406	\Hy@EveryPageBoxHook . . . . .		5845, 5847, 5850, 5852, 5855,
\Hy@drafttrue . . . . .	407			5857, 5860, 5862, 5865, 5867,
\Hy@driver	481, 2681, 2856, 2868,	. . . . .		7393, 7454, 7613, 7630
	2878, 2883, 2888, 2901, 2911,	6106, 6110, 6114, 7592,	\Hy@InfoNoLine	281, 4177, 4179,
	2916, 2921, 2928, 2931, 2957,	10435, 10723		11788
	2973, 2980, 2985, 2995, 4204,	\Hy@EveryPageHook .	\Hy@LastPage . . . . .	4085
	4207, 4211, 4214, 4218, 4221,	6105, 6109,		13629, 13631, 13642,
	4223, 4227, 4233, 4237, 4240,	6273, 9026		13647, 13648, 13649, 13680
	4244, 4249, 4253, 4256, 4260,	\Hy@ExchangeLeftParenthesis . .	\Hy@levelcheck . . .	13630, 13645
	4263, 4265, 4269, 4274, 4278,	. . . . .	\Hy@linkcounter .	483, 485, 6599,
	4281, 4284, 4295, 4298, 4301,	8404, 8410		6600, 6622, 6623, 7716, 7985,
	4310, 4311, 4322, 4324, 4330,	\Hy@ExchangeRightParenthesis .		7986, 7990, 8036, 8037, 8041
	4332, 4334	. . . . .	\Hy@linkfileprefix . . .	3484, 4898,
\Hy@dth@currentHref	6930, 6954	8414, 8420		9183, 9985, 11572, 11848
\Hy@dviErrMsg	2823, 2825, 2828,	\Hy@false .	\Hy@LinkMath . . .	10626, 10628,
	2834, 2847	2417, 2519, 3025, 3061,		10633, 10665, 10953, 10955,
\Hy@dviModetrue . . .	2832, 2837	5523		10960, 10962, 10968, 10970
\Hy@dviPDFmxOutlineOpentru		\Hy@figuresfalse . . . . .	\Hy@linktoc . . .	2636, 2638, 2646,
	4362, 4369	449		2648, 2658, 7649
\Hy@EndAnnot	9680, 9725, 9764,	\Hy@finalfalse . . . . .	\Hy@linktoc@all . . . . .	2644
	9793, 9818	407	\Hy@linktoc@none . . . . .	2641
\Hy@endcolorlink . . . . .		\Hy@finaltrue . . . . .	\Hy@linktoc@page . . .	2636, 2643,
	4468, 4473, 4477, 8558,	406		2646
	8641, 9143, 9180, 9204, 9212,	\Hy@FirstPage . . . . .	\Hy@linktoc@section .	2638, 2642,
	9238, 9262, 9283, 9297, 9321,	4082		2648
		\Hy@FirstPageHook . . . . .	\Hy@linktocpagefalse . . . . .	455
		6107, 6120, 6122, 6372, 6373,		
		11293, 11379, 11441, 11743,		
		11931		
		\Hy@fitwindowfalse . . . . .		
		450		
		\Hy@FixNotFirstPage		
		9115, 9116,		
		9122		
		\Hy@float@caption . . .		
		7187, 7237,		
		7239		
		\Hy@float@currentHref		
		7240, 7242,		
		7244, 7252, 7255, 7257		
		\Hy@footnote@currentHref .		
		5873,		
		6995, 7000, 7010, 7015, 7018,		
		7030, 7032, 7055, 7096, 7099		

\Hy@localanchornamefalse . . . 456	\Hy@pagecounter . 484, 486, 6661, 7568, 7570	\Hy@pstringURI . . . . . 8679, 8700, 9769, 9782, 10128, 10140, 10204, 10208, 11193, 11205
\Hy@LT@currentHref . 6769, 6780	\Hy@pageheight . . . . 4022, 11381, 11470	\Hy@PutCatalog 6269, <u>6277</u> , 6389
\Hy@LT@footnotetext 7054, 7063	\Hy@pagelabelsfalse . . . . . 6129	\Hy@raisedlink . . . . . 2441, 6523, 6705, 6726, 6727, 6728, 6731, 6781, 6820, 6823, 6951, 6998, 7013, 7068, 7094, 7225, 7303, 7327, 7332, 7352, 7692, 7717, 11281, 11364, 11622, 11786, 13609, 13987, 14012, 14023, 14053, 14105
\Hy@Make@anchor . . . 7690, 7696, 7702	\Hy@pagelabelstrue . . . . . 463	\Hy@raiselinksfalse . . . 467, 7455
\Hy@make@df@tag@@ 7694, 7709	\Hy@param 6567, 6568, 6569, 6596, 6600	\Hy@RemoveDurPageAttr . 8983, <u>8996</u>
\Hy@make@df@tag@@@ 7700, 7710	\Hy@pdfafalse . . . . . 477	\Hy@RemoveHidPageAttr . 9006, <u>9018</u>
\Hy@MakeCurrentHref <u>6610</u> , 6623	\Hy@pdfencoding@pdfdoc . 2783	\Hy@RemovePercentCr . . . 4595, 4599, 4604
\Hy@MakeCurrentHrefAuto . . . . . <u>6621</u> , 6703, 7691, 13608, 13995, 14011, 14022, 14052, 14066, 14104	\Hy@pdfmarkerrorfalse . . 10892	\Hy@RemoveTransPageAttr 8958, <u>8972</u>
\Hy@MakeRemoteAction . . 4683, 8718, 9736, 11221	\Hy@pdfmarkerrortrue . . . 11059, 11068	\Hy@reserved@a 4828, 6830, 6859, 12355, 12405, 12468
\Hy@maketitle@end . . 7126, 7131, 7133	\Hy@pdfminorversion 8440, 8446, 8449, 8457, 8462, 8464, 8467, 8471	\Hy@RestoreCatcodes <u>205</u> , 4028, 4337
\Hy@maketitle@optarg 7124, 7129	\Hy@pdfpagehiddenfalse . . . 464	\Hy@RestoreLastskip . <u>2462</u> , 8597, 9146, 9161, 9240, 9250, 9548, 10021, 10038, 10109, 10122, 10598, 10618, 11532, 11547, 11812, 11826
\Hy@Match . 328, 330, 3002, 3494, 3543, 3560, 3903, 4728, 5617	\Hy@pdfstringdef . <u>815</u> , 5346, 5354	\Hy@RestoreSavedSpaceFactor . . 2437, 9191, 9271, 9308, 9346, 11581, 11856
\Hy@MaybeStopNow . 2924, 4032	\Hy@pdfstringfalse . . . . 465, 5903	\Hy@RestoreSpaceFactor . . . . . 2428, 2454, 2459, 9190, 9198, 9205, 9270, 9280, 9288, 9307, 9318, 9326, 9345, 9356, 9364, 10632, 10668, 10959, 10967, 10991, 11580, 11588, 11595, 11855, 11867, 11874, 11908, 11912
\Hy@menubartrue . . . . . 457	\Hy@pdfstringtrue . . . . 669, 5875	\Hy@ReturnAfterElseFi <u>487</u> , 4583
\Hy@Message . . . . . 282, 2858, 2933, 4181, 4286, 4330, 10041, 10045, 10048, 10051, 10054, 10057, 10060, 10063, 12115, 12325, 12328, 12331, 12334, 12337, 12340, 12342, 12343, 12352, 12489, 12884	\Hy@pdfversion 2810, 2821, 5348, 8462, 8464, 8468, 8471, 13308	\Hy@ReturnAfterElseFiFiEnd . . . . . 491, 1843
\Hy@naturalnamesfalse . . . . 458	\Hy@plainpagesfalse . . . . . 466	\Hy@ReturnAfterFi <u>487</u> , 507, 2021, 4587, 4603, 7887, 7923, 8409, 8419, 13280
\Hy@nestingfalse . . . . . 459	\Hy@PrevPage . . . . . 4079	\Hy@ReturnAfterFiFiEnd . . 490, 1835, 1849, 1927, 1934
\Hy@newline@author . . . . . 6099	\Hy@ps@CR <u>11423</u> , 11430, 11435, 11436, 11453, 11474, 11475, 11476, 11482, 11489, 11496, 11503	\Hy@ReturnEnd . . 489, 490, 491, 1855, 1939
\Hy@newline@title . . . . . 6098	\Hy@pstringB . . . . . 8860, 8865, 9898, 9910, 10865, 10881, 11715, 11731	\Hy@ReturnEnd . . 489, 490, 491, 1855, 1939
\Hy@newwindowfalse . . . . . 461	\Hy@pstringD . 8717, 8742, 9735, 9754, 11220, 11241	\Hy@safe@activesfalse <u>492</u> , 4494, 4499, 4842, 8270
\Hy@newwindowsetfalse 460, 3952	\Hy@pstringdef . . . . . <u>8375</u> , 8595, 8619, 8679, 8716, 8717, 8754, 8755, 8860, 9499, 9699, 9734, 9735, 9769, 9898, 10128, 10204, 10263, 10264, 10865, 11057, 11066, 11193, 11219, 11220, 11251, 11252, 11715, 13279, 13898, 13914	\Hy@safe@activetrue . <u>492</u> , 4123, 4492, 4497, 4575, 4612, 4620,
\Hy@newwindowsettrue . . . 3954, 4702	\Hy@pstringDest . . . . . 8595, 8596, 9499, 9546, 11057, 11058, 11062, 11066, 11067, 11071	
\Hy@newwindowtrue . . . . . 4703	\Hy@pstringF . . . . . 8714, 8715, 8716, 8736, 8754, 8773, 8778, 9732, 9733, 9734, 9749, 10184, 10185, 10189, 10263, 10270, 10274, 11217, 11218, 11219, 11236, 11251, 11267, 11270	
\Hy@next 6223, 6233, 6238, 14021, 14030, 14033	\Hy@pstringName . 13898, 13899, 13914, 13928	
\Hy@nextfalse . . . . . 4114, 7787	\Hy@pstringP . 8755, 8778, 10264, 10274, 11252, 11270	
\Hy@NextPage . . . . . 4076		
\Hy@nexttrue . 4115, 4116, 4117, 7788, 7789, 7790		
\Hy@number . . . 3872, 3876, 3884		
\Hy@numberline . . 13624, 13661, 13662, 13663, 13664		
\Hy@ObsoletePaperOption 2610, 2618		
\Hy@ocgcolor . . 8552, 8566, 9648, 9662		
\Hy@ocgcolorlinksfalse . . . . 4448		
\Hy@org@chapter . . 14019, 14034		
\Hy@OrgMakeLabel 11900, 11907		
\Hy@OutlineName . 13899, 13954		
\Hy@OutlineRerunCheck . <u>13764</u> , 13863, 13945		
\Hy@pageanchortrue . . . . . 462		

4648, 4765, 4834, 8177, 8259,  
13856, 13886

\Hy@saved@currentHref . . . 7028,  
7031

\Hy@saved@footnotemark . . 7120,  
7135

\Hy@saved@footnotetext . . 7121,  
7138

\Hy@saved@hook . . . . 6084, 6094

\Hy@saved@refstepcounter . 6507,  
6755

\Hy@SavedSpaceFactor . . . 2424,  
2426, 2431, 2432, 2438, 11905

\Hy@SaveLastskip . . . 2462, 8593,  
9134, 9149, 9231, 9243, 9496,  
10008, 10024, 10099, 10112,  
10588, 10602, 11521, 11535,  
11801, 11815

\Hy@SaveSavedSpaceFactor . . . .  
2436, 9189, 9269, 9306, 9344,  
11579, 11854

\Hy@SaveSpaceFactor . . . . 2425,  
2445, 2456, 9188, 9200, 9268,  
9282, 9305, 9320, 9343, 9358,  
10630, 10666, 10951, 10963,  
10971, 11578, 11590, 11853,  
11869, 11903, 11910

\Hy@scanauthor . . . . . 6054, 6059

\Hy@scanoptauthor . . . 6054, 6055

\Hy@scanopttitle . . . . 6045, 6046

\Hy@scantitle . . . . . 6045, 6050

\Hy@secnum@part . . 14040, 14042,  
14045

\Hy@SectionAnchorHref . . . . 667,  
13978, 14000, 14071

\Hy@SectionHShift . . 13977, 13986,  
13996, 14067

\Hy@seminarslidesfalse . . . 7935

\Hy@seminarslidetrue . . . . 7933

\Hy@setbreaklinks . . . 2673, 2677,  
2689, 8436, 9489

\Hy@SetCatcodes . . 181, 231, 4030

\Hy@SetNewWindow . . . . .  
. . . . 3958, 8738, 8775, 9756,  
10271, 11235, 11266

\Hy@setouterhbox . . 10927, 10958

\Hy@setpagesizetrue . . . . . 468

\Hy@setpdfborder . . . . .  
3576, 8625, 8684, 8722, 8759,  
9091, 9710, 9742, 9775, 9808,  
10148, 10169, 10192, 10216,  
10248, 10280, 10296

\Hy@setpdfversiontrue . . . . 2809

\Hy@setref@link . . . . . 8133, 8136

\Hy@slidetitle . . 7962, 7964, 7971,  
7979, 7989, 8013, 8015, 8022,  
8030, 8040

\Hy@StartlinkName . . 8623, 8637

\Hy@StepCount . . 478, 6184, 12155,  
12218, 12420, 12635, 12699,  
12974, 13041, 13744, 13749,  
13825

\Hy@StringLocalhost . . 4944, 4945,  
4960

\Hy@temp . . . . . 697,  
704, 819, 891, 994, 997, 1005,  
1006, 2616, 2621, 2622, 2623,  
2624, 2625, 2626, 3458, 3467,  
3468, 3469, 3470, 3471, 3472,  
3473, 3514, 3515, 3516, 3519,  
3521, 3524, 3541, 3554, 3558,  
3573, 3735, 3736, 3739, 3742,  
3745, 3770, 3778, 3779, 3780,  
3781, 3782, 3783, 3784, 3785,  
3786, 3950, 3951, 4103, 4107,  
4108, 4109, 4110, 4209, 4211,  
4216, 4218, 4221, 4235, 4237,  
4242, 4244, 4251, 4253, 4258,  
4260, 4263, 4323, 4324, 5071,  
5075, 5076, 5087, 5171, 5172,  
5173, 5175, 5179, 5491, 5492,  
5493, 5495, 5499, 5500, 5615,  
5627, 5698, 5714, 5715, 5716,  
5717, 5718, 5719, 5720, 5721,  
5723, 5729, 5735, 5736, 5737,  
5738, 5739, 5740, 5741, 5742,  
5743, 5744, 5745, 6164, 6167,  
6176, 6178, 6182, 6186, 6230,  
6232, 6655, 6658, 6661, 6667,  
6793, 6799, 7104, 7110, 7884,  
7885, 8875, 8904, 8906, 9419,  
9424, 9430, 9434, 9437, 9442,  
9473, 9475, 9870, 9913, 9915,  
10765, 10768, 10772, 10773,  
10779, 10780, 10786, 10814,  
10819, 10825, 10829, 10832,  
10837, 10870, 10872, 10933,  
10934, 10938, 11023, 11024,  
11032, 11033, 11137, 11138,  
11664, 11669, 11675, 11679,  
11682, 11687, 11720, 11722,  
13261, 13262, 13896, 13902,  
13910, 13925

\Hy@temp@A . . 728, 729, 1827, 1829,  
1840, 1842, 1847, 1848, 1851,  
3771, 3773, 7806, 7807, 7808,  
7815, 7843, 7844, 7845, 7854

\Hy@temp@B . . . . . 1828, 1829

\Hy@tempa . . 2510, 2512, 2514, 2515,  
2517, 2519, 2521, 2524, 2527,  
2528, 3021, 3022, 3023, 3025,  
3026, 3028, 3029, 3031, 3035,  
3039, 3050, 3052, 3054, 3055,  
3057, 3061, 4581, 4582, 4593,  
4597, 4766, 4770, 4833, 4836,  
4845, 4847, 5478, 5479, 5519,  
5520, 5523, 5527, 6213, 6215,  
6253, 6255, 6400, 6402, 6877,  
6879, 6880, 6883, 6884, 6885,  
7182, 7187, 7192, 7607, 7608,  
7626, 7627, 7633, 7949, 7950,  
8001, 8002, 9167, 9168, 9989,  
10137, 10138, 11553, 11554,  
11832, 11833, 13627, 13628,  
13651, 13653, 13672, 13673,  
13681, 13705, 13707, 13708,  
13710, 13711, 14094, 14119,  
14124, 14127, 14130

\Hy@tempb . . 6214, 6215, 6254, 6255,  
13652, 13653, 13681

\Hy@tempcolor . . . 10644, 10646,  
10659, 10735, 10737, 10749

\Hy@TempPageAnchor . . . 7558,  
7565, 7569, 7585

\Hy@Test@Alph . . . . . 6556, 6579

\Hy@Test@alph . . . . . 6547, 6575

\Hy@testname . . . . . 8611, 8612,  
8617, 8619, 8620, 8634, 9691,  
9692, 9697, 9699, 9701, 9717,  
10156, 10157, 10162, 10166,  
10235, 10236, 10241, 10245,  
10740, 10741, 10746, 10757

\Hy@texhtfalse . . . . . 469

\Hy@texhttrue . . . . . 2853, 4205

\Hy@title . . . . . 6047, 6051

\Hy@toclevel . . . 7618, 7622, 7635

\Hy@toolbartrue . . . . . 470

\Hy@true . . 2416, 2515, 2517, 3055,  
3057, 5520

\Hy@typexmlfalse . . . . . 471

\Hy@undefinedname . . . . . 8608,  
8615, 8617, 9687, 9695, 9697,  
10125, 10160, 10162, 10239,  
10241, 10731, 10744, 10746

\Hy@unicodefalse . . 472, 795, 805,  
2739, 2740, 2748, 3712, 3718,  
6657, 7562, 13310

\Hy@unicodetrue . . 2740, 6334, 6348

\Hy@useHidKeyfalse . . . . . 3506

\Hy@useHidKeytrue . . . . . 3510

\Hy@UseMaketitleInfos . . . . .  
. . . . 6100, 8917, 9381, 9830,  
10524, 10763, 11633

\Hy@UseMaketitleString . . 6081,  
6101, 6102

\Hy@UseNameKey . . . . .  
. . . . . 2594, 8882, 8883,  
8884, 8885, 8886, 8887, 8888,  
8889, 8908, 9449, 9450, 9451,  
9452, 9453, 9454, 9455, 9456,  
9477, 9877, 9878, 9879, 9880,



9881, 9882, 9883, 9884, 9917,  
 10496, 10497, 10498, 10499,  
 10500, 10501, 10502, 10503,  
 10844, 10845, 10846, 10847,  
 10848, 10849, 10850, 10851,  
 10874, 11694, 11695, 11696,  
 11697, 11698, 11699, 11700,  
 11701, 11724  
 \Hy@usetitlefalse . . . . . 473  
 \Hy@varioref@refstepcounter 6746,  
 6753  
 \Hy@varioref@undefined . . . 6737,  
 6741, 8265  
 \Hy@VerboseAnchor . 4645, 8594,  
 9135, 9150, 9232, 9244, 9497,  
 10009, 10025, 10100, 10113,  
 10589, 10603, 11522, 11536,  
 11802, 11816  
 \Hy@verbosefalse . . . . . 474  
 \Hy@VerboseGlobalTemp . . 4621,  
 4622, 4623, 4624, 4628  
 \Hy@VerboseLinkInfo 4628, 4629,  
 4632, 4639  
 \Hy@VerboseLinkStart . . . . .  
 4617, 8657, 8667, 9165, 9217,  
 9253, 9265, 9689, 9965, 9988,  
 10127, 10228, 10621, 10733,  
 11551, 11607, 11830, 11885  
 \Hy@VerboseLinkStop 4633, 8642  
 \Hy@VersionCheck . . . . 290, 4334  
 \Hy@VersionChecked . . 289, 322,  
 4331, 4333  
 \Hy@vt@PutCatalog . 6306, 6308  
 \Hy@VTeXversion . . . 6286, 6298,  
 10188, 10307, 10443, 13777  
 \Hy@WarnHTMLFieldOption . .  
 . . 5545, 5578, 5581, 5731  
 \Hy@Warning . . . . . 278, 353,  
 514, 1767, 2532, 2547, 2572,  
 2652, 2767, 2772, 3375, 3427,  
 3497, 3549, 3568, 3747, 3794,  
 3802, 3913, 4444, 4689, 4732,  
 4848, 4970, 5128, 5483, 5546,  
 5620, 6344, 6359, 7599, 8246,  
 8295, 8613, 9530, 9534, 9693,  
 10158, 10237, 10742, 11060,  
 11069, 13636, 13654  
 \Hy@WarningNoLine . 279, 2611,  
 2679, 2793, 3478, 3530, 3663,  
 3763, 4015, 4062, 4213, 4222,  
 4239, 4255, 4264, 6028, 6130,  
 6300, 6414, 6642, 7609, 7764,  
 10900  
 \Hy@WarningPageBorderColor .  
 . . . . 3527, 3529, 3531  
 \Hy@WarningPageColor . . . 3475,  
 3477, 3479  
 \Hy@WarnOptionDisabled . 2544,  
 2546  
 \Hy@WarnOptionValue . . . 2525,  
 2531, 3042, 3064  
 \Hy@windowuitrue . . . . . 475  
 \Hy@wrapper@babel . 4121, 4139  
 \Hy@WrapperDef . . . . 4131, 8589,  
 9133, 9148, 9230, 9242, 9495,  
 10007, 10023, 10098, 10111,  
 10587, 10601, 11520, 11534,  
 11800, 11814  
 \Hy@writebookmark . 2421, 7619,  
 7969, 7977, 7987, 8020, 8028,  
 8038, 13613, 13755  
 \HyC@cmd . . . . . 87, 109, 122  
 \HyC@check . . . . . 68, 71, 74  
 \HyC@checkcommand . . 50, 57, 59  
 \HyC@checkFailed . . . . 146, 157  
 \HyC@checkItem . . . 132, 133, 134,  
 135, 138  
 \HyC@checklong . . . . . 45, 53  
 \HyC@checkOk . . . . . 144, 154  
 \HyC@checkPackage . . 12, 16, 18  
 \HyC@cmd 62, 75, 87, 95, 118, 131  
 \HyC@date . . . . 11, 15, 23, 29, 31  
 \HyC@DeclareRobustCommand .  
 . . . . . 114  
 \HyC@def . . . . . 125  
 \HyC@defcmd . . . . . 47, 54, 93  
 \HyC@doCheck . . . . . 99, 130  
 \HyC@edef . . . . . 125  
 \HyC@getDate . . . . . 12, 14  
 \HyC@meaning . . . . . 152, 160  
 \HyC@nc@default . . . . 103, 105  
 \HyC@nc@noopt 88, 91, 103, 112,  
 123, 127  
 \HyC@nc@opt . . . . . 88, 101, 123  
 \HyC@newcommand . . . . . 86  
 \HyC@next . . . . . 48, 55, 60, 83  
 \HyC@noValue . 80, 81, 82, 85, 139  
 \HyC@optcmd . . . . . 107, 111  
 \HyC@org@cmd . . . . . 76  
 \HyC@org@optcmd . . . . 80, 111  
 \HyC@org@robustcmd . . 81, 120  
 \HyC@org@robustoptcmd . . 82  
 \HyC@package 10, 22, 28, 34, 37, 38  
 \HyC@param . . . . . 78, 96, 102  
 \HyC@robustcmd . . 115, 120, 121,  
 122  
 \HyC@star . . . . . 67, 70, 94  
 \HyC@string . . . 131, 152, 155, 158  
 \HyC@Toks . . . 79, 90, 96, 106, 126  
 \HyCal@do . . . . . 508, 512  
 \HyCal@scan . . . . . 499, 503, 527  
 \HyColor@FieldBColor 5679, 5682  
 \HyColor@FieldColor . . . . 5685  
 \HyColor@HyperrefBorderColor .  
 . . . . . 3517  
 \HyColor@HyperrefColor . . 3463  
 \HyColor@UseColor . . 4466, 8555,  
 8566, 9651, 9662  
 \HyField@@AddToFields . 12531,  
 12535  
 \HyField@@PDFChoices . . 5366,  
 5367, 5382  
 \HyField@@SetFlag . . 5061, 5063  
 \HyField@@UseFlag . . 5051, 5053  
 \HyField@AddToFields . . 12501,  
 12530, 12620, 12714, 12727,  
 12753, 12777, 12800, 12821  
 \HyField@AdvanceAnnotCount .  
 12921, 12950, 13046, 13076,  
 13104, 13132, 13160, 13186  
 \HyField@afields . . 12498, 12520,  
 12521, 12523, 12558  
 \HyField@AfterAuxOpen . 12511,  
 12518, 12536  
 \HyField@AnnotCount . . . 12919,  
 12922, 12925  
 \HyField@AuxAddToFields 12510,  
 12515, 12519, 12539  
 \HyField@FlagsAnnot 5221, 5240,  
 5254, 5267, 5283, 5315  
 \HyField@FlagsCheckBox . 5253,  
 12313, 12814, 13181  
 \HyField@FlagsChoice . . . 5314,  
 12194, 12675, 13014  
 \HyField@FlagsPushButton 5239,  
 12252, 12271, 12295, 12745,  
 12765, 12794, 13102, 13126,  
 13156  
 \HyField@FlagsRadioButton 5266,  
 12190, 12671, 13010  
 \HyField@FlagsSubmit . . . 5187,  
 12272, 12766, 13127  
 \HyField@FlagsText 5282, 12133,  
 12613, 12944  
 \HyField@NeedAppearancesfalse  
 . . . . . 5511, 5524  
 \HyField@NeedAppearancetrue  
 . . . . 5514, 5517, 5521  
 \HyField@NewBitsetFlag . . 5019,  
 5022, 5030  
 \HyField@NewFlag . . 5017, 5093,  
 5094, 5095, 5096, 5097, 5098,  
 5099, 5100, 5101, 5102, 5103,  
 5104, 5105, 5106, 5107, 5108,  
 5109, 5110, 5111, 5112, 5117,  
 5118, 5119, 5120, 5121, 5122,  
 5123, 5124, 5125, 5158, 5160,  
 5161, 5163, 5164, 5166, 5167,  
 5168, 5169

\HyField@NewFlagOnly . . . <a href="#">5021</a> , 5159, 5162, 5165	\HyInfo@AddonList . . . <a href="#">3816</a> , <a href="#">3817</a> , 3851, 3858	\HyOrg@float@makebox . . . <a href="#">7248</a> , 7250
\HyField@NewOption <a href="#">5018</a> , <a href="#">5024</a>	\HyInfo@Addons <a href="#">3837</a> , <a href="#">3853</a> , <a href="#">8941</a> , 9855, 10795, 10799	\HyOrg@hyperpage . . . <a href="#">7782</a> , <a href="#">7784</a> , 7785
\HyField@PDFAFlagWarning . . . 5127, 5135, 5139, 5143, 5147, 5151, 5155	\HyInfo@AddonUnsupportedtrue . . . <a href="#">9379</a> , <a href="#">10522</a> , <a href="#">11631</a>	\HyOrg@languageshorthands <a href="#">965</a> , 979, 990, 1000
\HyField@PDFChoices . . . . <a href="#">5339</a> , 12231, 12721, 13070	\HyInfo@do . . . . <a href="#">3791</a> , <a href="#">3818</a> , <a href="#">3841</a>	\HyOrg@make@df@tag@@ . . <a href="#">7707</a>
\HyField@PrintFlags . <a href="#">5068</a> , <a href="#">5214</a> , 5232, 5246, 5259, 5275, 5307, 5332	\HyInfo@GenerateAddons . <a href="#">3835</a> , 8918, 9831, 10764	\HyOrg@make@df@tag@@@ <a href="#">7708</a>
\HyField@SetFlag . . . . <a href="#">5060</a> , <a href="#">5200</a> , 5206, 5211, 5245, 5273	\HyInfo@Key . . . <a href="#">3799</a> , <a href="#">3800</a> , <a href="#">3808</a> , 3813, 3818, 3821, 3828, 3842, 3846	\HyOrg@maketitle . . . <a href="#">7118</a> , <a href="#">7125</a> , 7130
\HyField@SetKeys . . <a href="#">5443</a> , <a href="#">12130</a> , 12161, 12164, 12183, 12240, 12268, 12285, 12310, 12609, 12641, 12644, 12663, 12732, 12762, 12784, 12810, 12940, 12980, 12983, 13002, 13088, 13123, 13146, 13177	\HyInfo@KeyEscaped . <a href="#">3798</a> , <a href="#">3799</a>	\HyOrg@subequations <a href="#">6894</a> , <a href="#">6901</a>
\HyField@TheAnnotCount <a href="#">12924</a> , 12954, 12959, 13051, 13063, 13078, 13083, 13109, 13115, 13134, 13139, 13162, 13167, 13190, 13195	\HyInfo@trapped@false <a href="#">3739</a> , <a href="#">3758</a>	\HyOrg@title . . . <a href="#">6043</a> , <a href="#">6048</a> , <a href="#">6052</a>
\HyField@UseFlag . . . <a href="#">5050</a> , <a href="#">5191</a> , 5192, 5193, 5194, 5195, 5196, 5197, 5198, 5201, 5202, 5203, 5204, 5207, 5208, 5209, 5212, 5223, 5224, 5225, 5226, 5227, 5228, 5229, 5230, 5231, 5242, 5243, 5244, 5256, 5257, 5258, 5269, 5270, 5271, 5272, 5274, 5285, 5286, 5287, 5288, 5289, 5290, 5291, 5292, 5303, 5306, 5317, 5318, 5319, 5320, 5322, 5324, 5325, 5328, 5331	\HyInfo@trapped@true <a href="#">3736</a> , <a href="#">3757</a>	\HyOrg@url . . . . . <a href="#">4745</a>
\HyInd@@@wrindex . . <a href="#">7802</a> , <a href="#">7805</a> , 7836, 7842	\HyInfo@trapped@unknown <a href="#">3742</a> , 3759	\HyPat@NonNegativeReal . <a href="#">3544</a> , 3545, 3546, 3547, 3563, 3565, 3894, 3904, 3905, 3906, 3908, 3909, 3910
\HyInd@@hyperpage . <a href="#">7882</a> , <a href="#">7892</a>	\HyInfo@TrappedUnsupported . . . . . <a href="#">3760</a> , <a href="#">3764</a> , <a href="#">9382</a> , <a href="#">10525</a> , 11634	\HyPat@ObjRef <a href="#">4729</a> , <a href="#">4730</a> , <a href="#">4743</a> , 8437, 9490, 10584
\HyInd@@wrindex . . . <a href="#">7797</a> , <a href="#">7798</a>	\HyInfo@Value . . . . . <a href="#">3812</a> , <a href="#">3814</a>	\hyper@@anchor <a href="#">4046</a> , <a href="#">4755</a> , <a href="#">4757</a> , 4788, 4790, 4823, 4825, 4967, 5915, 5931, 5948, 6994, 6999, 7009, 7014, 7066, 7069, 7095, 7223, 7226, 7254, 7558, 7565, 7570, 7968, 7976, 7986, 8019, 8027, 8037
\HyInd@EncapChar . . <a href="#">3072</a> , <a href="#">4025</a> , 7792	\HyLang@addto <a href="#">3276</a> , <a href="#">3292</a> , <a href="#">3310</a> , 3343, 3351	\hyper@@link . . . <a href="#">4615</a> , <a href="#">4673</a> , <a href="#">4778</a> , 4802, 4804, 4828, 7311, 7457, 7458, 7459, 7507, 7509, 7511, 8138, 8153, 8255
\HyInd@hyperpage . . . <a href="#">7879</a> , <a href="#">7881</a> , 7888	\HyLang@afrikaans . . . . . <a href="#">3074</a>	\hyper@@normalise . . <a href="#">4584</a> , <a href="#">4588</a> , 4592
\HyInd@org@wrindex . <a href="#">7796</a> , <a href="#">7800</a> , 7810, 7816, 7818, 7821	\HyLang@DeclareLang <a href="#">3290</a> , <a href="#">3319</a> , 3320, 3321, 3322, 3323, 3324, 3325, 3326, 3327, 3328, 3329, 3330, 3331, 3332, 3333, 3334, 3335, 3336, 3337, 3338, 3339, 3340, 3341	\hyper@@anchor . . . . . . . . . . <a href="#">4994</a> , <a href="#">5918</a> , <a href="#">5933</a> , <a href="#">5998</a> , 6011, 8645, 9133, 9230, 9553, 10023, 10098, 10587, 11520, 11800
\HyInd@pagelink <a href="#">7897</a> , <a href="#">7903</a> , <a href="#">7905</a> , 7908	\HyLang@english . . . . . <a href="#">3092</a>	\hyper@@anchorend . . . . . . . . . . <a href="#">4049</a> , <a href="#">5902</a> , <a href="#">5920</a> , 5935, 5951, 6524, 6707, 6782, 6823, 6842, 6866, 6955, 7305, 7330, 7333, 7353, 7486, 7692, 7718, 8652, 9158, 9248, 9560, 10018, 10120, 10609, 11544, 11823, 13609, 13756, 13988, 14013, 14024, 14054, 14106
\HyInd@ParenLeft . . . <a href="#">7779</a> , <a href="#">7807</a> , 7844	\HyLang@french . . . . . <a href="#">3110</a>	\hyper@@anchorstart . . . . . . . . . . <a href="#">4048</a> , <a href="#">5902</a> , <a href="#">5919</a> , 5934, 5950, 6524, 6706, 6782, 6820, 6842, 6866, 6952, 7303, 7328, 7333, 7353, 7486, 7692, 7718, 8648, 9148, 9242, 9556, 10007, 10111, 10601, 11534, 11814, 13609, 13756, 13988, 14013, 14024, 14054, 14106
\HyInd@ParenRight . . <a href="#">7780</a> , <a href="#">7808</a> , 7815, 7845, 7854	\HyLang@german . . . . . <a href="#">3128</a>	\hyper@chars . . . . . <a href="#">4609</a> , <a href="#">8680</a> , 9138, 9152, 9172, 9194, 9208,
\HyInd@removespaces <a href="#">7911</a> , <a href="#">7914</a> , 7924	\HyLang@italian . . . . . <a href="#">3146</a>	
\HyInfo@AddonHandler . . . <a href="#">3789</a> , 3792	\HyLang@magyar . . . . . <a href="#">3164</a>	
	\HyLang@portuges . . . . . <a href="#">3182</a>	
	\HyLang@russian . . . . . <a href="#">3200</a>	
	\HyLang@spanish . . . . . <a href="#">3240</a>	
	\HyLang@vietnamese . <a href="#">3258</a> , <a href="#">3343</a> , 3351	
	\HyLinguex@OrgB . . . . . <a href="#">893</a> , <a href="#">897</a>	
	\HyLinguex@OrgC . . . . . <a href="#">894</a> , <a href="#">898</a>	
	\HyLinguex@OrgD . . . . . <a href="#">895</a> , <a href="#">899</a>	
	\HyLinguex@Restore . . <a href="#">896</a> , <a href="#">909</a> , 913, 921, 2721	
	\HyOpt@CheckDvi . . <a href="#">2841</a> , <a href="#">2877</a> , 2882, 2887, 2910, 2915, 2920, 2972, 2979, 2984, 2989, 2994	
	\HyOpt@DriverFallback . . <a href="#">2998</a> , 3001, 3002, 3006, 4300, 4305	
	\HyOpt@DriverType . <a href="#">4273</a> , <a href="#">4275</a> , 4302, 4312, 4314, 4330	
	\HyOrg@addtoreset . . <a href="#">7722</a> , <a href="#">7724</a> , 7751	
	\HyOrg@appendix . . . <a href="#">6538</a> , <a href="#">6544</a>	
	\HyOrg@author . . <a href="#">6044</a> , <a href="#">6057</a> , <a href="#">6061</a>	

9222, 9302, 9340, 9974, 9995, 10011, 10028, 10103, 10115, 10205, 11194, 11538, 11558, 11584, 11598, 11612, 11818, 11837, 11860, 11877, 11890	\hyper@currentanchor . . . 10606, 10615, 10638, 10655	\hyper@pageduration . 8979, 9028, 10420, 10437, 10695, 10725	\hyperref . 4760, 5008, 5009, 5972, 8213, 8217, 8227, 8241
\hyper@currentlinktype . . 10639, 10643, 10647	\hyper@qhash . . 4561, 4562, 4610, 4890, 4902, 4919, 4922, 5869, 9968	\hyper@pagehidden . . 9003, 9029, 10430, 10438, 10712, 10726	\hypersetup 2760, 2800, 3328, 3775, 4027, 5966
\hyper@image . 4751, 4752, 9220, 10259, 10728, 11610, 11888	\hyper@last . . . . . 6018, 6023	\hyper@pagetransition 8955, 9027, 10309, 10436, 10678, 10724	\hypertarget . . . . . 4753, 5971
\hyper@link . . . . . 4047, 4837, 5916, 5917, 5932, 5943, 5949, 8666, 9216, 9264, 9726, 9964, 10227, 10732, 11606, 11884	\hyper@link . . . . . 4051, 5922, 5937, 5953, 7034, 7297, 7300, 7653, 7657, 7661, 7663, 8665, 9178, 9261, 9725, 9727, 10000, 10178, 10641, 11566, 11843	\hyper@quote . . . . . 5871, 9140, 9154, 9169, 9174, 9195, 9209, 9223, 9968, 9978, 9991, 10014, 10032, 11526, 11540, 11555, 11561, 11585, 11599, 11613, 11806, 11819, 11834, 11839, 11862, 11878, 11891	\HyPL@@@CheckThePage . 6234, 6252
\hyper@link@ . . 4054, 4829, 4831, 5914, 5925, 5929, 5940, 5956	\hyper@linkend . . . . . 4051, 5922, 5937, 5953, 7034, 7297, 7300, 7653, 7657, 7661, 7663, 8665, 9178, 9261, 9725, 9727, 10000, 10178, 10641, 11566, 11843	\hyper@readexternallink . . 4839, 4855	\HyPL@@@CheckThePage . . 6210, 6212
\hyper@linkfile . . . . . 4053, 4915, 5924, 5939, 5955, 8712, 9182, 9338, 9729, 9984, 10182, 11215, 11570, 11847	\hyper@linkstart . . . . 4050, 5921, 5936, 5952, 7032, 7293, 7300, 7653, 7657, 7661, 7663, 8656, 9164, 9252, 9688, 9727, 9987, 10126, 10620, 11550, 11829	\hyper@refstepcounter 6498, 6501, 6509	\HyPL@Alph . . . . . 6150
\hyper@linkurl . . . . . 4052, 4750, 4890, 4897, 4918, 4922, 5923, 5938, 5954, 8677, 9183, 9185, 9218, 9300, 9766, 9972, 9985, 10202, 10260, 10729, 11191, 11571, 11575, 11608, 11848, 11850, 11886	\hyper@livelink . . . . . 5916, 5943	\hyperbaseurl . . 3481, 3482, 5967	\HyPL@alph . . . . . 6151
\hyper@livelink . . . . . 5916, 5943	\hyper@makecurrent . 6520, 6565, 6768, 6819, 6841, 6865, 6929, 7029, 7199, 7241	\hypercaltcbp . . . . . 494, 494	\HyPL@arabic . . . . . 6147
\hyper@nat@malise . . . 4576, 4580	\hyper@nat@current . . . . . 7294	\hypercaltcbpdf . . 496, 533, 3891, 3901	\HyPL@CheckThePage 6162, 6209
\hyper@nat@current . . . . . 7294	\hyper@nat@anchorend . . . . 7305	\hyperdef . . . . . 4780, 5969	\HyPL@Entry . 6402, 6410, 6418, 6420
\hyper@nat@anchorstart . . . . 7302	\hyper@nat@linkbreak . . . . . 7299	\HyperDestNameFilter . . . . . . . . . . 4007, 4649, 8595, 8620, 9140, 9154, 9174, 9218, 9499, 9700, 9968, 9978, 9996, 10014, 10032, 10104, 10116, 10165, 10244, 11057, 11066, 11526, 11540, 11561, 11608, 11806, 11819, 11839, 11886, 13834, 13898, 13914	\HyPL@EveryPage . . . 6152, 6273
\hyper@nat@linkend . . . . . 7296	\hyper@nat@linkstart . . . . . 7291	\HyperFirstAtBeginDocument . . . . 5995, 5997, 6019, 6022	\HyPL@Format 6225, 6226, 6227, 6228, 6229, 6241
\hyper@normalise . . . 4026, 4031, 4553, 4663, 4666, 4747, 4749, 4751, 4772, 5473		\hypergetpageref . . . . . 6700	\HyPL@found . 6224, 6231, 6235, 6242, 6252, 6254
		\hypergetref . . . . . 6699	\HyPL@Labels . 6141, 6264, 6265, 6267, 6269, 6320, 6321, 6413, 6421, 6422
		\HyperGlobalCurrentHref . 6585, 6587, 6595, 6596, 6600, 6603, 6607, 6613, 6614, 6618	\HyPL@LastNumber . 6145, 6180, 6203
		\hyperimage . . . 4751, 5001, 7774	\HyPL@LastPrefix . . . 6146, 6174, 6205
		\hyperindexformat . . . . . 7781	\HyPL@LastType 6144, 6165, 6204
		\hyperlink 4614, 5970, 7920, 8058, 8066, 8081, 8089, 8099, 8107, 8114	\HyPL@page . . 6155, 6157, 6162, 6170
		\hyperlinkfileprefix . . 3484, 3485, 3486, 11792	\HyPL@Prefix . 6170, 6172, 6174, 6188, 6191, 6193, 6205, 6219, 6257
		\HyperLocalCurrentHref . . 6603, 6605, 6611, 6612, 6613, 6614, 6616	\HyPL@Roman . . . . . 6148
		\hyperpage 5976, 7782, 7783, 7785, 7878	\HyPL@roman . . . . . 6149
		\HyperRaiseLinkDefault . . 2423, 2450	\HyPL@SetPageLabels 6263, 6328, 6416
		\HyperRaiseLinkHook 2422, 2451	\HyPL@storePageLabel . . . 6188, 6190, 6260, 6318, 6397
		\HyperRaiseLinkLength . . 2449, 2450, 2453	\HyPL@thisLabel 6138, 6140, 6154, 6157, 6158
			\HyPL@Type . . 6160, 6165, 6169, 6187, 6195, 6204, 6218, 6256
			\HyPL@Useless . . . . . 6261, 6267
			\HyPsd@@@autoref . . 1688, 1690, 1693
			\HyPsd@@@CJKdigits 1558, 1561, 1569
			\HyPsd@@@nameref . . 1670, 1672, 1675
			\HyPsd@@@pageref . . 1652, 1654, 1657
			\HyPsd@@@ref . . 1636, 1638, 1641
			\HyPsd@@@UTFviii@four . . 2290, 2293
			\HyPsd@@@AppendItalcorr . 1857
			\HyPsd@@@autoref . . . 1685, 1686



\HyPsd@@autorefname [1706](#), [1709](#)  
\HyPsd@@CJKdigits . [1550](#), [1552](#), [1555](#)  
\HyPsd@@CJKnumber [1451](#), [1453](#), [1456](#), [1509](#), [1524](#), [1537](#), [1539](#), [1543](#)  
\HyPsd@@ConvertToUnicode . . . . . [2169](#)  
\HyPsd@@GetNextTwoTokens . . . . . [2167](#)  
\HyPsd@@GlyphProcessWarning . . . . . [2027](#), [2030](#)  
\HyPsd@@GreekNum . [1113](#), [1122](#), [1221](#), [1225](#), [1229](#)  
\HyPsd@@hspace . . . . . [1606](#), [1607](#)  
\HyPsd@@LetCommand . . [1730](#), [1751](#)  
\HyPsd@@nameref . . . . . [1667](#), [1668](#)  
\HyPsd@@pageref . . . . . [1649](#), [1650](#)  
\HyPsd@@ProtectSpacesFi . [1779](#), [1783](#), [1801](#), [1807](#), [1812](#)  
\HyPsd@@ref . . . . . [1633](#), [1634](#)  
\HyPsd@@RemoveBraces . . [1825](#)  
\HyPsd@@RemoveBracesFi [1822](#), [1825](#)  
\HyPsd@@RemoveCmdPrefix . . . . . [1984](#), [1987](#)  
\HyPsd@@ReplaceFi . [2054](#), [2060](#), [2065](#)  
\HyPsd@@UTFviii@four . . . [2274](#), [2279](#)  
\HyPsd@add@accent . . [556](#), [1595](#)  
\HyPsd@AfterCountRemove [1870](#), [1941](#)  
\HyPsd@AfterDimenRemove . . . . . [1876](#), [1944](#)  
\HyPsd@AfterSkipRemove . [1882](#), [1956](#)  
\HyPsd@AMScsfix . [652](#), [1616](#), [1618](#)  
\HyPsd@AppendItalcrr . . [1841](#), [1848](#), [1857](#)  
\HyPsd@autoref . . . . . [662](#), [1685](#)  
\HyPsd@autorefname . [1697](#), [1703](#)  
\HyPsd@babel@danish . . . . . [1009](#)  
\HyPsd@babel@dutch . . . . . [1015](#)  
\HyPsd@babel@finnish . . . . . [1021](#)  
\HyPsd@babel@frenchb . . . . . [1026](#)  
\HyPsd@babel@german . . . . . [1031](#)  
\HyPsd@babel@macedonian [1038](#)  
\HyPsd@babel@ngerman . . . [1044](#)  
\HyPsd@babel@portuges . . . [1050](#)  
\HyPsd@babel@russian . . . . . [1055](#)  
\HyPsd@babel@slovene . . . . . [1061](#)  
\HyPsd@babel@spanish . . . . . [1066](#)  
\HyPsd@babel@swedish . . . . . [1076](#)  
\HyPsd@babel@ukrainian . . . [1082](#)  
\HyPsd@babel@usorbian . . . [1088](#)  
\HyPsd@BabelPatch [638](#), [964](#), [999](#)  
\HyPsd@CatcodeWarning . [1886](#), [1903](#), [1906](#), [1909](#), [1912](#), [1968](#)  
\HyPsd@Char . . . . . [2171](#)  
\HyPsd@CharOctByte [2191](#), [2193](#), [2196](#), [2205](#), [2210](#)  
\HyPsd@CharSurrogate . . . [2185](#), [2202](#)  
\HyPsd@CharTwoByte [2183](#), [2190](#)  
\HyPsd@CheckCatcodes [715](#), [1863](#)  
\HyPsd@CJK@Unicode [1333](#), [1337](#)  
\HyPsd@CJKActiveChars . [1273](#), [1288](#)  
\HyPsd@CJKdigit . . . . . [1562](#), [1572](#)  
\HyPsd@CJKdigits . . . . . [1335](#), [1548](#)  
\HyPsd@CJKhook [668](#), [1244](#), [1255](#)  
\HyPsd@CJKhook@bookmarks . . . . . [1250](#), [1284](#)  
\HyPsd@CJKhook@unicode [1252](#), [1332](#)  
\HyPsd@CJKnumber . [1334](#), [1448](#)  
\HyPsd@CJKnumberFour . [1466](#), [1470](#), [1474](#), [1487](#), [1491](#), [1495](#), [1501](#)  
\HyPsd@CJKnumberLarge . [1479](#), [1486](#)  
\HyPsd@CJKnumberThree [1507](#), [1511](#), [1517](#)  
\HyPsd@CJKnumberTwo . . . [1522](#), [1526](#), [1532](#)  
\HyPsd@ConvertToUnicode . [783](#), [2117](#)  
\HyPsd@DecimalToOctal . . [1265](#), [1296](#)  
\HyPsd@DecimalToOctalFirst . . . . . [1339](#), [1375](#)  
\HyPsd@DecimalToOctalSecond . . . . . [1340](#), [1349](#), [1412](#)  
\HyPsd@DefCommand . [698](#), [699](#), [700](#), [701](#), [1719](#)  
\HyPsd@DisableCommands . [944](#), [946](#)  
\HyPsd@DoConvert . . . . . [2119](#), [2129](#)  
\HyPsd@DoEscape . . . . . [2143](#)  
\HyPsd@doxspace . . . . . [755](#), [2090](#)  
\HyPsd@empty [740](#), [742](#), [746](#), [747](#), [749](#), [757](#), [764](#)  
\HyPsd@End [715](#), [719](#), [1780](#), [1783](#), [1786](#), [1789](#), [1792](#), [1805](#), [1815](#), [1822](#), [1825](#), [1863](#), [1871](#), [1877](#), [1883](#), [1928](#), [1935](#), [1941](#), [1944](#), [1956](#)  
\HyPsd@EndWithElse [1585](#), [1594](#)  
\HyPsd@EscapeTeX [794](#), [804](#), [2072](#)  
\HyPsd@fi . [1797](#), [1803](#), [1807](#), [1813](#)  
\HyPsd@GetNextTwoTokens [2167](#)  
\HyPsd@GetOneBye . . . . . [2162](#)  
\HyPsd@GetTwoBytes . . . . . [2158](#)  
\HyPsd@GLYPHERR [720](#), [1582](#), [1596](#), [1603](#)  
\HyPsd@GlyphProcess [722](#), [2015](#), [2028](#)  
\HyPsd@GlyphProcessWarning . . . . . [2022](#), [2026](#)  
\HyPsd@GobbleFiFi . [1587](#), [1593](#)  
\HyPsd@GreekNum . . [1102](#), [1105](#), [1107](#)  
\HyPsd@Greeknumeral [1098](#), [1104](#)  
\HyPsd@greeknumeral [1097](#), [1101](#)  
\HyPsd@GreekNumI . [1125](#), [1151](#), [1194](#), [1220](#)  
\HyPsd@GreekNumII . [1129](#), [1173](#), [1217](#), [1224](#)  
\HyPsd@GreekNumIII [1132](#), [1196](#), [1228](#)  
\HyPsd@GreekNumIV [1141](#), [1219](#)  
\HyPsd@GreekNumV . [1144](#), [1223](#)  
\HyPsd@GreekNumVI [1146](#), [1227](#)  
\HyPsd@GreekPatch . [635](#), [1094](#), [1096](#)  
\HyPsd@HighA . . . . . [1343](#), [1352](#)  
\HyPsd@HighB . . . . . [1353](#), [1358](#)  
\HyPsd@HighC . . . . . [1359](#), [1362](#)  
\HyPsd@HighD . . . . . [1355](#), [1367](#)  
\HyPsd@href . . . . . [657](#), [1632](#)  
\HyPsd@hspace . . . . . [653](#), [1606](#)  
\HyPsd@hspacetest . . [1609](#), [1611](#), [1614](#)  
\HyPsd@ifnextchar [684](#), [685](#), [686](#), [1756](#)  
\HyPsd@ignorespaces . . . [666](#), [955](#)  
\HyPsd@InitUnicode . . . . . [918](#)  
\HyPsd@inmathwarn . . [555](#), [1579](#)  
\HyPsd@ITALCORR . . [676](#), [680](#), [1603](#)  
\HyPsd@langshort@system . . [970](#), [973](#)  
\HyPsd@LanguageShorthands . . . . . [966](#), [971](#), [983](#)  
\HyPsd@LetCommand . [702](#), [703](#), [1719](#)  
\HyPsd@LetUnexpandableSpace . . . . . [671](#), [672](#), [673](#), [674](#), [1599](#), [1602](#)  
\HyPsd@LoadStringEnc . . . [2764](#), [2784](#), [2786](#), [2790](#), [2792](#), [6339](#)  
\HyPsd@LoadUnicode [2713](#), [2718](#), [2726](#), [2729](#), [2731](#), [2738](#), [6333](#)  
\HyPsd@nameref . . . . . [661](#), [1667](#)  
\HyPsd@pageref . . . . . [660](#), [1649](#)  
\HyPsd@pdfencoding . [784](#), [2712](#), [2715](#), [2747](#), [2759](#), [2762](#), [2763](#),

2768, 2783, 6335, 6337, 6354, 6357	2771, 2775, 6352, 6353, 6354, 6356, 6357, 6362	\HyRef@Ref . . . . . 8210, 8212
\HyPsd@pdfencoding@auto . 784, 2753, 2763, 2780, 6337, 6356	\HyPsd@ToBigChar 844, 845, 854	\HyRef@ShowKeysInit 8333, 8346, 8350
\HyPsd@pdfencoding@pdfdoc . . . . . 2746, 2768, 2781	\HyPsd@ToBigChars . . . 797, 836	\HyRef@ShowKeysRef 8264, 8332
\HyPsd@pdfencoding@unicode . . . . . 2750, 2782, 6335, 6353	\HyPsd@tocsection . . 1619, 1620, 1621, 1622, 1623, 1624, 1625, 1627	\HyRef@StarSetRef . . 8175, 8193, 8196, 8199, 8204
\HyPsd@PrerenderUnicode 3673, 3689, 3695, 3701, 3707, 3725, 3731, 3811	\HyPsd@UnescapedString . . 789, 838, 839, 845	\HyRef@StripStar . . . 8291, 8322
\HyPsd@protected@testopt . 687, 688, 1760	\HyPsd@UnexpandableSpace . . . 1602, 1788, 1812, 1947, 1959	\HyRef@testreftype . . 8269, 8288
\HyPsd@ProtectSpaces 708, 1777, 1798, 1847	\HyPsd@unichar 2232, 2299, 2305, 2310	\HyRef@thisref . . . . . 8266, 8269
\HyPsd@ref . . . . . 659, 1633	\HyPsd@unichar@first@byte 2318, 2338	\HyTmp@found . 5393, 5403, 5406
\HyPsd@RemoveBraces 710, 1819, 1836, 1844, 1850	\HyPsd@unichar@octtwo . . 2340, 2348, 2354	\HyTmp@key . . . . . 5387, 5388
\HyPsd@RemoveCmdPrefix 1977, 1983	\HyPsd@unichar@second@byte . . . . . 2326, 2346	\HyTmp@optitem . . . 5343, 5359, 5386, 5391, 5397, 5418, 5429
\HyPsd@RemoveMask 718, 1786, 1792, 1805, 1815	\HyPsd@UnicodeReplacementCharacter . . . . . 2302, 2337	\HyTmp@optlist 5342, 5357, 5358, 5389, 5390, 5395, 5396, 5404, 5405, 5425, 5427, 5434, 5437
\HyPsd@RemoveSpaceWarning . . . . . 1951, 1963, 1989	\HyPsd@utf@viii@undeferr . . 552, 2360	\HyXeTeX@CheckUnicode . 3659, 3670, 3687, 3693, 3699, 3705, 3723, 3729, 3809, 6367
\HyPsd@ReplaceSpaceWarning . . . . . 1946, 1958, 2002	\HyPsd@UTFviii . 546, 2220, 2225	
\HyPsd@Rest . . 1864, 1924, 1932, 1935, 1942, 1947, 1953, 1959, 1965	\HyPsd@UTFviii@@three . . 2255, 2264	I
\HyPsd@RussianPatch . 637, 1237	\HyPsd@UTFviii@@two 2240, 2246	\i 14290, 14453, 14456, 14459, 14462, 14659, 14821, 14824, 14827, 14830, 14947, 14952, 14957, 14962, 14966, 15133, 15189
\HyPsd@SanitizeForOutFile . . . . . 13673, 13704	\HyPsd@UTFviii@ccc@liv@def 2230, 2236	\if . . . . . 1628, 2410, 6178, 6186, 6883, 6884, 10383, 10386, 10390, 10394, 10398, 10400, 10402, 13361
\HyPsd@SanitizeOut@BraceLeft . . . 13708, 13714, 13723	\HyPsd@UTFviii@ccc@liv@undef . . . . . 2229, 2235	\if@eqnstar . . . . . 6825, 6833
\HyPsd@SanitizeOut@BraceRight . . . 13711, 13726, 13735	\HyPsd@UTFviii@four 2228, 2273	\if@filesw . . . . . 2378, 4816, 5988, 6032, 6398, 6408, 6649, 7340, 7355, 7371, 7383, 7413, 7436, 7463, 7468, 7487, 7830, 12513, 12537, 13674, 13861, 13943
\HyPsd@SPACEOPTI . 712, 727, 728, 730, 732, 734, 735, 774, 776, 1899, 2101	\HyPsd@UTFviii@three 2227, 2254	\if@hyper@item . . . . . 6483, 6496
\HyPsd@spaceopti . . . . . 776, 2046	\HyPsd@UTFviii@two 2226, 2239	\if@inlabel . . . . . 6941
\HyPsd@SpanishPatch . 636, 1231	\HyPsd@Warning 1764, 1969, 1990, 2003, 2032, 2038	\if@Localurl . . . . . 9955, 10001
\HyPsd@String . . . . . 709, 711, 714, 716, 721, 723, 1830, 1831, 1841, 1893, 1894, 1898, 1899, 1914, 1915, 1945, 1957, 2016, 2017	\HyPsd@XeTeXBigCharsfalse 811, 825, 830	\if@mid@expandable . . . . . 651
\HyPsd@StringSubst . . 724, 726, 732, 738, 741, 744, 747, 766, 769, 771, 2069	\HyPsd@XeTeXBigCharstrue . . . . . 824, 833, 3688, 3694, 3700, 3706, 3724, 3730, 3810, 13313, 13671	\if@minipage . . . . . 7211, 7282
\HyPsd@Subst . 720, 729, 733, 739, 745, 749, 753, 758, 759, 760, 761, 762, 763, 767, 770, 2053, 2070, 2085, 2086, 2087	\HyPsd@XSPACE 678, 754, 1603	\if@nmbrlist . . . . . 6470
\HyPsd@temp . . . . . 787, 789, 790, 792, 793, 800, 802, 803, 2745, 2746, 2747, 2750, 2753, 2759,	\HyPsd@xspace . . . 752, 754, 755	\if@nbreak . . . . . 6960
	\HyRef@@StarSetRef . 8181, 8186	\if@skiphyperref . . . . . 6484, 6494
	\HyRef@autopageref . 8238, 8240	\if@twocolumn . . . . . 14108
	\HyRef@autopagerefname . 8237, 8241, 8243	\if@twoside . . . . . 14097
	\HyRef@autoref . . . . . 8255, 8257	\ifcase . . . . . 346, 1158, 1180, 1203, 1297, 1346, 1368, 1371, 1377, 1413, 1457, 1573, 2268, 2750, 3424, 4333, 5189, 5294, 5423, 5500, 6548, 6557, 7649, 7807, 7844, 8073, 8265, 10456, 10946, 13419, 13446, 13513, 13548, 13583, 13781
	\HyRef@autosetref . . . 8260, 8263	\ifcat 1865, 1892, 1897, 1902, 1905, 1908, 1911, 4978, 4980
	\HyRef@CaseStar . . . . 8324, 8330	\ifdim . . . . . 1614, 1945, 1949, 1957, 1961, 2465,
	\HyRef@currentHtag . 8276, 8294, 8297, 8303, 8310, 8316, 8331	
	\HyRef@MakeUppercaseFirstOfFive . . . . . 8204, 8206	
	\HyRef@name . 8292, 8293, 8298, 8305, 8323, 8324, 8325, 8327	

2484, 4012, 4359, 9047, 9051,  
 9056, 9060, 9067, 9070, 9074,  
 9077, 9935, 9936, 9941, 9942,  
 10074, 10077, 10081, 10084,  
 10975, 10986, 11345, 11346,  
 11351, 11352, 12157, 12195,  
 12196, 12637, 12676, 12677,  
 12976, 13015, 13016  
 \ifetex@unexpanded . . . . . 1771  
 \iffalse . . . . . 831, 5512  
 \ifFileExists . . . . . 6027, 11917  
 \ifFld@checked 5446, 12475, 13406  
 \ifFld@comb . . . . . 5293  
 \ifFld@combo . 5321, 5326, 12170,  
 12199, 12650, 12680, 12989,  
 13019  
 \ifFld@disabled . . . . 5447, 12476  
 \ifFld@edit . . . . . 5327  
 \ifFld@fileselect . . . . . 5296  
 \ifFld@hidden 12134, 12184, 12253,  
 12273, 12296, 12314, 12374,  
 12386, 12396, 12479, 12614,  
 12665, 12746, 12767, 12795,  
 12815, 12945, 13004, 13103,  
 13128, 13157, 13182  
 \ifFld@multiline . . . . 5294, 12123,  
 12381, 12602, 12933  
 \ifFld@multiselect . . . . . 5365  
 \ifFld@password . . . 5295, 12362  
 \ifFld@popdown . . . 5113, 12171,  
 12651, 12990  
 \ifFld@radio . 12167, 12189, 12411,  
 12647, 12670, 12986, 13009  
 \ifFld@readonly . . . 12383, 12393,  
 12477  
 \ifForm@html . . . . . 5467  
 \ifhmode . 2426, 2430, 2483, 2492,  
 4655, 6908, 7026, 7035, 7169,  
 7171, 8590, 8598, 11902  
 \ifHy@activeanchor . . . 396, 4991  
 \ifHy@backref . . 397, 4164, 4536,  
 5849, 7464, 7500  
 \ifHy@bookmarks . . . . 398, 4384  
 \ifHy@bookmarksnumbered . 399,  
 7961, 8012, 13660  
 \ifHy@bookmarksopen . 400, 4374  
 \ifHy@breaklinks 401, 2678, 10622,  
 10663, 10957, 10980  
 \ifHy@centerwindow . . . . .  
 402, 8880, 9447, 9875, 10494,  
 10842, 11692  
 \ifHy@CJKbookmarks . 403, 1249  
 \ifHy@colorlinks . 404, 4455, 5854,  
 11507  
 \ifHy@displaydoctitle . . . . .  
 439, 8881, 9448, 9876, 10495,  
 10843, 11693  
 \ifHy@draft . . . . . 405, 4045  
 \ifHy@DviMode . 2822, 2842, 3000  
 \ifHy@DvipdfmxOutlineOpen . .  
 . . . . . 4357, 13916  
 \ifHy@escapeform . . . 408, 13257,  
 13287  
 \ifHy@figures 409, 4144, 5834, 7771  
 \ifHy@fitwindow 410, 8879, 9446,  
 9874, 10493, 10841, 11691  
 \ifHy@frenchlinks . . . . 411, 4471  
 \ifHy@href@ismap . . . 4711, 8701,  
 9783, 10141, 10209, 11206  
 \ifHy@hyperfootnotes . 412, 6968  
 \ifHy@hyperindex 413, 4154, 5844,  
 7778  
 \ifHy@hypertextnames 414, 6571,  
 6653, 7556, 7966, 8017  
 \ifHy@implicit . . 415, 4176, 13971  
 \ifHy@linktocpage 416, 2635, 2645  
 \ifHy@localanchorname 417, 6604,  
 6615  
 \ifHy@menubar . 418, 8877, 9444,  
 9872, 10491, 10839, 11689  
 \ifHy@naturalnames . . 419, 6583,  
 7967, 8018  
 \ifHy@nesting . . 420, 4149, 4754,  
 4787, 4822, 4976, 5839, 6993,  
 7008, 7065, 7222  
 \ifHy@newwindow . . . 422, 3961,  
 10188  
 \ifHy@newwindowset . . 421, 3959  
 \ifHy@next . . . . 1007, 4118, 7795  
 \ifHy@ocgcolorlinks . . 423, 3374,  
 4441, 4451, 5859, 8456, 8474,  
 8551, 8559, 9564, 9647, 9655  
 \ifHy@pageanchor 424, 6640, 6652,  
 6667, 7555  
 \ifHy@pagelabels 425, 6126, 6318,  
 6396  
 \ifHy@pdfa . . . . . 440, 4069,  
 4443, 4878, 5126, 5702, 5751,  
 5864, 8624, 8696, 8734, 8771,  
 9103, 9709, 9741, 9774, 9802,  
 10147, 10168, 10191, 10215,  
 10247, 10279, 10295, 11081,  
 12092, 12243, 12289, 12566,  
 12736, 12788, 12903, 13092,  
 13150, 13363, 13409, 13573  
 \ifHy@pdfmarkerror 10889, 10897  
 \ifHy@pdfpagehidden . 426, 3509,  
 9007, 10432, 10718  
 \ifHy@pdfstring . . 427, 929, 6488  
 \ifHy@plainpages 428, 4159, 6654,  
 7557  
 \ifHy@psize . . . . . 429  
 \ifHy@raiselinks . 430, 9187, 9267,  
 9304, 9342, 11577, 11852  
 \ifHy@seminarslides . . . . . 431  
 \ifHy@setpagesize 432, 9035, 9932,  
 10071, 11342  
 \ifHy@setpdfversion . . 2801, 8461  
 \ifHy@texht 433, 4231, 4483, 4531,  
 5537, 5569, 5722, 5746, 5902,  
 8121  
 \ifHy@toolbar . . 434, 8876, 9443,  
 9871, 10490, 10838, 11688  
 \ifHy@typexml . . 395, 4169, 4458,  
 4502, 5989, 13865, 13947  
 \ifHy@unicode . 435, 542, 575, 578,  
 725, 737, 765, 773, 782, 1108,  
 1268, 1971, 1992, 2005, 2034,  
 2040, 2300, 2711, 2761, 3661,  
 6342, 13309  
 \ifHy@useHidKey . . . . 3505, 9004,  
 10431, 10713  
 \ifHy@usetitle . . . . . 436, 6042  
 \ifHy@verbose . . 437, 4618, 4634,  
 4646, 5069, 7624  
 \ifHy@windowui . 438, 8878, 9445,  
 9873, 10492, 10840, 11690  
 \ifHyField@NeedAppearances . . .  
 . . . 5510, 5512, 5515, 12094,  
 12568, 12905  
 \ifHyInfo@AddonUnsupported . .  
 . . . . 3787, 3801, 3836  
 \ifHyPsd@XeTeXBigChars . . 829,  
 831, 834, 837  
 \ifmeasuring@ . . . . . 6508, 6521  
 \ifmmode . . . . . 10625, 10952  
 \ifnum . . . . . 258,  
 861, 864, 867, 870, 873, 984,  
 1109, 1112, 1123, 1124, 1128,  
 1136, 1140, 1143, 1153, 1175,  
 1198, 1338, 1449, 1465, 1469,  
 1489, 1502, 1505, 1518, 1520,  
 1533, 1535, 1541, 2179, 2182,  
 2258, 2301, 2304, 2316, 2431,  
 2927, 2930, 2956, 3425, 3426,  
 4368, 4375, 4688, 5348, 5419,  
 5430, 6161, 6180, 6196, 6298,  
 8075, 8113, 8457, 8462, 8796,  
 8803, 8809, 8817, 9676, 9681,  
 10188, 10307, 10443, 10451,  
 10453, 10454, 10464, 10467,  
 10553, 10555, 10675, 11369,  
 12550, 12713, 13045, 13050,  
 13061, 13308, 13389, 13419,  
 13424, 13446, 13452, 13480,  
 13513, 13519, 13538, 13548,  
 13553, 13583, 13588, 13617,  
 13633, 13777, 13847, 13850,  
 13877, 13880, 13918, 14027,  
 14045, 14060  
 \ifodd . . . . . 2282, 2287, 7579

<code>\ifpdf</code> . 256, 2824, 2867, 4210, 4277	<code>\itemautorefname</code> . . . 3077, 3095, 3113, 3131, 3149, 3167, 3185, 3214, 3215, 3243, 3261, 8356, 8357, 8360	<code>\l@subslide</code> . 7998, 8061, 8068, 8112
<code>\ifpdfstringunicode</code> . . . . 547, 550	<code>\itemindent</code> . . . . . 6946	<code>\label</code> . . . . . 654, 7597
<code>\ifportrait</code> . . . . . 9046	<code>\itshape</code> . . . . . 608	<code>\label@hyperref</code> . . . . 4794, 4796
<code>\ifthenelse</code> . . . . . 7490	<b>J</b>	<code>\label@hyperdef</code> . . . . 4780, 4808
<code>\iftrue</code> 834, 1778, 1800, 2064, 5515, 14029	<code>\j</code> . . . . . 14975, 15160, 15224	<code>\label@hyperref</code> . 4761, 4793, 5005
<code>\ifvmode</code> . . . . . 2442, 2464, 2473	<code>\jarr</code> . . . . . 16581	<code>\labelsep</code> . . . . . 7497
<code>\ifvoid</code> . . . . . 6775, 6779, 6945	<code>\jeem</code> . . . . . 16553	<code>\labelwidth</code> . . . . . 7496
<code>\ifvtex</code> . . . . . 2830, 2926, 2955	<code>\jeh</code> . . . . . 16589	<code>\lam</code> . . . . . 16572
<code>\ifvtexdvi</code> . . . . . 2831	<code>\jobname</code> 5991, 6027, 6034, 11917, 13766, 13857, 13864, 13891, 13936, 13938, 13946	<code>\language@group</code> . . . . . 633
<code>\ifvtexhtml</code> . . . . . 4252, 4283	<b>K</b>	<code>\languageshorthands</code> . . 965, 966, 1000
<code>\ifvtexpdf</code> . . . . . 4294	<code>\k</code> . . . . 14170, 14512, 14514, 14519, 14521, 14564, 14582, 14601, 14608, 14872, 14874, 14912, 14914, 14959, 14961, 14962, 15097, 15099, 15156, 15158, 15755, 15794, 15797	<code>\LARGE</code> . . . . . 615
<code>\ifvtexps</code> . . . . . 4297	<code>\kaf</code> . . . . . 16571	<code>\Large</code> . . . . . 616
<code>\ifxetex</code> 788, 821, 2827, 2900, 3660, 4236, 4280, 4358	<code>\kasra</code> . . . . . 16584	<code>\large</code> . 619, 8078, 8086, 8096, 8104
<code>\ignorespaces</code> . . . 666, 6735, 6903, 7101, 7207, 7218, 7221, 7278, 7286, 7348, 7363, 7379, 7388, 7498, 7946, 7998	<code>\keepPDF@SetupDoc</code> 11511, 11518	<code>\lastbox</code> . . . . . 6944
<code>\IJ</code> . . . . . 14286, 14968	<code>\kern</code> 1874, 1946, 1951, 1963, 6946, 7574, 7575, 7576, 7578, 7579, 7584, 13986	<code>\lastpage@putlabel</code> . . . . . 6635
<code>\ij</code> . . . . . 14495, 14970	<code>\kernel@ifnextchar</code> . . . . . 685	<code>\lastskip</code> . 2465, 2469, 2476, 2484, 2488, 2495
<code>\immediate</code> . . . . . 5990, 5991, 5992, 5994, 6034, 6311, 6401, 6409, 6664, 6692, 7343, 7358, 7374, 7384, 7414, 7437, 7463, 7493, 8476, 8491, 8506, 10558, 11366, 12492, 12514, 12556, 13767, 13833, 13864, 13866, 13946, 13948	<code>\kha</code> . . . . . 16555	<code>\LaTeX</code> . . . 572, 574, 11923, 11924
<code>\incr@eqnum</code> . . . . . 6794, 6807	<code>\KV@href@pdfnewwindow</code> . 4709	<code>\LaTeXe</code> . . . . . 573, 11924
<code>\index</code> . . . . . 655	<code>\KV@href@pdfnewwindow@default</code> . . . . . 4710	<code>\LayoutCheckField</code> . 5790, 12315, 12816, 13187
<code>\indexentry</code> 7833, 7848, 7856, 7860, 7865	<code>\KV@Hyp@draft</code> . . . . . 2609	<code>\LayoutChoiceField</code> . 5787, 12188, 12669, 13008
<code>\input</code> . . . . . 912, 920, 2720, 3346, 3354, 3361, 4332, 11284, 11367, 11458, 11627	<code>\KV@Hyp@nolinks</code> . . . . . 2609	<code>\LayoutPushButtonField</code> . . 5793, 12247, 12254, 12740, 12747, 13096, 13105
<code>\InputIfFileExists</code> . . 4029, 13857, 13891, 13936, 13938	<code>\KV@Hyp@pdfnewwindow</code> . 4709	<code>\LayoutTextField</code> . . . 5784, 12136, 12616, 12951
<code>\inputlineno</code> . . . . . 4625, 4983	<code>\KV@Hyp@pdfnewwindow@default</code> . . . . . 4710	<code>\lccode</code> . . . . . 364, 369, 860, 1278, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2223, 5662, 7792, 7793, 13691, 13692, 13693, 13694, 13695, 13696, 13697, 13698, 13699, 13700, 13701
<code>\insert</code> . . . . . 7080	<code>\kv@key</code> . . 3795, 3798, 3805, 5346, 5349, 5351, 5355, 5359	<code>\ldots</code> . . . . . 567
<code>\IntCalcAdd</code> . . . . . 2208	<code>\kv@parse</code> . . . . . 5345	<code>\leavevmode</code> 663, 2420, 4055, 4072, 4112, 4883, 5960, 7025, 7168, 7404, 8216, 8224, 8610, 8681, 8719, 8756, 9186, 9266, 9303, 9341, 9730, 9767, 9966, 9975, 10029, 10183, 10206, 10234, 10265, 10624, 10950, 11195, 11222, 11253, 11576, 11851, 12248, 12255, 12288, 12701, 12722, 12741, 12748, 12768, 12787, 13043, 13074, 13097, 13106, 13130, 13149, 13984
<code>\IntCalcDec</code> . . . . . 1360	<code>\kv@parse@normalized</code> 3820, 3827	<code>\letLTXcmds@gttemp</code> . . . . . 240
<code>\IntCalcDiv</code> 1354, 1363, 1368, 1471, 1480, 1492, 1509, 1524, 1539, 2192, 2198, 2204	<code>\kv@processor@default</code> 3823, 3830	<code>\LetLtxMacro</code> . 5905, 5909, 5977, 5981
<code>\intcalcDiv</code> . 1344, 2199, 2206, 2209	<code>\kv@set@family@handler</code> . . 3788	<code>\limits</code> . . . . . 4601
<code>\IntCalcMod</code> . . 1356, 1365, 1371, 1475, 1481, 1496, 1512, 1527, 1541, 1543, 2194, 2199, 2200, 2206, 2209, 2211	<code>\kv@value</code> . 3793, 5347, 5354, 5355	<code>\listofslides</code> . . . . . 8047
<code>\intcalcMod</code> . . . . . 1346	<code>\kvsetkeys</code> . . . . . 2800, 2854, 2974, 3667, 3768, 4070, 4307, 4325, 4442, 5444, 8458, 10896, 12111, 12347, 12360, 12409, 12452, 12473, 12547, 12888	<code>\listslidenam</code> . 8046, 8049, 8051, 8053
<code>\intcalcSub</code> . . . . . 2186	<b>L</b>	
<code>\interfootnotelinepenalty</code> . . 7083	<code>\L</code> . . . . . 14279, 14999	
<code>\interlinepenalty</code> . . . . . 7083	<code>\l</code> . . . . . 14292, 15001	
<code>\item</code> 6465, 6468, 7370, 7382, 7485	<code>\l@slide</code> . . 7946, 8056, 8061, 8065, 8072	
<code>\Itemautorefname</code> . . . . . 8356		

<code>\literalps@out</code> 2418, 10547, 10552, 10604, 10610, 10636, 10642, 10907, 10918, 10947, 10948, 10976, 10978, 10987, 10989, 11282, 11365, 11428, 11625	<code>\ltx@zero</code> . 2077, 2078, 2079, 2080, 2081, 2082	<code>\mediawidth</code> . . . . . 10078, 10085
<code>\lower</code> . . . 9193, 9273, 9310, 9348, 10978, 11583, 11858	<code>\LTXcmds@Gtemp</code> . 235, 236, 237, 239, 244, 245, 247	<code>\meem</code> . . . . . 16573
<code>\lowercase</code> . . . 365, 370, 880, 1279, 2083, 2224, 2511, 3021, 3051, 3735, 3771, 5018, 5019, 5022, 5027, 5051, 5061, 5115, 5171, 5491, 5564, 5567, 5663, 7794, 10674, 13702	<code>\luatexrevision</code> . . . . . 8840	<code>\message</code> . . . . . 8074
<code>\slide@flag</code> 8073, 8076, 8094, 8113, 8117	<code>\luatexversion</code> . . . . . 8832, 8837	<code>\MessageBreak</code> . . . . . 294, 300, 314, 315, 354, 355, 515, 1977, 1998, 2011, 2034, 2039, 2041, 2533, 2534, 2548, 2570, 2573, 2575, 2653, 2654, 2680, 2681, 2733, 2734, 2735, 2773, 2774, 2794, 2805, 2846, 2871, 2904, 2942, 2949, 2960, 2966, 3043, 3376, 3498, 3499, 3550, 3551, 3569, 3570, 3664, 3748, 3803, 3804, 3914, 3915, 4017, 4214, 4215, 4223, 4224, 4240, 4241, 4256, 4257, 4265, 4266, 4445, 4690, 4691, 4715, 4716, 4732, 4733, 5072, 5077, 5086, 5129, 5175, 5299, 5412, 5484, 5495, 5527, 5528, 5547, 5621, 5622, 5623, 5624, 6131, 6345, 6360, 6361, 6643, 7601, 7631, 7632, 7633, 7634, 7635, 7766, 8614, 9694, 10159, 10238, 10743, 12504, 12506, 13638, 13656, 13769
<code>\LT@array</code> . . . . . 6760	<b>M</b>	<code>\MF</code> . . . . . 582, 11926
<code>\LT@foot</code> . . . . . 6775, 6779	<code>\m@ne</code> . . . . . 4133, 4637, 4696, 5033, 6680, 6875, 9685, 13938, 14027, 14042	<code>\MP</code> . . . . . 583, 11927
<code>\LT@p@ftn</code> . 7041, 7044, 7048, 7058	<code>\make@df@tag@@</code> . . . . 7707, 7709	<code>\multiply</code> . . . . 8836, 10412, 10447
<code>\LT@p@ftntext</code> . . . . . 7039, 7046	<code>\make@df@tag@@@</code> . . . . 7708, 7710	<b>N</b>
<code>\LT@start</code> . . . . . 6777, 6787	<code>\make@stripped@name</code> 6513, 6816, 6838, 6862, 6873	<code>\n</code> . . . . . 871
<code>\ltx@backslashchar</code> . 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 344	<code>\makeatletter</code> . . . . . 3, 943, 6026	<code>\name@of@eq</code> . . . . . 6481, 6511
<code>\ltx@empty</code> . 237, 240, 2823, 2998, 3006, 3502, 4300, 4310, 10934	<code>\MakeButtonField</code> . . 5800, 12249, 12257, 12275, 12293, 12298, 12742, 12751, 12775, 12792, 12798, 13098, 13101, 13129, 13154, 13158	<code>\name@of@slide</code> . . . . 6482, 6492
<code>\ltx@firstofone</code> 2843, 13719, 13731	<code>\MakeCheckField</code> . . . 5797, 12317, 12819, 13184	<code>\nameref</code> . . . . . 661, 4521, 4525
<code>\ltx@firstoftwo</code> 259, 351, 359, 4517, 4939	<code>\MakeChoiceField</code> . . 5799, 12233, 12725, 13072	<code>\nasb</code> . . . . . 16579
<code>\ltx@gobble</code> 286, 2849, 6279, 13717, 13729	<code>\MakeFieldObject</code> . 12491, 12578, 12588, 12591	<code>\netscape</code> . . . . . 9229
<code>\ltx@ifpackagelater</code> . . . . . 362	<code>\MakeLowercase</code> . . . . . 630	<code>\new@ifnextchar</code> . . . . . 686
<code>\ltx@ifpackageloaded</code> . . . . . 1245	<code>\MakeLowercaseUnsupportedInPdfStrings</code> . . . . . 630	<code>\new@pdfink</code> . . . 8589, 8646, 8649
<code>\ltx@ifUndefined</code> . . 253, 292, 298, 327, 632, 675, 750, 785, 903, 904, 905, 1008, 1014, 1020, 1025, 1030, 1037, 1043, 1049, 1054, 1060, 1065, 1075, 1081, 1087, 1093, 1232, 1238, 1615, 1710, 1711, 2372, 2405, 4115, 4116, 4117, 4516, 4517, 4713, 6082, 6449, 6536, 6540, 6855, 7306, 8244, 8245, 8289, 8290, 8292, 8293, 8658, 8668, 9066, 10073, 10130, 10229, 10600, 10643, 10734, 10911, 14018, 14028	<code>\MakeRadioField</code> . . . 5796, 12221, 12712, 13036	<code>\new@crefstepcounter</code> . 6789, 6821
<code>\ltx@ifundefined</code> . . . . . 6953	<code>\makeslideheading</code> . . . . . 7956	<code>\newblock</code> . . . . . 7501
<code>\ltx@leftbracechar</code> . . . . 342, 366	<code>\makeslidesubheading</code> . . . . 8008	<code>\newcommand</code> . . . . . 4, 9, 42, 2419, 5964, 5968, 6444, 6447, 6450, 6451, 6452, 6454, 6455, 6456, 6457, 6459, 6460, 6461, 6462, 6463, 6464, 6473, 6474, 6475, 6476, 6477, 6478, 6871, 7734, 7933, 7938, 7939, 13739, 13742, 13747
<code>\ltx@LocalAppendToMacro</code> . 234, 379, 382	<code>\maketag@@@</code> . . . . . 7696	<code>\newcount</code> . . . . . 483, 484, 2424, 4681, 5450, 6142, 12229, 12719, 12919, 13068, 13774
<code>\ltx@one</code> . . . . . 258	<code>\MakeTextField</code> . . . . 5798, 12138, 12619, 12948	<code>\newcounter</code> . . . 6466, 6969, 9563, 13689
<code>\ltx@rightbracechar</code> . . . . 343, 371	<code>\maketitle</code> . . . . . 7118, 7119	<code>\newdimen</code> . . . . . 480, 5451, 5452
<code>\ltx@secondoftwo</code> . . 254, 261, 265, 348, 4516, 4517, 4519, 4937	<code>\MakeUppercase</code> 629, 8051, 8053, 8207	<code>\newif</code> . . . . . 395, 396, 397, 398, 399, 400, 401, 402, 403, 404,
<code>\ltx@space</code> . . . . . 345	<code>\MakeUppercaseUnsupportedInPdfStrings</code> . . . . . 629	
<code>\ltx@undefined</code> . . . . . 236	<code>\MathBSuppress</code> . . . . 9976, 9980	
	<code>\mathdisplay</code> . . . . . 6797, 6806	
	<code>\mathdisplay@push</code> . . 6795, 6804	
	<code>\mathversion</code> . . . . . 624	
	<code>\maxdimen</code> . . . . . 3446, 12496	
	<code>\MaybeStopEarly</code> 482, 2857, 2932, 4180, 4285, 6429	
	<code>\mbox</code> 664, 7417, 7440, 8561, 9657	
	<code>\mddefault</code> . . . . . 6915	
	<code>\mdseries</code> . . . . . 607	
	<code>\meaning</code> . . . . . 62, 153, 159, 2381, 6066, 6596, 6880, 13902, 13910, 13925	
	<code>\measuring@false</code> . . . . . 6508	
	<code>\mediaheight</code> 10067, 10069, 10075, 10082	



405, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 829, 1007, 2801, 2822, 3505, 3787, 4357, 4711, 5025, 5113, 5446, 5447, 5467, 5510, 6483, 6484, 6508, 6825, 9955, 10889	\NoHy@OrgPageRef . . 5909, 5911, 5981, 5983	\OBJ@OCG@view . . . 8490, 8508, 8541, 9565, 9567, 9580, 9600, 9637
\newlabel . 2384, 4818, 6004, 6005, 6013, 6039, 6665, 6693	\NoHy@OrgRef 5905, 5907, 5977, 5979	\OBJ@OCGs . . 8511, 8514, 8520, 8525, 8530, 9597, 9599, 9603, 9607, 9613, 9618, 9623
\newlabelxx . . . . . 6006, 6007	\NoHyper . . . . . 5913	\OBJ@pdfdocencoding . . . 12551, 12859, 12875
\newlength . . . . . 13977	\nohyperpage . . 5959, 7877, 7879, 7881	\OBJ@ZaDb 12552, 12561, 12868
\newline . . . . . 570, 6087	\nolinkurl . . . . . 4747	\OCIRCUMFLEX . 16417, 16515, 16516, 16517, 16518, 16519
\newname 6514, 6817, 6839, 6863, 6876, 6885	\nolinkurl@ . . . . . 4747, 4748	\ocircumflex 16410, 16455, 16456, 16457, 16458, 16459
\newsavebox . . . . . 9493, 10926	\NomFancyVerbLineautorefname . . . . . 3232	\oddsidemargin . . . . . 7580
\newtie 14172, 14173, 14556, 14586, 14605, 14621	\Nomfootnoteautorefname . 3212	\OE . . . . . 14281, 15033
\newtoks . 90, 5538, 10761, 10998, 10999	\Nomtheoremautorefname . 3236	\oe . . . . . 14294, 15035
\newwrite . . . 6033, 13862, 13944	\nonumber . . . . . 6850, 6853	\offinterlineskip . . . . . 6113
\next . . . 7491, 7492, 7493, 10375, 10377, 10379	\normalfont . . . . . 602, 6911	\OHORN . . . 16418, 16520, 16521, 16522, 16523, 16524
\nfss@text . 8128, 8148, 8165, 8282	\normalsize . . . . . 620, 7214, 7285	\ohorn . . 3259, 3266, 16411, 16460, 16461, 16462, 16463, 16464
\NG . . . . . 15017	\NR@getttitle . . . . . 7204	\oldb . . . . . 903
\ng . . . . . 15019	\null . . . . . 7482, 7490, 8170, 8278	\oldc . . . . . 904
\noboundary . . . . . 16594	\number . 1126, 1130, 1133, 1141, 1144, 1146, 1451, 1453, 1480, 1481, 2183, 2241, 2242, 2243, 2244, 2248, 2249, 2250, 2251, 2252, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2266, 2267, 2268, 2269, 2270, 2271, 2274, 2276, 2280, 2281, 2283, 2285, 2287, 2290, 2294, 2295, 2296, 2297, 2306, 2307, 2311, 2312, 2319, 2320, 2324, 2327, 2328, 2329, 2339, 2341, 2342, 2347, 2349, 2350, 2355, 2356, 3873, 4359, 4376, 5039, 6573, 6574, 6577, 6581, 8468, 8471, 9257, 9275, 9276, 9291, 9292, 9312, 9313, 9329, 9330, 9350, 9351, 9367, 9368	\oldcontentsline . 5999, 6002, 6012
\nobreak . 2466, 2474, 2485, 2493, 7026, 7169	\numberline . . . 7207, 7278, 13661, 13666	\oldd . . . . . 905
\nobreakspace . . 674, 8219, 8248, 8251	\numberwithin . . . . . 7731	\oldnewlabel . . . 6004, 6009, 6013
\noexpand . . . . . 22, 93, 95, 108, 116, 169, 171, 172, 173, 176, 206, 849, 953, 1292, 1725, 1742, 1865, 2237, 2472, 2473, 2474, 2477, 2491, 2492, 2493, 2496, 3304, 3306, 3308, 3309, 3310, 3312, 3328, 3516, 3517, 3519, 3853, 4135, 4139, 4140, 4307, 4595, 4768, 4848, 4978, 4980, 5081, 6234, 6235, 6244, 6246, 6249, 6374, 6677, 6678, 6680, 6705, 6706, 6707, 6708, 6709, 6717, 6718, 6719, 6879, 7042, 7050, 7051, 7052, 7054, 7178, 7267, 7342, 7357, 7373, 7726, 7728, 8181, 8182, 8298, 8299, 8304, 8306, 8311, 8312, 8317, 8318, 8839, 9431, 10826, 10893, 11425, 11676, 12163, 12164, 12165, 12166, 12643, 12644, 12645, 12646, 12982, 12983, 12984, 12985, 13259	\numexpr . 2248, 2249, 2250, 2252, 2258, 2266, 2267, 2268, 2269, 2270, 2271, 2275, 2277, 2281, 2283, 2285, 2287, 2291, 2294, 2295, 2297, 2306, 2311, 2328, 2342, 2350, 2356, 3877	\OMEGA . . . . . 11922
\nofrenchguillemets . . . . 693, 695	\nun . . . . . 16574	\on@line . . . . . 7628, 7629
	<b>O</b>	\openout 5991, 6034, 13864, 13946
	\O . . . . . 14412, 14780, 15175	\OpMode . 2927, 2930, 2943, 2956, 2961, 10464, 10555, 11369
	\o . . . . . 14480, 14848, 15177	\or . . . . . 349, 1160, 1161, 1162, 1163, 1164, 1165, 1166, 1167, 1168, 1182, 1183, 1184, 1185, 1186, 1187, 1188, 1189, 1190, 1205, 1206, 1207, 1208, 1209, 1210, 1211, 1212, 1213, 1298, 1299, 1300, 1301, 1302, 1303, 1304, 1305, 1306, 1307, 1308, 1309, 1310, 1311, 1312, 1313, 1314, 1315, 1316, 1317, 1318, 1319, 1320, 1321, 1322, 1323, 1324, 1325, 1326, 1327, 1328, 1329, 1347, 1369, 1372, 1378, 1379, 1380, 1381, 1382, 1383, 1384, 1385, 1386, 1387, 1388, 1389, 1390, 1391, 1392, 1393, 1394, 1395, 1396, 1397, 1398, 1399, 1400, 1401, 1402, 1403, 1404, 1405, 1406, 1407, 1408, 1409, 1414, 1415, 1416, 1417, 1418, 1419, 1420, 1421, 1422, 1423, 1424, 1425, 1426, 1427, 1428, 1429, 1430, 1431, 1432, 1433, 1434, 1435, 1436, 1437, 1438, 1439, 1440, 1441, 1442, 1443, 1444,
	\obeylines . . . . . 11424	
	\OBJ@acroform . . . 12574, 12575	
	\OBJ@Helv . 12553, 12562, 12878	
	\OBJ@OCG@print . . . 8505, 8508, 8516, 8542, 9581, 9583, 9596, 9600, 9609, 9638	

1445, 1458, 1459, 1460, 1461, 1462, 1574, 1575, 1576, 5199, 5205, 5210, 5424, 6548, 6549, 6550, 6551, 6557, 6558, 6559, 6560, 7651, 7655, 8093, 8102, 10457, 13782, 13783, 13784, 13785, 13786, 13787, 13788, 13789, 13790, 13791, 13792, 13793, 13794, 13795, 13796, 13797, 13798, 13799, 13800, 13801, 13802, 13803, 13804, 13805, 13806, 13807, 13808, 13809, 13810, 13811, 13812, 13813	11107, 11109, 11111, 11113, 11115, 11117, 11119, 11121, 11123, 11125, 11126, 11127, 11128, 11129, 11130, 11131, 11132, 11133, 11134, 11135, 11140	\PDFForm@Name . 12612, 12664, 12735, 12813, 12943, 13003, 13091, 13180, <u>13295</u> \PDFForm@Push . . 12256, 12258, 12749, 12750, 13107, 13111, <u>13409</u> \PDFForm@Radio . 12220, 12224, 12702, 12704, 13044, 13056, <u>13471</u> \PDFForm@Reset . 12297, 12299, 12796, 12797, 13159, 13164, <u>13573</u> \PDFForm@Submit 12274, 12277, 12769, 12771, 13131, 13136, <u>13540</u> \PDFForm@Text . . 12137, 12139, 12617, 12618, 12952, 12955, <u>13505</u> \pdfhorigin . . . . . 9043 \pdfinfo . . . . . 8919 \pdflastform . . . . . 8583 \pdflastlink . . . . . 12532 \pdflastobj 8490, 8505, 8511, 12574, 12859, 12868, 12878 \pdflastxform . 8583, 12494, 12496 \pdflinkmargin . . 8578, 8581, 8586 \pdfliteral . . . . . 8562, 8564, 8569 \pdfm@box . . 9493, 12915, 12916, 12917, 12947, 12958, 13035, 13060, 13071, 13082, 13101, 13114, 13129, 13138, 13158, 13166, 13183, 13194 \pdfmark . 6392, 9431, 9440, 9470, 10591, 10611, 10650, 10685, 10702, 10714, 10748, 10785, 10797, 10826, 10835, 10866, 10890, 11148, 11162, 11177, 11189, 11196, 11223, 11254, 11676, 11685, 11716, 12138, 12221, 12233, 12257, 12275, 12298, 12317, 13906 \pdfmark@ . . . . . 10890, 10891 \pdfmatch . . . . . 346 \pdfminorversion . . . . . 8449 \PDFNextPage . . . . . 11160 \PDFNextPage@ . . 11160, 11161 \pdfobj . 8476, 8491, 8506, 12556, 12826, 12860, 12869 \PDFOpen . . . . . 11188 \pdfoptionpdfminorversion 8446 \pdfoutline . . . . . 13955 \pdfpageattr . . 8959, 8963, 8964, 8974, 8983, 8987, 8988, 8998, 9006, 9009, 9010, 9020 \pdfpageheight 9053, 9062, 9071, 9078 \pdfpageresources . . . . . 8539
<b>P</b>		
\P . . . . . 566	\pdf@addtoksx 10995, 11005, 11018	
\p@ . . . . . 2307, 2312, 5453, 5459, 6917, 9202, 9286, 9324, 9362, 10411, 11592, 11872, 12159, 12639, 12978, 14102, 14103	\pdf@box . . . 10926, 10958, 10966, 10974, 10975, 10978, 10985	
\p@equation . . . . . 7703	\pdf@defaulttoks . . 10893, 10999, 11000, 11010	
\PackageError . . . . . 61	\pdf@docset . . . . . 10761	
\PackageInfo . . 8452, 8466, 12502	\pdf@endanchor . 8602, 8646, 8653	
\PackageWarning . . . . 2804, 5410	\pdf@escapestring . . . . . 8428	
\pageautorefname . . . 3090, 3108, 3126, 3144, 3162, 3180, 3198, 3238, 3256, 3274, 8251, 8373	\PDF@FinishDoc 2860, 2861, 2935, 2936, 4004, 4057, 4183, 4184, 4288, 4289, 5958, 6123, 6124, <u>8915</u> , 9126, 9380, 9829, 9956, 10523, 10762, 11632, 11793	
\pagename . . . . . 8248	\pdf@ifdraftmode . . . . . 254, 257, 265, 6278, 8475, 8916, 9025, 12548, 13874	
\pageref . . . 660, 4190, 4512, 5909, 5910, 5981, 5982, 6643, 8237, 8241	\pdf@linktype 10911, 10915, 11015, 11016	
\paperheight . . . . . . . . . 4010, 9051, 9053, 9056, 9058, 9070, 9071, 9936, 9937, 10074, 10075, 10077, 11346, 11347	\pdf@rect . . . 10903, 10917, 10930	
\paperwidth . . . 9047, 9049, 9060, 9062, 9067, 9068, 9935, 9937, 10078, 11345, 11347	\PDF@SetupDoc . . . . . 4003, 4056, 5876, 5877, 5957, 8846, 9127, 9411, 9869, 9957, 10472, 10813, 11513, 11663, 11794	
\par . 6909, 7206, 7234, 7276, 7286, 7484, 7504	\PDF@SetupDox . . . . . 8846	
\paragraphautorefname . . . 3086, 3104, 3122, 3140, 3158, 3176, 3194, 3227, 3229, 3252, 3270, 8369	\pdf@strcmp . . . . . 984	
\partautorefname 3080, 3098, 3116, 3134, 3152, 3170, 3188, 3218, 3246, 3264, 8363	\pdf@toks . . 10893, 10908, 10919, 10998, 11002, 11006	
\partnumberline . . . 13663, 13668	\pdf@type . . 10895, 10899, 10908, 10919, 10993, 11013	
\PassOptionsToPackage . . . 2975, 3032, 3036, 3058, 4039, 4326	\pdfannotlink . . . . . 8580	
\pdf@addtoks 11001, 11020, 11026, 11035, 11042, 11046, 11048, 11050, 11052, 11054, 11062, 11071, 11075, 11077, 11079, 11082, 11091, 11095, 11097, 11099, 11101, 11103, 11105,	\pdfbookmark . 2419, 5963, 5964, 13740, 13745, 13750, 13754	
	\pdfcatalog 6281, 8512, 8861, 8903, 12575	
	\PDFdefaults . . . . . 11009	
	\pdfdest . . . . . 8604	
	\pdfdraftmode . . . . . 258	
	\pdfendlink . . 8643, 12619, 12712, 12726, 12752, 12776, 12799, 12820	
	\pdfescapestring . . . . . 13288	
	\pdfform . . . . . 8582	
	\PDFForm@@Name 13296, 13299, 13303, <u>13306</u>	
	\PDFForm@Check . 12316, 12318, 12817, 12818, 13188, 13192, <u>13380</u>	
	\PDFForm@List . . . 12232, 12234, 12723, 12724, 13075, 13080, <u>13438</u>	

<code>\pdfpagesattr</code> . . .	8850, 8852, 8854	
<code>\pdfpagewidth</code> .	9049, 9058, 9068, 9075	
<code>\PDFPreviousPage</code> . . . . .	11173	
<code>\PDFPreviousPage@</code>	11174, 11176	
<code>\pdfrefform</code> . . . . .	8584	
<code>\pdfrefobj</code> . .	12551, 12552, 12553	
<code>\pdfrefxform</code> . . . . .	8584, 12496	
<code>\pdfstartlink</code> . . . . .	8579, 8580, 8638, 8682, 8720, 8757, 9089, 12618, 12703, 12724, 12750, 12770, 12797, 12818	
<code>\pdfstringdef</code>	535, 816, 3690, 3696, 3702, 3708, 3713, 3719, 3726, 3732, 3812, 5371, 5376, 5402, 6090, 6170, 6172, 6658, 7563, 13314, 13672	
<code>\pdfstringdefDisableCommands</code> . . . . .	902, 941, 5961, 6085	
<code>\pdfstringdefPostHook</code> . .	812, 935	
<code>\pdfstringdefPreHook</code> .	670, 935, 947, 949, 6084, 6094	
<code>\pdfstringdefWarn</code> .	569, 570, 665, 952, 1733, 1738, 1757, 1761	
<code>\pdfTeXrevision</code> .	8806, 8814, 8825	
<code>\pdfTeXversion</code> .	8801, 8803, 8806, 8809, 8812, 8813, 8817, 8823, 8824, 12550	
<code>\pdfvorigin</code> . . . . .	9044	
<code>\pdfxform</code> . . . . .	8582, 12492	
<code>\peh</code> . . . . .	16587	
<code>\penalty</code> . .	1868, 2446, 4656, 7411, 7434	
<code>\phantom</code> . . . . .	625	
<code>\phantomsection</code>	4005, 5965, 7603, 13607, 13658, 14046	
<code>\Preamble</code> . . . . .	11918	
<code>\PrerenderUnicode</code> . . . . .	3681	
<code>\process@me</code> . .	6064, 6076, 6077, 8849, 8858	
<code>\ProcessKeyvalOptions</code> . . .	4043	
<code>\protect</code> . . . . .	1866, 4798, 7207, 7278, 7342, 7357, 7373, 7489, 7496, 7497, 7641, 7672, 7946, 7998, 8127, 8147, 8153, 8164, 8281, 9137, 9234, 10027, 10102, 11524, 11804, 13679, 13979, 14102, 14103	
<code>\protected@edef</code> . . . . .	4833, 6230, 6748, 6877, 6897, 8611, 9691, 10156, 10235, 10740	
<code>\protected@write</code>	2383, 4817, 7469, 7832, 7847, 7855, 7859, 7864, 13678	
<code>\protected@xdef</code> . . . . .	7051, 7144	
<code>\providecommand</code> . . . . .	2400, 2401, 3401, 3402, 3405, 3406, 4276, 4489, 4490, 4609, 4752, 5995, 6260, 6285, 6410, 7307, 7308, 7323, 7401, 7929, 7930, 8046, 8354, 8355, 8356, 8357, 8358, 8359, 8360, 8361, 8362, 8363, 8364, 8365, 8366, 8367, 8368, 8369, 8370, 8371, 8372, 8373, 8435, 8588, 8606, 8607, 9125, 9228, 9229, 9488, 9550, 9551, 9552, 9953, 10072, 10094, 10095, 10096, 10548, 10927, 10928, 11280, 11288, 11289, 11290, 11291, 11363, 11375, 11376, 11377, 11378, 11422, 11463, 11464, 11465, 11466, 11621, 11623, 11624, 11737, 11738, 11785, 12515	
<code>\PushButton</code> . . . . .	5772	
<code>\put@me@back</code> . .	4973, 4986, 4996	
<b>Q</b>		
<code>\qaf</code> . . . . .	16570	
<code>\quotedblbase</code>	14261, 14498, 16087, 16391	
<code>\quotesinglbase</code> . . .	14271, 14500, 16081, 16393	
<b>R</b>		
<code>\r</code> .	874, 14139, 14151, 14163, 14373, 14438, 14547, 14574, 14593, 14615, 14742, 14806, 15089, 15091, 16051, 16053	
<code>\ra</code> . . . . .	16558	
<code>\raff</code> . . . . .	16580	
<code>\raise</code>	2453, 9203, 9287, 9325, 9363, 10989, 11593, 11873	
<code>\ReadBookmarks</code>	4042, 4060, 4197, 4393, 4533, 13838, 13873	
<code>\real@setref</code> . . . . .	8124, 8190	
<code>\realfootnote</code> . . . . .	7141	
<code>\Ref</code> . . . . .	8209, 8213, 8218	
<code>\ref</code> . .	659, 4189, 4509, 5013, 5905, 5906, 5977, 5978, 7106, 7113, 8228, 11894	
<code>\ref@one</code> . . . . .	4774, 4775	
<code>\rEfLiNK</code> . . . . .	11895, 11896	
<code>\refstepcounter</code>	6480, 6487, 6507, 6730, 6753, 6754, 6755, 6764, 6789, 6813, 6821, 7270	
<code>\rem@ptetc</code> . . . . .	10675, 10677	
<code>\renewcommand</code>	2375, 7249, 7748, 13754	
<code>\RequirePackage</code> . . . . .	22, 232, 250, 251, 269, 270, 271, 272, 273, 274, 275, 276, 394, 1243, 1770, 2369, 2785, 2855, 4171, 4172, 4461, 4505, 4537, 4744, 5016, 5947, 6104, 6326, 9954, 11790, 13764	
<code>\RerunFileCheck</code> . . . . .	13766	
<code>\Reset</code> . . . . .	5781	
<code>\reset@font</code>	7417, 7440, 8128, 8148, 8165, 8282	
<code>\revtex@checking</code> . . . . .	7394	
<code>\Rightarrow</code> . . . . .	8080	
<code>\rlap</code> . . . . .	8563, 9659	
<code>\rm</code> . . . . .	613	
<code>\rmfamily</code> . . . . .	603	
<code>\Roman</code> . . . . .	6226	
<code>\roman</code> . . . . .	6227	
<code>\romannumeral</code> . . . . .	959, 960	
<code>\rule</code> . . . . .	7091	
<b>S</b>		
<code>\sad</code> . . . . .	16562	
<code>\sbox</code> . . . . .	3677, 5801, 9190, 9270, 9307, 9345, 10927, 10966, 11580, 11855, 12491	
<code>\scr@LT@array</code> . . . . .	6763	
<code>\scriptsize</code> . . . . .	621	
<code>\scriptstyle</code> . . . . .	7407	
<code>\scrollmode</code>	1785, 1810, 1820, 1833, 1925, 2057	
<code>\scshape</code> . . . . .	609	
<code>\section</code> . . . . .	8048	
<code>\sectionautorefname</code> . .	3083, 3101, 3119, 3137, 3155, 3173, 3191, 3220, 3249, 3267, 8366	
<code>\seen</code> . . . . .	16560	
<code>\selectfont</code> . . . . .	589, 4472, 12584	
<code>\set@display@protect</code> . . . . .	4124	
<code>\setbox</code> . . . . .	1869, 1875, 1881, 3429, 3435, 5597, 6112, 6944, 8553, 9117, 9632, 9649, 12947, 13035, 13071, 13101, 13129, 13158, 13183	
<code>\setcounter</code> . . . . .	4687	
<code>\setkeys</code> . . . . .	4662, 4707	
<code>\setlength</code> . . . . .	519, 520, 2450, 9043, 9044, 9049, 9053, 9058, 9062, 9068, 9071, 9075, 9078, 10075, 10078, 10082, 10085, 10411, 13996, 14067	
<code>\setpdfinkmargin</code>	3860, 3861, 8578	
<code>\settowidth</code> .	12156, 12636, 12975	
<code>\SetupKeyvalOptions</code> .	2504, 4033	
<code>\sffamily</code> . . . . .	604	
<code>\shadda</code> . . . . .	16585	
<code>\sheen</code> . . . . .	16561	
<code>\shortciteN</code> . . . . .	7532	
<code>\SK@</code> . . . . .	8340	
<code>\SK@ref</code> . . . . .	8340	
<code>\SK@ref</code> . . . . .	8337	





<code>\textdelta</code> . . . . .	1163, 15344	<code>\texthslash</code> . . . . .	14942	<code>\textogonek</code> . . . . .	14192, 14582, 14601, 15234
<code>\textDigammagreek</code> . . . . .	15403	<code>\textHT</code> . . . . .	14176, 14623	<code>\textohm</code> . . . . .	16197
<code>\textdigammagreek</code> . . . . .	15405	<code>\texthungarumlaut</code> . . . . .	14190, 14581, 14600, 15238, 15239	<code>\textOmega</code> . . . . .	1212, 15271, 15321
<code>\textdiscount</code> . . . . .	16115	<code>\textinterrobang</code> . . . . .	16107	<code>\textomega</code> . . . . .	1212, 15386, 15397
<code>\textdiv</code> . . . . .	14508, 16401	<code>\textIota</code> . . . . .	1182, 15265, 15291, 15324	<code>\textOmicron</code> . . . . .	1188, 15267, 15303
<code>\textdivide</code> . . . . .	14478, 14508, 14846, 16401	<code>\textiota</code> . . . . .	1182, 15334, 15354, 15388	<code>\textomicron</code> . . . . .	1188, 15366, 15392
<code>\textdivorced</code> . . . . .	16381	<code>\textIotadieresis</code> . . . . .	15273, 15323	<code>\textonehalf</code> . . . . .	14357, 14726
<code>\textdollar</code> . . . . .	561, 14202, 14633	<code>\textit</code> . . . . .	598	<code>\textoneinferior</code> . . . . .	16145
<code>\textdong</code> . . . . .	16177	<code>\textKappa</code> . . . . .	1183, 15293	<code>\textonequarter</code> . . . . .	14355, 14724
<code>\textdotaccent</code> . . . . .	14141, 14153, 14165, 14188, 14576, 14595, 15230	<code>\textkappa</code> . . . . .	1183, 15356	<code>\textonesuperior</code> . . . . .	14349, 14718
<code>\textdotbelow</code> . . . . .	14145, 14157, 14169, 14212, 14584, 14603, 15249	<code>\textKoppagreek</code> . . . . .	1190, 15407	<code>\textopenbullet</code> . . . . .	16373
<code>\textdoublegrave</code> . . . . .	14579, 14598, 15245	<code>\textkoppagreek</code> . . . . .	1190, 15409	<code>\textordfeminine</code> . . . . .	14320, 14688
<code>\textdownarrow</code> . . . . .	16213	<code>\textkra</code> . . . . .	14981	<code>\textordmasculine</code> . . . . .	14351, 14720
<code>\texteightinferior</code> . . . . .	16159	<code>\textLambda</code> . . . . .	1184, 15295	<code>\textparagraph</code> . . . . .	566, 14343, 14712
<code>\texteightsuperior</code> . . . . .	16127	<code>\textlambda</code> . . . . .	1184, 15358	<code>\textparenleft</code> . . . . .	766, 767, 14208, 14641
<code>\textellipsis</code> . . . . .	567, 568, 14243, 16095	<code>\textlangle</code> . . . . .	16219	<code>\textparenleftinferior</code> . . . . .	16163
<code>\textemdash</code> . . . . .	758, 14245, 16073	<code>\textlatin</code> . . . . .	631, 6584	<code>\textparenleftsuperior</code> . . . . .	16137
<code>\textendash</code> . . . . .	759, 14247, 16071	<code>\textlbrackdbl</code> . . . . .	16383	<code>\textparenright</code> . . . . .	14210, 14643
<code>\textEpsilon</code> . . . . .	1164, 15261, 15283	<code>\textleftarrow</code> . . . . .	16207	<code>\textparenrightinferior</code> . . . . .	16165
<code>\textepsilon</code> . . . . .	575, 578, 1164, 15330, 15346	<code>\textless</code> . . . . .	14214, 14647	<code>\textparenrightsuperior</code> . . . . .	16139
<code>\textequalsuperior</code> . . . . .	16135	<code>\textLF</code> . . . . .	14178, 14625	<code>\textpercent</code> . . . . .	562, 14204, 14635
<code>\textestimated</code> . . . . .	16203	<code>\textlira</code> . . . . .	16169	<code>\textperiodcentered</code> . . . . .	14345, 14510, 14714, 16403
<code>\textEta</code> . . . . .	1167, 15263, 15287	<code>\textlnot</code> . . . . .	14325, 14693	<code>\textpertenthousand</code> . . . . .	16099
<code>\texteta</code> . . . . .	1167, 15332, 15350	<code>\textlogicalnot</code> . . . . .	14324, 14506, 14692, 16399	<code>\textperthousand</code> . . . . .	14259, 16097
<code>\texteuro</code> . . . . .	14300, 16179	<code>\textlongs</code> . . . . .	15123, 16055	<code>\textpeseta</code> . . . . .	16173
<code>\textexclamdown</code> . . . . .	762, 1071, 14302, 14670	<code>\textlquill</code> . . . . .	16111	<code>\textpeso</code> . . . . .	16181
<code>\textfi</code> . . . . .	760, 14275, 16387	<code>\textmacronbelow</code> . . . . .	14144, 14156, 14168, 14223, 14583, 14602, 15251	<code>\textPhi</code> . . . . .	1209, 15315
<code>\TextField</code> . . . . .	5763	<code>\textmarried</code> . . . . .	16379	<code>\textphi</code> . . . . .	1209, 15380
<code>\textfiveinferior</code> . . . . .	16153	<code>\textmd</code> . . . . .	597	<code>\textPi</code> . . . . .	1189, 15305
<code>\textfivesuperior</code> . . . . .	16121	<code>\textmho</code> . . . . .	16199	<code>\textpi</code> . . . . .	1189, 15368
<code>\textfl</code> . . . . .	761, 14277, 16389	<code>\textminus</code> . . . . .	14257, 16215	<code>\textplusminus</code> . . . . .	14333, 14509, 14701, 16402
<code>\textflorin</code> . . . . .	14249, 15125	<code>\textminussuperior</code> . . . . .	16133	<code>\textplussuperior</code> . . . . .	16131
<code>\textflq</code> . . . . .	649, 14504, 16397	<code>\textMu</code> . . . . .	1185, 15297	<code>\textpm</code> . . . . .	14509, 16402
<code>\textflqq</code> . . . . .	647, 14502, 16395	<code>\textmu</code> . . . . .	1185, 14341, 14710	<code>\textPsi</code> . . . . .	1211, 15319
<code>\textfourinferior</code> . . . . .	16151	<code>\textmugreek</code> . . . . .	15360	<code>\textpsi</code> . . . . .	1211, 15384
<code>\textfoursuperior</code> . . . . .	16119	<code>\textmultiply</code> . . . . .	14410, 14507, 14778, 16400	<code>\textquestiondown</code> . . . . .	763, 1072, 14361, 14730
<code>\textfractionsolidus</code> . . . . .	14251, 16109	<code>\textmusicalnote</code> . . . . .	16377	<code>\textquotedbl</code> . . . . .	14198, 14629
<code>\textfrq</code> . . . . .	650, 14505, 16398	<code>\textnaira</code> . . . . .	16171	<code>\textquotedblleft</code> . . . . .	14263, 14499, 16083, 16392
<code>\textfrqq</code> . . . . .	648, 14503, 16396	<code>\textnapostrophe</code> . . . . .	15015	<code>\textquotedblright</code> . . . . .	14265, 16085
<code>\textGamma</code> . . . . .	1162, 15279	<code>\textneg</code> . . . . .	14506, 16399	<code>\textquoteleft</code> . . . . .	14267, 14501, 16077, 16394
<code>\textgamma</code> . . . . .	1162, 15342	<code>\textnewtie</code> . . . . .	14586, 14605, 15247	<code>\textquoteright</code> . . . . .	14269, 16079
<code>\textglq</code> . . . . .	645, 14500, 16393	<code>\textnineinferior</code> . . . . .	16161	<code>\textquotesingle</code> . . . . .	14639
<code>\textglqq</code> . . . . .	643, 14498, 16391	<code>\textninesuperior</code> . . . . .	16129	<code>\texttriangle</code> . . . . .	16221
<code>\textgravedbl</code> . . . . .	15241	<code>\textnormal</code> . . . . .	592	<code>\texttrbrackdbl</code> . . . . .	16385
<code>\textgreater</code> . . . . .	14216, 14649	<code>\textnsuperior</code> . . . . .	16141	<code>\textrecipe</code> . . . . .	16191
<code>\textgrq</code> . . . . .	646, 14501, 16394	<code>\textNu</code> . . . . .	1186, 15299	<code>\textreferencemark</code> . . . . .	16105
<code>\textgrqq</code> . . . . .	644, 14499, 16392	<code>\textnu</code> . . . . .	1186, 15362	<code>\textregistered</code> . . . . .	14327, 14695
<code>\textGslash</code> . . . . .	15144	<code>\textnumbersign</code> . . . . .	560, 14200, 14631	<code>\textRho</code> . . . . .	1205, 15307
<code>\textgslash</code> . . . . .	15146	<code>\textnumeralsigngreek</code> . . . . .	1137, 15255	<code>\textrho</code> . . . . .	1205, 15370
<code>\textguarani</code> . . . . .	16183	<code>\textnumeralsignlowergreek</code> . . . . .	1154, 1176, 1199, 15257	<code>\textrightarrow</code> . . . . .	16211
<code>\textHslash</code> . . . . .	14940	<code>\textnumero</code> . . . . .	16187		

<code>\textring</code> . . .	14139, 14151, 14163, 14194, 14574, 14593, 15232	<code>\theslidesubsection</code> . .	7999, 8006, 8013, 8019, 8021, 8023, 8029, 8039
<code>\textrm</code> . . . . .	593	<code>\This@name</code>	6491, 6492, 6510, 6511
<code>\textrquill</code> . . . . .	16113	<code>\thispdfpagelabel</code> . . . . .	6137
<code>\textSampigreek</code> . . .	1213, 15411	<code>\ThisShouldNotHappen</code> . .	13266
<code>\textsampigreek</code> . . .	1213, 15413	<code>\thm@headpunct</code> . . . . .	6916
<code>\textsc</code> . . . . .	599	<code>\thm@headsep</code> . . . . .	6917
<code>\textsection</code> . . . . .	14314, 14682	<code>\thm@notefont</code> . . . . .	6915
<code>\textservicemark</code> . . . . .	16193	<code>\thm@postskip</code> . . . . .	6921
<code>\textseveninferior</code> . . . . .	16157	<code>\thm@preskip</code> . . . . .	6920
<code>\textsevensuperior</code> . . . . .	16125	<code>\thm@space@setup</code> . . . . .	6918
<code>\textsf</code> . . . . .	594, 12589, 12592	<code>\thm@swap</code> . . . . .	6914
<code>\textSigma</code> . . . . .	1206, 15309	<code>\thmheadnl</code> . . . . .	6913
<code>\textsigma</code> . . . . .	1206, 15374	<code>\tiny</code> . . . . .	623
<code>\textsixinferior</code> . . . . .	16155	<code>\title</code> . . . . .	6043, 6045
<code>\textsixsuperior</code> . . . . .	16123	<code>\TMP@EnsureCode</code> . .	4403, 4410, 4411, 4412, 4413, 4414, 4415, 4416, 4417, 4418, 4419, 4420, 4421, 4422, 4423, 4424, 4425, 4426, 4427, 4428, 4429, 4430, 4431, 4432, 4433, 4434, 4435, 4436
<code>\textsl</code> . . . . .	600	<code>\tocappendix</code> . . . . .	1621
<code>\textsterling</code> . . . . .	14306, 14674	<code>\tocchapter</code> . . . . .	1620
<code>\textStigmagreek</code> . . .	1165, 15399	<code>\toclevel@chapter</code> . . . . .	3392
<code>\textstigmagreek</code> . . .	1165, 15401	<code>\toclevel@figure</code> . . . . .	3398
<code>\textsurd</code> . . . . .	16217	<code>\toclevel@listing</code> . . . . .	3406
<code>\TextSymbolUnavailable</code> .	14170, 14171, 14173	<code>\toclevel@lstlisting</code> . . . . .	3402
<code>\textTau</code> . . . . .	1207, 15311	<code>\toclevel@paragraph</code> . . . . .	3396
<code>\texttau</code> . . . . .	1207, 15376	<code>\toclevel@part</code> . . . . .	3388, 3390
<code>\textTheta</code> . . . . .	1168, 15289	<code>\toclevel@section</code> . . . . .	3393
<code>\texttheta</code> . . . . .	1168, 15352	<code>\toclevel@subfigure</code> . . . . .	2400
<code>\textthreeinferior</code> . . . . .	16149	<code>\toclevel@subparagraph</code> . . .	3397
<code>\textthreequarters</code> .	14359, 14728	<code>\toclevel@subsection</code> . . . . .	3394
<code>\textthreesuperior</code> .	14337, 14705	<code>\toclevel@subsubsection</code> . . .	3395
<code>\texttie</code> . . . . .	14585, 14604, 15253	<code>\toclevel@subtable</code> . . . . .	2401
<code>\texttilde</code> . . . . .	4119, 14137, 14149, 14161, 14196, 14572, 14591, 15236	<code>\toclevel@table</code> . . . . .	3399
<code>\texttildelow</code> . . . . .	15243	<code>\tocparagraph</code> . . . . .	1625
<code>\texttimes</code> . . . . .	14507, 16400	<code>\tocpart</code> . . . . .	1619
<code>\texttrademark</code> . . .	14273, 16195	<code>\tocsection</code> . . . . .	1622
<code>\textTslash</code> . . . . .	15073	<code>\tocsubsection</code> . . . . .	1623
<code>\texttslash</code> . . . . .	15075	<code>\tocsubsubsection</code> . . . . .	1624
<code>\texttt</code> . . . . .	595	<code>\toks</code> . . . . .	244, 245, 947, 948, 949, 4837, 4839, 4841, 4845, 4850, 8138, 8139, 8141, 13999, 14004, 14070, 14075
<code>\texttwoinferior</code> . . . . .	16147	<code>\toks@</code>	171, 208, 498, 501, 504, 522, 523, 842, 849, 881, 882, 1257, 1280, 1283, 1285, 1793, 1794, 3285, 3286, 3288, 3840, 3844, 3845, 3853, 4127, 4128, 4305, 4307, 4952, 4957, 4961, 4965, 6232, 6234, 6320, 6322, 6372,
<code>\texttwosuperior</code> . .	14335, 14703		
<code>\textunderscore</code> .	565, 4566, 4567, 4569, 14222, 14655		
<code>\textup</code> . . . . .	601		
<code>\textuparrow</code> . . . . .	16209		
<code>\textUpsilon</code> .	1208, 15269, 15313, 15326		
<code>\textupsilon</code> . .	1208, 15378, 15390, 15395		
<code>\textupsilonacute</code> . .	15336, 15394		
<code>\textvarsigma</code> . . . . .	15372		
<code>\textvisiblespace</code> . . . . .	16225		
<code>\textwon</code> . . . . .	16175		
<code>\textXi</code> . . . . .	1187, 15301		
<code>\textxi</code> . . . . .	1187, 15364		
<code>\textyen</code> . . . . .	14310, 14678		
<code>\textzeroinferior</code> . . . . .	16143		
<code>\textzerosuperior</code> . . . . .	16117		
<code>\textZeta</code> . . . . .	1166, 15285		
<code>\textzeta</code> . . . . .	1166, 15348		
<code>\TH</code> . . . . .	14424, 14792		
<code>\th</code> . . . . .	14492, 14860		
<code>\thaa</code> . . . . .	16552		
<code>\thebookmark@seq@number</code>	13682		
<code>\theequation</code> . .	6513, 6816, 6838, 6862, 6898		
<code>\thefootnote</code> . . . . .	6986, 7163		
<code>\theHchapter</code> . .	6454, 6455, 6456, 6457, 6542		
<code>\theHenumi</code> . . . . .	6473		
<code>\theHenumii</code> . . . . .	6474		
<code>\theHenumiii</code> . . . . .	6475		
<code>\theHenumiv</code> . . . . .	6476		
<code>\theHequation</code> .	6444, 6514, 6817, 6839, 6863, 6871, 6898, 6902		
<code>\theHfigure</code> . . . . .	6451, 6455		
<code>\theHHfootnote</code> . . . . .	6477, 6479		
<code>\theHHmpfootnote</code> . . . . .	6479		
<code>\theHItem</code>	6467, 6473, 6474, 6475, 6476		
<code>\theHlisting</code> . . . . .	3405		
<code>\theHlstlisting</code> . . . . .	3401		
<code>\theHmpfootnote</code> . . . . .	6478		
<code>\theHparagraph</code> . . . . .	6461, 6462		
<code>\theHparentequation</code> .	6897, 6902		
<code>\theHpart</code> . . . . .	6447		
<code>\theHsection</code> . .	6444, 6450, 6457, 6459, 6463, 6464, 6541		
<code>\theHslide</code> . . . . .	7933		
<code>\theHslidesection</code>	7938, 7940, 7976, 7980		
<code>\theHslidesubsection</code> .	7939, 8027, 8031		
<code>\theHsubequation</code> . . . . .	6871		
<code>\theHsubparagraph</code> . . . . .	6462		
<code>\theHsubsection</code> . . . . .	6459, 6460		
<code>\theHsubsubsection</code> . .	6460, 6461		
<code>\theHtable</code> . . . . .	6452, 6456		
<code>\theHtheorem</code> . . . . .	6463		
<code>\theHthm</code> . . . . .	6464		
<code>\theHy@tempcnt</code>	4682, 4690, 4697		
<code>\thelisting</code> . . . . .	3405		
<code>\thelstlisting</code> . . . . .	3401		
<code>\thempfn</code> . .	6975, 7052, 7144, 7156		
<code>\theoremautorefname</code> .	3089, 3107, 3125, 3143, 3161, 3179, 3197, 3235, 3255, 3273, 8372		
<code>\thepage</code> .	2386, 4800, 6132, 6155, 6658, 6666, 6693, 7420, 7443, 7472, 7563, 7641, 7672, 7833, 7850, 7856, 7860, 7867, 8130, 8150, 8167, 8284		
<code>\theslideheading</code> . . . . .	7959		

6384, 6675, 6679, 6715, 6720,  
7703, 7704, 7910, 7915, 7917,  
7920, 13998, 14004, 14069,  
14075

\topmargin . . . . . 7575

\trivlist . . . . . 6912

\tryhyper@link . . . . . 4775, 4777

\ttfamily . . . . . 605

\ttl@b . . . . . 6726, 6731

\ttl@gobblecontents . . . . . 6735

\ttl@Hy@PatchSaveWrite . . 6709,  
6713

\ttl@Hy@refstepcounter . . . 6725

\ttl@Hy@saveanchor . . 6704, 6728

\ttl@Hy@SavedCurrentHref 6708,  
6719

\ttl@Hy@steplink . . . . . 6702

\ttl@savewrite . . . . . 6715, 6717

\tw@ . 13999, 14004, 14070, 14075

\typeout . . . 5, 6, 7, 19, 26, 27, 36,  
131, 155, 158, 159, 160, 4982,  
14096, 16597

## U

\U . . . 14541, 15446, 15469, 15534,  
15611, 15801, 15803, 15825,  
15827, 15837, 15839

\u . . . 14540, 14578, 14597, 14617,  
14868, 14870, 14904, 14906,  
14924, 14926, 14954, 14956,  
14957, 15025, 15027, 15085,  
15087

\UHORN . . . 16419, 16530, 16531,  
16532, 16533, 16534

\uhorn . . 3259, 3266, 16412, 16470,  
16471, 16472, 16473, 16474

\UnDef . . . . . 11895

\unhbox 6958, 10928, 12958, 13082,  
13114, 13138, 13166, 13194

\unhcopy . . . . . 13060

\unichar . . . . . 2232

\Unicode . . . . . 1333

\unrestored@protected@xdef 6975,  
6986, 7106, 7113, 7156, 7163

\unskip . . 6909, 7405, 8216, 8220,  
8224, 8229

\upshape . . . . . 611, 6915

\Url . . . . . 4746

\url . . . . . 4745, 4749

\url@ . . . . . 4749, 4750

\use@file . . . . . 4913, 4915, 4922

\usefont . . . . . 590

\utf@viii@undeferr . . . . . 552

\UTFviii@four@octets 2228, 2237

\UTFviii@three@octets . . . 2227

\UTFviii@two@octets . . . . 2226

## V

\v . . . 14140, 14152, 14164, 14283,  
14288, 14296, 14298, 14551,  
14575, 14594, 14616, 14888,  
14890, 14892, 14894, 14916,  
14918, 14991, 14993, 15011,  
15013, 15045, 15047, 15061,  
15063, 15069, 15071, 15119,  
15121, 15127, 15129, 15131,  
15133, 15134, 15136, 15138,  
15140, 15142, 15148, 15150,  
15152, 15154, 15160, 15161,  
15204, 15206

\V@@@footnotetext . . . . . 7093

\V@@footnotetext . . . . . 7079

\value 7359, 7385, 7579, 7728, 9676,  
9681

\vbox 5796, 5797, 5798, 5799, 6112,  
7573

\vfill . . . . . 5796, 5797, 5798, 5799

\voffset . . . . . 7574

\vpageref . . . . . 8229

\vphantom . . . . . 626

\Vr@f . . . . . 8215

\vr@f . . . . . 8223

\vref@pagenum . . . . . 6739

\vref@space . . . . 8216, 8219, 8224

\vskip . . . . . 2475, 2476

\vss . . . . . 7588

\vtex@trans@special 10382, 10384,  
10387, 10391, 10395, 10399,  
10401, 10403, 10407, 10413,  
10414, 10417

\VTexXInitMediaSize 10072, 10089

\VTexXOS . . . 10452, 10453, 10454,  
10456

\VTexXversion . 6287, 6290, 6293,  
10444, 10448

## W

\waw . . . . . 16576

\wawhamza . . . . . 16545

\wd . 9275, 9291, 9312, 9329, 9350,  
9367, 12916

\write 4637, 5992, 5994, 6401, 6409,  
6664, 6692, 7343, 7358, 7374,  
7384, 7414, 7437, 7463, 7493,  
12514, 12538, 13866, 13948

\WriteBookmarks . . . . .  
. . . . 4061, 4198, 4372, 4394,  
13615, 13859, 13892, 13893,  
13935, 13941

\wwwbrowser . . . 9229, 9314, 9331

## X

\x . . . . . 21, 25, 92, 98,  
168, 169, 176, 178, 206, 209,  
210, 211, 212, 213, 214, 215,

216, 217, 218, 219, 220, 221,  
222, 223, 224, 225, 226, 227,  
228, 304, 309, 310, 521, 526,  
844, 847, 851, 856, 888, 957,  
963, 1720, 1748, 2175, 2177,  
2470, 2480, 2489, 2499, 2554,  
2555, 2560, 2576, 3296, 3299,  
3303, 3316, 3417, 3418, 3421,  
3422, 3423, 3427, 3430, 3436,  
3843, 3849, 3852, 3855, 4010,  
4011, 4016, 4017, 4074, 4075,  
4076, 4079, 4082, 4085, 4125,  
4126, 4128, 4129, 4306, 4309,  
4636, 4642, 4835, 4846, 4850,  
4853, 4928, 4929, 4930, 4942,  
4953, 4954, 4955, 4956, 4959,  
4960, 5034, 5048, 5073, 5077,  
5080, 5090, 6065, 6066, 6071,  
6676, 6683, 6716, 6723, 6764,  
6773, 6775, 6787, 7917, 7918,  
8140, 8143, 8178, 8179, 8180,  
8182, 8184, 8538, 8546, 8834,  
8835, 8838, 8840, 8843, 9500,  
9501, 9502, 9504, 9505, 9506,  
9508, 9509, 9510, 9512, 9513,  
9514, 9516, 9517, 9518, 9520,  
9521, 9522, 9524, 9525, 9526,  
9528, 9529, 9531, 9537, 9546,  
10552, 10557, 10561, 10932,  
10935, 10941, 10946, 11088,  
11089, 12162, 12182, 12642,  
12662, 12981, 13001, 14003,  
14005, 14074, 14076

\XeTeXrevision . . . . 4359, 9826

\XeTeXversion . . . . . 4359, 9826

\XR@@dURL . . . . . 2407, 2408

\XR@addURL . . . . . 2407

\XR@ext . . . . .  
2662, 2663, 4911, 4914, 6285,  
8435, 9125, 9228, 9488, 9953,  
11280, 11363, 11422, 11621,  
11785

\XR@URL . . . . . 2412

\xspace . . . . . 676, 678

## Y

\y . . . . . 309, 311, 315, 859,  
862, 865, 868, 871, 874, 883,  
2556, 2561, 2566, 3423, 3424,  
3425, 3426, 4077, 4080, 4083,  
4086, 4088, 4094, 4931, 4932,  
4933, 4934, 4942, 6066, 6074,  
6760, 6762, 6763, 6766, 6773,  
10937, 10938, 10939, 10940

\ya . . . . . 16578

\yahamza . . . . . 16547

<b>Z</b>			
<b>\z</b>	310, 311, 316, 2558, 2559, 2560, 4934, 4942	3435, 4012, 4368, 6288, 6291, 6944, 6945, 7091, 9047, 9051, 9056, 9060, 9067, 9070, 9074, 9077, 9935, 9936, 9941, 9942, 10443, 10467, 10675, 10975, 10986, 11345, 11346, 11351, 11352, 12152, 12632, 12920, 12971, 13389, 13419, 13424, 13446, 13452, 13480, 13513,	13519, 13538, 13548, 13583, 13588, 13693, 13695, 13696, 13697, 13699, 13700, 13701, 14040
<b>\z@</b>	820, 860, 984, 1136, 1153, 1175, 1198, 1449, 1489, 1502, 1518, 1533, 1541, 1614, 1869, 1875, 1881, 1945, 1949, 1957, 1961, 2426, 2431, 2465, 2484, 2751, 2754, 2896, 3429,		<b>\z@skip</b> ..... <b>\za</b> ..... <b>\zay</b> ..... <b>\ZWNJ</b> .....