

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

Sebastian Rahtz

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

Heiko Oberdiek

Email: `oberdiek@uni-freiburg.de`

processed October 14, 2008

## 1 Documentation overview for `hyperref`

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

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

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

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

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

**Bookmark talk, slides** Slides for the talk “PDF information and navigation elements with `hyperref`, `pdfTeX` and `thumbpdf`” at Euro $\text{\TeX}$  1999.

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

Source code documentation:

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

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

**`nameref.dtx`** “Section name references in  $\text{\LaTeX}$ ”

## 2 Contents

<b>1</b>	<b>Documentation overview for hyperref</b>	<b>1</b>
<b>2</b>	<b>Contents</b>	<b>2</b>
<b>3</b>	<b>File hycheck.tex</b>	<b>7</b>
<b>4</b>	<b>Package options and setup</b>	<b>10</b>
4.1	Save catcodes . . . . .	10
4.2	Compatibility with format dumps . . . . .	12
4.3	Switches . . . . .	12
<b>5</b>	<b>Common help macros</b>	<b>14</b>
5.1	Macros for recursions . . . . .	14
5.2	Babel's protection of shorthand characters . . . . .	14
5.3	Coordinate transformations . . . . .	14
<b>6</b>	<b>Dealing with PDF strings</b>	<b>16</b>
6.1	Description of PDF strings . . . . .	16
6.2	Definition of <code>\pdfstringdef</code> . . . . .	16
6.2.1	Preprocessing . . . . .	17
6.2.2	Expansion . . . . .	21
6.2.3	Postprocessing . . . . .	23
6.3	Encodings . . . . .	27
6.3.1	PD1 encoding . . . . .	27
6.3.2	PU encoding . . . . .	27
6.4	Additional user commands . . . . .	27
6.4.1	<code>\texorpdfstring</code> . . . . .	27
6.4.2	Hooks for <code>\pdfstringdef</code> . . . . .	27
6.5	Help macros for expansion . . . . .	28
6.5.1	Babel languages . . . . .	28
6.5.2	CJK bookmarks . . . . .	32
6.5.3	<code>\@inmathwarn-Patch</code> . . . . .	34
6.5.4	Unexpandable spaces . . . . .	35
6.5.5	Marker for commands . . . . .	36
6.5.6	<code>\hspace fix</code> . . . . .	36
6.5.7	Fix for AMS classes . . . . .	36
6.5.8	Reference commands . . . . .	36
6.5.9	Redefining the defining commands . . . . .	39
6.5.10	<code>\ifnextchar</code> . . . . .	40
6.5.11	<code>\@protected@testoptifnextchar</code> . . . . .	40
6.6	Help macros for postprocessing . . . . .	40
6.6.1	Generic warning. . . . .	40
6.6.2	Protecting spaces . . . . .	41
6.6.3	Remove grouping braces . . . . .	42
6.6.4	Catcode check . . . . .	43
6.6.5	Check for wrong glyphs . . . . .	46
6.6.6	Replacing tokens . . . . .	47
6.6.7	Support for package <code>xspace</code> . . . . .	47
6.6.8	Converting to Unicode . . . . .	48
6.6.9	Support for UTF-8 input encoding . . . . .	49

<b>7</b>	<b>Support of other packages</b>	<b>53</b>
7.1	Class memoir . . . . .	53
7.2	Package subfigure . . . . .	53
7.3	Package xr and xr-hyper . . . . .	54
<b>8</b>	<b>Help macros for links</b>	<b>54</b>
<b>9</b>	<b>Options</b>	<b>55</b>
9.1	Help macros . . . . .	55
9.2	Defining the options . . . . .	57
<b>10</b>	<b>Options for different drivers</b>	<b>62</b>
<b>11</b>	<b>Options to add extra features</b>	<b>64</b>
<b>12</b>	<b>Language options</b>	<b>65</b>
<b>13</b>	<b>Options to change appearance of links</b>	<b>71</b>
<b>14</b>	<b>Bookmarking</b>	<b>72</b>
<b>15</b>	<b>PDF-specific options</b>	<b>73</b>
15.1	PDF/A . . . . .	80
15.2	Patch for babel's <code>\texttilde</code> . . . . .	81
15.3	Patch for babel 3.8j . . . . .	81
15.3.1	Driver loading . . . . .	82
15.3.2	Bookmarks . . . . .	85
<b>16</b>	<b>User hypertext macros</b>	<b>88</b>
<b>17</b>	<b>Underlying basic hypertext macros</b>	<b>91</b>
<b>18</b>	<b>Compatibility with the <i>BT<sub>E</sub>X2html</i> package</b>	<b>94</b>
<b>19</b>	<b>Forms creation</b>	<b>95</b>
19.1	Field flags . . . . .	95
19.1.1	Declarations of field flags . . . . .	97
19.1.2	Set submit flags . . . . .	99
19.1.3	Set annot flags in fields . . . . .	99
19.1.4	Pushbutton field . . . . .	100
19.1.5	Check box field . . . . .	100
19.1.6	Radio button field . . . . .	101
19.1.7	Text fields . . . . .	101
19.1.8	Choice fields . . . . .	102
19.2	Choice field . . . . .	102
19.3	Forms . . . . .	104
<b>20</b>	<b>Setup</b>	<b>109</b>
<b>21</b>	<b>Low-level utility macros</b>	<b>110</b>
<b>22</b>	<b>Localized nullifying of package</b>	<b>111</b>
<b>23</b>	<b>Package nohyperref</b>	<b>111</b>

<b>24 The Mangling Of Aux and Toc Files</b>	<b>112</b>
<b>25 Title strings</b>	<b>113</b>
<b>26 Page numbers</b>	<b>115</b>
<b>27 Every page</b>	<b>115</b>
27.1 PDF /PageLabels . . . . .	115
27.1.1 pdfTeX and VTeX . . . . .	119
27.1.2 pdfmarkbase, dvipdfm . . . . .	120
<b>28 Automated L<sup>A</sup>T<sub>E</sub>X hypertext cross-references</b>	<b>121</b>
<b>29 Package lastpage support</b>	<b>125</b>
<b>30 Package ifthen support</b>	<b>126</b>
<b>31 Package titlesec and titletoc support</b>	<b>126</b>
<b>32 Package varioref support</b>	<b>127</b>
<b>33 Package longtable support</b>	<b>127</b>
<b>34 Equations</b>	<b>128</b>
<b>35 Footnotes</b>	<b>130</b>
<b>36 Float captions</b>	<b>134</b>
<b>37 Bibliographic references</b>	<b>136</b>
37.1 Package harvard . . . . .	139
37.2 Package chicago . . . . .	141
<b>38 Page numbers</b>	<b>142</b>
<b>39 Table of contents</b>	<b>142</b>
<b>40 New counters</b>	<b>144</b>
<b>41 AMSL<sup>A</sup>T<sub>E</sub>X compatibility</b>	<b>145</b>
41.1 \@addtoreset and \numberwithin patches . . . . .	146
<b>42 Included figures</b>	<b>147</b>
<b>43 hyperindex entries</b>	<b>147</b>
<b>44 Compatibility with foiltex</b>	<b>149</b>
<b>45 Compatibility with seminar slide package</b>	<b>149</b>
<b>46 Configuration files</b>	<b>157</b>
46.1 PS/PDF strings . . . . .	157
46.2 pdftex . . . . .	159
46.3 hypertext . . . . .	171
46.4 dviwindo . . . . .	173
46.5 dvipdfm dvi to PDF converter . . . . .	177

46.6	VTeX typesetting system	184
46.7	Fix for Adobe bug number 466320	196
46.8	Direct pdfmark support	196
46.9	Rokicki's dvips	208
46.10	VTeX's vtexpdfmark driver	210
46.11	Textures	211
46.12	dvipsone	215
46.13	TeX4ht	218
<b>47</b>	<b>Driver-specific form support</b>	<b>220</b>
47.1	pdfmarks	220
47.2	HyperTeX	227
47.3	TeX4ht	228
47.4	pdfTeX	230
47.5	dvipdfm	237
47.6	Common forms part	244
<b>48</b>	<b>Bookmarks in the PDF file</b>	<b>250</b>
48.1	Bookmarks	250
<b>49</b>	<b>Compatibility with koma-script classes</b>	<b>257</b>
<b>50</b>	<b>Encoding definition files for encodings of PDF strings</b>	<b>258</b>
50.1	PD1 encoding	258
50.2	PU encoding	266
50.2.1	NFSS2 accents	266
50.2.2	Basic Latin: U+0000 to U+007F	268
50.2.3	Latin-1 Supplement: U+0080 to U+00FF	269
50.2.4	Latin Extended-A: U+0080 to U+017F	273
50.2.5	Latin Extended-B: U+0180 to U+024F	277
50.2.6	Spacing Modifier Letters: U+02B0 to U+02FF	279
50.2.7	Combining Diacritical Marks: U+0300 to U+036F	280
50.2.8	Greek and Coptic: U+0370 to U+03FF	280
50.2.9	Cyrillic: U+0400 to U+04FF	283
50.2.10	Thai: U+0E00 to U+0E7F	292
50.2.11	Latin Extended Additional: U+1E00 to U+1EFF	292
50.2.12	General Punctuation: U+2000 to U+206F	295
50.2.13	Superscripts and Subscripts: U+2070 to U+209F	295
50.2.14	Currency Symbols: U+20A0 to U+20CF	296
50.2.15	Letterlike Symbols: U+2100 to U+214F	297
50.2.16	Arrows: U+2190 to U+21FF	297
50.2.17	Mathematical Operators: U+2200 to U+22FF	297
50.2.18	Miscellaneous Technical: U+2300 to U+23FF	297
50.2.19	Control Pictures: U+2400 to U+243F	298
50.2.20	Enclosed Alphanumerics: U+2460 to U+24FF	298
50.2.21	Box Drawing: U+2500 to U+257F	300
50.2.22	Miscellaneous Symbols: U+2600 to U+26FF	300
50.2.23	Miscellaneous Mathematical Symbols-A: U+27C0 to U+27EF	300
50.2.24	Alphabetic Presentation Forms: U+FB00 to U+FB4F	301
50.2.25	Miscellaneous	301
50.2.26	Aliases	301
50.3	PU encoding, additions for VnTeX	301
50.4	PU encoding, additions for Arabi	304

<b>51 End of file hycheck.tex</b>	<b>305</b>
<b>52 Index</b>	<b>306</b>

### 3 File hycheck.tex

Many commands of L<sup>A</sup>T<sub>E</sub>X 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 L<sup>A</sup>T<sub>E</sub>X'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 L<sup>A</sup>T<sub>E</sub>X.

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

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

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

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

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

`\HyC@checkPackage`

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

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

```

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

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

```

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

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

```

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

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

```

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

`\HyC@noValue`

```

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

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



```

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

```

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

```

90 \newtoks\HyC@Toks

```

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

```

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

```

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

```

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

```

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

```

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

```

`\HyC@DeclareRobustCommand` `\DeclareRobustCommand{\cmd}` makes the command `\cmd` robust, that then calls `\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\[%
218 \x\]%
219 \x\/%
220 \x\!%
221 \x\<%
222 \x\>%
223 \x\.%
224 \x;%
225 \x\+%
226 \x\-%
227 \x\"%
228 \x\'%
229 }%
230 \endgroup

```

```
231 \Hy@SetCatcodes
```

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

```

232 \RequirePackage{keyval}[1997/11/10]
233 \RequirePackage{ifpdf}[2006/02/20]
234 \RequirePackage{ifvtex}
235 \RequirePackage{ifxetex}[2006/08/21]
236 \RequirePackage{hycolor}
237 \def\Hy@Warning#1{\PackageWarning{hyperref}{#1}}
238 \def\Hy@WarningNoLine#1{\PackageWarningNoLine{hyperref}{#1}}
239 \def\Hy@Info#1{\PackageInfo{hyperref}{#1}}

```

## 4.2 Compatibility with format dumps

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

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

```

240 \@ifundefined{AfterBeginDocument}{%
241   \def\AfterBeginDocument{\AtBeginDocument}%
242 }{}%

```

## 4.3 Switches

```

243 \newif\ifHy@typexml
244 \newif\ifHy@activeanchor
245 \newif\ifHy@backref
246 \newif\ifHy@bookmarks
247 \newif\ifHy@bookmarksnumbered
248 \newif\ifHy@bookmarksopen
249 \newif\ifHy@breaklinks
250 \newif\ifHy@centerwindow
251 \newif\ifHy@CJKbookmarks
252 \newif\ifHy@colorlinks
253 \newif\ifHy@draft
254 \let\Hy@finaltrue\Hy@draftfalse
255 \let\Hy@finalfalse\Hy@drafttrue

```

```

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

```

Defaults for the switches are now set.

```

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

```

```

312 \Hy@plainpagesfalse
313 \Hy@raiselinksfalse
314 \Hy@setpagesizetrue
315 \Hy@texhtfalse
316 \Hy@toolbartrue
317 \Hy@typexmlfalse
318 \Hy@unicodetrue
319 \Hy@usetitlefalse
320 \Hy@verbosefalse
321 \Hy@windowuitrue
322 \Hy@displaydoctitlefalse
323 \Hy@pdfafalse

```

## 5 Common help macros

\Hy@StepCount

```

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

```

\Hy@GlobalStepCount

```

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

326 \newdimen\@linkdim
327 \let\Hy@driver\@empty
328 \let\MaybeStopEarly\relax
329 \newcount\Hy@linkcounter
330 \newcount\Hy@pagecounter
331 \Hy@linkcounter0
332 \Hy@pagecounter0

```

### 5.1 Macros for recursions

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

```

333 \long\def\Hy@ReturnAfterElseFi#1\else#2\fi{\fi#1}
334 \long\def\Hy@ReturnAfterFi#1\fi{\fi#1}

335 \let\Hy@ReturnEnd\@empty
336 \long\def\Hy@ReturnAfterFiFiEnd#1\fi#2\Hy@ReturnEnd{\fi\fi#1}
337 \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.

```

338 \def\Hy@safe@activetrue{\csname @safe@activetrue\endcsname}
339 \def\Hy@safe@activesfalse{\csname @safe@activesfalse\endcsname}

```

### 5.3 Coordinate transformations

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

\hypercalcbp    The user macro \hypercalcbp can be used, for example, inside option values:  
 pdfstartview={FitBH \hypercalcbp{\paperheight-\topmargin-1in}}

- It cannot be used inside `\usepackage`, because LaTeX expands the options before package `hyperref` is loaded and `\hypercalcbp` is defined.
- With e-TeX extensions an expandable implementation is very easy; `\hypercalcbp` can be used everywhere and is expanded at use.
- Without e-TeX's features `\hypercalcbp` cannot be implemented expandable (practically) and have to be supported by `\hypercalcbpdef`. Limitations:
  - Works only in options that use `\hypercalcbpdef` (currently only `pdfstartview`).
  - For calculations package `calc` has to be loaded.
  - The expansion of the argument is done at definition time.

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

```

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

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

```

```

374 }%
375 \else
376 \def\hypercalcbp#1{%
377 \strip@pt\dimexpr 0.99626401\dimexpr #1\relax\relax
378 }%
379 \def\hypercalcbpdef{\def}%
380 \fi

```

## 6 Dealing with PDF strings

The PDF string stuff done by Heiko Oberdiek.

Email: oberdiek@uni-freiburg.de.

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

### 6.1 Description of PDF strings

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

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

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

### 6.2 Definition of `\pdfstringdef`

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

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

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

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

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

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



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

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

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

```
382 \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.

```
383 \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.

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

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

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

```
387 \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.

```
388 \ifHy@unicode
```

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

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

```
391 \fontencoding{PU}%
```

```
392 \HyPsd@UTFviii
```

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

```
394 \else
```

```
395 \fontencoding{PD1}%
```

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

```
397 \fi
```

```
398 \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).

```
399 \@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).

```
400 \let\@inmathwarn\HyPsd@inmathwarn
```

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

```
401 \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.

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

```
414 \def\{\pdfstringdefWarn\\}%
415 \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.

```
416 \def\TeX{\TeX}%
417 \def\LaTeX{La\TeX}%
418 \def\LaTeXe{LaTeX2e}%
419 \def\eTeX{e-\TeX}%
420 \def\SliTeX{Sli\TeX}%
421 \def\MF{Metafont}%
422 \def\MP{Metapost}%
```

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

```

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

```

**Package color.**

```

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

```

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

```

458 \let\textlatin\@firstofone
459 \@ifundefined{language@group}{\}%
460 \csname HyPsd@babel@language@group\endcsname
461 }%
462 \HyPsd@GreekPatch
463 \let\@safe@activetrue\relax
464 \let\@safe@activesfalse\relax

```

Disable \cyr, used in russianb.ldf.

```

465 \let\cyr\relax

```

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

```

466 \let\es@roman\@Roman

```

**Package german.**

```

467 \let\glqq\textglqq
468 \let\grqq\textgrqq
469 \let\glq\textglq
470 \let\grq\textgrq
471 \let\flqq\textflqq
472 \let\frqq\textfrqq
473 \let\flq\textflq
474 \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}

475 \let\if@mid@expandable\@firstoftwo

```

**AMS classes.**

```

476 \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.

```

477 \let\hspace\HyPsd@hspace

```

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

```

478 \let\label\@gobble
479 \let\index\@gobble
480 \let\glossary\@gobble
481 \let\href\@secondoftwo
482 \let\@mkboth\@gobbletwo

```

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

```

483 \let\ref\HyPsd@ref
484 \let\pageref\HyPsd@pageref
485 \let\nameref\HyPsd@nameref
486 \let\autoref\HyPsd@autoref

```

**Miscellaneous commands.**

```

487 \let\leavevmode\@empty
488 \let\mbox\@empty

```

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

```

489 \def\halign{\pdfstringdefWarn\halign\@gobble}%

```

**Patch for cjk bookmarks.**

```

490 \ifHy@CJKbookmarks
491 \HyPsd@CJKhook
492 \fi

```

**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`).

```
493 \Hy@pdfstringtrue
494 \pdfstringdefPreHook
```

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

```
495 \HyPsd@LetUnexpandableSpace\space
496 \HyPsd@LetUnexpandableSpace\ %
497 \HyPsd@LetUnexpandableSpace~%
498 \HyPsd@LetUnexpandableSpace\nobreakspace
```

**Package xspace.**

```
499 \@ifundefined{@xspace}{%
500   \let\xspace\HyPsd@ITALCORR
501 }{%
502   \let\xspace\HyPsd@XSPACE
503 }%
504 \let\/\HyPsd@ITALCORR
505 \let\bgroup\/%
506 \let\egroup\/%
```

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

```
507 \let\discretionary\@gobbletwo
    \@ifstar is defined in  $\LaTeX$  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:

```
508 \let\@ifnextchar\HyPsd@ifnextchar
509 \let\@ifnextchar\HyPsd@new@ifnextchar
510 \let\@protected@testopt\HyPsd@protected@testopt
```

Support for package 'xargs':

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

## 6.2.2 Expansion

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

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

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

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

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

```

512   \begingroup
513   \let\GenericError\@gobblefour
514   \let\GenericWarning\@gobbletwo
515   \let\GenericInfo\@gobbletwo

```

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

```

516   \ifx\nofrenchguillemets\@undefined
517   \else
518   \nofrenchguillemets
519   \fi

```

**Definition commands and expansion.** Redefining the defining commands (see sec. 6.5.9). The original meaning of `\xdef` is saved in `\Hy@temp`.

```

520   \let\Hy@temp\xdef
521   \let\def\HyPsd@DefCommand
522   \let\gdef\HyPsd@DefCommand
523   \let\edef\HyPsd@DefCommand
524   \let\xdef\HyPsd@DefCommand
525   \let\futurelet\HyPsd@LetCommand
526   \let\let\HyPsd@LetCommand
527   \Hy@temp#1{#2}%
528   \endgroup

```

### 6.2.3 Postprocessing

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

```
529 \ifx#1\@empty
530 \else
```

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

- $\TeX$  does not accept a space as an undelimited argument, it cancels space tokens while looking for an undelimited argument. Therefore we must protect the spaces now.
- An argument can be a single token or a group of many tokens. And within curly braces tokens aren't found by  $\TeX$ 's argument scanning process. Third curly braces as grouping characters cannot be expanded further, so they don't vanish by the string expansion above. So these characters with catcode 1 and 2 are removed in the following and replaced by a marker for the xspace support.
- $\TeX$  silently removes the 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.

```
531 \HyPsd@ProtectSpaces#1%
532 \let\HyPsd@String\@empty
533 \expandafter\HyPsd@RemoveBraces\expandafter{#1}%
534 \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  $\backslash\text{HyPsd@CheckCatcodes}$  the command  $\backslash\text{HyPsd@RemoveMask}$  is reused to remove the group protection character |. This character is needed to ensure that the string at least consists of one token if  $\backslash\text{HyPsd@CheckCatcodes}$  is called.

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

```
535 \let\HyPsd@SPACEOPTI\relax
536 {%
537 \let\HyPsd@String\@empty
538 \expandafter\HyPsd@CheckCatcodes#1\HyPsd@End
539 \global\let#1\HyPsd@String
540}%
541 \expandafter\HyPsd@RemoveMask\expandafter
542 |\expandafter\@empty#1\HyPsd@End#1%
```

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

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

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

```
543 \expandafter\HyPsd@Subst\expandafter{\HyPsd@GLYPHERR}{\relax}#1%
544 \let\HyPsd@String\@empty
545 \expandafter\HyPsd@GlyphProcess#1\relax\@empty
546 \global\let#1\HyPsd@String
```

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

```
547 \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.lfd can produce an additional space before \guillemotright, because \lastskip and \unskip do not work. Therefore it is removed here.

```
548 \ifHy@unicode
549 \expandafter\HyPsd@StringSubst\csname 80\040\endcsname
550 \HyPsd@SPACEOPTI#1%
551 \edef\Hy@temp@A{\HyPsd@SPACEOPTI\HyPsd@SPACEOPTI\80\273}%
552 \expandafter\HyPsd@Subst\expandafter{\Hy@temp@A}%
553 {\HyPsd@SPACEOPTI\80\273}#1%
554 \else
555 \HyPsd@StringSubst{\040}\HyPsd@SPACEOPTI#1%
556 \expandafter\HyPsd@Subst\expandafter{%
557 \expandafter\HyPsd@SPACEOPTI\expandafter\HyPsd@SPACEOPTI
558 \string\273}\HyPsd@SPACEOPTI\273}#1%
559 \fi
```

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

```
560 \ifHy@unicode
561 \HyPsd@StringSubst{\)}{\80\051}#1%
562 \HyPsd@Subst){\80\051}#1%
563 \let\HyPsd@empty\relax
564 \expandafter\HyPsd@StringSubst\csname 80\051\endcsname
565 {\HyPsd@empty\80\051}#1%
566 \else
567 \HyPsd@StringSubst{\)}{\051}#1%
568 \HyPsd@Subst){\051}#1%
569 \let\HyPsd@empty\relax
```



```

570      \HyPsd@StringSubst{\051}{\HyPsd@empty\string\)}#1%
571      \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`.

```

572      \expandafter\HyPsd@Subst\expandafter{\}/\HyPsd@empty#1%
573      \@ifundefined{xspace}{%
574      }{%
575      \let\HyPsd@xspace\relax
576      \expandafter\HyPsd@Subst\expandafter
577      {\HyPsd@XSPACE}\HyPsd@xspace#1%
578      \let\HyPsd@xspace\HyPsd@doxspace
579      }%
580      \xdef#1{#1\HyPsd@empty}%

```

**Ligatures.**  $\TeX$  forms ligatures in its stomach, but the PDF strings are treated only by  $\TeX$ 's mouth. The `PDFDocEncoding` contains some ligatures, but the current version 3 of the `AcrobatReader` lacks the `fi` and `fl` glyphs, and the Linux version lacks the `emdash` and `endash` glyphs. So the necessary code is provided here, but currently disabled, hoping that version 4 of the `AcrobatReader` is better. To break the ligatures the user can use an empty group, because it leads to an insertion of an `\HyPsd@empty`. If this ligature code will be enabled some day, then the italic correction should also break the ligatures. Currently this occurs only, if package `xspace` is loaded.

Since newer `AcrobatReader` versions now show the `en-` and `emdash` in a correct way (`AR7/Linux`, `AR8/Linux`), the substitution code for them is enabled starting with version 6.781.

```

581      \HyPsd@Subst{---}\textemdash#1%
582      \HyPsd@Subst{--}\textendash#1%
583 %      \HyPsd@Subst{fi}\textfi#1%
584 %      \HyPsd@Subst{fl}\textfl#1%
585      \HyPsd@Subst{!'}\textexclamdown#1%
586      \HyPsd@Subst{?'}\textquestiondown#1%

```

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

```

587      \let\HyPsd@empty\@empty

```

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

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

```

588      \ifHy@unicode
589      \HyPsd@StringSubst{\( \textparenleft#1%
590      \HyPsd@Subst(\textparenleft#1%
591      \else

```

```

592      \HyPsd@StringSubst\({\050}#1%
593      \HyPsd@Subst({\050}#1%
594      \HyPsd@StringSubst{\050}{\string\()}#1%
595      \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.

```

596      \ifHy@unicode
597      \edef\HyPsd@SPACEOPTI{\80\040}%
598      \else
599      \let\HyPsd@SPACEOPTI\HyPsd@spaceopti
600      \fi
601      \xdef#1{#1\@empty}%
602      \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.

```

603      \endgroup
604      \begingroup
605      \ifHy@unicode
606      \HyPsd@ConvertToUnicode#1%

```

**Try conversion back to PDFDocEncoding.**

```

607      \ifx\HyPsd@pdfencoding\HyPsd@pdfencoding@auto
608      \@ifundefined{StringEncodingConvertTest}{%
609      }{%
610      \EdefUnescapeString\HyPsd@temp#1%
611      \StringEncodingConvertTest\HyPsd@temp\HyPsd@temp
612      {utf16be}{pdfdoc}{%
613      \EdefEscapeString\HyPsd@temp\HyPsd@temp
614      \global\let#1\HyPsd@temp
615      \Hy@unicodedefalse
616      }{%}%
617      }%
618      \fi
619      \fi

```

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

```

620      \pdfstringdefPostHook#1%
621      \endgroup
622      }

```

\Hy@pdfstringdef

```

623      \def\Hy@pdfstringdef#1#2{%
624      \pdfstringdef\Hy@gtemp{#2}%
625      \let#1\Hy@gtemp
626      }

```

## 6.3 Encodings

### 6.3.1 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.

```
627 \@ifundefined{T@PD1}{\input{pd1enc.def}}{}
628 \DeclareFontFamily{PD1}{pdf}{}
629 \DeclareFontShape{PD1}{pdf}{m}{n}{ <-> cmr10 }{}
630 \DeclareFontSubstitution{PD1}{pdf}{m}{n}
```

### 6.3.2 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.

```
631 \def\HyPsd@InitUnicode{%
632   \ifundefined{T@PU}{\input{puenc.def}}{}%
633   \DeclareFontFamily{PU}{pdf}{}%
634   \DeclareFontShape{PU}{pdf}{m}{n}{ <-> cmr10 }{}%
635   \DeclareFontSubstitution{PU}{pdf}{m}{n}%
636   \let\HyPsd@InitUnicode\relax
637 }
```

## 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 expandable macro `\texorpdfstring`. It expects two arguments, the first contains the string that will be set and processed by T<sub>E</sub>X's stomach, the second contains the replacement for PDF strings.

```
638 \def\texorpdfstring{%
639   \ifHy@pdfstring
640     \expandafter\@secondoftwo
641   \else
642     \expandafter\@firstoftwo
643   \fi
644 }
```

### 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`.

```
645 \@ifundefined{pdfstringdefPreHook}{%
646   \let\pdfstringdefPreHook\@empty
647 }{}
648 \@ifundefined{pdfstringdefPostHook}{%
```

```

649 \let\pdfstringdefPostHook\@gobble
650 }{}

```

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

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

```

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

```

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

```

651 \def\pdfstringdefDisableCommands{%
652   \begingroup
653     \makeatletter
654     \HyPsd@DisableCommands
655 }

```

`\HyPsd@DisableCommands`

```

656 \long\def\HyPsd@DisableCommands#1{%
657   \toks0=\expandafter{\pdfstringdefPreHook}%
658   \toks1={#1}%
659   \xdef\pdfstringdefPreHook{\the\toks0 \the\toks1}%
660   \endgroup
661 }

```

`\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`.

```

662 \def\pdfstringdefWarn#1{%
663   \expandafter\noexpand\csname\<>-string#1\endcsname
664 }

```

## 6.5 Help macros for expansion

### 6.5.1 Babel languages

```

665 \newif\ifHy@next

```

Nothing to do for english.

```

666 \ifundefined{danish@sh@}{sel}{}{%
667   \def\HyPsd@babel@danish{%
668     \declare@shorthand{danish}{|}{|}%
669     \declare@shorthand{danish}{~}{-}%
670   }%

```

```

671 }
672 \@ifundefined{dutch@sh@"@sel}{-}{%
673   \def\HyPsd@babel@dutch{%
674     \declare@shorthand{dutch}{-}{-}%
675     \declare@shorthand{dutch}{-}{-}%
676   }%
677 }
678 \@ifundefined{finnish@sh@"@sel}{-}{%
679   \def\HyPsd@babel@finnish{%
680     \declare@shorthand{finnish}{-}{-}%
681   }%
682 }
683 \@ifundefined{french@sh@"@sel}{-}{%
684   \def\HyPsd@babel@frenchb{%
685     \def\guill@spacing{ }%
686   }%
687 }
688 \@ifundefined{german@sh@"@sel}{-}{%
689   \def\HyPsd@babel@german{%
690     \declare@shorthand{german}{f}{f}%
691     \declare@shorthand{german}{-}{-}%
692     \declare@shorthand{german}{-}{-}%
693   }%
694 }
695 \@ifundefined{macedonian@sh@"@sel}{-}{%
696   \def\HyPsd@babel@macedonian{%
697     \declare@shorthand{macedonian}{-}{-}%
698     \declare@shorthand{macedonian}{-}{-}%
699   }%
700 }{-}
701 \@ifundefined{ngerman@sh@"@sel}{-}{%
702   \def\HyPsd@babel@ngerman{%
703     \declare@shorthand{ngerman}{-}{-}%
704     \declare@shorthand{ngerman}{-}{-}%
705   }%
706 }
707 \@ifundefined{portuges@sh@"@sel}{-}{%
708   \def\HyPsd@babel@portuges{%
709     \declare@shorthand{portuges}{-}{-}%
710   }%
711 }
712 \@ifundefined{russian@sh@"@sel}{-}{%
713   \def\HyPsd@babel@russian{%
714     \declare@shorthand{russian}{-}{-}%
715     \declare@shorthand{russian}{-}{-}%
716   }%
717 }
718 \@ifundefined{slovene@sh@"@sel}{-}{%
719   \def\HyPsd@babel@slovene{%
720     \declare@shorthand{slovene}{-}{-}%
721   }%
722 }

```

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

```

723 \@ifundefined{spanish@sh@>@sel}{-}{%
724   \def\HyPsd@babel@spanish{%
725     \declare@shorthand{spanish}{<<}{\guillemotleft}%
726     \declare@shorthand{spanish}{>>}{\guillemotright}%

```

```

727 \declare@shorthand{spanish}{"="}{-}%
728 \declare@shorthand{spanish}{"~}{-}%
729 \declare@shorthand{spanish}{"!}{\textexclamdown}%
730 \declare@shorthand{spanish}{"?}{\textquestiondown}%
731 }%
732 }
733 \@ifundefined{swedish@sh@"@sel}{-}{%
734 \def\HyPsd@babel@swedish{%
735 \declare@shorthand{swedish}{"}{|}%
736 \declare@shorthand{swedish}{"}{~}{-}%
737 }%
738 }
739 \@ifundefined{ukrainian@sh@"@sel}{-}{%
740 \def\HyPsd@babel@ukrainian{%
741 \declare@shorthand{ukrainian}{"}{|}%
742 \declare@shorthand{ukrainian}{"}{~}{-}%
743 }%
744 }
745 \@ifundefined{usorbian@sh@"@sel}{-}{%
746 \def\HyPsd@babel@usorbian{%
747 \declare@shorthand{usorbian}{"}{f}{f}%
748 \declare@shorthand{usorbian}{"}{|}{|}%
749 }%
750 }
751 \@ifundefined{greek@sh@\string~@sel}{-}{%
752 \let\HyPsd@GreekPatch\@empty
753 }%
754 \def\HyPsd@GreekPatch{%
755 \let\greeknumeral\HyPsd@greeknumeral
756 \let\Greeknatural\HyPsd@Greeknatural
757 }%
758 }
759 \def\HyPsd@greeknumeral#1{%
760 \HyPsd@GreekNum\@firstoftwo{#1}%
761 }
762 \def\HyPsd@Greeknatural#1{%
763 \HyPsd@GreekNum\@secondoftwo{#1}%
764 }
765 \def\HyPsd@GreekNum#1#2{%
766 \ifHy@unicode
767 \ifnum#2<\@ne
768 \@arabic{#2}%
769 \else
770 \ifnum#2<1000000 %
771 \HyPsd@@GreekNum#1{#2}%
772 \else
773 \@arabic{#2}%
774 \fi
775 \fi
776 \else
777 \@arabic{#2}%
778 \fi
779 }
780 \def\HyPsd@@GreekNum#1#2{%
781 \ifnum#2<\@m
782 \ifnum#2<10 %
783 \expandafter\HyPsd@GreekNumI

```

```

784         \expandafter \@gobble \expandafter #1 \number #2%
785     \else
786         \ifnum #2 < 100 %
787             \expandafter \HyPsd@GreekNumII
788             \expandafter \@gobble \expandafter #1 \number #2%
789         \else
790             \expandafter \HyPsd@GreekNumIII
791             \expandafter \@gobble \expandafter #1 \number #2%
792         \fi
793     \fi
794     \ifnum #2 > \z@
795         \textnumeralsigngreek
796     \fi
797 \else
798     \ifnum #2 < \@M
799         \expandafter \HyPsd@GreekNumIV \expandafter #1 \number #2%
800     \else
801         \ifnum #2 < 100000 %
802             \expandafter \HyPsd@GreekNumV \expandafter #1 \number #2%
803         \else
804             \expandafter \HyPsd@GreekNumVI \expandafter #1 \number #2%
805         \fi
806     \fi
807 \fi
808 }
809 \def \HyPsd@GreekNumI#1#2#3{%
810     #1{%
811         \ifnum #3 > \z@
812             \textnumeralsignlowergreek
813         \fi
814     }%
815     \expandafter #2%
816     \ifcase #3 %
817         {}{}%
818         \or \textalpha \textAlpha
819         \or \textbeta \textBeta
820         \or \textgamma \textGamma
821         \or \textdelta \textDelta
822         \or \textepsilon \textEpsilon
823         \or \textstigmagreek \textStigmagreek
824         \or \textzeta \textZeta
825         \or \texteta \textEta
826         \or \texttheta \textTheta
827     \else
828         {}{}%
829     \fi
830 }
831 \def \HyPsd@GreekNumII#1#2#3#4{%
832     #1{%
833         \ifnum #3 > \z@
834             \textnumeralsignlowergreek
835         \fi
836     }%
837     \expandafter #2%
838     \ifcase #3 %
839         {}{}%
840         \or \textiota \textIota

```

```

841 \or\textkappa\textKappa
842 \or\textlambda\textLambda
843 \or\textmu\textMu
844 \or\textnu\textNu
845 \or\textxi\textXi
846 \or\textomicron\textOmicron
847 \or\textpi\textPi
848 \or\textkoppagreek\textKoppagreek
849 \else
850   {}{}%
851 \fi
852 \HyPsd@GreekNumI#1#2#4%
853 }
854 \def\HyPsd@GreekNumIII#1#2#3#4#5{%
855   #1{%
856     \ifnum#3>\z@
857       \textnumeralsignlowergreek
858     \fi
859   }%
860 \expandafter#2%
861 \ifcase#3 %
862   {}{}%
863 \or\textrho\textRho
864 \or\textsigma\textSigma
865 \or\texttau\textTau
866 \or\textupsilon\textUpsilon
867 \or\textphi\textPhi
868 \or\textchi\textChi
869 \or\textpsi\textPsi
870 \or\textomega\textOmega
871 \or\textsampigreek\textSampigreek
872 \else
873   {}{}%
874 \fi
875 \HyPsd@GreekNumII#1#2#4#5%
876 }
877 \def\HyPsd@GreekNumIV#1#2#3#4#5{%
878   \HyPsd@GreekNumI\@firstofone#1#2%
879   \HyPsd@@GreekNum#1{#3#4#5}%
880 }
881 \def\HyPsd@GreekNumV#1#2#3#4#5#6{%
882   \HyPsd@GreekNumII\@firstofone#1#2#3%
883   \HyPsd@@GreekNum#1{#4#5#6}%
884 }
885 \def\HyPsd@GreekNumVI#1#2#3#4#5#6#7{%
886   \HyPsd@GreekNumIII\@firstofone#1#2#3#4%
887   \HyPsd@@GreekNum#1{#5#6#7}%
888 }

```

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

```

889 \begingroup
890 \catcode"7F=\active
891 \toks@{%
892   \let\CJK@ignorespaces\empty
893   \def\CJK@char#1{\@gobbletwo}%
894   \let\CJK@charx\@gobblefour
895   \let\CJK@punctchar\@gobblefour
896   \def\CJK@punctcharx#1{\@gobblefour}%
897   \catcode"7F=\active
898   \def^^7f#1^^7f#2^^7f{%
899     \string #1\HyPsd@DecimalToOctal{#2}%
900   }%
901   % ... ?
902   \ifHy@unicode
903     \def\Hy@cjkpu{\80}%
904   \else
905     \let\Hy@cjkpu\@empty
906   \fi
907   \HyPsd@CJKActiveChars
908 }%
909 \count@=127 %
910 \@whilenum\count@<255 \do{%
911   \advance\count@ by 1 %
912   \lccode'\~= \count@
913   \lowercase{%
914     \toks@\expandafter{\the\toks@ ~}%
915   }%
916 }%
917 \toks@\expandafter{\the\toks@ !}%
918 \xdef\HyPsd@CJKhook{\the\toks@}%
919 \endgroup

```

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

```

920 \def\HyPsd@CJKActiveChars#1{%
921   \ifx#1!%
922     \let\HyPsd@CJKActiveChars\relax
923   \else
924     \edef#1{\noexpand\Hy@cjkpu\string#1}%
925   \fi
926   \HyPsd@CJKActiveChars
927 }

```

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

```

928 \def\HyPsd@DecimalToOctal#1{%
929   \ifcase #1 %
930     \000\or \001\or \002\or \003\or \004\or \005\or \006\or \007%
931     \or \010\or \011\or \012\or \013\or \014\or \015\or \016\or \017%
932     \or \020\or \021\or \022\or \023\or \024\or \025\or \026\or \027%
933     \or \030\or \031\or \032\or \033\or \034\or \035\or \036\or \037%
934     \or \040\or \041\or \042\or \043\or \044\or \045\or \046\or \047%
935     \or \050\or \051\or \052\or \053\or \054\or \055\or \056\or \057%
936     \or 0\or 1\or 2\or 3\or 4\or 5\or 6\or 7%
937     \or 8\or 9\or \072\or \073\or \074\or \075\or \076\or \077%
938     \or @\or A\or B\or C\or D\or E\or F\or G%

```

```

939 \or H\or I\or J\or K\or L\or M\or N\or O%
940 \or P\or Q\or R\or S\or T\or U\or V\or W%
941 \or X\or Y\or Z\or \133\or \134\or \135\or \136\or \137%
942 \or \140\or a\or b\or c\or d\or e\or f\or g%
943 \or h\or i\or j\or k\or l\or m\or n\or o%
944 \or p\or q\or r\or s\or t\or u\or v\or w%
945 \or x\or y\or z\or \173\or \174\or \175\or \176\or \177%
946 \or \200\or \201\or \202\or \203\or \204\or \205\or \206\or \207%
947 \or \210\or \211\or \212\or \213\or \214\or \215\or \216\or \217%
948 \or \220\or \221\or \222\or \223\or \224\or \225\or \226\or \227%
949 \or \230\or \231\or \232\or \233\or \234\or \235\or \236\or \237%
950 \or \240\or \241\or \242\or \243\or \244\or \245\or \246\or \247%
951 \or \250\or \251\or \252\or \253\or \254\or \255\or \256\or \257%
952 \or \260\or \261\or \262\or \263\or \264\or \265\or \266\or \267%
953 \or \270\or \271\or \272\or \273\or \274\or \275\or \276\or \277%
954 \or \300\or \301\or \302\or \303\or \304\or \305\or \306\or \307%
955 \or \310\or \311\or \312\or \313\or \314\or \315\or \316\or \317%
956 \or \320\or \321\or \322\or \323\or \324\or \325\or \326\or \327%
957 \or \330\or \331\or \332\or \333\or \334\or \335\or \336\or \337%
958 \or \340\or \341\or \342\or \343\or \344\or \345\or \346\or \347%
959 \or \350\or \351\or \352\or \353\or \354\or \355\or \356\or \357%
960 \or \360\or \361\or \362\or \363\or \364\or \365\or \366\or \367%
961 \or \370\or \371\or \372\or \373\or \374\or \375\or \376\or \377%
962 \fi
963 }

```

### 6.5.3 \@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\endcsname\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}

964 \def\HyPsd@inmathwarn#1#2{%
965   \ifx#2\expandafter
966     \expandafter\ifx\csname\cf@encoding\string#1\endcsname\relax
967       \HyPsd@GLYPHERR
968       \expandafter\@gobble\string#1%
969       >%
970       \expandafter\expandafter\expandafter\HyPsd@EndWithElse
971     \else
972       \expandafter\expandafter\expandafter\HyPsd@GobbleFiFi
973     \fi
974   \else
975     \expandafter#2%
976   \fi
977 }
978 \def\HyPsd@GobbleFiFi#1\fi#2\fi{}
979 \def\HyPsd@EndWithElse#1\else\else}

```

\HyPsd@add@accent

```

980 \def\HyPsd@add@accent#1#2{%
981   \HyPsd@GLYPHERR\expandafter\@gobble\string#1+\string#2>%
982   #2%
983 }%

```

#### 6.5.4 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.

```

984 \def\HyPsd@LetUnexpandableSpace#1{%
985   \expandafter\futurelet\expandafter#1\expandafter\@gobble\space\relax
986 }

```

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

```

987 \HyPsd@LetUnexpandableSpace\HyPsd@UnexpandableSpace

```

### 6.5.5 Marker for commands

`\HyPsd@XSPACE` 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.

```
988 \edef\HyPsd@XSPACE{\string#\string X}
989 \edef\HyPsd@ITALCORR{\string#\string I}
990 \edef\HyPsd@GLYPHERR{\string#\string G}
```

### 6.5.6 `\hspace` fix

`\HyPsd@hspace`

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

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

```
992 \def\HyPsd@@hspace#1*#2\END{%
993   \ifx\#2\%
994     \HyPsd@hspacetest{#1}%
995   \else
996     \expandafter\HyPsd@hspacetest
997   \fi
998 }
```

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

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

### 6.5.7 Fix for AMS classes

```
1000 \@ifundefined{tocsection}{%
1001   \let\HyPsd@AMSclassfix\relax
1002 }{%
1003   \def\HyPsd@AMSclassfix{%
1004     \let\tocpart\HyPsd@tocsection
1005     \let\tocchapter\HyPsd@tocsection
1006     \let\tocappendix\HyPsd@tocsection
1007     \let\tocsection\HyPsd@tocsection
1008     \let\tocsubsection\HyPsd@tocsection
1009     \let\tocsubsubsection\HyPsd@tocsection
1010     \let\tocparagraph\HyPsd@tocsection
1011   }%
1012   \def\HyPsd@tocsection#1#2#3{%
1013     \if @#2@ \else \if @#1@ \else #1 \fi #2. \fi
1014     #3%
1015   }%
1016 }
```

### 6.5.8 Reference commands

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

```
1017 \def\HyPsd@ref#1{\HyPsd@@ref#1*\END}%
```

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

```
1018 \def\HyPsd@@ref#1*#2\END{%
```

```

1019 \ifx\#2\%
1020 \HyPsd@@@ref{#1}%
1021 \else
1022 \expandafter\HyPsd@@@ref
1023 \fi
1024 }%

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

1025 \def\HyPsd@@@ref#1{%
1026 \expandafter\ifx\csname r@#1\endcsname\relax
1027 ??%
1028 \else
1029 \expandafter\expandafter\expandafter
1030 \@car\csname r@#1\endcsname\@nil
1031 \fi
1032 }

\HyPsd@pageref Macro \HyPsd@pageref calls the macro \HyPsd@@pageref for star checking. The same
methods like in \HyPsd@hspace is used.
1033 \def\HyPsd@pageref#1{\HyPsd@@pageref#1*END}

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

1034 \def\HyPsd@@pageref#1*#2END{%
1035 \ifx\#2\%
1036 \HyPsd@@@pageref{#1}%
1037 \else
1038 \expandafter\HyPsd@@@pageref
1039 \fi
1040 }

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

1041 \def\HyPsd@@@pageref#1{%
1042 \expandafter\ifx\csname r@#1\endcsname\relax
1043 ??%
1044 \else
1045 \expandafter\expandafter\expandafter\expandafter
1046 \expandafter\expandafter\expandafter\@car
1047 \expandafter\expandafter\expandafter\@gobble
1048 \csname r@#1\endcsname{}\@nil
1049 \fi
1050 }

\HyPsd@nameref Macro \HyPsd@nameref calls the macro \HyPsd@@nameref for star checking. The same
methods like in \HyPsd@hspace is used.
1051 \def\HyPsd@nameref#1{\HyPsd@@nameref#1*END}

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

1052 \def\HyPsd@@nameref#1*#2END{%
1053 \ifx\#2\%
1054 \HyPsd@@@nameref{#1}%
1055 \else
1056 \expandafter\HyPsd@@@nameref
1057 \fi
1058 }

```

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

```

1059 \def\HyPsd@@@nameref#1{%
1060   \expandafter\ifx\csname r@#1\endcsname\relax
1061     ??%
1062   \else
1063     \expandafter\expandafter\expandafter\expandafter
1064     \expandafter\expandafter\expandafter\@car
1065     \expandafter\expandafter\expandafter\@gobbletwo
1066     \csname r@#1\endcsname\}\}\@nil
1067   \fi
1068 }

```

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

```

1069 \def\HyPsd@autoref#1{\HyPsd@@autoref#1*\END}

```

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

```

1070 \def\HyPsd@@autoref#1*#2\END{%
1071   \ifx\#2\%
1072     \HyPsd@@@autoref{#1}%
1073   \else
1074     \expandafter\HyPsd@@@autoref
1075   \fi
1076 }

```

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

```

1077 \def\HyPsd@@@autoref#1{%
1078   \expandafter\ifx\csname r@#1\endcsname\relax
1079     ??%
1080   \else
1081     \expandafter\expandafter\expandafter\HyPsd@autorefname
1082     \csname r@#1\endcsname\}\}\}\@nil
1083   \expandafter\expandafter\expandafter
1084   \@car\csname r@#1\endcsname\@nil
1085   \fi
1086 }

```

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

```

1087 \def\HyPsd@autorefname#1#2#3#4#5\@nil{%
1088   \ifx\#4\%
1089   \else
1090     \HyPsd@@autorefname#4.\@nil
1091   \fi
1092 }

```

`\HyPsd@@autorefname`

```

1093 \def\HyPsd@@autorefname#1.#2\@nil{%
1094   \@ifundefined{#1autorefname}\%
1095   \@ifundefined{#1name}\%
1096   }\%
1097   \csname#1name\endcsname\space
1098   }\%
1099   }\%
1100   \csname#1autorefname\endcsname\space
1101   }\%
1102 }

```

### 6.5.9 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 cause 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 doesn'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 unmatched `\if...` tokens, the cases `\let\if...\iftrue` and `\let\if...\iffalse` are checked and ignored.

```

\HyPsd@DefCommand
\HyPsd@LetCommand
1103 \begingroup
1104   \def\x#1#2{%
1105     \endgroup
1106     \let#1\def
1107     \def\HyPsd@DefCommand##1##2##{%
1108       #1%
1109       \expandafter\noexpand
1110         \csname\expandafter@gobble\string##1\@empty\endcsname
1111       \@gobble
1112     }%
1113     \let#2\let
1114     \def\HyPsd@@LetCommand##1{%
1115       \expandafter\ifx\csname##1\expandafter\endcsname
1116         \csname iftrue\endcsname
1117       \pdfstringdefWarn\let
1118       \expandafter\@gobble
1119     \else
1120       \expandafter\ifx\csname##1\expandafter\endcsname
1121         \csname iffalse\endcsname
1122       \pdfstringdefWarn\let
1123       \expandafter\expandafter\expandafter\@gobble
1124     \else
1125       #2%
1126       \expandafter\noexpand
1127       \csname##1\expandafter\expandafter\expandafter\endcsname

```

```

1128         \fi
1129     \fi
1130 }%
1131 }%
1132 \expandafter\x\csname <def>-command\expandafter\endcsname
1133         \csname <let>-command\endcsname
1134 \def\HyPsd@LetCommand#1{%
1135     \expandafter\expandafter\expandafter\HyPsd@@LetCommand
1136     \expandafter\expandafter\expandafter{%
1137     \expandafter\@gobble\string#1\@empty
1138 }%
1139 }

```

### 6.5.10 \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.

```

1140 \def\HyPsd@ifnextchar{%
1141     \pdfstringdefWarn\@ifnextchar
1142     \expandafter\@gobbletwo\@gobble
1143 }

```

`\HyPsd@new@ifnextchar` Package `amsgen.sty` redefines `\@ifstar` using `\new@ifnextchar` instead of `\@ifnextchar`. See bug report [latex/3662](https://tex.stackexchange.com/questions/3662).

```

1144 \def\HyPsd@new@ifnextchar{%
1145     \pdfstringdefWarn\new@ifnextchar
1146     \expandafter\@gobbletwo\@gobble
1147 }

```

### 6.5.11 \@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`.

```

1148 \def\HyPsd@protected@testopt#1{%
1149     \pdfstringdefWarn#1%
1150     \@gobbletwo
1151 }

```

## 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:

```

1152 \def\HyPsd@Warning#1{%
1153     \begingroup
1154     \def\space{ }%
1155     \Hy@Warning{#1}%
1156 \endgroup
1157 }

```



## 6.6.2 Protecting spaces

```

1158 \RequirePackage{etexcmds}[2007/09/09]
1159 \ifetex@unexpanded
1160   \expandafter\@secondoftwo
1161 \else
1162   \expandafter\@firstoftwo
1163 \fi
1164 {%

```

`\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`.

```

1165   \def\HyPsd@ProtectSpaces#1{%
1166     \iftrue
1167       \expandafter\HyPsd@@ProtectSpacesFi
1168       \expandafter|\expandafter\@empty#1| \HyPsd@End#1%
1169     \fi
1170   }%

```

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

```

1171   \def\HyPsd@@ProtectSpacesFi#1 #2\HyPsd@End#3\fi{%
1172     \fi
1173     \ifx\scrollmode#2\scrollmode
1174       \HyPsd@RemoveMask#1\HyPsd@End#3%
1175     \else
1176       \gdef#3{#1\HyPsd@UnexpandableSpace#2}%
1177       \expandafter\HyPsd@@ProtectSpacesFi#3\HyPsd@End#3%
1178     \fi
1179   }%

```

### 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.

```

1180   \def\HyPsd@RemoveMask#1|\HyPsd@End#2{%
1181     \toks@\expandafter{#1}%
1182     \xdef#2{\the\toks@}%
1183   }%

1184 }{%
1185   \let\HyPsd@fi\fi
1186   \def\HyPsd@ProtectSpaces#1{%
1187     \xdef#1{%
1188       \iftrue
1189         \expandafter\HyPsd@@ProtectSpacesFi
1190         \expandafter|\expandafter\@empty#1| %
1191       \HyPsd@fi
1192     }%
1193     \expandafter\HyPsd@RemoveMask#1\HyPsd@End#1%
1194   }%
1195   \def\HyPsd@@ProtectSpacesFi#1 #2\HyPsd@fi{%
1196     \fi
1197     \etex@unexpanded{#1}%
1198     \ifx\scrollmode#2\scrollmode
1199     \else
1200       \HyPsd@@ProtectSpacesFi\HyPsd@UnexpandableSpace#2%

```

```

1201 \HyPsd@fi
1202 }%
1203 \def\HyPsd@RemoveMask|#1|\HyPsd@End#2{%
1204 \xdef#2{\etex@unexpanded\expandafter{#1}}%
1205 }%
1206 }

```

### 6.6.3 Remove grouping braces

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

```

1207 \def\HyPsd@RemoveBraces#1{%
1208 \ifx\scrollmode#1\scrollmode
1209 \else
1210 \HyPsd@@RemoveBracesFi#1\HyPsd@End{#1}%
1211 \fi
1212 }

```

`\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`.

```

1213 \def\HyPsd@@RemoveBracesFi#1#2\HyPsd@End#3\fi{%
1214 \fi
1215 \def\Hy@temp@A{#1#2}%
1216 \def\Hy@temp@B{#3}%
1217 \ifx\Hy@temp@A\Hy@temp@B
1218 \expandafter\def\expandafter\HyPsd@String\expandafter{%
1219 \HyPsd@String#1%
1220 }%
1221 \ifx\scrollmode#2\scrollmode
1222 \else
1223 \Hy@ReturnAfterFiFiEnd{%
1224 \HyPsd@RemoveBraces{#2}%
1225 }%
1226 \fi
1227 \else
1228 \def\Hy@temp@A{#1}%
1229 \HyPsd@AppendItalcorr\HyPsd@String
1230 \ifx\Hy@temp@A\empty
1231 \Hy@ReturnAfterElseFiFiEnd{%
1232 \HyPsd@RemoveBraces{#2}%
1233 }%
1234 \else
1235 \HyPsd@ProtectSpaces\Hy@temp@A
1236 \HyPsd@AppendItalcorr\Hy@temp@A
1237 \Hy@ReturnAfterFiFiEnd{%
1238 \expandafter\HyPsd@RemoveBraces\expandafter
1239 {\Hy@temp@A#2}%
1240 }%
1241 \fi
1242 \fi

```

```

1243 \Hy@ReturnEnd
1244 }

```

\HyPsd@AppendItalcorr The string can contain commands yet, so it is better to use \def instead of a shorter \edef. The two help macros limit the count of \expandafter.

```

1245 \def\HyPsd@AppendItalcorr#1{%
1246 \expandafter\HyPsd@@AppendItalcorr\expandafter{/}#1%
1247 }
1248 \def\HyPsd@@AppendItalcorr#1#2{%
1249 \expandafter\def\expandafter#2\expandafter{#2#1}%
1250 }

```

#### 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).

```

1251 \def\HyPsd@CheckCatcodes#1#2\HyPsd@End{%
1252 \global\let\HyPsd@Rest\relax
1253 \ifcat\relax\noexpand#1\relax
1254 \ifx#1\protect
1255 \else
1256 \ifx#1\penalty
1257 \setbox\z@=\hbox{%
1258 \afterassignment\HyPsd@AfterCountRemove
1259 \count@=#2\HyPsd@End
1260 }%
1261 \else
1262 \ifx#1\kern
1263 \setbox\z@=\hbox{%
1264 \afterassignment\HyPsd@AfterDimenRemove
1265 \dimen@=#2\HyPsd@End
1266 }%
1267 \else
1268 \ifx#1\hskip
1269 \setbox\z@=\hbox{%
1270 \afterassignment\HyPsd@AfterSkipRemove
1271 \skip@=#2\HyPsd@End
1272 }%
1273 \else
1274 \HyPsd@CatcodeWarning{#1}%
1275 \fi
1276 \fi
1277 \fi
1278 \fi
1279 \else
1280 \ifcat#1A% letter
1281 \expandafter\def\expandafter\HyPsd@String\expandafter{%

```

```

1282     \HyPsd@String#1%
1283   }%
1284   \else
1285     \ifcat#1 % SPACE
1286       \expandafter\def\expandafter\HyPsd@String\expandafter{%
1287         \HyPsd@String\HyPsd@SPACEOPTI
1288       }%
1289   \else
1290     \ifcat$#1%
1291       \HyPsd@CatcodeWarning{math shift}%
1292   \else
1293     \ifcat&#1%
1294       \HyPsd@CatcodeWarning{alignment tab}%
1295   \else
1296     \ifcat^#1%
1297       \HyPsd@CatcodeWarning{superscript}%
1298   \else
1299     \ifcat_#1%
1300       \HyPsd@CatcodeWarning{subscript}%
1301   \else
1302     \expandafter\def\expandafter\HyPsd@String\expandafter{%
1303       \HyPsd@String#1%
1304     }%
1305   \fi
1306 \fi
1307 \fi
1308 \fi
1309 \fi
1310 \fi
1311 \fi
1312 \ifx\HyPsd@Rest\relax
1313   \ifx\scrollmode#2\scrollmode
1314   \else
1315     \Hy@ReturnAfterFiFiEnd{%
1316       \HyPsd@CheckCatcodes#2\HyPsd@End
1317     }%
1318   \fi
1319 \else
1320   \ifx\HyPsd@Rest\@empty
1321   \else
1322     \Hy@ReturnAfterFiFiEnd{%
1323       \expandafter\HyPsd@CheckCatcodes\HyPsd@Rest\HyPsd@End
1324     }%
1325   \fi
1326 \fi
1327 \Hy@ReturnEnd
1328 }

```

### Remove counts, dimens, skips.

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

```

1329 \def\HyPsd@AfterCountRemove#1\HyPsd@End{%
1330   \gdef\HyPsd@Rest{#1}%
1331 }

```

\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.

```

1332 \def\HyPsd@AfterDimenRemove#1\HyPsd@end{%
1333   \ifdim\ifx\HyPsd@String\@empty\z@\else\dimen@>1ex %
1334     \HyPsd@ReplaceSpaceWarning{\string\kern\space\the\dimen@}%
1335     \gdef\HyPsd@Rest{\HyPsd@UnexpandableSpace #1}%
1336   \else
1337     \ifdim\dimen@=\z@
1338     \else
1339       \HyPsd@RemoveSpaceWarning{\string\kern\space\the\dimen@}%
1340     \fi
1341     \gdef\HyPsd@Rest{#1}%
1342   \fi
1343 }

```

**\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).

```

1344 \def\HyPsd@AfterSkipRemove#1\HyPsd@end{%
1345   \ifdim\ifx\HyPsd@String\@empty\z@\else\skip@>1ex %
1346     \HyPsd@ReplaceSpaceWarning{\string\hskip\space\the\skip@}%
1347     \gdef\HyPsd@Rest{\HyPsd@UnexpandableSpace #1}%
1348   \else
1349     \ifdim\skip@=\z@
1350     \else
1351       \HyPsd@RemoveSpaceWarning{\string\kern\space\the\skip@}%
1352     \fi
1353     \gdef\HyPsd@Rest{#1}%
1354   \fi
1355 }

```

### Catcode warnings.

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

```

1356 \def\HyPsd@CatcodeWarning#1{%
1357   \HyPsd@Warning{%
1358     Token not allowed in a PDF string (%
1359     \ifHy@unicode
1360       Unicode%
1361     \else
1362       PDFDocEncoding%
1363     \fi
1364     ):%
1365     \MessageBreak removing ‘\HyPsd@RemoveCmdPrefix#1’%
1366   }%
1367 }
1368 \begingroup
1369   \catcode‘\|=0 %
1370   \catcode‘\|=12 %
1371   \gdef\HyPsd@RemoveCmdPrefix#1{%
1372     \expandafter\HyPsd@@RemoveCmdPrefix
1373     \string#1\@empty\<>-|@empty|@empty
1374   }%
1375   \gdef\HyPsd@@RemoveCmdPrefix#1\<>-#2|@empty#3|@empty{#1#2}%
1376 \endgroup

```

**\HyPsd@RemoveSpaceWarning**

```

1377 \def\HyPsd@RemoveSpaceWarning#1{%
1378   \HyPsd@Warning{%
1379     Token not allowed in a PDF string (
1380     \ifHy@unicode
1381       Unicode%
1382     \else
1383       PDFDocEncoding%
1384     \fi
1385   ):%
1386   \MessageBreak #1\MessageBreak
1387   removed%
1388 }%
1389 }

```

\HyPsd@ReplaceSpaceWarning

```

1390 \def\HyPsd@ReplaceSpaceWarning#1{%
1391   \HyPsd@Warning{%
1392     Token not allowed in a PDF string (
1393     \ifHy@unicode
1394       Unicode%
1395     \else
1396       PDFDocEncoding%
1397     \fi
1398   ):%
1399   \MessageBreak #1\MessageBreak
1400   replaced by space%
1401 }%
1402 }

```

### 6.6.5 Check for wrong glyphs

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

```

1403 \def\HyPsd@GlyphProcess#1\relax#2\@empty{%
1404   \expandafter\def\expandafter\HyPsd@String\expandafter{%
1405     \HyPsd@String#1%
1406   }%
1407   \ifx\#2\%
1408   \else
1409     \Hy@ReturnAfterFi{%
1410       \HyPsd@GlyphProcessWarning#2\@empty
1411     }%
1412   \fi
1413 }
1414 \def\HyPsd@GlyphProcessWarning#1>#2\@empty{%
1415   \HyPsd@@GlyphProcessWarning#1++>%
1416   \HyPsd@GlyphProcess#2\@empty
1417 }
1418 \def\HyPsd@@GlyphProcessWarning#1+#2+#3>{%
1419   \ifx\#2\%
1420     \HyPsd@Warning{%
1421       Glyph not defined in %
1422       P\ifHy@unicode U\else D1\fi\space encoding,\MessageBreak
1423       removing '@backslashchar#1'%
1424     }%
1425   \else
1426     \HyPsd@Warning{%

```

```

1427     Composite letter '@backslashchar#1+#2'\MessageBreak
1428     not defined in P\ifHy@unicode U\else D1\fi\space encoding,%
1429     \MessageBreak
1430     removing '@backslashchar#1'%
1431 }%
1432 \fi
1433 }

```

### 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`.

```

1434 \def\HyPsd@spaceopti#1{ % first space
1435   \ifx\HyPsd@spaceopti#1%
1436     \040%
1437   \else
1438     #1%
1439   \fi
1440 }%

```

### 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.

```

1441 \def\HyPsd@Subst#1#2#3{%
1442   \def\HyPsd@@ReplaceFi##1#1##2\END\fi{%
1443     \fi
1444     ##1%
1445     \ifx\scrollmode##2\scrollmode
1446     \else
1447       #2%
1448       \HyPsd@@ReplaceFi##2\END
1449     \fi
1450   }%
1451   \xdef#3{%
1452     \iftrue
1453       \expandafter\HyPsd@@ReplaceFi#3#1\END
1454     \fi
1455   }%
1456 }

```

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

```

1457 \def\HyPsd@StringSubst#1{%
1458   \expandafter\HyPsd@Subst\expandafter{\string#1}%
1459 }

```

### 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.

```

1460 \def\HyPsd@doxspace#1{%
1461   \ifx#1\relax\else
1462     \ifx#1.\else
1463       \ifx#1:\else
1464         \ifx#1,\else
1465         \ifx#1;\else
1466         \ifx#1!\else
1467         \ifx#1?\else
1468         \ifx#1/\else
1469         \ifx#1-\else
1470         \ifx#1'\else
1471         \HyPsd@SPACEOPTI
1472       \fi
1473     \fi
1474   \fi
1475 \fi
1476 \fi
1477 \fi
1478 \fi
1479 \fi
1480 \fi
1481 \fi
1482 #1%
1483 }%

```

### 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.

```

1484 \begingroup
1485   \catcode'\|=0 %
1486   \catcode'\|=12 %

```

\HyPsd@ConvertToUnicode

```

1487 |gdef|HyPsd@ConvertToUnicode#1{%
1488   |xdef#1{%
1489     |expandafter|HyPsd@DoConvert#1|@empty|@empty|@empty
1490   }%
1491   |ifx#1|@empty
1492   |else
1493     |xdef#1{%
1494       \376\377%
1495       #1%
1496     }%
1497   |fi
1498 }%

```

\HyPsd@DoConvert

```

1499 |gdef|HyPsd@DoConvert#1{%
1500   |ifx#1|@empty
1501   |else
1502     |Hy@ReturnAfterFi{%
1503       |ifx#1\%%
1504       \%%
1505       |expandafter|HyPsd@DoEscape

```



```

1506         |else
1507         \000#1%
1508         |expandafter|HyPsd@DoConvert
1509         |fi
1510     }%
1511 |fi
1512 }%

```

\HyPsd@DoEscape

```

1513 |gdef|HyPsd@DoEscape#1{%
1514     |ifx#19%
1515     |expandafter|HyPsd@GetTwoBytes
1516     |else
1517     |Hy@ReturnAfterFi{%
1518     |ifx#18%
1519     00%
1520     |expandafter|HyPsd@GetTwoBytes
1521     |else
1522     #1%
1523     |expandafter|HyPsd@GetOneByte
1524     |fi
1525     }%
1526 |fi
1527 }%

```

\HyPsd@GetTwoBytes

```

1528 |gdef|HyPsd@GetTwoBytes#1\#2#3#4{%
1529     #1\#2#3#4%
1530     |HyPsd@DoConvert
1531     }%

```

\HyPsd@GetOneByte

```

1532 |gdef|HyPsd@GetOneByte#1#2{%
1533     #1#2%
1534     |HyPsd@DoConvert
1535     }%
1536 |endgroup

```

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

```

1537 \def\HyPsd@GetNextTwoTokens#1#2#3\END#4{%
1538     \xdef#4{#4#1#2}%
1539     \HyPsd@@ConvertToUnicode#3\END#4%
1540 }

```

## 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 `e $\TeX$ 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

```

```

1541 \begingroup\expandafter\expandafter\expandafter\endgroup
1542 \expandafter\ifx\csname numexpr\endcsname\relax
1543   \let\HyPsd@UTFviii\relax
1544 \else
1545   \begingroup
1546     \lccode'\~='^f4\relax
1547   \lowercase{\endgroup
1548     \def\HyPsd@UTFviii{%
1549       \let\UTFviii@two@octets\HyPsd@UTFviii@two
1550       \let\UTFviii@three@octets\HyPsd@UTFviii@three
1551       \let\UTFviii@four@octets\HyPsd@UTFviii@four
1552       \ifx~\HyPsd@UTFviii@ccxliv@undef
1553         \let~\HyPsd@UTFviii@ccxliv@def
1554       \fi
1555       \let\unichar\HyPsd@unichar
1556     }%
1557   }%
1558   \def\HyPsd@UTFviii@ccxliv@undef{\@inpc@undefined@{utf8}}%
1559   \edef\HyPsd@UTFviii@ccxliv@def{%
1560     \noexpand\UTFviii@four@octets\string ~^f4%
1561   }%

```

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.

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

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

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

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

$$(5)$$

```

1562 \def\HyPsd@UTFviii@two#1#2{%
1563   \expandafter\HyPsd@UTFviii@two
1564   \number\dimexpr.25\dimexpr'#1sp\expandafter\relax\expandafter|%
1565   \number'#1\expandafter|%
1566   \number\dimexpr.125\dimexpr'#2sp\expandafter\relax\expandafter|%
1567   \number'#2 \@nil
1568 }%
1569 \def\HyPsd@UTFviii@two#1|#2|#3|#4\@nil{%
1570   \expandafter\8%
1571   \number\dimexpr #1-48\expandafter\relax
1572   \csname\number\dimexpr #2-4*#1\relax\expandafter\endcsname
1573   \number\dimexpr #3-8*%
1574   \number\dimexpr.125\dimexpr#3sp\relax\relax\expandafter\relax
1575   \number\dimexpr #4-8*#3\relax
1576 }%

```

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)

```

1577 \def\HyPsd@UTFviii@three#1#2#3{%
1578   \expandafter\HyPsd@UTFviii@three
1579   \number\dimexpr.25\dimexpr'#1sp\expandafter\relax\expandafter|
1580   \number'#1\expandafter|
1581   \number\ifnum\dimexpr'#2-128\relax <32 0\else 1\fi\expandafter|
1582   \number\dimexpr.25\dimexpr'#2sp\expandafter\relax\expandafter|
1583   \number'#2\expandafter|
1584   \number\dimexpr.125\dimexpr'#3sp\expandafter\relax\expandafter|
1585   \number'#3 \@nil
1586 }%
1587 \def\HyPsd@UTFviii@three#1|#2|#3|#4|#5|#6|#7\@nil{%
1588   \expandafter\
1589   \number\dimexpr #1-56\expandafter\relax
1590   \number\dimexpr 2*(#2-4*#1)+#3\expandafter\relax
1591   \number\dimexpr #4 - 32 -\ifcase#3 0\else 8\fi\expandafter\relax
1592   \csname\number\dimexpr #5-4*#4\relax\expandafter\endcsname
1593   \number\dimexpr #6-16\expandafter\relax
1594   \number\dimexpr #7-8*#6\relax
1595 }%
```

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
```

```

1596 \def\HyPsd@UTFviii@four#1#2{%
1597   \expandafter\HyPsd@UTFviii@four\
1598   \number\dimexpr-1+('#1-240)*4+\dimexpr.0625\dimexpr'#2sp-128sp%
1599   \expandafter|
1600   \number\dimexpr'#2-16*\dimexpr.0625\dimexpr'#2sp|
1601 }%
1602 \def\HyPsd@UTFviii@four#1|#2|#3{%
1603   \933\number\dimexpr.25\dimexpr#1sp\relax\relax
1604   \csname\number\dimexpr#1-4*\dimexpr.25\dimexpr#1sp\endcsname
1605   \ifodd#2 %
1606     \number\dimexpr(#2-1)/2\relax
1607   \else
1608     \number\dimexpr#2/2\relax
1609   \fi
1610   \number\dimexpr\ifodd#2 4+\fi
1611   \dimexpr.0625\dimexpr'#3sp-128sp\relax\relax\relax
1612   \933%
1613   \expandafter\HyPsd@UTFviii@four\
1614   \number\dimexpr'#3-16*\dimexpr.0625\dimexpr'#3sp|
1615 }%
1616 \def\HyPsd@UTFviii@four#1|#2{%
1617   \number\dimexpr4+\dimexpr.25\dimexpr#1sp\relax\relax\relax
1618   \csname\number\dimexpr#1-4*\dimexpr.25\dimexpr#1sp\endcsname
1619   \number\dimexpr.125\dimexpr'#2sp-128sp\relax\relax
1620   \number\dimexpr'#2-8*\dimexpr.125\dimexpr'#2sp\relax\relax\relax
1621 }%
```

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

```

1622 \def\HyPsd@unichar#1{%
1623   \ifHy@unicode
1624     \ifnum#1>"10FFFF %
1625       \HyPsd@UnicodeReplacementCharacter % illegal
1626     \else
1627       \ifnum#1>"FFFF %

```

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

```

1628     \expandafter\HyPsd@unichar\expandafter{%
1629       \number\numexpr 55296+
1630         \dimexpr.0009765625\dimexpr\number#1sp-\p@
1631       \relax\relax\relax
1632     }%

```

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

```

1633     \expandafter\HyPsd@unichar\expandafter{%
1634       \number\numexpr#1-9216
1635       -1024*\dimexpr.0009765625\dimexpr\number#1sp-\p@
1636       \relax\relax\relax
1637     }%
1638   \else
1639     \ifnum#1>"7FF %
1640       \9
1641       \expandafter\HyPsd@unichar@first@byte\expandafter{%
1642         \number
1643         \dimexpr.00390625\dimexpr\number#1sp\relax\relax
1644       }%
1645     \else
1646       \8
1647       \number\dimexpr.00390625\dimexpr\number#1sp\relax\relax
1648     \fi
1649     \expandafter\HyPsd@unichar@second@byte\expandafter{%
1650       \number
1651       \numexpr#1-256*\number
1652       \dimexpr.00390625\dimexpr\number#1sp\relax\relax\relax
1653     }%
1654   \fi
1655 \fi
1656 \else
1657   .% unsupported (Unicode -> PDF Doc Encoding)
1658 \fi
1659 }%
1660 \def\HyPsd@UnicodeReplacementCharacter{\9377\375}%
1661 \def\HyPsd@unichar@first@byte#1{%
1662   \number\dimexpr.015625\dimexpr#1sp\relax\relax
1663   \expandafter\HyPsd@unichar@octtwo\expandafter{%
1664     \number
1665     \numexpr#1-64*\number\dimexpr.015625\dimexpr#1sp
1666     \relax\relax\relax
1667   }%
1668 }%
1669 \def\HyPsd@unichar@second@byte#1{%
1670   \csname\number\dimexpr.015625\dimexpr#1sp\relax\relax\endcsname
1671   \expandafter\HyPsd@unichar@octtwo\expandafter{%
1672     \number
1673     \numexpr#1-64*\number\dimexpr.015625\dimexpr#1sp

```

```

1674     \relax\relax\relax
1675   }%
1676 }%
1677 \def\HyPsd@unichar@octtwo#1{%
1678   \number\dimexpr.125\dimexpr#1sp\relax\relax
1679   \number\numexpr#1-8*\number\dimexpr.125\dimexpr#1sp%
1680   \relax\relax\relax
1681 }%
1682 \fi

```

## 7 Support of other packages

### 7.1 Class memoir

```

1683 \@ifclassloaded{memoir}{%
1684   \AtEndOfPackage{\RequirePackage{memhfixc}}%
1685 }{}

```

### 7.2 Package subfigure

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

```

1686 \@ifpackageloaded{subfigure}{%
1687   \@ifundefined{sub@label}{%
1688     \Hy@hypertextnamesfalse
1689   }{%
1690     \renewcommand*{\sub@label}[1]{%
1691       \bsphack
1692       \subfig@oldlabel{#1}%
1693       \if@filesw
1694         \begingroup
1695         \edef\@currentlabstr{%
1696           \expandafter\strip@prefix\meaning\@currentlabelname
1697         }%
1698         \protected@write\@auxout{}{%
1699           \string\newlabel{sub@#1}{%
1700             {\@nameuse{@@thesub\@capttype}}%
1701             {\thepage}%
1702             {%
1703               \expandafter\strip@period\@currentlabstr
1704               \relax.\relax\@@%
1705             }%
1706             {\@currentHref}%
1707             {}%
1708           }%
1709         }%
1710         \endgroup
1711       \fi
1712       \esphack
1713     }%
1714     \@ifpackagelater{subfigure}{2002/03/26}{%
1715       \providecommand*{\toclevel@subfigure}{1}%
1716       \providecommand*{\toclevel@subtable}{1}%
1717     }%
1718   }%
1719 }{}

```

### 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:

```
1720 \@ifundefined{XR@addURL}{%
1721 }{%
```

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.

```
1722 \def\xR@addURL#1{\XR@dURL#1{}{}{}{}\\}%
1723 \def\xR@dURL#1#2#3#4#5\{%
1724   {#1}-{#2}%
1725   \if!#4!%
1726   \else
1727     {#3}-{#4}{\XR@URL}%
1728   \fi
1729 }%
1730 }
```

```
1731 \def\Hy@true{true}
1732 \def\Hy@false{false}
```

Providing dummy definitions.

```
1733 \let\literalps@out@gobble
1734 \newcommand\pdfbookmark[3][]{ }
1735 \def\Acrobatmenu#1#2{\leavevmode#2}
1736 \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

```
1737 \let\HyperRaiseLinkHook\@empty
1738 \def\HyperRaiseLinkDefault{\baselineskip}
```

\HyperRaiseLinkHook allows the user to reassign \HyperRaiseLinkLength.

```
1739 \def\Hy@raisedlink#1{%
1740   \ifvmode
1741     #1%
1742   \else
1743     \penalty\@M
1744     \smash{%
1745       \begingroup
1746         \let\HyperRaiseLinkLength\@tempdima
1747         \setlength\HyperRaiseLinkLength\HyperRaiseLinkDefault
1748         \HyperRaiseLinkHook
1749       \expandafter\endgroup
1750       \expandafter\raise\the\HyperRaiseLinkLength\hbox{#1}%

```

```

1751 }%
1752 \fi
1753 }

```

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

```

\Hy@RestoreLastskip
1754 \def\Hy@SaveLastskip{%
1755   \let\Hy@RestoreLastskip\relax
1756   \ifvmode
1757     \ifdim\lastskip=\z@
1758       \let\Hy@RestoreLastskip\nobreak
1759     \else
1760       \begingroup
1761         \skip@=-\lastskip
1762         \edef\x{%
1763           \endgroup
1764           \def\noexpand\Hy@RestoreLastskip{%
1765             \noexpand\ifvmode
1766               \noexpand\nobreak
1767               \vskip\the\skip@
1768               \vskip\the\lastskip\relax
1769             \noexpand\fi
1770           }%
1771         }%
1772       \x
1773     \fi
1774   \else
1775     \ifhmode
1776       \ifdim\lastskip=\z@
1777         \let\Hy@RestoreLastskip\nobreak
1778       \else
1779         \begingroup
1780           \skip@=-\lastskip
1781           \edef\x{%
1782             \endgroup
1783             \def\noexpand\Hy@RestoreLastskip{%
1784               \noexpand\ifhmode
1785                 \noexpand\nobreak
1786                 \hskip\the\skip@
1787                 \hskip\the\lastskip\relax
1788               \noexpand\fi
1789             }%
1790           }%
1791         \x
1792       \fi
1793     \fi
1794   \fi
1795 }%

```

## 9 Options

### 9.1 Help macros

```

\Hy@boolkey
1796 \def\Hy@boolkey{\@dblarg\Hy@@boolkey}
1797 \def\Hy@@boolkey[#1]#2#3{%
1798   \lowercase{\def\Hy@tempa{#3}}%

```

```

1799 \ifx\Hy@tempa\@empty
1800   \let\Hy@tempa\Hy@true
1801 \fi
1802 \ifx\Hy@tempa\Hy@true
1803 \else
1804   \ifx\Hy@tempa\Hy@false
1805   \else
1806     \let\Hy@tempa\relax
1807   \fi
1808 \fi
1809 \ifx\Hy@tempa\relax
1810   \Hy@WarnOptionValue{#3}{#1}{‘true’ or ‘false’}%
1811 \else
1812   \Hy@Info{Option ‘#1’ set ‘\Hy@tempa’}%
1813   \csname Hy@#2\Hy@tempa\endcsname
1814 \fi
1815 }

```

\Hy@WarnOptionValue

```

1816 \def\Hy@WarnOptionValue#1#2#3{%
1817   \Hy@Warning{%
1818     Unexpected value ‘#1’\MessageBreak
1819     of option ‘#2’ instead of\MessageBreak
1820     #3%
1821   }%
1822 }

```

\Hy@DisableOption

```

1823 \def\Hy@DisableOption#1{%
1824   \@ifundefined{KV@Hyp@#1@default}{%
1825     \define@key{Hyp}{#1}%
1826   }{%
1827     \define@key{Hyp}{#1}[]%
1828   }%
1829   {\Hy@WarnOptionDisabled{#1}}%
1830 }

```

\Hy@WarnOptionDisabled

```

1831 \def\Hy@WarnOptionDisabled#1{%
1832   \Hy@Warning{%
1833     Option ‘#1’ has already been used,\MessageBreak
1834     setting the option has no effect%
1835   }%
1836 }

```

\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.

```

1837 \def\Hy@CheckOptionValue#1#2#3{%
1838   \begingroup
1839   \edef\x{#1}%
1840   \@onelevel@sanitize\x
1841   \let\y=%
1842   \def\do##1##2{%
1843     \def\z{##1}%
1844     \@onelevel@sanitize\z
1845     \ifx\x\z
1846       \let\y=n%

```



```

1847         \let\do\@gobbletwo
1848     \fi
1849 }%
1850 #3%
1851 \ifx\y y%
1852     \def\do##1##2{%
1853         * '##1'%
1854         \ifx\##2\\\else\space(##2)\fi
1855         \MessageBreak
1856     }%
1857     \Hy@Warning{%
1858         Values of option '#2':\MessageBreak
1859         #3%
1860         * An empty value disables the option.\MessageBreak
1861         Unknown value '\x'%
1862     }%
1863 \fi
1864 \endgroup
1865 }

```

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

```

1866 \def\Hy@DefNameKey#1{%
1867     \expandafter\Hy@DefNameKey\csname @#1\endcsname{#1}%
1868 }

```

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

```

1869 \def\Hy@@DefNameKey#1#2#3{%
1870     \define@key{Hyp}{#2}{%
1871         \edef#1{##1}%
1872         \ifx#1\@empty
1873             \else
1874                 \Hy@CheckOptionValue{##1}{#2}{#3}%
1875             \fi
1876     }%
1877     \let#1\@empty
1878 }

```

`\Hy@UseNameKey`

```

1879 \def\Hy@UseNameKey#1#2{%
1880     \ifx#2\@empty
1881     \else
1882         /#1/#2%
1883     \fi
1884 }

```

## 9.2 Defining the options

```

1885 \define@key{Hyp}{implicit}[true]{%
1886     \Hy@boolkey{implicit}{#1}%
1887 }
1888 \define@key{Hyp}{draft}[true]{%
1889     \Hy@boolkey{draft}{#1}%

```

```

1890 }
1891 \define@key{Hyp}{final}[true]{%
1892   \Hy@boolkey{final}{#1}%
1893 }
1894 \let\KV@Hyp@nolinks\KV@Hyp@draft
1895 \define@key{Hyp}{a4paper}[true]{%
1896   \def\special@paper{210mm,297mm}%
1897   \def\Hy@pageheight{842}%
1898 }
1899 \define@key{Hyp}{a5paper}[true]{%
1900   \def\special@paper{148mm,210mm}%
1901   \def\Hy@pageheight{595}%
1902 }
1903 \define@key{Hyp}{b5paper}[true]{%
1904   \def\special@paper{176mm,250mm}%
1905   \def\Hy@pageheight{709}%
1906 }
1907 \define@key{Hyp}{letterpaper}[true]{%
1908   \def\special@paper{8.5in,11in}%
1909   \def\Hy@pageheight{792}%
1910 }
1911 \define@key{Hyp}{legalpaper}[true]{%
1912   \def\special@paper{8.5in,14in}%
1913   \def\Hy@pageheight{1008}%
1914 }
1915 \define@key{Hyp}{executivepaper}[true]{%
1916   \def\special@paper{7.25in,10.5in}%
1917   \def\Hy@pageheight{720}%
1918 }
1919 \define@key{Hyp}{setpagesize}[true]{%
1920   \Hy@boolkey{setpagesize}{#1}%
1921 }
1922 \define@key{Hyp}{debug}[true]{%
1923   \Hy@boolkey[debug]{verbose}{#1}%
1924 }
1925 \define@key{Hyp}{linktocpage}[true]{%
1926   \Hy@boolkey{linktocpage}{#1}%
1927   \ifHy@linktocpage
1928     \let\Hy@linktoc\Hy@linktoc@page
1929   \else
1930     \let\Hy@linktoc\Hy@linktoc@section
1931   \fi
1932 }
1933 \chardef\Hy@linktoc@none=0 %
1934 \chardef\Hy@linktoc@section=1 %
1935 \chardef\Hy@linktoc@page=2 %
1936 \chardef\Hy@linktoc@all=3 %
1937 \ifHy@linktocpage
1938   \let\Hy@linktoc\Hy@linktoc@page
1939 \else
1940   \let\Hy@linktoc\Hy@linktoc@section
1941 \fi
1942 \define@key{Hyp}{linktoc}{%
1943   \@ifundefined{Hy@linktoc@#1}{%
1944     \Hy@Warning{%
1945       Unexpected value ‘#1’ of\MessageBreak
1946       option ‘linktoc’ instead of ‘none’,\MessageBreak

```

```

1947     'section', 'page' or 'all'%
1948   }%
1949 }{%
1950   \expandafter\let\expandafter\Hy@linktoc
1951   \csname Hy@linktoc@#1\endcsname
1952 }%
1953 }
1954 \define@key{Hyp}{extension}{\def\XR@ext{#1}}
1955 \let\XR@ext\relax
1956 \define@key{Hyp}{verbose}[true]{%
1957   \Hy@boolkey{verbose}{#1}%
1958 }
1959 \define@key{Hyp}{typexml}[true]{%
1960   \Hy@boolkey{typexml}{#1}%
1961 }

```

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.

```

1962 \define@key{Hyp}{raiselinks}[true]{%
1963   \Hy@boolkey{raiselinks}{#1}%
1964 }

```

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

```

1965 \def\Hy@setbreaklinks#1{%
1966   \csname breaklinks#1\endcsname
1967 }
1968 \def\Hy@breaklinks@unsupported{%
1969   \ifx\Hy@setbreaklinks@gobble
1970     \ifHy@breaklinks
1971       \Hy@WarningNoLine{%
1972         You have enabled option 'breaklinks'.\MessageBreak
1973         But driver '\Hy@driver.def' does not support this.\MessageBreak
1974         Expect trouble with the link areas of broken links%
1975       }%
1976     \fi
1977   \fi
1978 }
1979 \define@key{Hyp}{breaklinks}[true]{%
1980   \Hy@boolkey{breaklinks}{#1}%
1981   \let\Hy@setbreaklinks@gobble
1982 }

```

Determines whether an automatic anchor is put on each page

```

1983 \define@key{Hyp}{pageanchor}[true]{%
1984   \Hy@boolkey{pageanchor}{#1}%
1985 }

```

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.

```

1986 \define@key{Hyp}{plainpages}[true]{%
1987   \Hy@boolkey{plainpages}{#1}%
1988 }

```

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

```

1989 \define@key{Hyp}{naturalnames}[true]{%
1990   \Hy@boolkey{naturalnames}{#1}%

```

1991 }

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

```
1992 \define@key{Hyp}{hypertexnames}[true]{%
1993   \Hy@boolkey{hypertexnames}{#1}%
1994 }
```

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

```
1995 \define@key{Hyp}{nesting}[true]{%
1996   \Hy@boolkey{nesting}{#1}%
1997 }

1998 \define@key{Hyp}{unicode}[true]{%
1999   \Hy@boolkey{unicode}{#1}%
2000   \ifHy@unicode
2001     \def\HyPsd@pdfencoding{unicode}%
2002   \else
2003     \def\HyPsd@pdfencoding{pdfdoc}%
2004   \fi
2005   \HyPsd@LoadUnicode
2006 }

2007 \def\HyPsd@LoadUnicode{%
2008   \@ifundefined{T@PU}{\input{puenc.def}}{}%
2009   \DeclareFontFamily{PU}{pdf}{}%
2010   \DeclareFontShape{PU}{pdf}{m}{n}{<-> cmr10 }{}%
2011   \DeclareFontSubstitution{PU}{pdf}{m}{n}%
2012   \global\let\HyPsd@LoadUnicode\relax
2013 }

2014 \AtBeginDocument{%
2015   \ifx\HyPsd@LoadUnicode\relax
2016   \else
2017     \def\HyPsd@LoadUnicode{%
2018       \PackageError{hyperref}{%
2019         Unicode support for bookmarks is not available.\MessageBreak
2020         Activate unicode support by using one of the options\MessageBreak
2021         'unicode', 'pdfencoding=unicode', 'pdfencoding=auto'\MessageBreak
2022         in the preamble%
2023       }@ehc
2024       \global\let\HyPsd@LoadUnicode\relax
2025       \global\Hy@unicodetrue
2026       \global\let\Hy@unicodetrue\Hy@unicodetrue
2027     }%
2028   \fi
2029 }

2030 \define@key{Hyp}{pdfencoding}{%
2031   \edef\HyPsd@temp{#1}%
2032   \ifx\HyPsd@temp\HyPsd@pdfencoding@pdfdoc
2033     \let\HyPsd@pdfencoding\HyPsd@temp
2034     \Hy@unicodetrue
2035   \else
2036     \ifcase\ifx\HyPsd@temp\HyPsd@pdfencoding@unicode
2037       \z@
2038     \else
2039       \ifx\HyPsd@temp\HyPsd@pdfencoding@auto
2040         \z@
2041       \else
2042         \@ne
2043       \fi
```

```

2044         \fi
2045     \let\HyPsd@pdfencoding\HyPsd@temp
2046     \hypersetup{unicode}%
2047     \ifHy@unicode
2048         \def\HyPsd@pdfencoding{#1}%
2049         \ifx\HyPsd@pdfencoding\HyPsd@pdfencoding@auto
2050             \HyPsd@LoadStringEnc
2051         \fi
2052     \else
2053         \Hy@Warning{Cannot switch to unicode bookmarks}%
2054         \let\HyPsd@pdfencoding\HyPsd@pdfencoding@pdfdoc
2055     \fi
2056 \else
2057     \@onelevel@sanitize\HyPsd@temp
2058     \Hy@Warning{%
2059         Values of option 'pdfencoding':\MessageBreak
2060         'pdfdoc', 'unicode', 'auto'.\MessageBreak
2061         Ignoring unknown value '\HyPsd@temp'%
2062     }%
2063 \fi
2064 \fi
2065 }
2066 \def\HyPsd@pdfencoding@auto{auto}
2067 \def\HyPsd@pdfencoding@pdfdoc{pdfdoc}
2068 \def\HyPsd@pdfencoding@unicode{unicode}
2069 \let\HyPsd@pdfencoding\Hy@pdfencoding@pdfdoc
2070 \def\HyPsd@LoadStringEnc{%
2071     \RequirePackage{stringenc}[2007/06/14]%
2072     \let\HyPsd@LoadStringEnc\relax
2073 }
2074 \AtBeginDocument{%
2075     \@ifpackageloaded{stringenc}{%
2076         \let\HyPsd@LoadStringEnc\relax
2077     }{%
2078         \def\HyPsd@LoadStringEnc{%
2079             \Hy@WarningNoLine{%
2080                 Missing package 'stringenc'. Use 'pdfencoding=auto'\MessageBreak
2081                 in the preamble or load the package there%
2082             }%
2083         }%
2084     }%
2085 }
2086 \newif\ifHy@setpdfversion
2087 \define@key{Hyp}{pdfversion}{%
2088     \@ifundefined{Hy@pdfversion@#1}{%
2089         \PackageWarning{hyperref}{%
2090             Unsupported PDF version '#1'.\MessageBreak
2091             Valid values: 1.2 until 1.9%
2092         }%
2093     }{%
2094         \Hy@setpdfversiontrue
2095         \edef\Hy@pdfversion{\@nameuse{Hy@pdfversion@#1}}%
2096     }%
2097 }
2098 \@namedef{Hy@pdfversion@1.2}{2}%
2099 \@namedef{Hy@pdfversion@1.3}{3}%
2100 \@namedef{Hy@pdfversion@1.4}{4}%

```

```

2101 \@namedef{Hy@pdfversion@1.5}{5}%
2102 \@namedef{Hy@pdfversion@1.6}{6}%
2103 \@namedef{Hy@pdfversion@1.7}{7}%
2104 \@namedef{Hy@pdfversion@1.8}{8}%
2105 \@namedef{Hy@pdfversion@1.9}{9}%
2106 \def\Hy@pdfversion{2}

```

## 10 Options for different drivers

```

2107 \define@key{Hyp}{hyperref}[true]{%
2108 \define@key{Hyp}{tex4ht}[true]{%
2109 \Hy@texhttrue
2110 \setkeys{Hyp}{colorlinks=true}%
2111 \def\BeforeTeXIVht{\usepackage{color}}%
2112 \def\Hy@driver{htex4ht}%
2113 \def\MaybeStopEarly{%
2114 \typeout{Hyperref stopped early}%
2115 \AfterBeginDocument{%
2116 \PDF@FinishDoc
2117 \gdef\PDF@FinishDoc{}%
2118 }%
2119 \endinput
2120 }%
2121 }
2122 \define@key{Hyp}{pdftex}[true]{%
2123 \def\Hy@driver{hpdftex}%
2124 }
2125 \define@key{Hyp}{nativepdf}[true]{%
2126 \def\Hy@driver{hdvips}%
2127 }
2128 \define@key{Hyp}{dvipdfm}[true]{%
2129 \def\Hy@driver{hdvipdfm}%
2130 }
2131 \define@key{Hyp}{dvipdfmx}[true]{%
2132 \def\Hy@driver{hdvipdfm}%
2133 }
2134 \define@key{Hyp}{dvipdfmx-outline-open}[true]{%
2135 \expandafter\ifx\csname if#1\expandafter\endcsname
2136 \csname iftrue\endcsname
2137 \chardef\SpecialDvipdfmxOutlineOpen\@ne
2138 \else
2139 \chardef\SpecialDvipdfmxOutlineOpen\z@
2140 \fi
2141 }
2142 \define@key{Hyp}{xetex}[true]{%
2143 \def\Hy@driver{hdvipdfm}%
2144 }
2145 \define@key{Hyp}{pdfmark}[true]{%
2146 \def\Hy@driver{hdvips}%
2147 }
2148 \define@key{Hyp}{dvips}[true]{%
2149 \def\Hy@driver{hdvips}%
2150 }
2151 \define@key{Hyp}{hypertex}[true]{%
2152 \def\Hy@driver{hypertex}%
2153 }
2154 \let\Hy@MaybeStopNow\relax

```

```

2155 \define@key{Hyp}{vtex}[true]{%
2156   \begingroup\expandafter\expandafter\expandafter\endgroup
2157   \expandafter\ifx\csname OpMode\endcsname\relax
2158     \@latex@error{Non-VTeX processor}{}%
2159     \global\let\Hy@MaybeStopNow\endinput
2160     \endinput
2161   \else
2162     \ifnum 0\ifnum\OpMode<1 1\fi \ifnum\OpMode>3 1\fi =0 %
2163     \def\Hy@driver{hvtex}%
2164   \else
2165     \ifnum\OpMode=10\relax
2166       \def\Hy@driver{hvtexhtm}%
2167       \def\MaybeStopEarly{%
2168         \typeout{Hyperref stopped early}%
2169         \AfterBeginDocument{%
2170           \PDF@FinishDoc
2171           \gdef\PDF@FinishDoc{}%
2172         }%
2173       \endinput
2174     }%
2175   \else
2176     \@latex@error{Mode (\the\OpMode) has no hyperref driver}{}%
2177     \global\let\Hy@MaybeStopNow\endinput
2178     \endinput
2179   \fi
2180 \fi
2181 \fi
2182 }
2183 \define@key{Hyp}{vtexpdfmark}[true]{%
2184   \begingroup\expandafter\expandafter\expandafter\endgroup
2185   \expandafter\ifx\csname OpMode\endcsname\relax
2186     \@latex@error{Non-VTeX processor}{}%
2187     \let\Hy@MaybeStopNow\endinput
2188     \endinput
2189   \else
2190     \ifnum 0\ifnum\OpMode<1 1\fi \ifnum\OpMode>3 1\fi =0 %
2191     \def\Hy@driver{hvtexmrk}%
2192   \else
2193     \@latex@error{Mode (\the\OpMode) has no hyperref driver}{}%
2194     \let\Hy@MaybeStopNow\endinput
2195     \endinput
2196   \fi
2197 \fi
2198 }
2199 \define@key{Hyp}{dviwindo}[true]{%
2200   \def\Hy@driver{hdvwind}%
2201   \setkeys{Hyp}{colorlinks}%
2202   \PassOptionsToPackage{dviwindo}{color}%
2203 }
2204 \define@key{Hyp}{dvipsone}[true]{%
2205   \def\Hy@driver{hdvipson}%
2206 }
2207 \define@key{Hyp}{textures}[true]{%
2208   \def\Hy@driver{htexture}%
2209 }
2210 \define@key{Hyp}{latex2html}[true]{%
2211   \AtBeginDocument{\@latextohtmlX}%

```

```
2212 }
```

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

```
2213 \define@key{Hyp}{ps2pdf}[true]{%
2214   \def\Hy@driver{hdvips}%
2215   \providecommand*\@pdfborder{0 0 1}%
2216 }
```

## 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.

```
2217 \define@key{Hyp}{hyperfigures}[true]{%
2218   \Hy@boolkey[hyperfigures]{figures}{#1}%
2219 }
```

The automatic footnote linking can be disabled by option hyperfootnotes.

```
2220 \define@key{Hyp}{hyperfootnotes}[true]{%
2221   \Hy@boolkey[hyperfootnotes]{#1}%
2222 }
```

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

```
2223 \def\back@none{none}
2224 \def\back@section{section}
2225 \def\back@page{page}
2226 \def\back@slide{slide}
2227 \define@key{Hyp}{backref}[section]{%
2228   \lowercase{\def\Hy@tempa{#1}}%
2229   \ifx\Hy@tempa\@empty
2230     \let\Hy@tempa\back@section
2231   \fi
2232   \ifx\Hy@tempa\Hy@false
2233     \let\Hy@tempa\back@none
2234   \fi
2235   \ifx\Hy@tempa\back@slide
2236     \let\Hy@tempa\back@section
2237   \fi
2238   \ifx\Hy@tempa\back@page
2239     \PassOptionsToPackage{hyperpageref}{backref}%
2240     \Hy@backreftrue
2241   \else
2242     \ifx\Hy@tempa\back@section
2243       \PassOptionsToPackage{hyperref}{backref}%
2244       \Hy@backreftrue
2245     \else
2246       \ifx\Hy@tempa\back@none
2247         \Hy@backreffalse
2248       \else
2249         \Hy@WarnOptionValue{#1}{backref}{%
2250           'section', 'slide', 'page', 'none', \MessageBreak
2251           or 'false'}%
2252       \fi
2253     \fi
2254   \fi
2255 }
2256 \define@key{Hyp}{pagebackref}[true]{%
2257   \lowercase{\def\Hy@tempa{#1}}%
2258   \ifx\Hy@tempa\@empty
```



```

2259 \let\Hy@tempa\Hy@true
2260 \fi
2261 \ifx\Hy@tempa\Hy@true
2262 \PassOptionsToPackage{hyperpageref}{backref}%
2263 \Hy@backreftrue
2264 \else
2265 \ifx\Hy@tempa\Hy@false
2266 \Hy@backreffalse
2267 \else
2268 \Hy@WarnOptionValue{#1}{pagebackref}{‘true’ or ‘false’}%
2269 \fi
2270 \fi
2271 }

```

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

```

2272 \define@key{Hyp}{hyperindex}[true]{%
2273 \Hy@boolkey{hyperindex}{#1}%
2274 }

```

Configuration of encap char.

```

2275 \define@key{Hyp}{encap}[\l]{%
2276 \def\HyInd@EncapChar{#1}%
2277 }

```

## 12 Language options

The \autoref feature depends on the language.

```

2278 \def\HyLang@afrikaans{%
2279 \def\equationautorefname{Vergelyking}%
2280 \def\footnoteautorefname{Voetnota}%
2281 \def\itemautorefname{Item}%
2282 \def\figureautorefname{Figuur}%
2283 \def\tableautorefname{Tabel}%
2284 \def\partautorefname{Deel}%
2285 \def\appendixautorefname{Bylae}%
2286 \def\chapterautorefname{Hoofstuk}%
2287 \def\sectionautorefname{Afdeling}%
2288 \def\subsectionautorefname{Subafdeling}%
2289 \def\subsubsectionautorefname{Subsubafdeling}%
2290 \def\paragraphautorefname{Paragraaf}%
2291 \def\subparagraphautorefname{Subparagraaf}%
2292 \def\FancyVerbLineautorefname{Lyn}%
2293 \def\theoremautorefname{Teorema}%
2294 \def\pageautorefname{Bladsy}%
2295 }
2296 \def\HyLang@english{%
2297 \def\equationautorefname{Equation}%
2298 \def\footnoteautorefname{footnote}%
2299 \def\itemautorefname{item}%
2300 \def\figureautorefname{Figure}%
2301 \def\tableautorefname{Table}%
2302 \def\partautorefname{Part}%
2303 \def\appendixautorefname{Appendix}%
2304 \def\chapterautorefname{chapter}%
2305 \def\sectionautorefname{section}%
2306 \def\subsectionautorefname{subsection}%

```

```

2307 \def\subsubsectionautorefname{subsubsection}%
2308 \def\paragraphautorefname{paragraph}%
2309 \def\subparagraphautorefname{subparagraph}%
2310 \def\FancyVerbLineautorefname{line}%
2311 \def\theoremautorefname{Theorem}%
2312 \def\pageautorefname{page}%
2313 }
2314 \def\HyLang@french{%
2315 \def\equationautorefname{'Equation}%
2316 \def\footnoteautorefname{note}%
2317 \def\itemautorefname{item}%
2318 \def\figureautorefname{Figure}%
2319 \def\tableautorefname{Tableau}%
2320 \def\partautorefname{Partie}%
2321 \def\appendixautorefname{Appendice}%
2322 \def\chapterautorefname{chapitre}%
2323 \def\sectionautorefname{section}%
2324 \def\subsectionautorefname{sous-section}%
2325 \def\subsubsectionautorefname{sous-sous-section}%
2326 \def\paragraphautorefname{paragraphe}%
2327 \def\subparagraphautorefname{sous-paragraphe}%
2328 \def\FancyVerbLineautorefname{ligne}%
2329 \def\theoremautorefname{Th'eor'eme}%
2330 \def\pageautorefname{page}%
2331 }
2332 \def\HyLang@german{%
2333 \def\equationautorefname{Gleichung}%
2334 \def\footnoteautorefname{Fu'ss note}%
2335 \def\itemautorefname{Punkt}%
2336 \def\figureautorefname{Abbildung}%
2337 \def\tableautorefname{Tabelle}%
2338 \def\partautorefname{Teil}%
2339 \def\appendixautorefname{Anhang}%
2340 \def\chapterautorefname{Kapitel}%
2341 \def\sectionautorefname{Abschnitt}%
2342 \def\subsectionautorefname{Unterabschnitt}%
2343 \def\subsubsectionautorefname{Unterunterabschnitt}%
2344 \def\paragraphautorefname{Absatz}%
2345 \def\subparagraphautorefname{Unterabsatz}%
2346 \def\FancyVerbLineautorefname{Zeile}%
2347 \def\theoremautorefname{Theorem}%
2348 \def\pageautorefname{Seite}%
2349 }
2350 \def\HyLang@italian{%
2351 \def\equationautorefname{Equazione}%
2352 \def\footnoteautorefname{nota}%
2353 \def\itemautorefname{punto}%
2354 \def\figureautorefname{Figura}%
2355 \def\tableautorefname{Tabella}%
2356 \def\partautorefname{Parte}%
2357 \def\appendixautorefname{Appendice}%
2358 \def\chapterautorefname{Capitolo}%
2359 \def\sectionautorefname{sezione}%
2360 \def\subsectionautorefname{sottosezione}%
2361 \def\subsubsectionautorefname{sottosottosezione}%
2362 \def\paragraphautorefname{paragrafo}%
2363 \def\subparagraphautorefname{sottoparagrafo}%

```

```

2364 \def\FancyVerbLineautorefname{linea}%
2365 \def\theoremautorefname{Teorema}%
2366 \def\pageautorefname{Pag.\@}%
2367 }
2368 \def\HyLang@magyar{%
2369 \def\equationautorefname{Egyenlet}%
2370 \def\footnoteautorefname{l\'abjegyzet}%
2371 \def\itemautorefname{Elem}%
2372 \def\figureautorefname{'Abra}%
2373 \def\tableautorefname{T\'abl\'azat}%
2374 \def\partautorefname{R\'esz}%
2375 \def\appendixautorefname{F\'uggel\'ek}%
2376 \def\chapterautorefname{fejezet}%
2377 \def\sectionautorefname{szakasz}%
2378 \def\subsectionautorefname{alszakasz}%
2379 \def\subsubsectionautorefname{alalszakasz}%
2380 \def\paragraphautorefname{bekezd\'es}%
2381 \def\subparagraphautorefname{albekezd\'es}%
2382 \def\FancyVerbLineautorefname{sor}%
2383 \def\theoremautorefname{T\'etel}%
2384 \def\pageautorefname{oldal}%
2385 }
2386 \def\HyLang@portuges{%
2387 \def\equationautorefname{Equa\c c\~ao}%
2388 \def\footnoteautorefname{Nota de rodap\'e}%
2389 \def\itemautorefname{Item}%
2390 \def\figureautorefname{Figura}%
2391 \def\tableautorefname{Tabela}%
2392 \def\partautorefname{Parte}%
2393 \def\appendixautorefname{Ap\~endice}%
2394 \def\chapterautorefname{Cap\'itulo}%
2395 \def\sectionautorefname{Se\c c\~ao}%
2396 \def\subsectionautorefname{Subse\c c\~ao}%
2397 \def\subsubsectionautorefname{Subsubse\c c\~ao}%
2398 \def\paragraphautorefname{par\'agrafo}%
2399 \def\subparagraphautorefname{subpar\'agrafo}%
2400 \def\FancyVerbLineautorefname{linha}%
2401 \def\theoremautorefname{Teorema}%
2402 \def\pageautorefname{P\'agina}%
2403 }

```

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`.

```

2404 \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`?

```

2405 \def\equationautorefname{\cyr\cyrv\cyrery\cyr.}%

```

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

```

2406 % \def\equationautorefname{%
2407 %     \cyr\cyrv\cyrery\cyrr\cyra\cyrz\cyre\cyrn\cyri\cyre
2408 % }%

```

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

```

2409 \def\footnoteautorefname{%
2410     \cyr\cyrp\cyro\cyrd\cyrs\cyrt\cyrr.\ \cyrp\cyrr\cyri\cyrm.%
2411 }%

```

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}”

```

2412 % \def\footnoteautorefname{%
2413 %     \cyr\cyrp\cyro\cyrd\cyrs\cyrt\cyrr\cyro\cyrch\cyrn\cyro\cyre\ %
2414 %     \cyrp\cyrr\cyri\cyrm\cyre\cyrch\cyra\cyrn\cyri\cyre
2415 % }%

```

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

```

2416 % \def\Nomfootnoteautorefname{\cyr\cyrs\cyrn\cyro\cyrs\cyrk\cyra}%
2417 % \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.

```

2418 \def\itemautorefname{\cyr\cyrp.}%
2419 % \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.

```

2420 \def\figureautorefname{\cyr\cyrr\cyri\cyrs.}%
2421 \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.

```

2422 \def\partautorefname{\cyr\cyrch.}%
2423 \def\chapterautorefname{\cyr\cyrg\cyrl.}%
2424 \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.

```

2425 \def\appendixautorefname{\cyr\cyrp\cyrr\cyri\cyrl.}%
2426 % \def\appendixautorefname{%
2427 %     \cyr\cyrp\cyrr\cyri\cyrl\cyro\cyrz\cyre\cyrn\cyri\cyre
2428 % }%

```

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.

```

2429 \def\subsectionautorefname{\cyr\cyrr\cyra\cyrz\cyrd.}%
2430 \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.

```

2431 \def\paragraphautorefname{\cyr\cyrp.}%
2432 \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.

```
2433 % \def\paragraphautorefname{\cyr\cyrp\cyru\cyrn\cyrk\cyrt}%
2434 % \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.

```
2435 \def\FancyVerbLineautorefname{\cyr\cyrs\cyrt\cyrr.}%
```

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

```
2436 % \def\NomFancyVerbLineautorefname{\cyr\cyrs\cyrt\cyrr\cyro\cyrk\cyra}%
2437 % \def\AccFancyVerbLineautorefname{\cyr\cyrs\cyrt\cyrr\cyro\cyrk\cyru}%
```

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

```
2438 % \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 ...

```
2439 \def\theoremautorefname{\cyr\cyrt\cyre\cyro\cyrr.}%
```

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

```
2440 % \def\Nomtheoremautorefname{\cyr\cyrt\cyre\cyro\cyrr\cyre\cyrm\cyra}%
2441 % \def\Acctheoremautorefname{\cyr\cyrt\cyre\cyro\cyrr\cyre\cyrm\cyru}%
```

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

```
2442 \def\pageautorefname{\cyr\cyrs.}%
2443 }
```

```
2444 \def\HyLang@spanish{%
2445 \def\equationautorefname{Ecuaci'on}%
2446 \def\footnoteautorefname{Nota a pie de p'agina}%
2447 \def\itemautorefname{Elemento}%
2448 \def\figureautorefname{Figura}%
2449 \def\tableautorefname{Tabla}%
2450 \def\partautorefname{Parte}%
2451 \def\appendixautorefname{Ap'endice}%
2452 \def\chapterautorefname{Cap'itulo}%
2453 \def\sectionautorefname{Secci'on}%
2454 \def\subsectionautorefname{Subsecci'on}%
2455 \def\subsubsectionautorefname{Subsubsecci'on}%
2456 \def\paragraphautorefname{P'arrafo}%
2457 \def\subparagraphautorefname{Subp'arrafo}%
2458 \def\FancyVerbLineautorefname{L'inea}%
2459 \def\theoremautorefname{Teorema}%
2460 \def\pageautorefname{P'agina}%
2461 }
```

```
2462 \def\HyLang@vietnamese{%
2463 \def\equationautorefname{Ph\uhorn{}\ohorn{}ng tr'inh}%
2464 \def\footnoteautorefname{Ch'u th'ich}%
2465 \def\itemautorefname{m\du{c}%
2466 \def\figureautorefname{H'inh}%
2467 \def\tableautorefname{B'h{a}ng}%
2468 \def\partautorefname{Ph'\acircumflex{n}%
2469 \def\appendixautorefname{Ph\du{1}\du{c}%
```

```

2470 \def\chapterautorefname{ch\uhorn{}\ohorn{}ng}%
2471 \def\sectionautorefname{m\du{c}}%
2472 \def\subsectionautorefname{m\du{c}}%
2473 \def\subsubsectionautorefname{m\du{c}}%
2474 \def\paragraphautorefname{dj{}\da{n}%
2475 \def\subparagraphautorefname{dj{}\da{n}%
2476 \def\FancyVerbLineautorefname{d\'ong}%
2477 \def\theoremautorefname{DJ{}\di{nh l\'y}%
2478 \def\pageautorefname{Trang}%
2479 }

```

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

```

2480 \def\HyLang@addto#1#2{%
2481   #2%
2482   \@temptokena{#2}%
2483   \ifx#1\relax
2484     \let#1\@empty
2485   \fi
2486   \ifx#1\undefined
2487     \edef#1{\the\@temptokena}%
2488   \else
2489     \toks@\expandafter{#1}%
2490     \edef#1{\the\toks@\the\@temptokena}%
2491   \fi
2492   \@temptokena{}\toks@\@temptokena
2493 }

2494 \def\HyLang@DeclareLang#1#2#3{%
2495   \begingroup
2496     \edef\x##1##2{%
2497       \noexpand\ifx##2\relax
2498         \errmessage{No definitions for language #2' found!}%
2499       \noexpand\fi
2500     \endgroup
2501     \noexpand\define@key{Hyp}{#1}[]{%
2502       \noexpand\HyLang@addto{\noexpand##1}{\noexpand##2}%
2503       #3%
2504     }%
2505   }%
2506   \expandafter\x\csname extras#1\expandafter\endcsname
2507     \csname HyLang@#2\endcsname
2508 }

2509 \HyLang@DeclareLang{english}{english}{}
2510 \HyLang@DeclareLang{UKenglish}{english}{}
2511 \HyLang@DeclareLang{british}{english}{}
2512 \HyLang@DeclareLang{USenglish}{english}{}
2513 \HyLang@DeclareLang{american}{english}{}
2514 \HyLang@DeclareLang{german}{german}{}
2515 \HyLang@DeclareLang{austrian}{german}{}
2516 \HyLang@DeclareLang{ngerman}{german}{}
2517 \HyLang@DeclareLang{naustrian}{german}{}
2518 \HyLang@DeclareLang{russian}{russian}{\noexpand\hypersetup{unicode}}
2519 \HyLang@DeclareLang{brazil}{portuges}{}
2520 \HyLang@DeclareLang{brazilian}{portuges}{}
2521 \HyLang@DeclareLang{portuguese}{portuges}{}
2522 \HyLang@DeclareLang{spanish}{spanish}{}
2523 \HyLang@DeclareLang{afrikaans}{afrikaans}{}

```

```

2524 \HyLang@DeclareLang{french}{french}{}
2525 \HyLang@DeclareLang{frenchb}{french}{}
2526 \HyLang@DeclareLang{francais}{french}{}
2527 \HyLang@DeclareLang{acadian}{french}{}
2528 \HyLang@DeclareLang{canadien}{french}{}
2529 \HyLang@DeclareLang{italian}{italian}{}
2530 \HyLang@DeclareLang{magyar}{magyar}{}
2531 \HyLang@DeclareLang{hungarian}{magyar}{}

```

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

```

2532 \define@key{Hyp}{vietnamese}[]{}%
2533   \HyLang@addto\extrasvietnamese\HyLang@vietnamese
2534   \AtEndOfPackage{%
2535     \ifundefined{T@PU}{}{}%
2536     \input{puvnenc.def}%
2537   }%
2538 }%
2539 }
2540 \define@key{Hyp}{vietnam}[]{}%
2541   \HyLang@addto\extravietnam\HyLang@vietnamese
2542   \AtEndOfPackage{%
2543     \ifundefined{T@PU}{}{}%
2544     \input{puvnenc.def}%
2545   }%
2546 }%
2547 }

```

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

```

2548 \define@key{Hyp}{arabic}[]{}%
2549   \AtEndOfPackage{%
2550     \ifundefined{T@PU}{}{}%
2551     \input{puarenc.def}%
2552   }%
2553 }%
2554 }

```

## 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.

```

2555 \define@key{Hyp}{colorlinks}[true]{}%
2556   \Hy@boolkey{colorlinks}{#1}%
2557 }
2558 \define@key{Hyp}{ocgcolorlinks}[true]{}%
2559   \Hy@boolkey{ocgcolorlinks}{#1}%
2560 }
2561 \AtBeginDocument{%
2562   \begingroup
2563     \ifundefined{OBJ@OCG@view}{}%
2564     \ifHy@ocgcolorlinks
2565       \Hy@Warning{%
2566         Driver does not support ‘ocgcolorlinks’,\MessageBreak
2567         using ‘colorlinks’ instead%
2568       }%
2569     \fi
2570   }{}%
2571 \endgroup
2572 }

```

```

2573 \define@key{Hyp}{frenchlinks}[true]{%
2574   \Hy@boolkey{frenchlinks}{#1}%
2575 }

```

## 14 Bookmarking

```

2576 \define@key{Hyp}{bookmarks}[true]{%
2577   \Hy@boolkey{bookmarks}{#1}%
2578 }

2579 \define@key{Hyp}{bookmarksopen}[true]{%
2580   \Hy@boolkey{bookmarksopen}{#1}%
2581 }

```

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.

```

2582 \let\Hy@bookmarksdepth\c@tocdepth
2583 \define@key{Hyp}{bookmarksdepth}[]{%
2584   \begingroup
2585     \edef\x{#1}%
2586     \ifx\x\empty
2587       \global\let\Hy@bookmarksdepth\c@tocdepth
2588     \else
2589       \@ifundefined{toclevel@x}{%
2590         \@onelevel@sanitize\x
2591         \edef\y{\expandafter\@car\x\@nil}%
2592         \ifcase 0\expandafter\ifx\y-1\fi
2593           \expandafter\ifnum\expandafter'\y>47 %
2594             \expandafter\ifnum\expandafter'\y<58 1\fi\fi\relax
2595           \Hy@Warning{Unknown document division name (\x)}%
2596         \else
2597           \setbox\z@=\hbox{%
2598             \count@=\x
2599             \xdef\Hy@bookmarksdepth{\the\count@}%
2600           }%
2601         \fi
2602       }{%
2603         \setbox\z@=\hbox{%
2604           \count@=\csname toclevel@x\endcsname
2605           \xdef\Hy@bookmarksdepth{\the\count@}%
2606         }%
2607       }%
2608     \fi
2609   \endgroup
2610 }

```

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

```

2611 \define@key{Hyp}{bookmarksopenlevel}{%
2612   \def\@bookmarksopenlevel{#1}%

```



```

2613 }
2614 \def\@bookmarksopenlevel{\maxdimen}
2615 % 'bookmarkstype' to specify which 'toc' file to mimic
2616 \define@key{Hyp}{bookmarkstype}{%
2617   \def\Hy@bookmarkstype{#1}%
2618 }
2619 \def\Hy@bookmarkstype{toc}

```

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

```

2620 \define@key{Hyp}{bookmarksnumbered}[true]{%
2621   \Hy@boolkey{bookmarksnumbered}{#1}%
2622 }

```

Option CJKbookmarks enables the patch for CJK bookmarks.

```

2623 \define@key{Hyp}{CJKbookmarks}[true]{%
2624   \Hy@boolkey{CJKbookmarks}{#1}%
2625 }

2626 \def\Hy@temp#1{%
2627   \expandafter\Hy@@temp\csname @#1color\endcsname{#1}%
2628 }
2629 \def\Hy@@temp#1#2#3{%
2630   \define@key{Hyp}{#2color}{%
2631     \HyColor@HyperrefColor{##1}#1%
2632   }%
2633   \def#1{#3}%
2634 }
2635 \Hy@temp{link}{red}
2636 \Hy@temp{anchor}{black}
2637 \Hy@temp{cite}{green}
2638 \Hy@temp{file}{cyan}
2639 \Hy@temp{url}{magenta}
2640 \Hy@temp{menu}{red}
2641 \Hy@temp{run}{\@filecolor}
2642 \define@key{Hyp}{pagecolor}{%
2643   \Hy@WarningPageColor
2644 }
2645 \def\Hy@WarningPageColor{%
2646   \Hy@WarningNoLine{Option 'pagecolor' is not available anymore}%
2647   \global\let\Hy@WarningPageColor\relax
2648 }

2649 \def\hyperbaseurl#1{\def\@baseurl{#1}}
2650 \define@key{Hyp}{baseurl}{\hyperbaseurl{#1}}
2651 \let\@baseurl\@empty
2652 \def\hyperlinkfileprefix#1{\def\Hy@linkfileprefix{#1}}
2653 \define@key{Hyp}{linkfileprefix}{\hyperlinkfileprefix{#1}}
2654 \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.

```

2655 \let\@pdfpagetransition\relax
2656 \define@key{Hyp}{pdfpagetransition}{\def\@pdfpagetransition{#1}}

```

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

```
2657 \let\pdfpageduration\relax
2658 \define@key{Hyp}{pdfpageduration}{\def\pdfpageduration{#1}}
```

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

```
2659 \newif\ifHy@useHidKey
2660 \Hy@useHidKeyfalse
2661 \define@key{Hyp}{pdfpagehidden}[true]{%
2662   \Hy@boolkey{pdfpagehidden}{#1}%
2663   \ifHy@pdfpagehidden
2664     \global\Hy@useHidKeytrue
2665   \fi
2666 }
```

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).

```
2667 \def\Hy@ColorList{cite,file,link,menu,run,url}
2668 \@for\Hy@temp:=\Hy@ColorList\do{%
2669   \edef\Hy@temp{%
2670     \noexpand\define@key{Hyp}{\Hy@temp bordercolor}{%
2671       \noexpand\HyColor@HyperrefBordercolor
2672       {##1}%
2673       \expandafter\noexpand\csname @\Hy@temp bordercolor\endcsname
2674       {hyperref}%
2675       {\Hy@temp bordercolor}%
2676     }%
2677   }%
2678   \Hy@temp
2679 }
2680 \define@key{Hyp}{pagebordercolor}{%
2681   \Hy@WarningPageBordercolor
2682 }
2683 \def\Hy@WarningPageBordercolor{%
2684   \Hy@WarningNoLine{Option 'pagebordercolor' is not available anymore}%
2685   \global\let\Hy@WarningPageBordercolor\relax
2686 }
2687 \define@key{Hyp}{pdfhighlight}{\def\pdfhighlight{#1}}
2688 \Hy@DefNameKey{pdfhighlight}{%
2689   \do{/I}{Invert}%
2690   \do{/N}{None}%
2691   \do{/O}{Outline}%
2692   \do{/P}{Push}%
2693 }
2694 \define@key{Hyp}{pdfborder}{\def\pdfborder{#1}}
2695 \define@key{Hyp}{pdfborderstyle}{\def\pdfborderstyle{#1}}
2696 \def\Hy@setpdfborder{%
2697   \ifx\pdfborder\empty
```

```

2698 \else
2699     /Border[\@pdfborder]%
2700 \fi
2701 \ifx\@pdfborderstyle\@empty
2702 \else
2703     /BS<<\@pdfborderstyle>>%
2704 \fi
2705 }
2706 \Hy@DefNameKey{pdfpagemode}{%
2707     \do{UseNone}{}%
2708     \do{UseOutlines}{}%
2709     \do{UseThumbs}{}%
2710     \do{FullScreen}{}%
2711     \do{UseOC}{PDF 1.5}%
2712     \do{UseAttachments}{PDF 1.6}%
2713 }
2714 \Hy@DefNameKey{pdfnonfullscreenpagemode}{%
2715     \do{UseNone}{}%
2716     \do{UseOutlines}{}%
2717     \do{UseThumbs}{}%
2718     \do{FullScreen}{}%
2719     \do{UseOC}{PDF 1.5}%
2720     \do{UseAttachments}{PDF 1.6}%
2721 }
2722 \Hy@DefNameKey{pdfdirection}{%
2723     \do{L2R}{Left to right}%
2724     \do{R2L}{Right to left}%
2725 }
2726 \Hy@DefNameKey{pdfviewarea}{%
2727     \do{MediaBox}{}%
2728     \do{CropBox}{}%
2729     \do{BleedBox}{}%
2730     \do{TrimBox}{}%
2731     \do{ArtBox}{}%
2732 }
2733 \Hy@DefNameKey{pdfviewclip}{%
2734     \do{MediaBox}{}%
2735     \do{CropBox}{}%
2736     \do{BleedBox}{}%
2737     \do{TrimBox}{}%
2738     \do{ArtBox}{}%
2739 }
2740 \Hy@DefNameKey{pdfprintarea}{%
2741     \do{MediaBox}{}%
2742     \do{CropBox}{}%
2743     \do{BleedBox}{}%
2744     \do{TrimBox}{}%
2745     \do{ArtBox}{}%
2746 }
2747 \Hy@DefNameKey{pdfprintclip}{%
2748     \do{MediaBox}{}%
2749     \do{CropBox}{}%
2750     \do{BleedBox}{}%
2751     \do{TrimBox}{}%
2752     \do{ArtBox}{}%
2753 }
2754 \Hy@DefNameKey{pdfprintscaling}{%

```

```

2755 \do{AppDefault}{}%
2756 \do{None}{}%
2757 }
2758 \Hy@DefNameKey{pdfduplex}{%
2759 \do{Simplex}{}%
2760 \do{DuplexFlipShortEdge}{}%
2761 \do{DuplexFlipLongEdge}{}%
2762 }
2763 \Hy@DefNameKey{pdfpicktraybypdfsize}{%
2764 \do{true}{}%
2765 \do{false}{}%
2766 }
2767 \define@key{Hyp}{pdfprintpagerange}{%
2768 \def\@pdfprintpagerange{#1}%
2769 }
2770 \Hy@DefNameKey{pdfnumcopies}{%
2771 \do{2}{two copies}%
2772 \do{3}{three copies}%
2773 \do{4}{four copies}%
2774 \do{5}{five copies}%
2775 }
2776 \define@key{Hyp}{pdfusetitle}[true]{%
2777 \Hy@boolkey[pdfusetitle]{usetitle}{#1}%
2778 }
2779 \define@key{Hyp}{pdftitle}{\pdfstringdef\@pdftitle{#1}}
2780 \define@key{Hyp}{pdfauthor}{\pdfstringdef\@pdfauthor{#1}}
2781 \define@key{Hyp}{pdfproducer}{\pdfstringdef\@pdfproducer{#1}}
2782 \define@key{Hyp}{pdfcreator}{\pdfstringdef\@pdfcreator{#1}}
2783 \define@key{Hyp}{pdfcreationdate}{%
2784 \begingroup
2785 \Hy@unicodedefalse
2786 \pdfstringdef\@pdfcreationdate{#1}%
2787 \endgroup
2788 }
2789 \define@key{Hyp}{pdfmoddate}{%
2790 \begingroup
2791 \Hy@unicodedefalse
2792 \pdfstringdef\@pdfmoddate{#1}%
2793 \endgroup
2794 }
2795 \define@key{Hyp}{pdfsubject}{\pdfstringdef\@pdfsubject{#1}}
2796 \define@key{Hyp}{pdfkeywords}{\pdfstringdef\@pdfkeywords{#1}}
2797 \define@key{Hyp}{pdfview}{\calculatepdfview#1 \}
2798 \define@key{Hyp}{pdflinkmargin}{\setpdflinkmargin{#1}}
2799 \let\setpdflinkmargin\@gobble
2800 \def\calculatepdfview#1 #2\{%
2801 \def\@pdfview{#1}%
2802 \ifx\#2\%
2803 \def\@pdfviewparams{ -32768}%
2804 \else
2805 \def\@pdfviewparams{ #2}%
2806 \fi
2807 }
2808 \begingroup\expandafter\expandafter\expandafter\endgroup
2809 \expandafter\ifx\csname numexpr\endcsname\relax
2810 \def\Hy@number#1{%
2811 \expandafter\@firstofone\expandafter{\number#1}%

```

```

2812 }%
2813 \else
2814   \def\Hy@number#1{%
2815     \the\numexpr#1\relax
2816   }%
2817 \fi
2818 \define@key{Hyp}{pdfstartpage}{%
2819   \ifx\#1\%
2820     \def\@pdfstartpage{%
2821       \else
2822         \edef\@pdfstartpage{\Hy@number{#1}}%
2823       \fi
2824     }%
2825 \define@key{Hyp}{pdfstartview}{%
2826   \ifx\#1\%
2827     \def\@pdfstartview{%
2828       \else
2829         \hypercalcbpdef\@pdfstartview{ /#1 }%
2830       \fi
2831   }
2832 \define@key{Hyp}{pdfpagescrop}{\edef\@pdfpagescrop{#1}}
2833 \define@key{Hyp}{pdftoolbar}[true]{%
2834   \Hy@boolkey[pdftoolbar]{toolbar}{#1}%
2835 }
2836 \define@key{Hyp}{pdfmenubar}[true]{%
2837   \Hy@boolkey[pdfmenubar]{menubar}{#1}%
2838 }
2839 \define@key{Hyp}{pdfwindowui}[true]{%
2840   \Hy@boolkey[pdfwindowui]{windowui}{#1}%
2841 }
2842 \define@key{Hyp}{pdffitwindow}[true]{%
2843   \Hy@boolkey[pdffitwindow]{fitwindow}{#1}%
2844 }
2845 \define@key{Hyp}{pdfcenterwindow}[true]{%
2846   \Hy@boolkey[pdfcenterwindow]{centerwindow}{#1}%
2847 }
2848 \define@key{Hyp}{pdfdisplaydoctitle}[true]{%
2849   \Hy@boolkey[pdfdisplaydoctitle]{displaydoctitle}{#1}%
2850 }
2851 \define@key{Hyp}{pdfa}[true]{%
2852   \Hy@boolkey{pdfa}{#1}%
2853 }
2854 \define@key{Hyp}{pdfnewwindow}[true]{%
2855   \def\Hy@temp{#1}%
2856   \ifx\Hy@temp\empty
2857     \Hy@newwindowsetfalse
2858   \else
2859     \Hy@newwindowsettrue
2860     \Hy@boolkey[pdfnewwindow]{newwindow}{#1}%
2861   \fi
2862 }
2863 \def\Hy@SetNewWindow{%
2864   \ifHy@newwindowset
2865     /NewWindow %
2866     \ifHy@newwindow true\else false\fi
2867   \fi
2868 }

```

```

2869 \Hy@DefNameKey{pdfpagelayout}{%
2870   \do{SinglePage}{}%
2871   \do{OneColumn}{}%
2872   \do{TwoColumnLeft}{}%
2873   \do{TwoColumnRight}{}%
2874   \do{TwoPageLeft}{PDF 1.5}%
2875   \do{TwoPageRight}{PDF 1.5}%
2876 }
2877 \define@key{Hyp}{pdflang}{%
2878   \def\@pdflang{#1}%
2879 }
2880 \define@key{Hyp}{pdfpagelabels}[true]{%
2881   \Hy@boolkey[pdfpagelabels]{pagelabels}{#1}%
2882 }
2883 \define@key{Hyp}{pdfescapeform}[true]{%
2884   \Hy@boolkey[pdfescapeform]{escapeform}{#1}%
2885 }

```

Default values:

```

2886 \def\@linkbordercolor{1 0 0}
2887 \def\@urlbordercolor{0 1 1}
2888 \def\@menubordercolor{1 0 0}
2889 \def\@filebordercolor{0 .5 .5}
2890 \def\@runbordercolor{0 .7 .7}
2891 \def\@citebordercolor{0 1 0}
2892 \def\@pdfhighlight{/I}
2893 \def\@pdftitle{}
2894 \def\@pdfauthor{}
2895 \let\@pdfproducer\relax
2896 \def\@pdfcreator{LaTeX with hyperref package}
2897 \def\@pdfcreationdate{}
2898 \def\@pdfmoddate{}
2899 \def\@pdfsubject{}
2900 \def\@pdfkeywords{}
2901 \def\@pdfpagescrop{}
2902 \def\@pdfstartview{ /Fit }
2903 \def\@pdfstartpage{1}
2904 \def\@pdfprintpagerange{}
2905 \def\@pdflang{}
2906 \let\PDF@SetupDoc\@empty
2907 \let\PDF@FinishDoc\@empty
2908 \let\phantomsection\@empty
2909 \let\special@paper\@empty
2910 \def\HyperDestNameFilter#1{#1}
2911 \ifundefined{stockwidth}{%
2912   \ifdim\paperwidth>\z@
2913     \ifdim\paperheight>\z@
2914       \edef\special@paper{\the\paperwidth,\the\paperheight}%
2915     \fi
2916   \fi
2917 }{%
2918   \ifdim\stockwidth>\z@
2919     \ifdim\stockheight>\z@
2920       \edef\special@paper{\the\stockwidth,\the\stockheight}%
2921     \fi
2922   \fi
2923 }
2924 \begingroup

```

```

2925 \edef\x{\@ifundefined{stockheight}\paperheight\stockheight}%
2926 \dimen@=\x\relax
2927 \ifdim\dimen@>\z@
2928 \else
2929 \dimen@=11in\relax
2930 \Hy@WarningNoLine{%
2931   Height of page (\expandafter\string\x) %
2932   is invalid (\the\x),\MessageBreak
2933   using 11in%
2934 }%
2935 \fi
2936 \dimen@=0.99626401\dimen@
2937 \xdef\Hy@pageheight{\strip@pt\dimen@}%
2938 \endgroup
2939 \def\HyInd@EncapChar{\|}
2940 \def\hypersetup{\setkeys{Hyp}}

```

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

```

2941 \let\hyper@normalise\ExecuteOptions
2942 \let\ExecuteOptions\hypersetup
2943 \Hy@RestoreCatcodes
2944 \InputIfFileExists{hyperref.cfg}{-}{-}
2945 \Hy@SetCatcodes
2946 \let\ExecuteOptions\hyper@normalise
2947 \Hy@MaybeStopNow

```

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

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

```

2948 \RequirePackage{kvoptions}[2006/08/17]

```

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

```

2949 \@ifpackageloaded{tex4ht}{%
2950   \@ifpackagewith{hyperref}{tex4ht}{-}{-}%
2951   \PassOptionsToPackage{tex4ht}{hyperref}%
2952 }%
2953 }{-}

2954 \let\ReadBookmarks\relax
2955 \ProcessKeyvalOptions{Hyp}

```

After processing options.

```

2956 \AtBeginDocument{%
2957   \ifHy@draft
2958     \let\hyper@@anchor\@gobble
2959     \gdef\hyper@link#1#2#3{#3}%
2960     \let\hyper@anchorstart\@gobble
2961     \let\hyper@anchorend\@empty
2962     \let\hyper@linkstart\@gobbletwo
2963     \let\hyper@linkend\@empty
2964     \def\hyper@linkurl#1#2{#1}%
2965     \def\hyper@linkfile#1#2#3{#1}%
2966     \def\hyper@link@{#1}#2#3{#1}%
2967     \def\Acrobatmenu#1#2{\leavevmode#2}%
2968     \let\PDF@SetupDoc\@empty

```

```

2969 \let\PDF@FinishDoc\@empty
2970 \let\@fifthoffive\@secondoftwo
2971 \let\@secondoffive\@secondoftwo
2972 \let\ReadBookmarks\relax
2973 \let\WriteBookmarks\relax
2974 \Hy@WarningNoLine{ draft mode on}%
2975 \fi
2976 \Hy@DisableOption{draft}%
2977 \Hy@DisableOption{nolinks}%
2978 \Hy@DisableOption{final}%
2979 }

```

## 15.1 PDF/A

```

2980 \Hy@DisableOption{pdfa}
2981 \ifHy@pdfa
2982 \setkeys{Hyp}{pdfversion=1.4}%
2983 \def\Hy@Acrobatmenu#1#2{%
2984 \leavevmode
2985 \beginngroup
2986 \edef\x{#1}%
2987 \@onelevel@sanitize\x
2988 \ifx\x\Hy@NextPage
2989 \let\y=Y%
2990 \else
2991 \ifx\x\Hy@PrevPage
2992 \let\y=Y%
2993 \else
2994 \ifx\x\Hy@FirstPage
2995 \let\y=Y%
2996 \else
2997 \ifx\x\Hy@LastPage
2998 \let\y=Y%
2999 \else
3000 \let\y=N%
3001 \fi
3002 \fi
3003 \fi
3004 \fi
3005 \expandafter\endgroup
3006 \ifx\y Y%
3007 \else
3008 \PackageError{hyperref}{%
3009 PDF/A: Named action ‘#1’ is not permitted%
3010 }\@ehc
3011 {#2}%
3012 \expandafter\@gobble
3013 \fi
3014 }%
3015 \def\Hy@temp#1{%
3016 \expandafter\def\csname Hy@#1\endcsname{#1}%
3017 \expandafter\@onelevel@sanitize\csname Hy@#1\endcsname
3018 }%
3019 \Hy@temp{NextPage}%
3020 \Hy@temp{PrevPage}%
3021 \Hy@temp{FirstPage}%
3022 \Hy@temp{LastPage}%

```



```

3023 \else
3024   \def\Hy@Acrobatmenu#1#2{\leavevmode}%
3025 \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.

```

3026 \Hy@nextfalse
3027 \@ifundefined{spanish@sh@"@sel}{\Hy@nexttrue}
3028 \@ifundefined{galician@sh@"@sel}{\Hy@nexttrue}
3029 \@ifundefined{estonian@sh@"@sel}{\Hy@nexttrue}
3030 \ifHy@next
3031   \let\texttilde~%
3032 \fi

```

## 15.3 Patch for babel 3.8j

Babel 2008/03/16 v3.8j adds a patch to disable shorthands for bookmarks. That reduces warnings, but the bookmarks are ugly. Therefore the following patch tries to undo this.

```

3033 \@ifpackageloaded{babel}{%
3034   \@ifpackagelater{babel}{2008/03/16}{%
3035     \def\Hy@PatchLanguageShorthands#1{%
3036       \begingroup
3037         \edef\x{#1}%
3038         \@onelevel@sanitize\x
3039         \def\y{system}%
3040         \@onelevel@sanitize\y
3041       \expandafter\endgroup
3042       \ifx\x\y
3043         \else
3044           \HyOrg@languageshorthands{#1}%
3045         \fi
3046     }%
3047     \AtBeginDocument{%
3048       \begingroup
3049         \toks0=\expandafter{\pdfstringdefPreHook}%
3050         \xdef\pdfstringdefPreHook{%
3051           \let\noexpand\HyOrg@languageshorthands
3052             \noexpand\languageshorthands
3053           \let\noexpand\languageshorthands
3054             \noexpand\Hy@PatchLanguageShorthands
3055           \the\toks0 %
3056           \let\noexpand\languageshorthands
3057             \noexpand\HyOrg@languageshorthands
3058         }%
3059       \endgroup
3060     }%
3061   }{}%
3062 }{}

3063 \ifHy@figures
3064   \Hy@Info{Hyper figures ON}%
3065 \else
3066   \Hy@Info{Hyper figures OFF}%
3067 \fi
3068 \ifHy@nesting
3069   \Hy@Info{Link nesting ON}%

```

```

3070 \else
3071   \Hy@Info{Link nesting OFF}%
3072 \fi
3073 \ifHy@hyperindex
3074   \Hy@Info{Hyper index ON}%
3075 \else
3076   \Hy@Info{Hyper index OFF}%
3077 \fi
3078 \ifHy@plainpages
3079   \Hy@Info{Plain pages ON}%
3080 \else
3081   \Hy@Info{Plain pages OFF}%
3082 \fi
3083 \ifHy@backref
3084   \Hy@Info{Backreferencing ON}%
3085 \else
3086   \Hy@Info{Backreferencing OFF}%
3087 \fi
3088 \ifHy@typexml
3089   \AtEndOfPackage{%
3090     \RequirePackage{color}%
3091     \RequirePackage{nameref}%
3092   }%
3093 \fi
3094 \Hy@DisableOption{typexml}
3095 \ifHy@implicit
3096   \typeout{Implicit mode ON; LaTeX internals redefined}%
3097 \else
3098   \typeout{Implicit mode OFF; no redefinition of LaTeX internals}%
3099   \def\MaybeStopEarly{%
3100     \typeout{Hyperref stopped early}%
3101     \AfterBeginDocument{%
3102       \PDF@FinishDoc
3103       \gdef\PDF@FinishDoc{}%
3104     }%
3105     \endinput
3106   }%
3107   \AtBeginDocument{%
3108     \let\autoref\ref
3109     \let\autopageref\pageref
3110     \ifx\pdfpagemode\@empty
3111       \gdef\pdfpagemode{UseNone}%
3112     \fi
3113     \global\Hy@backreffalse
3114   }%
3115   \AtEndOfPackage{%
3116     \global\let\ReadBookmarks\relax
3117     \global\let\WriteBookmarks\relax
3118   }%
3119 \fi
3120 \Hy@DisableOption{implicit}

```

### 15.3.1 Driver loading

```

3121 \AtEndOfPackage{%
3122   \@ifpackageloaded{tex4ht}{%
3123     \def\Hy@driver{htex4ht}%

```

```

3124 \Hy@texhttrue
3125 }{}%

```

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.

```

3126 \ifx\Hy@driver\@empty
3127 \else
3128 \def\Hy@temp{hpdfTeX}%
3129 \ifpdf
3130 \ifx\Hy@driver\Hy@temp
3131 \else
3132 \Hy@WarningNoLine{%
3133 Wrong driver '\Hy@driver.def';\MessageBreak
3134 pdfTeX is running in PDF mode.\MessageBreak
3135 Forcing driver '\Hy@temp.def'%
3136 }%
3137 \let\Hy@driver\Hy@temp
3138 \fi
3139 \else
3140 \ifx\Hy@driver\Hy@temp
3141 \Hy@WarningNoLine{%
3142 Wrong driver '\Hy@driver.def';\MessageBreak
3143 pdfTeX is not running in PDF mode.\MessageBreak
3144 Using default driver%
3145 }%
3146 \let\Hy@driver\@empty
3147 \fi
3148 \fi
3149 \fi
3150 \ifx\Hy@driver\@empty
3151 \else
3152 \def\Hy@temp{hdvipdfm}%
3153 \ifxetex
3154 \ifx\Hy@driver\Hy@temp
3155 \else
3156 \Hy@WarningNoLine{%
3157 Wrong driver '\Hy@driver.def';\MessageBreak
3158 XeTeX is running.\MessageBreak
3159 Forcing driver '\Hy@temp.def' for XeTeX%
3160 }%
3161 \let\Hy@driver\Hy@temp
3162 \fi
3163 \fi
3164 \fi
3165 \ifx\Hy@driver\@empty
3166 \else
3167 \def\Hy@temp{hvtexhtm}%
3168 \ifvtexhtml
3169 \ifx\Hy@driver\Hy@temp
3170 \else
3171 \Hy@WarningNoLine{%
3172 Wrong driver '\Hy@driver.def';\MessageBreak
3173 VTeX is running in HTML mode.\MessageBreak
3174 Forcing driver '\Hy@temp.def'%
3175 }%
3176 \let\Hy@driver\Hy@temp
3177 \fi
3178 \else

```

```

3179     \ifx\Hy@driver\Hy@temp
3180     \Hy@WarningNoLine{%
3181         Wrong driver '\Hy@driver.def';\MessageBreak
3182         VTeX is not running in HTML mode.\MessageBreak
3183         Using default driver%
3184     }%
3185     \let\Hy@driver\@empty
3186 \fi
3187 \fi
3188 \fi

```

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

```

3189 \ifx\Hy@driver\@empty
3190 \providecommand*{\Hy@defaultdriver}{hypertex}%
3191 \ifpdf
3192 \def\Hy@driver{hpdfTeX}%
3193 \else
3194 \ifxetex
3195 \def\Hy@driver{hdvipdfm}%
3196 \else
3197 \ifvtexhtml
3198 \def\Hy@driver{hvtexhtm}%
3199 \def\MaybeStopEarly{%
3200 \typeout{Hyperref stopped early}%
3201 \AfterBeginDocument{%
3202 \PDF@FinishDoc
3203 \gdef\PDF@FinishDoc{}%
3204 }%
3205 \endinput
3206 }%
3207 \else
3208 \ifvtexpdf
3209 \def\Hy@driver{hvtex}%
3210 \else
3211 \ifvtexps
3212 \def\Hy@driver{hvtex}%
3213 \else
3214 \let\Hy@driver\Hy@defaultdriver
3215 \fi
3216 \fi
3217 \fi
3218 \fi
3219 \fi
3220 \ifx\Hy@driver\Hy@defaultdriver
3221 \def\Hy@temp{hdwind}%
3222 \ifx\Hy@temp\Hy@driver
3223 \setkeys{Hyp}{colorlinks}%
3224 \PassOptionsToPackage{dviwindo}{color}%
3225 \fi
3226 \fi
3227 \typeout{*hyperref using default driver \Hy@driver*}%
3228 \else
3229 \typeout{*hyperref using driver \Hy@driver*}%
3230 \fi
3231 \input{\Hy@driver.def}%
3232 \let\@unprocessedoptions\relax
3233 \Hy@RestoreCatcodes
3234 }

```

```

3235 \newif\ifHy@DvipdfmxOutlineOpen
3236 \begingroup\expandafter\expandafter\endgroup
3237 \expandafter\ifx\csname SpecialDvipdfmxOutlineOpen\endcsname\relax
3238 \else
3239   \ifnum\SpecialDvipdfmxOutlineOpen>\z@
3240     \Hy@DvipdfmxOutlineOpen>true
3241   \fi
3242 \fi
3243 \Hy@DisableOption{tex4ht}
3244 \Hy@DisableOption{pdftex}
3245 \Hy@DisableOption{nativepdf}
3246 \Hy@DisableOption{dvipdfm}
3247 \Hy@DisableOption{dvipdfmx}
3248 \Hy@DisableOption{dvipdfmx-outline-open}
3249 \Hy@DisableOption{pdfmark}
3250 \Hy@DisableOption{dvips}
3251 \Hy@DisableOption{hypertex}
3252 \Hy@DisableOption{vtex}
3253 \Hy@DisableOption{vtexpdfmark}
3254 \Hy@DisableOption{dviwindo}
3255 \Hy@DisableOption{dvipsone}
3256 \Hy@DisableOption{textures}
3257 \Hy@DisableOption{latex2html}
3258 \Hy@DisableOption{ps2pdf}
3259 \Hy@DisableOption{xetex}
3260 \AtEndOfPackage{%
3261   \Hy@DisableOption{pdfversion}%
3262 }

```

### 15.3.2 Bookmarks

```

3263 \def\WriteBookmarks{0}
3264 \def\@bookmarkopenstatus#1{%
3265   \ifHy@bookmarksopen

```

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

```

3266     \ifnum#1<\expandafter\@firstofone\expandafter
3267       {\number\@bookmarkopenlevel} % explicit space
3268   \else
3269     -%
3270   \fi
3271 \else
3272   -%
3273 \fi
3274 }
3275 \ifHy@bookmarks
3276   \Hy@Info{Bookmarks ON}%
3277   \ifx\@pdfpagemode\@empty
3278     \def\@pdfpagemode{UseOutlines}%
3279   \fi
3280 \else
3281   \def\@bookmarkopenstatus#1{%
3282     \Hy@Info{Bookmarks OFF}%
3283     \AtEndOfPackage{%
3284       \global\let\ReadBookmarks\relax
3285       \global\let\WriteBookmarks\relax
3286     }%
3287     \ifx\@pdfpagemode\@empty

```

```

3288 \def\@pdfpagemode{UseNone}%
3289 \fi
3290 \fi
3291 \Hy@DisableOption{bookmarks}

Add wrapper for setting standard catcodes (babel's shorthands).
3292 \def\Hy@CatcodeWrapper#1{%
3293 \def\Hy@EndWrap{}%
3294 \def\TMP@EnsureCode##1##2{%
3295 \edef\Hy@EndWrap{%
3296 \Hy@EndWrap
3297 \catcode##1 \the\catcode##1\relax
3298 }%
3299 \catcode##1 ##2\relax
3300 }%
3301 \TMP@EnsureCode{10}{12}% ^^J
3302 \TMP@EnsureCode{33}{12}% !
3303 \TMP@EnsureCode{34}{12}% "
3304 \TMP@EnsureCode{36}{3}% $ (math)
3305 \TMP@EnsureCode{38}{4}% & (alignment)
3306 \TMP@EnsureCode{39}{12}% '
3307 \TMP@EnsureCode{40}{12}% (
3308 \TMP@EnsureCode{41}{12}% )
3309 \TMP@EnsureCode{42}{12}% *
3310 \TMP@EnsureCode{43}{12}% +
3311 \TMP@EnsureCode{44}{12}% ,
3312 \TMP@EnsureCode{45}{12}% -
3313 \TMP@EnsureCode{46}{12}% .
3314 \TMP@EnsureCode{47}{12}% /
3315 \TMP@EnsureCode{58}{12}% :
3316 \TMP@EnsureCode{59}{12}% ;
3317 \TMP@EnsureCode{60}{12}% <
3318 \TMP@EnsureCode{61}{12}% =
3319 \TMP@EnsureCode{62}{12}% >
3320 \TMP@EnsureCode{63}{12}% ?
3321 \TMP@EnsureCode{91}{12}% [
3322 \TMP@EnsureCode{93}{12}% ]
3323 \TMP@EnsureCode{94}{7}% ^ (superscript)
3324 \TMP@EnsureCode{95}{8}% _ (subscript)
3325 \TMP@EnsureCode{96}{12}% '
3326 \TMP@EnsureCode{124}{12}% |
3327 \TMP@EnsureCode{126}{13}% ~ (active)
3328 #1\relax
3329 \Hy@EndWrap
3330 }

\HyColor@UseColor expects a macro as argument. It contains the color specifica-
tion.
3331 \AtBeginDocument{%
3332 \ifHy@ocgcolorlinks
3333 \setkeys{Hyp}{colorlinks}%
3334 \ifHy@pdfa
3335 \Hy@Warning{%
3336 PDF/A: Optional Content Groups are prohibited,\MessageBreak
3337 using 'colorlinks' instead of 'ocgcolorlinks'%
3338 }%
3339 \Hy@ocgcolorlinksfalse
3340 \fi
3341 \fi

```

```

3342 \ifHy@ocgcolorlinks
3343 \else
3344   \Hy@DisableOption{ocgcolorlinks}%
3345 \fi
3346 \ifHy@colorlinks
3347   \def\@pdfborder{0 0 0}%
3348   \let\@pdfborderstyle\@empty
3349   \ifHy@typexml
3350   \else
3351     \Hy@CatcodeWrapper{%
3352       \RequirePackage{color}%
3353     }%
3354   \fi
3355   \def\Hy@colorlink#1{%
3356     \begingroup
3357     \HyColor@UseColor#1%
3358   }%
3359   \def\Hy@endcolorlink{\endgroup}%
3360   \Hy@Info{Link coloring ON}%
3361 \else
3362   \ifHy@frenchlinks
3363     \def\Hy@colorlink#1{\begingroup\fontshape{sc}\selectfont}%
3364     \def\Hy@endcolorlink{\endgroup}%
3365     \Hy@Info{French linking ON}%
3366   \else
for grouping consistency:
3367     \def\Hy@colorlink#1{\begingroup}%
3368     \def\Hy@endcolorlink{\endgroup}%
3369     \Hy@Info{Link coloring OFF}%
3370   \fi
3371 \fi
3372 \Hy@DisableOption{colorlinks}%
3373 \Hy@DisableOption{frenchlinks}%
3374 \ifHy@texht
3375   \long\def\@firstoffive#1#2#3#4#5{#1}%
3376   \long\def\@secondoffive#1#2#3#4#5{#2}%
3377   \long\def\@thirdoffive#1#2#3#4#5{#3}%
3378   \long\def\@fourthoffive#1#2#3#4#5{#4}%
3379   \long\def\@fifthoffive#1#2#3#4#5{#5}%
3380   \providecommand*\@safe@activetrue{}%
3381   \providecommand*\@safe@activesfalse{}%
3382   \def\T@ref#1{%
3383     \Hy@safe@activetrue
3384     \expandafter\@setref\csname r@#1\endcsname\@firstoffive{#1}%
3385     \Hy@safe@activesfalse
3386   }%
3387   \def\T@pageref#1{%
3388     \Hy@safe@activetrue
3389     \expandafter\@setref\csname r@#1\endcsname\@secondoffive{#1}%
3390     \Hy@safe@activesfalse
3391   }%
3392 \else
3393   \ifHy@typexml
3394   \else
3395     \Hy@CatcodeWrapper{%
3396       \RequirePackage{nameref}%
3397     }%

```

```

3398 \fi
3399 \fi
3400 \DeclareRobustCommand\ref{\@ifstar\@refstar\T@ref}%
3401 \DeclareRobustCommand\pageref{%
3402   \@ifstar\@pagerefstar\T@pageref
3403 }%
3404 }
3405 \AfterBeginDocument{%
3406   \ifHy@texht
3407   \else
3408     \Hy@CatcodeWrapper{%
3409       \ReadBookmarks
3410     }%
3411   \fi
3412 }
3413 \ifHy@backref
3414   \RequirePackage{backref}%
3415 \else
3416   \let\Hy@backout\@gobble
3417 \fi
3418 \Hy@DisableOption{backref}
3419 \Hy@DisableOption{pagebackref}
3420 \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.

```

3421 \begingroup
3422   \endlinechar=-1 %
3423   \catcode'\^^A=14 %
3424   \catcode'\^^M\active
3425   \catcode'\%\active
3426   \catcode'\#\active
3427   \catcode'\_\active
3428   \catcode'\$\active
3429   \gdef\hyper@normalise{^^A
3430     \begingroup
3431     \catcode'\^^M\active
3432     \def^^M{ }^^A
3433     \catcode'\%\active
3434     \let%\@percentchar
3435     \let\%\@percentchar
3436     \catcode'\#\active
3437     \def#{\hyper@hash}^^A
3438     \def\#{\hyper@hash}^^A
3439     \@makeother\&^^A
3440     \edef\textunderscore{\string_}^^A
3441     \let\_ \textunderscore
3442     \catcode'\_\active
3443     \let\_ \textunderscore
3444     \let~\hyper@tilde

```



```

3445 \let\~\hyper@tilde
3446 \let\textasciitilde\hyper@tilde
3447 \let\\\@backslashchar
3448 \edef$\{string$\}^^A
3449 \Hy@safe@activetrue
3450 \hyper@n@rmalise
3451 }^^A
3452 \catcode'\# =6 ^^A
3453 \gdef\Hy@ActiveCarriageReturn{^^M}^^A
3454 \gdef\hyper@n@rmalise#1#2{^^A
3455 \def\Hy@tempa{#2}^^A
3456 \ifx\Hy@tempa\Hy@ActiveCarriageReturn
3457 \Hy@ReturnAfterElseFi{^^A
3458 \hyper@@normalise{#1}^^A
3459 }^^A
3460 \else
3461 \Hy@ReturnAfterFi{^^A
3462 \hyper@@normalise{#1}{#2}^^A
3463 }^^A
3464 \fi
3465 }^^A
3466 \gdef\hyper@@normalise#1#2{^^A
3467 \edef\Hy@tempa{^^A
3468 \endgroup
3469 \noexpand#1{\Hy@RemovePercentCr#2%^^M\@nil}^^A
3470 }^^A
3471 \Hy@tempa
3472 }^^A
3473 \gdef\Hy@RemovePercentCr#1%^^M#2\@nil{^^A
3474 #1^^A
3475 \ifx\limits#2\limits
3476 \else
3477 \Hy@ReturnAfterFi{^^A
3478 \Hy@RemovePercentCr #2\@nil
3479 }^^A
3480 \fi
3481 }^^A
3482 \endgroup
3483 \providecommand*\hyper@chars{%
3484 \let\#\hyper@hash
3485 \let%\@percentchar
3486 \Hy@safe@activetrue
3487 }

3488 \def\hyperlink#1#2{%
3489 \hyper@@link{-}{#1}{#2}%
3490 }

3491 \DeclareRobustCommand*\href{%
3492 \@ifnextchar\bgroup\Hy@href{\hyper@normalise\href@}%
3493 }
3494 \def\Hy@href#1{%
3495 \hyper@normalise\href@
3496 }
3497 \begingroup
3498 \catcode'\$ =6 %
3499 \catcode'\# =12 %
3500 \gdef\href@#1{\expandafter\href@split$1##\}%
3501 \gdef\href@split$1#$2#$3\{\%

```

```

3502 \hyper@@link{$1}{$2}%
3503 }%
3504 \endgroup

```

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

```

3505 \RequirePackage{url}
3506 \let\HyOrg@url\url
3507 \def\Hurl{\begingroup \Url}
3508 \DeclareRobustCommand*\nolinkurl{\hyper@normalise\nolinkurl@}
3509 \def\nolinkurl@#1{\Hurl{#1}}
3510 \DeclareRobustCommand*\url{\hyper@normalise\url@}
3511 \def\url@#1{\hyper@linkurl{\Hurl{#1}}{#1}}

3512 \DeclareRobustCommand*\hyperimage{\hyper@normalise\hyper@image}
3513 \providecommand\hyper@image[2]{#2}

3514 \def\hypertarget#1#2{%
3515   \ifHy@nesting
3516     \hyper@@anchor{#1}{#2}%
3517   \else
3518     \hyper@@anchor{#1}{\relax}#2%
3519   \fi
3520 }

```

`\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.

```

3521 \DeclareRobustCommand*\hyperref{%
3522   \@ifnextchar[{\Hy@babelnormalise\label@hyperref}\@hyperref
3523 }
3524 \def\Hy@babelnormalise#1[#2]{%
3525   \begingroup
3526     \Hy@safe@activestrue
3527     \edef\Hy@tempa{%
3528       \endgroup
3529       \noexpand#1[#2]}%
3530   }%
3531   \Hy@tempa
3532 }
3533 \def\@hyperref{\hyper@normalise\@hyperref}
3534 \def\@hyperref#1#2#3{%
3535   \edef\ref@one{\ifx\#2\else#2.\fi#3}%
3536   \expandafter\tryhyper@link\ref@one\{#1}%
3537 }
3538 \def\tryhyper@link#1\#2{%
3539   \hyper@@link{#2}{#1}%
3540 }

3541 \def\hyperdef{\@ifnextchar[{\label@hyperdef}\@hyperdef}}
3542 \def\@hyperdef#1#2#3{%, category, name, text
3543   \ifHy@nesting
3544     \hyper@@anchor{#1.#2}{#3}%
3545   \else
3546     \hyper@@anchor{#1.#2}{\relax}#3%
3547   \fi
3548 }

```

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

```

3549 \def\label@hyperref[#1]{%
3550   \expandafter\label@hyperref\csname r@#1\endcsname{#1}%
3551 }%
3552 \def\label@@hyperref#1#2#3{%
3553   \ifx#1\relax
3554     \protect\G@refundefinedtrue
3555     \latex@warning{%
3556       Hyper reference ‘#2’ on page \thepage \space undefined%
3557     }%
3558     \hyper@@link{}{??}{#3}%
3559   \else
3560     \hyper@@link{\expandafter\@fifthoffive#1}%
3561     {\expandafter\@fourthoffive#1\@empty\@empty}{#3}%
3562   \fi
3563 }
3564 \def\label@hyperdef[#1]#2#3#4{% label name, category, name,
3565                               % anchor text
3566   \@bsphack
3567   \if@filesw
3568     \protected@write\@auxout{%
3569       {\string\newlabel{#1}{#2}{#3}{#4}{#2.#3}}%
3570     \fi
3571   \@esphack
3572   \ifHy@nesting
3573     \hyper@@anchor{#2.#3}{#4}%
3574   \else
3575     \hyper@@anchor{#2.#3}{\relax}#4%
3576   \fi
3577 }

```

## 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.

```

3578 \def\hyper@@link{\let\Hy@reserved@a\relax
3579   \ifnextchar[{\hyper@link@}{\hyper@link@[link]}}%
3580 }
3581 \def\hyper@link@[#1]#2#3#4{%
3582   \begingroup
3583     \protected@edef\Hy@tempa{#2}%
3584     \Hy@safe@activestrue
3585     \edef\x{#3}%
3586     \ifx\Hy@tempa\@empty
3587       \toks0{\hyper@link{#1}}%
3588     \else
3589       \toks0{\expandafter\hyper@readexternallink#2\{#1}}%
3590     \fi
3591     \toks2{%
3592       \Hy@safe@activesfalse
3593       #4%
3594     }%
3595     \edef\Hy@tempa{\the\toks2}%

```

```

3596 \edef\x{\endgroup
3597 \ifx\Hy@tempa\@empty
3598 \noexpand\Hy@Warning{Suppressing empty link}%
3599 \else
3600 \the\toks0 {\x}{\the\toks2}%%
3601 \fi
3602 }%
3603 \x
3604 }

```

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.

```

3605 \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.

```

3606 \expandafter\@hyper@readexternallink{#2}{#3}{#4}#1::\{#1}%
3607 }

```

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

```

3608 \def\@pdftempwordfile{file}%
3609 \def\@pdftempwordrun{run}%
3610 \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:

```

3611 \ifx\#6\%
3612 \expandafter\@hyper@linkfile file:#7\{#3}{#2}%
3613 \else
3614 \ifx\#4\%
3615 \expandafter\@hyper@linkfile file:#7\{#3}{#2}%
3616 \else

```

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

```

3617 \def\@pdftempa{#4}%
3618 \ifx\@pdftempa\@pdftempwordfile
3619 \expandafter\@hyper@linkfile#7\{#3}{#2}%
3620 \else

```

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

```

3621 \ifx\@pdftempa\@pdftempwordrun
3622 \ifHy@pdfa
3623 \PackageError{hyperref}{%
3624 PDF/A: Launch action is prohibited%

```

```

3625         }\@ehc
3626         \begingroup
3627         \leavevmode
3628         #2%
3629         \endgroup
3630     \else
3631         \expandafter\@hyper@launch#7\{\#3}\#2}%
3632     \fi
3633 \else

```

otherwise its a URL

```

3634         \hyper@linkurl{\#3}\#7\ifx\#2\\\else\hyper@hash#2\fi}%
3635     \fi
3636 \fi
3637 \fi
3638 \fi
3639 }

```

By default, turn run: into file:

```

3640 \def\@hyper@launch run:#1\#2#3{% filename, anchor text, linkname
3641     \hyper@linkurl{\#2}{%
3642         \Hy@linkfileprefix
3643         #1%
3644         \ifx\#3\%
3645         \else
3646             \hyper@hash
3647             #3%
3648         \fi
3649     }%
3650 }

```

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

```

3651 \def\@hyper@linkfile file:#1\#2#3{%
3652     %file url,link string, name
3653     \filename@parse{#1}%
3654     \ifx\filename@ext\relax
3655         \edef\filename@ext{\XR@ext}%
3656     \fi
3657     \def\use@file{\filename@area\filename@base.\filename@ext}%
3658     \ifx\filename@ext\XR@ext
3659         \hyper@linkfile{\#2}{\use@file}\#3}%
3660     \else
3661         \ifx\@baseurl\@empty
3662             \hyper@linkurl{\#2}{%
3663                 \Hy@linkfileprefix\use@file\ifx\#3\\\else\hyper@hash#3\fi
3664             }%
3665         \else
3666             \hyper@linkurl{\#2}{\use@file\ifx\#3\\\else\hyper@hash#3\fi}%
3667         \fi
3668     \fi
3669 }

```

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.

```

3670 \long\def\hyper@@anchor#1#2{\@hyper@@anchor#1\relax#2\relax}
3671 \long\def\@hyper@@anchor#1\relax#2#3\relax{%
3672   \ifx\#1\%
3673     #2\Hy@WarningNoLine{empty link? #1: #2#3}%
3674   \else
3675     \def\anchor@spot{#2#3}%
3676     \let\put@me@back\@empty
3677     \ifx\relax#2\relax
3678     \else
3679       \ifHy@nesting
3680       \else
3681         \ifcat a\noexpand#2\relax
3682         \else
3683           \ifcat 0\noexpand#2 \relax
3684           \else
3685             \typeout{Anchor start is not alphanumeric %
3686             on input line\the\inputlineno%
3687             }%
3688             \let\anchor@spot\@empty
3689             \def\put@me@back{#2#3}%
3690           \fi
3691         \fi
3692       \fi
3693     \fi
3694     \ifHy@activeanchor
3695     \anchor@spot
3696     \else
3697     \hyper@anchor{#1}%
3698     \fi
3699     \expandafter\put@me@back
3700   \fi
3701   \let\anchor@spot\@empty
3702 }

```

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

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

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

```

3703 \let\htmladding\hyperimage
3704 \def\htmladdnormallink#1#2{\href{#2}{#1}}
3705 \def\htmladdnormallinkfoot#1#2{\href{#2}{#1}\footnote{#2}}
3706 \def\htmlref#1#2{% anchor text, label
3707   \label@hyperref[{#2}]{#1}%
3708 }

```

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

```

3709 \def\@latextohtmlX{%
3710   \let\hhyperref\hyperref

```

```

3711 \def\hyperref##1##2##3##4{% anchor text for HTML
3712             % text to print before label in print
3713             % label
3714             % post-label text in print
3715     ##2\ref{##4}##3%
3716 }%
3717 }

```

## 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.

```

3718 \RequirePackage{bitset}

```

Each flag has an 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
3719 \def\HyField@NewFlag#1#2{%
3720   \lowercase{\HyField@NewOption{#2}}%
3721   \lowercase{\HyField@NewBitsetFlag{#2}}{#2}{#1}%
3722 }

```

```

\HyField@NewFlagOnly
3723 \def\HyField@NewFlagOnly#1#2{%
3724   \lowercase{\HyField@NewBitsetFlag{#2}}{#2}{#1}%
3725 }

```

```

\HyField@NewOption #1: option name
3726 \def\HyField@NewOption#1{%
3727   \expandafter\newif\csname ifFld@#1\endcsname
3728   \define@key{Field}{#1}[true]{%
3729     \lowercase{\Field@boolkey{##1}}{#1}%
3730   }%
3731 }

```

```

\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
3732 \def\HyField@NewBitsetFlag#1#2#3#4{%
3733   \begingroup
3734     \count@=#4\relax
3735     \advance\count@\m@ne

```

```

3736 \def\x##1{%
3737 \endgroup
3738 \expandafter\def\csname HyField@#3@#1\endcsname{##1}%
3739 \expandafter\ifx\csname HyField@#3@#1\endcsname\relax
3740 \expandafter\edef\csname HyField@#3@#1\endcsname{%
3741 (\number#4) #2%
3742 }%
3743 \else
3744 \expandafter\edef\csname HyField@#3@#1\endcsname{%
3745 \csname HyField@#3@#1\endcsname
3746 /#2%
3747 }%
3748 \fi
3749 }%
3750 \expandafter\x\expandafter{\the\count@}%
3751 }

```

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

```

3752 \def\HyField@UseFlag#1#2{%
3753 \lowercase{\HyField@@UseFlag{#2}}{#1}%
3754 }

```

\HyField@@UseFlag

```

3755 \def\HyField@@UseFlag#1#2{%
3756 \bitsetSetValue{HyField@#2}{%
3757 \csname HyField@#2@#1\endcsname
3758 }{%
3759 \csname ifFld@#1\endcsname 1\else 0\fi
3760 }%
3761 }

```

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

```

3762 \def\HyField@SetFlag#1#2{%
3763 \lowercase{\HyField@@SetFlag{#2}}{#1}%
3764 }

```

\HyField@@SetFlag

```

3765 \def\HyField@@SetFlag#1#2{%
3766 \bitsetSetValue{HyField@#2}{%
3767 \csname HyField@#2@#1\endcsname
3768 }{1}%
3769 }

```

\HyField@PrintFlags

```

3770 \def\HyField@PrintFlags#1#2{%
3771 \ifHy@verbose
3772 \begingroup
3773 \let\Hy@temp\@empty
3774 \let\MessageBreak\relax
3775 \expandafter\@for\expandafter\x\expandafter:\expandafter=%
3776 \bitsetGetSetBitList{HyField@#1}\do{%
3777 \edef\Hy@temp{%
3778 \Hy@temp
3779 \csname HyField@#1@\x\endcsname\MessageBreak
3780 }%
3781 }%

```



```

3782 \edef\x{\endgroup
3783 \noexpand\Hy@Info{%
3784 Field flags: %
3785 \expandafter\ifx\@car#1\@nil S\else/\fi
3786 #1 %
3787 \bitsetGetDec{HyField@#1} %
3788 (0x\bitsetGetHex{HyField@#1}{32})\MessageBreak
3789 \Hy@temp
3790 for #2%
3791 }%
3792 }\x
3793 \fi
3794 }

```

### 19.1.1 Declarations of field flags

“Table 8.70 Field flags common to all field types”

```

3795 \HyField@NewFlag{Ff}{ReadOnly}{1}
3796 \HyField@NewFlag{Ff}{Required}{2}
3797 \HyField@NewFlag{Ff}{NoExport}{3}

```

“Table 8.75 Field flags specific to button fields”

```

3798 \HyField@NewFlag{Ff}{NoToggleToOff}{15}
3799 \HyField@NewFlag{Ff}{Radio}{16}
3800 \HyField@NewFlag{Ff}{Pushbutton}{17}
3801 \HyField@NewFlag{Ff}{RadiosInUnison}{26}

```

“Table 8.77 Field flags specific to text fields”

```

3802 \HyField@NewFlag{Ff}{Multiline}{13}
3803 \HyField@NewFlag{Ff}{Password}{14}
3804 \HyField@NewFlag{Ff}{FileSelect}{21}% PDF 1.4
3805 \HyField@NewFlag{Ff}{DoNotSpellCheck}{23}% PDF 1.4
3806 \HyField@NewFlag{Ff}{DoNotScroll}{24}% PDF 1.4
3807 \HyField@NewFlag{Ff}{Comb}{25}% PDF 1.4
3808 \HyField@NewFlag{Ff}{RichText}{26}% PDF 1.5

```

“Table 8.79 field flags specific to choice fields”

```

3809 \HyField@NewFlag{Ff}{Combo}{18}
3810 \HyField@NewFlag{Ff}{Edit}{19}
3811 \HyField@NewFlag{Ff}{Sort}{20}
3812 \HyField@NewFlag{Ff}{MultiSelect}{22}% PDF 1.4
3813 % \HyField@NewFlag{Ff}{DoNotSpellCheck}{23}% PDF 1.4
3814 \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.

```

3815 \newif\ifFld@popdown
3816 \define@key{Field}{popdown}[true]{%
3817 \lowercase{\Field@boolkey{#1}}{popdown}%
3818 }

```

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.

```

3819 \HyField@NewFlag{F}{Invisible}{1}

```

```

3820 \HyField@NewFlag{F}{Hidden}{2}% PDF 1.2
3821 \HyField@NewFlag{F}{Print}{3}% PDF 1.2
3822 \HyField@NewFlag{F}{NoZoom}{4}% PDF 1.2
3823 \HyField@NewFlag{F}{NoRotate}{5}% PDF 1.3
3824 \HyField@NewFlag{F}{NoView}{6}% PDF 1.3
3825 \HyField@NewFlag{F}{Locked}{8}% PDF 1.4
3826 \HyField@NewFlag{F}{ToggleNoView}{9}% PDF 1.5
3827 \HyField@NewFlag{F}{LockedContents}{10}% PDF 1.7
3828 \ifHy@pdfa
3829   \def\HyField@PDFAFflagWarning#1#2{%
3830     \Hy@Warning{%
3831       PDF/A: Annotation flag ‘#1’ must\MessageBreak
3832       be set to ‘#2’%
3833     }%
3834   }%
3835   \Fld@invisiblefalse
3836   \def\Fld@invisibletrue{%
3837     \HyField@PDFAFflagWarning{invisible}{false}%
3838   }%
3839   \Fld@hiddenfalse
3840   \def\Fld@hiddentrue{%
3841     \HyField@PDFAFflagWarning{hidden}{false}%
3842   }%
3843   \Fld@printtrue
3844   \def\Fld@printfalse{%
3845     \HyField@PDFAFflagWarning{print}{true}%
3846   }%
3847   \Fld@nozoomtrue
3848   \def\Fld@nozoomfalse{%
3849     \HyField@PDFAFflagWarning{nozoom}{true}%
3850   }%
3851   \Fld@norotatetrue
3852   \def\Fld@norotatefalse{%
3853     \HyField@PDFAFflagWarning{norotate}{true}%
3854   }%
3855   \Fld@noviewfalse
3856   \def\Fld@noviewtrue{%
3857     \HyField@PDFAFflagWarning{noview}{false}%
3858   }%
3859 \fi

```

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

```

3860 \HyField@NewFlag{Submit}{IncludeNoValueFields}{2}
3861 \HyField@NewFlagOnly{Submit}{ExportFormat}{3}
3862 \HyField@NewFlag{Submit}{GetMethod}{4}
3863 \HyField@NewFlag{Submit}{SubmitCoordinates}{5}
3864 \HyField@NewFlagOnly{Submit}{XFDF}{6}
3865 \HyField@NewFlag{Submit}{IncludeAppendSaves}{7}
3866 \HyField@NewFlag{Submit}{IncludeAnnotations}{8}
3867 \HyField@NewFlagOnly{Submit}{SubmitPDF}{9}
3868 \HyField@NewFlag{Submit}{CanonicalFormat}{10}
3869 \HyField@NewFlag{Submit}{ExclNonUserAnnots}{11}
3870 \HyField@NewFlag{Submit}{ExclFKey}{12}
3871 \HyField@NewFlag{Submit}{EmbedForm}{14}
3872 \define@key{Field}{export}{%
3873   \lowercase{\def\Hy@temp{#1}}%
3874   \@ifundefined{Fld@export@\Hy@temp}{%

```

```

3875 \@onelevel@sanitize\Hy@temp
3876 \PackageError{hyperref}{%
3877   Unknown export format '\Hy@temp'.\MessageBreak
3878   Known formats are 'FDF', 'HTML', 'XFDF', and 'PDF'%
3879 }{\@ehc
3880 }{%
3881 \let\Fld@export\Hy@temp
3882 }%
3883 }
3884 \def\Fld@export{fdf}
3885 \@namedef{Fld@export@fdf}{0}%
3886 \@namedef{Fld@export@html}{1}%
3887 \@namedef{Fld@export@xfdf}{2}%
3888 \@namedef{Fld@export@pdf}{3}%

```

### 19.1.2 Set submit flags

\HyField@FlagsSubmit

```

3889 \def\HyField@FlagsSubmit{%
3890 \bitsetReset{HyField@Submit}%
3891 \ifcase\@nameuse{Fld@export@Fld@export} %
3892 % FDF
3893 \HyField@UseFlag{Submit}{IncludeNoValueFields}%
3894 \HyField@UseFlag{Submit}{SubmitCoordinates}%
3895 \HyField@UseFlag{Submit}{IncludeAppendSaves}%
3896 \HyField@UseFlag{Submit}{IncludeAnnotations}%
3897 \HyField@UseFlag{Submit}{CanonicalFormat}%
3898 \HyField@UseFlag{Submit}{ExclNonUserAnnots}%
3899 \HyField@UseFlag{Submit}{ExclFKey}%
3900 \HyField@UseFlag{Submit}{EmbedForm}%
3901 \or % HTML
3902 \HyField@SetFlag{Submit}{ExportFormat}%
3903 \HyField@UseFlag{Submit}{IncludeNoValueFields}%
3904 \HyField@UseFlag{Submit}{GetMethod}%
3905 \HyField@UseFlag{Submit}{SubmitCoordinates}%
3906 \HyField@UseFlag{Submit}{CanonicalFormat}%
3907 \or % XFDF
3908 \HyField@SetFlag{Submit}{XFDF}%
3909 \HyField@UseFlag{Submit}{IncludeNoValueFields}%
3910 \HyField@UseFlag{Submit}{SubmitCoordinates}%
3911 \HyField@UseFlag{Submit}{CanonicalFormat}%
3912 \or % PDF
3913 \HyField@SetFlag{Submit}{SubmitPDF}%
3914 \HyField@UseFlag{Submit}{GetMethod}%
3915 \fi
3916 \HyField@PrintFlags{Submit}{submit button field}%
3917 \bitsetIsEmpty{HyField@Submit}{%
3918 \def\Fld@submitflags{%
3919 }{%
3920 \edef\Fld@submitflags{/Flags \bitsetGetDec{HyField@Submit}}%
3921 }%
3922 }

```

### 19.1.3 Set annot flags in fields

\HyField@FlagsAnnot

```

3923 \def\HyField@FlagsAnnot#1{%
3924   \bitsetReset{HyField@F}%
3925   \HyField@UseFlag{F}{Invisible}%
3926   \HyField@UseFlag{F}{Hidden}%
3927   \HyField@UseFlag{F}{Print}%
3928   \HyField@UseFlag{F}{NoZoom}%
3929   \HyField@UseFlag{F}{NoRotate}%
3930   \HyField@UseFlag{F}{NoView}%
3931   \HyField@UseFlag{F}{Locked}%
3932   \HyField@UseFlag{F}{ToggleNoView}%
3933   \HyField@UseFlag{F}{LockedContents}%
3934   \HyField@PrintFlags{F}{#1}%
3935   \bitsetIsEmpty{HyField@F}{%
3936     \def\Fld@annotflags{%
3937     }{%
3938       \edef\Fld@annotflags{/F \bitsetGetDec{HyField@F}}%
3939     }%
3940 }

```

#### 19.1.4 Pushbutton field

\HyField@FlagsPushButton

```

3941 \def\HyField@FlagsPushButton{%
3942   \HyField@FlagsAnnot{push button field}%
3943   \bitsetReset{HyField@Ff}%
3944   \HyField@UseFlag{Ff}{ReadOnly}%
3945   \HyField@UseFlag{Ff}{Required}%
3946   \HyField@UseFlag{Ff}{NoExport}%
3947   \HyField@SetFlag{Ff}{PushButton}%
3948   \HyField@PrintFlags{Ff}{push button field}%
3949   \bitsetIsEmpty{HyField@Ff}{%
3950     \def\Fld@flags{%
3951     }{%
3952       \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
3953     }%
3954 }

```

#### 19.1.5 Check box field

\HyField@FlagsCheckBox

```

3955 \def\HyField@FlagsCheckBox{%
3956   \HyField@FlagsAnnot{check box field}%
3957   \bitsetReset{HyField@Ff}%
3958   \HyField@UseFlag{Ff}{ReadOnly}%
3959   \HyField@UseFlag{Ff}{Required}%
3960   \HyField@UseFlag{Ff}{NoExport}%
3961   \HyField@PrintFlags{Ff}{check box field}%
3962   \bitsetIsEmpty{HyField@Ff}{%
3963     \def\Fld@flags{%
3964     }{%
3965       \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
3966     }%
3967 }

```

### 19.1.6 Radio button field

\HyField@FlagsRadioButton

```
3968 \def\HyField@FlagsRadioButton{%
3969   \HyField@FlagsAnnot{radio button field}%
3970   \bitsetReset{HyField@Ff}%
3971   \HyField@UseFlag{Ff}{ReadOnly}%
3972   \HyField@UseFlag{Ff}{Required}%
3973   \HyField@UseFlag{Ff}{NoExport}%
3974   \HyField@UseFlag{Ff}{NoToggleToOff}%
3975   \HyField@SetFlag{Ff}{Radio}%
3976   \HyField@UseFlag{Ff}{RadiosInUnison}%
3977   \HyField@PrintFlags{Ff}{radio button field}%
3978   \bitsetIsEmpty{HyField@Ff}{%
3979     \def\Fld@flags{%
3980     }{%
3981       \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
3982     }%
3983 }
```

### 19.1.7 Text fields

\HyField@FlagsText

```
3984 \def\HyField@FlagsText{%
3985   \HyField@FlagsAnnot{text field}%
3986   \bitsetReset{HyField@Ff}%
3987   \HyField@UseFlag{Ff}{ReadOnly}%
3988   \HyField@UseFlag{Ff}{Required}%
3989   \HyField@UseFlag{Ff}{NoExport}%
3990   \HyField@UseFlag{Ff}{Multiline}%
3991   \HyField@UseFlag{Ff}{Password}%
3992   \HyField@UseFlag{Ff}{FileSelect}%
3993   \HyField@UseFlag{Ff}{DoNotSpellCheck}%
3994   \HyField@UseFlag{Ff}{DoNotScroll}%
3995   \ifFld@comb
3996     \ifcase0\ifFld@multiline
3997       \else\ifFld@password
3998       \else\ifFld@fileselect
3999       \else 1\fi\fi\fi\relax
4000     \PackageError{hyperref}{%
4001       Field option ‘comb’ cannot be used together with\MessageBreak
4002       ‘multiline’, ‘password’, or ‘fileselect’%
4003     }\@ehc
4004   \else
4005     \HyField@UseFlag{Ff}{Comb}%
4006   \fi
4007 \fi
4008 \HyField@UseFlag{Ff}{RichText}%
4009 \HyField@PrintFlags{Ff}{text field}%
4010 \bitsetIsEmpty{HyField@Ff}{%
4011   \def\Fld@flags{%
4012   }{%
4013     \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
4014   }%
4015 }
```

## 19.1.8 Choice fields

\HyField@FlagsChoice

```

4016 \def\HyField@FlagsChoice{%
4017   \HyField@FlagsAnnot{choice field}%
4018   \bitsetReset{HyField@Ff}%
4019   \HyField@UseFlag{Ff}{ReadOnly}%
4020   \HyField@UseFlag{Ff}{Required}%
4021   \HyField@UseFlag{Ff}{NoExport}%
4022   \HyField@UseFlag{Ff}{Combo}%
4023   \ifFld@combo
4024     \HyField@UseFlag{Ff}{Edit}%
4025   \fi
4026   \HyField@UseFlag{Ff}{Sort}%
4027   \HyField@UseFlag{Ff}{MultiSelect}%
4028   \ifFld@combo
4029     \ifFld@edit
4030       \HyField@UseFlag{Ff}{DoNotSpellCheck}%
4031     \fi
4032   \fi
4033   \HyField@UseFlag{Ff}{CommitOnSelChange}%
4034   \HyField@PrintFlags{Ff}{choice field}%
4035   \bitsetIsEmpty{HyField@Ff}{%
4036     \def\Fld@flags{%
4037     }{%
4038     \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
4039     }%
4040 }
```

## 19.2 Choice field

4041 \RequirePackage{kvsetkeys}[2007/09/29]

\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.

```

4042 \def\HyField@PDFChoices#1{%
4043   \begingroup
4044     \gdef\Fld@choices{%
4045     \def\HyTmp@optlist{%
4046       \let\HyTmp@optitem\relax
4047       \count@=0 %
4048       \kv@parse{#1}{%
4049         \Hy@pdfstringdef\kv@key\kv@key
4050         \ifx\kv@value\relax
4051           \ifnum\Hy@pdfversion<3 % implementation note 122, PDF spec 1.7
4052             \xdef\Fld@choices{\Fld@choices[(\kv@key)(\kv@key)]}%
4053           \else
4054             \xdef\Fld@choices{\Fld@choices(\kv@key)}%
4055           \fi
4056         \else
4057           \Hy@pdfstringdef\kv@value\kv@value
4058           \xdef\Fld@choices{\Fld@choices[(\kv@key)(\kv@value)]}%
4059         \fi
4060       \edef\HyTmp@optlist{%
4061         \HyTmp@optlist
4062         \HyTmp@optitem{\the\count@}{\kv@key}0%
```

```

4063     }%
4064     \advance\count@ by 1 %
4065     \@gobbletwo
4066 }%
4067 \xdef\Fld@choices{/Opt[\Fld@choices]}%
4068 \ifFld@multiselect
4069   \HyField@@PDFChoices{DV}\Fld@default
4070   \HyField@@PDFChoices{V}\Fld@value
4071 \else
4072   \ifx\Fld@default\relax
4073   \else
4074     \pdfstringdef\Hy@gtmp\Fld@default
4075     \xdef\Fld@choices{\Fld@choices/DV(\Hy@gtmp)}%
4076   \fi
4077   \ifx\Fld@value\relax
4078   \else
4079     \pdfstringdef\Hy@gtmp\Fld@value
4080     \xdef\Fld@choices{\Fld@choices/V(\Hy@gtmp)}%
4081   \fi
4082 \fi
4083 \endgroup
4084 }

```

\HyField@@PDFChoices

```

4085 \def\HyField@@PDFChoices#1#2{%
4086   \ifx#2\relax
4087   \else
4088     \count@=0 %
4089     \def\HyTmp@optitem##1##2##3{%
4090       \def\HyTmp@key{##2}%
4091       \ifx\HyTmp@key\Hy@gtmp
4092         \expandafter\def\expandafter\HyTmp@optlist\expandafter{%
4093           \HyTmp@optlist
4094           \HyTmp@optitem{##1}{##2}1%
4095         }%
4096         \let\HyTmp@found=Y%
4097       \else
4098         \expandafter\def\expandafter\HyTmp@optlist\expandafter{%
4099           \HyTmp@optlist
4100           \HyTmp@optitem{##1}{##2}##3%
4101         }%
4102       \fi
4103     }%
4104     \expandafter\comma@parse\expandafter{#2}{%
4105       \pdfstringdef\Hy@gtmp\comma@entry
4106       \let\HyTmp@found=N %
4107       \expandafter\let\expandafter\HyTmp@optlist\expandafter\@empty
4108       \HyTmp@optlist
4109       \ifx\HyTmp@found Y%
4110         \advance\count@ by 1 %
4111       \else
4112         \@onelevel@sanitize\comma@entry
4113         \PackageWarning{hyperref}{%
4114           \string\ChoiceBox: Ignoring value ‘\comma@entry’,%
4115           \MessageBreak
4116           it cannot be found in the choices%
4117         }%

```

```

4118     \fi
4119     \@gobble
4120 }%
4121 \def\HyTmp@optitem##1##2##3{%
4122     \ifnum##3=1 %
4123         (##2)%
4124     \fi
4125 }%
4126 \ifcase\count@
4127 \or
4128     \xdef\Fld@choices{\Fld@choices/#1\HyTmp@optlist}%
4129 \else
4130     \xdef\Fld@choices{\Fld@choices/#1[\HyTmp@optlist]]}%
4131     \ifx#1V%
4132         \def\HyTmp@optitem##1##2##3{%
4133             \ifnum##3=1 %
4134                 \@firstofone{ ##1}%
4135             \fi
4136         }%
4137         \edef\HyTmp@optlist{\HyTmp@optlist}%
4138     \xdef\Fld@choices{%
4139         \Fld@choices
4140         /I[\expandafter\@firstofone\HyTmp@optlist]]%
4141     }%
4142     \fi
4143 \fi
4144 \fi
4145 }

```

### 19.3 Forms

\HyField@SetKeys

```

4146 \def\HyField@SetKeys{%
4147     \setkeys{Field}%
4148 }

4149 \newif\ifFld@checked
4150 \newif\ifFld@disabled
4151 \Fld@checkedfalse
4152 \Fld@disabledfalse
4153 \newcount\Fld@menulength
4154 \newdimen\Fld@Width
4155 \newdimen\Fld@charsize
4156 \Fld@charsize=10\p@
4157 \def\Fld@maxlen{0}
4158 \def\Fld@align{0}
4159 \def\Fld@color{0 0 0 rg}
4160 \def\Fld@bcolor{1 1 1}
4161 \def\Fld@bordercolor{1 0 0}
4162 \def\Fld@bordersep{1\p@}
4163 \def\Fld@borderwidth{1}
4164 \def\Fld@borderstyle{S}
4165 \def\Fld@cbsymbol{4}
4166 \def\Fld@rotation{0}
4167 \def\Form{\@ifnextchar [{\@Form}{\@Form[]}}
4168 \def\endForm{\@endForm}
4169 \newif\ifForm@html

```



```

4170 \Form@htmlfalse
4171 \def\Form@boolkey#1#2{%
4172   \csname Form@#2\ifx\relax#1\relax true\else#1\fi\endcsname
4173 }
4174 \define@key{Form}{action}{%
4175   \hyper@normalise\Hy@DefFormAction{#1}%
4176 }
4177 \def\Hy@DefFormAction{\def\Form@action}
4178 \def\enc@html{html}
4179 \define@key{Form}{encoding}{%
4180   \def\Hy@tempa{#1}%
4181   \ifx\Hy@tempa\enc@html
4182     \Form@htmltrue
4183     \def\Fld@export{html}%
4184   \else
4185     \typeout{hyperref: form 'encoding' key set to #1 %
4186       -- unknown type%
4187     }%
4188     \Form@htmlfalse
4189   \fi
4190 }
4191 \define@key{Form}{method}{%
4192   \lowercase{\def\Hy@temp{#1}}%
4193   \@ifundefined{Form@method@\Hy@temp}{%
4194     \@onelevel@sanitize\Hy@temp
4195     \PackageError{hyperref}{%
4196       Unknown method '\Hy@temp'.\MessageBreak
4197       Known values are 'post' and 'get'%
4198     }\@ehc
4199   }{%
4200     \let\Form@method\Hy@temp
4201     \ifcase\@nameuse{Form@method@\Hy@temp} %
4202       \Fld@getmethodfalse
4203     \else
4204       \Fld@getmethodtrue
4205     \fi
4206   }%
4207 }
4208 \def\Form@method{}
4209 \@namedef{Form@method@post}{0}
4210 \@namedef{Form@method@get}{1}
4211 \def\Field@boolkey#1#2{%
4212   \csname Fld@#2\ifx\relax#1\relax true\else#1\fi\endcsname
4213 }
4214 \newtoks\Field@toks
4215 \Field@toks={ }%
4216 \def\Field@addtoks#1#2{%
4217   \edef\@processme{\Field@toks{\the\Field@toks\space #1="#2"}}%
4218   \@processme
4219 }
4220 \def\Fld@checkequals#1=#2=#3\{\{%
4221   \def\@currDisplay{#1}%
4222   \ifx\@#2\%
4223     \def\@currValue{#1}%
4224   \else
4225     \def\@currValue{#2}%
4226   \fi

```

```

4227 }
4228 \define@key{Field}{loc}{%
4229   \def\Fld@loc{#1}%
4230 }
4231 \define@key{Field}{checked}[true]{%
4232   \lowercase{\Field@boolkey{#1}}{checked}%
4233 }
4234 \define@key{Field}{disabled}[true]{%
4235   \lowercase{\Field@boolkey{#1}}{disabled}%
4236 }
4237 \define@key{Field}{accesskey}{%
4238   \Field@addtoks{accesskey}{#1}%
4239 }
4240 \define@key{Field}{tabkey}{%
4241   \Field@addtoks{tabkey}{#1}%
4242 }
4243 \define@key{Field}{name}{%
4244   \def\Fld@name{#1}%
4245 }
4246 \define@key{Field}{width}{%
4247   \def\Fld@width{#1}%
4248   \Field@Width#1\setbox0=\hbox{m}%
4249 }
4250 \define@key{Field}{maxlen}{%
4251   \def\Fld@maxlen{#1}%
4252 }
4253 \define@key{Field}{menulength}{%
4254   \Fld@menulength=#1\relax
4255 }
4256 \define@key{Field}{height}{%
4257   \def\Fld@height{#1}%
4258 }
4259 \define@key{Field}{charsize}{%
4260   \Fld@charsize#1%
4261 }
4262 \define@key{Field}{borderwidth}{%
4263   \def\Fld@borderwidth{#1}%
4264 }
4265 \define@key{Field}{borderstyle}{%
4266   \def\Fld@borderstyle{#1}%
4267 }
4268 \define@key{Field}{bordersep}{%
4269   \def\Fld@bordersep{#1}%
4270 }
4271 \define@key{Field}{default}{%
4272   \def\Fld@default{#1}%
4273 }
4274 \define@key{Field}{align}{%
4275   \def\Fld@align{#1}%
4276 }
4277 \define@key{Field}{value}{%
4278   \def\Fld@value{#1}%
4279 }
4280 \define@key{Field}{checkboxsymbol}{%
4281   \def\Fld@cbsymbol{#1}%
4282 }
4283 \define@key{Field}{rotation}{%

```

```

4284 \def\Fld@rotation{#1}%
4285 }

4286 \define@key{Field}{backgroundcolor}{%
4287   \HyColor@FieldBColor{#1}\Fld@bcolor{hyperref}{backgroundcolor}%
4288 }
4289 \define@key{Field}{bordercolor}{%
4290   \HyColor@FieldBColor{#1}\Fld@bordercolor{hyperref}{bordercolor}%
4291 }
4292 \define@key{Field}{color}{%
4293   \HyColor@FieldColor{#1}\Fld@color{hyperref}{color}%
4294 }

4295 \def\Fld@format@code{}
4296 \def\Fld@validate@code{}
4297 \def\Fld@calculate@code{}
4298 \def\Fld@keystroke@code{}
4299 \def\Fld@onfocus@code{}
4300 \def\Fld@onblur@code{}
4301 \def\Fld@onmousedown@code{}
4302 \def\Fld@onmouseup@code{}
4303 \def\Fld@onenter@code{}
4304 \def\Fld@onexit@code{}
4305 \def\Hy@temp#1{%
4306   \expandafter\Hy@@temp\csname Fld@#1@code\endcsname{#1}%
4307 }
4308 \def\Hy@@temp#1#2{%
4309   \ifHy@pdfa
4310     \define@key{Field}{#2}{%
4311       \PackageError{hyperref}{%
4312         PDF/A: Additional action ‘#2’ is prohibited%
4313       }\@ehc
4314     }%
4315   \else
4316     \define@key{Field}{#2}{%
4317       \def#1{##1}%
4318     }%
4319   \fi
4320 }

4321 \Hy@temp{keystroke}
4322 \Hy@temp{format}
4323 \Hy@temp{validate}
4324 \Hy@temp{calculate}
4325 \Hy@temp{onfocus}
4326 \Hy@temp{onblur}
4327 \Hy@temp{onenter}
4328 \Hy@temp{onexit}
4329 \def\Hy@temp#1{%
4330   \define@key{Field}{#1}{%
4331     \Field@addtoks{#1}{##1}%
4332   }%
4333 }

4334 \Hy@temp{onselect}
4335 \Hy@temp{onchange}
4336 \Hy@temp{ondblclick}
4337 \Hy@temp{onmousedown}
4338 \Hy@temp{onmouseup}
4339 \Hy@temp{onmouseover}
4340 \Hy@temp{onmousemove}

```

```

4341 \Hy@temp{onmouseout}
4342 \Hy@temp{onkeypress}
4343 \Hy@temp{onkeydown}
4344 \Hy@temp{onkeyup}
4345 \ifHy@pdfa
4346   \define@key{Field}{onclick}{%
4347     \PackageError{hyperref}{%
4348       PDF/A: Action 'onclick' is prohibited%
4349     }\@ehc
4350   }%
4351 \else
4352   \define@key{Field}{onclick}{%
4353     \def\Fld@onclick{#1}%
4354     \Field@addtoks{onclick}{#1}%
4355   }%
4356 \fi

4357 \DeclareRobustCommand\TextField{%
4358   \@ifnextchar[{\@TextField}{\@TextField[]}%
4359 }
4360 \DeclareRobustCommand\ChoiceMenu{%
4361   \@ifnextchar[{\@ChoiceMenu}{\@ChoiceMenu[]}%
4362 }
4363 \DeclareRobustCommand\CheckBox{%
4364   \@ifnextchar[{\@CheckBox}{\@CheckBox[]}%
4365 }
4366 \DeclareRobustCommand\PushButton{%
4367   \@ifnextchar[{\@PushButton}{\@PushButton[]}%
4368 }
4369 \DeclareRobustCommand\Gauge{%
4370   \@ifnextchar[{\@Gauge}{\@Gauge[]}%
4371 }
4372 \DeclareRobustCommand\Submit{%
4373   \@ifnextchar[{\@Submit}{\@Submit[]}%
4374 }
4375 \DeclareRobustCommand\Reset{%
4376   \@ifnextchar[{\@Reset}{\@Reset[]}%
4377 }
4378 \def\LayoutTextField#1#2{% label, field
4379   #1 #2%
4380 }
4381 \def\LayoutChoiceField#1#2{% label, field
4382   #1 #2%
4383 }
4384 \def\LayoutCheckField#1#2{% label, field
4385   #1 #2%
4386 }
4387 \def\LayoutPushButtonField#1{% button
4388   #1%
4389 }
4390 \def\MakeRadioField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
4391 \def\MakeCheckField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
4392 \def\MakeTextField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
4393 \def\MakeChoiceField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
4394 \def\MakeButtonField#1{%
4395   \sbox0{%
4396     \hskip\Fld@borderwidth bp#1\hskip\Fld@borderwidth bp%
4397   }%

```

```

4398 \@tempdima\ht0 %
4399 \advance\@tempdima by \Fld@borderwidth bp %
4400 \advance\@tempdima by \Fld@borderwidth bp %
4401 \ht0\@tempdima
4402 \@tempdima\dp0 %
4403 \advance\@tempdima by \Fld@borderwidth bp %
4404 \advance\@tempdima by \Fld@borderwidth bp %
4405 \dp0\@tempdima
4406 \box0\relax
4407 }
4408 \def\DefaultHeightofSubmit{14pt}
4409 \def\DefaultWidthofSubmit{2cm}
4410 \def\DefaultHeightofReset{14pt}
4411 \def\DefaultWidthofReset{2cm}
4412 \def\DefaultHeightofCheckBox{\baselineskip}
4413 \def\DefaultWidthofCheckBox{\baselineskip}
4414 \def\DefaultHeightofChoiceMenu{\baselineskip}
4415 \def\DefaultWidthofChoiceMenu{\baselineskip}
4416 \def\DefaultHeightofText{\baselineskip}
4417 \def\DefaultHeightofTextMultiline{4\baselineskip}
4418 \def\DefaultWidthofText{3cm}
4419 \def\DefaultOptionsofSubmit{print,name=Submit,noexport}
4420 \def\DefaultOptionsofReset{print,name=Reset,noexport}
4421 \def\DefaultOptionsofPushButton{print}
4422 \def\DefaultOptionsofCheckBox{print}
4423 \def\DefaultOptionsofText{print}

```

Default options for the types of \ChoiceMenu.

```

4424 \def\DefaultOptionsofListBox{print}
4425 \def\DefaultOptionsofComboBox{print,edit,sort}
4426 \def\DefaultOptionsofPopdownBox{print}
4427 \def\DefaultOptionsofRadio{print,notoggletooff}

```

## 20 Setup

```

4428 \ifHy@figures
4429 \Hy@Info{Hyper figures ON}%
4430 \else
4431 \Hy@Info{Hyper figures OFF}%
4432 \fi
4433 \ifHy@nesting
4434 \Hy@Info{Link nesting ON}%
4435 \else
4436 \Hy@Info{Link nesting OFF}%
4437 \fi
4438 \ifHy@hyperindex
4439 \Hy@Info{Hyper index ON}%
4440 \else
4441 \Hy@Info{Hyper index OFF}%
4442 \fi
4443 \ifHy@backref
4444 \Hy@Info{backreferencing ON}%
4445 \else
4446 \Hy@Info{backreferencing OFF}%
4447 \fi
4448 \ifHy@colorlinks
4449 \Hy@Info{Link coloring ON}%

```

```

4450 \else
4451   \Hy@Info{Link coloring OFF}%
4452 \fi
4453 \ifHy@ocgcolorlinks
4454   \Hy@Info{Link coloring with OCG ON}%
4455 \else
4456   \Hy@Info{Link coloring with OCG OFF}%
4457 \fi
4458 \ifHy@pdfa
4459   \Hy@Info{PDF/A mode ON}%
4460 \else
4461   \Hy@Info{PDF/A mode OFF}%
4462 \fi

```

## 21 Low-level utility macros

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

```

4463 \edef\hyper@hash{\string#}
4464 \edef\hyper@tilde{\string~}
4465 \edef\hyper@quote{\string"}
4466 \let\@currentHref\@empty
4467 \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.

```

4468 \AfterBeginDocument{%
4469   \Hy@pdfstringtrue
4470   \PDF@SetupDoc
4471   \let\PDF@SetupDoc\@empty
4472   \Hy@DisableOption{pdfpagescrop}%
4473   \Hy@DisableOption{pdfpagemode}%
4474   \Hy@DisableOption{pdfnonfullscreenpagemode}%
4475   \Hy@DisableOption{pdfdirection}%
4476   \Hy@DisableOption{pdfviewarea}%
4477   \Hy@DisableOption{pdfviewclip}%
4478   \Hy@DisableOption{pdfprintarea}%
4479   \Hy@DisableOption{pdfprintclip}%
4480   \Hy@DisableOption{pdfprintscaling}%
4481   \Hy@DisableOption{pdfduplex}%
4482   \Hy@DisableOption{pdfpicktraybypdfsize}%
4483   \Hy@DisableOption{pdfprintpagerange}%
4484   \Hy@DisableOption{pdfnumcopies}%
4485   \Hy@DisableOption{pdfstartview}%
4486   \Hy@DisableOption{pdfstartpage}%
4487   \Hy@DisableOption{pdftoolbar}%
4488   \Hy@DisableOption{pdfmenubar}%
4489   \Hy@DisableOption{pdfwindowui}%
4490   \Hy@DisableOption{pdffitwindow}%
4491   \Hy@DisableOption{pdfcenterwindow}%
4492   \Hy@DisableOption{pdfdisplaydoctitle}%
4493   \Hy@DisableOption{pdfpagelayout}%
4494   \Hy@DisableOption{pdflang}%
4495   \Hy@DisableOption{baseurl}%
4496   \ifHy@texht\else\hyper@anchorstart{Doc-Start}\hyper@anchorend\fi
4497   \Hy@pdfstringfalse
4498 }

```

## 22 Localized nullifying of package

Sometimes we just don't want the wretched package interfering with us. Define an environment we can put in manually, or include in a style file, which stops the hyperref functions doing anything. This is used, for instance, in the Elsevier classes, to stop hyperref playing havoc in the front matter.

```
4499 \def\NoHyper{%
4500   \def\hyper@link@{##1}##2##3##4{##4}%
4501   \def\hyper@@anchor##1{%
4502     \global\let\hyper@livelink\hyper@link
4503     \gdef\hyper@link##1##2##3{##3}%
4504     \def\hyper@anchorstart##1{%
4505       \let\hyper@anchorend\@empty
4506       \def\hyper@linkstart##1##2{%
4507         \let\hyper@linkend\@empty
4508         \def\hyper@linkurl##1##2{##1}%
4509         \def\hyper@linkfile##1##2##3{##1}%
4510         \def\hyper@link@{##1}##2##3{%
4511           \let\Hy@backout\@gobble
4512       }
4513     \def\stop@hyper{%
4514       \def\hyper@link@{##1}##2##3##4{##4}%
4515       \let\Hy@backout\@gobble
4516       \def\hyper@@anchor##1{%
4517         \def\hyper@link##1##2##3{##3}%
4518         \def\hyper@anchorstart##1{%
4519           \let\hyper@anchorend\@empty
4520           \def\hyper@linkstart##1##2{%
4521             \let\hyper@linkend\@empty
4522             \def\hyper@linkurl##1##2{##1}%
4523             \def\hyper@linkfile##1##2##3{##1}%
4524             \def\hyper@link@{##1}##2##3{%
4525             }
4526         \def\endNoHyper{%
4527           \global\let\hyper@link\hyper@livelink
4528         }
4529       }
4530     }
4531   }
4532 }
4533 \end{package}
```

## 23 Package nohyperref

This package is introduced by Sebastian Rahtz.

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

Some low-level commands:

```
4530 \def\*nohyperref{
4531   \let\hyper@@anchor\@gobble
4532   \def\hyper@link#1#2#3{#3}%
4533   \let\hyper@anchorstart\@gobble
4534   \let\hyper@anchorend\@empty
4535   \let\hyper@linkstart\@gobbletwo
4536   \let\hyper@linkend\@empty
4537   \def\hyper@linkurl#1#2{#1}%
4538   \def\hyper@linkfile#1#2#3{#1}%
4539 }
```

```

4539 \def\hyper@link@[#1]#2#3{%
4540 \let\PDF@SetupDoc\@empty
4541 \let\PDF@FinishDoc\@empty
4542 \def\nohyperpage#1{#1}

```

Some top-level commands:

```

4543 \def\Acrobatmenu#1#2{\leavevmode#2}
4544 \let\pdfstringdefDisableCommands\@gobbletwo
4545 \let\texorpdfstring\@firstoftwo
4546 \let\pdfbookmark\@undefined
4547 \newcommand\pdfbookmark[3][]{\@{}}
4548 \let\phantomsection\@empty
4549 \let\hypersetup\@gobble
4550 \let\hyperbaseurl\@gobble
4551 \let\href\@gobble
4552 \let\hyperdef\@gobbletwo
4553 \let\hyperlink\@gobble
4554 \let\hypertarget\@gobble
4555 \def\hyperref{%
4556   \@ifnextchar[\@gobbleopt{\expandafter\@gobbletwo\@gobble}%
4557 }
4558 \long\def\@gobbleopt[#1]{\@{}}
4559 \let\hyperpage\@empty
4560 \</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}`

```

4561 \<{*package}
4562 \AfterBeginDocument{%

```

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

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

```

4563 \if@filesw
4564   \ifHy@typexml
4565     \immediate\closeout\@mainaux
4566     \immediate\openout\@mainaux\jobname.aux\relax
4567     \immediate\write\@auxout{<relaxxml>\relax}%
4568   \fi
4569   \immediate\write\@auxout{%
4570     \string\ifx\string\hyper@anchor\string\@undefined^^J%
4571     \global\let\string\oldcontentsline\string\contentsline^^J%
4572     \gdef\string\contentsline%
4573       \string#1\string#2\string#3\string#4{%
4574       \string\oldcontentsline%
4575       {\string#1}{\string#2}{\string#3}}^^J%
4576     \global\let\string\oldnewlabel\string\newlabel^^J%
4577     \gdef\string\newlabel\string#1\string#2{%
4578     \string\newlabelxx{\string#1}\string#2}^^J%
4579     \gdef\string\newlabelxx%
4580     \string#1\string#2\string#3\string#4\string#5\string#6{%
4581     \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.

```
4582      \string\AtEndDocument{%
4583      \let\string\contentsline\string\oldcontentsline^^J%
4584      \let\string\newlabel\string\oldnewlabel}^^J%
```

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

```
4585      \string\else^^J%
4586      \global\let\string\hyper@last\relax^^J%
4587      \string\fi^^J%
4588  }%
4589  \fi
```

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

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

```
4590  \ifx\hyper@last\@undefined
4591    \def\@starttoc#1{%
4592      \begingroup
4593      \makeatletter
4594      \IfFileExists{\jobname.#1}{%
4595        \Hy@WarningNoLine{%
4596          old #1 file detected, not used; run LaTeX again%
4597        }%
4598      }{%
4599        \if@filesw
4600          \expandafter\newwrite\csname tf@#1\endcsname
4601          \immediate\openout\csname tf@#1\endcsname \jobname.#1\relax
4602        \fi
4603        \@nobreakfalse
4604      \endgroup
4605    }%
4606    \def\newlabel#1#2{\@newl@bel r{#1}{#2}{ }{}{}}}%
4607  \fi
4608 }
```

## 25 Title strings

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

```
4609 \ifHy@usetitle
4610   \let\HyOrg@title\title
4611   \let\HyOrg@author\author
4612   \def\title{\@ifnextchar[{\Hy@scanopttitle}{\Hy@scantitle}}%
4613   \def\Hy@scanopttitle[#1]{%
4614     \gdef\Hy@title{#1}%
4615     \HyOrg@title[#1]%
4616   }%
4617   \def\Hy@scantitle#1{%
4618     \gdef\Hy@title{#1}%
4619     \HyOrg@title{#1}%
4620   }%
4621   \def\author{\@ifnextchar[{\Hy@scanoptauthor}{\Hy@scanauthor}}%
```

```

4622 \def\Hy@scanoptauthor[#1]{%
4623   \gdef\Hy@author{#1}%
4624   \HyOrg@author[{#1}]%
4625 }%
4626 \def\Hy@scanauthor#1{%
4627   \gdef\Hy@author{#1}%
4628   \HyOrg@author{#1}%
4629 }%

```

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.

```

4630 \begingroup
4631   \def\process@me#1\@nil#2{%
4632     \expandafter\let\expandafter\x\csname @#2\endcsname
4633     \edef\y{\expandafter\strip@prefix\meaning\x}%
4634     \def\c##1##2\@nil{%
4635       \ifx\\##1\\%
4636       \else
4637         \expandafter\gdef\csname Hy@#2\expandafter\endcsname
4638           \expandafter{\x}%
4639       \fi
4640     }%
4641     \expandafter\c\y\relax#1\@nil
4642   }%
4643   \expandafter\process@me\string\@latex@\@nil{title}%
4644   \expandafter\process@me\string\@latex@\@nil{author}%
4645 \endgroup
4646 \fi
4647 \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.

```

4648 \def\Hy@UseMaketitleString#1{%
4649   \@ifundefined{Hy@#1}{}{%
4650     \begingroup
4651       \let\Hy@saved@hook\pdfstringdefPreHook
4652       \pdfstringdefDisableCommands{%
4653         \expandafter\let\expandafter\\\csname Hy@newline@#1\endcsname
4654         \let\newline\\%
4655       }%
4656       \expandafter\ifx\csname @pdf#1\endcsname\@empty
4657         \expandafter\pdfstringdef\csname @pdf#1\endcsname{%
4658           \csname Hy@#1\endcsname\@empty
4659         }%
4660       \fi
4661       \global\let\pdfstringdefPreHook\Hy@saved@hook
4662     \endgroup
4663   }%
4664 }
4665 \def\Hy@newline@title#1{ #1}

```

```

4666 \def\Hy@newline@author#1{, #1}
4667 \def\Hy@UseMaketitleInfos{%
4668   \Hy@UseMaketitleString{title}%
4669   \Hy@UseMaketitleString{author}%
4670 }

```

## 26 Page numbers

This stuff is done by Heiko Oberdiek.

## 27 Every page

```

4671 \RequirePackage{atbegshi}[2007/09/09]
4672 \def\Hy@EveryPageHook{}
4673 \def\Hy@EveryPageBoxHook{}
4674 \def\Hy@FirstPageHook{}
4675 \AtBeginShipout{%
4676   \Hy@EveryPageHook
4677   \ifx\Hy@EveryPageBoxHook\@empty
4678   \else
4679     \setbox\AtBeginShipoutBox=\vbox{%
4680       \offinterlineskip
4681       \Hy@EveryPageBoxHook
4682       \box\AtBeginShipoutBox
4683     }%
4684   \fi
4685 }
4686 \AtBeginShipoutFirst{%
4687   \Hy@FirstPageHook
4688 }
4689 \g@addto@macro\Hy@FirstPageHook{%
4690   \PDF@FinishDoc
4691   \gdef\PDF@FinishDoc{}}%
4692 }

```

### 27.1 PDF /PageLabels

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

```

4693 \ifHy@pagelabels
4694   \begingroup\expandafter\expandafter\expandafter\endgroup
4695   \expandafter\ifx\csname thepage\endcsname\relax
4696     \Hy@pagelabelsfalse
4697     \Hy@WarningNoLine{%
4698       Option 'pdfpagelabels' is turned off\MessageBreak
4699       because \string\thepage\space is undefined%
4700     }%
4701     \csname fi\endcsname
4702     \csname iffalse\expandafter\endcsname
4703   \fi

```

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

```

4704 \def\thispdfpagelabel#1{%
4705   \gdef\HyPL@thisLabel{#1}%
4706 }%
4707 \global\let\HyPL@thisLabel\relax

```

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

```
4708 \def\HyPL@Labels{}
```

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

```
4709 \newcount\Hy@abspage
```

```
4710 \Hy@abspage=0 %
```

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

```
4711 \def\HyPL@LastType{init}%
```

```
4712 \def\HyPL@LastNumber{0}%
```

```
4713 \def\HyPL@LastPrefix{}
```

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

```
4714 \def\HyPL@arabic{D}%
```

```
4715 \def\HyPL@Roman{R}%
```

```
4716 \def\HyPL@roman{r}%
```

```
4717 \def\HyPL@Alph{A}%
```

```
4718 \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.

```
4719 \def\HyPL@EveryPage{%
4720   \begingroup
4721   \ifx\HyPL@thisLabel\relax
4722     \let\HyPL@page\thepage
4723   \else
4724     \let\HyPL@page\HyPL@thisLabel
4725     \global\let\HyPL@thisLabel\relax
4726   \fi
4727   \let\HyPL@Type\relax
4728   \ifnum\the\c@page>0 %
4729     \expandafter\HyPL@CheckThePage\HyPL@page\@nil
4730   \fi
4731   \let\Hy@temp Y%
4732   \ifx\HyPL@Type\HyPL@LastType
4733   \else
4734     \let\Hy@temp N%
4735   \fi
4736   \ifx\HyPL@Type\relax
4737     \pdfstringdef\HyPL@Prefix{\HyPL@page}%
4738   \else
4739     \pdfstringdef\HyPL@Prefix\HyPL@Prefix
4740   \fi
4741   \ifx\HyPL@Prefix\HyPL@LastPrefix
4742   \else
4743     \let\Hy@temp N%
4744   \fi
4745   \if Y\Hy@temp
4746     \advance\c@page by -1 %
4747     \ifnum\HyPL@LastNumber=\the\c@page\relax
4748     \else
4749       \let\Hy@temp N%
4750     \fi
4751     \Hy@StepCount\c@page
4752   \fi
4753   \if N\Hy@temp
4754     \ifx\HyPL@Type\relax
```

```

4755     \HyPL@StorePageLabel{/P(\HyPL@Prefix)}%
4756   \else
4757     \HyPL@StorePageLabel{%
4758       \ifx\HyPL@Prefix\@empty
4759       \else
4760         /P(\HyPL@Prefix)%
4761       \fi
4762       /S/\csname HyPL\HyPL@Type\endcsname
4763       \ifnum\the\c@page=1 %
4764       \else
4765         \space/St \the\c@page
4766       \fi
4767     }%
4768   \fi
4769 \fi
4770 \xdef\HyPL@LastNumber{\the\c@page}%
4771 \global\let\HyPL@LastType\HyPL@Type
4772 \global\let\HyPL@LastPrefix\HyPL@Prefix
4773 \endgroup
4774 \Hy@GlobalStepCount\Hy@abspage
4775 }%

```

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

```

4776 \def\HyPL@CheckThePage#1\@nil{%
4777   \HyPL@@CheckThePage{#1}#1\csname\endcsname\c@page\@nil
4778 }%

```

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

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

```

4779 \def\HyPL@@CheckThePage#1#2\csname#3\endcsname\c@page#4\@nil{%
4780   \def\Hy@tempa{#4}%
4781   \def\Hy@tempb{\csname\endcsname\c@page}%
4782   \ifx\Hy@tempa\Hy@tempb
4783     \expandafter\ifx\csname HyPL#3\endcsname\relax
4784   \else
4785     \def\HyPL@Type{#3}%
4786     \def\HyPL@Prefix{#2}%
4787   \fi
4788 \else
4789   \begingroup
4790     \let\Hy@next\endgroup
4791     \let\HyPL@found\@undefined
4792     \def\arabic{\HyPL@Format{arabic}}%
4793     \def\Roman{\HyPL@Format{Roman}}%
4794     \def\roman{\HyPL@Format{roman}}%
4795     \def\Alph{\HyPL@Format{Alph}}%
4796     \def\alph{\HyPL@Format{alph}}%
4797     \protected@edef\Hy@temp{#1}%
4798     \ifx\HyPL@found\relax
4799       \toks@{\expandafter{\Hy@temp}}%
4800     \edef\Hy@next{\endgroup
4801       \noexpand\HyPL@@@CheckThePage\the\toks@
4802       \noexpand\HyPL@found\relax\noexpand\@nil
4803     }%
4804   \fi

```

```

4805     \Hy@next
4806     \fi
4807 }%

```

**\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`.

```

4808 \def\HyPL@Format#1#2{%
4809     \ifx\HyPL@found\@undefined
4810         \expandafter\ifx\csname c@#2\endcsname\c@page
4811             \expandafter\noexpand\csname HyPL@found\endcsname{#1}%
4812         \else
4813             \expandafter\noexpand\csname#1\endcsname{#2}%
4814         \fi
4815     \else
4816         \expandafter\noexpand\csname#1\endcsname{#2}%
4817     \fi
4818 }%

```

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

```

4819 \def\HyPL@@@CheckThePage#1\HyPL@found#2#3\@nil{%
4820     \def\Hy@tempa{#3}%
4821     \def\Hy@tempb{\HyPL@found\relax}%
4822     \ifx\Hy@tempa\Hy@tempb
4823         \def\HyPL@Type{#2}%
4824         \def\HyPL@Prefix{#1}%
4825     \fi
4826 }%

```

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

```

4827 \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`.

```

4828 \def\HyPL@Useless{0<</S/D>>}%
4829 \@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.

```

4830 \def\HyPL@SetPageLabels{%
4831     \@onelevel@sanitize\HyPL@Labels
4832     \ifx\HyPL@Labels\@empty
4833     \else
4834         \ifx\HyPL@Labels\HyPL@Useless
4835         \else
4836             \Hy@PutCatalog{/PageLabels<</Nums[\HyPL@Labels]>>}%
4837         \fi
4838     \fi
4839 }%

```

```

4840 \g@addto@macro\Hy@EveryPageHook{\HyPL@EveryPage}%
4841 \fi

```

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

```

4842 \Hy@DisableOption{pdfpagelabels}
4843 </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`

```
4844 <pdfTeX>\let\Hy@PutCatalog\pdfcatalog
```

The code for VTeX is more complicate, because it does not allow the direct access to the `/Catalog` object. The command scans its argument and looks for a `/PageLabels` entry.

VTeX 6.59g is the first version, that implements `\special{!pdfpagelabels...}`. For this version `\VTeXversion` reports 660.

```
4845 <*vTeX>
4846 \providecommand*{\XR@ext}{pdf}
4847 \edef\Hy@VTeXversion{%
4848   \ifx\VTeXversion\@undefined
4849     \z@
4850   \else
4851     \ifx\VTeXversion\relax
4852       \z@
4853     \else
4854       \VTeXversion
4855     \fi
4856   \fi
4857 }
4858 \begingroup
4859   \ifnum\Hy@VTeXversion<660 %
4860     \gdef\Hy@PutCatalog#1{%
4861       \Hy@WarningNoLine{%
4862         VTeX 6.59g or above required for pdfpagelabels%
4863       }%
4864     }%
4865   \else
4866     \gdef\Hy@PutCatalog#1{%
4867       \Hy@vt@PutCatalog#1/PageLabels<<>>\@nil
4868     }%
4869     \gdef\Hy@vt@PutCatalog#1/PageLabels<<#2>>#3\@nil{%
4870       \ifx\#2\%
4871         \else
4872           \immediate\special{!pdfpagelabels #2}%
4873         \fi
4874       }%
4875     \fi
4876 \endgroup
4877 </vTeX>

4878 <*pdfTeX | vTeX>
```

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

```
4879 \ifHy@pagelabels
4880   \def\HyPL@StorePageLabel#1{%
4881     \toks@\expandafter{\HyPL@Labels}%
4882     \xdef\HyPL@Labels{%
4883       \the\toks@
4884       \the\Hy@abspage<<#1>>%
4885     }%
4886   }%
```

At the end of the document, \clearpage tries to make sure, that no further pages will follow. Then the PDF catalog entry for \PageLabels is set.

```

4887 \@ifclassloaded{revtex4}{%
4888   \g@addto@macro\clear@document{\HyPL@SetPageLabels}%
4889 }{%
4890   \AtEndDocument{\clearpage\HyPL@SetPageLabels}%
4891 }%

4892 \fi
4893 </pdfTeX | vtex>

```

### 27.1.2 pdfmarkbase, dvipdfm

```

4894 <*pdfmarkbase>
4895 \begingroup
4896 \toks@{\expandafter{\Hy@FirstPageHook}%
4897 \xdef\Hy@FirstPageHook{%
4898   \noexpand\headerps@out{%
4899     systemdict /pdfmark known%
4900     {%
4901       userdict /?pdfmark systemdict /exec get put%
4902     }{%
4903       userdict /?pdfmark systemdict /pop get put %
4904       userdict /pdfmark systemdict /cleartomark get put%
4905     }%
4906     ifelse%
4907   }%
4908   \the\toks@
4909 }%
4910 \endgroup
4911 </pdfmarkbase>

\Hy@PutCatalog

4912 <dvipdfm>\def\Hy@PutCatalog#1{\@pdfm@mark{docview << #1 >>}}
4913 <*pdfmarkbase>
4914 \def\Hy@PutCatalog#1{%
4915   \pdfmark{pdfmark=/PUT,Raw={\string{Catalog\string} << #1 >>}}%
4916 }
4917 </pdfmarkbase>

4918 <*pdfmarkbase | dvipdfm>
4919 \ifHy@pagelabels

```

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

```

4920 \def\HyPL@StorePageLabel#1{%
4921   \if@filesW
4922     \begingroup
4923       \edef\Hy@tempa{\the\Hy@abspage<<#1>>}%
4924       \immediate\write\@mainaux{%
4925         \string\HyPL@Entry{\Hy@tempa}%
4926       }%
4927     \endgroup
4928   \fi
4929 }%

```

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.



```

4930 \AfterBeginDocument{%
4931   \if@filesw
4932     \immediate\write\@mainaux{%
4933       \string\providecommand\string*\string\HyPL@Entry[1]{}%
4934     }%
4935   \fi
4936   \ifx\HyPL@Labels\@empty
4937     \Hy@WarningNoLine{Rerun to get /PageLabels entry}%
4938   \else
4939     \HyPL@SetPageLabels
4940   \fi
4941   \let\HyPL@Entry\@gobble
4942 }%

\HyPL@Entry
4943 \def\HyPL@Entry#1{%
4944   \expandafter\gdef\expandafter\HyPL@Labels\expandafter{%
4945     \HyPL@Labels
4946     #1%
4947   }%
4948 }%

4949 \fi
4950 </pdfmarkbase | dvipdfm>
4951 <*package>
4952 \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

```

4953 \def\Hy@CounterExists#1{%
4954   \begingroup\expandafter\expandafter\expandafter\endgroup
4955   \expandafter\ifx\csname c@#1\endcsname\relax
4956     \expandafter\@gobble
4957   \else
4958     \begingroup\expandafter\expandafter\expandafter\endgroup
4959     \expandafter\ifx\csname the#1\endcsname\relax
4960       \expandafter\expandafter\expandafter\@gobble
4961     \else

```

```

4962 \expandafter\expandafter\expandafter\@firstofone
4963 \fi
4964 \fi
4965 }
4966 \Hy@CounterExists{section}{%
4967 \newcommand\theHequation{\theHsection.\arabic{equation}}%
4968 }
4969 \Hy@CounterExists{part}{%
4970 \newcommand\theHpart{\arabic{part}}%
4971 }
4972 \@ifundefined{thechapter}{%
4973 \newcommand\theHsection {\arabic{section}}%
4974 \newcommand\theHfigure {\arabic{figure}}%
4975 \newcommand\theHtable {\arabic{table}}%
4976 }{%
4977 \newcommand\theHchapter {\arabic{chapter}}%
4978 \newcommand\theHfigure {\theHchapter.\arabic{figure}}%
4979 \newcommand\theHtable {\theHchapter.\arabic{table}}%
4980 \newcommand\theHsection {\theHchapter.\arabic{section}}%
4981 }
4982 \newcommand\theHsubsection {\theHsection.\arabic{subsection}}
4983 \newcommand\theHsubsubsection{\theHsubsection.\arabic{subsubsection}}
4984 \newcommand\theHparagraph {\theHsubsubsection.\arabic{paragraph}}
4985 \newcommand\theHsubparagraph {\theHparagraph.\arabic{subparagraph}}
4986 \newcommand\theHtheorem {\theHsection.\arabic{theorem}}
4987 \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.

```

4988 \let\H@item\item
4989 \newcounter{Item}
4990 \def\theHItem{\arabic{Item}}
4991 \def\item{%
4992 \@hyper@itemfalse
4993 \if@nmbrlist\@hyper@itemtrue\fi
4994 \H@item
4995 }
4996 \newcommand\theHenumi {\theHItem}
4997 \newcommand\theHenumii {\theHItem}
4998 \newcommand\theHenumiii {\theHItem}
4999 \newcommand\theHenumiv {\theHItem}
5000 \newcommand\theHHfootnote {\arabic{Hfootnote}}
5001 \newcommand\theHmpfootnote{\arabic{mpfootnote}}
5002 \let\theHmpfootnote\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.

```

5003 \let\H@refstepcounter\refstepcounter
5004 \edef\name@of@eq{equation}%
5005 \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.

```

5006 \newif\if@hyper@item
5007 \newif\if@skiphyperref

```

```

5008 \@hyper@itemfalse
5009 \@skiphyperreffalse
5010 \def\refstepcounter#1{%
5011   \ifHy@pdfstring
5012   \else
5013     \H@refstepcounter{#1}%
5014     \edef\This@name{#1}%
5015     \ifx\This@name\name@of@slide
5016     \else
5017       \if@skiphyperref
5018       \else
5019         \if@hyper@item
5020         \stepcounter{Item}%
5021         \hyper@refstepcounter{Item}%
5022         \@hyper@itemfalse
5023       \else
5024         \hyper@refstepcounter{#1}%
5025       \fi
5026     \fi
5027   \fi
5028 \fi
5029 }

```

AMS<sup>1</sup>TeX 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.

```

5030 \@ifpackageloaded{amsmath}{\newif\ifmeasuring@measuring@false}

```

`\hyper@refstepcounter`

```

5031 \def\hyper@refstepcounter#1{%
5032   \edef\This@name{#1}%
5033   \ifx\This@name\name@of@eq
5034     \@ifundefined{theHequation}{%
5035       \make@stripped@name{\theequation}%
5036       \let\theHequation\newname
5037     }{}%
5038   \fi
5039   \@ifundefined{theH#1}{%
5040     \expandafter\def\csname theH#1\endcsname{\arabic{#1}}%
5041   }{}%
5042   \hyper@makecurrent{#1}%
5043   \ifmeasuring@
5044   \else
5045     \Hy@raisedlink{%
5046       \hyper@anchorstart{\@currentHref}\hyper@anchorend
5047     }%
5048   \fi
5049 }

```

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`.

```

5050 \begingroup\expandafter\expandafter\expandafter\endgroup
5051 \expandafter\ifx\csname chapter\endcsname\relax

```

```

5052 \def\Hy@chapterstring{section}%
5053 \else
5054 \def\Hy@chapterstring{chapter}%
5055 \fi
5056 \def\Hy@appendixstring{appendix}
5057 \def\Hy@chapapp{\Hy@chapterstring}
5058 \let\HyOrg@appendix\appendix
5059 \def\appendix{%
5060 \ifundefined{chapter}%
5061 {\gdef\theHsection{\Alph{section}}}%
5062 {\gdef\theHchapter{\Alph{chapter}}}%
5063 \xdef\Hy@chapapp{\Hy@appendixstring}%
5064 \HyOrg@appendix
5065 }

```

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

```

5066 \def\hyper@makecurrent#1{%
5067 \begingroup
5068 \edef\Hy@param{#1}%
5069 \ifx\Hy@param\Hy@chapterstring
5070 \let\Hy@param\Hy@chapapp
5071 \fi
5072 \ifHy@hypertextnames
5073 \let\@number\@firstofone
5074 \ifundefined{latin@Alph}{-}{%
5075 \ifx\@Alph\greek@Alph
5076 \def\@Alph{Alph\@arabic}%
5077 \fi
5078 }%
5079 \ifx\@Alph\@Alph@bul
5080 \def\@Alph{Alph\@arabic}%
5081 \fi
5082 \ifx\@alph\@alph@bul
5083 \def\@alph{alph\@arabic}%
5084 \fi
5085 \ifHy@naturalnames
5086 \let\textlatin\@firstofone
5087 \xdef\@currentHlabel{\csname the#1\endcsname}%
5088 \else
5089 \xdef\@currentHlabel{\csname theH#1\endcsname}%
5090 \fi
5091 \xdef\@currentHref{%
5092 \Hy@param.\expandafter\strip@prefix\meaning\@currentHlabel
5093 }%
5094 \else
5095 \Hy@GlobalStepCount\Hy@linkcounter
5096 \xdef\@currentHref{\Hy@param.the\Hy@linkcounter}%
5097 \fi
5098 \endgroup
5099 }

5100 \ifpackageloaded{fancyvrb}{%
5101 \def\FV@StepLineNo{%
5102 \FV@SetLineNo
5103 \def\FV@StepLineNo{\H@refstepcounter{FancyVerbLine}}%
5104 \FV@StepLineNo
5105 }%

```

## 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 hypertexnames 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`

```

5107 \AtBeginDocument{%
5108   \@ifclassloaded{revtex4}{%
5109     \@namedef{ver@lastpage.sty}{1994/06/25}%
5110   }{}%
5111   \@ifpackageloaded{lastpage}{%
5112     \ifHy@pageanchor
5113     \else
5114       \Hy@WarningNoLine{%
5115         The \string\pageref{LastPage} link doesn't work\MessageBreak
5116         with disabled option 'pageanchor'%
5117       }%
5118     \fi
5119     \def\lastpage@putlabel{%
5120       \addtocounter{page}{-1}%
5121       \if@filesw
5122         \begingroup
5123           \let\@number\@firstofone
5124           \ifHy@pageanchor
5125             \ifHy@hypertexnames
5126               \ifHy@plainpages
5127                 \def\Hy@temp{\arabic{page}}%
5128               \else
5129                 \Hy@unicodedefalse
5130                 \pdfstringdef\Hy@temp{\thepage}%
5131               \fi
5132             \else
5133               \def\Hy@temp{\the\Hy@pagecounter}%
5134             \fi
5135           \fi
5136           \immediate\write\@auxout{%
5137             \string\newlabel
5138             {LastPage}{\the\Hy@temp}{\thepage}{\the\Hy@temp}{\thepage}{\thepage}%
5139             \ifHy@pageanchor page.\Hy@temp\fi}{\thepage}%
5140           }%
5141         \endgroup
5142       \fi
5143       \addtocounter{page}{1}%
5144     }%
5145   \@ifclassloaded{revtex4}{%
5146     \begingroup
5147       \toks@{\expandafter{\lastpage@putlabel}}%
5148       \edef\x{\endgroup
5149         \def\noexpand\lastpage@putlabel{%
5150           \noexpand\stepcounter{page}%

```

```

5151         \the\toks@
5152         \noexpand\addtocounter{page}\noexpand\m@ne
5153     }%
5154 }%
5155 \x
5156 }{}%
5157 }{}%
5158 }
5159 \</package>
5160 \<*check>
5161 \checkpackage{lastpage}[1994/06/25]
5162 \checkcommand\def\lastpage@putlabel{%
5163     \addtocounter{page}{-1}%
5164     \immediate\write\@auxout{%
5165         \string\newlabel{LastPage}{{}\{\thepage}}%
5166     }%
5167     \addtocounter{page}{1}%
5168 }
5169 \</check>
5170 \<*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.

```

5171 \def\hypergetref#1{\getrefbykeydefault{#1}{}{??}}
5172 \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:

```

5173 \@ifpackageloaded{titlesec}{%
5174     \def\ttl@Hy@steplink#1{%
5175         \Hy@GlobalStepCount\Hy@linkcounter
5176         \xdef\@currentHref{#1*.\the\Hy@linkcounter}%
5177         \def\ttl@Hy@saveanchor{%
5178             \Hy@raisedlink{%
5179                 \hyper@anchorstart{\@currentHref}\hyper@anchorend
5180             }%
5181         }%
5182     }%
5183     \def\ttl@Hy@refstepcounter#1{%
5184         \let\ttl@b\Hy@raisedlink
5185         \def\Hy@raisedlink##1{%
5186             \def\ttl@Hy@saveanchor{\Hy@raisedlink{##1}}%
5187         }%
5188         \refstepcounter{#1}%
5189         \let\Hy@raisedlink\ttl@b
5190     }%
5191 }{}

```

Package titletoc support:

```

5192 \@ifpackageloaded{titletoc}{%

```

```

5193 \def\ttl@gobblecontents#1#2#3#4{\ignorespaces}%
5194 }{}

```

## 32 Package varioref support

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

```

5195 \def\Hy@varioref@undefined{{??}{??}{}}{}{}
5196 \@ifpackageloaded{varioref}{%
5197   \def\vref@pagenum#1#2{%
5198     \ifundefined{r@#2}{%
5199       \expandafter\let\csname r@#2\endcsname\Hy@varioref@undefined
5200     }{}%
5201     \edef#1{\getpagerefnumber{#2}}%
5202   }%
5203 }{}

```

## 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

```

5204 \@ifpackageloaded{longtable}{%
5205   \begingroup
5206     \def\y{\LT@array}%
5207     \@ifundefined{scr@LT@array}{}{\def\y{\scr@LT@array}}%
5208     \long\def\x\refstepcounter#1#2\@sharp#3#4\@nil{%
5209       \expandafter\endgroup
5210       \expandafter\def\y[#1]##2{%
5211         \H@refstepcounter{#1}%
5212         \hyper@makecurrent{table}%
5213         \let\Hy@LT@currentHlabel\@currentHlabel
5214         \let\Hy@LT@currentHref\@currentHref
5215         #2\@sharp####4%
5216       }%
5217     }%
5218     \expandafter\expandafter\expandafter\x\y[#1]{#2}\@nil

```

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

```

5219 \begingroup
5220 \def\x#1\ifvoid\LT@firsthead\copy#2\@nil{%
5221   \endgroup
5222   \def\LT@start{%
5223     #1%
5224     \let\@currentHlabel\Hy@LT@currentHlabel
5225     \let\@currentHref\Hy@LT@currentHref
5226     \Hy@raisedlink{%
5227       \hyper@anchorstart{\@currentHref}\hyper@anchorend
5228     }%
5229     \ifvoid\LT@firsthead\copy
5230     #2%
5231   }%
5232 }%

```

```

5233 \expandafter\x\LT@start\@nil
5234 }{}

```

## 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.

```

5235 \let\new@refstepcounter\refstepcounter
5236 \let\H@equation\equation
5237 \let\H@endequation\endequation

5238 \@ifpackageloaded{amsmath}{%
5239   \long\def\Hy@temp{%
5240     \incr@eqnum
5241     \mathdisplay@push
5242     \st@rredfalse \global\@eqnswtrue
5243     \mathdisplay{equation}%
5244   }%
5245   \ifx\Hy@temp\equation
5246     \expandafter\ifx\csname if@fleqn\expandafter\endcsname
5247       \csname iftrue\endcsname
5248     \else
5249       \long\def\equation{%
5250         \mathdisplay@push
5251         \st@rredfalse \global\@eqnswtrue
5252         \mathdisplay{equation}%
5253         \incr@eqnum
5254       }%
5255     \fi
5256   \fi
5257 }{}%
5258 \def\equation{%
5259   \let\refstepcounter\H@refstepcounter
5260   \H@equation
5261   \@ifundefined{theHequation}{%
5262     \make@stripped@name{\theequation}%
5263     \let\theHequation\newname
5264   }{}%
5265   \hyper@makecurrent{equation}%
5266   \Hy@raisedlink{\hyper@anchorstart{\@currentHref}}%
5267   \let\refstepcounter\new@refstepcounter
5268 }%
5269 \def\endequation{\Hy@raisedlink{\hyper@anchorend}\H@endequation}%
5270 }

```

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.

```

5271 \newif\if@eqnstar
5272 \@eqnstarfalse
5273 \let\H@eqnarray\eqnarray

```



```

5274 \let\H@endeqnarray\endeqnarray
5275 \def\eqnarray{%
5276   \let\Hy@reserved@a\relax
5277   \def\@currentHref{%
5278     \H@eqnarray
5279     \if@eqnstar
5280     \else
5281       \ifx\\ \@currentHref\\
5282       \else
5283         \@ifundefined{theHequation}{%
5284           \make@stripped@name{\theequation}%
5285           \let\theHequation\newname
5286         }{}%
5287         \hyper@makecurrent{equation}%
5288         \hyper@anchorstart{\@currentHref}{\hyper@anchorend
5289       \fi
5290     \fi
5291   }
5292 \def\endeqnarray{%
5293   \H@endeqnarray
5294 }

```

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.

```

5295 \@namedef{eqnarray*}{%
5296   \def\@eqnocr{\nonumber\@seqnocr}\@eqnstartrue\eqnarray
5297 }
5298 \@namedef{endeqnarray*}{%
5299   \nonumber\endeqnarray\@eqnstarfalse
5300 }

```

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

```

5301 \@ifundefined{subeqnarray}{}{%
5302   \let\H@subeqnarray\subeqnarray
5303   \let\H@endsubeqnarray\endsubeqnarray
5304   \def\subeqnarray{%
5305     \let\Hy@reserved@a\relax
5306     \H@subeqnarray
5307     \@ifundefined{theHequation}{%
5308       \make@stripped@name{\theequation}%
5309       \let\theHequation\newname
5310     }{}%
5311     \hyper@makecurrent{equation}%
5312     \hyper@anchorstart{\@currentHref}{\hyper@anchorend
5313   }%
5314   \def\endsubeqnarray{%
5315     \H@endsubeqnarray
5316   }%
5317   \newcommand\theHsubequation{\theHequation\alph{subequation}}%
5318 }

```

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

```

5319 \def\make@stripped@name#1{%
5320   \begingroup
5321     \escapechar\m@ne
5322     \global\let\newname\empty
5323     \protected@edef\Hy@tempa{#1}%
5324     \edef\@tempb{%

```

```

5325     \noexpand\@tfor\noexpand\Hy@tempa:=%
5326     \expandafter\strip@prefix\meaning\Hy@tempa
5327   }%
5328   \@tempb\do{%
5329     \if\Hy@tempa\else
5330     \if}\Hy@tempa\else
5331     \xdef\newname{\newname\Hy@tempa}%
5332     \fi
5333   \fi
5334 }%
5335 \endgroup
5336 }

Support for amsmath's subequations:
5337 \begingroup\expandafter\expandafter\expandafter\endgroup
5338 \expandafter\ifx\csname subequations\endcsname\relax
5339 \else
5340   \let\HyOrg@subequations\subequations
5341   \def\subequations{%
5342     \stepcounter{equation}%
5343     \protected@edef\theHparentequation{%
5344       \@ifundefined{theHequation}\theequation\theHequation
5345     }%
5346     \addtocounter{equation}{-1}%
5347     \HyOrg@subequations
5348     \def\theHequation{\theHparentequation\alph{equation}}%
5349     \ignorespaces
5350   }%
5351 \fi

```

## 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.

```

5352 \@ifpackageloaded{tabularx}{\Hy@hyperfootnotesfalse}{}
5353 \ifHy@hyperfootnotes
5354   \newcounter{Hfootnote}%
5355   \let\H@@footnotetext\@footnotetext
5356   \let\H@@footnotemark\@footnotemark
5357   \def\@xfootnotenext[#1]{%
5358     \begingroup
5359       \csname c@\@mpfn\endcsname #1\relax
5360       \unrestored@protected@xdef\@thefnmark{\thempfn}%
5361     \endgroup
5362     \ifx\@footnotetext\@mpfootnotetext
5363       \expandafter\H@@mpfootnotetext
5364     \else
5365       \expandafter\H@@footnotetext
5366     \fi
5367   }%
5368   \def\@xfootnotemark[#1]{%
5369     \begingroup
5370       \c@footnote #1\relax

```

```

5371     \unrestored@protected@xdef\@thefnmark{\thefootnote}%
5372     \endgroup
5373     \H@@footnotemark
5374 }%
5375 \let\H@@mpfootnotetext\@mpfootnotetext
5376 \long\def\@mpfootnotetext#1{%
5377     \H@@mpfootnotetext{%
5378         \ifHy@nesting
5379             \hyper@@anchor{\Hy@footnote@currentHref}{#1}%
5380         \else
5381             \Hy@raisedlink{%
5382                 \hyper@@anchor{\Hy@footnote@currentHref}{\relax}%
5383             }#1%
5384         \fi
5385     }%
5386 }%
5387 \long\def\@footnotetext#1{%
5388     \H@@footnotetext{%
5389         \ifHy@nesting
5390             \hyper@@anchor{\Hy@footnote@currentHref}{#1}%
5391         \else
5392             \Hy@raisedlink{%
5393                 \hyper@@anchor{\Hy@footnote@currentHref}{\relax}%
5394             }%
5395             \let\@currentHlabel\Hy@footnote@currentHlabel
5396             \let\@currentHref\Hy@footnote@currentHref
5397             \let\@currentlabelname\@empty
5398             #1%
5399         \fi
5400     }%
5401 }%

```

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.

```

5402 \def\@footnotemark{%
5403     \leavevmode
5404     \ifhmode\edef\@x@sf{\the\spacefactor}\nobreak\fi
5405     \stepcounter{Hfootnote}%
5406     \global\let\Hy@saved@currentHlabel\@currentHlabel
5407     \global\let\Hy@saved@currentHref\@currentHref
5408     \hyper@makecurrent{Hfootnote}%
5409     \global\let\Hy@footnote@currentHlabel\@currentHlabel
5410     \global\let\Hy@footnote@currentHref\@currentHref
5411     \global\let\@currentHlabel\Hy@saved@currentHlabel
5412     \global\let\@currentHref\Hy@saved@currentHref
5413     \hyper@linkstart{link}{\Hy@footnote@currentHref}%
5414     \@makefnmark
5415     \hyper@linkend
5416     \ifhmode\spacefactor\@x@sf\fi
5417     \relax
5418 }%

```

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

```

5419 \@ifpackageloaded{longtable}{%
5420   \CheckCommand*{\LT@p@ftntext}[1]{%
5421     \edef\@tempa{%
5422       \the\LT@p@ftn
5423       \noexpand\footnotetext[\the\c@footnote]%
5424     }%
5425     \global\LT@p@ftn\expandafter{\@tempa{#1}}%
5426   }%
5427   \long\def\LT@p@ftntext#1{%
5428     \edef\@tempa{%
5429       \the\LT@p@ftn
5430       \begingroup
5431         \noexpand\c@footnote=\the\c@footnote\relax
5432         \noexpand\protected@xdef
5433           \noexpand\@thefnmark{\noexpand\thempfn}%
5434         \noexpand\protected@xdef\noexpand\@thefnmark{%
5435           \noexpand\thempfn
5436         }%
5437         \expandafter\expandafter\expandafter\noexpand
5438         \expandafter\expandafter\expandafter\Hy@LT@footnotetext
5439         \expandafter\expandafter\expandafter{%
5440         \expandafter\Hy@footnote@currentHref\expandafter
5441         }\expandafter{\Hy@footnote@currentHlabel}%
5442       }%
5443       \global\LT@p@ftn\expandafter{%
5444         \@tempa{#1}%
5445       \endgroup
5446     }%
5447   }%
5448   \long\def\Hy@LT@footnotetext#1#2#3{%
5449     \H@@footnotetext{%
5450       \ifHy@nesting
5451         \hyper@@anchor{#1}{#3}%
5452       \else
5453         \Hy@raisedlink{%
5454           \hyper@@anchor{#1}{\relax}%
5455         }%
5456         \def\@currentHlabel{#2}%
5457         \def\@currentHref{#1}%
5458         \let\@currentlabelname\@empty
5459         #3%
5460       \fi
5461     }%
5462   }%
5463 }{}%
```

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

```

5464 \@ifpackageloaded{fancyvrb}{%
5465   \def\V@@footnotetext{%
5466     \insert\footins\bgroup
5467     \csname reset@font\endcsname
5468     \footnotesize
5469     \interlinepenalty\interfootnotelinepenalty
5470     \splittopskip\footnotesep
5471     \splitmaxdepth\dp\strutbox
5472     \floatingpenalty \@MM
5473     \hsize\columnwidth
5474     \@parboxrestore
```

```

5475 \edef\@currentlabel{\csname p@footnote\endcsname\@thefnmark}%
5476 \@makefnmark}%
5477 \rule{\z@}{\footnotesep}%
5478 \bgroup
5479 \aftergroup\V@@@footnotetext
5480 \Hy@raisedlink{%
5481 \hyper@@anchor{\Hy@footnote@currentHref}{\relax}%
5482 }%
5483 \let\@currentHlabel\Hy@footnote@currentHlabel
5484 \let\@currentHref\Hy@footnote@currentHref
5485 \let\@currentlabelname\@empty
5486 \ignorespaces
5487 }%
5488 }-%

```

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.

```

5489 \let\HyOrg@maketitle\maketitle
5490 \def\maketitle{%
5491 \let\Hy@saved@footnotemark\@footnotemark
5492 \let\Hy@saved@footnotetext\@footnotetext
5493 \let\@footnotemark\H@@footnotemark
5494 \let\@footnotetext\H@@footnotetext
5495 \@ifnextchar[\Hy@maketitle@optarg{% ]
5496 \HyOrg@maketitle
5497 \Hy@maketitle@end
5498 }%
5499 }%
5500 \def\Hy@maketitle@optarg[#1]{%
5501 \HyOrg@maketitle[#{#1}]%
5502 \Hy@maketitle@end
5503 }%
5504 \def\Hy@maketitle@end{%
5505 \ifx\@footnotemark\H@@footnotemark
5506 \let\@footnotemark\Hy@saved@footnotemark
5507 \fi
5508 \ifx\@footnotetext\H@@footnotetext
5509 \let\@footnotetext\Hy@saved@footnotetext
5510 \fi
5511 }%

```

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

```

5512 \def\realfootnote{%
5513 \@ifnextchar[\@xfootnote{%
5514 \stepcounter{\@mpfn}%
5515 \protected@xdef\@thefnmark{\thempfn}%
5516 \H@@footnotemark\H@@footnotetext
5517 }%
5518 }%

5519 \fi
5520 \Hy@DisableOption{hyperfootnotes}

5521 </package>
5522 <*check>
5523 \checklatex
5524 \checkcommand\def\@xfootnotenext[#1]{%
5525 \begingroup

```

```

5526 \csname c@\mpfn\endcsname #1\relax
5527 \unrestored@protected@xdef\@thefnmark{\thempfn}%
5528 \endgroup
5529 \@footnotetext
5530 }
5531 \checkcommand\def\@xfootnotemark[#1]{%
5532 \begingroup
5533 \c@footnote #1\relax
5534 \unrestored@protected@xdef\@thefnmark{\thefootnote}%
5535 \endgroup
5536 \@footnotemark
5537 }
5538 \checkcommand\def\@footnotemark{%
5539 \leavevmode
5540 \ifhmode\edef\@x@sf{\the\spacefactor}\nobreak\fi
5541 \@makefnmark
5542 \ifhmode\spacefactor\@x@sf\fi
5543 \relax
5544 }
5545 </check>
5546 <*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.

```

5547 \def\caption{%
5548 \ifx\@capytype\@undefined
5549 \latex@error{\noexpand\caption outside float}\@ehd
5550 \expandafter\@gobble
5551 \else
5552 \H@refstepcounter\@capytype
5553 \let\Hy@tempa\@caption
5554 \@ifundefined{float@caption}{%
5555 }{%
5556 \expandafter\ifx\csname @float@c@\@capytype\endcsname
5557 \float@caption
5558 \let\Hy@tempa\Hy@float@caption
5559 \fi
5560 }%
5561 \expandafter\@firstofone
5562 \fi
5563 {\@dblarg{\Hy@tempa\@capytype}}}%
5564 }
5565 \long\def\@caption#1[#2]#3{%
5566 \expandafter\ifx\csname if@capstart\expandafter\endcsname
5567 \csname iftrue\endcsname
5568 \global\let\@currentHref\hc@currentHref
5569 \else
5570 \hyper@makecurrent{\@capytype}%
5571 \fi
5572 \def\@currentlabelname{#2}%
5573 \par\addcontentsline{\csname ext@#1\endcsname}{#1}{%
5574 \protect\numberline{\csname the#1\endcsname}{\ignorespaces #2}%
5575 }%
5576 \begingroup

```

```

5577 \@parboxrestore
5578 \if@minipage
5579 \setminipage
5580 \fi
5581 \normalsize
5582 \expandafter\ifx\csname if@capstart\expandafter\endcsname
5583 \csname iftrue\endcsname
5584 \global\@capstartfalse
5585 \@makecaption{\csname fnum@#1\endcsname}{\ignorespaces#3}%
5586 \else
5587 \@makecaption{\csname fnum@#1\endcsname}{%
5588 \ignorespaces

```

If we cannot have nesting, the anchor is empty.

```

5589 \ifHy@nesting
5590 \hyper@@anchor{\@currentHref}{#3}%
5591 \else
5592 \Hy@raisedlink{\hyper@@anchor{\@currentHref}{\relax}}#3%
5593 \fi
5594 }%
5595 \fi
5596 \par
5597 \endgroup
5598 }

```

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.

```

5599 \let\Hy@float@caption\@caption
5600 \@ifpackageloaded{float}{%
5601 \def\Hy@float@caption{%
5602 \ifx\Hy@float@currentHref\@undefined
5603 \hyper@makecurrent{\@cuptype}%
5604 \global\let\Hy@float@currentHref\@currentHref
5605 \else
5606 \let\@currentHref\Hy@float@currentHref
5607 \fi
5608 \float@caption
5609 }%
5610 \let\HyOrg@float@makebox\float@makebox
5611 \renewcommand{\float@makebox}[1]{%
5612 \HyOrg@float@makebox{%
5613 #1\relax
5614 \ifx\Hy@float@currentHref\@undefined
5615 \else
5616 \hyper@@anchor{\Hy@float@currentHref}{\relax}%
5617 \global\let\Hy@float@currentHref\@undefined
5618 \fi
5619 }%
5620 }%
5621 }{}
5622 \</package>
5623 \< *check>
5624 \checklatex[1999/06/01 - 2000/06/01]
5625 \checkcommand\def\caption{%
5626 \ifx\@cuptype\@undefined
5627 \@latexerror{\noexpand\caption outside float}\@ehd
5628 \expandafter\@gobble
5629 \else

```

```

5630 \refstepcounter\@capttype
5631 \expandafter\@firstofone
5632 \fi
5633 {\@dblarg{\@caption\@capttype}}%
5634 }
5635 \checkcommand\long\def\@caption#1[#2]#3{%
5636 \par
5637 \addcontentsline{\csname ext@#1\endcsname}{#1}%
5638 {\protect\numberline{\csname the#1\endcsname}{\ignorespaces #2}}%
5639 \begingroup
5640 \@parboxrestore
5641 \if@minipage
5642 \@setminipage
5643 \fi
5644 \normalsize
5645 \makecaption{\csname fnum@#1\endcsname}{\ignorespaces #3}\par
5646 \endgroup
5647 }
5648 \</check>
5649 \<*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 *drfcite* may break.

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

```

5650 \def\hyper@natlinkstart#1{%
5651 \Hy@backout{#1}%
5652 \hyper@linkstart{cite}{cite.#1}%
5653 \def\hyper@nat@current{#1}%
5654 }
5655 \def\hyper@natlinkend{%
5656 \hyper@linkend
5657 }
5658 \def\hyper@natlinkbreak#1#2{%
5659 \hyper@linkend#1\hyper@linkstart{cite}{cite.#2}%
5660 }
5661 \def\hyper@natanchorstart#1{%
5662 \Hy@raisedlink{\hyper@anchorstart{cite.#1}}%
5663 }
5664 \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.

```

5665 \ifundefined{NAT@parse}{%
5666 \providecommand*\@extra@binfo{}%
5667 \providecommand*\@extra@b@citeb{}%
5668 \def\bibcite#1#2{%
5669 \newl@bel{b}{#1\@extra@binfo}{%

```



```

5670     \hyper@@link[cite]{\cite.#1\@extra@b@citeb}{#2}%
5671   }%
5672 }%
5673 \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.”.

```

5674 \let\Hy@bibcite\bibcite
5675 \begingroup
5676   \ifundefined{bbl@cite@choice}{\%
5677     \g@addto@macro\bbl@cite@choice{%
5678       \let\bibcite\Hy@bibcite
5679     }%
5680   }%
5681 \endgroup

```

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

```

5682 \providecommand*\@BIBLABEL{\@biblabel}%
5683 \def\@bibitem[#1]#2{%
5684   \@skiphyperreftrue
5685   \H@item[%
5686     \ifx\Hy@raisedlink\@empty
5687       \hyper@anchorstart{cite.#2\@extra@b@citeb}%
5688       \@BIBLABEL{#1}%
5689     \hyper@anchorend
5690   \else
5691     \Hy@raisedlink{%
5692       \hyper@anchorstart{cite.#2\@extra@b@citeb}\hyper@anchorend
5693     }%
5694     \@BIBLABEL{#1}%
5695   \fi
5696   \hfill
5697 ]%
5698 \@skiphyperreffalse
5699 \if@filesw
5700   \begingroup
5701     \let\protect\noexpand
5702     \immediate\write\@auxout{%
5703       \string\bibcite{#2}{#1}%
5704     }%
5705   \endgroup
5706 \fi
5707 \ignorespaces
5708 }%

```

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

```

5709 \def\@bibitem#1{%
5710   \@skiphyperreftrue\H@item\@skiphyperreffalse
5711   \Hy@raisedlink{%
5712     \hyper@anchorstart{cite.#1\@extra@b@citeb}\relax\hyper@anchorend
5713   }%
5714   \if@filesw
5715     \begingroup
5716       \let\protect\noexpand
5717       \immediate\write\@auxout{%
5718         \string\bibcite{#1}{\the\value{\@listctr}}%
5719       }%
5720     \endgroup

```

```

5721 \fi
5722 \ignorespaces
5723 }%
5724 }{}

5725 </package>
5726 <*check>
5727 \checklatex
5728 \checkcommand\def\@lbibitem[#1]#2{%
5729 \item[\@biblabel{#1}\hfill]%
5730 \if@filesw
5731 {%
5732 \let\protect\noexpand
5733 \immediate\write\@auxout{%
5734 \string\bibcite{#2}{#1}%
5735 }%
5736 }%
5737 \fi
5738 \ignorespaces
5739 }
5740 \checkcommand\def\@bibitem#1{%
5741 \item
5742 \if@filesw
5743 \immediate\write\@auxout{%
5744 \string\bibcite{#1}{\the\value{\@listctr}}%
5745 }%
5746 \fi
5747 \ignorespaces
5748 }
5749 </check>
5750 <*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.

```

5751 \@ifclassloaded{revtex}{%
5752 \Hy@Info{*** compatibility with revtex **** }%
5753 \def\revtex@checking#1#2{%
5754 \expandafter\let\expandafter\T@temp\csname b@#1\endcsname
5755 \expandafter\def\csname b@#1\endcsname{#2}%
5756 \@SetMaxRnhefLabel{#1}%
5757 \expandafter\let\csname b@#1\endcsname\T@temp
5758 }%

```

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

```

5759 \@ifundefined{CITE}{\def\CITE{\@cite}}{}%
5760 \providecommand*{\extra@b@citeb}{}%
5761 \def\CITEX[#1]#2{%
5762 \let\@citea\@empty
5763 \leavevmode
5764 \unskip
5765 $^{}%
5766 \scriptstyle
5767 \CITE{%
5768 \@for\@citeb:=#2\do{%
5769 \@citea
5770 \def\@citea{\penalty\@m\ }%

```

```

5771         \edef\@citeb{\expandafter\@firstofone\@citeb}%
5772         \if@files
5773             \immediate\write\@auxout{\string\citation{\@citeb}}%
5774         \fi
5775         \@ifundefined{b@\@citeb\extra@b@citeb}{%
5776             \mbox{\reset@font\bfseries ?}%
5777             \G@refundefinedtrue
5778             \@latex@warning{%
5779                 Citation ‘\@citeb’ on page \thepage \space undefined%
5780             }%
5781         }{%
5782             {\csname b@\@citeb\@extra@b@citeb\endcsname}%
5783         }%
5784     }%
5785     }{\#1}%
5786     }$%
5787 }%

```

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.

```

5788 \def\@citex[#1]#2{%
5789     \let\@citea\@empty
5790     \@cite{%
5791         \@for\@citeb:=#2\do{%
5792             \@citea
5793             \def\@citea{\penalty\@m\ }%
5794             \edef\@citeb{\expandafter\@firstofone\@citeb}%
5795             \if@files
5796                 \immediate\write\@auxout{\string\citation{\@citeb}}%
5797             \fi
5798             \@ifundefined{b@\@citeb\@extra@b@citeb}{%
5799                 \mbox{\reset@font\bfseries ?}%
5800                 \G@refundefinedtrue
5801                 \@latex@warning{%
5802                     Citation ‘\@citeb’ on page \thepage \space undefined%
5803                 }%
5804             }{%
5805                 \hbox{\csname b@\@citeb\@extra@b@citeb\endcsname}%
5806             }%
5807         }%
5808     }{\#1}%
5809 }%
5810 }{}

```

### 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.

```

5811 \@ifpackageloaded{harvard}{%
5812     \AtBeginDocument{%
5813         \Hy@Info{*** compatibility with harvard ***}%
5814         \Hy@raiselinksfalse
5815         \def\harvardcite#1#2#3#4{%

```

```

5816 \global\@namedef{HAR@fn@#1}{\hyper@@link[cite]{}{cite.#1}{#2}}%
5817 \global\@namedef{HAR@an@#1}{\hyper@@link[cite]{}{cite.#1}{#3}}%
5818 \global\@namedef{HAR@yr@#1}{\hyper@@link[cite]{}{cite.#1}{#4}}%
5819 \global\@namedef{HAR@df@#1}{\csname HAR@fn@#1\endcsname}%
5820 }%
5821 \def\HAR@citetoaux#1{%
5822 \if@filesw\immediate\write\@auxout{\string\citation{#1}}\fi%
5823 \ifHy@backref
5824 \ifx\@empty\@currentlabel
5825 \else
5826 \@bsphack
5827 \if@filesw
5828 \protected@write\@auxout{}{%
5829 \string\@writefile{brf}{%
5830 \string\backcite{#1}{%
5831 {\thepage}{\@currentlabel}{\@currentHref}%
5832 }%
5833 }%
5834 }%
5835 \fi
5836 \@esphack
5837 \fi
5838 \fi
5839 }%
5840 \def\harvarditem{%
5841 \@ifnextchar[{\@harvarditem}{\@harvarditem[\null]}}%
5842 }%
5843 \def\@harvarditem[#1]#2#3#4#5\par{%
5844 \item[]%
5845 \hyper@anchorstart{cite.#4}\relax\hyper@anchorend
5846 \if@filesw
5847 \begingroup
5848 \def\protect##1{\string ##1\space}%
5849 \ifthenelse{\equal{#1}{\null}}%
5850 {\def\next{{#4}{#2}{#3}}}%
5851 {\def\next{{#4}{#2}{#1}{#3}}}%
5852 \immediate\write\@auxout{\string\harvardcite\codeof\next}%
5853 \endgroup
5854 \fi
5855 \protect\hspace*{-\labelwidth}%
5856 \protect\hspace*{-\labelsep}%
5857 \ignorespaces
5858 #5%
5859 \ifHy@backref
5860 \newblock
5861 \backref{\csname br@#4\endcsname}%
5862 \fi
5863 \par
5864 }%

```

\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:

```

5865 \long\def\HAR@checkcitations#1#2#3#4{%
5866 \def\HAR@tempa{\hyper@@link[cite]{}{cite.#1}{#2}}%
5867 \expandafter\ifx\csname HAR@fn@#1\endcsname\HAR@tempa
5868 \def\HAR@tempa{\hyper@@link[cite]{}{cite.#1}{#3}}%

```

```

5869         \expandafter\ifx\csname HAR@an@#1\endcsname\HAR@tempa
5870         \def\HAR@tempa{\hyper@@link[cite]{\cite.#1}{#4}}%
5871         \expandafter\ifx\csname HAR@yr@#1\endcsname\HAR@tempa
5872         \else
5873         \@tempwattrue
5874         \fi
5875         \else
5876         \@tempwattrue
5877         \fi
5878         \else
5879         \@tempwattrue
5880         \fi
5881     }%
5882 }%

5883 }{}

```

## 37.2 Package chicago

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

```

5884 \@ifpackageloaded{chicago}{%

```

`\citeN`

```

5885 \def\citeN{%
5886     \def\@citesep{-1000}%
5887     \def\@cite##1##2{##1}%
5888     \def\citeauthoryear##1##2##3{##1 (##3\@cite@opt)}%
5889     \@citedata@opt
5890 }%

```

`\shortciteN`

```

5891 \def\shortciteN{%
5892     \def\@citesep{-1000}%
5893     \def\@cite##1##2{##1}%
5894     \def\citeauthoryear##1##2##3{##2 (##3\@cite@opt)}%
5895     \@citedata@opt
5896 }%

```

`\@citedata@opt`

```

5897 \def\@citedata@opt{%
5898     \let\@cite@opt\@empty
5899     \@ifnextchar [{%
5900         \@tempwattrue
5901         \@citedatax@opt
5902     }{%
5903         \@tempwafalse
5904         \@citedatax[]%
5905     }%
5906 }%

```

`\@citedatax@opt`

```

5907 \def\@citedatax@opt[#1]{%
5908     \def\@cite@opt{, #1}%
5909     \@citedatax[{#1}]%
5910 }%

5911 }{}

```

## 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.

```
5912 \def\Hy@EveryPageAnchor{%
5913   \Hy@DistillerDestFix
5914   \ifHy@pageanchor
5915     \ifHy@hypertextnames
5916     \ifHy@plainpages
5917       \def\Hy@TempPageAnchor{\hyper@@anchor{page.\the\c@page}}%
5918     \else
5919       \begingroup
5920         \let\@number\@firstofone
5921         \Hy@unicodedefalse
5922         \pdfstringdef\@theH@page{\thepage}%
5923       \endgroup
5924       \def\Hy@TempPageAnchor{\hyper@@anchor{page.\@theH@page}}%
5925     \fi
5926   \else
5927     \Hy@GlobalStepCount\Hy@pagecounter
5928     \def\Hy@TempPageAnchor{\hyper@@anchor{page.\the\Hy@pagecounter}}%
5929   \fi
5930   \vbox to 0pt{%
5931     \kern\voffset
5932     \kern\topmargin
5933     \kern-1bp\relax
5934     \hbox to 0pt{%
5935       \kern\hoffset
5936       \kern\ifodd\value{page}%
5937         \oddsidemargin
5938       \else
5939         \evensidemargin
5940       \fi
5941       \kern-1bp\relax
5942       \Hy@TempPageAnchor
5943     \hss
5944   }%
5945   \vss
5946 }%
5947 \fi
5948 }
5949 \g@addto@macro\Hy@EveryPageBoxHook{%
5950   \Hy@EveryPageAnchor
5951 }
```

## 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.

```
5952 \begingroup\expandafter\expandafter\expandafter\endgroup
```

```

5953 \expandafter\ifx\csname chapter\endcsname\relax
5954   \def\toclevel@part{0}%
5955 \else
5956   \def\toclevel@part{-1}%
5957 \fi
5958 \def\toclevel@chapter{0}
5959 \def\toclevel@section{1}
5960 \def\toclevel@subsection{2}
5961 \def\toclevel@subsubsection{3}
5962 \def\toclevel@paragraph{4}
5963 \def\toclevel@subparagraph{5}
5964 \def\toclevel@figure{0}
5965 \def\toclevel@table{0}
5966 \@ifpackageloaded{listings}{%
5967   \providecommand*\theHlstlisting{\thelstlisting}%
5968   \providecommand*\toclevel@lstlisting{0}%
5969 }{}
5970 \@ifpackageloaded{listing}{%
5971   \providecommand*\theHlisting{\thelisting}%
5972   \providecommand*\toclevel@listing{0}%
5973 }{}
5974 \def\addcontentsline#1#2#3{% toc extension, type, tag
5975   \begingroup
5976     \let\label\gobble
5977     \let\textlatin\@firstofone
5978     \ifx\@currentHref\@empty
5979       \Hy@Warning{%
5980         No destination for bookmark of \string\addcontentsline,%
5981         \MessageBreak destination is added%
5982       }%
5983     \phantomsection
5984   \fi
5985   \expandafter\ifx\csname toclevel@#2\endcsname\relax
5986     \begingroup
5987       \def\Hy@tempa{#1}%
5988       \ifx\Hy@tempa\Hy@bookmarkstype
5989         \Hy@WarningNoLine{%
5990           bookmark level for unknown #2 defaults to 0%
5991         }%
5992       \else
5993         \Hy@Info{bookmark level for unknown #2 defaults to 0}%
5994       \fi
5995     \endgroup
5996     \expandafter\gdef\csname toclevel@#2\endcsname{0}%
5997   \fi
5998   \edef\Hy@toclevel{\csname toclevel@#2\endcsname}%
5999   \Hy@writebookmark{\csname the#2\endcsname}%
6000     {#3}%
6001     {\@currentHref}%
6002     {\Hy@toclevel}%
6003     {#1}%
6004   \ifHy@verbose
6005     \def\Hy@tempa{#3}%
6006     \@onelevel@sanitize\Hy@tempa
6007     \typeout{pdfTeX: bookmark at \the\inputlineno: %
6008       {\csname the#2\endcsname}%
6009       {\Hy@tempa}%

```

```

6010      {\@currentHref}%
6011      {\Hy@toclevel}%
6012      {#1}%
6013    }%
6014  \fi
6015  \addtocontents{#1}{%
6016    \protect\contentsline{#2}{#3}{\thepage}{\@currentHref}%
6017  }%
6018  \endgroup
6019 }
6020 \def\contentsline#1#2#3#4{%
6021   \ifx\#4\%
6022     \csname l@#1\endcsname{#2}{#3}%
6023   \else
6024     \ifcase\Hy@linktoc % none
6025       \csname l@#1\endcsname{#2}{#3}%
6026     \or % section
6027       \csname l@#1\endcsname{%
6028         \hyper@linkstart{link}{#4}{#2}\hyper@linkend
6029       }{#3}%
6030     \or % page
6031       \csname l@#1\endcsname{#2}{%
6032         \hyper@linkstart{link}{#4}{#3}\hyper@linkend
6033       }%
6034     \else % all
6035       \csname l@#1\endcsname{%
6036         \hyper@linkstart{link}{#4}{#2}\hyper@linkend
6037       }{%
6038         \hyper@linkstart{link}{#4}{#3}\hyper@linkend
6039       }%
6040     \fi
6041   \fi
6042 }
6043 </package>
6044 <*check>
6045 \checklatex
6046 \checkcommand\def\addcontentsline#1#2#3{%
6047   \addtocontents{#1}{\protect\contentsline{#2}{#3}{\thepage}}%
6048 }
6049 \checkcommand\def\contentsline#1{\csname l@#1\endcsname}
6050 </check>
6051 <*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.

```

6052 \let\H@definecounter\@definecounter
6053 \def\@definecounter#1{%
6054   \H@definecounter{#1}%
6055   \expandafter\def\csname theH#1\endcsname{\arabic{#1}}%
6056 }

```

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.

```

6057 \let\H@newctr\@newctr

```



```

6058 \def\@newctr#1[#2]{%
6059   \H@newctr#1[#2]}%
6060 \expandafter\def\csname theH#1\endcsname{%
6061   \csname the\@ifundefined{theH#2}{H}#2\endcsname.\arabic{#1}%
6062 }%
6063 }

```

## 41 AMS $\LaTeX$ 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.

```

6064 \@ifpackageloaded{amsmath}{%
6065   \def\Hy@make@anchor{%
6066     \Hy@GlobalStepCount\Hy@linkcounter
6067     \xdef\@currentHref{AMS.\the\Hy@linkcounter}%
6068     \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
6069   }%
6070   \def\Hy@make@df@tag@@#1{%
6071     \gdef\df@tag{%
6072       \maketag@@@{\Hy@make@anchor#1}%
6073       \def\@currentlabel{#1}%
6074     }%
6075   }%
6076   \def\Hy@make@df@tag@@@#1{%
6077     \gdef\df@tag{%
6078       \tagform@{\Hy@make@anchor#1}%
6079       \toks@{\p@equation{#1}}%
6080       \edef\@currentlabel{\the\toks@}%
6081     }%
6082   }%
6083   \let\HyOrg@make@df@tag@@\make@df@tag@@
6084   \let\HyOrg@make@df@tag@@@\make@df@tag@@@
6085   \let\make@df@tag@@\Hy@make@df@tag@@
6086   \let\make@df@tag@@@\Hy@make@df@tag@@@
6087 }{}

```

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

```

6088 \@ifpackagewith{hyperref}{pdf $\TeX$ }{%
6089   \let\H@seteqlabel\@seteqlabel
6090   \def\@seteqlabel#1{%
6091     \H@seteqlabel{#1}%
6092     \xdef\@currentHref{AMS.\the\Hy@linkcounter}%
6093     \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
6094   }%
6095 }{}

```

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@tagform0{\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.

```

6096 \let\HyOrg@addtoreset\@addtoreset
6097 \def\@addtoreset#1#2{%
6098   \HyOrg@addtoreset{#1}{#2}%
6099   \expandafter\xdef\csname theH#1\endcsname{%
6100     \expandafter\noexpand
6101       \csname the\@ifundefined{theH#2}{}H#2\endcsname
6102     .\noexpand\the\noexpand\value{#1}%
6103   }%
6104 }

```

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

```

6105 </package>
6106 <*check>
6107 \checkpackage{amsmath}[1999/12/14 - 2000/06/06]
6108 \checkcommand\newcommand{\numberwithin}[3][\arabic]{%
6109   \@ifundefined{c@#2}{\@nocounterr{#2}}{%
6110     \@ifundefined{c@#3}{\@nocnterr{#3}}{%
6111       \@addtoreset{#2}{#3}%
6112       \@xp\xdef\csname the#2\endcsname{%
6113         \@xp@nx\csname the#3\endcsname .\@nx#1{#2}%
6114       }%
6115     }%
6116   }%
6117 }%
6118 </check>
6119 <*package>
6120 \@ifpackageloaded{amsmath}{%
6121   \@ifpackagelater{amsmath}{1999/12/14}{%
6122     \renewcommand*{\numberwithin}[3][\arabic]{%
6123       \@ifundefined{c@#2}{\@nocounterr{#2}}{%
6124         \@ifundefined{c@#3}{\@nocnterr{#3}}{%
6125           \HyOrg@addtoreset{#2}{#3}%
6126           \@xp\xdef\csname the#2\endcsname{%
6127             \@xp@nx\csname the#3\endcsname .\@nx#1{#2}%
6128           }%
6129           \@xp\xdef\csname theH#2\endcsname{%
6130             \@xp@nx
6131             \csname the\@ifundefined{theH#3}{}H#3\endcsname
6132             .\@nx#1{#2}%
6133           }%
6134         }%
6135       }%
6136     }%
6137   }{%
6138     \Hy@WarningNoLine{%
6139       \string\numberwithin\space of package 'amsmath' %
6140       only fixed\MessageBreak

```

```

6141     for version 2000/06/06 v2.12 or newer%
6142   }%
6143 }%
6144 }{}

```

## 42 Included figures

Simply intercept the low level graphics package macro.

```

6145 \ifHy@figures
6146   \let\Hy@Gin@setfile\Gin@setfile
6147   \def\Gin@setfile#1#2#3{%
6148     \hyperimage{#3}{\Hy@Gin@setfile{#1}{#2}{#3}}%
6149   }%
6150 \fi
6151 \Hy@DisableOption{hyperfigures}

```

## 43 hyperindex entries

Internal command names are prefixed with \HyInd@.

Hyper-indexing works crudely, by forcing code onto the end of the index entry with the | feature; this puts a hyperlink around the printed page numbers. It will not proceed if the author has already used the | specifier for something like emboldening entries. That would make Makeindex fail (cannot have two | specifiers). The solution is for the author to use generic coding, and put in the requisite \hyperpage in his/her own macros along with the boldness.

This section is poor stuff; it's open to all sorts of abuse. Sensible large projects will design their own indexing macros any bypass this.

```

6152 \ifHy@hyperindex
6153   \def\HyInd@ParenLeft{({}%
6154   \def\HyInd@ParenRight{)}}%
6155   \Hy@nextfalse
6156   \@ifpackageloaded{multind}{\Hy@nexttrue}{}%
6157   \@ifpackageloaded{index}{\Hy@nexttrue}{}%
6158   \begingroup
6159     \lccode'\|=\expandafter'\HyInd@EncapChar\relax
6160   \lowercase{\endgroup
6161     \ifHy@next
6162       \let\HyInd@org@wrindex\@wrindex
6163       \def\@wrindex#1#2{\HyInd@wrindex{#1}#2||\}%
6164       \def\HyInd@wrindex#1#2|#3|#4\{\%
6165         \ifx\|#3\%
6166           \HyInd@org@wrindex{#1}{#2|hyperpage}%
6167         \else
6168           \def\Hy@temp@A{#3}%
6169           \ifcase0\ifx\Hy@temp@A\HyInd@ParenLeft 1\fi
6170             \ifx\Hy@temp@A\HyInd@ParenRight 1\fi
6171             \relax
6172           \HyInd@org@wrindex{#1}{#2|#3}%
6173         \else
6174           \HyInd@org@wrindex{#1}{#2|#3hyperpage}%
6175         \fi
6176       \fi
6177     }%
6178   \else

```

```

6179 \def\@wrindex#1{\@wrindex#1||\}%
6180 \def\@wrindex#1|#2|#3\{\%
6181 \if@files
6182 \ifx\#2\%
6183 \protected@write\@indexfile{\%
6184 \string\indexentry{#1|hyperpage}{\thepage}%
6185 }%
6186 \else
6187 \def\Hy@temp@A{#2}%
6188 \ifcase0\ifx\Hy@temp@A\HyInd@ParenLeft 1\fi
6189 \ifx\Hy@temp@A\HyInd@ParenRight 1\fi
6190 \relax
6191 \protected@write\@indexfile{\%
6192 \string\indexentry{#1|#2}{\thepage}%
6193 }%
6194 \else
6195 \protected@write\@indexfile{\%
6196 \string\indexentry{#1|#2hyperpage}{\thepage}%
6197 }%
6198 \fi
6199 \fi
6200 \fi
6201 \endgroup
6202 \@esphack
6203 }%
6204 \fi
6205 }%
6206 \fi
6207 \Hy@DisableOption{hyperindex}
6208 \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.

```

6209 \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.

```

6210 \def\hyperpage#1{\%
6211 \HyInd@hyperpage#1\nohyperpage{\@nil
6212 }
6213 \def\HyInd@hyperpage#1\nohyperpage#2#3\@nil{\%
6214 \HyInd@@hyperpage{#1}%
6215 #2%
6216 \def\Hy@temp{#3}%
6217 \ifx\Hy@temp\@empty
6218 \else
6219 \Hy@ReturnAfterFi{\%
6220 \HyInd@hyperpage#3\@nil
6221 }%
6222 \fi
6223 }
6224 \def\HyInd@@hyperpage#1{\@hyperpage#1----\}%
6225 \def\@hyperpage#1--#2--#3\{\%
6226 \ifx\#2\%
6227 \@commahyperpage{#1}%
6228 \else
6229 \HyInd@pagelink{#1}--\HyInd@pagelink{#2}%

```

```

6230 \fi
6231 }
6232 \def\@commahyperpage#1{\@commahyperpage#1, ,\}
6233 \def\@commahyperpage#1, #2,#3\{\%
6234 \ifx\#2\%
6235 \HyInd@pagelink{#1}%
6236 \else
6237 \HyInd@pagelink{#1}, \HyInd@pagelink{#2}%
6238 \fi
6239 }

```

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

```

6240 \def\HyInd@pagelink#1{%
6241 \begingroup
6242 \toks@={}%
6243 \HyInd@removespaces#1 \@nil
6244 \endgroup
6245 }
6246 \def\HyInd@removespaces#1 #2\@nil{%
6247 \toks@=\expandafter{\the\toks@#1}%
6248 \ifx\#2\%
6249 \edef\x{\the\toks@}%
6250 \ifx\x\@empty
6251 \else
6252 \hyperlink{page.\the\toks@}{\the\toks@}%
6253 \fi
6254 \else
6255 \Hy@ReturnAfterFi{%
6256 \HyInd@removespaces#2\@nil
6257 }%
6258 \fi
6259 }

```

## 44 Compatibility with foiltex

```

6260 \@ifclassloaded{foils}{%
6261 \providecommand*\ext@table{lot}%
6262 \providecommand*\ext@figure{lof}%
6263 }{}

```

## 45 Compatibility with seminar slide package

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

```

6264 \@ifclassloaded{seminar}{%
6265 \Hy@seminarslidestrue\newcommand\theHslide{\arabic{slide}}%
6266 }{%
6267 \Hy@seminarslidesfalse
6268 }
6269 \@ifpackageloaded{slidesec}{%
6270 \newcommand\theHslidesection {\arabic{slidesection}}%
6271 \newcommand\theHslidesubsection{%
6272 \theHslidesection.\arabic{slidesubsection}}%
6273 }%
6274 \def\slide@heading[#1]#2{%

```

```

6275 \H@refstepcounter{slidesection}%
6276 \@addtoreset{slidesubsection}{slidesection}%
6277 \addtocontents{los}{%
6278   \protect\l@slide{\the\c@slidesection}{\ignorespaces#1}%
6279   {\@SCTR}{slideheading.\theslidesection}%
6280 }%
6281 \def\Hy@tempa{#2}%
6282 \ifx\Hy@tempa\@empty
6283 \else
6284 {%
6285   \edef\@currentlabel{%
6286     \csname p@slidesection\endcsname\theslidesection
6287   }%
6288   \makeslideheading{#2}%
6289 }%
6290 \fi
6291 \gdef\theslideheading{#1}%
6292 \gdef\theslidesubheading{}%
6293 \ifHy@bookmarksnumbered
6294   \def\Hy@slidetitle{\theslidesection\space #1}%
6295 \else
6296   \def\Hy@slidetitle{#1}%
6297 \fi
6298 \ifHy@hypertextnames
6299   \ifHy@naturalnames
6300     \hyper@@anchor{slideheading.\theslidesection}{\relax}%
6301     \Hy@writebookmark
6302       {\theslidesection}%
6303       {\Hy@slidetitle}%
6304       {slideheading.\theslidesection}%
6305       {1}%
6306       {toc}%
6307   \else
6308     \hyper@@anchor{slideheading.\theHslidesection}{\relax}%
6309     \Hy@writebookmark
6310       {\theslidesection}%
6311       {\Hy@slidetitle}%
6312       {slideheading.\theHslidesection}%
6313       {1}%
6314       {toc}%
6315   \fi
6316 \else
6317   \Hy@GlobalStepCount\Hy@linkcounter
6318   \hyper@@anchor{slideheading.\the\Hy@linkcounter}{\relax}%
6319   \Hy@writebookmark
6320     {\theslidesection}%
6321     {\Hy@slidetitle}%
6322     {slideheading.\the\Hy@linkcounter}%
6323     {1}%
6324     {toc}%
6325 \fi
6326 }%
6327 \def\slide@subheading[#1]#2{%
6328   \H@refstepcounter{slidesubsection}%
6329   \addtocontents{los}{%
6330     \protect\l@subslide{\the\c@slidesubsection}{\ignorespaces#1}%
6331     {\@SCTR}{slideheading.\theslidesubsection}%

```

```

6332 }%
6333 \def\Hy@tempa{#2}%
6334 \ifx\Hy@tempa\@empty
6335 \else
6336 {%
6337   \edef\@currentlabel{%
6338     \csname p@slidesubsection\endcsname\theslidesubsection
6339   }%
6340   \makeslidesubheading{#2}%
6341 }%
6342 \fi
6343 \gdef\theslidesubheading{#1}%
6344 \ifHy@bookmarksnumbered
6345   \def\Hy@slidetitle{\theslidesubsection\space #1}%
6346 \else
6347   \def\Hy@slidetitle{#1}%
6348 \fi
6349 \ifHy@hypertextnames
6350   \ifHy@naturalnames
6351     \hyper@@anchor{slideheading.\theslidesubsection}{\relax}%
6352     \Hy@writebookmark
6353       {\theslidesubsection}%
6354       {\Hy@slidetitle}%
6355       {slideheading.\theslidesubsection}%
6356       {2}%
6357       {toc}%
6358   \else
6359     \hyper@@anchor{slideheading.\theHslidesubsection}{\relax}%
6360     \Hy@writebookmark
6361       {\theslidesubsection}%
6362       {\Hy@slidetitle}%
6363       {slideheading.\theHslidesubsection}%
6364       {2}%
6365       {toc}%
6366   \fi
6367 \else
6368   \Hy@GlobalStepCount\Hy@linkcounter
6369   \hyper@@anchor{slideheading.\the\Hy@linkcounter}{\relax}%
6370   \Hy@writebookmark
6371     {\theslidesubsection}%
6372     {\Hy@slidetitle}%
6373     {slideheading.\the\Hy@linkcounter}%
6374     {1}%
6375     {toc}%
6376 \fi
6377 }%
6378 \providecommand*\listslidenamename{List of Slides}%
6379 \def\listofslides{%
6380   \section*{%
6381     \listslidenamename
6382     \@mkboth{%
6383       \expandafter\MakeUppercase\listslidenamename
6384     }{%
6385       \expandafter\MakeUppercase\listslidenamename
6386     }%
6387   }%
6388   \def\l@slide##1##2##3##4{%

```

```

6389     \slide@undottedcline{%
6390         \slidenumberline{##3}{\hyperlink{##4}{##2}}}%
6391     }{%
6392 }%
6393 \let\l@subslide\l@slide
6394 \@startlos
6395 }%
6396 \def\slide@contents{%
6397     \def\l@slide##1##2##3##4{%
6398         \slide@cline{\slidenumberline{##3}{\hyperlink{##4}{##2}}}{##3}%
6399     }%
6400     \let\l@subslide\@gobblefour
6401     \@startlos
6402 }%
6403 \def\Slide@contents{%
6404     \def\l@slide##1##2##3##4{%
6405         \ifcase\lslide@flag
6406             \message{##1 ** \the\c@slide@section}%
6407             \ifnum##1>\c@slide@section
6408                 \def\lslide@flag{1}%
6409                 {%
6410                     \large
6411                     \slide@cline{%
6412                         \slidenumberline{$\rightarrow\bullet$}%
6413                         {\hyperlink{##4}{##2}}}%
6414                     }{##3}%
6415                 }%
6416             \else
6417                 {%
6418                     \large
6419                     \slide@cline{%
6420                         \slidenumberline{$\surd;$\bullet$}%
6421                         {\hyperlink{##4}{##2}}}%
6422                     }{##3}%
6423                 }%
6424             \fi
6425         \or
6426             \def\lslide@flag{2}%
6427             {%
6428                 \large
6429                 \slide@cline{%
6430                     \slidenumberline{$\bullet$}%
6431                     {\hyperlink{##4}{##2}}}%
6432                 }{##3}%
6433             }%
6434         \or
6435             {%
6436                 \large
6437                 \slide@cline{%
6438                     \slidenumberline{$\bullet$}%
6439                     {\hyperlink{##4}{##2}}}%
6440                 }{##3}%
6441             }%
6442         \fi
6443     }%
6444     \def\l@subslide##1##2##3##4{%
6445         \ifnum\lslide@flag=1 %

```



```

6446      \undottedtoctline{2}{3.8em}{3.2em}{\hyperlink{##4}{##2}}{}%
6447      \fi
6448    }%
6449    \def\lslide@flag{0}%
6450    \@startlos
6451  }%
6452 }{}

```

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.)

```

6453 \ifHy@texht
6454   \expandafter\endinput
6455 \fi
6456 \let\real@setref\@setref
6457 \def\@setref#1#2#3{% csname, extract group, refname
6458   \ifx#1\relax
6459     \protect\G@refundefinedtrue
6460     \nfss@text{\reset@font\bfseries ??}%
6461     \@latex@warning{%
6462       Reference ‘#3’ on page \thepage \space undefined%
6463     }%
6464   \else
6465     \expandafter\Hy@setref@link#1\@empty\@empty\@nil{#2}%
6466   \fi
6467 }

```

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

```

6468 \def\Hy@setref@link#1#2#3#4#5#6\@nil#7{%
6469   \begingroup
6470   \toks0={\hyper@@link{#5}{#4}}%
6471   \toks1=\expandafter{#7{#1}{#2}{#3}{#4}{#5}}%
6472   \edef\x{\endgroup
6473     \the\toks0 \the\toks1 }%
6474   }%
6475   \x
6476 }
6477 \def\@pagesetref#1#2#3{% csname, extract macro, ref
6478   \ifx#1\relax
6479     \protect\G@refundefinedtrue
6480     \nfss@text{\reset@font\bfseries ??}%
6481     \@latex@warning{%
6482       Reference ‘#3’ on page \thepage \space undefined%
6483     }%
6484   \else
6485     \protect\hyper@@link
6486     {\expandafter\@fifthoffive#1}%
6487     {page.\expandafter\@secondoffive#1}%
6488     {\expandafter\@secondoffive#1}%
6489   \fi
6490 }
6491 </package>
6492 <*check>
6493 \checklatex
6494 \checkcommand\def\@setref#1#2#3{%
6495   \ifx#1\relax
6496     \protect\G@refundefinedtrue

```

```

6497 \nfss@text{\reset@font\bfseries ??}%
6498 \latex@warning{%
6499   Reference '#3' on page \thepage\space undefined%
6500 }%
6501 \else
6502   \expandafter#2#1\null
6503 \fi
6504 }
6505 \</check>
6506 \<*package>

```

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

```

6507 \def\HyRef@StarSetRef#1{%
6508   \begingroup
6509   \Hy@safe@activestrue
6510   \edef\x{#1}%
6511   \@onelevel@sanitize\x
6512   \edef\x{\endgroup
6513     \noexpand\HyRef@@StarSetRef
6514     \expandafter\noexpand\csname r@\x\endcsname{\x}%
6515   }%
6516   \x
6517 }
6518 \def\HyRef@@StarSetRef#1#2#3{%
6519   \ifx#1\@undefined
6520     \let#1\relax
6521   \fi
6522   \real@setref#1#3{#2}%
6523 }
6524 \def\@refstar#1{%
6525   \HyRef@StarSetRef{#1}\@firstoffive
6526 }
6527 \def\@pagerefstar#1{%
6528   \HyRef@StarSetRef{#1}\@secondoffive
6529 }
6530 \AtBeginDocument{%
6531   \ifpackageloaded{varioref}{%
6532     \def\@Refstar#1{%
6533       \HyRef@StarSetRef{#1}\HyRef@MakeUppercaseFirstOfFive
6534     }%
6535     \def\HyRef@MakeUppercaseFirstOfFive#1#2#3#4#5{%
6536       \MakeUppercase#1%
6537     }%
6538     \DeclareRobustCommand*\Ref*{%
6539       \@ifstar\@Refstar\HyRef@Ref
6540     }%
6541     \def\HyRef@Ref#1{%
6542       \hyperref[#{#1}]{\Ref*{#1}}%
6543     }%
6544     \def\Vr@f#1{%
6545       \leavevmode\unskip\vref@space
6546       \hyperref[#{#1}]{%
6547         \Ref*{#1}%
6548         \let\vref@space\nobreakspace
6549         \vpageref[\unskip]{#1}%
6550       }%
6551     }%

```

```

6552 \def\vr@f#1{%
6553 \leavevmode\unskip\href@space
6554 \begingroup
6555 \let\T@pageref\@pagerefstar
6556 \hyperref[{#1}] {%
6557 \ref*{#1}%
6558 \vpageref[\unskip]{#1}%
6559 }%
6560 \endgroup
6561 }%
6562 }{}%
6563 }
6564 \DeclareRobustCommand*\autopageref{%
6565 \ifstar{%
6566 \HyRef@autopagerefname\pageref*%
6567 }\HyRef@autopageref
6568 }
6569 \def\HyRef@autopageref#1{%
6570 \hyperref[{#1}]{\HyRef@autopagerefname\pageref*{#1}}%
6571 }
6572 \def\HyRef@autopagerefname{%
6573 \ifundefined{pageautorefname}{%
6574 \ifundefined{pagename}{%
6575 \Hy@Warning{No autoref name for 'page'}%
6576 }{%
6577 \pagename\nobreakspace
6578 }%
6579 }{%
6580 \pageautorefname\nobreakspace
6581 }%
6582 }
6583 \DeclareRobustCommand*\autoref{%
6584 \ifstar{\HyRef@autoref\@gobbletwo}{\HyRef@autoref\hyper@@link}%
6585 }
6586 \def\HyRef@autoref#1#2{%
6587 \begingroup
6588 \Hy@safe@activetrue
6589 \expandafter\HyRef@autosetref\csname r@#2\endcsname{#2}{#1}%
6590 \endgroup
6591 }
6592 \def\HyRef@autosetref#1#2#3{% link command, csname, refname
6593 \HyRef@ShowKeysRef{#2}%
6594 \ifcase 0\ifx#1\relax 1\fi\ifx#1\Hy@varioref@undefined 1\fi\relax
6595 \edef\HyRef@thisref{%
6596 \expandafter\@fourthoffive#1\@empty\@empty\@empty
6597 }%
6598 \expandafter\HyRef@testreftype\HyRef@thisref.\.%
6599 \Hy@safe@activesfalse
6600 #3{%
6601 \expandafter\@fifthoffive#1\@empty\@empty\@empty
6602 }{%
6603 \expandafter\@fourthoffive#1\@empty\@empty\@empty
6604 }{%
6605 \HyRef@currentHtag
6606 \expandafter\@firstoffive#1\@empty\@empty\@empty
6607 \null
6608 }%

```

```

6609 \else
6610   \protect\G@refundefinedtrue
6611   \nfss@text{\reset@font\bfseries ??}%
6612   \@latex@warning{%
6613     Reference ‘#2’ on page \thepage\space undefined%
6614   }%
6615 \fi
6616 }
6617 \def\HyRef@testreftype#1.#2\\{%
6618   \@ifundefined{#1autorefname}{%
6619     \@ifundefined{#1name}{%
6620       \HyRef@StripStar#1\\*\\@nil{#1}%
6621     }{\@ifundefined{\HyRef@name autorefname}{%
6622       \@ifundefined{\HyRef@name name}{%
6623         \def\HyRef@currentHtag{%
6624           \Hy@Warning{No autoref name for ‘#1’}%
6625         }{%
6626           \edef\HyRef@currentHtag{%
6627             \expandafter\noexpand\csname\HyRef@name name\endcsname
6628             \noexpand~%
6629           }%
6630         }%
6631       }{%
6632         \edef\HyRef@currentHtag{%
6633           \expandafter\noexpand\csname\HyRef@name autorefname\endcsname
6634           \noexpand~%
6635         }%
6636       }%
6637     }{%
6638       \edef\HyRef@currentHtag{%
6639         \expandafter\noexpand\csname#1name\endcsname
6640         \noexpand~%
6641       }%
6642     }%
6643   }{%
6644     \edef\HyRef@currentHtag{%
6645       \expandafter\noexpand\csname#1autorefname\endcsname
6646       \noexpand~%
6647     }%
6648   }%
6649 }
6650 \def\HyRef@StripStar#1*\\#2@nil#3{%
6651   \def\HyRef@name{#2}%
6652   \ifx\HyRef@name\HyRef@CaseStar
6653     \def\HyRef@name{#1}%
6654   \else
6655     \def\HyRef@name{#3}%
6656   \fi
6657 }
6658 \def\HyRef@CaseStar{*\\}
6659 \def\HyRef@currentHtag{}

```

Support for package showkeys.

\HyRef@ShowKeysRef

```

6660 \let\HyRef@ShowKeysRef\@gobble
6661 \def\HyRef@ShowKeysInit{%
6662   \begingroup\expandafter\expandafter\expandafter\endgroup

```

```

6663 \expandafter\ifx\csname SK@@label\endcsname\relax
6664 \else
6665   \ifx\SK@ref\@empty
6666   \else
6667     \def\HyRef@ShowKeysRef{%
6668       \SK@\SK@@ref
6669     }%
6670   \fi
6671 \fi
6672 }
6673 \@ifpackageloaded{showkeys}{%
6674   \HyRef@ShowKeysInit
6675 }{%
6676   \AtBeginDocument{%
6677     \@ifpackageloaded{showkeys}{%
6678       \HyRef@ShowKeysInit
6679     }{}%
6680   }%
6681 }

```

Defaults for the names that `\autoref` uses.

```

6682 \providecommand*{\AMSautorefname}{\equationautorefname}
6683 \providecommand*{\Hfootnoteautorefname}{\footnoteautorefname}
6684 \providecommand*{\Itemautorefname}{\itemautorefname}
6685 \providecommand*{\itemautorefname}{item}
6686 \providecommand*{\equationautorefname}{Equation}
6687 \providecommand*{\footnoteautorefname}{footnote}
6688 \providecommand*{\itemautorefname}{item}
6689 \providecommand*{\figureautorefname}{Figure}
6690 \providecommand*{\tableautorefname}{Table}
6691 \providecommand*{\partautorefname}{Part}
6692 \providecommand*{\appendixautorefname}{Appendix}
6693 \providecommand*{\chapterautorefname}{chapter}
6694 \providecommand*{\sectionautorefname}{section}
6695 \providecommand*{\subsectionautorefname}{subsection}
6696 \providecommand*{\subsubsectionautorefname}{subsubsection}
6697 \providecommand*{\paragraphautorefname}{paragraph}
6698 \providecommand*{\subparagraphautorefname}{subparagraph}
6699 \providecommand*{\FancyVerbLineautorefname}{line}
6700 \providecommand*{\theoremautorefname}{Theorem}
6701 \providecommand*{\pageautorefname}{page}
6702 </package>

```

## 46 Configuration files

### 46.1 PS/PDF strings

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

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

```

6703 <*\pdfTeX | dvipdfm | vtex | pdfmarkbase | dviwindo>
6704 \RequirePackage{pdfTeXcmds}[2007/11/11]

```

```

6705 \begingroup\expandafter\expandafter\expandafter\endgroup
6706 \expandafter\ifx\csname pdf@escapestring\endcsname\relax
6707   \begingroup
6708     \catcode'\| =0 %
6709     \@makeother\| %
6710   \@firstofone{\endgroup
6711     |def|Hy@pstringdef#1#2{%
6712       |begingroup
6713         |edef~{|string~}%
6714         |xdef|Hy@gtemp{#2}%
6715       |endgroup
6716       |let#1|Hy@gtemp
6717       |@onelevel@sanitize#1%
6718       |edef#1{|expandafter|Hy@ExchangeBackslash#1\|@nil}%
6719       |edef#1{|expandafter|Hy@ExchangeLeftParenthesis#1(|@nil}%
6720       |edef#1{|expandafter|Hy@ExchangeRightParenthesis#1)|@nil}%
6721     }%
6722     |def|Hy@ExchangeBackslash#1\#2|@nil{%
6723       #1%
6724       |ifx|\#2|\%%
6725       |else
6726         \\\%
6727         |Hy@ReturnAfterFi{%
6728           |Hy@ExchangeBackslash#2|@nil
6729         }%
6730       |fi
6731     }%
6732   }%
6733   \def\Hy@ExchangeLeftParenthesis#1(#2\@nil{%
6734     #1%
6735     \ifx\#2\%%
6736     \else
6737       \@backslashchar(%
6738       \Hy@ReturnAfterFi{%
6739         \Hy@ExchangeLeftParenthesis#2\@nil
6740       }%
6741     \fi
6742   }%
6743   \def\Hy@ExchangeRightParenthesis#1)#2\@nil{%
6744     #1%
6745     \ifx\#2\%%
6746     \else
6747       \@backslashchar)%
6748       \Hy@ReturnAfterFi{%
6749         \Hy@ExchangeRightParenthesis#2\@nil
6750       }%
6751     \fi
6752   }%
6753 \else
6754   \def\Hy@pstringdef#1#2{%
6755     \begingroup
6756     \edef~{\string~}%
6757     \xdef\Hy@gtemp{\pdf@escapestring{#2}}%
6758   \endgroup
6759   \let#1\Hy@gtemp
6760 }%
6761 \fi

```

```
6762 </pdfTeX | dvipdfm | vtex | pdfmarkbase | dviwindo>
```

## 46.2 pdfTeX

```
6763 <*pdfTeX>
6764 \providecommand*{\XR@ext}{pdf}
6765 \Hy@setbreaklinks{true}
```

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

Set PDF version if requested by option pdfversion.

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

```
6766 \let\Hy@pdfminorversion\relax
6767 \begingroup\expandafter\expandafter\expandafter\endgroup
6768 \expandafter\ifx\csname pdfminorversion\endcsname\relax
6769   \begingroup\expandafter\expandafter\expandafter\endgroup
6770   \expandafter\ifx\csname pdfoptionpdfminorversion\endcsname\relax
6771     \else
6772       \def\Hy@pdfminorversion{\pdfoptionpdfminorversion}%
6773     \fi
6774   \else
6775     \def\Hy@pdfminorversion{\pdfminorversion}%
6776   \fi
6777 \ifundefined{Hy@pdfminorversion}{%
6778   \PackageInfo{hyperref}{%
6779     PDF version is not set, because pdfTeX is too old (<1.10a)%
6780   }%
6781 }%
6782 \ifHy@ocgcolorlinks
6783   \ifnum\Hy@pdfminorversion<5 %
6784     \setkeys{Hyp}{pdfversion=1.5}%
6785   \fi
6786 \fi
6787 \ifHy@setpdfversion
6788   \ifnum\Hy@pdfminorversion=\Hy@pdfversion\relax
6789   \else
6790     \Hy@pdfminorversion=\Hy@pdfversion\relax
6791   \fi
6792   \PackageInfo{hyperref}{%
6793     \expandafter\string\Hy@pdfminorversion
6794     :=\number\Hy@pdfversion\space
6795   }%
6796 \fi
6797 \edef\Hy@pdfversion{\number\Hy@pdfminorversion}%
6798 }
6799 \Hy@DisableOption{pdfversion}%

6800 \ifHy@ocgcolorlinks
6801   \immediate\pdfobj{%
6802     <<%
6803       /Type/OCG%
6804       /Name(View)%
6805       /Usage<<%
6806         /Print<<%
6807           /PrintState/OFF%
```

```

6808         >>%
6809         /View<<%
6810         /ViewState/ON%
6811         >>%
6812     >>%
6813 >>%
6814 }%
6815 \edef\OBJ@OCG@view{\the\pdflastobj\space 0 R}%
6816 \immediate\pdfobj{%
6817     <<%
6818     /Type/OCG%
6819     /Name(Print)%
6820     /Usage<<%
6821     /Print<<%
6822     /PrintState/ON%
6823     >>%
6824     /View<<%
6825     /ViewState/OFF%
6826     >>%
6827     >>%
6828     >>%
6829 }%
6830 \edef\OBJ@OCG@print{\the\pdflastobj\space 0 R}%
6831 \immediate\pdfobj{%
6832     [%
6833     \OBJ@OCG@view\space\OBJ@OCG@print
6834     ]%
6835 }%
6836 \edef\OBJ@OCGs{\the\pdflastobj\space 0 R}%
6837 \pdfcatalog{%
6838     /OCProperties<<%
6839     /OCGs \OBJ@OCGs
6840     /D<<%
6841     /OFF[\OBJ@OCG@print]%
6842     /AS[%
6843     <<%
6844     /Event/View%
6845     /OCGs \OBJ@OCGs
6846     /Category[/View]%
6847     >>%
6848     <<%
6849     /Event/Print%
6850     /OCGs \OBJ@OCGs
6851     /Category[/Print]%
6852     >>%
6853     <<%
6854     /Event/Export%
6855     /OCGs \OBJ@OCGs
6856     /Category[/Print]%
6857     >>%
6858     ]%
6859     >>%
6860     >>%
6861 }%
6862 \beginngroup
6863 \edef\x{\endgroup
6864     \pdfpageresources{%

```



```

6865      /Properties<<%
6866      /OCView \OBJ@OCG@view
6867      /OCPrint \OBJ@OCG@print
6868      >>%
6869  }%
6870 }%
6871 \x
6872 \AtBeginDocument{%
6873   \def\Hy@colorlink#1{%
6874     \begingroup
6875     \ifHy@ocgcolorlinks
6876       \def\Hy@ocgcolor{#1}%
6877       \setbox0=\color@hbox
6878     \else
6879       \HyColor@UseColor#1%
6880     \fi
6881   }%
6882   \def\Hy@endcolorlink{%
6883     \ifHy@ocgcolorlinks
6884       \color@endbox
6885     \mbox{%
6886       \pdfliteral page{/OC/OCPrint BDC}%
6887       \rlap{\copy0}%
6888       \pdfliteral page{EMC/OC/OCView BDC}%
6889     \begingroup
6890       \expandafter\HyColor@UseColor\Hy@ocgcolor
6891       \box0 %
6892     \endgroup
6893     \pdfliteral page{EMC}%
6894   }%
6895   \fi
6896 \endgroup
6897 }%
6898 }%
6899 \else
6900   \Hy@DisableOption{ocgcolorlinks}%
6901 \fi

```

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

```

6902 \def\setpdflinkmargin#1{\pdflinkmargin#1}
6903 \ifx\pdfstartlink\@undefined% less than version 14
6904   \let\pdfstartlink\pdfannotlink
6905   \let\pdflinkmargin\@tempdima
6906   \let\pdfxform\pdfform
6907   \let\pdflastxform\pdfastform
6908   \let\pdfrefxform\pdfrefform
6909 \else
6910   \pdflinkmargin1pt %
6911 \fi

```

First set up the default linking

```

6912 \providecommand*\@pdfview{XYZ}

```

First define the anchors:

```

6913 \def\new@pdflink#1{%
6914   \ifHy@verbose
6915     \typeout{pdftex: define anchor at line \the\inputlineno: #1}%
6916   \fi
6917   \Hy@SaveLastskip

```

```

6918 \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
6919 \Hy@DestName\Hy@pstringDest\@pdfview
6920 \Hy@RestoreLastskip
6921 }
6922 \let\pdf@endanchor\@empty

```

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

```

6923 \def\Hy@DestName#1#2{%
6924 \pdfdest name{#1}#2\relax
6925 }

```

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.

```

6926 \providecommand*\@pdfborder{0 0 1}
6927 \providecommand*\@pdfborderstyle{}
6928 \def\Hy@undefinedname{UNDEFINED}
6929 \def\find@pdflink#1#2{%
6930 \leavevmode
6931 \protected@edef\Hy@testname{#2}%
6932 \ifx\Hy@testname\@empty
6933 \let\Hy@testname\Hy@undefinedname
6934 \else
6935 \Hy@pstringdef\Hy@testname{%
6936 \expandafter\HyperDestNameFilter\expandafter{\Hy@testname}%
6937 }%
6938 \fi
6939 \Hy@StartlinkName{%
6940 \ifHy@pdfa /F 4\fi
6941 \Hy@setpdfborder
6942 \ifx\@pdfhighlight\@empty
6943 \else
6944 /H\@pdfhighlight
6945 \fi
6946 \ifx\CurrentBorderColor\relax
6947 \else
6948 /C[\CurrentBorderColor]%
6949 \fi
6950 }\Hy@testname
6951 \expandafter\Hy@colorlink\csname @#1color\endcsname
6952 }
6953 \def\Hy@StartlinkName#1#2{%
6954 \pdfstartlink attr{#1}goto name{#2}\relax
6955 }
6956 \def\close@pdflink{\Hy@endcolorlink\pdfendlink}
6957 \def\hyper@anchor#1{\new@pdflink{#1}\anchor@spot\pdf@endanchor}
6958 \def\hyper@anchorstart#1{\new@pdflink{#1}\Hy@activeanchortrue}
6959 \def\hyper@anchorend{\pdf@endanchor\Hy@activeanchorfalse}
6960 \def\hyper@linkstart#1#2{%
6961 \@ifundefined{#1bordercolor}{%
6962 \let\CurrentBorderColor\relax
6963 }{%
6964 \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
6965 }%
6966 \find@pdflink{#1}{#2}%

```

```

6967 }
6968 \def\hyper@linkend{\close@pdflink}
6969 \def\hyper@link#1#2#3{%
6970   \@ifundefined{#@1bordercolor}{%
6971     \let\CurrentBorderColor\relax
6972   }{%
6973     \edef\CurrentBorderColor{\csname #@1bordercolor\endcsname}%
6974   }%
6975   \find@pdflink{#1}{#2}#3%
6976   \close@pdflink
6977 }
6978 \let\CurrentBorderColor\@linkbordercolor
6979 \def\hyper@linkurl#1#2{%
6980   \begingroup
6981     \Hy@pstringdef\Hy@pstringURI{#2}%
6982     \hyper@chars
6983     \leavevmode
6984     \pdfstartlink
6985     attr{%
6986       \Hy@setpdfborder
6987       \ifx\@pdfhighlight\@empty
6988       \else
6989         /H\@pdfhighlight
6990       \fi
6991       \ifx\@urlbordercolor\relax
6992       \else
6993         /C[\@urlbordercolor]%
6994       \fi
6995     }%
6996     user{%
6997       /Subtype/Link%
6998       \ifHy@pdfa /F 4\fi
6999       /A<<%
7000         /Type/Action%
7001         /S/URI%
7002         /URI(\Hy@pstringURI)%
7003       >>%
7004     }%
7005     \relax
7006     \Hy@colorlink\@urlcolor#1%
7007     \close@pdflink
7008   \endgroup
7009 }
7010 \def\hyper@linkfile#1#2#3{% anchor text, filename, linkname
7011   \begingroup
7012     \Hy@pstringdef\Hy@pstringF{#2}%
7013     \Hy@pstringdef\Hy@pstringD{#3}%
7014     \leavevmode
7015     \pdfstartlink
7016     attr{%
7017       \Hy@setpdfborder
7018       \ifx\@pdfhighlight\@empty
7019       \else
7020         /H\@pdfhighlight
7021       \fi
7022       \ifx\@filebordercolor\relax
7023       \else

```

```

7024         /C[\@filebordercolor]%
7025     \fi
7026 }%
7027 user {%
7028     /Subtype/Link%
7029     \ifHy@pdfa /F 4\fi
7030     /A<<%
7031     /F(\Hy@pstringF)%
7032     /S/GoToR%
7033     \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}

```

```

7034     \ifx\#3\%
7035     /D[0 \@pdfstartview]%
7036     \else
7037     /D(\Hy@pstringD)%
7038     \fi
7039     >>%
7040 }%
7041 \relax
7042 \Hy@colorlink\@filecolor#1%
7043 \close@pdflink
7044 \endgroup
7045 }
7046 \def\@hyper@launch run:#1\#2#3{% filename, anchor text linkname
7047 \begingroup
7048   \Hy@pstringdef\Hy@pstringF{#1}%
7049   \Hy@pstringdef\Hy@pstringP{#3}%
7050   \leavevmode
7051   \pdfstartlink
7052   attr{%
7053     \Hy@setpdfborder
7054     \ifx\@pdfhighlight\@empty
7055     \else
7056     /H\@pdfhighlight
7057     \fi
7058     \ifx\@runbordercolor\relax
7059     \else
7060     /C[\@runbordercolor]%
7061     \fi
7062   }%
7063   user {%
7064     /Subtype/Link%
7065     \ifHy@pdfa /F 4\fi
7066     /A<<%
7067     /F(\Hy@pstringF)%
7068     /S/Launch%
7069     \Hy@SetNewWindow

```

```

7070         \ifx\#3\%
7071         \else
7072             /Win<</P(\Hy@pstringP)/F(\Hy@pstringF)>>%
7073         \fi
7074     >>%
7075     }%
7076     \relax
7077     \Hy@colorlink\@runcolor#2%
7078     \close@pdflink
7079 \endgroup
7080 }

```

\@pdfproducer

```

7081 \ifx\@pdfproducer\relax
7082 \begingroup\expandafter\expandafter\expandafter\endgroup
7083 \expandafter\ifx\csname luatexversion\endcsname\relax
7084     \def\@pdfproducer{pdfTeX}%
7085     \ifx\eTeXversion\undefined
7086     \else
7087         \ifx\eTeXversion\relax
7088         \else
7089             \ifnum\eTeXversion>0 %
7090                 \def\@pdfproducer{pdfTeX}%
7091             \fi
7092         \fi
7093     \fi
7094     \ifx\pdfTeXversion\undefined
7095     \else
7096         \ifnum\pdfTeXversion<100 %
7097             \edef\@pdfproducer{%
7098                 \@pdfproducer
7099                 \the\pdfTeXversion.\pdfTeXrevision
7100             }%
7101         \else
7102             \ifnum\pdfTeXversion<130 %
7103                 \edef\@pdfproducer{%
7104                     \@pdfproducer-%
7105                     \expandafter\@car\the\pdfTeXversion\@empty\@nil.%
7106                     \expandafter\@cdr\the\pdfTeXversion\@empty\@nil.%
7107                     \pdfTeXrevision
7108                 }%
7109             \else
7110                 \ifnum\pdfTeXversion<140 %
7111                 \else
7112                     \def\@pdfproducer{pdfTeX}%
7113                 \fi
7114                 \edef\@pdfproducer{%
7115                     \@pdfproducer-%
7116                     \expandafter\@car\the\pdfTeXversion\@empty\@nil.%
7117                     \expandafter\@cdr\the\pdfTeXversion\@empty\@nil.%
7118                     \pdfTeXrevision
7119                 }%
7120             \fi
7121         \fi
7122     \fi
7123 \else
7124     \begingroup

```

```

7125     \count@=\luatexversion
7126     \divide\count@ by 100 %
7127     \edef\x{\the\count@}%
7128     \count@=-\x\relax
7129     \multiply\count@ by 100 %
7130     \advance\count@ by \luatexversion
7131     \edef\x{\endgroup
7132         \def\noexpand\pdfproducer{%
7133             LuaTeX-\x.\the\count@.\luatexrevision
7134         }%
7135     }%
7136     \x
7137 \fi
7138 \fi

```

\PDF@SetupDox

```

7139 \def\PDF@SetupDoc{%
7140   \ifx\pdfpagescrop\@empty
7141   \else
7142     \edef\process@me{%
7143       \pdfpagesattr={%
7144         /CropBox[\pdfpagescrop]%
7145         \expandafter\ifx\expandafter\\\the\pdfpagesattr\\%
7146         \else
7147           ^^J\the\pdfpagesattr
7148         \fi
7149       }%
7150     }%
7151     \process@me
7152   \fi
7153   \Hy@pstringdef\Hy@pstringB{\@baseurl}%
7154   \pdfcatalog{%
7155     /PageMode/\pdfpagemode
7156     \ifx\@baseurl\@empty
7157     \else
7158       /URI<</Base(\Hy@pstringB)>>%
7159     \fi
7160   }%
7161   \ifx\pdfstartpage\@empty
7162   \else
7163     \ifx\pdfstartview\@empty
7164     \else
7165       openaction goto page\pdfstartpage{\pdfstartview}%
7166     \fi
7167   \fi
7168   \edef\Hy@temp{%
7169     \ifHy@toolbar\else /HideToolbar true\fi
7170     \ifHy@menubar\else /HideMenubar true\fi
7171     \ifHy>windowui\else /HideWindowUI true\fi
7172     \ifHy@fitwindow /FitWindow true\fi
7173     \ifHy@centerwindow /CenterWindow true\fi
7174     \ifHy@displaydoctitle /DisplayDocTitle true\fi
7175     \Hy@UseNameKey{NonFullScreenPageMode}\pdfnonfullscreenpagemode
7176     \Hy@UseNameKey{Direction}\pdfdirection
7177     \Hy@UseNameKey{ViewArea}\pdfviewarea
7178     \Hy@UseNameKey{ViewClip}\pdfviewclip
7179     \Hy@UseNameKey{PrintArea}\pdfprintarea

```

```

7180 \Hy@UseNameKey{PrintClip}\@pdfprintclip
7181 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
7182 \Hy@UseNameKey{Duplex}\@pdfduplex
7183 \ifx\@pdfpicktraybypdfsize\@empty
7184 \else
7185 /PickTrayByPDFSize \@pdfpicktraybypdfsize
7186 \fi
7187 \ifx\@pdfprintpagerange\@empty
7188 \else
7189 /PrintPageRange[\@pdfprintpagerange]%
7190 \fi
7191 \ifx\@pdfnumcopies\@empty
7192 \else
7193 /NumCopies \@pdfnumcopies
7194 \fi
7195 }%
7196 \pdfcatalog{%
7197 \ifx\Hy@temp\@empty
7198 \else
7199 /ViewerPreferences<<\Hy@temp>>%
7200 \fi
7201 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
7202 \ifx\@pdflang\@empty
7203 \else
7204 /Lang(\@pdflang)%
7205 \fi
7206 }%
7207 }

```

\PDF@FinishDoc

```

7208 \def\PDF@FinishDoc{%
7209 \Hy@UseMaketitleInfos
7210 \pdfinfo{%
7211 /Author(\@pdfauthor)%
7212 /Title(\@pdftitle)%
7213 /Subject(\@pdfsubject)%
7214 /Creator(\@pdfcreator)%
7215 \ifx\@pdfcreationdate\@empty
7216 \else
7217 /CreationDate(\@pdfcreationdate)%
7218 \fi
7219 \ifx\@pdfmoddate\@empty
7220 \else
7221 /ModDate(\@pdfmoddate)%
7222 \fi
7223 \ifx\@pdfproducer\relax
7224 \else
7225 /Producer(\@pdfproducer)%
7226 \fi
7227 /Keywords(\@pdfkeywords)%
7228 }%
7229 \Hy@DisableOption{pdfauthor}%
7230 \Hy@DisableOption{pdftitle}%
7231 \Hy@DisableOption{pdfsubject}%
7232 \Hy@DisableOption{pdfcreator}%
7233 \Hy@DisableOption{pdfcreationdate}%
7234 \Hy@DisableOption{pdfmoddate}%

```

```

7235 \Hy@DisableOption{pdfproducer}%
7236 \Hy@DisableOption{pdfkeywords}%
7237 }

```

`\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`.

```

7238 \def\hyper@pagetransition{%
7239 \ifx\@pdfpagetransition\relax
7240 \else
7241 \expandafter\Hy@RemoveTransPageAttr
7242 \the\pdfpageattr^^J/Trans{>>\END
7243 \ifx\@pdfpagetransition\@empty
7244 \else
7245 \edef\@processme{%
7246 \global\pdfpageattr{%
7247 \the\pdfpageattr
7248 ^^J/Trans << /S /\@pdfpagetransition\space >>%
7249 }%
7250 }%
7251 \@processme
7252 \fi
7253 \fi
7254 }

```

`\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.

```

7255 \gdef\Hy@RemoveTransPageAttr#1^^J/Trans#2#3>>#4\END{%
7256 \ifx\#2\%
7257 \global\pdfpageattr{#1}%
7258 \else
7259 \Hy@RemoveTransPageAttr#1#4\END
7260 \fi
7261 }

```

`\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`.

```

7262 \def\hyper@pageduration{%
7263 \ifx\@pdfpageduration\relax
7264 \else
7265 \expandafter\Hy@RemoveDurPageAttr\the\pdfpageattr^^J/Dur{} \END
7266 \ifx\@pdfpageduration\@empty
7267 \else
7268 \edef\@processme{%
7269 \global\pdfpageattr{%
7270 \the\pdfpageattr
7271 ^^J/Dur \@pdfpageduration\space
7272 }%
7273 }%
7274 \@processme
7275 \fi
7276 \fi
7277 }

```



`\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.

```
7278 \gdef\Hy@RemoveDurPageAttr#1^^J/Dur#2#3 #4\END{%
7279   \ifx\#2\%
7280     \global\pdfpageattr{#1}%
7281   \else
7282     \Hy@RemoveDurPageAttr#1#4\END
7283   \fi
7284 }
```

`\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).

```
7285 \def\hyper@pagehidden{%
7286   \ifHy@useHidKey
7287     \expandafter\Hy@RemoveHidPageAttr\the\pdfpageattr^^J/Hid{ } \END
7288   \ifHy@pdfpagehidden
7289     \edef\@processme{%
7290       \global\pdfpageattr{%
7291         \the\pdfpageattr
7292         ^^J/Hid true % SPACE
7293       }%
7294     }%
7295     \@processme
7296   \fi
7297 \fi
7298 }
```

`\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.

```
7299 \gdef\Hy@RemoveHidPageAttr#1^^J/Hid#2#3 #4\END{%
7300   \ifx\#2\%
7301     \global\pdfpageattr{#1}%
7302   \else
7303     \Hy@RemoveHidPageAttr#1#4\END
7304   \fi
7305 }
```

```
7306 \g@addto@macro\Hy@EveryPageHook{%
7307   \hyper@pagetransition
7308   \hyper@pageduration
7309   \hyper@pagehidden
7310 }

7311 \AtBeginDocument{%
7312   \ifHy@setpagesize
7313     \expandafter\@firstofone
7314   \else
7315     \expandafter\@gobble
7316   \fi
7317 }%
7318 \@ifclassloaded{seminar}{%
7319   \setlength{\pdfhorigin}{1truein}%
7320 }
```

```

7320 \setlength{\pdfvorigin}{1truein}%
7321 \ifportrait
7322 \ifdim\paperwidth=\z@
7323 \else
7324 \setlength{\pdfpagewidth}{\strip@pt\paperwidth truept}%
7325 \fi
7326 \ifdim\paperheight=\z@
7327 \else
7328 \setlength{\pdfpageheight}{\strip@pt\paperheight truept}%
7329 \fi
7330 \else
7331 \ifdim\paperheight=\z@
7332 \else
7333 \setlength{\pdfpagewidth}{\strip@pt\paperheight truept}%
7334 \fi
7335 \ifdim\paperwidth=\z@
7336 \else
7337 \setlength{\pdfpageheight}{\strip@pt\paperwidth truept}%
7338 \fi
7339 \fi
7340 }{%
7341 \@ifundefined{stockwidth}{%
7342 \ifdim\paperwidth=\z@
7343 \else
7344 \setlength{\pdfpagewidth}{\paperwidth}%
7345 \fi
7346 \ifdim\paperheight=\z@
7347 \else
7348 \setlength{\pdfpageheight}{\paperheight}%
7349 \fi
7350 }{%
7351 \ifdim\stockwidth=\z@
7352 \else
7353 \setlength{\pdfpagewidth}{\stockwidth}%
7354 \fi
7355 \ifdim\stockheight=\z@
7356 \else
7357 \setlength{\pdfpageheight}{\stockheight}%
7358 \fi
7359 }%
7360 }%
7361 }%
7362 \Hy@DisableOption{setpagesize}%
7363 }
7364 \def\Acrobatmenu#1#2{%
7365 \Hy@Acrobatmenu{#1}{#2}{%
7366 \pdfstartlink
7367 attr{%
7368 \Hy@setpdfborder
7369 \ifx\pdfhighlight\@empty
7370 \else
7371 /H\pdfhighlight
7372 \fi
7373 \ifx\@menubordercolor\relax
7374 \else
7375 /C[\@menubordercolor]%
7376 \fi

```

```

7377     }%
7378     user{%
7379         /Subtype/Link%
7380         \ifHy@pdfa /F 4\fi
7381         /A<<%
7382         /S/Named/N/#1%
7383         >>%
7384     }%
7385     \relax
7386     \Hy@colorlink\@menucolor#2%
7387     \close@pdflink
7388 }%
7389 }
7390 </pdfTeX>
7391 <*hypertex>

```

### 46.3 hypertex

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

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

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

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

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

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

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

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

```

7392 \providecommand*\XR@ext}{dvi}
7393 \def\PDF@FinishDoc{}
7394 \def\PDF@SetupDoc{%
7395   \ifx\@baseurl\@empty
7396   \else
7397     \special{html:<base href="\@baseurl">}}%
7398   \fi

```

```

7399 }
7400 \def\hyper@anchor#1{%
7401   \Hy@SaveLastskip
7402   \begingroup
7403     \let\protect=\string
7404     \hyper@chars
7405     \special{html:<a name=%
7406       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
7407   \endgroup
7408   \Hy@activeanchortrue
7409   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
7410   \special{html:</a>}%
7411   \Hy@activeanchorfalse
7412   \Hy@RestoreLastskip
7413 }
7414 \def\hyper@anchorstart#1{%
7415   \Hy@SaveLastskip
7416   \begingroup
7417     \hyper@chars
7418     \special{html:<a name=%
7419       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
7420   \endgroup
7421   \Hy@activeanchortrue
7422 }
7423 \def\hyper@anchorend{%
7424   \special{html:</a>}%
7425   \Hy@activeanchorfalse
7426   \Hy@RestoreLastskip
7427 }
7428 \def\@urltype{url}
7429 \def\hyper@linkstart#1#2{%
7430   \expandafter\Hy@colorlink\csname @#1color\endcsname
7431   \def\Hy@tempa{#1}%
7432   \ifx\Hy@tempa\@urltype
7433     \special{html:<a href=\hyper@quote#2\hyper@quote>}%
7434   \else
7435     \begingroup
7436       \hyper@chars
7437       \special{html:<a href=%
7438         \hyper@quote\#HyperDestNameFilter{#2}\hyper@quote>}%
7439     \endgroup
7440   \fi
7441 }
7442 \def\hyper@linkend{%
7443   \special{html:</a>}%
7444   \Hy@endcolorlink
7445 }
7446 \def\hyper@linkfile#1#2#3{%
7447   \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\else\##3\fi}%
7448 }
7449 \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.

```

7450   \leavevmode
7451   \ifHy@raiselinks
7452     \setbox\@tempboxa=\color@hbox #1\color@endbox

```

```

7453 \@linkdim\dp\@tempboxa
7454 \lower\@linkdim\hbox{%
7455 \hyper@chars
7456 \special{html:<a href=\hyper@quote#2\hyper@quote>}}%
7457 }%
7458 \Hy@colorlink\@urlcolor#1%
7459 \@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).

```

7460 \advance\@linkdim by -6.5\p@
7461 \raise\@linkdim\hbox{\special{html:</a>}}%
7462 \Hy@endcolorlink
7463 \else
7464 \begingroup
7465 \hyper@chars
7466 \special{html:<a href=\hyper@quote#2\hyper@quote>}}%
7467 \Hy@colorlink\@urlcolor#1%
7468 \special{html:</a>}}%
7469 \Hy@endcolorlink
7470 \endgroup
7471 \fi
7472 }

```

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

```

7473 \def\hyper@link#1#2#3{%
7474 \hyper@linkurl{#3}{\#HyperDestNameFilter{#2}}%
7475 }

7476 \def\hyper@image#1#2{%
7477 \begingroup
7478 \hyper@chars
7479 \special{html:<img src=\hyper@quote#1\hyper@quote>}}%
7480 \endgroup
7481 }
7482 </hypertext>
7483 <*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 hypertext cfg. For dviwindo,  $\LaTeX$  must specify the size of the active area for links. For some hooks this information is available but for some, the start and end of the link are specified separately in which case a fixed size area of 10000000sp wide by \baselineskip high is used.

```

7484 \providecommand*\XR@ext{dvi}
7485 \providecommand*\wwwbrowser{c:\string\netscape\string\netscape}
7486 \def\hyper@anchor#1{%
7487 \Hy@SaveLastskip
7488 \begingroup
7489 \let\protect=\string

```

```

7490 \special{mark: #1}%
7491 \endgroup
7492 \Hy@activeanchortrue
7493 \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
7494 \Hy@activeanchorfalse
7495 \Hy@RestoreLastskip
7496 }
7497 \def\hyper@anchorstart#1{%
7498 \Hy@SaveLastskip
7499 \special{mark: #1}%
7500 \Hy@activeanchortrue
7501 }
7502 \def\hyper@anchorend{%
7503 \Hy@activeanchorfalse
7504 \Hy@RestoreLastskip
7505 }
7506 \def\hyper@linkstart#1#2{%
7507 \expandafter\Hy@colorlink\csname @#1color\endcsname
7508 \special{button: %
7509 10000000 %
7510 \number\baselineskip\space
7511 #2%
7512 }%
7513 }
7514 \def\hyper@linkend{%
7515 \Hy@endcolorlink
7516 }
7517 \def\hyper@link#1#2#3{%
7518 \setbox\@tempboxa=\color@hbox #3\color@endbox
7519 \leavevmode
7520 \ifHy@raiselinks
7521 \@linkdim\dp\@tempboxa
7522 \lower\@linkdim\hbox{%
7523 \special{button: %
7524 \number\wd\@tempboxa\space
7525 \number\ht\@tempboxa\space
7526 #2%
7527 }%
7528 \expandafter\Hy@colorlink\csname @#1color\endcsname#3%
7529 \Hy@endcolorlink
7530 }%
7531 \@linkdim\ht\@tempboxa
7532 \advance\@linkdim by -6.5\p@
7533 \raise\@linkdim\hbox{%}%
7534 \else
7535 \special{button: %
7536 \number\wd\@tempboxa\space
7537 \number\ht\@tempboxa\space
7538 #2%
7539 }%
7540 \expandafter\Hy@colorlink\csname @#1color\endcsname#3%
7541 \Hy@endcolorlink
7542 \fi
7543 }
7544 \def\hyper@linkurl#1#2{%
7545 \begingroup
7546 \hyper@chars

```

```

7547 \leavevmode
7548 \setbox\@tempboxa=\color@hbox #1\color@endbox
7549 \ifHy@raiselinks
7550 \@linkdim\dp\@tempboxa
7551 \lower\@linkdim\hbox{%
7552 \special{button: %
7553 \number\wd\@tempboxa\space
7554 \number\ht\@tempboxa\space
7555 launch: \wwwbrowser\space
7556 #2%
7557 }%
7558 \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
7559 }%
7560 \@linkdim\ht\@tempboxa
7561 \advance\@linkdim by -6.5\p@
7562 \raise\@linkdim\hbox{}}%
7563 \else
7564 \special{button: %
7565 \number\wd\@tempboxa\space
7566 \number\ht\@tempboxa\space
7567 launch: \wwwbrowser\space
7568 #2%
7569 }%
7570 \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
7571 \fi
7572 \endgroup
7573 }
7574 \def\hyper@linkfile#1#2#3{%
7575 \begingroup
7576 \hyper@chars
7577 \leavevmode
7578 \setbox\@tempboxa=\color@hbox #1\color@endbox
7579 \ifHy@raiselinks
7580 \@linkdim\dp\@tempboxa
7581 \lower\@linkdim\hbox{%
7582 \special{button: %
7583 \number\wd\@tempboxa\space
7584 \number\ht\@tempboxa\space
7585 #3,%
7586 file: #2%
7587 }%
7588 \Hy@colorlink\@filecolor#1\Hy@endcolorlink
7589 }%
7590 \@linkdim\ht\@tempboxa
7591 \advance\@linkdim by -6.5\p@
7592 \raise\@linkdim\hbox{}}%
7593 \else
7594 \special{button: %
7595 \number\wd\@tempboxa\space
7596 \number\ht\@tempboxa\space
7597 #3,%
7598 file: #2%
7599 }%
7600 \Hy@colorlink\@filecolor#1\Hy@endcolorlink
7601 \fi
7602 \endgroup
7603 }

```

```

7604 \ifx\@pdfproducer\relax
7605   \def\@pdfproducer{dviwindo + Distiller}%
7606 \fi
7607 \def\PDF@FinishDoc{%
7608   \Hy@UseMaketitleInfos
7609   \special{PDF: Keywords \@pdfkeywords}%
7610   \special{PDF: Title \@pdftitle}%
7611   \special{PDF: Creator \@pdfcreator}%
7612   \ifx\@pdfcreationdate\@empty
7613   \else
7614     \special{PDF: CreationDate \@pdfcreationdate}%
7615   \fi
7616   \ifx\@pdfmoddate\@empty
7617   \else
7618     \special{PDF: ModDate \@pdfmoddate}%
7619   \fi
7620   \special{PDF: Author \@pdfauthor}%
7621   \ifx\@pdfproducer\relax
7622   \else
7623     \special{PDF: Producer \@pdfproducer}%
7624   \fi
7625   \special{PDF: Subject \@pdfsubject}%
7626   \Hy@DisableOption{pdfauthor}%
7627   \Hy@DisableOption{pdftitle}%
7628   \Hy@DisableOption{pdfsubject}%
7629   \Hy@DisableOption{pdfcreator}%
7630   \Hy@DisableOption{pdfcreationdate}%
7631   \Hy@DisableOption{pdfmoddate}%
7632   \Hy@DisableOption{pdfproducer}%
7633   \Hy@DisableOption{pdfkeywords}%
7634 }
7635 \def\PDF@SetupDoc{%
7636   \ifx\@baseurl\@empty
7637   \else
7638     \special{PDF: Base \@baseurl}%
7639   \fi
7640   \ifx\@pdfpagescrop\@empty\else
7641     \special{PDF: BBox \@pdfpagescrop}%
7642   \fi
7643   \def\Hy@temp{%
7644     \ifx\@pdfstartpage\@empty
7645     \else
7646       \ifx\@pdfstartview\@empty
7647       \else
7648         \edef\Hy@temp{%
7649           ,Page=\@pdfstartpage
7650           ,View=\@pdfstartview
7651         }%
7652       \fi
7653     \fi
7654     \edef\Hy@temp{%
7655       \noexpand\pdfmark{%
7656         pdfmark=/DOCVIEW,%
7657         PageMode=/\@pdfpagemode
7658       }\Hy@temp
7659     }%
7660   }%

```



```

7661 \Hy@temp
7662 \ifx\@pdfpagescrop\@empty
7663 \else
7664 \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
7665 \fi
7666 \edef\Hy@temp{%
7667 \ifHy@toolbar\else /HideToolbar true\fi
7668 \ifHy@menubar\else /HideMenubar true\fi
7669 \ifHy>windowui\else /HideWindowUI true\fi
7670 \ifHy@fitwindow /FitWindow true\fi
7671 \ifHy@centerwindow /CenterWindow true\fi
7672 \ifHy@displaydoctitle /DisplayDocTitle true\fi
7673 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
7674 \Hy@UseNameKey{Direction}\@pdfdirection
7675 \Hy@UseNameKey{ViewArea}\@pdfviewarea
7676 \Hy@UseNameKey{ViewClip}\@pdfviewclip
7677 \Hy@UseNameKey{PrintArea}\@pdfprintarea
7678 \Hy@UseNameKey{PrintClip}\@pdfprintclip
7679 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
7680 \Hy@UseNameKey{Duplex}\@pdfduplex
7681 \ifx\@pdfpicktraybypdfsize\@empty
7682 \else
7683 /PickTrayByPDFSize \@pdfpicktraybypdfsize
7684 \fi
7685 \ifx\@pdfprintpagerange\@empty
7686 \else
7687 /PrintPageRange[\@pdfprintpagerange]%
7688 \fi
7689 \ifx\@pdfnumcopies\@empty
7690 \else
7691 /NumCopies \@pdfnumcopies
7692 \fi
7693 }%
7694 \pdfmark{pdfmark=/PUT,%
7695 Raw={%
7696 \string{Catalog\string}<<%
7697 \ifx\Hy@temp\@empty
7698 \else
7699 /ViewerPreferences<<\Hy@temp>>%
7700 \fi
7701 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
7702 \ifx\@pdflang\@empty
7703 \else
7704 /Lang(\@pdflang)%
7705 \fi
7706 >>%
7707 }%
7708 }%
7709 }
7710 </dviwindo>
7711 <*dvipdfm>

```

## 46.5 dvipdfm dvi to PDF converter

Provided by Mark Wicks (mwicks@kettering.edu)

```

7712 \providecommand*\XR@ext}{pdf}
7713 \Hy@setbreaklinks{true}

```

```

7714 \newsavebox{\pdfm@box}
7715 \def\@pdfm@mark#1{\special{pdf:#1}}
7716 \def\@pdfm@dest#1{%
7717   \Hy@SaveLastskip
7718   \beginngroup
7719     \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
7720     \def\x{XYZ}%
7721     \ifx\x\@pdfview
7722       \def\x{XYZ @xpos @ypos null}%
7723     \else
7724       \def\x{FitH}%
7725       \ifx\x\@pdfview
7726         \def\x{FitH @ypos}%
7727       \else
7728         \def\x{FitBH}%
7729         \ifx\x\@pdfview
7730           \def\x{FitBH @ypos}%
7731         \else
7732           \def\x{FitV}%
7733           \ifx\x\@pdfview
7734             \def\x{FitV @xpos}%
7735           \else
7736             \def\x{FitBV}%
7737             \ifx\x\@pdfview
7738               \def\x{FitBV @xpos}%
7739             \else
7740               \def\x{Fit}%
7741               \ifx\x\@pdfview
7742                 \let\x\@pdfview
7743               \else
7744                 \def\x{FitB}%
7745                 \ifx\x\@pdfview
7746                   \let\x\@pdfview
7747                 \else
7748                   \def\x{FitR}%
7749                   \ifx\x\@pdfview
7750                     \Hy@Warning{'pdfview=FitR' is not supported}%
7751                     \def\x{XYZ @xpos @ypos null}%
7752                   \else
7753                     \@onelevel@sanitize\@pdfview
7754                     \Hy@Warning{Unknown value '\@pdfview' for pdfview}%
7755                     \def\x{XYZ @xpos @ypos null}%
7756                   \fi
7757                 \fi
7758               \fi
7759             \fi
7760           \fi
7761         \fi
7762       \fi
7763     \fi
7764     \@pdfm@mark{dest (\Hy@pstringDest) [@thispage /\x]}%
7765   \endgroup
7766   \Hy@RestoreLastskip
7767 }
7768 \providecommand*\@pdfview{XYZ}
7769 \providecommand*\@pdfborder{0 0 1}
7770 \providecommand*\@pdfborderstyle{}

```

```

7771 \def\hyper@anchor#1{%
7772   \@pdfm@dest{#1}%
7773 }
7774 \def\hyper@anchorstart#1{%
7775   \Hy@activeanchortrue
7776   \@pdfm@dest{#1}%
7777 }
7778 \def\hyper@anchorend{%
7779   \Hy@activeanchorfalse
7780 }

7781 \ifHy@ocgcolorlinks
7782   \def\OBJ@OCG@view{@OCG@view}%
7783   \@pdfm@mark{%
7784     obj \OBJ@OCG@view <<%
7785       /Type/OCG%
7786       /Name(View)%
7787       /Usage<<%
7788         /Print<<%
7789         /PrintState/OFF%
7790       >>%
7791       /View<<%
7792       /ViewState/ON%
7793     >>%
7794   >>%
7795   >>%
7796   }%
7797   \@pdfm@mark{close \OBJ@OCG@view}%
7798   \def\OBJ@OCG@print{@OCG@print}%
7799   \@pdfm@mark{%
7800     obj \OBJ@OCG@print <<%
7801       /Type/OCG%
7802       /Name(Print)%
7803       /Usage<<%
7804       /Print<<%
7805       /PrintState/ON%
7806     >>%
7807     /View<<%
7808     /ViewState/OFF%
7809   >>%
7810   >>%
7811   >>%
7812   }%
7813   \@pdfm@mark{close \OBJ@OCG@print}%
7814   \def\OBJ@OCGs{@OCGs}%
7815   \@pdfm@mark{%
7816     obj \OBJ@OCGs [%
7817       \OBJ@OCG@view\space\OBJ@OCG@print
7818     ]%
7819   }%
7820   \@pdfm@mark{close \OBJ@OCGs}%
7821   \@pdfm@mark{%
7822     put @catalog <<%
7823       /OCProperties<<%
7824       /OCGs \OBJ@OCGs
7825     /D<<%
7826     /OFF[\OBJ@OCG@print]%
7827     /AS[%

```

```

7828         <<%
7829             /Event/View%
7830             /OCGs \OBJ@OCGs
7831             /Category[/View]%
7832         >>%
7833         <<%
7834             /Event/Print%
7835             /OCGs \OBJ@OCGs
7836             /Category[/Print]%
7837         >>%
7838         <<%
7839             /Event/Export%
7840             /OCGs \OBJ@OCGs
7841             /Category[/Print]%
7842         >>%
7843     ]%
7844 >>%
7845 >>%
7846 >>%
7847 }%
7848 \@pdfm@mark{%
7849     put @resources <<%
7850         /Properties<<%
7851             /OCView \OBJ@OCG@view
7852             /OCPrint \OBJ@OCG@print
7853         >>%
7854     >>%
7855 }%
7856 \AtBeginDocument{%
7857     \def\Hy@colorlink#1{%
7858         \begingroup
7859             \ifHy@ocgcolorlinks
7860                 \def\Hy@ocgcolor{#1}%
7861                 \setbox0=\color@hbox
7862             \else
7863                 \HyColor@UseColor#1%
7864             \fi
7865         }%
7866         \def\Hy@endcolorlink{%
7867             \ifHy@ocgcolorlinks
7868                 \color@endbox
7869             \mbox{%
7870                 \@pdfm@mark{content /OC/OCPrint BDC}%
7871                 \rlap{\copy0}%
7872                 \@pdfm@mark{content EMC/OC/OCView BDC}%
7873             \begingroup
7874                 \expandafter\HyColor@UseColor\Hy@ocgcolor
7875                 \box0 %
7876             \endgroup
7877             \@pdfm@mark{content EMC}%
7878         }%
7879         \fi
7880     \endgroup
7881 }%
7882 }%
7883 \else
7884     \Hy@DisableOption{ocgcolorlinks}%

```

```

7885 \fi
7886 \def\Hy@undefinedname{UNDEFINED}
7887 \def\hyper@linkstart#1#2{%
7888   \protected@edef\Hy@testname{#2}%
7889   \ifx\Hy@testname\empty
7890     \let\Hy@testname\Hy@undefinedname
7891   \else
7892     \Hy@pstringdef\Hy@testname{%
7893       \expandafter\HyperDestNameFilter\expandafter{\Hy@testname}%
7894     }%
7895   \fi
7896   \@pdfm@mark{%
7897     bann<<%
7898     /Type/Annot%
7899     /Subtype/Link%
7900     \ifHy@pdfa /F 4\fi
7901     \Hy@setpdfborder
7902     \expandafter\ifx\csname @#1bordercolor\endcsname\relax
7903     \else
7904       /C[\csname @#1bordercolor\endcsname]%
7905     \fi
7906     /A<<%
7907     /S/GoTo%
7908     /D(\Hy@testname)%
7909     >>%
7910     >>%
7911   }%
7912   \expandafter\Hy@colorlink\csname @#1color\endcsname
7913 }
7914 \def\hyper@linkend{%
7915   \Hy@endcolorlink
7916   \@pdfm@mark{eann}%
7917 }
7918 \def\hyper@link#1#2#3{%
7919   \hyper@linkstart{#1}{#2}#3\hyper@linkend
7920 }
7921 \def\hyper@linkfile#1#2#3{%
7922   \Hy@pstringdef\Hy@pstringF{#2}%
7923   \Hy@pstringdef\Hy@pstringD{#3}%
7924   \leavevmode
7925   \@pdfm@mark{%
7926     bann<<%
7927     /Type/Annot%
7928     /Subtype/Link%
7929     \ifHy@pdfa /F 4\fi
7930     \Hy@setpdfborder
7931     \ifx\@filebordercolor\relax
7932     \else
7933       /C[\@filebordercolor]%
7934     \fi
7935     /A<<%
7936     /S/GoToR%
7937     /F(\Hy@pstringF)%
7938     /D\ifx\#3\[\[0 \@pdfstartview\else(\Hy@pstringD)\fi
7939     \Hy@SetNewWindow
7940     >>%
7941     >>%

```

```

7942 }%
7943 \Hy@colorlink\@filecolor#1\Hy@endcolorlink
7944 \@pdfm@mark{eann}%
7945 }
7946 \def\hyper@linkurl#1#2{%
7947 \Hy@pstringdef\Hy@pstringURI{#2}%
7948 \leavevmode
7949 \@pdfm@mark{%
7950   bann<<%
7951     /Type/Annot%
7952     /Subtype/Link%
7953     \ifHy@pdfa /F 4\fi
7954     \Hy@setpdfborder
7955     \ifx\@urlbordercolor\relax
7956     \else
7957       /C[\@urlbordercolor]%
7958     \fi
7959     /A<<%
7960     /S/URI%
7961     /URI(\Hy@pstringURI)%
7962   >>%
7963   >>%
7964 }%
7965 \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
7966 \@pdfm@mark{eann}%
7967 }
7968 \def\Acrobatmenu#1#2{%
7969 \Hy@Acrobatmenu{#1}{#2}{%
7970   \@pdfm@mark{%
7971     bann<<%
7972       /Type/Annot%
7973       /Subtype/Link%
7974       \ifHy@pdfa /F 4\fi
7975       /A<<%
7976       /S/Named%
7977       /N/#1%
7978     >>%
7979     \Hy@setpdfborder
7980     \ifx\@menubordercolor\relax
7981     \relax
7982     /C[\@menubordercolor]%
7983     \fi
7984   >>%
7985   }%
7986   \Hy@colorlink\@menucolor#2\Hy@endcolorlink
7987   \@pdfm@mark{eann}%
7988 }%
7989 }
7990 \ifx\@pdfproducer\relax
7991 \def\@pdfproducer{dvipdfm}%

```

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

```

7992 \begingroup\expandafter\expandafter\expandafter\endgroup
7993 \expandafter\ifx\csname XeTeXversion\endcsname\relax
7994 \else
7995   \edef\@pdfproducer{XeTeX \the\XeTeXversion\XeTeXrevision}%
7996 \fi
7997 \fi

```

```

7998 \def\PDF@FinishDoc{%
7999   \Hy@UseMaketitleInfos
8000   \@pdfm@mark{%
8001     docinfo<<%
8002       /Title(\@pdftitle)%
8003       /Subject(\@pdfsubject)%
8004       /Creator(\@pdfcreator)%
8005       \ifx\@pdfcreationdate\@empty
8006       \else
8007         /CreationDate(\@pdfcreationdate)%
8008       \fi
8009       \ifx\@pdfmoddate\@empty
8010       \else
8011         /ModDate(\@pdfmoddate)%
8012       \fi
8013       /Author(\@pdfauthor)%
8014       \ifx\@pdfproducer\relax
8015       \else
8016         /Producer(\@pdfproducer)%
8017       \fi
8018       /Keywords(\@pdfkeywords)%
8019     >>%
8020   }%
8021   \Hy@DisableOption{pdfauthor}%
8022   \Hy@DisableOption{pdftitle}%
8023   \Hy@DisableOption{pdfsubject}%
8024   \Hy@DisableOption{pdfcreator}%
8025   \Hy@DisableOption{pdfcreationdate}%
8026   \Hy@DisableOption{pdfmoddate}%
8027   \Hy@DisableOption{pdfproducer}%
8028   \Hy@DisableOption{pdfkeywords}%
8029 }

8030 \def\PDF@SetupDoc{%
8031   \edef\Hy@temp{%
8032     \ifHy@toolbar\else /HideToolbar true\fi
8033     \ifHy@menubar\else /HideMenubar true\fi
8034     \ifHy>windowui\else /HideWindowUI true\fi
8035     \ifHy@fitwindow /FitWindow true\fi
8036     \ifHy@centerwindow /CenterWindow true\fi
8037     \ifHy@displaydoctitle /DisplayDocTitle true\fi
8038     \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
8039     \Hy@UseNameKey{Direction}\@pdfdirection
8040     \Hy@UseNameKey{ViewArea}\@pdfviewarea
8041     \Hy@UseNameKey{ViewClip}\@pdfviewclip
8042     \Hy@UseNameKey{PrintArea}\@pdfprintarea
8043     \Hy@UseNameKey{PrintClip}\@pdfprintclip
8044     \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
8045     \Hy@UseNameKey{Duplex}\@pdfduplex
8046     \ifx\@pdfpicktraybypdfsize\@empty
8047     \else
8048       /PickTrayByPDFSize \@pdfpicktraybypdfsize
8049     \fi
8050     \ifx\@pdfprintpagerange\@empty
8051     \else
8052       /PrintPageRange[\@pdfprintpagerange]%
8053     \fi
8054     \ifx\@pdfnumcopies\@empty

```

```

8055 \else
8056 /NumCopies \@pdfnumcopies
8057 \fi
8058 }%
8059 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
8060 \@pdfm@mark{%
8061 docview<<%
8062 \ifx\@pdfstartpage\@empty
8063 \else
8064 \ifx\@pdfstartview\@empty
8065 \else
8066 /OpenAction[@page\@pdfstartpage\@pdfstartview]%
8067 \fi
8068 \fi
8069 \ifx\@baseurl\@empty
8070 \else
8071 /URI<</Base(\Hy@pstringB)>>%
8072 \fi
8073 /PageMode/\@pdfpagemode
8074 \ifx\Hy@temp\@empty
8075 \else
8076 /ViewerPreferences<<\Hy@temp>>%
8077 \fi
8078 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
8079 \ifx\@pdflang\@empty
8080 \else
8081 /Lang(\@pdflang)%
8082 \fi
8083 >>%
8084 }%
8085 \ifx\@pdfpagescrop\@empty
8086 \else
8087 \@pdfm@mark{put @pages <</CropBox[\@pdfpagescrop]>>}%
8088 \fi
8089 }

8090 \AtBeginShipoutFirst{%
8091 \ifx\special@paper\@empty\else
8092 \ifHy@setpagesize
8093 \special{papersize=\special@paper}%
8094 \fi
8095 \fi
8096 \Hy@DisableOption{setpagesize}%
8097 }
8098 </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.

```

8099 <*vtexhtml>
8100 \providecommand*{\XR@ext}{htm}
8101 \RequirePackage{vtexhtml}
8102 \newif\if@Localurl
8103 \def\PDF@FinishDoc{}
8104 \def\PDF@SetupDoc{%
8105 \ifx\@baseurl\@empty

```



```

8106 \else
8107 \special{!direct <base href="\@baseurl">}%
8108 \fi
8109 }
8110 \def\@urltype{url}
8111 \def\hyper@link#1#2#3{%
8112 \leavevmode
8113 \special{!direct <a href=%
8114 \hyper@quote\hyper@hash\HyperDestNameFilter{#2}\hyper@quote>}%
8115 #3%
8116 \special{!direct </a>}%
8117 }
8118 \def\hyper@linkurl#1#2{%
8119 \begingroup
8120 \hyper@chars
8121 \leavevmode
8122 \MathBSuppress=1\relax
8123 \special{!direct <a href=%
8124 \hyper@quote\HyperDestNameFilter{#2}\hyper@quote>}%
8125 #1%
8126 \MathBSuppress=0\relax
8127 \special{!direct </a>}%
8128 \endgroup
8129 }
8130 \def\hyper@linkfile#1#2#3{%
8131 \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\\else\\#3\fi}%
8132 }
8133 \def\hyper@linkstart#1#2{%
8134 \def\Hy@tempa{#1}\ifx\Hy@tempa\@urltype
8135 \@Localurltrue
8136 \special{!direct <a href=\hyper@quote#2\hyper@quote>}%
8137 \else
8138 \@Localurlfalse
8139 \begingroup
8140 \hyper@chars
8141 \special{!aref \HyperDestNameFilter{#2}}%
8142 \endgroup
8143 \fi
8144 }
8145 \def\hyper@linkend{%
8146 \if@Localurl
8147 \special{!endaref}%
8148 \else
8149 \special{!direct </a>}%
8150 \fi
8151 }
8152 \def\hyper@anchorstart#1{%
8153 \Hy@SaveLastskip
8154 \begingroup
8155 \hyper@chars
8156 \special{!aname #1}%
8157 \special{!direct <a name=%
8158 \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
8159 \endgroup
8160 \Hy@activeanchortrue
8161 }
8162 \def\hyper@anchorend{%

```

```

8163 \special{!direct </a>}%
8164 \Hy@activeanchorfalse
8165 \Hy@RestoreLastskip
8166 }
8167 \def\hyper@anchor#1{%
8168 \Hy@SaveLastskip
8169 \begingroup
8170 \let\protect=\string
8171 \hyper@chars
8172 \leavevmode
8173 \special{!aname #1}%
8174 \special{!direct <a name=%
8175 \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
8176 \endgroup
8177 \Hy@activeanchortrue
8178 \bgroup\anchor@spot\egroup
8179 \special{!direct </a>}%
8180 \Hy@activeanchorfalse
8181 \Hy@RestoreLastskip
8182 }
8183 \def\@Form[#1]{\typeout{Sorry, TeXpider does not yet support FORMs}}
8184 \def\@endForm{}
8185 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
8186 \typeout{Sorry, TeXpider does not yet support FORM gauges}%
8187 }
8188 \def\@TextField[#1]#2{% parameters, label
8189 \typeout{Sorry, TeXpider does not yet support FORM text fields}%
8190 }
8191 \def\@CheckBox[#1]#2{% parameters, label
8192 \typeout{Sorry, TeXpider does not yet support FORM checkboxes}%
8193 }
8194 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
8195 \typeout{Sorry, TeXpider does not yet support FORM choice menus}%
8196 }
8197 \def\@PushButton[#1]#2{% parameters, label
8198 \typeout{Sorry, TeXpider does not yet support FORM pushbuttons}%
8199 }
8200 \def\@Reset[#1]#2{%
8201 \typeout{Sorry, TeXpider does not yet support FORMs}%
8202 }
8203 \def\@Submit[#1]#2{%
8204 \typeout{Sorry, TeXpider does not yet support FORMs}%
8205 }
8206 </vtexhtml>
8207 <*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.

```

8208 \ifx\mediaheight\@undefined
8209 \else
8210 \ifx\mediaheight\relax
8211 \else
8212 \ifHy@setpagesize
8213 \providecommand*{\VTeXInitMediaSize}{%
8214 \@ifundefined{stockwidth}{%
8215 \ifdim\paperheight>0pt %

```

```

8216         \setlength\mediaheight\paperheight
8217     \fi
8218     \ifdim\paperheight>0pt %
8219         \setlength\mediawidth\paperwidth
8220     \fi
8221 }{%
8222     \ifdim\stockheight>0pt %
8223         \setlength\mediaheight\stockheight
8224     \fi
8225     \ifdim\stockwidth>0pt %
8226         \setlength\mediawidth\stockwidth
8227     \fi
8228 }%
8229 }%
8230 \AtBeginDocument{\VTeXInitMediaSize}%
8231 \fi
8232 \Hy@DisableOption{setpagesize}%
8233 \fi
8234 \fi

```

Older versions of VTeX require xyz in lower case.

```

8235 \providecommand*\@pdfview{xyz}
8236 \providecommand*\@pdfborder{0 0 1}
8237 \providecommand*\@pdfborderstyle{}
8238 \let\CurrentBorderColor\@linkbordercolor
8239 \def\hyper@anchor#1{%
8240     \Hy@SaveLastskip
8241     \begingroup
8242         \let\protect=\string
8243         \hyper@chars
8244         \special{!aname \HyperDestNameFilter{#1};\@pdfview}%
8245     \endgroup
8246     \Hy@activeanchortrue
8247     \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
8248     \Hy@activeanchorfalse
8249     \Hy@RestoreLastskip
8250 }
8251 \def\hyper@anchorstart#1{%
8252     \Hy@SaveLastskip
8253     \begingroup
8254         \hyper@chars
8255         \special{!aname \HyperDestNameFilter{#1};\@pdfview}%
8256     \endgroup
8257     \Hy@activeanchortrue
8258 }
8259 \def\hyper@anchorend{%
8260     \Hy@activeanchorfalse
8261     \Hy@RestoreLastskip
8262 }
8263 \def\@urltype{url}
8264 \def\Hy@undefinedname{UNDEFINED}
8265 \def\hyper@linkstart#1#2{%
8266     \Hy@pstringdef\Hy@pstringURI{#2}%
8267     \expandafter\Hy@colorlink\csname @#1color\endcsname
8268     \@ifundefined{#@#1bordercolor}{%
8269         \let\CurrentBorderColor\relax
8270     }{%
8271         \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%

```

```

8272 }%
8273 \def\Hy@tempa{#1}%
8274 \ifx\Hy@tempa\@urltype
8275   \special{!%
8276     aref <u=/Type /Action /S /URI /URI (\Hy@pstringURI)>;%
8277     a=<%
8278       \ifHy@pdfa /F 4\fi
8279       \Hy@setpdfborder
8280       \ifx\CurrentBorderColor\relax
8281       \else
8282         /C [\CurrentBorderColor]%
8283       \fi
8284     >%
8285   }%
8286 \else
8287   \protected@edef\Hy@testname{#2}%
8288   \ifx\Hy@testname\@empty
8289     \let\Hy@testname\Hy@undefinedname
8290   \fi
8291   \special{!%
8292     aref \expandafter\HyperDestNameFilter
8293     \expandafter{\Hy@testname};%
8294     a=<%
8295       \ifHy@pdfa /F 4\fi
8296       \Hy@setpdfborder
8297       \ifx\CurrentBorderColor\relax
8298       \else
8299         /C [\CurrentBorderColor]%
8300       \fi
8301     >%
8302   }%
8303 \fi
8304 }
8305 \def\hyper@linkend{%
8306   \special{!endaref}%
8307   \Hy@endcolorlink
8308 }
8309 \def\hyper@linkfile#1#2#3{%
8310   \leavevmode
8311   \special{!%
8312     aref <%
8313     \ifnum\Hy@VTeXversion>753 \ifHy@newwindow n\fi\fi
8314     f=#2>#3;%
8315     a=<%
8316       \ifHy@pdfa /F 4\fi
8317       \Hy@setpdfborder
8318       \ifx\@filebordercolor\relax
8319       \else
8320         /C [\@filebordercolor]%
8321       \fi
8322     >%
8323   }%
8324   \Hy@colorlink\@filecolor#1\Hy@endcolorlink
8325   \special{!endaref}%
8326 }
8327 \def\hyper@linkurl#1#2{%
8328   \begingroup

```

```

8329 \Hy@pstringdef\Hy@pstringURI{#2}%
8330 \hyper@chars
8331 \leavevmode
8332 \special{!%
8333   aref <u=/Type /Action /S /URI /URI (\Hy@pstringURI)>;%
8334   a=<%
8335     \ifHy@pdfa /F 4\fi
8336     \Hy@setpdfborder
8337     \ifx\@urlbordercolor\relax
8338     \else
8339       /C [\@urlbordercolor]%
8340     \fi
8341   >%
8342 }%
8343 \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
8344 \special{!endaref}%
8345 \endgroup
8346 }
8347 \def\hyper@link#1#2#3{%
8348   \@ifundefined{#@1bordercolor}{%
8349     \let\CurrentBordercolor\relax
8350   }{%
8351     \edef\CurrentBordercolor{\csname @1bordercolor\endcsname}%
8352   }%
8353   \leavevmode
8354   \protected@edef\Hy@testname{#2}%
8355   \ifx\Hy@testname\@empty
8356     \let\Hy@testname\Hy@undefinedname
8357   \fi
8358   \special{!%
8359     aref \expandafter\HyperDestNameFilter
8360       \expandafter{\Hy@testname};%
8361     a=<%
8362       \ifHy@pdfa /F 4\fi
8363       \Hy@setpdfborder
8364       \ifx\CurrentBordercolor\relax
8365       \else
8366         /C [\CurrentBordercolor]%
8367       \fi
8368     >%
8369   }%
8370   \expandafter\Hy@colorlink\csname @1color\endcsname#3\Hy@endcolorlink
8371   \special{!endaref}%
8372 }
8373 \def\hyper@image#1#2{%
8374   \hyper@linkurl{#2}{#1}%
8375 }
8376 \def\@hyper@launch run:#1\#2#3{%
8377   \Hy@pstringdef\Hy@pstringF{#1}%
8378   \Hy@pstringdef\Hy@pstringP{#3}%
8379   \leavevmode
8380   \special{!aref %
8381     <u=%
8382       /Type/Action%
8383       /S/Launch%
8384       /F(\Hy@pstringF)%
8385       \Hy@SetNewWindow

```

```

8386 \ifx\#3\else /Win<</F(\Hy@pstringF)/P(\Hy@pstringP)>>\fi%
8387 >;%
8388 a=<%
8389 \ifHy@pdfa /F 4\fi
8390 \Hy@setpdfborder
8391 \ifx\@runbordercolor\relax
8392 \else
8393 /C[\@runbordercolor]%
8394 \fi
8395 >%
8396 }%
8397 \Hy@colorlink\@runcolor#2\Hy@endcolorlink
8398 \special{!endaref}%
8399 }
8400 \def\Acrobatmenu#1#2{%
8401 \Hy@Acrobatmenu{#1}{#2}{%
8402 \special{!%
8403 aref <u=/S /Named /N /#1>;%
8404 a=<%
8405 \ifHy@pdfa /F 4\fi
8406 \Hy@setpdfborder
8407 \ifx\@menubordercolor\relax
8408 \else
8409 /C[\@menubordercolor]%
8410 \fi
8411 >%
8412 }%
8413 \Hy@colorlink\@menucolor#2\Hy@endcolorlink
8414 \special{!endaref}%
8415 }%
8416 }

```

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

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

Please never use `\@ifundefined{VTeXversion}{...}{...}` globally.

```

8417 \ifnum\Hy@VTeXversion<702 %
8418 \else
8419 \def\hyper@pagetransition{%
8420 \ifx\@pdfpagetransition\relax
8421 \else
8422 \ifx\@pdfpagetransition\@empty

```

Standard incantation.

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

```

8423 \else
8424 \hvtex@parse@trans\@pdfpagetransition
8425 \fi
8426 \fi
8427 }%

```

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

Syntax of  $\text{\TeX}$  `\special{!trans <transition_effect>}`:

```

<transition_effect> ::= <transition_style>[,<transition_duration>]
<transition_style> ::= <Blinds_effect> | <Box_effect> |
                        <Dissolve_effect> | <Glitter_effect> |
                        <Split_effect> | <Wipe_effect>
<Blinds_effect> ::= B[<effect_dimension>]

```

```

<Box_effect> ::= X[<effect_motion>]
<Dissolve_effect> ::= D
<Glitter_effect> ::= G[<effect_direction>]
<Split_effect> ::= S[<effect_motion>][<effect_dimension>]
<Wipe_effect> ::= W[<effect_direction>]
<Replace_effect> ::= R
<effect_direction> ::= <number>
<effect_dimension> ::= H | V
<effect_motion> ::= I | O
<transition_duration> ::= <number>

```

Transition codes:

```

8428 \def\hvtex@trans@effect@Blinds{\def\hvtex@trans@code{B}}%
8429 \def\hvtex@trans@effect@Box{\def\hvtex@trans@code{X}}%
8430 \def\hvtex@trans@effect@Dissolve{\def\hvtex@trans@code{D}}%
8431 \def\hvtex@trans@effect@Glitter{\def\hvtex@trans@code{G}}%
8432 \def\hvtex@trans@effect@Split{\def\hvtex@trans@code{S}}%
8433 \def\hvtex@trans@effect@Wipe{\def\hvtex@trans@code{W}}%
8434 \def\hvtex@trans@effect@R{\def\hvtex@trans@code{R}}%

```

Optional parameters:

```

8435 \def\hvtex@par@dimension{/Dm}%
8436 \def\hvtex@par@direction{/Di}%
8437 \def\hvtex@par@duration{/D}%
8438 \def\hvtex@par@motion{/M}%

```

Tokenizer:

```

8439 \def\hvtex@gettoken{\expandafter\hvtex@gettoken@\hvtex@buffer\@nil}%

```

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

```

8440 \def\hvtex@gettoken#1 #2\@nil{%
8441   \edef\hvtex@token{#1}%
8442   \edef\hvtex@buffer{#2}%
8443 }%
8444 \def\hvtex@parse@trans#1{%

```

Initializing code:

```

8445 \let\hvtex@trans@code\@empty
8446 \let\hvtex@param@dimension\@empty
8447 \let\hvtex@param@direction\@empty
8448 \let\hvtex@param@duration\@empty
8449 \let\hvtex@param@motion\@empty
8450 \edef\hvtex@buffer{#1\space}%

```

First token is the PDF transition name without escape.

```

8451 \hvtex@gettoken
8452 \ifx\hvtex@token\@empty

```

Leading space(s)?

```

8453 \ifx\hvtex@buffer\@empty

```

The buffer is empty, nothing to do.

```

8454 \else
8455   \hvtex@gettoken
8456 \fi
8457 \fi
8458 \csname hvtex@trans@effect@\hvtex@token\endcsname

```

Now is time to parse optional parameters.

```

8459 \hvtex@trans@params
8460 }%

```

Reentrant macro to parse optional parameters.

```

8461 \def\hvtex@trans@params{%
8462   \ifx\hvtex@buffer\@empty
8463   \else
8464     \hvtex@gettoken
8465     \let\hvtex@trans@par\hvtex@token
8466     \ifx\hvtex@buffer\@empty
8467     \else
8468       \hvtex@gettoken
8469       \ifx\hvtex@trans@par\hvtex@par@duration

```

/D is the effect duration in seconds. V<sub>T</sub>E<sub>X</sub> special takes it in milliseconds.

```

8470       \let\hvtex@param@duration\hvtex@token
8471     \else \ifx\hvtex@trans@par\hvtex@par@motion

```

/M can be either /I or /O

```

8472       \expandafter\edef\expandafter\hvtex@param@motion
8473       \expandafter{\expandafter\@gobble\hvtex@token}%
8474     \else \ifx\hvtex@trans@par\hvtex@par@dimension

```

/Dm can be either /H or /V

```

8475       \expandafter\edef\expandafter\hvtex@param@dimension
8476       \expandafter{\expandafter\@gobble\hvtex@token}%
8477     \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).

```

8478       \let\hvtex@param@direction\hvtex@token
8479       \fi\fi\fi\fi
8480     \fi
8481   \fi
8482   \ifx\hvtex@buffer\@empty
8483     \let\next\hvtex@produce@trans
8484   \else
8485     \let\next\hvtex@trans@params
8486   \fi
8487   \next
8488 }%

```

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

```

8489 \def\hvtex@produce@trans{%
8490   \let\vtex@trans@special\@empty
8491   \if S\hvtex@trans@code
8492     \edef\vtex@trans@special{\hvtex@trans@code
8493       \hvtex@param@dimension\hvtex@param@motion}%
8494   \else\if B\hvtex@trans@code
8495     \edef\vtex@trans@special{%
8496       \hvtex@trans@code\hvtex@param@dimension
8497     }%
8498   \else\if X\hvtex@trans@code
8499     \edef\vtex@trans@special{%
8500       \hvtex@trans@code\hvtex@param@motion
8501     }%
8502   \else\if W\hvtex@trans@code
8503     \edef\vtex@trans@special{%
8504       \hvtex@trans@code\hvtex@param@direction
8505     }%
8506   \else\if D\hvtex@trans@code

```



```

8507     \let\vtex@trans@special\hvtex@trans@code
8508     \else\if R\hvtex@trans@code
8509         \let\vtex@trans@special\hvtex@trans@code
8510     \else\if G\hvtex@trans@code
8511         \edef\vtex@trans@special{%
8512             \hvtex@trans@code\hvtex@param@direction
8513         }%
8514     \fi\fi\fi\fi\fi\fi\fi
8515     \ifx\vtex@trans@special\@empty
8516     \else
8517         \ifx\hvtex@param@duration\@empty
8518         \else
8519             \setlength{\dimen@}{\hvtex@param@duration\p}%

```

I'm not guilty of possible overflow.

```

8520         \multiply\dimen@\@m
8521         \edef\vtex@trans@special{%
8522             \vtex@trans@special,\strip@pt\dimen@
8523         }%
8524     \fi

```

And all the mess is just for this.

```

8525     \special{!trans \vtex@trans@special}%
8526     \fi
8527 }%

8528 \def\hyper@pageduration{%
8529     \ifx\@pdfpageduration\relax
8530     \else
8531         \ifx\@pdfpageduration\@empty
8532             \special{!duration-}%
8533         \else
8534             \special{!duration \@pdfpageduration}%
8535         \fi
8536     \fi
8537 }%

8538 \def\hyper@pagehidden{%
8539     \ifHy@useHidKey
8540         \special{!hidden\ifHy@pdfpagehidden +\else -\fi}%
8541     \fi
8542 }%

8543 \g@addto@macro\Hy@EveryPageBoxHook{%
8544     \hyper@pagetransition
8545     \hyper@pageduration
8546     \hyper@pagehidden
8547 }%
8548 \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

```

8549 \ifx\@pdfproducer\relax
8550   \def\@pdfproducer{VTeX}%
8551   \ifnum\Hy@VTeXversion>\z@
8552     \count@\VTeXversion
8553     \divide\count@ 100 %
8554     \edef\@pdfproducer{\@pdfproducer\space v\the\count@}%
8555     \multiply\count@ -100 %
8556     \advance\count@\VTeXversion
8557     \edef\@pdfproducer{%
8558       \@pdfproducer
8559       .\ifnum\count@<10 0\fi\the\count@
8560       \ifx\VTeXOS\undefined\else
8561         \ifnum\VTeXOS>0 %
8562           \ifnum\VTeXOS<6 %
8563             \space(%
8564             \ifcase\VTeXOS
8565               \or Windows\or Linux\or OS/2\or MacOS\or MacOS/X%
8566             \fi
8567             )%
8568           \fi
8569         \fi
8570       \fi
8571       ,\space
8572       \ifnum\OpMode=\@ne PDF\else PS\fi
8573       \space backend%
8574       \ifx\gexmode\undefined\else
8575         \ifnum\gexmode>\z@\space with GeX\fi
8576       \fi
8577     }%
8578   \fi
8579 \fi

```

Current !pdfinfo key syntax:

Key	Field	Type
a	<b>Author</b>	String
b	<b>CropBox</b>	String
c	<b>Creator</b>	String
k	<b>Keywords</b>	String
l	<b>PageLayout</b>	PS
p	<b>PageMode</b>	PS
r	<b>Producer</b>	String
s	<b>Subject</b>	String
t	<b>Title</b>	String
u	<b>URI</b>	PS
v	<b>ViewPreferences</b>	PS

Note: PS objects that are dicts are in <<< . . >>> (yuck; no choice).

```

8580 \def\PDF@SetupDoc{%
8581   \ifx\@pdfpagescrop\@empty
8582   \else
8583     \special{!pdfinfo b=<\@pdfpagescrop>}%
8584   \fi
8585   \ifx\@pdfstartpage\@empty
8586   \else
8587     \ifx\@pdfstartview\@empty
8588     \else
8589       \special{!onopen Page\@pdfstartpage}%
8590     \fi

```

```

8591 \fi
8592 \special{!pdfinfo p=<\/\@pdfpagemode>}%
8593 \ifx\@baseurl\@empty
8594 \else
8595 \special{!pdfinfo u=<<<\/Base (\@baseurl)>>>}%
8596 \fi
8597 \special{!pdfinfo v=<<<%
8598 \ifHy@toolbar\else /HideToolbar true\fi
8599 \ifHy@menubar\else /HideMenubar true\fi
8600 \ifHy>windowui\else /HideWindowUI true\fi
8601 \ifHy@fitwindow /FitWindow true\fi
8602 \ifHy@centerwindow /CenterWindow true\fi
8603 \ifHy@displaydoctitle /DisplayDocTitle true\fi
8604 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
8605 \Hy@UseNameKey{Direction}\@pdfdirection
8606 \Hy@UseNameKey{ViewArea}\@pdfviewarea
8607 \Hy@UseNameKey{ViewClip}\@pdfviewclip
8608 \Hy@UseNameKey{PrintArea}\@pdfprintarea
8609 \Hy@UseNameKey{PrintClip}\@pdfprintclip
8610 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
8611 \Hy@UseNameKey{Duplex}\@pdfduplex
8612 \ifx\@pdfpicktraybypdfsize\@empty
8613 \else
8614 /PickTrayByPDFSize \@pdfpicktraybypdfsize
8615 \fi
8616 \ifx\@pdfprintpagerange\@empty
8617 \else
8618 /PrintPageRange[\@pdfprintpagerange]%
8619 \fi
8620 \ifx\@pdfnumcopies\@empty
8621 \else
8622 /NumCopies \@pdfnumcopies
8623 \fi
8624 >>>}%
8625 \ifx\@pdfpagelayout\@empty
8626 \else
8627 \special{!pdfinfo l=<\/\@pdfpagelayout\space>}%
8628 \fi
8629 }%
8630 \def\PDF@FinishDoc{%
8631 \Hy@UseMaketitleInfos
8632 \special{!pdfinfo a=<\/\@pdfauthor>}%
8633 \special{!pdfinfo t=<\/\@pdftitle>}%
8634 \special{!pdfinfo s=<\/\@pdfsubject>}%
8635 \special{!pdfinfo c=<\/\@pdfcreator>}%
8636 \ifx\@pdfproducer\relax
8637 \else
8638 \special{!pdfinfo r=<\/\@pdfproducer>}%
8639 \fi
8640 \special{!pdfinfo k=<\/\@pdfkeywords>}%
8641 \Hy@DisableOption{pdfauthor}%
8642 \Hy@DisableOption{pdftitle}%
8643 \Hy@DisableOption{pdfsubject}%
8644 \Hy@DisableOption{pdfcreator}%
8645 \Hy@DisableOption{pdfcreationdate}%
8646 \Hy@DisableOption{pdfmoddate}%
8647 \Hy@DisableOption{pdfproducer}%

```

```

8648 \Hy@DisableOption{pdfkeywords}%
8649 }
8650 \</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.

```

8651 <dviwindo>\def\literalps@out#1{\special{ps:#1}}%
8652 <package>\providecommand*\Hy@DistillerDestFix{}
8653 <*pdfmark | dviwindo>
8654 \def\Hy@DistillerDestFix{%
8655   \begingroup
8656     \let\x\literalps@out

```

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

```

8657   \ifnum \@ifundefined{OpMode}{0}{%
8658     \@ifundefined{gexmode}{0}{%
8659       \ifnum\gexmode>0 \OpMode\else 0\fi
8660     }>1 %
8661   \def\x##1{%
8662     \immediate\special{!=##1}%
8663   }%
8664 \fi
8665 \x{%
8666   /product where{%
8667     pop %
8668     product(Distiller)search{%
8669       pop pop pop %
8670       version(.)search{%
8671         exch pop exch pop%
8672         (3011)eq{%
8673           gsave %
8674           newpath 0 0 moveto closepath clip%
8675           /Courier findfont 10 scalefont setfont %
8676           72 72 moveto(.)show %
8677           grestore%
8678         }if%
8679       }{pop}ifelse%
8680     }{pop}ifelse%
8681   }if%
8682 }%
8683 \endgroup
8684 }
8685 </pdfmark | dviwindo>

```

## 46.8 Direct pdfmark support

Drivers that load pdfmark.def have to provide the correct macro definitions of

<code>\pdfproducer</code>	for document information
<code>\literalps@out</code>	PostScript output
<code>\headerps@out</code>	PostScript output that goes in the header area

and the correct definitions of the following PostScript procedures:

<code>H.S</code>	start of anchor, link or rect
<code>#1 H.A</code>	end of anchor, argument=baselineskip in pt
<code>#1 H.L</code>	end of link, argument=baselineskip in pt
<code>H.R</code>	end of rect
<code>H.B</code>	raw rect code

```

8686 (*pdfmark)
8687 \Hy@breaklinks@unsupported
8688 \def\hyper@anchor#1{%
8689   \Hy@SaveLastskip
8690   \beginngroup
8691     \pdfmark[\anchor@spot]{%
8692       pdfmark=/DEST,%
8693       linktype=anchor,%
8694       View=/\@pdfview \@pdfviewparams,%
8695       DestAnchor={#1}%
8696     }%
8697   \endgroup
8698   \Hy@RestoreLastskip
8699 }
8700 \@ifundefined{hyper@anchorstart}{\endinput}{}
8701 \def\hyper@anchorstart#1{%
8702   \Hy@SaveLastskip
8703   \literalps@out{H.S}%
8704   \xdef\hyper@currentanchor{#1}%
8705   \Hy@activeanchortrue
8706 }
8707 \def\hyper@anchorend{%
8708   \literalps@out{\strip@pt@and@otherjunk\baselineskip\space H.A}%
8709   \pdfmark{%
8710     pdfmark=/DEST,%
8711     linktype=anchor,%
8712     View=/\@pdfview \@pdfviewparams,%
8713     DestAnchor=\hyper@currentanchor,%
8714   }%
8715   \Hy@activeanchorfalse
8716   \Hy@RestoreLastskip
8717 }
8718 \def\hyper@linkstart#1#2{%
8719   \ifHy@breaklinks
8720   \else
8721     \leavevmode\hbox\bgroup
8722     \fi
8723     \expandafter\Hy@colorlink\csname @#1color\endcsname
8724     \literalps@out{H.S}%
8725     \xdef\hyper@currentanchor{#2}%
8726     \gdef\hyper@currentlinktype{#1}%
8727 }
8728 \def\hyper@linkend{%
8729   \literalps@out{\strip@pt@and@otherjunk\baselineskip\space H.L}%
8730   \@ifundefined{@\hyper@currentlinktype bordercolor}{%
8731     \let\Hy@tempcolor\relax

```

```

8732 }{%
8733   \edef\Hy@tempcolor{%
8734     \csname @\hyper@currentlinktype bordercolor\endcsname
8735   }%
8736 }%
8737 \pdfmark{%
8738   pdfmark=/ANN,%
8739   linktype=link,%
8740   Subtype=/Link,%
8741   PDFAFlags=4,%
8742   Dest=\hyper@currentanchor,%
8743   AcroHighlight=\@pdfhighlight,%
8744   Border=\@pdfborder,%
8745   BorderStyle=\@pdfborderstyle,%
8746   Color=\Hy@tempcolor,%
8747   Raw=H.B%
8748 }%
8749 \Hy@endcolorlink
8750 \ifHy@breaklinks
8751 \else
8752   \egroup
8753 \fi
8754 }

```

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.

```

8755 \begingroup
8756 \catcode'P=12 %
8757 \catcode'T=12 %
8758 \lowercase{\endgroup
8759 \gdef\rem@ptetc#1.#2PT#3!{#1\ifnum#2>\z@.#2\fi}%
8760 }
8761 \def\strip@pt@and@otherjunk#1{\expandafter\rem@ptetc\the#1!}

```

\hyper@pagetransition

```

8762 \def\hyper@pagetransition{%
8763   \ifx\@pdfpagetransition\relax
8764   \else
8765     \ifx\@pdfpagetransition\@empty
8766       % 1. Does an old entry have to be deleted?
8767       % 2. If 1=yes, how to delete?
8768     \else
8769       \pdfmark{%
8770         pdfmark=/PUT,%
8771         Raw={%
8772           \string{ThisPage\string}%
8773           <</Trans << /S /\@pdfpagetransition\space >> >>%
8774         }%
8775       }%
8776     \fi
8777 \fi
8778 }

```

\hyper@pageduration

```

8779 \def\hyper@pageduration{%
8780   \ifx\@pdfpageduration\relax

```

```

8781 \else
8782   \ifx\@pdfpageduration\@empty
8783     % 1. Does an old entry have to be deleted?
8784     % 2. If 1=yes, how to delete?
8785   \else
8786     \pdfmark{%
8787       pdfmark=/PUT,%
8788       Raw={%
8789         \string{ThisPage\string}%
8790         <</Dur \@pdfpageduration>>%
8791       }%
8792     }%
8793   \fi
8794 \fi
8795 }

```

\hyper@pagehidden

```

8796 \def\hyper@pagehidden{%
8797   \ifHy@useHidKey
8798     \pdfmark{%
8799       pdfmark=/PUT,%
8800       Raw={%
8801         \string{ThisPage\string}%
8802         <</Hid \ifHy@pdfpagehidden true\else false\fi>>%
8803       }%
8804     }%
8805   \fi
8806 }

8807 \g@addto@macro\Hy@EveryPageBoxHook{%
8808   \hyper@pagetransition
8809   \hyper@pageduration
8810   \hyper@pagehidden
8811 }

8812 \def\hyper@image#1#2{%
8813   \hyper@linkurl{#2}{#1}%
8814 }

8815 \def\Hy@undefinedname{UNDEFINED}
8816 \def\hyper@link#1#2#3{%
8817   \@ifundefined{#1bordercolor}{%
8818     \let\Hy@tempcolor\relax
8819   }{%
8820     \edef\Hy@tempcolor{\csname #1bordercolor\endcsname}%
8821   }%
8822   \begin{group}
8823     \protected@edef\Hy@testname{#2}%
8824     \ifx\Hy@testname\@empty
8825       \let\Hy@testname\Hy@undefinedname
8826     \fi
8827     \pdfmark[#{#3}]{%
8828       Color=\Hy@tempcolor,%
8829       linktype={#1},%
8830       AcroHighlight=\@pdfhighlight,%
8831       Border=\@pdfborder,%
8832       BorderStyle=\@pdfborderstyle,%
8833       pdfmark=/ANN,%
8834       Subtype=/Link,%

```

```

8835         PDFAFlags=4,%
8836         Dest=\Hy@testname
8837     }%
8838 \endgroup
8839 }
8840 \newtoks\pdf@docset
8841 \def\PDF@FinishDoc{%
8842     \Hy@UseMaketitleInfos
8843     \let\Hy@temp\@empty
8844     \ifx\@pdfcreationdate\@empty
8845     \else
8846         \def\Hy@temp{CreationDate=\@pdfcreationdate,}%
8847     \fi
8848     \ifx\@pdfmoddate\@empty
8849     \else
8850         \expandafter\def\expandafter\Hy@temp\expandafter{%
8851             \Hy@temp
8852             ModDate=\@pdfmoddate,%
8853         }%
8854     \fi
8855     \ifx\@pdfproducer\relax
8856     \else
8857         \expandafter\def\expandafter\Hy@temp\expandafter{%
8858             \Hy@temp
8859             Producer=\@pdfproducer,%
8860         }%
8861     \fi
8862     \expandafter
8863     \pdfmark\expandafter{%
8864         \Hy@temp
8865         pdfmark=/DOCINFO,%
8866         Title=\@pdftitle,%
8867         Subject=\@pdfsubject,%
8868         Creator=\@pdfcreator,%
8869         Author=\@pdfauthor,%
8870         Keywords=\@pdfkeywords
8871     }%
8872     \Hy@DisableOption{pdfauthor}%
8873     \Hy@DisableOption{pdftitle}%
8874     \Hy@DisableOption{pdfsubject}%
8875     \Hy@DisableOption{pdfcreator}%
8876     \Hy@DisableOption{pdfcreationdate}%
8877     \Hy@DisableOption{pdfmoddate}%
8878     \Hy@DisableOption{pdfproducer}%
8879     \Hy@DisableOption{pdfkeywords}%
8880 }
8881 \def\PDF@SetupDoc{%
8882     \def\Hy@temp{}%
8883     \ifx\@pdfstartpage\@empty
8884     \else
8885         \ifx\@pdfstartview\@empty
8886         \else
8887             \edef\Hy@temp{%
8888                 ,Page=\@pdfstartpage
8889                 ,View=\@pdfstartview
8890             }%
8891         \fi

```



```

8892 \fi
8893 \edef\Hy@temp{%
8894     \noexpand\pdfmark{%
8895         pdfmark=/DOCVIEW,%
8896         PageMode=/\@pdfpagemode
8897         \Hy@temp
8898     }%
8899 }%
8900 \Hy@temp
8901 \ifx\@pdfpagescrop\@empty
8902 \else
8903     \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
8904 \fi
8905 \edef\Hy@temp{%
8906     \ifHy@toolbar\else /HideToolbar true\fi
8907     \ifHy@menubar\else /HideMenubar true\fi
8908     \ifHy>windowui\else /HideWindowUI true\fi
8909     \ifHy@fitwindow /FitWindow true\fi
8910     \ifHy@centerwindow /CenterWindow true\fi
8911     \ifHy@displaydoctitle /DisplayDocTitle true\fi
8912     \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
8913     \Hy@UseNameKey{Direction}\@pdfdirection
8914     \Hy@UseNameKey{ViewArea}\@pdfviewarea
8915     \Hy@UseNameKey{ViewClip}\@pdfviewclip
8916     \Hy@UseNameKey{PrintArea}\@pdfprintarea
8917     \Hy@UseNameKey{PrintClip}\@pdfprintclip
8918     \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
8919     \Hy@UseNameKey{Duplex}\@pdfduplex
8920     \ifx\@pdfpicktraybypdfsize\@empty
8921     \else
8922         /PickTrayByPDFSize \@pdfpicktraybypdfsize
8923     \fi
8924     \ifx\@pdfprintpagerange\@empty
8925     \else
8926         /PrintPageRange[\@pdfprintpagerange]%
8927     \fi
8928     \ifx\@pdfnumcopies\@empty
8929     \else
8930         /NumCopies \@pdfnumcopies
8931     \fi
8932 }%
8933 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
8934 \pdfmark{%
8935     pdfmark=/PUT,%
8936     Raw={%
8937         \string{Catalog\string}<<%
8938         \ifx\Hy@temp\@empty
8939         \else
8940             /ViewerPreferences<<\Hy@temp>>%
8941         \fi
8942         \Hy@UseNameKey{PageLayout}\@pdfpagelayout
8943         \ifx\@pdflang\@empty
8944         \else
8945             /Lang(\@pdflang)%
8946         \fi
8947         \ifx\@baseurl\@empty
8948         \else

```

```

8949      /URI<</Base(\Hy@pstringB)>>%
8950      \fi
8951      >>%
8952      }%
8953      }%
8954  }
8955  </pdfmark>
8956  <*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.

```

8957 \newif\ifHy@pdfmarkerror
8958 \def\pdfmark{\@ifnextchar [{\pdfmark@}{\pdfmark@[]}}
8959 \def\pdfmark@[#1]#2{%
8960   \Hy@pdfmarkerrorfalse
8961   \edef\@processme{\noexpand\pdf@toks={\the\pdf@defaulttoks}}%
8962   \@processme
8963   \let\pdf@type\relax
8964   \setkeys{PDF}{#2}%
8965   \ifHy@pdfmarkerror
8966   \else
8967     \ifx\pdf@type\relax
8968       \Hy@WarningNoLine{no pdfmark type specified in #2!!}%
8969       \ifx\#1\%
8970       \else
8971         \pdf@rect{#1}%
8972       \fi
8973     \else
8974       \ifx\#1\%
8975         \literalps@out{%
8976           [\the\pdf@toks\space\pdf@type\space pdfmark%
8977           ]%
8978         \else
8979           \@ifundefined{@\pdf@linktype color}{%
8980             \Hy@colorlink\@linkcolor
8981           }{%
8982             \expandafter\Hy@colorlink
8983               \csname @\pdf@linktype color\endcsname
8984           }%
8985           \pdf@rect{#1}%
8986           \literalps@out{%
8987             [\the\pdf@toks\space\pdf@type\space pdfmark%
8988             ]%
8989           \Hy@endcolorlink
8990         \fi
8991       \fi
8992     \fi
8993 }

```

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

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}

8994 \newsavebox{\pdf@box}
8995 \providecommand*{\Hy@setouterhbox}{\sbox}
8996 \providecommand*{\Hy@breaklinksunhbox}{\unhbox}
8997 \def\Hy@DEST{/DEST}
8998 \def\pdf@rect#1{%
8999   \leavevmode
9000   \ifHy@breaklinks
9001     \Hy@setouterhbox\pdf@box{#1}%
9002   \else
9003     \sbox\pdf@box{#1}%
9004   \fi
9005   \dimen@ht\pdf@box
9006   \ifdim\dp\pdf@box=\z@
9007     \literalps@out{H.S}%
9008   \else
9009     \lower\dp\pdf@box\hbox{\literalps@out{H.S}}%
9010   \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...).

```

9011 \ifHy@breaklinks
9012   \expandafter\Hy@breaklinksunhbox
9013 \else
9014   \expandafter\box
9015 \fi
9016 \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

9017 \ifdim\dimen@=\z@
9018   \literalps@out{H.R}%
9019 \else
9020   \raise\dimen@\hbox{\literalps@out{H.R}}%
9021 \fi
9022 \ifx\pdf@type\Hy@DEST
9023 \else
9024   \pdf@addtoksx{H.B}%
9025 \fi
9026 }

```

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.

```

9027 \newtoks\pdf@toks
9028 \newtoks\pdf@defaulttoks
9029 \pdf@defaulttoks={}
9030 \def\pdf@addtoks#1#2{%
9031   \edef\@processme{\pdf@toks{\the\pdf@toks/#2 #1}}%
9032   \@processme
9033 }
9034 \def\pdf@addtoksx#1{%

```

```

9035 \edef\@processme{\pdf@toks{\the\pdf@toks\space #1}}%
9036 \@processme
9037 }
9038 \def\PDFdefaults#1{%
9039 \pdf@defaulttoks={#1}%
9040 }

```

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

```

9041 % what is the type of pdfmark?
9042 \define@key{PDF}{pdfmark}{\def\pdf@type{#1}}
9043 % what is the link type?
9044 \define@key{PDF}{linktype}{\def\pdf@linktype{#1}}
9045 \def\pdf@linktype{link}
9046 % parameter is a stream of PDF
9047 \define@key{PDF}{Raw}{\pdf@addtoksx{#1}}
9048 % parameter is a name
9049 \define@key{PDF}{Action}{\pdf@addtoks{#1}{Action}}
9050 % parameter is a array
9051 \define@key{PDF}{Border}{%
9052 \edef\Hy@temp{#1}%
9053 \ifx\Hy@temp\@empty
9054 \else
9055 \pdf@addtoks{[#1]\Hy@BorderArrayPatch}{Border}% hash-ok
9056 \fi
9057 }
9058 \let\Hy@BorderArrayPatch\@empty
9059 % parameter is a dictionary
9060 \define@key{PDF}{BorderStyle}{%
9061 \edef\Hy@temp{#1}%
9062 \ifx\Hy@temp\@empty
9063 \else
9064 \pdf@addtoks{<<#1>>}{BS}%
9065 \fi
9066 }
9067 % parameter is a array
9068 \define@key{PDF}{Color}{%
9069 \ifx\relax#1\relax
9070 \else
9071 \pdf@addtoks{[#1]}{Color}% hash-ok
9072 \fi
9073 }
9074 % parameter is a string
9075 \define@key{PDF}{Contents}{\pdf@addtoks{(#1)}{Contents}}
9076 % parameter is a integer
9077 \define@key{PDF}{Count}{\pdf@addtoks{#1}{Count}}
9078 % parameter is a array
9079 \define@key{PDF}{CropBox}{\pdf@addtoks{[#1]}{CropBox}}% hash-ok
9080 % parameter is a string
9081 \define@key{PDF}{DOSFile}{\pdf@addtoks{(#1)}{DOSFile}}
9082 % parameter is a string or file
9083 \define@key{PDF}{DataSource}{\pdf@addtoks{(#1)}{DataSource}}
9084 % parameter is a destination
9085 \define@key{PDF}{Dest}{%
9086 \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
9087 \ifx\Hy@pstringDest\@empty
9088 \Hy@pdfmarkerrortrue
9089 \Hy@Warning{Destination with empty name ignored}%
9090 \else

```

```

9091 \pdf@addtoks{(\Hy@pstringDest) cvn}{Dest}%
9092 \fi
9093 }
9094 \define@key{PDF}{DestAnchor}{%
9095 \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
9096 \ifx\Hy@pstringDest\empty
9097 \Hy@pdfmarkerrortrue
9098 \Hy@Warning{Destination with empty name ignored}%
9099 \else
9100 \pdf@addtoks{(\Hy@pstringDest) cvn}{Dest}%
9101 \fi
9102 }
9103 % parameter is a string
9104 \define@key{PDF}{Dir}{\pdf@addtoks{(#1)}{Dir}}
9105 % parameter is a string
9106 \define@key{PDF}{File}{\pdf@addtoks{(#1)}{File}}
9107 % parameter is a int
9108 \define@key{PDF}{Flags}{\pdf@addtoks{#1}{Flags}}
9109 \define@key{PDF}{PDFAFlags}{%
9110 \ifHy@pdfa
9111 \pdf@addtoks{#1}{F}%
9112 \fi
9113 }
9114 % parameter is a name
9115 \define@key{PDF}{AcroHighlight}{%
9116 \begingroup
9117 \edef\x{#1}%
9118 \expandafter\endgroup\ifx\x\empty
9119 \else
9120 \pdf@addtoks{#1}{H}%
9121 \fi
9122 }
9123 % parameter is a string
9124 \define@key{PDF}{ID}{\pdf@addtoks{[#1]}{ID}}% hash-ok
9125 % parameter is a string
9126 \define@key{PDF}{MacFile}{\pdf@addtoks{(#1)}{MacFile}}
9127 % parameter is a string
9128 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
9129 % parameter is a string
9130 \define@key{PDF}{Op}{\pdf@addtoks{(#1)}{Op}}
9131 % parameter is a Boolean
9132 \define@key{PDF}{Open}{\pdf@addtoks{#1}{Open}}
9133 % parameter is a integer or name
9134 \define@key{PDF}{Page}{\pdf@addtoks{#1}{Page}}
9135 % parameter is a name
9136 \define@key{PDF}{PageMode}{\pdf@addtoks{#1}{PageMode}}
9137 % parameter is a string
9138 \define@key{PDF}{Params}{\pdf@addtoks{(#1)}{Params}}
9139 % parameter is a array
9140 \define@key{PDF}{Rect}{\pdf@addtoks{[#1]}{Rect}}% hash-ok
9141 % parameter is a integer
9142 \define@key{PDF}{SrcPg}{\pdf@addtoks{#1}{SrcPg}}
9143 % parameter is a name
9144 \define@key{PDF}{Subtype}{\pdf@addtoks{#1}{Subtype}}
9145 % parameter is a string
9146 \define@key{PDF}{Title}{\pdf@addtoks{(#1)}{Title}}
9147 % parameter is a string

```

```

9148 \define@key{PDF}{Unix}{\pdf@addtoks{(#1)}{Unix}}
9149 % parameter is a string
9150 \define@key{PDF}{UnixFile}{\pdf@addtoks{(#1)}{UnixFile}}
9151 % parameter is an array
9152 \define@key{PDF}{View}{\pdf@addtoks{[#1]}{View}}% hash-ok
9153 % parameter is a string
9154 \define@key{PDF}{WinFile}{\pdf@addtoks{(#1)}{WinFile}}

```

These are the keys used in the DOCINFO section.

```

9155 \define@key{PDF}{Author}{\pdf@addtoks{(#1)}{Author}}
9156 \define@key{PDF}{Creator}{\pdf@addtoks{(#1)}{Creator}}
9157 \define@key{PDF}{CreationDate}{\pdf@addtoks{(#1)}{CreationDate}}
9158 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
9159 \define@key{PDF}{Producer}{\pdf@addtoks{(#1)}{Producer}}
9160 \define@key{PDF}{Subject}{\pdf@addtoks{(#1)}{Subject}}
9161 \define@key{PDF}{Keywords}{\pdf@addtoks{(#1)}{Keywords}}
9162 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
9163 \define@key{PDF}{Base}{\pdf@addtoks{(#1)}{Base}}
9164 \define@key{PDF}{URI}{\pdf@addtoks{(#1)}{URI}}
9165 </pdfmarkbase>
9166 <*pdfmark>
9167 \def\Acrobatmenu#1#2{%
9168   \Hy@Acrobatmenu{#1}{#2}{%
9169     \pdfmark[#{#2}]{%
9170       linktype=menu,%
9171       pdfmark=/ANN,%
9172       AcroHighlight=\@pdfhighlight,%
9173       Border=\@pdfborder,%
9174       BorderStyle=\@pdfborderstyle,%
9175       Action={<< /Subtype /Named /N /#1 >>},%
9176       Subtype=/Link,%
9177       PDFAFflags=4%
9178     }%
9179   }%
9180 }

```

And now for some useful examples:

```

9181 \def\PDFNextPage{\@ifnextchar[{\PDFNextPage@}{\PDFNextPage@[]}}
9182 \def\PDFNextPage@[#1]#2{%
9183   \pdfmark[#{#2}]{%
9184     #1,%
9185     Border=\@pdfborder,%
9186     BorderStyle=\@pdfborderstyle,%
9187     Color=.2 .1 .5,%
9188     pdfmark=/ANN,%
9189     Subtype=/Link,%
9190     PDFAFflags=4,%
9191     Page=/Next%
9192   }%
9193 }
9194 \def\PDFPreviousPage{%
9195   \@ifnextchar[{\PDFPreviousPage@}{\PDFPreviousPage@[]}%
9196 }
9197 \def\PDFPreviousPage@[#1]#2{%
9198   \pdfmark[#{#2}]{%
9199     #1,%
9200     Border=\@pdfborder,%
9201     BorderStyle=\@pdfborderstyle,%

```

```

9202     Color=.4 .4 .1,%
9203     pdfmark=/ANN,%
9204     Subtype=/Link,%
9205     PDFAFlags=4,%
9206     Page=/Prev%
9207 }%
9208 }
9209 \def\PDFOpen#1{%
9210   \pdfmark{#1,pdfmark=/DOCVIEW}%
9211 }

```

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

```

9212 \def\hyper@linkurl#1#2{%
9213   \begingroup
9214     \Hy@pstringdef\Hy@pstringURI{#2}%
9215     \hyper@chars
9216     \leavevmode
9217     \pdfmark[{#1}]{%
9218       pdfmark=/ANN,%
9219       linktype=url,%
9220       AcroHighlight=\@pdfhighlight,%
9221       Border=\@pdfborder,%
9222       BorderStyle=\@pdfborderstyle,%
9223       Color=\@urlbordercolor,%
9224       Action={<< /Subtype /URI /URI (\Hy@pstringURI) >>},%
9225       Subtype=/Link,%
9226       PDFAFlags=4%
9227     }%
9228   \endgroup
9229 }
9230 \def\hyper@linkfile#1#2#3{%
9231   \begingroup
9232     \Hy@pstringdef\Hy@pstringF{#2}%
9233     \Hy@pstringdef\Hy@pstringD{#3}%
9234     \leavevmode
9235     \pdfmark[{#1}]{%
9236       pdfmark=/ANN,%
9237       Subtype=/Link,%
9238       PDFAFlags=4,%
9239       AcroHighlight=\@pdfhighlight,%
9240       Border=\@pdfborder,%
9241       BorderStyle=\@pdfborderstyle,%
9242       linktype=file,%
9243       Color=\@filebordercolor,%
9244       Action={%
9245         <<%
9246           /S/GoToR%
9247           \Hy@SetNewWindow
9248           /F(\Hy@pstringF)%
9249           /D\ifx\#3\[\[0 \@pdfstartview]\else(\Hy@pstringD)cvn\fi
9250         >>%
9251       }%
9252     }%
9253   \endgroup
9254 }
9255 \def\@hyper@launch run:#1\#2#3{%
9256   \begingroup
9257     \Hy@pstringdef\Hy@pstringF{#1}%

```

```

9258 \Hy@pstringdef\Hy@pstringP{#3}%
9259 \leavevmode
9260 \pdfmark[#{#2}]{%
9261   pdfmark=/ANN,%
9262   Subtype=/Link,%
9263   PDFAFlags=4,%
9264   AcroHighlight=\@pdfhighlight,%
9265   Border=\@pdfborder,%
9266   BorderStyle=\@pdfborderstyle,%
9267   linktype=run,%
9268   Color=\@runbordercolor,%
9269   Action={%
9270     <<%
9271     /S/Launch%
9272     \Hy@SetNewWindow
9273     /F(\Hy@pstringF)%
9274     \ifx\#3\%
9275     \else
9276     /Win<</P(\Hy@pstringP)/F(\Hy@pstringF)>>%
9277     \fi
9278     >>%
9279   }%
9280 }%
9281 \endgroup
9282 }
9283 </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.

```

9284 < *dvips>
9285 \providecommand*{\XR@ext}{pdf}
9286 \def\Hy@raisedlink{}
9287 \def\literalps@out#1{\special{ps:SDict begin #1 end}}%
9288 \def\headerps@out#1{\special{! #1}}%
9289 \input{pdfmark.def}%
9290 \ifx\@pdfproducer\relax
9291   \def\@pdfproducer{dvips + Distiller}%
9292 \fi
9293 \providecommand*\@pdfborder{0 0 1}
9294 \providecommand*\@pdfborderstyle{}
9295 \providecommand*\@pdfview{XYZ}
9296 \providecommand*\@pdfviewparams{ H.V}
9297 \def\Hy@BorderArrayPatch{BorderArrayPatch}
9298 \g@addto@macro\Hy@FirstPageHook{%
9299   \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.

```
9300 /DvipsToPDF{72.27 mul Resolution div} def%
9301 /PDFToDvips{72.27 div Resolution mul} def%
9302 /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.

```
9303 /BorderArrayPatch{%
9304   [exch{%
9305     dup dup type/integertype eq exch type/realtype eq or%
9306     {BPToDvips}if%
9307   }forall]%
9308 }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.

```
9309 /HyperBorder {1 PDFToDvips} def%
9310 /H.V {pdf@hoff pdf@voff null} def%
9311 /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

```
9312 /H.S {%
9313   currentpoint %
9314   HyperBorder add /pdf@lly exch def %
9315   dup DvipsToPDF 72 add /pdf@hoff exch def %
9316   HyperBorder sub /pdf@llx exch def%
9317 } def%
```

The calculation of upper left  $y$  is done without raising the point in  $\text{\TeX}$ , by simply adding on the current `\baselineskip` to the current  $y$ . This is usually too much, so we remove a notional 2 points.

We have to see what the current `baselineskip` is, and convert it to the dvips coordinate system.

Argument: `baselineskip` in pt. The  $x$  and  $y$  coordinates of the current point, minus the `baselineskip`

```
9318 /H.L {%
9319   2 sub dup%
9320   /HyperBasePt exch def %
9321   PDFToDvips /HyperBaseDvips exch def %
9322   currentpoint %
9323   HyperBaseDvips sub /pdf@ury exch def%
9324   /pdf@urx exch def%
9325 } def%
9326 /H.A {%
9327   H.L %
9328 % |pdf@voff| = the distance from the top of the page to a point
9329 % |\baselineskip| above the current point in PDF coordinates
9330   currentpoint exch pop %
9331   vsize 72 sub exch DvipsToPDF %
9332   HyperBasePt sub % baseline skip
```

```

9333     sub /pdf@voff exch def%
9334   } def%
9335   /H.R {%
9336     currentpoint %
9337     HyperBorder sub /pdf@ury exch def %
9338     HyperBorder add /pdf@urx exch def %
9339 % | /pdf@voff| = the distance from the top of the page to the current point, in
9340 % PDF coordinates
9341     currentpoint exch pop vsize 72 sub %
9342     exch DvipsToPDF sub /pdf@voff exch def%
9343   } def%
9344 }%
9345 }
9346 \AfterBeginDocument{%
9347   \ifx\special@paper\@empty\else
9348     \ifHy@setpagesize
9349       \special{papersize=\special@paper}%
9350     \fi
9351   \fi
9352   \Hy@DisableOption{setpagesize}%
9353 }
9354 </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.

```

9355 < *vtexpdfmark>
9356 \providecommand*{\XR@ext}{pdf}
9357 \def\Hy@raisedlink{}
9358 \def\literalps@out#1{\special{pS:#1}}%
9359 \def\headerps@out#1{\immediate\special{pS:#1}}%
9360 \input{pdfmark.def}%
9361 \ifx\@pdfproducer\relax
9362   \ifnum\OpMode=\@ne
9363     \def\@pdfproducer{VTeX}%
9364   \else
9365     \def\@pdfproducer{VTeX + Distiller}%
9366   \fi
9367 \fi
9368 \providecommand*\@pdfborder{0 0 1}
9369 \providecommand*\@pdfborderstyle{}
9370 \providecommand*\@pdfview{XYZ}
9371 \providecommand*\@pdfviewparams{ H.V}
9372 \g@addto@macro\Hy@FirstPageHook{%
9373   \headerps@out{%
9374     /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.

```

9375   /HyperBorder {1} def%
9376   /H.V {pdf@hoff pdf@voff null} def%
9377   /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:  $\text{pdf@lly} = Y_c - \text{HyperBorder}$ ,  $\text{pdf@hoff} = X_c + 72$ ,  $\text{pdf@llx} = X_c - \text{HyperBorder}$

```

9378    /H.S {%
9379        currentpoint %
9380        HyperBorder sub%
9381        /pdf@lly exch def %
9382        dup 72 add /pdf@hoff exch def %
9383        HyperBorder sub%
9384        /pdf@llx exch def%
9385    } def%
```

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

```

9386    /H.L {%
9387        2 sub%
9388        /HyperBasePt exch def %
9389        currentpoint %
9390        HyperBasePt add HyperBorder add%
9391        /pdf@ury exch def %
9392        HyperBorder add%
9393        /pdf@urx exch def%
9394    } def%
9395    /H.A {%
9396        H.L %
9397        currentpoint exch pop %
9398        vsize 72 sub exch %
9399        HyperBasePt add add%
9400        /pdf@voff exch def%
9401    } def%
```

$\text{pdf@ury} = Y_c + \text{HyperBorder}$ ,  $\text{pdf@urx} = X_c + \text{HyperBorder}$

```

9402    /H.R {%
9403        currentpoint %
9404        HyperBorder add%
9405        /pdf@ury exch def %
9406        HyperBorder add%
9407        /pdf@urx exch def %
9408        currentpoint exch pop vsize 72 sub add%
9409        /pdf@voff exch def%
9410    } def%
9411 }%
9412 }
9413 </vtxpdfmark>
```

## 46.11 Textures

```

9414 <*textures>
9415 \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.

```
9416 \begingroup
9417   \obeylines %
9418   \gdef\Hy@ps@CR{\noexpand
9419     }%
9420 \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`.

```
9421 \def\literalps@out#1{%
9422   \special{postscript 0 0 transform}%
9423   \special{rawpostscript itransform moveto\Hy@ps@CR #1}%
9424 }%
9425 %
```

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.

```
9426 \def\headerps@out#1{%
9427   \special{%
9428     prepostscript TeXdict begin\Hy@ps@CR
9429       #1\Hy@ps@CR
9430     end%
9431   }%
9432 }%
9433 %
```

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.

```
9434 \g@addto@macro\Hy@FirstPageHook{%
9435   \headerps@out{%
9436     /betterpdfmark {%
9437       systemdict begin %
9438         dup /BP eq%
9439         {cleartomark gsave nulldevice []}%
9440         {dup /EP eq%
9441           {cleartomark cleartomark grestore}%
9442           {cleartomark}%
9443         }ifelse%
9444       }ifelse %
9445     end%
9446   }def\Hy@ps@CR
9447   __pdfmark__ not{/pdfmark /betterpdfmark load def}if%
9448 }% end of \headerps@out
9449 }% end of \AtBeginShipoutFirst
9450 %
9451 \input{pdfmark.def}%
9452 %
9453 \ifx\@pdfproducer\relax
```

```

9454 \def\@pdfproducer{Textures + Distiller}%
9455 \fi
9456 \providecommand*\@pdfborder{0 0 1}
9457 \providecommand*\@pdfborderstyle{}
9458 \providecommand*\@pdfview{XYZ}
9459 \providecommand*\@pdfviewparams{ H.V}
9460 %

```

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  $\TeX$ .

```

9461 \headerps@out{%

```

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

```

9462 /vsize {\Hy@pageheight} def%
9463 /DvipsToPDF {} def%
9464 /PDFToDvips {} def%
9465 /BPToDvips {} def%
9466 /HyperBorder { 1 PDFToDvips } def\Hy@ps@CR
9467 /H.V {pdf@hoff pdf@voff null} def\Hy@ps@CR
9468 /H.B {/Rect[pdf@llx pdf@lly pdf@urx pdf@ury]} def\Hy@ps@CR
9469 /H.S {%
9470     currentpoint %
9471     HyperBorder add /pdf@lly exch def %
9472     dup DvipsToPDF 72 add /pdf@hoff exch def %
9473     HyperBorder sub /pdf@llx exch def%
9474 } def\Hy@ps@CR
9475 /H.L {%
9476     2 sub %
9477     PDFToDvips /HyperBase exch def %
9478     currentpoint %
9479     HyperBase sub /pdf@ury exch def%
9480     /pdf@urx exch def%
9481 } def\Hy@ps@CR
9482 /H.A {%
9483     H.L %
9484     currentpoint exch pop %
9485     vsize 72 sub exch DvipsToPDF %
9486     HyperBase sub % baseline skip
9487     sub /pdf@voff exch def%
9488 } def\Hy@ps@CR
9489 /H.R {%
9490     currentpoint %
9491     HyperBorder sub /pdf@ury exch def %
9492     HyperBorder add /pdf@urx exch def %
9493     currentpoint exch pop vsize 72 sub %
9494     exch DvipsToPDF sub /pdf@voff exch def%
9495 } def\Hy@ps@CR
9496 }

9497 \AfterBeginDocument{%
9498     \ifHy@colorlinks
9499         \headerps@out{/PDFBorder{/Border [0 0 0]}def}%
9500     \fi
9501 }

```

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.

```

9502 \expandafter\let\expandafter\keepPDF@SetupDoc
9503   \csname PDF@SetupDoc\endcsname
9504 \def\PDF@SetupDoc{%
9505   \ifx\@baseurl\@empty
9506   \else
9507     \special{html:<base href="\@baseurl">}%
9508   \fi
9509   \keepPDF@SetupDoc
9510 }
9511 \def\hyper@anchor#1{%
9512   \Hy@SaveLastskip
9513   \begingroup
9514     \let\protect=\string
9515     \special{html:<a name=%
9516       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
9517   \endgroup
9518   \Hy@activeanchortrue
9519   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
9520   \special{html:</a>}%
9521   \Hy@activeanchorfalse
9522   \Hy@RestoreLastskip
9523 }
9524 \def\hyper@anchorstart#1{%
9525   \Hy@SaveLastskip
9526   \begingroup
9527     \hyper@chars
9528     \special{html:<a name=%
9529       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
9530   \endgroup
9531   \Hy@activeanchortrue
9532 }
9533 \def\hyper@anchorend{%
9534   \special{html:</a>}%
9535   \Hy@activeanchorfalse
9536   \Hy@RestoreLastskip
9537 }
9538 \def\@urltype{url}
9539 \def\hyper@linkstart#1#2{%
9540   \expandafter\Hy@colorlink\csname @#1color\endcsname
9541   \def\Hy@tempa{#1}%
9542   \ifx\Hy@tempa\@urltype
9543     \special{html:<a href=\hyper@quote#2\hyper@quote>}%
9544   \else
9545     \begingroup
9546       \hyper@chars
9547       \special{html:<a href=%
9548         \hyper@quote\#HyperDestNameFilter{#2}\hyper@quote>}%
9549     \endgroup
9550   \fi
9551 }
9552 \def\hyper@linkend{%
9553   \special{html:</a>}%
9554   \Hy@endcolorlink
9555 }
9556 \def\hyper@linkfile#1#2#3{%

```

```

9557 \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\\else\##3\fi}%
9558 }
9559 \def\hyper@linkurl#1#2{%
9560 \leavevmode
9561 \ifHy@raiselinks
9562 \setbox\@tempboxa=\color@hbox #1\color@endbox
9563 \@linkdim\dp\@tempboxa
9564 \lower\@linkdim\hbox{%
9565 \hyper@chars
9566 \special{html:<a href=\hyper@quote#2\hyper@quote>}}%
9567 }%
9568 \Hy@colorlink\@urlcolor#1%
9569 \@linkdim\ht\@tempboxa
9570 \advance\@linkdim by -6.5\p@
9571 \raise\@linkdim\hbox{\special{html:</a>}}%
9572 \Hy@endcolorlink
9573 \else
9574 \begingroup
9575 \hyper@chars
9576 \special{html:<a href=\hyper@quote#2\hyper@quote>}}%
9577 \Hy@colorlink\@urlcolor#1%
9578 \special{html:</a>}}%
9579 \Hy@endcolorlink
9580 \endgroup
9581 \fi
9582 }

```

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

```

9583 \def\hyper@link#1#2#3{%
9584 \hyper@linkurl{#3}{\#HyperDestNameFilter{#2}}%
9585 }
9586 \def\hyper@image#1#2{%
9587 \begingroup
9588 \hyper@chars
9589 \special{html:<img src=\hyper@quote#1\hyper@quote>}}%
9590 \endgroup
9591 }
9592 </textures>

```

## 46.12 dvipsone

```

9593 % \subsection{dvipsone driver}
9594 % Over-ride the default setup macro in pdfmark driver to use Y\&Y
9595 % |\special| commands.
9596 <*dvipsone>
9597 \providecommand*\XR@ext}{pdf}
9598 \def\Hy@raisedlink{}
9599 \providecommand*\@pdfborder{0 0 1}
9600 \providecommand*\@pdfborderstyle{}
9601 \def\literalps@out#1{\special{ps:#1}}%
9602 \def\headerps@out#1{\special{headertext=#1}}%
9603 \input{pdfmark.def}%
9604 \ifx\@pdfproducer\relax
9605 \def\@pdfproducer{dvipsone + Distiller}%
9606 \fi
9607 \def\PDF@FinishDoc{%
9608 \Hy@UseMaketitleInfos
9609 \special{PDF: Keywords \@pdfkeywords}%

```

```

9610 \special{PDF: Title \@pdftitle}%
9611 \special{PDF: Creator \@pdfcreator}%
9612 \ifx\@pdfcreationdate\@empty
9613 \else
9614 \special{PDF: CreationDate \@pdfcreationdate}%
9615 \fi
9616 \ifx\@pdfmoddate\@empty
9617 \else
9618 \special{PDF: ModDate \@pdfmoddate}%
9619 \fi
9620 \special{PDF: Author \@pdfauthor}%
9621 \ifx\@pdfproducer\relax
9622 \else
9623 \special{PDF: Producer \@pdfproducer}%
9624 \fi
9625 \special{PDF: Subject \@pdfsubject}%
9626 \Hy@DisableOption{pdfauthor}%
9627 \Hy@DisableOption{pdftitle}%
9628 \Hy@DisableOption{pdfsubject}%
9629 \Hy@DisableOption{pdfcreator}%
9630 \Hy@DisableOption{pdfcreationdate}%
9631 \Hy@DisableOption{pdfmoddate}%
9632 \Hy@DisableOption{pdfproducer}%
9633 \Hy@DisableOption{pdfkeywords}%
9634 }
9635 \def\PDF@SetupDoc{%
9636 \def\Hy@temp{%
9637 \ifx\@pdfstartpage\@empty
9638 \else
9639 \ifx\@pdfstartview\@empty
9640 \else
9641 \edef\Hy@temp{%
9642 ,Page=\@pdfstartpage
9643 ,View=\@pdfstartview
9644 }%
9645 \fi
9646 \fi
9647 \edef\Hy@temp{%
9648 \noexpand\pdfmark{%
9649 pdfmark=/DOCVIEW,%
9650 PageMode=/\@pdfpagemode
9651 \Hy@temp
9652 }%
9653 }%
9654 \Hy@temp
9655 \ifx\@pdfpagescrop\@empty
9656 \else
9657 \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
9658 \fi
9659 \edef\Hy@temp{%
9660 \ifHy@toolbar\else /HideToolbar true\fi
9661 \ifHy@menubar\else /HideMenubar true\fi
9662 \ifHy@windowui\else /HideWindowUI true\fi
9663 \ifHy@fitwindow /FitWindow true\fi
9664 \ifHy@centerwindow /CenterWindow true\fi
9665 \ifHy@displaydoctitle /DisplayDocTitle true\fi
9666 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode

```



```

9667 \Hy@UseNameKey{Direction}\@pdfdirection
9668 \Hy@UseNameKey{ViewArea}\@pdfviewarea
9669 \Hy@UseNameKey{ViewClip}\@pdfviewclip
9670 \Hy@UseNameKey{PrintArea}\@pdfprintarea
9671 \Hy@UseNameKey{PrintClip}\@pdfprintclip
9672 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
9673 \Hy@UseNameKey{Duplex}\@pdfduplex
9674 \ifx\@pdfpicktraybypdfsize\@empty
9675 \else
9676 /PickTrayByPDFSize \@pdfpicktraybypdfsize
9677 \fi
9678 \ifx\@pdfprintpagerange\@empty
9679 \else
9680 /PrintPageRange[\@pdfprintpagerange]%
9681 \fi
9682 \ifx\@pdfnumcopies\@empty
9683 \else
9684 /NumCopies \@pdfnumcopies
9685 \fi
9686 }%
9687 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
9688 \pdfmark{%
9689 pdfmark=/PUT,%
9690 Raw={%
9691 \string{Catalog\string}<<%
9692 \ifx\Hy@temp\@empty
9693 \else
9694 /ViewerPreferences<<\Hy@temp>>%
9695 \fi
9696 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
9697 \ifx\@pdflang\@empty
9698 \else
9699 /Lang(\@pdflang)%
9700 \fi
9701 \ifx\@baseurl\@empty
9702 \else
9703 /URI<</Base(\Hy@pstringB)>>%
9704 \fi
9705 >>%
9706 }%
9707 }%
9708 }
9709 \providecommand*\@pdfview{XYZ}
9710 \providecommand*\@pdfviewparams{ %
9711 gsave revscl currentpoint grestore %
9712 72 add exch pop null exch null%
9713 }
9714 \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  $\TeX$ .

```

9715 \g@addto@macro\Hy@FirstPageHook{%
9716 \headerps@out{%

```

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

```

9717 /DvipsToPDF { 65781 div } def%
9718 /PDFToDvips { 65781 mul } def%
9719 /BPToDvips{65781 mul}def%
9720 /HyperBorder { 1 PDFToDvips } def%
9721 /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.

```

9722 /BorderArrayPatch{%
9723   [exch{%
9724     dup dup type/integertype eq exch type/realtype eq or%
9725     {BPToDvips}if%
9726   }forall]]%
9727 }def%
9728 /H.S {%
9729   currentpoint %
9730   HyperBorder add /pdf@lly exch def %
9731   dup DvipsToPDF 72 add /pdf@hoff exch def %
9732   HyperBorder sub /pdf@llx exch def%
9733 } def%
9734 /H.L {%
9735   2 sub %
9736   PDFToDvips /HyperBase exch def %
9737   currentpoint %
9738   HyperBase sub /pdf@ury exch def%
9739   /pdf@urx exch def%
9740 } def%
9741 /H.A {%
9742   H.L %
9743   currentpoint exch pop %
9744   HyperBase sub % baseline skip
9745   DvipsToPDF /pdf@voff exch def%
9746 } def%
9747 /H.R {%
9748   currentpoint %
9749   HyperBorder sub /pdf@ury exch def %
9750   HyperBorder add /pdf@urx exch def %
9751   currentpoint exch pop DvipsToPDF /pdf@voff exch def%
9752 } def%
9753 }%
9754 }
9755 </dvipsone>

```

## 46.13 TeX4ht

```

9756 <*tex4ht>
9757 \providecommand*{\XR@ext}{html}
9758 \def\Hy@raisedlink{}
9759 \@ifpackageloaded{tex4ht}{%
9760   \typeout{hyperref tex4ht: tex4ht already loaded}%
9761 }{%
9762   \RequirePackage[hx4ht]{tex4ht}%
9763 }
9764 \hyperlinkfileprefix{}
9765 \def\PDF@FinishDoc{}
9766 \def\PDF@SetupDoc{%
9767   \ifx\@baseurl\@empty

```

```

9768 \else
9769 \special{t4ht=<base href="\@baseurl">}%
9770 \fi
9771 }
9772 \def\hyper@anchor#1{%
9773 \Hy@SaveLastskip
9774 \begingroup
9775 \let\protect=\string
9776 \special{t4ht=<a name=%
9777 \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
9778 \endgroup
9779 \Hy@activeanchortrue
9780 \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
9781 \special{t4ht=</a>}%
9782 \Hy@activeanchorfalse
9783 \Hy@RestoreLastskip
9784 }
9785 \def\hyper@anchorstart#1{%
9786 \Hy@SaveLastskip
9787 \begingroup
9788 \hyper@chars\special{t4ht=<a name=%
9789 \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
9790 \endgroup
9791 \Hy@activeanchortrue
9792 }
9793 \def\hyper@anchorend{%
9794 \special{t4ht=</a>}%
9795 \Hy@activeanchorfalse
9796 \Hy@RestoreLastskip
9797 }
9798 \def\@urltype{url}
9799 \def\hyper@linkstart#1#2{%
9800 \expandafter\Hy@colorlink\csname @#1color\endcsname
9801 \def\Hy@tempa{#1}%
9802 \ifx\Hy@tempa\@urltype
9803 \special{t4ht=<a href=\hyper@quote#2\hyper@quote>}%
9804 \else
9805 \begingroup
9806 \hyper@chars
9807 \special{t4ht=<a href=%
9808 \hyper@quote\#\HyperDestNameFilter{#2}\hyper@quote>}%
9809 \endgroup
9810 \fi
9811 }
9812 \def\hyper@linkend{%
9813 \special{t4ht=</a>}%
9814 \Hy@endcolorlink
9815 }
9816 \def\hyper@linkfile#1#2#3{%
9817 \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\else\##3\fi}%
9818 }
9819 \def\hyper@linkurl#1#2{%
9820 \leavevmode
9821 \ifHy@raiselinks
9822 \setbox\@tempboxa=\color@hbox #1\color@endbox
9823 \@linkdim\dp\@tempboxa
9824 \lower\@linkdim\hbox{%

```

```

9825     \begingroup
9826     \hyper@chars\special{t4ht=<a href=\hyper@quote#2\hyper@quote>}}%
9827     \endgroup
9828 }%
9829 \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
9830 \@linkdim\ht\@tempboxa
9831 \advance\@linkdim by -6.5\p@
9832 \raise\@linkdim\hbox{\special{t4ht=</a>}}%
9833 \else
9834 \begingroup
9835 \hyper@chars
9836 \special{t4ht=<a href=\hyper@quote#2\hyper@quote>}}%
9837 \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
9838 \special{t4ht=</a>}}%
9839 \endgroup
9840 \fi
9841 }

```

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

```

9842 \def\hyper@link#1#2#3{%
9843   \hyper@linkurl{#3}{\#\HyperDestNameFilter{#2}}}%
9844 }
9845 \def\hyper@image#1#2{%
9846   \begingroup
9847   \hyper@chars
9848   \special{t4ht=<img src=\hyper@quote#1\hyper@quote>}}%
9849   \endgroup
9850 }
9851 \let\autoref\ref
9852 \ifx \rEfLiNK \UnDef
9853   \def\rEfLiNK #1#2{#2}%
9854 \fi
9855 \def\backref#1{}
9856 </tex4ht>
9857 <*tex4htcfg>
9858 \IfFileExists{\jobname.cfg}{\endinput}{}
9859 \Preamble{html}
9860   \begin{document}%
9861 \EndPreamble
9862 \def\TeX{TeX}
9863 \def\OMEGA{\Omega}
9864 \def\LaTeX{LaTeX}
9865 \def\LaTeXe{\LaTeX2e}
9866 \def\eTeX{e-TeX}
9867 \def\MF{Metafont}
9868 \def\MP{MetaPost}
9869 </tex4htcfg>

```

## 47 Driver-specific form support

### 47.1 pdfmarks

```

9870 <*pdfmark>
9871 \long\def\@Form[#1]{%
9872   \g@addto@macro\Hy@FirstPageHook{%
9873     \headerps@out{%
9874       [%
9875     /_objdef{pdfDocEncoding}%

```

```

9876 /type/dict%
9877 /OBJ pdfmark%
9878 [%
9879 {pdfDocEncoding}%
9880 <<%
9881 /Type/Encoding%
9882 /Differences[%
9883 24/breve/caron/circumflex/dotaccent/hungarumlaut/ogonek/ring%
9884 /tilde %
9885 39/quotesingle %
9886 96/grave %
9887 128/bullet/dagger/daggerdbl/ellipsis/emdash/endash/florin%
9888 /fraction/guilsinglleft/guilsinglright/minus/perthousand%
9889 /quotedblbase/quotedblleft/quotedblright/quoteleft%
9890 /quoteright/quotesinglbase/trademark/fi/fl/Lslash/OE/Scaron%
9891 /Ydieresis/Zcaron/dotlessi/lslash/oe/scaron/zcaron %
9892 164/currency %
9893 166/brokenbar %
9894 168/dieresis/copyright/ordfeminine %
9895 172/logicalnot/.notdef/registered/macron/degree/plusminus%
9896 /twosuperior/threesuperior/acute/mu %
9897 183/periodcentered/cedilla/onesuperior/ordmasculine %
9898 188/onequarter/onehalf/threequarters %
9899 192/Agrave/Aacute/Acircumflex/Atilde/Adieresis/Aring/AE%
9900 /Ccedilla/Egrave/Eacute/Ecircumflex/Edieresis/Igrave%
9901 /Iacute/Icircumflex/Idieresis/Eth/Ntilde/Ograve/Oacute%
9902 /Ocircumflex/Otilde/Odieresis/multiply/Slash/Ugrave%
9903 /Uacute/Ucircumflex/Udieresis/Yacute/Thorn/germandbls%
9904 /agrave/aacute/acircumflex/atilde/adieresis/aring/ae%
9905 /ccedilla/egrave/eacute/ecircumflex/edieresis/igrave%
9906 /iacute/icircumflex/idieresis/eth/ntilde/ograde/oacute%
9907 /ocircumflex/otilde/odieresis/divide/oshort/ugrave/uacute%
9908 /ucircumflex/udieresis/yacute/thorn/ydieresis%
9909 ]%
9910 >>%
9911 /PUT pdfmark%
9912 [%
9913 /_objdef{ZaDb}%
9914 /type/dict%
9915 /OBJ pdfmark%
9916 [%
9917 {ZaDb}%
9918 <<%
9919 /Type/Font%
9920 /Subtype/Type1%
9921 /Name/ZaDb%
9922 /BaseFont/ZapfDingbats%
9923 >>%
9924 /PUT pdfmark%
9925 [%
9926 /_objdef{Helv}%
9927 /type/dict%
9928 /OBJ pdfmark%
9929 [%
9930 {Helv}%
9931 <<%
9932 /Type/Font%

```

```

9933     /Subtype/Type1%
9934     /Name/Helv%
9935     /BaseFont/Helvetica%
9936     /Encoding{pdfDocEncoding}%
9937   >>%
9938 /PUT pdfmark%
9939 [%
9940   /_objdef{aform}%
9941   /type/dict%
9942 /OBJ pdfmark%
9943 [%
9944   /_objdef{afields}%
9945   /type/array%
9946 /OBJ pdfmark%
9947 {%
9948   [%
9949     /BBox[0 0 100 100]%
9950     /_objdef{Check}%
9951   /BP pdfmark %
9952   1 0 0 setrgbcolor%
9953   /ZapfDingbats 80 selectfont %
9954   20 20 moveto%
9955   (4)show%
9956   [/EP pdfmark%
9957   [%
9958     /BBox[0 0 100 100]%
9959     /_objdef{Cross}%
9960   /BP pdfmark %
9961   1 0 0 setrgbcolor%
9962   /ZapfDingbats 80 selectfont %
9963   20 20 moveto%
9964   (8)show%
9965   [/EP pdfmark%
9966   [%
9967     /BBox[0 0 250 100]%
9968     /_objdef{Submit}%
9969   /BP pdfmark %
9970   0.6 setgray %
9971   0 0 250 100 rectfill %
9972   1 setgray %
9973   2 2 moveto %
9974   2 98 lineto %
9975   248 98 lineto %
9976   246 96 lineto %
9977   4 96 lineto %
9978   4 4 lineto %
9979   fill %
9980   0.34 setgray %
9981   248 98 moveto %
9982   248 2 lineto %
9983   2 2 lineto %
9984   4 4 lineto %
9985   246 4 lineto %
9986   246 96 lineto %
9987   fill%
9988   /Helvetica 76 selectfont %
9989   0 setgray %

```

```

9990 8 22.5 moveto%
9991 (Submit)show%
9992 [/EP pdfmark%
9993 [%
9994 /BBox[0 0 250 100]%
9995 /_objdef{SubmitP}%
9996 /BP pdfmark %
9997 0.6 setgray %
9998 0 0 250 100 rectfill %
9999 0.34 setgray %
10000 2 2 moveto %
10001 2 98 lineto %
10002 248 98 lineto %
10003 246 96 lineto %
10004 4 96 lineto %
10005 4 4 lineto %
10006 fill %
10007 1 setgray %
10008 248 98 moveto %
10009 248 2 lineto %
10010 2 2 lineto %
10011 4 4 lineto %
10012 246 4 lineto %
10013 246 96 lineto %
10014 fill%
10015 /Helvetica 76 selectfont %
10016 0 setgray %
10017 10 20.5 moveto%
10018 (Submit)show%
10019 [/EP pdfmark%
10020 } ?pdfmark%
10021 [%
10022 {aform}%
10023 <<%
10024 /Fields{afields}%
10025 /DR<<%
10026 /Font<<%
10027 /ZaDb{ZaDb}%
10028 /Helv{Helv}%
10029 >>%
10030 >>%
10031 /DA(/Helv 10 Tf 0 g)%
10032 /CO{corder}%
10033 \ifHy@pdfa
10034 \else
10035 /NeedAppearances true%
10036 \fi
10037 >>%
10038 /PUT pdfmark%
10039 [%
10040 {Catalog}%
10041 <<%
10042 /AcroForm{aform}%
10043 >>%
10044 /PUT pdfmark%
10045 [%
10046 /_objdef{corder}%

```

```

10047 /type/array%
10048 /OBJ pdfmark% dps
10049 }}%
10050 \setkeys{Form}{#1}%
10051 }
10052 \def\@endForm{}
10053 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
10054 \typeout{Sorry, pdfmark drivers do not support FORM gauges}%
10055 }
10056 \def\@TextField[#1]#2{% parameters, label
10057 \def\Fld@name{#2}%
10058 \def\Fld@default{}%
10059 \let\Fld@value\@empty
10060 \def\Fld@width{\DefaultWidthofText}%
10061 \def\Fld@height{%
10062 \ifFld@multiline
10063 \DefaultHeightofTextMultiline
10064 \else
10065 \DefaultHeightofText
10066 \fi
10067 }%
10068 \begingroup
10069 \Field@toks={ }%
10070 \expandafter\HyField@SetKeys\expandafter{%
10071 \DefaultOptionsofText,#1%
10072 }%
10073 \HyField@FlagsText
10074 \ifFld@hidden\def\Fld@width{1sp}\fi
10075 \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
10076 \LayoutTextField{#2}{%
10077 \Hy@escapeform\PDFForm@Text
10078 \pdfmark[\MakeTextField{\Fld@width}{\Fld@height}]{%
10079 pdfmark=/ANN,Raw={\PDFForm@Text}%
10080 }%
10081 }%
10082 \endgroup
10083 }
10084 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
10085 \def\Fld@name{#2}%
10086 \let\Fld@default\relax
10087 \let\Fld@value\relax
10088 \def\Fld@width{\DefaultWidthofChoiceMenu}%
10089 \def\Fld@height{\DefaultHeightofChoiceMenu}%
10090 \begingroup
10091 \Fld@menulength=0 %
10092 \@tempdima\z@
10093 \@for\@curropt:=#3\do{%
10094 \expandafter\Fld@checkequals\@curropt==\%
10095 \Hy@StepCount\Fld@menulength
10096 \settowidth{\@tempdimb}{\@currDisplay}%
10097 \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
10098 }%
10099 \advance\@tempdima by 15\p@
10100 \Field@toks={ }%
10101 \begingroup
10102 \HyField@SetKeys{#1}%
10103 \edef\x{\endgroup

```



```

10104 \noexpand\expandafter
10105 \noexpand\HyField@SetKeys
10106 \noexpand\expandafter{%
10107 \expandafter\noexpand\csname DefaultOptionsof%
10108 \ifFld@radio
10109 Radio%
10110 \else
10111 \ifFld@combo
10112 \ifFld@popdown
10113 PopdownBox%
10114 \else
10115 ComboBox%
10116 \fi
10117 \else
10118 ListBox%
10119 \fi
10120 \fi
10121 \endcsname
10122 }%
10123 }\x
10124 \HyField@SetKeys{#1}%
10125 \ifFld@hidden\def\Fld@width{1sp}\fi
10126 \ifx\Fld@value\relax
10127 \let\Fld@value\Fld@default
10128 \fi
10129 \LayoutChoiceField{#2}{%
10130 \ifFld@radio
10131 \HyField@FlagsRadioButton
10132 \@@Radio{#3}%
10133 \else
10134 \begingroup
10135 \HyField@FlagsChoice
10136 \ifdim\Fld@width<\@tempdima
10137 \ifdim\@tempdima<1cm\@tempdima1cm\fi
10138 \edef\Fld@width{\the\@tempdima}%
10139 \fi
10140 \ifFld@combo
10141 \else
10142 \@tempdima=\the\Fld@menulength\Fld@charsize
10143 \advance\@tempdima by \Fld@borderwidth bp %
10144 \advance\@tempdima by \Fld@borderwidth bp %
10145 \edef\Fld@height{\the\@tempdima}%
10146 \fi
10147 \@@ListBox{#3}%
10148 \endgroup
10149 \fi
10150 }%
10151 \endgroup
10152 }
10153 \def\@@Radio#1{%
10154 \Fld@listcount=0 %
10155 \@for\@curropt:=#1\do{%
10156 \expandafter\Fld@checkequals\@curropt==\%
10157 \Hy@StepCount\Fld@listcount
10158 \@currDisplay\space
10159 \Hy@escapeform\PDFForm@Radio
10160 \pdfmark[\MakeRadioField{\Fld@width}{\Fld@height}]{%

```

```

10161         pdfmark=/ANN,%
10162         Raw={\PDFForm@Radio /AP <</N <</\@currValue\space {Check}>> >>}%
10163     } % deliberate space between radio buttons
10164 }%
10165 }
10166 \newcount\Fld@listcount
10167 \def\@@ListBox#1{%
10168     \HyField@PDFChoices{#1}%
10169     \Hy@escapeform\PDFForm@List
10170     \pdfmark[\MakeChoiceField{\Fld@width}{\Fld@height}]{%
10171         pdfmark=/ANN,Raw={\PDFForm@List}%
10172     }%
10173 }
10174 \def\@PushButton[#1]#2{% parameters, label
10175     \def\Fld@name{#2}%
10176     \begingroup
10177         \Field@toks={ }%
10178         \expandafter\HyField@SetKeys\expandafter{%
10179             \DefaultOptionsofPushButton,#1%
10180         }%
10181         \ifHy@pdfa
10182             \PackageError{hyperref}{%
10183                 PDF/A: Push button with JavaScript is prohibited%
10184             }\@ehc
10185             \LayoutPushButtonField{%
10186                 \leavevmode
10187                 \MakeButtonField{#2}%
10188             }%
10189         \else
10190             \HyField@FlagsPushButton
10191             \ifFld@hidden\def\Fld@width{1sp}\fi
10192             \LayoutPushButtonField{%
10193                 \leavevmode
10194                 \Hy@escapeform\PDFForm@Push
10195                 \pdfmark[\MakeButtonField{#2}]{%
10196                     pdfmark=/ANN,Raw={\PDFForm@Push}%
10197                 }%
10198             }%
10199         \fi
10200     \endgroup
10201 }
10202 \def\@Submit[#1]#2{%
10203     \Field@toks={ }%
10204     \def\Fld@width{\DefaultWidthofSubmit}%
10205     \def\Fld@height{\DefaultHeightofSubmit}%
10206     \begingroup
10207         \expandafter\HyField@SetKeys\expandafter{%
10208             \DefaultOptionsofSubmit,#1%
10209         }%
10210         \HyField@FlagsPushButton
10211         \HyField@FlagsSubmit
10212         \ifFld@hidden\def\Fld@width{1sp}\fi
10213         \Hy@escapeform\PDFForm@Submit
10214         \pdfmark[\MakeButtonField{#2}]{%
10215             pdfmark=/ANN,%
10216             Raw={\PDFForm@Submit /AP << /N {Submit} /D {SubmitP} >>}%
10217         }%

```

```

10218 \endgroup
10219 }
10220 \def\@Reset[#1]#2{%
10221   \Field@toks={ }%
10222   \def\Fld@width{\DefaultWidthofReset}%
10223   \def\Fld@height{\DefaultHeightofReset}%
10224   \begingroup
10225     \expandafter\HyField@SetKeys\expandafter{%
10226       \DefaultOptionsofReset,#1%
10227     }%
10228     \leavevmode
10229     \ifHy@pdfa
10230       \PackageError{hyperref}{%
10231         PDF/A: Reset action is prohibited%
10232       }\@ehc
10233       \MakeButtonField{#2}%
10234     \else
10235       \HyField@FlagsPushButton
10236       \ifFld@hidden\def\Fld@width{1sp}\fi
10237       \Hy@escapeform\PDFForm@Reset
10238       \pdfmark[\MakeButtonField{#2}]{%
10239         pdfmark=/ANN,Raw={\PDFForm@Reset}%
10240       }%
10241     \fi
10242   \endgroup
10243 }%
10244 \def\@CheckBox[#1]#2{% parameters, label
10245   \def\Fld@name{#2}%
10246   \def\Fld@default{0}%
10247   \begingroup
10248     \def\Fld@width{\DefaultWidthofCheckBox}%
10249     \def\Fld@height{\DefaultHeightofCheckBox}%
10250     \Field@toks={ }%
10251     \expandafter\HyField@SetKeys\expandafter{%
10252       \DefaultOptionsofCheckBox,#1%
10253     }%
10254     \HyField@FlagsCheckBox
10255     \ifFld@hidden\def\Fld@width{1sp}\fi
10256     \LayoutCheckField{#2}{%
10257       \Hy@escapeform\PDFForm@Check
10258       \pdfmark[\MakeCheckField{\Fld@width}{\Fld@height}]{%
10259         pdfmark=/ANN,Raw={\PDFForm@Check}%
10260       }%
10261     }%
10262   \endgroup
10263 }
10264 \pdfmark>

```

## 47.2 HyperTeX

```

10265 \hypertex>
10266 \def\@Form[#1]{\typeout{Sorry, HyperTeX does not support FORMs}}
10267 \def\@endForm{}
10268 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
10269   \typeout{Sorry, HyperTeX does not support FORM gauges}%
10270 }
10271 \def\@TextField[#1]#2{% parameters, label
10272   \typeout{Sorry, HyperTeX does not support FORM text fields}%

```

```

10273 }
10274 \def\@CheckBox[#1]#2{% parameters, label
10275   \typeout{Sorry, HyperTeX does not support FORM checkboxes}%
10276 }
10277 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
10278   \typeout{Sorry, HyperTeX does not support FORM choice menus}%
10279 }
10280 \def\@PushButton[#1]#2{% parameters, label
10281   \typeout{Sorry, HyperTeX does not support FORM pushbuttons}%
10282 }
10283 \def\@Reset[#1]#2{\typeout{Sorry, HyperTeX does not support FORMs}}
10284 \def\@Submit[#1]#2{\typeout{Sorry, HyperTeX does not support FORMs}}
10285 \end{hypertex}

```

### 47.3 TeX4ht

```

10286 \def\@Form[#1]{%
10287   \setkeys{Form}{#1}%
10288   \HCode{<form action="\Form@action" method="\Form@method">}%
10289 }
10290 \def\@endForm{\HCode{</form>}}
10291 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
10292   \typeout{Sorry, TeX4ht does not support gauges}%
10293 }
10294 \def\@TextField[#1]#2{% parameters, label
10295   \let\Hy@reserved@a\@empty
10296   \def\Fld@name{#2}%
10297   \def\Fld@default{}%
10298   \bgroup
10299     \Field@toks={ }%
10300     \setkeys{Field}{#1}%
10301     \HCode{<label for="\Fld@name">#2</label>}%
10302     \ifFld@password
10303       \@@PasswordField
10304     \else
10305       \@@TextField
10306     \fi
10307   \egroup
10308 }
10309 \def\@@PasswordField{%
10310   \HCode{%
10311     <input type="password" %
10312       id="\Fld@name" %
10313       name="\Fld@name" %
10314       \ifFld@hidden type="hidden" \fi
10315       value="\Fld@default" %
10316       \the\Fld@toks
10317     >%
10318   }%
10319 }
10320 \def\@@TextField{%
10321   \ifFld@multiline
10322     \HCode{<textarea %
10323       \ifFld@readonly readonly \fi
10324       id="\Fld@name" %
10325       name="\Fld@name" %
10326       \ifFld@hidden type="hidden" \fi

```

```

10328     \the\Field@toks>%
10329   }%
10330   \Fld@default
10331   \HCode{</textarea>}%
10332 \else
10333   \HCode{<input type="text" %
10334     \ifFld@readonly readonly \fi
10335     id="\Fld@name" %
10336     name="\Fld@name" %
10337     \ifFld@hidden type="hidden" \fi
10338     value="\Fld@default" %
10339     \the\Field@toks>%
10340   }%
10341 \fi
10342 }
10343 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
10344   \def\Fld@name{#2}%
10345   \def\Fld@default{}%
10346   \let\Hy@reserved@a\relax
10347   \begingroup
10348     \expandafter\Fld@findlength#3\\%
10349     \Field@toks={ }%
10350     \setkeys{Field}{#1}%
10351     #2%
10352     \ifFld@radio
10353       \expandafter\@@Radio#3\\%
10354     \else
10355       \expandafter\@@Menu#3\\%
10356     \fi
10357   \endgroup
10358 }
10359 \def\Fld@findlength#1\\{%
10360   \Fld@menulength=0 %
10361   \@for\@curropt:=#1\do{\Hy@StepCount\Fld@menulength}%
10362 }
10363 \def\@@Menu#1\\{%
10364   \HCode{<select size="\the\Fld@menulength" %
10365     name="\Fld@name" %
10366     \the\Field@toks>%
10367   }%
10368   \@for\@curropt:=#1\do{%
10369     \expandafter\Fld@checkequals\@curropt==\\%
10370     \HCode{<option %
10371       \ifx\@curropt\Fld@default selected \fi
10372       value="\@currValue">\@currDisplay</option>%
10373     }%
10374   }%
10375   \HCode{</select>}%
10376 }
10377 \def\@@Radio#1\\{%
10378   \@for\@curropt:=#1\do{%
10379     \expandafter\Fld@checkequals\@curropt==\\%
10380     \HCode{<input type="radio" %
10381       \ifx\@curropt\Fld@default checked \fi
10382       name="\Fld@name" %
10383       value="\@currValue" %
10384       \the\Field@toks>%

```

```

10385     }%
10386     \@currDisplay
10387 }%
10388 }
10389 \def\@PushButton[#1]#2{% parameters, label
10390 \def\Fld@name{#2}%
10391 \bgroup
10392 \Field@toks={ }%
10393 \setkeys{Field}{#1}%
10394 \HCode{<input type="button" %
10395     name="\Fld@name" %
10396     value="#2" %
10397     \the\Field@toks>%
10398 }%
10399 \HCode{</button>}%
10400 \egroup
10401 }
10402 \def\@Submit[#1]#2{%
10403 \HCode{<button type="submit">#2</button>}%
10404 }
10405 \def\@Reset[#1]#2{%
10406 \HCode{<button type="reset">#2</button>}%
10407 }
10408 \def\@CheckBox[#1]#2{% parameters, label
10409 \let\Hy@reserved@a\@empty
10410 \def\Fld@name{#2}%
10411 \def\Fld@default{0}%
10412 \bgroup
10413 \Field@toks={ }%
10414 \setkeys{Field}{#1}%
10415 \HCode{<input type="checkbox" %
10416     \ifFld@checked checked \fi
10417     \ifFld@disabled disabled \fi
10418     \ifFld@readonly readonly \fi
10419     name="\Fld@name" %
10420     \ifFld@hidden type="hidden" \fi
10421     value="\Fld@default" %
10422     \the\Field@toks>%
10423     #2%
10424 }%
10425 \egroup
10426 }
10427 </tex4ht>

```

## 47.4 pdfTeX

```

10428 <*pdfTeX>
10429 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
10430 \typeout{Sorry, pdfTeX does not support FORM gauges}%
10431 }
10432 \def\MakeFieldObject#1#2{\sbox0{#1}%
10433 \immediate\pdfxform0 %
10434 \expandafter\edef\csname #2Object\endcsname{%
10435     \the\pdflastxform\space 0 R%
10436 }%
10437 % \hbox to Opt{\hskip-\maxdimen{\pdfrefxform \the\pdflastxform}}%
10438 }%
10439 \def\HyField@afields{}

```

```

10440 \begingroup\expandafter\expandafter\expandafter\endgroup
10441 \expandafter\ifx\csname pdfastlink\endcsname\relax
10442   \let\HyField@AddToFields\relax
10443   \PackageInfo{hyperref}{%
10444     You need pdfTeX 1.40.0 for setting the /Fields entry.\MessageBreak
10445     Adobe Reader/Acrobat accepts an empty /Field array,\MessageBreak
10446     but other PDF viewers might complain%
10447   }%
10448 \else
10449   \def\HyField@AddToFields{%
10450     \xdef\HyField@afields{%
10451       \ifx\HyField@afields\@empty
10452       \else
10453         \HyField@afields
10454         \space
10455       \fi
10456       \the\pdfastlink\space 0 R%
10457     }%
10458   }%
10459 \fi
10460 \def\@Form[#1]{%
10461   \ifundefined{textcolor}{\let\textcolor@gobble}{}}%
10462   \setkeys{Form}{#1}%
10463   \ifnum\pdfTeXversion>13 %
10464     \pdfrefobj\OBJ@pdfdocencoding
10465     \pdfrefobj\OBJ@ZaDb
10466     \pdfrefobj\OBJ@Helv
10467   \fi
10468   \AtEndDocument{%
10469     \immediate\pdfobj{%
10470       <<%
10471         /Fields[\HyField@afields]%
10472         /DR<<%
10473           /Font<<%
10474             /ZaDb \OBJ@ZaDb\space 0 R%
10475             /Helv \OBJ@Helv\space 0 R%
10476           >>%
10477         >>%
10478         /DA(/Helv 10 Tf 0 g)%
10479         \ifHy@pdfa
10480         \else
10481           /NeedAppearances true%
10482         \fi
10483       >>%
10484     }%
10485     \edef\OBJ@acroform{\the\pdfastobj}%
10486     \pdfcatalog{/AcroForm \OBJ@acroform\space 0 R}%
10487   }%
10488   \MakeFieldObject{%

```

Same as \ding{123} of package pifont.

```

10489   \begingroup
10490     \fontfamily{pzd}%
10491     \fontencoding{U}%
10492     \fontseries{m}%
10493     \fontshape{n}%
10494     \selectfont
10495     \char123 %

```

```

10496 \endgroup
10497 }{Ding}%
10498 \MakeFieldObject{%
10499 \fbox{\textcolor{yellow}{\textsf{Submit}}}%
10500 }{Submit}%
10501 \MakeFieldObject{%
10502 \fbox{\textcolor{yellow}{\textsf{SubmitP}}}%
10503 }{SubmitP}%
10504 }
10505 \def\@endForm{}
10506 \def\@TextField[#1]#2{% parameters, label
10507 \def\Fld@name{#2}%
10508 \def\Fld@default{}%
10509 \let\Fld@value\@empty
10510 \def\Fld@width{\DefaultWidthofText}%
10511 \def\Fld@height{%
10512 \ifFld@multiline
10513 \DefaultHeightofTextMultiline
10514 \else
10515 \DefaultHeightofText
10516 \fi
10517 }%
10518 \begingroup
10519 \Field@toks={ }%
10520 \expandafter\HyField@SetKeys\expandafter{%
10521 \DefaultOptionsofText,#1%
10522 }%
10523 \PDFForm@Name
10524 \HyField@FlagsText
10525 \ifFld@hidden\def\Fld@width{1sp}\fi
10526 \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
10527 \LayoutTextField{#2}{%
10528 \Hy@escapeform\PDFForm@Text
10529 \pdfstartlink user {\PDFForm@Text}\relax
10530 \MakeTextField{\Fld@width}{\Fld@height}\pdfendlink
10531 \HyField@AddToFields
10532 }%
10533 \endgroup
10534 }
10535 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
10536 \def\Fld@name{#2}%
10537 \let\Fld@default\relax
10538 \let\Fld@value\relax
10539 \def\Fld@width{\DefaultWidthofChoiceMenu}%
10540 \def\Fld@height{\DefaultHeightofChoiceMenu}%
10541 \begingroup
10542 \Fld@menulength=0 %
10543 \@tempdima\z@
10544 \@for\@curropt:=#3\do{%
10545 \expandafter\Fld@checkequals\@curropt==\%
10546 \Hy@StepCount\Fld@menulength
10547 \settowidth{\@tempdimb}{\@currDisplay}%
10548 \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
10549 }%
10550 \advance\@tempdima by 15\p@
10551 \Field@toks={ }%
10552 \begingroup

```



```

10553     \HyField@SetKeys{#1}%
10554 \edef\x{\endgroup
10555     \noexpand\expandafter
10556     \noexpand\HyField@SetKeys
10557     \noexpand\expandafter{%
10558     \expandafter\noexpand\csname DefaultOptionsof%
10559     \ifFld@radio
10560     Radio%
10561     \else
10562     \ifFld@combo
10563     \ifFld@popdown
10564     PopdownBox%
10565     \else
10566     ComboBox%
10567     \fi
10568     \else
10569     ListBox%
10570     \fi
10571     \fi
10572     \endcsname
10573     }%
10574 } \x
10575 \HyField@SetKeys{#1}%
10576 \PDFForm@Name
10577 \ifFld@hidden\def\Fld@width{1sp}\fi
10578 \ifx\Fld@value\relax
10579     \let\Fld@value\Fld@default
10580 \fi
10581 \LayoutChoiceField{#2}{%
10582     \ifFld@radio
10583     \HyField@FlagsRadioButton
10584     \@@Radio{#3}%
10585     \else
10586     \begingroup
10587     \HyField@FlagsChoice
10588     \ifdim\Fld@width<\@tempdima
10589         \ifdim\@tempdima<1cm\@tempdima1cm\fi
10590         \edef\Fld@width{\the\@tempdima}%
10591     \fi
10592     \ifFld@combo
10593     \else
10594         \@tempdima=\the\Fld@menulength\Fld@charsize
10595         \advance\@tempdima by \Fld@borderwidth bp %
10596         \advance\@tempdima by \Fld@borderwidth bp %
10597         \edef\Fld@height{\the\@tempdima}%
10598     \fi
10599     \@@ListBox{#3}%
10600     \endgroup
10601     \fi
10602     }%
10603 \endgroup
10604 }
10605 \def\@@Radio#1{%
10606     \Fld@listcount=0 %
10607     \@for\@curropt:=#1\do{%
10608         \expandafter\Fld@checkequals\@curropt==\%
10609         \Hy@StepCount\Fld@listcount

```

```

10610 \currDisplay\space
10611 \leavevmode
10612 \Hy@escapeform\PDFForm@Radio
10613 \pdfstartlink user {%
10614 \PDFForm@Radio
10615 /AP<<%
10616 /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.

```

10617 \currValue\space \DingObject
10618 >>%
10619 >>%
10620 }%
10621 \relax
10622 \MakeRadioField{\Fld@width}{\Fld@height}\pdfendlink
10623 \ifnum\Fld@listcount=1 %
10624 \HyField@AddToFields
10625 \fi
10626 \space % deliberate space between radio buttons
10627 }%
10628 }
10629 \newcount\Fld@listcount
10630 \def\@@ListBox#1{%
10631 \HyField@PDFChoices{#1}%
10632 \leavevmode
10633 \Hy@escapeform\PDFForm@List
10634 \pdfstartlink user {\PDFForm@List}\relax
10635 \MakeChoiceField{\Fld@width}{\Fld@height}%
10636 \pdfendlink
10637 \HyField@AddToFields
10638 }
10639 \def\@PushButton[#1]#2{% parameters, label
10640 \def\Fld@name{#2}%
10641 \begingroup
10642 \Field@toks={ }%
10643 \expandafter\HyField@SetKeys\expandafter{%
10644 \DefaultOptionsofPushButton,#1%
10645 }%
10646 \PDFForm@Name
10647 \ifHy@pdfa
10648 \PackageError{hyperref}{%
10649 PDF/A: Push button with JavaScript is prohibited%
10650 }{\@ehc
10651 \LayoutPushButtonField{%
10652 \leavevmode
10653 \MakeButtonField{#2}%
10654 }%
10655 \else
10656 \HyField@FlagsPushButton
10657 \ifFld@hidden\def\Fld@width{1sp}\fi
10658 \LayoutPushButtonField{%
10659 \leavevmode
10660 \Hy@escapeform\PDFForm@Push
10661 \pdfstartlink user {\PDFForm@Push}\relax
10662 \MakeButtonField{#2}%
10663 \pdfendlink

```

```

10664         \HyField@AddToFields
10665     }%
10666     \fi
10667 \endgroup
10668 }
10669 \def\@Submit[#1]#2{%
10670     \Field@toks={ }%
10671     \def\Fld@width{\DefaultWidthofSubmit}%
10672     \def\Fld@height{\DefaultHeightofSubmit}%
10673     \begingroup
10674         \expandafter\HyField@SetKeys\expandafter{%
10675             \DefaultOptionsofSubmit,#1%
10676         }%
10677         \HyField@FlagsPushButton
10678         \HyField@FlagsSubmit
10679         \ifFld@hidden\def\Fld@width{1sp}\fi
10680         \leavevmode
10681         \Hy@escapeform\PDFForm@Submit
10682         \pdfstartlink user {%
10683             \PDFForm@Submit
10684             /AP<</N \SubmitObject/D \SubmitPObject>>%
10685         }%
10686         \relax
10687         \MakeButtonField{#2}%
10688         \pdfendlink
10689         \HyField@AddToFields
10690     \endgroup
10691 }
10692 \def\@Reset[#1]#2{%
10693     \Field@toks={ }%
10694     \def\Fld@width{\DefaultWidthofReset}%
10695     \def\Fld@height{\DefaultHeightofReset}%
10696     \begingroup
10697         \expandafter\HyField@SetKeys\expandafter{%
10698             \DefaultOptionsofReset,#1%
10699         }%
10700         \leavevmode
10701         \ifHy@pdfa
10702             \PackageError{hyperref}{%
10703                 PDF/A: Reset action is prohibited%
10704             }\@ehc
10705             \MakeButtonField{#2}%
10706         \else
10707             \HyField@FlagsPushButton
10708             \ifFld@hidden\def\Fld@width{1sp}\fi
10709             \Hy@escapeform\PDFForm@Reset
10710             \pdfstartlink user {\PDFForm@Reset}\relax
10711             \MakeButtonField{#2}%
10712             \pdfendlink
10713             \HyField@AddToFields
10714         \fi
10715     \endgroup
10716 }
10717 \def\@CheckBox[#1]#2{% parameters, label
10718     \def\Fld@name{#2}%
10719     \def\Fld@default{0}%
10720     \begingroup

```

```

10721 \def\Fld@width{\DefaultWidthofCheckBox}%
10722 \def\Fld@height{\DefaultHeightofCheckBox}%
10723 \Field@toks={ }%
10724 \expandafter\HyField@SetKeys\expandafter{%
10725 \DefaultOptionsofCheckBox,#1%
10726 }%
10727 \PDFForm@Name
10728 \HyField@FlagsCheckBox
10729 \ifFld@hidden\def\Fld@width{1sp}\fi
10730 \LayoutCheckField{#2}{%
10731 \Hy@escapeform\PDFForm@Check
10732 \pdfstartlink user {\PDFForm@Check}\relax
10733 \MakeCheckField{\Fld@width}{\Fld@height}%
10734 \pdfendlink
10735 \HyField@AddToFields
10736 }%
10737 \endgroup
10738 }
10739 \pdfobj {%
10740 <<%
10741 /Type/Encoding%
10742 /Differences[%
10743 24/breve/caron/circumflex/dotaccent/hungarumlaut/ogonek%
10744 /ring/tilde %
10745 39/quotesingle %
10746 96/grave %
10747 128/bullet/dagger/daggerdbl/ellipsis/emdash/endash/florin%
10748 /fraction/guilsinglleft/guilsinglright/minus/perthousand%
10749 /quotedblbase/quotedblleft/quotedblright/quoteleft%
10750 /quoteright/quotesinglbase/trademark/fi/fl/Lslash/OE%
10751 /Scaron/Ydieresis/Zcaron/dotlessi/lslash/oe/scaron/zcaron %
10752 164/currency %
10753 166/brokenbar %
10754 168/dieresis/copyright/ordfeminine %
10755 172/logicalnot/.notdef/registered/macron/degree/plusminus%
10756 /twosuperior/threesuperior/acute/mu %
10757 183/periodcentered/cedilla/onesuperior/ordmasculine %
10758 188/onequarter/onehalf/threequarters %
10759 192/Agrave/Aacute/Acircumflex/Atilde/Adieresis/Aring/AE%
10760 /Ccedilla/Egrave/Eacute/Ecircumflex/Edieresis/Igrave%
10761 /Iacute/Icircumflex/Idieresis/Eth/Ntilde/Ograve/Oacute%
10762 /Ocircumflex/Otilde/Odieresis/multiply/Oslash/Ugrave%
10763 /Uacute/Ucircumflex/Udieresis/Yacute/Thorn/germandbls%
10764 /agrave/aacute/acircumflex/tilde/adieresis/aring/ae%
10765 /ccedilla/egrave/eacute/ecircumflex/edieresis/igrave%
10766 /iacute/icircumflex/idieresis/eth/ntilde/ograve/oacute%
10767 /ocircumflex/otilde/odieresis/divide/oslash/ugrave%
10768 /uacute/ucircumflex/udieresis/yacute/thorn/ydieresis%
10769 ]%
10770 >>%
10771 }
10772 \edef\OBJ@pdfdocencoding{\the\pdflastobj}
10773 \pdfobj{%
10774 <<%
10775 /Type/Font%
10776 /Subtype/Type1%
10777 /Name/ZaDb%

```

```

10778 /BaseFont/ZapfDingbats%
10779 >>%
10780 }
10781 \edef\OBJ@ZaDb{\the\pdflastobj}
10782 \pdfobj{%
10783 <<%
10784 /Type/Font%
10785 /Subtype/Type1%
10786 /Name/Helv%
10787 /BaseFont/Helvetica%
10788 /Encoding \OBJ@pdfdocencoding\space 0 R%
10789 >>%
10790 }
10791 \edef\OBJ@Helv{\the\pdflastobj}
10792 \pdfobj{</pdfobj>}

```

## 47.5 dvipdfm

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.

```

10793 \def\*dvipdfm{

```

\@Gauge

```

10794 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
10795 \typeout{Sorry, dvipdfm does not support FORM gauges}%
10796 }

```

\@Form

```

10797 \def\@Form[#1]{%
10798 \ifundefined{textcolor}{\let\textcolor\@gobble}{}}%
10799 \setkeys{Form}{#1}%
10800 \pdfmark{obj @afields []}%
10801 \pdfmark{obj @corder []}%
10802 \pdfmark{%
10803 obj @aform <<%
10804 /Fields @afields%
10805 /DR<<%
10806 /Font<<%
10807 /ZaDb \OBJ@ZaDb%
10808 /Helv \OBJ@Helv%
10809 >>%
10810 >>%
10811 /DA(/Helv 10 Tf 0 g)%
10812 /CO @corder%
10813 \ifHy@pdfa
10814 \else
10815 /NeedAppearances true%
10816 \fi
10817 >>%
10818 }%
10819 \pdfmark{put @catalog <</AcroForm @aform>>}%
10820 }

```

\@endForm

```

10821 \def\@endForm{

```

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

```

10822 \def\dvipdfm@setdim{%
10823   height \the\ht\pdfm@box\space
10824   width \the\wd\pdfm@box\space
10825   depth \the\dp\pdfm@box\space
10826 }

\HyField@AnnotCount

10827 \newcount\HyField@AnnotCount
10828 \HyField@AnnotCount=\z@

\HyField@AdvanceAnnotCount

10829 \def\HyField@AdvanceAnnotCount{%
10830   \global\advance\HyField@AnnotCount\@ne
10831 }

\HyField@TheAnnotCount

10832 \def\HyField@TheAnnotCount{%
10833   \the\HyField@AnnotCount
10834 }

\@TextField

10835 \def\@TextField[#1]#2{% parameters, label
10836   \def\Fld@name{#2}%
10837   \def\Fld@default{}%
10838   \let\Fld@value\@empty
10839   \def\Fld@width{\DefaultWidthofText}%
10840   \def\Fld@height{%
10841     \ifFld@multiline
10842       \DefaultHeightofTextMultiline
10843     \else
10844       \DefaultHeightofText
10845     \fi
10846   }%
10847   \begingroup
10848     \Field@toks={ }%
10849     \expandafter\HyField@SetKeys\expandafter{%
10850       \DefaultOptionsofText,#1%
10851     }%
10852     \PDFForm@Name
10853     \HyField@FlagsText
10854     \ifFld@hidden\def\Fld@width{1sp}\fi
10855     \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
10856     \setbox\pdfm@box=\hbox{%
10857       \MakeTextField{\Fld@width}{\Fld@height}%
10858     }%
10859     \HyField@AdvanceAnnotCount
10860     \LayoutTextField{#2}{%
10861       \Hy@escapeform\PDFForm@Text
10862       \@pdfm@mark{%
10863         ann @text\HyField@TheAnnotCount\space
10864         \dvipdfm@setdim << \PDFForm@Text >>%
10865       }%
10866     }%
10867     \unhbox\pdfm@box
10868     \@pdfm@mark{put @afields @text\HyField@TheAnnotCount}%
10869     % record in @afields array
10870   \endgroup

```

10871 }

\@ChoiceMenu

```
10872 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
10873   \def\Fld@name{#2}%
10874   \let\Fld@default\relax
10875   \let\Fld@value\relax
10876   \def\Fld@width{\DefaultWidthofChoiceMenu}%
10877   \def\Fld@height{\DefaultHeightofChoiceMenu}%
10878   \begingroup
10879     \Fld@menulength=0 %
10880     \@tempdima\z@
10881     \for\@curropt:=#3\do{%
10882       \expandafter\Fld@checkequals\@curropt==\%
10883       \Hy@StepCount\Fld@menulength
10884       \settowidth{\@tempdimb}{\@currDisplay}%
10885       \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
10886     }%
10887     \advance\@tempdima by 15\p@
10888     \Field@toks={ }%
10889     \begingroup
10890       \HyField@SetKeys{#1}%
10891     \edef\x{\endgroup
10892       \noexpand\expandafter
10893       \noexpand\HyField@SetKeys
10894       \noexpand\expandafter{%
10895         \expandafter\noexpand\csname DefaultOptionsof%
10896           \ifFld@radio
10897             Radio%
10898           \else
10899             \ifFld@combo
10900               \ifFld@popdown
10901                 PopdownBox%
10902               \else
10903                 ComboBox%
10904               \fi
10905             \else
10906               ListBox%
10907             \fi
10908           \fi
10909         \endcsname
10910       }%
10911     }\x
10912     \HyField@SetKeys{#1}%
10913     \PDFForm@Name
10914     \ifFld@hidden\def\Fld@width{1sp}\fi
10915     \ifx\Fld@value\relax
10916       \let\Fld@value\Fld@default
10917     \fi
10918     \LayoutChoiceField{#2}{%
10919       \ifFld@radio
10920         \HyField@FlagsRadioButton
10921         \@@Radio{#3}%
10922       \else
10923         \begingroup
10924         \HyField@FlagsChoice
10925         \ifdim\Fld@width<\@tempdima
```

```

10926         \ifdim\@tempdima<1cm\@tempdima1cm\fi
10927         \edef\Fld@width{\the\@tempdima}%
10928     \fi
10929     \ifFld@combo
10930     \else
10931         \@tempdima=\the\Fld@menulength\Fld@charsize
10932         \advance\@tempdima by \Fld@borderwidth bp %
10933         \advance\@tempdima by \Fld@borderwidth bp %
10934         \edef\Fld@height{\the\@tempdima}%
10935     \fi
10936     \@@ListBox{#3}%
10937 \endgroup
10938 \fi
10939 }%
10940 \endgroup
10941 }

```

\@@Radio

```

10942 \def\@@Radio#1{%
10943     \Fld@listcount=0 %
10944     \setbox\pdfm@box=\hbox{\MakeRadioField{\Fld@width}{\Fld@height}}%
10945     \@for\@curropt:=#1\do{%
10946         \expandafter\Fld@checkequals\@curropt==\%
10947         \Hy@StepCount\Fld@listcount
10948         \@currDisplay\space
10949         \leavevmode
10950         \Hy@escapeform\PDFForm@Radio
10951         \ifnum\Fld@listcount=1 %
10952             \HyField@AdvanceAnnotCount
10953         \fi
10954         \@pdfm@mark{%
10955             ann \ifnum\Fld@listcount=1 @radio\HyField@TheAnnotCount\space\fi
10956             \dvi pdfm@setdim
10957             <<%
10958                 \PDFForm@Radio
10959                 /AP<</N<</\@currValue /null>>>>%
10960             >>%
10961         }%
10962         \unhcopy\pdfm@box\space% deliberate space between radio buttons
10963         \ifnum\Fld@listcount=1 %
10964             \@pdfm@mark{put @afields @radio\HyField@TheAnnotCount}%
10965         \fi
10966     }%
10967 }

```

\Fld@listcount

```

10968 \newcount\Fld@listcount

```

\@@ListBox

```

10969 \def\@@ListBox#1{%
10970     \HyField@PDFChoices{#1}%
10971     \setbox\pdfm@box=\hbox{\MakeChoiceField{\Fld@width}{\Fld@height}}%
10972     \leavevmode
10973     \Hy@escapeform\PDFForm@List
10974     \HyField@AdvanceAnnotCount
10975     \@pdfm@mark{%
10976         ann @list\HyField@TheAnnotCount\space

```



```

10977 \dvipdfm@setdim
10978 <<\PDFForm@List>>%
10979 }%
10980 \unhbox\pdfm@box
10981 \@pdfm@mark{put @afields @list\HyField@TheAnnotCount}%
10982 }

\@PushButton

10983 \def\@PushButton[#1]#2{% parameters, label
10984 \def\Fld@name{#2}%
10985 \begingroup
10986 \Field@toks={ }%
10987 \expandafter\HyField@SetKeys\expandafter{%
10988 \DefaultOptionsofPushButton,#1%
10989 }%
10990 \PDFForm@Name
10991 \ifHy@pdfa
10992 \PackageError{hyperref}{%
10993 PDF/A: Push button with JavaScript is prohibited%
10994 }{\@ehc
10995 \LayoutPushButtonField{%
10996 \leavevmode
10997 \MakeButtonField{#2}%
10998 }%
10999 \else
11000 \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
11001 \HyField@FlagsPushButton
11002 \ifFld@hidden\def\Fld@width{1sp}\fi
11003 \HyField@AdvanceAnnotCount
11004 \LayoutPushButtonField{%
11005 \leavevmode
11006 \Hy@escapeform\PDFForm@Push
11007 \@pdfm@mark{%
11008 ann @push\HyField@TheAnnotCount\space
11009 \dvipdfm@setdim
11010 <<\PDFForm@Push>>%
11011 }%
11012 }%
11013 \unhbox\pdfm@box
11014 \@pdfm@mark{put @afields @push\HyField@TheAnnotCount}%
11015 \fi
11016 \endgroup
11017 }

\@Submit

11018 \def\@Submit[#1]#2{%
11019 \Field@toks={ }%
11020 \def\Fld@width{\DefaultWidthofSubmit}%
11021 \def\Fld@height{\DefaultHeightofSubmit}%
11022 \begingroup
11023 \expandafter\HyField@SetKeys\expandafter{%
11024 \DefaultOptionsofSubmit,#1%
11025 }%
11026 \HyField@FlagsPushButton
11027 \HyField@FlagsSubmit
11028 \ifFld@hidden\def\Fld@width{1sp}\fi
11029 \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%

```

```

11030 \leavevmode
11031 \Hy@escapeform\PDFForm@Submit
11032 \HyField@AdvanceAnnotCount
11033 \@pdfm@mark{%
11034   ann @submit\HyField@TheAnnotCount\space
11035   \dvipdfm@setdim
11036   <<\PDFForm@Submit>>%
11037 }%
11038 \unhbox\pdfm@box%
11039 \@pdfm@mark{put @afields @submit\HyField@TheAnnotCount}%
11040 \endgroup
11041 }

\@Reset
11042 \def\@Reset[#1]#2{%
11043   \Field@toks={ }%
11044   \def\Fld@width{\DefaultWidthofReset}%
11045   \def\Fld@height{\DefaultHeightofReset}%
11046   \begingroup
11047     \expandafter\HyField@SetKeys\expandafter{%
11048       \DefaultOptionsofReset,#1%
11049     }%
11050     \leavevmode
11051     \ifHy@pdfa
11052       \PackageError{hyperref}{%
11053         PDF/A: Reset action is prohibited%
11054       }\@ehc
11055       \MakeButtonField{#2}%
11056     \else
11057       \HyField@FlagsPushButton
11058       \ifFld@hidden\def\Fld@width{1sp}\fi
11059       \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
11060       \Hy@escapeform\PDFForm@Reset
11061       \HyField@AdvanceAnnotCount
11062       \@pdfm@mark{%
11063         ann @reset\HyField@TheAnnotCount\space
11064         \dvipdfm@setdim
11065         <<\PDFForm@Reset>>%
11066       }%
11067       \unhbox\pdfm@box
11068       \@pdfm@mark{put @afields @reset\HyField@TheAnnotCount}%
11069     \fi
11070   \endgroup
11071 }

\@CheckBox
11072 \def\@CheckBox[#1]#2{% parameters, label
11073   \def\Fld@name{#2}%
11074   \def\Fld@default{0}%
11075   \begingroup
11076     \def\Fld@width{\DefaultWidthofCheckBox}%
11077     \def\Fld@height{\DefaultHeightofCheckBox}%
11078     \Field@toks={ }%
11079     \expandafter\HyField@SetKeys\expandafter{%
11080       \DefaultOptionsofCheckBox,#1%
11081     }%
11082     \PDFForm@Name

```

```

11083 \HyField@FlagsCheckBox
11084 \ifFld@hidden\def\Fld@width{1sp}\fi
11085 \setbox\pdfm@box=\hbox{\MakeCheckField{\Fld@width}{\Fld@height}}%
11086 \HyField@AdvanceAnnotCount
11087 \LayoutCheckField{#2}{%
11088 \Hy@escapeform\PDFForm@Check
11089 \@pdfm@mark{%
11090 ann @check\HyField@TheAnnotCount\space
11091 \dvipdfm@setdim
11092 <<\PDFForm@Check>>%
11093 }%
11094 \unhbox\pdfm@box
11095 \@pdfm@mark{put @afields @check\HyField@TheAnnotCount}%
11096 }%
11097 \endgroup
11098 }

11099 \@pdfm@mark{obj @OBJpdfdocencoding%
11100 <<%
11101 /Type/Encoding%
11102 /Differences[%
11103 24/breve/caron/circumflex/dotaccent/hungarumlaut/ogonek/ring/tilde %
11104 39/quotesingle %
11105 96/grave %
11106 128/bullet/dagger/daggerdbl/ellipsis/emdash/endash/florin%
11107 /fraction/guilsinglleft/guilsinglright/minus/perthousand%
11108 /quotedblbase/quotedblleft/quotedblright/quoteleft/quoteright%
11109 /quotesinglbase/trademark/fi/fl/Lslash/OE/Scaron/Ydieresis%
11110 /Zcaron/dotlessi/lslash/oe/scaron/zcaron %
11111 164/currency %
11112 166/brokenbar %
11113 168/dieresis/copyright/ordfeminine %
11114 172/logicalnot/.notdef/registered/macron/degree/plusminus%
11115 /twosuperior/threesuperior/acute/mu %
11116 183/periodcentered/cedilla/onesuperior/ordmasculine %
11117 188/onequarter/onehalf/threequarters %
11118 192/Agrave/Aacute/Acircumflex/Atilde/Adieresis/Aring/AE%
11119 /Ccedilla/Egrave/Eacute/Ecircumflex/Edieresis/Igrave/Iacute%
11120 /Icircumflex/Idieresis/Eth/Ntilde/Ograve/Oacute/Ocircumflex%
11121 /Otilde/Odieresis/multiply/Oslash/Ugrave/Uacute/Ucircumflex%
11122 /Udieresis/Yacute/Thorn/germandbls/agrave/aacute/acircumflex%
11123 /atilde/adieresis/aring/ae/ccedilla/egrave/eacute%
11124 /ecircumflex/edieresis/igrave/iacute/icircumflex/idieresis%
11125 /eth/ntilde/ograde/oacute/ocircumflex/otilde/odieresis%
11126 /divide/oslash/ugrave/uacute/ucircumflex/udieresis/yacute%
11127 /thorn/ydieresis%
11128 ]%
11129 >>%
11130 }
11131 \@pdfm@mark{obj @OBJZaDb%
11132 <<%
11133 /Type/Font%
11134 /Subtype/Type1%
11135 /Name/ZaDb%
11136 /BaseFont/ZapfDingbats%
11137 >>%
11138 }
11139 \@pdfm@mark{obj @OBJHelv%

```

```

11140 <<%
11141   /Type/Font%
11142   /Subtype/Type1%
11143   /Name/Helv%
11144   /BaseFont/Helvetica%
11145   /Encoding @OBJpdfdocencoding%
11146 >>%
11147 }
11148 </dvipdfm>

```

## 47.6 Common forms part

```

11149 <*pdfform>

```

\Hy@escapestring

```

11150 \begingroup\expandafter\expandafter\expandafter\endgroup
11151 \expandafter\ifx\csname pdfescapestring\endcsname\relax
11152   \let\Hy@escapestring\@firstofone
11153   \def\Hy@escapeform#1{%
11154     \ifHy@escapeform
11155       \def\Hy@escapestring##1{%
11156         \noexpand\Hy@escapestring{\noexpand##1}%
11157       }%
11158       \edef\Hy@temp{#1}%
11159       \expandafter\Hy@@escapeform\Hy@temp\Hy@escapestring{}\@nil
11160       \def\Hy@escapestring##1{%
11161         \@ifundefined{Hy@esc@\string##1}{%
11162           ##1%
11163           \ThisShouldNotHappen
11164         }{%
11165           \csname Hy@esc@\string##1\endcsname
11166         }%
11167       }%
11168     \else
11169       \let\Hy@escapestring\@firstofone
11170     \fi
11171   }%
11172   \def\Hy@@escapeform#1\Hy@escapestring#2#3\@nil{%
11173     \ifx\#3\%
11174     \else
11175       \expandafter\Hy@pstringdef\csname Hy@esc@\string#2\endcsname{#2}%
11176       \Hy@ReturnAfterFi{%
11177         \Hy@@escapeform#3\@nil
11178       }%
11179     \fi
11180   }%
11181 \else
11182   \def\Hy@escapeform#1{%
11183     \ifHy@escapeform
11184       \let\Hy@escapestring\pdfescapestring
11185     \else
11186       \let\Hy@escapestring\@firstofone
11187     \fi
11188   }%
11189   \Hy@escapeform{}%
11190 \fi

```

\PDFForm@Name

```
11191 \def\PDFForm@Name{%
11192   \begingroup
11193     \ifnum\Hy@pdfversion<5 % implementation note 117, PDF spec 1.7
11194       \ifHy@unicode
11195         \Hy@unicodetrue
11196       \fi
11197     \fi
11198     \pdfstringdef\Hy@gtemp\Fld@name
11199   \endgroup
11200   \let\Fld@name\Hy@gtemp
11201 }
```

\PDFForm@Check

```
11202 \def\PDFForm@Check{%
11203   /Subtype/Widget%
11204   \Fld@annotflags
11205   /T(\Fld@name)%
11206   /FT/Btn%
11207   \Fld@flags
11208   /Q \Fld@align
11209   /BS<</W \Fld@borderwidth /S/\Fld@borderstyle>>%
11210   /MK<<%
11211     \ifnum\Fld@rotation=\z@
11212     \else
11213       /R \Fld@rotation
11214     \fi
11215     \ifx\Fld@bordercolor\relax
11216     \else
11217       /BC[\Fld@bordercolor]%
11218     \fi
11219     \ifx\Fld@bcolor\relax
11220     \else
11221       /BG[\Fld@bcolor]%
11222     \fi
11223     /CA(\Hy@escapestring{\Fld@cbsymbol})%
11224   >>%
11225   /DA(/ZaDb \strip@pt\Fld@charsize\space Tf%
11226     \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
11227   /H/P%
11228   \ifFld@checked /V/Yes\else /V/Off\fi
11229 }
```

\PDFForm@Push

```
11230 \ifHy@pdfa
11231 \else
11232   \def\PDFForm@Push{%
11233     /Subtype/Widget%
11234     \Fld@annotflags
11235     /T(\Fld@name)%
11236     /FT/Btn%
11237     \Fld@flags
11238     /H/P%
11239     /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
11240     \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
11241       \ifx\Fld@bordercolor\relax\else 1\fi
11242       \space
```

```

11243 \else
11244 /MK<<%
11245 \ifnum\Fld@rotation=\z@
11246 \else
11247 /R \Fld@rotation
11248 \fi
11249 \ifx\Fld@bordercolor\relax
11250 \else
11251 /BC[\Fld@bordercolor]%
11252 \fi
11253 >>%
11254 \fi
11255 /A<</S/JavaScript/JS(\Hy@escapestring{\Fld@onclick})>>%
11256 }%
11257 \fi

```

\Fld@additionalactions

```

11258 \def\Fld@@additionalactions{%
K input (keystroke) format
11259 \ifx\Fld@keystroke@code\@empty
11260 \else
11261 /K<</S/JavaScript/JS(\Hy@escapestring{\Fld@keystroke@code})>>%
11262 \fi
F display format
11263 \ifx\Fld@format@code\@empty
11264 \else
11265 /F<</S/JavaScript/JS(\Hy@escapestring{\Fld@format@code})>>%
11266 \fi
V validation
11267 \ifx\Fld@validate@code\@empty
11268 \else
11269 /V<</S/JavaScript/JS(\Hy@escapestring{\Fld@validate@code})>>%
11270 \fi
C calculation
11271 \ifx\Fld@calculate@code\@empty
11272 \else
11273 /C<</S/JavaScript/JS(\Hy@escapestring{\Fld@calculate@code})>>%
11274 \fi
Fo receiving the input focus
11275 \ifx\Fld@onfocus@code\@empty
11276 \else
11277 /Fo<</S/JavaScript/JS(\Hy@escapestring{\Fld@onfocus@code})>>%
11278 \fi
Bl loosing the input focus (blurred)
11279 \ifx\Fld@onblur@code\@empty
11280 \else
11281 /Bl<</S/JavaScript/JS(\Hy@escapestring{\Fld@onblur@code})>>%
11282 \fi
D pressing the mouse button (down)
11283 \ifx\Fld@onmousedown@code\@empty
11284 \else
11285 /D<</S/JavaScript/JS(\Hy@escapestring{\Fld@onmousedown@code})>>%
11286 \fi

```

U releasing the mouse button (up)

```
11287 \ifx\Fld@onmouseup@code\@empty
11288 \else
11289 /U<</S/JavaScript/JS(\Hy@escapestring{\Fld@onmouseup@code})>>%
11290 \fi
```

E cursor enters the annotation's active area.

```
11291 \ifx\Fld@onenter@code\@empty
11292 \else
11293 /E<</S/JavaScript/JS(\Hy@escapestring{\Fld@onenter@code})>>%
11294 \fi
```

X cursor exits the annotation's active area.

```
11295 \ifx\Fld@onexit@code\@empty
11296 \else
11297 /X<</S/JavaScript/JS(\Hy@escapestring{\Fld@onexit@code})>>%
11298 \fi
```

```
11299 }
```

```
11300 \def\Fld@additionalactions{%
11301 \if-\Fld@@additionalactions-%
11302 \else
11303 \ifHy@pdfa
11304 \else
11305 /AA<<\Fld@@additionalactions>>%
11306 \fi
11307 \fi
11308 }
```

\PDFForm@List

```
11309 \def\PDFForm@List{%
11310 /Subtype/Widget%
11311 \Fld@annotflags
11312 /T(\Fld@name)%
11313 /FT/Ch%
11314 \Fld@flags
11315 /Q \Fld@align
11316 /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
11317 \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
11318 \ifx\Fld@bordercolor\relax\else 1\fi
11319 \ifx\Fld@bcolor\relax \else 1\fi
11320 \space
11321 \else
11322 /MK<<%
11323 \ifnum\Fld@rotation=\z@
11324 \else
11325 /R \Fld@rotation
11326 \fi
11327 \ifx\Fld@bordercolor\relax
11328 \else
11329 /BC[\Fld@bordercolor]%
11330 \fi
11331 \ifx\Fld@bcolor\relax
11332 \else
11333 /BG[\Fld@bcolor]%
11334 \fi
11335 >>%
11336 \fi
11337 /DA(/Helv \strip@pt\Fld@charsize\space Tf%
```

```

11338     \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
11339   \Fld@choices
11340   \Fld@additionalactions
11341 }

```

#### \PDFForm@Radio

```

11342 \def\PDFForm@Radio{%
11343   /Subtype/Widget%
11344   \Fld@annotflags
11345   /T(\Fld@name)%
11346   /FT/Btn%
11347   \Fld@flags
11348   /H/P%
11349   /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
11350   /MK<<%
11351     \ifnum\Fld@rotation=\z@
11352     \else
11353       /R \Fld@rotation
11354     \fi
11355     \ifx\Fld@bordercolor\relax
11356     \else
11357       /BC[\Fld@bordercolor]%
11358     \fi
11359     \ifx\Fld@bcolor\relax
11360     \else
11361       /BG[\Fld@bcolor]%
11362     \fi
11363     /CA(H)%
11364   >>%
11365   /DA(/ZaDb \strip@pt\Fld@charsize\space Tf%
11366     \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
11367   \ifx\@currValue\Fld@default
11368     /V/\Fld@default
11369   \else
11370     /V/Off%
11371   \fi
11372   \Fld@additionalactions
11373 }

```

#### \PDFForm@Text

```

11374 \def\PDFForm@Text{%
11375   /Subtype/Widget%
11376   \Fld@annotflags
11377   /T(\Fld@name)%
11378   /FT/Tx%
11379   \Fld@flags
11380   /Q \Fld@align
11381   /BS<</W \Fld@borderwidth\space /S /\Fld@borderstyle>>%
11382   \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
11383     \ifx\Fld@bordercolor\relax\else 1\fi
11384     \ifx\Fld@bcolor\relax \else 1\fi
11385     \space
11386   \else
11387     /MK<<%
11388     \ifnum\Fld@rotation=\z@
11389     \else
11390       /R \Fld@rotation

```



```

11391     \fi
11392     \ifx\Fld@bordercolor\relax
11393     \else
11394         /BC[\Fld@bordercolor]%
11395     \fi
11396     \ifx\Fld@bcolor\relax
11397     \else
11398         /BG[\Fld@bcolor]%
11399     \fi
11400     >>%
11401     \fi
11402     /DA(/Helv \strip@pt\Fld@charsize\space Tf%
11403         \ifx\Fld@color\empty\else\space\Fld@color\fi)%
11404     /DV(\Hy@escapestring{\Fld@default})%
11405     /V(\Hy@escapestring{\Fld@value})%
11406     \Fld@additionalactions
11407     \ifnum\Fld@maxlen>\z@/MaxLen \Fld@maxlen \fi
11408 }

```

\PDFForm@Submit

```

11409 \def\PDFForm@Submit{%
11410     /Subtype/Widget%
11411     \Fld@annotflags
11412     /T(\Fld@name)%
11413     /FT/Btn%
11414     \Fld@flags
11415     /H/P%
11416     /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
11417     \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
11418         \ifx\Fld@bordercolor\relax\else 1\fi
11419         \space
11420     \else
11421         /MK<<%
11422         \ifnum\Fld@rotation=\z@
11423         \else
11424             /R \Fld@rotation
11425         \fi
11426         \ifx\Fld@bordercolor\relax
11427         \else
11428             /BC[\Fld@bordercolor]%
11429         \fi
11430         >>%
11431     \fi
11432     /A<<%
11433         /S/SubmitForm%
11434         /F<<%
11435             /FS/URL%
11436             /F(\Hy@escapestring{\Form@action})%
11437         >>%
11438         \Fld@submitflags
11439     >>%
11440 }

```

\PDFForm@Reset

```

11441 \ifHy@pdfa
11442 \else
11443     \def\PDFForm@Reset{%

```

```

11444 /Subtype/Widget%
11445 \Fld@annotflags
11446 /T(\Fld@name)%
11447 /FT/Btn%
11448 \Fld@flags
11449 /H/P%
11450 /DA(/Helv \strip@pt\Fld@charsize\space Tf 0 0 1 rg)%
11451 \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
11452 \ifx\Fld@bordercolor\relax\else 1\fi
11453 \space
11454 \else
11455 /MK<<%
11456 \ifnum\Fld@rotation=\z@
11457 \else
11458 /R \Fld@rotation
11459 \fi
11460 \ifx\Fld@bordercolor\relax
11461 \else
11462 /BC[\Fld@bordercolor]%
11463 \fi
11464 % /CA (Clear)
11465 % /AC (Done)
11466 >>%
11467 \fi
11468 /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
11469 /A<</S/ResetForm>>%
11470 }%
11471 \fi

11472 </pdfform>
11473 <*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`

```

11474 \def\phantomsection{%
11475 \Hy@GlobalStepCount\Hy@linkcounter
11476 \xdef\@currentHref{section*.\the\Hy@linkcounter}%
11477 \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
11478 }
11479 </package>

```

### 48.1 Bookmarks

```
11480 <*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.

```

11481 \def\Hy@writebookmark#1#2#3#4#5{%
11482   % section number, text, label, level, file
11483   \ifx\WriteBookmarks\relax%
11484   \else
11485     \ifnum#4>\Hy@bookmarksdepth\relax
11486     \else
11487       \@writetorep{#1}{#2}{#3}{#4}{#5}%
11488     \fi
11489   \fi
11490 }
11491 \def\Hy@currentbookmarklevel{0}
11492 \def\Hy@numberline#1{#1 }
11493 \def\@@writetorep#1#2#3#4#5{%
11494   \begingroup
11495     \edef\Hy@tempa{#5}%
11496     \ifx\Hy@tempa\Hy@bookmarkstype
11497       \edef\Hy@level{#4}%
11498       \ifx\Hy@levelcheck Y%
11499         \@tempcnta\Hy@level\relax
11500         \advance\@tempcnta by -1 %
11501         \ifnum\Hy@currentbookmarklevel<\@tempcnta
11502           \advance\@tempcnta by -\Hy@currentbookmarklevel\relax
11503           \advance\@tempcnta by 1 %
11504           \Hy@Warning{%
11505             Difference (\the\@tempcnta) between bookmark levels is %
11506             greater \MessageBreak than one, level fixed%
11507           }%
11508           \@tempcnta\Hy@currentbookmarklevel
11509           \advance\@tempcnta by 1 %
11510           \edef\Hy@level{\the\@tempcnta}%
11511         \fi
11512       \else
11513         \global\let\Hy@levelcheck Y%
11514       \fi
11515       \global\let\Hy@currentbookmarklevel\Hy@level
11516       \@tempcnta\Hy@level\relax
11517       \expandafter\xdef\csname Parent\Hy@level\endcsname{#3}%
11518       \advance\@tempcnta by -1 %
11519       \edef\Hy@tempa{#3}%
11520       \edef\Hy@tempb{\csname Parent\the\@tempcnta\endcsname}%
11521       \ifx\Hy@tempa\Hy@tempb
11522         \Hy@Warning{%
11523           The anchor of a bookmark and its parent's must not%
11524           \MessageBreak be the same. Added a new anchor%
11525         }%
11526       \phantomsection
11527     \fi
11528     \ifHy@bookmarksnumbered
11529       \let\numberline\Hy@numberline
11530       \let\partnumberline\Hy@numberline
11531       \let\chapternumberline\Hy@numberline
11532     \else
11533       \let\numberline\@gobble
11534       \let\partnumberline\@gobble

```

```

11535      \let\chapternumberline@gobble
11536      \fi
11537      \pdfstringdef\Hy@tempa{#2}%
11538      \if@filesw
11539          \protected@write\@outlinefile{%
11540              \protect\BOOKMARK
11541                  [\Hy@level] [\@bookmarkopenstatus{\Hy@level}] {#3}%
11542                  {\Hy@tempa}{\Hy@tempb}%
11543          }%
11544      \fi
11545      \fi
11546      \endgroup
11547 }

```

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

```

11548 \newcommand{\currentpdfbookmark}{%
11549     \pdfbookmark[\Hy@currentbookmarklevel]%
11550 }
11551 \newcommand{\subpdfbookmark}{%
11552     \@tempcnta\Hy@currentbookmarklevel
11553     \Hy@StepCount\@tempcnta
11554     \expandafter\pdfbookmark\expandafter[\the\@tempcnta]%
11555 }
11556 \newcommand{\belowpdfbookmark}[2]{%
11557     \@tempcnta\Hy@currentbookmarklevel
11558     \Hy@StepCount\@tempcnta
11559     \expandafter\pdfbookmark\expandafter[\the\@tempcnta]{#1}{#2}%
11560     \advance\@tempcnta by -1 %
11561     \xdef\Hy@currentbookmarklevel{\the\@tempcnta}%
11562 }

```

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.

```

11563 \renewcommand\pdfbookmark[3][0]{%
11564     \Hy@writebookmark{#2}{#3.#1}{#1}{toc}%
11565     \hyper@anchorstart{#3.#1}\hyper@anchorend
11566 }
11567 \def\BOOKMARK{\@ifnextchar[{\@BOOKMARK}{\@@BOOKMARK[1][-]}}
11568 \def\@BOOKMARK[#1]{\@ifnextchar[{\@@BOOKMARK[#1]}{\@@BOOKMARK[#1][-]}}

```

The macros for calculating structure of outlines are derived from those by Petr Olsak used in the texinfopdf macros.

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.

```

11569 <*vtx>
11570 \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.

```

11571 \begingroup
11572     \catcode'\'=12 %
11573     \ifnum\Hy@VTeXversion<650 %
11574         \catcode\'\"=12 %

```

```

11575 \gdef\hv@pdf@char#1#2#3{%
11576 \char
11577 \ifcase'#1#2#3 %
11578 "00\or"01\or"02\or"03\or"04\or"05\or"06\or"07%
11579 \or"08\or"09\or"0A\or"0B\or"0C\or"0D\or"0E\or"0F%
11580 \or"10\or"11\or"12\or"13\or"14\or"15\or"16\or"17%
11581 \or"18\or"19\or"1A\or"1B\or"1C\or"1D\or"1E\or"1F%
11582 \or"20\or"21\or"22\or"23\or"24\or"25\or"26\or"27%
11583 \or"28\or"29\or"2A\or"2B\or"2C\or"2D\or"2E\or"2F%
11584 \or"30\or"31\or"32\or"33\or"34\or"35\or"36\or"37%
11585 \or"38\or"39\or"3A\or"3B\or"3C\or"3D\or"3E\or"3F%
11586 \or"40\or"41\or"42\or"43\or"44\or"45\or"46\or"47%
11587 \or"48\or"49\or"4A\or"4B\or"4C\or"4D\or"4E\or"4F%
11588 \or"50\or"51\or"52\or"53\or"54\or"55\or"56\or"57%
11589 \or"58\or"59\or"5A\or"5B\or"5C\or"5D\or"5E\or"5F%
11590 \or"60\or"61\or"62\or"63\or"64\or"65\or"66\or"67%
11591 \or"68\or"69\or"6A\or"6B\or"6C\or"6D\or"6E\or"6F%
11592 \or"70\or"71\or"72\or"73\or"74\or"75\or"76\or"77%
11593 \or"78\or"79\or"7A\or"7B\or"7C\or"7D\or"7E\or"7F%
11594 \or"80\or"81\or"82\or"83\or"84\or"85\or"86\or"87%
11595 \or"88\or"89\or"8A\or"8B\or"8C\or"8D\or"8E\or"8F%
11596 \or"90\or"91\or"92\or"93\or"94\or"95\or"96\or"97%
11597 \or"98\or"99\or"9A\or"9B\or"9C\or"9D\or"9E\or"9F%
11598 \or"A0\or"A1\or"A2\or"A3\or"A4\or"A5\or"A6\or"A7%
11599 \or"A8\or"A9\or"AA\or"AB\or"AC\or"AD\or"AE\or"AF%
11600 \or"B0\or"B1\or"B2\or"B3\or"B4\or"B5\or"B6\or"B7%
11601 \or"B8\or"B9\or"BA\or"BB\or"BC\or"BD\or"BE\or"BF%
11602 \or"C0\or"C1\or"C2\or"C3\or"C4\or"C5\or"C6\or"C7%
11603 \or"C8\or"C9\or"CA\or"CB\or"CC\or"CD\or"CE\or"CF%
11604 \or"D0\or"D1\or"D2\or"D3\or"D4\or"D5\or"D6\or"D7%
11605 \or"D8\or"D9\or"DA\or"DB\or"DC\or"DD\or"DE\or"DF%
11606 \or"E0\or"E1\or"E2\or"E3\or"E4\or"E5\or"E6\or"E7%
11607 \or"E8\or"E9\or"EA\or"EB\or"EC\or"ED\or"EE\or"EF%
11608 \or"F0\or"F1\or"F2\or"F3\or"F4\or"F5\or"F6\or"F7%
11609 \or"F8\or"F9\or"FA\or"FB\or"FC\or"FD\or"FE\or"FF%
11610 \fi
11611 }%
11612 \else
11613 \gdef\hv@pdf@char{\char'}%
11614 \fi
11615 \endgroup

```

\@@BOOKMARK

```

11616 \def\@@BOOKMARK[#1][#2]#3#4#5{%
11617 \expandafter\edef\csname @count@#3\endcsname{\the\@serial@counter}%
11618 \edef\@mycount{\the\@serial@counter}%
11619 \Hy@StepCount\@serial@counter
11620 \edef\@parcount{%
11621 \expandafter\ifx\csname @count@#5\endcsname\relax
11622 0%
11623 \else
11624 \csname @count@#5\endcsname
11625 \fi
11626 }%
11627 \immediate\special{%
11628 !outline \HyperDestNameFilter{#3};p=\@parcount,i=\@mycount,%
11629 s=\ifx#2-c\else o\fi,t=#4%

```

```

11630 }%
11631 }%

```

\ReadBookmarks

```

11632 \def\ReadBookmarks{%
11633   \begingroup
11634   \def\O{\hv@pdf@char 0}%
11635   \def\1{\hv@pdf@char 1}%
11636   \def\2{\hv@pdf@char 2}%
11637   \def\3{\hv@pdf@char 3}%
11638   \def\({}%
11639   \def\)}%
11640   \def\do##1{%
11641     \ifnum\the\catcode'##1=\active
11642       \makeother##1%
11643     \fi
11644   }%
11645   \dospecials
11646   \InputIfFileExists{\jobname.out}{\}%
11647 \endgroup
11648 \ifx\WriteBookmarks\relax
11649 \else
11650   \if@filesw
11651     \newwrite\@outlinefile
11652     \immediate\openout\@outlinefile=\jobname.out\relax
11653     \ifHy@typexml
11654       \immediate\write\@outlinefile{<relaxxml>\relax}%
11655     \fi
11656   \fi
11657 \fi
11658 }

11659 </vtex>

11660 <*\vtex>
11661 \def\ReadBookmarks{%
11662   \begingroup
11663   \escapechar='\'%
11664   \let\escapechar\@gobble %
11665   \def\@@BOOKMARK[##1][##2]##3##4##5{\calc@bm@number{##5}}%
11666   \InputIfFileExists{\jobname.out}{\}%
11667   \ifx\WriteBookmarks\relax
11668     \global\let\WriteBookmarks\relax
11669   \fi
11670   \def\@@BOOKMARK[##1][##2]##3##4##5{%
11671     \def\Hy@temp{##4}%
11672 <*pdftex>
11673     \Hy@pstringdef\Hy@pstringName{\HyperDestNameFilter{##3}}%
11674     \Hy@OutlineName{}\Hy@pstringName{%
11675       ##2\check@bm@number{##3}%
11676     }%
11677     \expandafter\strip@prefix\meaning\Hy@temp
11678   }%
11679 </pdftex>
11680 <*pdfmark>
11681   \pdfmark{%
11682     pdfmark=/OUT,%
11683     Count={##2\check@bm@number{##3}},%

```

```

11684         Dest={##3},%
11685         Title=\expandafter\strip@prefix\meaning\Hy@temp
11686     }%
11687 </pdfmark>
11688 <*dvipdfm>
11689     \Hy@pstringdef\Hy@pstringName{\HyperDestNameFilter{##3}}%
11690     \@pdfm@mark{%
11691         outline \ifHy@DvipdfmxOutlineOpen
11692             [%
11693             \ifnum##21>\z@
11694             \else
11695             -%
11696             \fi
11697             ] %
11698             \fi
11699             ##1<<%
11700             /Title(\expandafter\strip@prefix\meaning\Hy@temp)%
11701             /A<<%
11702             /S/GoTo%
11703             /D(\Hy@pstringName)%
11704             >>%
11705             >>%
11706         }%
11707 </dvipdfm>
11708     }%
11709     {%
11710         \def\WriteBookmarks{0}%
11711         \InputIfFileExists{\jobname.out}{\relax}%
11712     }%
11713     {%\escapechar\m@ne\InputIfFileExists{\jobname.out}{\relax}%
11714     \ifx\WriteBookmarks\relax
11715     \else
11716         \if@filesw
11717             \newwrite\@outlinefile
11718             \immediate\openout\@outlinefile=\jobname.out\relax
11719             \ifHy@typexml
11720                 \immediate\write\@outlinefile{<relaxxml>\relax}%
11721             \fi
11722         \fi
11723     \fi
11724     \endgroup
11725 }
11726 <*pdfTeX>
11727 \def\Hy@OutlineName#1#2#3#4{%
11728     \pdfoutline goto name{#2}count#3{#4}%
11729 }
11730 </pdfTeX>
11731 \def\check@bm@number#1{%
11732     \expandafter\ifx\csname B_#1\endcsname\relax
11733         0%
11734     \else
11735         \csname B_#1\endcsname
11736     \fi
11737 }
11738 \def\calc@bm@number#1{%
11739     \@tempcnta=\check@bm@number{#1}\relax
11740     \advance\@tempcnta by 1 %

```

```

11741 \expandafter\xdef\csname B_#1\endcsname{\the\@tempcnta}%
11742 }
11743 \</!vtex>

11744 \ifHy@implicit
11745 \else
11746 \expandafter\endinput
11747 \fi

11748 \</outlines>
11749 \<*outlines | hypertex>

11750 \let\H@old@ssect\@ssect
11751 \def\@ssect#1#2#3#4#5{%
11752 \H@old@ssect{#1}{#2}{#3}{#4}{#5}%
11753 \phantomsection
11754 }
11755 \let\H@old@schapter\@schapter
11756 \def\@schapter#1{%
11757 \H@old@schapter{#1}%
11758 \beginingroup
11759 \let\@mkboth\@gobbletwo
11760 \Hy@GlobalStepCount\Hy@linkcounter
11761 \xdef\@currentHref{\Hy@chapapp*.\the\Hy@linkcounter}%
11762 \Hy@raisedlink{%
11763 \hyper@anchorstart{\@currentHref}\hyper@anchorend
11764 }%
11765 \endgroup
11766 }

```

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:

```

11767 \@ifundefined{@chapter}{\{}%
11768 \let\Hy@org@chapter\@chapter
11769 \def\@chapter{%
11770 \def\Hy@next{%
11771 \Hy@GlobalStepCount\Hy@linkcounter
11772 \xdef\@currentHref{\Hy@chapapp*.\the\Hy@linkcounter}%
11773 \Hy@raisedlink{%
11774 \hyper@anchorstart{\@currentHref}\hyper@anchorend
11775 }%
11776 }%
11777 \ifnum\c@secnumdepth>\m@ne
11778 \@ifundefined{if@mainmatter}%
11779 \iftrue{\csname if@mainmatter\endcsname}%
11780 \let\Hy@next\relax
11781 \fi
11782 \fi
11783 \Hy@next
11784 \Hy@org@chapter
11785 }%
11786 }

11787 \let\H@old@part\@part
11788 \beginingroup\expandafter\expandafter\expandafter\endgroup
11789 \expandafter\ifx\csname chapter\endcsname\relax
11790 \let\Hy@secnum@part\z@
11791 \else
11792 \let\Hy@secnum@part\m@ne

```



```

11793 \fi
11794 \def\@part{%
11795   \ifnum\Hy@secnum@part>\c@secnumdepth
11796     \phantomsection
11797   \fi
11798   \H@old@part
11799 }

11800 \let\H@old@spart\@spart
11801 \def\@spart#1{%
11802   \H@old@spart{#1}%
11803   \Hy@GlobalStepCount\Hy@linkcounter
11804   \xdef\@currentHref{part*.\the\Hy@linkcounter}%
11805   \Hy@raisedlink{%
11806     \hyper@anchorstart{\@currentHref}\hyper@anchorend
11807   }%
11808 }

11809 \let\H@old@sect\@sect
11810 \def\@sect#1#2#3#4#5#6[#7]#8{%
11811   \ifnum #2>\c@secnumdepth
11812     \Hy@GlobalStepCount\Hy@linkcounter
11813     \xdef\@currentHref{section*.\the\Hy@linkcounter}%
11814   \fi
11815   \H@old@sect{#1}{#2}{#3}{#4}{#5}{#6}[#7]{#8}%
11816   \ifnum #2>\c@secnumdepth
11817     \Hy@raisedlink{%
11818       \hyper@anchorstart{\@currentHref}\hyper@anchorend
11819     }%
11820   \fi
11821 }

11822 </outlines | hypertex>
11823 <*outlines>

11824 \expandafter\def\csname Parent-4\endcsname{}
11825 \expandafter\def\csname Parent-3\endcsname{}
11826 \expandafter\def\csname Parent-2\endcsname{}
11827 \expandafter\def\csname Parent-1\endcsname{}
11828 \expandafter\def\csname Parent0\endcsname{}
11829 \expandafter\def\csname Parent1\endcsname{}
11830 \expandafter\def\csname Parent2\endcsname{}
11831 \expandafter\def\csname Parent3\endcsname{}
11832 \expandafter\def\csname Parent4\endcsname{}

11833 </outlines>

```

## 49 Compatibility with koma-script classes

```
11834 <*outlines | hypertex>
```

Hard-wire in an unpleasant over-ride of komascript ‘scrbook’ class for 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.

```

11835 \def\Hy@tempa{%
11836   \def\@addchap[##1]##2{%
11837     \typeout{##2}%
11838     \if@twoside
11839       \@mkboth{##1}{-}%
11840     \else

```

```

11841 \mkboth{}{##1}%
11842 \fi
11843 \addtocontents{lof}{\protect\addvspace{10\p@}}%
11844 \addtocontents{lot}{\protect\addvspace{10\p@}}%
11845 \Hy@GlobalStepCount\Hy@linkcounter
11846 \xdef\@currentHref{\Hy@chapapp*.\the\Hy@linkcounter}%
11847 \Hy@raisedlink{%
11848 \hyper@anchorstart{\@currentHref}\hyper@anchorend
11849 }%
11850 \if@twocolumn
11851 \topnewpage[\@makeschapterhead{##2}]%
11852 \else
11853 \@makeschapterhead{##2}%
11854 \@afterheading
11855 \fi
11856 \addcontentsline{toc}{chapter}{##1}%
11857 }%
11858 }
11859 \@ifclassloaded{scrbook}{%
11860 \@ifclasslater{scrbook}{2001/01/01}{%
11861 \let\Hy@tempa\@empty
11862 }{}%
11863 }{%
11864 \@ifclassloaded{scrreprt}{%
11865 \@ifclasslater{scrreprt}{2001/01/01}{%
11866 \let\Hy@tempa\@empty
11867 }{}%
11868 }{%
11869 \let\Hy@tempa\@empty
11870 }%
11871 }%
11872 \Hy@tempa
11873 </outlines | hypertext>

```

## 50 Encoding definition files for encodings of PDF strings

This was contributed by Heiko Oberdiek oberdiek@ruf.uni-freiburg.de

### 50.1 PD1 encoding

```

11874 <*pd1enc>
11875 \DeclareFontEncoding{PD1}{}{}

Accents
11876 \DeclareTextAccent{'}{PD1}{\textasciigrave}
11877 \DeclareTextAccent{'\'}{PD1}{\textacute}
11878 \DeclareTextAccent{\`}{PD1}{\textasciicircum}
11879 \DeclareTextAccent{\~}{PD1}{\texttilde}
11880 \DeclareTextAccent{"}{PD1}{\textasciidieresis}
11881 \DeclareTextAccent{\r}{PD1}{\textring}
11882 \DeclareTextAccent{\v}{PD1}{\textasciicaroon}
11883 \DeclareTextAccent{\.}{PD1}{\textdotaccent}
11884 \DeclareTextAccent{\c}{PD1}{\textcedilla}
11885 \DeclareTextAccent{\=}{PD1}{\textasciimacron}
11886 \DeclareTextAccent{\b}{PD1}{\textmacronbelow}
11887 \DeclareTextAccent{\d}{PD1}{\textdotbelow}
11888 \DeclareTextCompositeCommand{'}{PD1}{\@empty}{\textasciigrave}

```

```

11889 \DeclareTextCompositeCommand{\'}{PD1}{\@empty}{\textacute}
11890 \DeclareTextCompositeCommand{\^}{PD1}{\@empty}{\textasciicircum}
11891 \DeclareTextCompositeCommand{\~}{PD1}{\@empty}{\texttilde}
11892 \DeclareTextCompositeCommand{\"}{PD1}{\@empty}{\textasciidieresis}
11893 \DeclareTextCompositeCommand{\r}{PD1}{\@empty}{\textring}
11894 \DeclareTextCompositeCommand{\v}{PD1}{\@empty}{\textasciicaron}
11895 \DeclareTextCompositeCommand{\.}{PD1}{\@empty}{\textdotaccent}
11896 \DeclareTextCompositeCommand{\c}{PD1}{\@empty}{\textcedilla}
11897 \DeclareTextCompositeCommand{\=}{PD1}{\@empty}{\textasciimacron}
11898 \DeclareTextCompositeCommand{\b}{PD1}{\@empty}{\textmacronbelow}
11899 \DeclareTextCompositeCommand{\d}{PD1}{\@empty}{\textdotbelow}
11900 \DeclareTextCompositeCommand{\'}{PD1}{\ }{\textasciigrave}
11901 \DeclareTextCompositeCommand{\'}{PD1}{\ }{\textacute}
11902 \DeclareTextCompositeCommand{\^}{PD1}{\ }{\textasciicircum}
11903 \DeclareTextCompositeCommand{\~}{PD1}{\ }{\texttilde}
11904 \DeclareTextCompositeCommand{\"}{PD1}{\ }{\textasciidieresis}
11905 \DeclareTextCompositeCommand{\r}{PD1}{\ }{\textring}
11906 \DeclareTextCompositeCommand{\v}{PD1}{\ }{\textasciicaron}
11907 \DeclareTextCompositeCommand{\.}{PD1}{\ }{\textdotaccent}
11908 \DeclareTextCompositeCommand{\c}{PD1}{\ }{\textcedilla}
11909 \DeclareTextCompositeCommand{\=}{PD1}{\ }{\textasciimacron}
11910 \DeclareTextCompositeCommand{\b}{PD1}{\ }{\textmacronbelow}
11911 \DeclareTextCompositeCommand{\d}{PD1}{\ }{\textdotbelow}
11912 \DeclareTextCommand{\k}{PD1}[1]{\TextSymbolUnavailable{\k{#1}}#1}
11913 \DeclareTextCommand{\t}{PD1}[1]{\TextSymbolUnavailable{\t{#1}}#1}
11914 \DeclareTextCommand{\newtie}{PD1}[1]{\TextSymbolUnavailable{\newtie{#1}}#1}

```

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

```

11915 % U+0009 (CHARACTER TABULATION)
11916 \DeclareTextCommand{\textHT}{PD1}{\011}% U+0009
11917 % U+000A (LINE FEED)
11918 \DeclareTextCommand{\textLF}{PD1}{\012}% U+000A
11919 % U+000D (CARRIAGE RETURN)
11920 \DeclareTextCommand{\textCR}{PD1}{\015}% U+000D

```

Accent glyph names

```

11921 % U+02D8 BREVE; breve
11922 \DeclareTextCommand{\textasciibreve}{PD1}{\030}% U+02D8
11923 % U+02C7 CARON; caron
11924 \DeclareTextCommand{\textasciicaron}{PD1}{\031}% U+02C7
11925 % U+02C6 MODIFIER LETTER CIRCUMFLEX ACCENT; circumflex
11926 \DeclareTextCommand{\textcircumflex}{PD1}{\032}% U+02C6
11927 % U+02D9 DOT ABOVE; dotaccent
11928 \DeclareTextCommand{\textdotaccent}{PD1}{\033}% U+02D9
11929 % U+02DD DOUBLE ACUTE ACCENT; hungarumlaut
11930 \DeclareTextCommand{\texthungarumlaut}{PD1}{\034}% U+02DD
11931 % U+02DB OGONEK; ogonek
11932 \DeclareTextCommand{\textogonek}{PD1}{\035}% U+02DB
11933 % U+02DA RING ABOVE; ring
11934 \DeclareTextCommand{\textring}{PD1}{\036}% U+02DA
11935 % U+02DC SMALL TILDE; ilde, *tilde
11936 \DeclareTextCommand{\texttilde}{PD1}{\037}% U+02DC

```

\040: U+0020 SPACE; \*space, spacehackarabic

\041: U+0021 EXCLAMATION MARK; exclam

11937 % U+0022 QUOTATION MARK; quotedbl

11938 \DeclareTextCommand{\textquotedbl}{PD1}{\string"}% \042 U+0022

11939 % U+0023 NUMBER SIGN; numbersign

11940 \DeclareTextCommand{\textnumbersign}{PD1}{\043}% U+0023

11941 % U+0024 DOLLAR SIGN; dollar  
 11942 \DeclareTextCommand{\textdollar}{PD1}{\044}% U+0024  
 11943 % U+0025 PERCENT SIGN; percent  
 11944 \DeclareTextCommand{\textpercent}{PD1}{\045}% U+0025  
 11945 % U+0026 AMPERSAND; ampersand  
 11946 \DeclareTextCommand{\textampersand}{PD1}{\046}% U+0026  
 \047: U+0027 APOSTROPHE; quotesingle  
  
 11947 % U+0028 LEFT PARENTHESIS; parenleft  
 11948 \DeclareTextCommand{\textparenleft}{PD1}{\string\{}% \050 U+0028  
 11949 % U+0029 RIGHT PARENTHESIS; parenright  
 11950 \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  
 11951 % U+002E FULL STOP; period  
 11952 \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  
 11953 % U+003C LESS-THAN SIGN; less  
 11954 \DeclareTextCommand{\textless}{PD1}{<}% \074 U+003C  
 \075: U+003D EQUALS SIGN; equal  
 11955 % U+003E GREATER-THAN SIGN; greater  
 11956 \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  
 11957 % U+005C REVERSE SOLIDUS; backslash  
 11958 \DeclareTextCommand{\textbackslash}{PD1}{\134}% U+005C  
 \135: U+005D RIGHT SQUARE BRACKET; bracketright  
 11959 % U+005E CIRCUMFLEX ACCENT; asciicircum  
 11960 \DeclareTextCommand{\textasciicircum}{PD1}{\136}% U+005E  
 11961 % U+005F LOW LINE; underscore  
 11962 \DeclareTextCommand{\textunderscore}{PD1}{\137}% U+005F  
 11963 \DeclareTextCommand{\textmacronbelow}{PD1}{\137}% U+005F  
 11964 % U+0060 GRAVE ACCENT; grave  
 11965 \DeclareTextCommand{\textasciigrave}{PD1}{\140}% U+0060  
 \141: U+0061 LATIN SMALL LETTER A; a  
 ...  
 \150: U+0068 LATIN SMALL LETTER H; h  
 11966 % U+0069 LATIN SMALL LETTER I; i  
 11967 \DeclareTextCompositeCommand{\.}{PD1}{i}{i}% \151 U+0069  
 \152: U+006A LATIN SMALL LETTER J; j  
 ...

\172: U+007A LATIN SMALL LETTER Z; z  
 11968 % U+007B LEFT CURLY BRACKET; braceleft  
 11969 \DeclareTextCommand{\textbraceleft}{PD1}{\173}% U+007B  
 11970 % U+007C VERTICAL LINE; \*bar, verticalbar  
 11971 \DeclareTextCommand{\textbar}{PD1}{|}% U+007C  
 11972 % U+007D RIGHT CURLY BRACKET; braceright  
 11973 \DeclareTextCommand{\textbraceright}{PD1}{\175}% U+007D  
 11974 % U+007E TILDE; asciitilde  
 11975 \DeclareTextCommand{\textasciitilde}{PD1}{\176}% U+007E  
 Slot \177 (0x7F) is undefined in PDFDocEncoding.  
 11976 % U+2022 BULLET; bullet  
 11977 \DeclareTextCommand{\textbullet}{PD1}{\200}% U+2022  
 11978 % U+2020 DAGGER; dagger  
 11979 \DeclareTextCommand{\textdagger}{PD1}{\201}% U+2020  
 11980 % U+2021 DOUBLE DAGGER; daggerdbl  
 11981 \DeclareTextCommand{\textdaggerdbl}{PD1}{\202}% U+2021  
 11982 % U+2026 HORIZONTAL ELLIPSIS; ellipsis  
 11983 \DeclareTextCommand{\textellipsis}{PD1}{\203}% U+2026  
 11984 % U+2014 EM DASH; emdash  
 11985 \DeclareTextCommand{\textemdash}{PD1}{\204}% U+2014  
 11986 % U+2013 EN DASH; endash  
 11987 \DeclareTextCommand{\textendash}{PD1}{\205}% U+2013  
 11988 % U+0192 LATIN SMALL LETTER F WITH HOOK; florin  
 11989 \DeclareTextCommand{\textflorin}{PD1}{\206}% U+0192  
 11990 % U+2044 FRACTION SLASH; fraction  
 11991 \DeclareTextCommand{\textfractionsolidus}{PD1}{\207}% U+2044  
 11992 % U+2039 SINGLE LEFT-POINTING ANGLE QUOTATION MARK; guilsinglleft  
 11993 \DeclareTextCommand{\guilsinglleft}{PD1}{\210}% U+2039  
 11994 % U+203A SINGLE RIGHT-POINTING ANGLE QUOTATION MARK; guilsinglright  
 11995 \DeclareTextCommand{\guilsinglright}{PD1}{\211}% U+203A  
 11996 % U+2212 MINUS SIGN; minus  
 11997 \DeclareTextCommand{\textminus}{PD1}{\212}% U+2212  
 11998 % U+2030 PER MILLE SIGN; perthousand  
 11999 \DeclareTextCommand{\textperthousand}{PD1}{\213}% U+2030  
 12000 % U+201E DOUBLE LOW-9 QUOTATION MARK; quotedblbase  
 12001 \DeclareTextCommand{\quotedblbase}{PD1}{\214}% U+201E  
 12002 % U+201C LEFT DOUBLE QUOTATION MARK; quotedblleft  
 12003 \DeclareTextCommand{\textquotedblleft}{PD1}{\215}% U+201C  
 12004 % U+201D RIGHT DOUBLE QUOTATION MARK; quotedblright  
 12005 \DeclareTextCommand{\textquotedblright}{PD1}{\216}% U+201D  
 12006 % U+2018 LEFT SINGLE QUOTATION MARK; quoteleft  
 12007 \DeclareTextCommand{\textquoteleft}{PD1}{\217}% U+2018  
 12008 % U+2019 RIGHT SINGLE QUOTATION MARK; quoteright  
 12009 \DeclareTextCommand{\textquoteright}{PD1}{\220}% U+2019  
 12010 % U+201A SINGLE LOW-9 QUOTATION MARK; quotesinglbase  
 12011 \DeclareTextCommand{\quotesinglbase}{PD1}{\221}% U+201A  
 12012 % U+2122 TRADE MARK SIGN; trademark  
 12013 \DeclareTextCommand{\texttrademark}{PD1}{\222}% U+2122  
 12014 % U+FB01 LATIN SMALL LIGATURE FI; fi  
 12015 \DeclareTextCommand{\textfi}{PD1}{\223}% U+FB01  
 12016 % U+FB02 LATIN SMALL LIGATURE FL; fl  
 12017 \DeclareTextCommand{\textfl}{PD1}{\224}% U+FB02  
 12018 % U+0141 LATIN CAPITAL LETTER L WITH STROKE; Lslash  
 12019 \DeclareTextCommand{\L}{PD1}{\225}% U+0141  
 12020 % U+0152 LATIN CAPITAL LIGATURE OE; OE  
 12021 \DeclareTextCommand{\OE}{PD1}{\226}% U+0152  
 12022 % U+0160 LATIN CAPITAL LETTER S WITH CARON; Scaron

12023 \DeclareTextCompositeCommand{\v}{PD1}{S}{\227}% U+0160  
 12024 % U+0178 LATIN CAPITAL LETTER Y WITH DIAERESIS; Ydieresis  
 12025 \DeclareTextCompositeCommand{\"}{PD1}{Y}{\230}% U+0178  
 12026 \DeclareTextCommand{\IJ}{PD1}{\230}  
 12027 % U+017D LATIN CAPITAL LETTER Z WITH CARON; Zcaron  
 12028 \DeclareTextCompositeCommand{\v}{PD1}{Z}{\231}% U+017D  
 12029 % U+0131 LATIN SMALL LETTER DOTLESS I; dotlessi  
 12030 \DeclareTextCommand{\i}{PD1}{\232}% U+0131  
 12031 % U+0142 LATIN SMALL LETTER L WITH STROKE; lslash  
 12032 \DeclareTextCommand{\l}{PD1}{\233}% U+0142  
 12033 % U+0153 LATIN SMALL LIGATURE OE; oe  
 12034 \DeclareTextCommand{\oe}{PD1}{\234}% U+0153  
 12035 % U+0161 LATIN SMALL LETTER S WITH CARON; scaron  
 12036 \DeclareTextCompositeCommand{\v}{PD1}{s}{\235}% U+0161  
 12037 % U+017E LATIN SMALL LETTER Z WITH CARON; zcaron  
 12038 \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.  
 12039 % U+20AC EURO SIGN; \*Euro, euro  
 12040 \DeclareTextCommand{\texteuro}{PD1}{\240}% U+20AC  
 12041 % U+00A1 INVERTED EXCLAMATION MARK; exclamdown  
 12042 \DeclareTextCommand{\textexclamdown}{PD1}{\241}% U+00A1  
 12043 % U+00A2 CENT SIGN; cent  
 12044 \DeclareTextCommand{\textcent}{PD1}{\242}% U+00A2  
 12045 % U+00A3 POUND SIGN; sterling  
 12046 \DeclareTextCommand{\textsterling}{PD1}{\243}% U+00A3  
 12047 % U+00A4 CURRENCY SIGN; currency  
 12048 \DeclareTextCommand{\textcurrency}{PD1}{\244}% U+00A4  
 12049 % U+00A5 YEN SIGN; yen  
 12050 \DeclareTextCommand{\textyen}{PD1}{\245}% U+00A5  
 12051 % U+00A6 BROKEN BAR; brokenbar  
 12052 \DeclareTextCommand{\textbrokenbar}{PD1}{\246}% U+00A6  
 12053 % U+00A7 SECTION SIGN; section  
 12054 \DeclareTextCommand{\textsection}{PD1}{\247}% U+00A7  
 12055 % U+00A8 DIAERESIS; dieresis  
 12056 \DeclareTextCommand{\textasciidieresis}{PD1}{\250}% U+00A8  
 12057 % U+00A9 COPYRIGHT SIGN; copyright  
 12058 \DeclareTextCommand{\textcopyright}{PD1}{\251}% U+00A9  
 12059 % U+00AA FEMININE ORDINAL INDICATOR; ordfeminine  
 12060 \DeclareTextCommand{\textordfeminine}{PD1}{\252}% U+00AA  
 12061 % U+00AB LEFT-POINTING DOUBLE ANGLE QUOTATION MARK; guillemotleft  
 12062 \DeclareTextCommand{\guillemotleft}{PD1}{\253}% U+00AB  
 12063 % U+00AC NOT SIGN; logicalnot  
 12064 \DeclareTextCommand{\textlogicalnot}{PD1}{\254}% U+00AC  
 12065 \DeclareTextCommand{\textlnot}{PD1}{\254}% logical not  
 No glyph \255 in PDFDocEncoding.  
 12066 % U+00AE REGISTERED SIGN; registered  
 12067 \DeclareTextCommand{\textregistered}{PD1}{\256}% U+00AE  
 12068 % U+00AF MACRON; \*macron, overscore  
 12069 \DeclareTextCommand{\textasciimacron}{PD1}{\257}% U+00AF  
 12070 % U+00B0 DEGREE SIGN; degree  
 12071 \DeclareTextCommand{\textdegree}{PD1}{\260}% U+00B0  
 12072 % U+00B1 PLUS-MINUS SIGN; plusminus  
 12073 \DeclareTextCommand{\textplusminus}{PD1}{\261}% U+00B1  
 12074 % U+00B2 SUPERScript TWO; twosuperior  
 12075 \DeclareTextCommand{\texttwosuperior}{PD1}{\262}% U+00B2  
 12076 % U+00B3 SUPERScript THREE; threesuperior

12077 \DeclareTextCommand{\textthreesuperior}{PD1}{\263}% U+00B3  
12078 % U+00B4 ACUTE ACCENT; acute  
12079 \DeclareTextCommand{\textacute}{PD1}{\264}% U+00B4  
12080 % U+00B5 MICRO SIGN; mu, mu1  
12081 \DeclareTextCommand{\textmu}{PD1}{\265}% U+00B5  
12082 % U+00B6 PILCROW SIGN; paragraph  
12083 \DeclareTextCommand{\textparagraph}{PD1}{\266}% U+00B6  
12084 % U+00B7 MIDDLE DOT; middot, \*periodcentered  
12085 \DeclareTextCommand{\textperiodcentered}{PD1}{\267}% U+00B7  
12086 % U+00B8 CEDILLA; cedilla  
12087 \DeclareTextCommand{\textcedilla}{PD1}{\270}% U+00B8  
12088 % U+00B9 SUPERScript ONE; onesuperior  
12089 \DeclareTextCommand{\textonesuperior}{PD1}{\271}% U+00B9  
12090 % U+00BA MASCULINE ORDINAL INDICATOR; ordmasculine  
12091 \DeclareTextCommand{\textordmasculine}{PD1}{\272}% U+00BA  
12092 % U+00BB RIGHT-POINTING DOUBLE ANGLE QUOTATION MARK; guillemotright  
12093 \DeclareTextCommand{\guillemotright}{PD1}{\273}% U+00BB  
12094 % U+00BC VULGAR FRACTION ONE QUARTER; onequarter  
12095 \DeclareTextCommand{\textonequarter}{PD1}{\274}% U+00BC  
12096 % U+00BD VULGAR FRACTION ONE HALF; onehalf  
12097 \DeclareTextCommand{\textonehalf}{PD1}{\275}% U+00BD  
12098 % U+00BE VULGAR FRACTION THREE QUARTERS; threequarters  
12099 \DeclareTextCommand{\textthreequarters}{PD1}{\276}% U+00BE  
12100 % U+00BF INVERTED QUESTION MARK; questiondown  
12101 \DeclareTextCommand{\textquestiondown}{PD1}{\277}% U+00BF  
12102 % U+00C0 LATIN CAPITAL LETTER A WITH GRAVE; Agrave  
12103 \DeclareTextCompositeCommand{\`}{PD1}{A}{\300}% U+00C0  
12104 % U+00C1 LATIN CAPITAL LETTER A WITH ACUTE; Aacute  
12105 \DeclareTextCompositeCommand{\'}{PD1}{A}{\301}% U+00C1  
12106 % U+00C2 LATIN CAPITAL LETTER A WITH CIRCUMFLEX; Acircumflex  
12107 \DeclareTextCompositeCommand{\^}{PD1}{A}{\302}% U+00C2  
12108 % U+00C3 LATIN CAPITAL LETTER A WITH TILDE; Atilde  
12109 \DeclareTextCompositeCommand{\~}{PD1}{A}{\303}% U+00C3  
12110 % U+00C4 LATIN CAPITAL LETTER A WITH DIAERESIS; Adieresis  
12111 \DeclareTextCompositeCommand{\"}{PD1}{A}{\304}% U+00C4  
12112 % U+00C5 LATIN CAPITAL LETTER A WITH RING ABOVE; Aring  
12113 \DeclareTextCompositeCommand{\r}{PD1}{A}{\305}% U+00C5  
12114 % U+00C6 LATIN CAPITAL LETTER AE; AE  
12115 \DeclareTextCommand{\AE}{PD1}{\306}% U+00C6  
12116 % U+00C7 LATIN CAPITAL LETTER C WITH CEDILLA; Ccedilla  
12117 \DeclareTextCompositeCommand{\c}{PD1}{C}{\307}% U+00C7  
12118 % U+00C8 LATIN CAPITAL LETTER E WITH GRAVE; Egrave  
12119 \DeclareTextCompositeCommand{\`}{PD1}{E}{\310}% U+00C8  
12120 % U+00C9 LATIN CAPITAL LETTER E WITH ACUTE; Eacute  
12121 \DeclareTextCompositeCommand{\'}{PD1}{E}{\311}% U+00C9  
12122 % U+00CA LATIN CAPITAL LETTER E WITH CIRCUMFLEX; Ecircumflex  
12123 \DeclareTextCompositeCommand{\^}{PD1}{E}{\312}% U+00CA  
12124 % U+00CB LATIN CAPITAL LETTER E WITH DIAERESIS; Edieresis  
12125 \DeclareTextCompositeCommand{\"}{PD1}{E}{\313}% U+00CB  
12126 % U+00CC LATIN CAPITAL LETTER I WITH GRAVE; Igrave  
12127 \DeclareTextCompositeCommand{\`}{PD1}{I}{\314}% U+00CC  
12128 % U+00CD LATIN CAPITAL LETTER I WITH ACUTE; Iacute  
12129 \DeclareTextCompositeCommand{\'}{PD1}{I}{\315}% U+00CD  
12130 % U+00CE LATIN CAPITAL LETTER I WITH CIRCUMFLEX; Icircumflex  
12131 \DeclareTextCompositeCommand{\^}{PD1}{I}{\316}% U+00CE  
12132 % U+00CF LATIN CAPITAL LETTER I WITH DIAERESIS; Idieresis  
12133 \DeclareTextCompositeCommand{\"}{PD1}{I}{\317}% U+00CF

12134 % U+00D0 LATIN CAPITAL LETTER ETH; Eth  
12135 \DeclareTextCommand{\DH}{PD1}{\320}% U+00D0  
12136 \DeclareTextCommand{\DJ}{PD1}{\320}% U+00D0  
12137 % U+00D1 LATIN CAPITAL LETTER N WITH TILDE; Ntilde  
12138 \DeclareTextCompositeCommand{\~}{PD1}{N}{\321}% U+00D1  
12139 % U+00D2 LATIN CAPITAL LETTER O WITH GRAVE; Ograve  
12140 \DeclareTextCompositeCommand{\`}{PD1}{O}{\322}% U+00D2  
12141 % U+00D3 LATIN CAPITAL LETTER O WITH ACUTE; Oacute  
12142 \DeclareTextCompositeCommand{\'}{PD1}{O}{\323}% U+00D3  
12143 % U+00D4 LATIN CAPITAL LETTER O WITH CIRCUMFLEX; Ocircumflex  
12144 \DeclareTextCompositeCommand{\^}{PD1}{O}{\324}% U+00D4  
12145 % U+00D5 LATIN CAPITAL LETTER O WITH TILDE; Otilde  
12146 \DeclareTextCompositeCommand{\~}{PD1}{O}{\325}% U+00D5  
12147 % U+00D6 LATIN CAPITAL LETTER O WITH DIAERESIS; Odieresis  
12148 \DeclareTextCompositeCommand{\"}{PD1}{O}{\326}% U+00D6  
12149 % U+00D7 MULTIPLICATION SIGN; multiply  
12150 \DeclareTextCommand{\textmultiply}{PD1}{\327}% U+00D7  
12151 % U+00D8 LATIN CAPITAL LETTER O WITH STROKE; Oslash  
12152 \DeclareTextCommand{\O}{PD1}{\330}% U+00D8  
12153 % U+00D9 LATIN CAPITAL LETTER U WITH GRAVE; Ugrave  
12154 \DeclareTextCompositeCommand{\`}{PD1}{U}{\331}% U+00D9  
12155 % U+00DA LATIN CAPITAL LETTER U WITH ACUTE; Uacute  
12156 \DeclareTextCompositeCommand{\'}{PD1}{U}{\332}% U+00DA  
12157 % U+00DB LATIN CAPITAL LETTER U WITH CIRCUMFLEX; Ucircumflex  
12158 \DeclareTextCompositeCommand{\^}{PD1}{U}{\333}% U+00DB  
12159 % U+00DC LATIN CAPITAL LETTER U WITH DIAERESIS; Udieresis  
12160 \DeclareTextCompositeCommand{\"}{PD1}{U}{\334}% U+00DC  
12161 % U+00DD LATIN CAPITAL LETTER Y WITH ACUTE; Yacute  
12162 \DeclareTextCompositeCommand{\'}{PD1}{Y}{\335}% U+00DD  
12163 % U+00DE LATIN CAPITAL LETTER THORN; Thorn  
12164 \DeclareTextCommand{\TH}{PD1}{\336}% U+00DE  
12165 % U+00DF LATIN SMALL LETTER SHARP S; germandbls  
12166 \DeclareTextCommand{\ss}{PD1}{\337}% U+00DF  
12167 % U+00E0 LATIN SMALL LETTER A WITH GRAVE; agrave  
12168 \DeclareTextCompositeCommand{\`}{PD1}{a}{\340}% U+00E0  
12169 % U+00E1 LATIN SMALL LETTER A WITH ACUTE; aacute  
12170 \DeclareTextCompositeCommand{\'}{PD1}{a}{\341}% U+00E1  
12171 % U+00E2 LATIN SMALL LETTER A WITH CIRCUMFLEX; acircumflex  
12172 \DeclareTextCompositeCommand{\^}{PD1}{a}{\342}% U+00E2  
12173 % U+00E3 LATIN SMALL LETTER A WITH TILDE; atilde  
12174 \DeclareTextCompositeCommand{\~}{PD1}{a}{\343}% U+00E3  
12175 % U+00E4 LATIN SMALL LETTER A WITH DIAERESIS; adieresis  
12176 \DeclareTextCompositeCommand{\"}{PD1}{a}{\344}% U+00E4  
12177 % U+00E5 LATIN SMALL LETTER A WITH RING ABOVE; aring  
12178 \DeclareTextCompositeCommand{\r}{PD1}{a}{\345}% U+00E5  
12179 % U+00E6 LATIN SMALL LETTER AE; ae  
12180 \DeclareTextCommand{\ae}{PD1}{\346}% U+00E6  
12181 % U+00E7 LATIN SMALL LETTER C WITH CEDILLA; ccedilla  
12182 \DeclareTextCompositeCommand{\c}{PD1}{c}{\347}% U+00E7  
12183 % U+00E8 LATIN SMALL LETTER E WITH GRAVE; egrave  
12184 \DeclareTextCompositeCommand{\`}{PD1}{e}{\350}% U+00E8  
12185 % U+00E9 LATIN SMALL LETTER E WITH ACUTE; eacute  
12186 \DeclareTextCompositeCommand{\'}{PD1}{e}{\351}% U+00E9  
12187 % U+00EA LATIN SMALL LETTER E WITH CIRCUMFLEX; ecircumflex  
12188 \DeclareTextCompositeCommand{\^}{PD1}{e}{\352}% U+00EA  
12189 % U+00EB LATIN SMALL LETTER E WITH DIAERESIS; edieresis  
12190 \DeclareTextCompositeCommand{\"}{PD1}{e}{\353}% U+00EB



12191 % U+00EC LATIN SMALL LETTER I WITH GRAVE; igrave  
12192 \DeclareTextCompositeCommand{\`}{PD1}{i}{\354}% U+00EC  
12193 \DeclareTextCompositeCommand{\`}{PD1}{i}{\354}% U+00EC  
12194 % U+00ED LATIN SMALL LETTER I WITH ACUTE; iacute  
12195 \DeclareTextCompositeCommand{\`}{PD1}{i}{\355}% U+00ED  
12196 \DeclareTextCompositeCommand{\`}{PD1}{i}{\355}% U+00ED  
12197 % U+00EE LATIN SMALL LETTER I WITH CIRCUMFLEX; icircumflex  
12198 \DeclareTextCompositeCommand{\`}{PD1}{i}{\356}% U+00EE  
12199 \DeclareTextCompositeCommand{\`}{PD1}{i}{\356}% U+00EE  
12200 % U+00EF LATIN SMALL LETTER I WITH DIAERESIS; idieresis  
12201 \DeclareTextCompositeCommand{\`}{PD1}{i}{\357}% U+00EF  
12202 \DeclareTextCompositeCommand{\`}{PD1}{i}{\357}% U+00EF  
12203 % U+00F0 LATIN SMALL LETTER ETH; eth  
12204 \DeclareTextCommand{\dh}{PD1}{\360}% U+00F0  
12205 % U+00F1 LATIN SMALL LETTER N WITH TILDE; ntilde  
12206 \DeclareTextCompositeCommand{\~}{PD1}{n}{\361}% U+00F1  
12207 % U+00F2 LATIN SMALL LETTER O WITH GRAVE; ograve  
12208 \DeclareTextCompositeCommand{\`}{PD1}{o}{\362}% U+00F2  
12209 % U+00F3 LATIN SMALL LETTER O WITH ACUTE; oacute  
12210 \DeclareTextCompositeCommand{\`}{PD1}{o}{\363}% U+00F3  
12211 % U+00F4 LATIN SMALL LETTER O WITH CIRCUMFLEX; ocircumflex  
12212 \DeclareTextCompositeCommand{\`}{PD1}{o}{\364}% U+00F4  
12213 % U+00F5 LATIN SMALL LETTER O WITH TILDE; otilde  
12214 \DeclareTextCompositeCommand{\~}{PD1}{o}{\365}% U+00F5  
12215 % U+00F6 LATIN SMALL LETTER O WITH DIAERESIS; odieresis  
12216 \DeclareTextCompositeCommand{\`}{PD1}{o}{\366}% U+00F6  
12217 % U+00F7 DIVISION SIGN; divide  
12218 \DeclareTextCommand{\textdivide}{PD1}{\367}% U+00F7  
12219 % U+00F8 LATIN SMALL LETTER O WITH STROKE; oslash  
12220 \DeclareTextCommand{\o}{PD1}{\370}% U+00F8  
12221 % U+00F9 LATIN SMALL LETTER U WITH GRAVE; ugrave  
12222 \DeclareTextCompositeCommand{\`}{PD1}{u}{\371}% U+00F9  
12223 % U+00FA LATIN SMALL LETTER U WITH ACUTE; uacute  
12224 \DeclareTextCompositeCommand{\`}{PD1}{u}{\372}% U+00FA  
12225 % U+00FB LATIN SMALL LETTER U WITH CIRCUMFLEX; ucircumflex  
12226 \DeclareTextCompositeCommand{\`}{PD1}{u}{\373}% U+00FB  
12227 % U+00FC LATIN SMALL LETTER U WITH DIAERESIS; udieresis  
12228 \DeclareTextCompositeCommand{\`}{PD1}{u}{\374}% U+00FC  
12229 % U+00FD LATIN SMALL LETTER Y WITH ACUTE; yacute  
12230 \DeclareTextCompositeCommand{\`}{PD1}{y}{\375}% U+00FD  
12231 % U+00FE LATIN SMALL LETTER THORN; thorn  
12232 \DeclareTextCommand{\th}{PD1}{\376}% U+00FE  
12233 % U+00FF LATIN SMALL LETTER Y WITH DIAERESIS; ydieresis  
12234 \DeclareTextCompositeCommand{\`}{PD1}{y}{\377}% U+00FF  
12235 \DeclareTextCommand{\ij}{PD1}{\377}% U+00FF

Glyphs that consist of several characters.

12236 \DeclareTextCommand{\SS}{PD1}{SS}  
12237 \DeclareTextCommand{\textcelsius}{PD1}{\textdegree C}

Aliases (german.sty)

12238 \DeclareTextCommand{\textglqq}{PD1}{\quotedblbase}  
12239 \DeclareTextCommand{\textgrqq}{PD1}{\textquotedblleft}  
12240 \DeclareTextCommand{\textglq}{PD1}{\quotesinglbase}  
12241 \DeclareTextCommand{\textgrq}{PD1}{\textquoteleft}  
12242 \DeclareTextCommand{\textflqq}{PD1}{\guillemotleft}  
12243 \DeclareTextCommand{\textfrqq}{PD1}{\guillemotright}  
12244 \DeclareTextCommand{\textflq}{PD1}{\guilsinglleft}  
12245 \DeclareTextCommand{\textfrq}{PD1}{\guilsinglright}

Aliases (math names)

```

12246 \DeclareTextCommand{\textneg}{PD1}{\textlogicalnot}
12247 \DeclareTextCommand{\texttimes}{PD1}{\textmultiply}
12248 \DeclareTextCommand{\textdiv}{PD1}{\textdivide}
12249 \DeclareTextCommand{\textpm}{PD1}{\textplusminus}
12250 \DeclareTextCommand{\textcdot}{PD1}{\textperiodcentered}
12251 \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;

```

12252 \DeclareTextCompositeCommand{\k}{PD1}{a}{a}% aogonek
12253 \DeclareTextCompositeCommand{\'}{PD1}{c}{c}% cacute
12254 \DeclareTextCompositeCommand{\k}{PD1}{e}{e}% eogonek
12255 \DeclareTextCompositeCommand{\'}{PD1}{n}{n}% nacute
12256 \DeclareTextCompositeCommand{\'}{PD1}{s}{s}% sacute
12257 \DeclareTextCompositeCommand{\'}{PD1}{z}{z}% zacute
12258 \DeclareTextCompositeCommand{\.}{PD1}{z}{z}% zdot
12259 \DeclareTextCompositeCommand{\k}{PD1}{A}{A}% Aogonek
12260 \DeclareTextCompositeCommand{\'}{PD1}{C}{C}% Cacute
12261 \DeclareTextCompositeCommand{\k}{PD1}{E}{E}% Eogonek
12262 \DeclareTextCompositeCommand{\'}{PD1}{N}{N}% Nacute
12263 \DeclareTextCompositeCommand{\'}{PD1}{S}{S}% Sacute
12264 \DeclareTextCompositeCommand{\'}{PD1}{Z}{Z}% Zacute
12265 \DeclareTextCompositeCommand{\.}{PD1}{Z}{Z}% Zdot

```

12266 </pdlenc>

## 50.2 PU encoding

```

12267 <*puenc>
12268 \DeclareFontEncoding{PU}{}{}

```

### 50.2.1 NFSS2 accents

```

12269 % U+0300 COMBINING GRAVE ACCENT; gravecmb, *gravecomb
12270 \DeclareTextCommand{\'}{PU}[1]{#1\83\000}% U+0300
12271 % U+0301 COMBINING ACUTE ACCENT; acutecmb, *acutecomb
12272 \DeclareTextCommand{\'}{PU}[1]{#1\83\001}% U+0301
12273 % U+0302 COMBINING CIRCUMFLEX ACCENT; circumflexcmb
12274 \DeclareTextCommand{\^}{PU}[1]{#1\83\002}% U+0302
12275 % U+0303 COMBINING TILDE; tildecmb, *tildecmb
12276 \DeclareTextCommand{\~}{PU}[1]{#1\83\003}% U+0303
12277 % U+0304 COMBINING MACRON; macroncmb
12278 \DeclareTextCommand{\=}{PU}[1]{#1\83\004}% U+0304
12279 % U+0306 COMBINING BREVE; brevecmb
12280 \DeclareTextCommand{\u}{PU}[1]{#1\83\006}% U+0306
12281 \DeclareTextCommand{\U}{PU}[1]{#1\83\006}% U+0306
12282 % U+0307 COMBINING DOT ABOVE; dotaccentcmb
12283 \DeclareTextCommand{\.}{PU}[1]{#1\83\007}% U+0307
12284 % U+0308 COMBINING DIAERESIS; dieresiscmb
12285 \DeclareTextCommand{\"}{PU}[1]{#1\83\010}% U+0308
12286 % U+030A COMBINING RING ABOVE; ringcmb
12287 \DeclareTextCommand{\r}{PU}[1]{#1\83\012}% U+030A
12288 % U+030B COMBINING DOUBLE ACUTE ACCENT; hungarumlautcmb
12289 \DeclareTextCommand{\H}{PU}[1]{#1\83\013}% U+030B
12290 % U+030C COMBINING CARON; caroncmb
12291 \DeclareTextCommand{\v}{PU}[1]{#1\83\014}% U+030C
12292 % U+030F COMBINING DOUBLE GRAVE ACCENT; dblgravecmb
12293 \DeclareTextCommand{\G}{PU}[1]{#1\83\017}% U+030F
12294 \DeclareTextCommand{\C}{PU}[1]{#1\83\017}% U+030F

```

```

12295 % U+0311 COMBINING INVERTED BREVE; breveinvertedcmb
12296 \DeclareTextCommand{\newtie}{PU}[1]{#1\83\021}% U+0311
12297 % U+0323 COMBINING DOT BELOW; dotbelowcmb, *dotbelowcmb
12298 \DeclareTextCommand{\d}{PU}[1]{#1\83\043}% U+0323
12299 % U+0331 COMBINING MACRON BELOW; macronbelowcmb
12300 \DeclareTextCommand{\b}{PU}[1]{#1\83\061}% U+0331
12301 % U+0327 COMBINING CEDILLA; cedillacmb
12302 \DeclareTextCommand{\c}{PU}[1]{#1\83\047}% U+0327
12303 % U+0328 COMBINING OGONEK; ogonekcmb
12304 \DeclareTextCommand{\k}{PU}[1]{#1\83\050}% U+0328
12305 % U+0361 COMBINING DOUBLE INVERTED BREVE; breveinverteddoublecmb
12306 \DeclareTextCommand{\t}{PU}[1]{#1\83\141}% U+0361
12307 % U+20DD COMBINING ENCLOSING CIRCLE
12308 \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.

```

12309 \DeclareTextCompositeCommand{\'}{PU}{\@empty}{\textasciigrave}
12310 \DeclareTextCompositeCommand{\'}{PU}{\@empty}{\textacute}
12311 \DeclareTextCompositeCommand{\`}{PU}{\@empty}{\textasciicircum}
12312 \DeclareTextCompositeCommand{\~}{PU}{\@empty}{\texttilde}
12313 \DeclareTextCompositeCommand{\"}{PU}{\@empty}{\textasciidieresis}
12314 \DeclareTextCompositeCommand{\r}{PU}{\@empty}{\textring}
12315 \DeclareTextCompositeCommand{\v}{PU}{\@empty}{\textasciicaron}
12316 \DeclareTextCompositeCommand{\.}{PU}{\@empty}{\textdotaccent}
12317 \DeclareTextCompositeCommand{\c}{PU}{\@empty}{\textcedilla}
12318 \DeclareTextCompositeCommand{\u}{PU}{\@empty}{\textasciibreve}
12319 \DeclareTextCompositeCommand{\G}{PU}{\@empty}{\textdoublegrave}
12320 \DeclareTextCompositeCommand{\=}{PU}{\@empty}{\textasciimacron}
12321 \DeclareTextCompositeCommand{\H}{PU}{\@empty}{\texthungarumlaut}
12322 \DeclareTextCompositeCommand{\k}{PU}{\@empty}{\textogonek}
12323 \DeclareTextCompositeCommand{\b}{PU}{\@empty}{\textmacronbelow}
12324 \DeclareTextCompositeCommand{\d}{PU}{\@empty}{\textdotbelow}
12325 \DeclareTextCompositeCommand{\t}{PU}{\@empty}{\texttie}
12326 \DeclareTextCompositeCommand{\newtie}{PU}{\@empty}{\textnewtie}
12327 \DeclareTextCompositeCommand{\textcircled}{PU}{\@empty}{\textbigcircle}

12328 \DeclareTextCompositeCommand{\'}{PU}{\ }{\textasciigrave}
12329 \DeclareTextCompositeCommand{\'}{PU}{\ }{\textacute}
12330 \DeclareTextCompositeCommand{\`}{PU}{\ }{\textasciicircum}
12331 \DeclareTextCompositeCommand{\~}{PU}{\ }{\texttilde}
12332 \DeclareTextCompositeCommand{\"}{PU}{\ }{\textasciidieresis}
12333 \DeclareTextCompositeCommand{\r}{PU}{\ }{\textring}
12334 \DeclareTextCompositeCommand{\v}{PU}{\ }{\textasciicaron}
12335 \DeclareTextCompositeCommand{\.}{PU}{\ }{\textdotaccent}
12336 \DeclareTextCompositeCommand{\c}{PU}{\ }{\textcedilla}
12337 \DeclareTextCompositeCommand{\u}{PU}{\ }{\textasciibreve}
12338 \DeclareTextCompositeCommand{\G}{PU}{\ }{\textdoublegrave}
12339 \DeclareTextCompositeCommand{\=}{PU}{\ }{\textasciimacron}
12340 \DeclareTextCompositeCommand{\H}{PU}{\ }{\texthungarumlaut}
12341 \DeclareTextCompositeCommand{\k}{PU}{\ }{\textogonek}
12342 \DeclareTextCompositeCommand{\b}{PU}{\ }{\textmacronbelow}
12343 \DeclareTextCompositeCommand{\d}{PU}{\ }{\textdotbelow}
12344 \DeclareTextCompositeCommand{\t}{PU}{\ }{\texttie}
12345 \DeclareTextCompositeCommand{\newtie}{PU}{\ }{\textnewtie}
12346 \DeclareTextCompositeCommand{\textcircled}{PU}{\ }{\textbigcircle}

```

Accents for capitals (see encoding TS1)

```

12347 \DeclareTextCommand{\capitalcedilla}{PU}[1]{\c{#1}}

```

```

12348 \DeclareTextCommand{\capitalogonek}{PU}[1]{\k{#1}}
12349 \DeclareTextCommand{\capitalgrave}{PU}[1]{\'{#1}}
12350 \DeclareTextCommand{\capitalacute}{PU}[1]{\'{#1}}
12351 \DeclareTextCommand{\capitalcircumflex}{PU}[1]{\^{#1}}
12352 \DeclareTextCommand{\capitaltilde}{PU}[1]{\~{#1}}
12353 \DeclareTextCommand{\capitaldieresis}{PU}[1]{\"{#1}}
12354 \DeclareTextCommand{\capitalhungarumlaut}{PU}[1]{\H{#1}}
12355 \DeclareTextCommand{\capitalring}{PU}[1]{\r{#1}}
12356 \DeclareTextCommand{\capitalcaron}{PU}[1]{\v{#1}}
12357 \DeclareTextCommand{\capitalbreve}{PU}[1]{\u{#1}}
12358 \DeclareTextCommand{\capitalmacron}{PU}[1]{\={#1}}
12359 \DeclareTextCommand{\capitaldotaccent}{PU}[1]{\.{#1}}
12360 \DeclareTextCommand{\capitaltie}{PU}[1]{\t{#1}}
12361 \DeclareTextCommand{\capitalnewtie}{PU}[1]{\newtie{#1}}

```

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

Special white space escape characters.

```

12362 % U+0009 (CHARACTER TABULATION)
12363 \DeclareTextCommand{\textHT}{PU}{\80\011}% U+0009
12364 % U+000A (LINE FEED)
12365 \DeclareTextCommand{\textLF}{PU}{\80\012}% U+000A
12366 % U+000D (CARRIAGE RETURN)
12367 \DeclareTextCommand{\textCR}{PU}{\80\015}% U+000D

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

12368 % U+0022 QUOTATION MARK; quotedbl
12369 \DeclareTextCommand{\textquotedbl}{PU}{\string"}% \80\042 U+0022
12370 % U+0023 NUMBER SIGN; numbersign
12371 \DeclareTextCommand{\textnumbersign}{PU}{\80\043}% U+0023
12372 % U+0024 DOLLAR SIGN; dollar
12373 \DeclareTextCommand{\textdollar}{PU}{\80\044}% U+0024
12374 % U+0025 PERCENT SIGN; percent
12375 \DeclareTextCommand{\textpercent}{PU}{\80\045}% U+0025
12376 % U+0026 AMPERSAND; ampersand
12377 \DeclareTextCommand{\textampersand}{PU}{\80\046}% U+0026
12378 % U+0027 APOSTROPHE; quotesingle
12379 \DeclareTextCommand{\textquotesingle}{PU}{\80\047}% U+0027
12380 % U+0028 LEFT PARENTHESIS; parenleft
12381 \DeclareTextCommand{\textparenleft}{PU}{\80\050}% U+0028
12382 % U+0029 RIGHT PARENTHESIS; parenright
12383 \DeclareTextCommand{\textparenright}{PU}{\80\051}% U+0029
12384 % U+002A ASTERISK; asterisk
12385 \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

12386 % U+003C LESS-THAN SIGN; less
12387 \DeclareTextCommand{\textless}{PU}{<}% \80\074 U+003C

```

\80\075: U+003D EQUALS SIGN; equal  
 12388 % U+003E GREATER-THAN SIGN; greater  
 12389 \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  
 12390 % U+005C REVERSE SOLIDUS; backslash  
 12391 \DeclareTextCommand{\textbackslash}{PU}{\80\134}% U+005C  
 \80\135: U+005D RIGHT SQUARE BRACKET; bracketright  
 12392 % U+005E CIRCUMFLEX ACCENT; asciicircum  
 12393 \DeclareTextCommand{\textasciicircum}{PU}{\80\136}% U+005E  
 12394 % U+005F LOW LINE; underscore  
 12395 \DeclareTextCommand{\textunderscore}{PU}{\80\137}% U+005F  
 12396 % U+0060 GRAVE ACCENT; grave  
 12397 \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  
 12398 % U+0069 LATIN SMALL LETTER I; i  
 12399 \DeclareTextCompositeCommand{\.}{PU}{\i}{i} % \80\151 U+0069  
 12400 \DeclareTextCompositeCommand{\.}{PU}{\i}{i}% \80\151 U+0069  
 \80\152: U+006A LATIN SMALL LETTER J; j  
 ...  
 \80\172: U+007A LATIN SMALL LETTER Z; z  
 12401 % U+007B LEFT CURLY BRACKET; braceleft  
 12402 \DeclareTextCommand{\textbraceleft}{PU}{\80\173}% U+007B  
 12403 % U+007C VERTICAL LINE; \*bar, verticalbar  
 12404 \DeclareTextCommand{\textbar}{PU}{|}% \80\174 U+007C  
 12405 % U+007D RIGHT CURLY BRACKET; braceright  
 12406 \DeclareTextCommand{\textbraceright}{PU}{\80\175}% U+007D  
 12407 % U+007E TILDE; asciitilde  
 12408 \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  
 12409 % U+00A1 INVERTED EXCLAMATION MARK; exclamdown  
 12410 \DeclareTextCommand{\textexclamdown}{PU}{\80\241}% U+00A1  
 12411 % U+00A2 CENT SIGN; cent  
 12412 \DeclareTextCommand{\textcent}{PU}{\80\242}% U+00A2  
 12413 % U+00A3 POUND SIGN; sterling  
 12414 \DeclareTextCommand{\textsterling}{PU}{\80\243}% U+00A3  
 12415 % U+00A4 CURRENCY SIGN; currency  
 12416 \DeclareTextCommand{\textcurrency}{PU}{\80\244}% U+00A4  
 12417 % U+00A5 YEN SIGN; yen  
 12418 \DeclareTextCommand{\textyen}{PU}{\80\245}% U+00A5  
 12419 % U+00A6 BROKEN BAR; brokenbar  
 12420 \DeclareTextCommand{\textbrokenbar}{PU}{\80\246}% U+00A6  
 12421 % U+00A7 SECTION SIGN; section  
 12422 \DeclareTextCommand{\textsection}{PU}{\80\247}% U+00A7  
 12423 % U+00A8 DIAERESIS; dieresis

12424 \DeclareTextCommand{\textasciidieresis}{PU}{\80\250}% U+00A8  
 12425 % U+00A9 COPYRIGHT SIGN; copyright  
 12426 \DeclareTextCommand{\textcopyright}{PU}{\80\251}% U+00A9  
 12427 % U+00AA FEMININE ORDINAL INDICATOR; ordfeminine  
 12428 \DeclareTextCommand{\textordfeminine}{PU}{\80\252}% U+00AA  
 12429 % U+00AB LEFT-POINTING DOUBLE ANGLE QUOTATION MARK; guillemotleft  
 12430 \DeclareTextCommand{\guillemotleft}{PU}{\80\253}% U+00AB  
 12431 % U+00AC NOT SIGN; logicalnot  
 12432 \DeclareTextCommand{\textlogicalnot}{PU}{\80\254}% U+00AC  
 12433 \DeclareTextCommand{\textlnot}{PU}{\80\254}% U+00AC  
 \80\255: U+00AD SOFT HYPHEN; sfthyphen, softthyphen  
 12434 % U+00AE REGISTERED SIGN; registered  
 12435 \DeclareTextCommand{\textregistered}{PU}{\80\256}% U+00AE  
 12436 % U+00AF MACRON; \*macron, overscore  
 12437 \DeclareTextCommand{\textasciimacron}{PU}{\80\257}% U+00AF  
 12438 % U+00B0 DEGREE SIGN; degree  
 12439 \DeclareTextCommand{\textdegree}{PU}{\80\260}% U+00B0  
 12440 % U+00B1 PLUS-MINUS SIGN; plusminus  
 12441 \DeclareTextCommand{\textplusminus}{PU}{\80\261}% U+00B1  
 12442 % U+00B2 SUPERSCRIFT TWO; twosuperior  
 12443 \DeclareTextCommand{\texttwosuperior}{PU}{\80\262}% U+00B2  
 12444 % U+00B3 SUPERSCRIFT THREE; threesuperior  
 12445 \DeclareTextCommand{\textthreesuperior}{PU}{\80\263}% U+00B3  
 12446 % U+00B4 ACUTE ACCENT; acute  
 12447 \DeclareTextCommand{\textacute}{PU}{\80\264}% U+00B4  
 12448 \DeclareTextCommand{\textasciiacute}{PU}{\80\264}% U+00B4  
 12449 % U+00B5 MICRO SIGN; mu, mu1  
 12450 \DeclareTextCommand{\textmu}{PU}{\80\265}% U+00B5  
 12451 % U+00B6 PILCROW SIGN; paragraph  
 12452 \DeclareTextCommand{\textparagraph}{PU}{\80\266}% U+00B6  
 12453 % U+00B7 MIDDLE DOT; middot, \*periodcentered  
 12454 \DeclareTextCommand{\textperiodcentered}{PU}{\80\267}% U+00B7  
 12455 % U+00B8 CEDILLA; cedilla  
 12456 \DeclareTextCommand{\textcedilla}{PU}{\80\270}% U+00B8  
 12457 % U+00B9 SUPERSCRIFT ONE; onesuperior  
 12458 \DeclareTextCommand{\textonesuperior}{PU}{\80\271}% U+00B9  
 12459 % U+00BA MASCULINE ORDINAL INDICATOR; ordmasculine  
 12460 \DeclareTextCommand{\textordmasculine}{PU}{\80\272}% U+00BA  
 12461 % U+00BB RIGHT-POINTING DOUBLE ANGLE QUOTATION MARK; guillemotright  
 12462 \DeclareTextCommand{\guillemotright}{PU}{\80\273}% U+00BB  
 12463 % U+00BC VULGAR FRACTION ONE QUARTER; onequarter  
 12464 \DeclareTextCommand{\textonequarter}{PU}{\80\274}% U+00BC  
 12465 % U+00BD VULGAR FRACTION ONE HALF; onehalf  
 12466 \DeclareTextCommand{\textonehalf}{PU}{\80\275}% U+00BD  
 12467 % U+00BE VULGAR FRACTION THREE QUARTERS; threequarters  
 12468 \DeclareTextCommand{\textthreequarters}{PU}{\80\276}% U+00BE  
 12469 % U+00BF INVERTED QUESTION MARK; questiondown  
 12470 \DeclareTextCommand{\textquestiondown}{PU}{\80\277}% U+00BF  
 12471 % U+00C0 LATIN CAPITAL LETTER A WITH GRAVE; Agrave  
 12472 \DeclareTextCompositeCommand{\`}{PU}{A}{\80\300}% U+00C0  
 12473 % U+00C1 LATIN CAPITAL LETTER A WITH ACUTE; Aacute  
 12474 \DeclareTextCompositeCommand{\'}{PU}{A}{\80\301}% U+00C1  
 12475 % U+00C2 LATIN CAPITAL LETTER A WITH CIRCUMFLEX; Acircumflex  
 12476 \DeclareTextCompositeCommand{\^}{PU}{A}{\80\302}% U+00C2  
 12477 % U+00C3 LATIN CAPITAL LETTER A WITH TILDE; Atilde  
 12478 \DeclareTextCompositeCommand{\~}{PU}{A}{\80\303}% U+00C3  
 12479 % U+00C4 LATIN CAPITAL LETTER A WITH DIAERESIS; Adieresis

12480 \DeclareTextCompositeCommand{"}{PU}{A}{\80\304}% U+00C4  
12481 % U+00C5 LATIN CAPITAL LETTER A WITH RING ABOVE; Aring  
12482 \DeclareTextCompositeCommand{\r}{PU}{A}{\80\305}% U+00C5  
12483 % U+00C6 LATIN CAPITAL LETTER AE; AE  
12484 \DeclareTextCommand{\AE}{PU}{\80\306}% U+00C6  
12485 % U+00C7 LATIN CAPITAL LETTER C WITH CEDILLA; Ccedilla  
12486 \DeclareTextCompositeCommand{\c}{PU}{C}{\80\307}% U+00C7  
12487 % U+00C8 LATIN CAPITAL LETTER E WITH GRAVE; Egrave  
12488 \DeclareTextCompositeCommand{\`}{PU}{E}{\80\310}% U+00C8  
12489 % U+00C9 LATIN CAPITAL LETTER E WITH ACUTE; Eacute  
12490 \DeclareTextCompositeCommand{\'}{PU}{E}{\80\311}% U+00C9  
12491 % U+00CA LATIN CAPITAL LETTER E WITH CIRCUMFLEX; Ecircumflex  
12492 \DeclareTextCompositeCommand{\^}{PU}{E}{\80\312}% U+00CA  
12493 % U+00CB LATIN CAPITAL LETTER E WITH DIAERESIS; Edieresis  
12494 \DeclareTextCompositeCommand{"}{PU}{E}{\80\313}% U+00CB  
12495 % U+00CC LATIN CAPITAL LETTER I WITH GRAVE; Igrave  
12496 \DeclareTextCompositeCommand{\`}{PU}{I}{\80\314}% U+00CC  
12497 % U+00CD LATIN CAPITAL LETTER I WITH ACUTE; Iacute  
12498 \DeclareTextCompositeCommand{\'}{PU}{I}{\80\315}% U+00CD  
12499 % U+00CE LATIN CAPITAL LETTER I WITH CIRCUMFLEX; Icircumflex  
12500 \DeclareTextCompositeCommand{\^}{PU}{I}{\80\316}% U+00CE  
12501 % U+00CF LATIN CAPITAL LETTER I WITH DIAERESIS; Idieresis  
12502 \DeclareTextCompositeCommand{"}{PU}{I}{\80\317}% U+00CF  
12503 % U+00D0 LATIN CAPITAL LETTER ETH; Eth  
12504 \DeclareTextCommand{\DH}{PU}{\80\320}% U+00D0  
12505 % U+00D1 LATIN CAPITAL LETTER N WITH TILDE; Ntilde  
12506 \DeclareTextCompositeCommand{\~}{PU}{N}{\80\321}% U+00D1  
12507 % U+00D2 LATIN CAPITAL LETTER O WITH GRAVE; Ograve  
12508 \DeclareTextCompositeCommand{\`}{PU}{O}{\80\322}% U+00D2  
12509 % U+00D3 LATIN CAPITAL LETTER O WITH ACUTE; Oacute  
12510 \DeclareTextCompositeCommand{\'}{PU}{O}{\80\323}% U+00D3  
12511 % U+00D4 LATIN CAPITAL LETTER O WITH CIRCUMFLEX; Ocircumflex  
12512 \DeclareTextCompositeCommand{\^}{PU}{O}{\80\324}% U+00D4  
12513 % U+00D5 LATIN CAPITAL LETTER O WITH TILDE; Otilde  
12514 \DeclareTextCompositeCommand{\~}{PU}{O}{\80\325}% U+00D5  
12515 % U+00D6 LATIN CAPITAL LETTER O WITH DIAERESIS; Odieresis  
12516 \DeclareTextCompositeCommand{"}{PU}{O}{\80\326}% U+00D6  
12517 % U+00D7 MULTIPLICATION SIGN; multiply  
12518 \DeclareTextCommand{\textmultiply}{PU}{\80\327}% U+00D7  
12519 % U+00D8 LATIN CAPITAL LETTER O WITH STROKE; Oslash  
12520 \DeclareTextCommand{\O}{PU}{\80\330}% U+00D8  
12521 % U+00D9 LATIN CAPITAL LETTER U WITH GRAVE; Ugrave  
12522 \DeclareTextCompositeCommand{\`}{PU}{U}{\80\331}% U+00D9  
12523 % U+00DA LATIN CAPITAL LETTER U WITH ACUTE; Uacute  
12524 \DeclareTextCompositeCommand{\'}{PU}{U}{\80\332}% U+00DA  
12525 % U+00DB LATIN CAPITAL LETTER U WITH CIRCUMFLEX; Ucircumflex  
12526 \DeclareTextCompositeCommand{\^}{PU}{U}{\80\333}% U+00DB  
12527 % U+00DC LATIN CAPITAL LETTER U WITH DIAERESIS; Udieresis  
12528 \DeclareTextCompositeCommand{"}{PU}{U}{\80\334}% U+00DC  
12529 % U+00DD LATIN CAPITAL LETTER Y WITH ACUTE; Yacute  
12530 \DeclareTextCompositeCommand{\'}{PU}{Y}{\80\335}% U+00DD  
12531 % U+00DE LATIN CAPITAL LETTER THORN; Thorn  
12532 \DeclareTextCommand{\TH}{PU}{\80\336}% U+00DE  
12533 % U+00DF LATIN SMALL LETTER SHARP S; germandbls  
12534 \DeclareTextCommand{\ss}{PU}{\80\337}% U+00DF  
12535 % U+00E0 LATIN SMALL LETTER A WITH GRAVE; agrave  
12536 \DeclareTextCompositeCommand{\`}{PU}{a}{\80\340}% U+00E0

12537 % U+00E1 LATIN SMALL LETTER A WITH ACUTE; aacute  
12538 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\341}% U+00E1  
12539 % U+00E2 LATIN SMALL LETTER A WITH CIRCUMFLEX; acircumflex  
12540 \DeclareTextCompositeCommand{\~}{PU}{a}{\80\342}% U+00E2  
12541 % U+00E3 LATIN SMALL LETTER A WITH TILDE; atilde  
12542 \DeclareTextCompositeCommand{\~}{PU}{a}{\80\343}% U+00E3  
12543 % U+00E4 LATIN SMALL LETTER A WITH DIAERESIS; adieresis  
12544 \DeclareTextCompositeCommand{\"}{PU}{a}{\80\344}% U+00E4  
12545 % U+00E5 LATIN SMALL LETTER A WITH RING ABOVE; aring  
12546 \DeclareTextCompositeCommand{\r}{PU}{a}{\80\345}% U+00E5  
12547 % U+00E6 LATIN SMALL LETTER AE; ae  
12548 \DeclareTextCommand{\ae}{PU}{\80\346}% U+00E6  
12549 % U+00E7 LATIN SMALL LETTER C WITH CEDILLA; ccedilla  
12550 \DeclareTextCompositeCommand{\c}{PU}{c}{\80\347}% U+00E7  
12551 % U+00E8 LATIN SMALL LETTER E WITH GRAVE; egrave  
12552 \DeclareTextCompositeCommand{\`}{PU}{e}{\80\350}% U+00E8  
12553 % U+00E9 LATIN SMALL LETTER E WITH ACUTE; eacute  
12554 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\351}% U+00E9  
12555 % U+00EA LATIN SMALL LETTER E WITH CIRCUMFLEX; ecircumflex  
12556 \DeclareTextCompositeCommand{\^}{PU}{e}{\80\352}% U+00EA  
12557 % U+00EB LATIN SMALL LETTER E WITH DIAERESIS; edieresis  
12558 \DeclareTextCompositeCommand{\"}{PU}{e}{\80\353}% U+00EB  
12559 % U+00EC LATIN SMALL LETTER I WITH GRAVE; igrave  
12560 \DeclareTextCompositeCommand{\`}{PU}{i}{\80\354}% U+00EC  
12561 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\354}% U+00EC  
12562 % U+00ED LATIN SMALL LETTER I WITH ACUTE; iacute  
12563 \DeclareTextCompositeCommand{\`}{PU}{i}{\80\355}% U+00ED  
12564 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\355}% U+00ED  
12565 % U+00EE LATIN SMALL LETTER I WITH CIRCUMFLEX; icircumflex  
12566 \DeclareTextCompositeCommand{\^}{PU}{i}{\80\356}% U+00EE  
12567 \DeclareTextCompositeCommand{\^}{PU}{i}{\80\356}% U+00EE  
12568 % U+00EF LATIN SMALL LETTER I WITH DIAERESIS; idieresis  
12569 \DeclareTextCompositeCommand{\"}{PU}{i}{\80\357}% U+00EF  
12570 \DeclareTextCompositeCommand{\"}{PU}{i}{\80\357}% U+00EF  
12571 % U+00F0 LATIN SMALL LETTER ETH; eth  
12572 \DeclareTextCommand{\dh}{PU}{\80\360}% U+00F0  
12573 % U+00F1 LATIN SMALL LETTER N WITH TILDE; ntilde  
12574 \DeclareTextCompositeCommand{\~}{PU}{n}{\80\361}% U+00F1  
12575 % U+00F2 LATIN SMALL LETTER O WITH GRAVE; ograve  
12576 \DeclareTextCompositeCommand{\`}{PU}{o}{\80\362}% U+00F2  
12577 % U+00F3 LATIN SMALL LETTER O WITH ACUTE; oacute  
12578 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\363}% U+00F3  
12579 % U+00F4 LATIN SMALL LETTER O WITH CIRCUMFLEX; ocircumflex  
12580 \DeclareTextCompositeCommand{\^}{PU}{o}{\80\364}% U+00F4  
12581 % U+00F5 LATIN SMALL LETTER O WITH TILDE; otilde  
12582 \DeclareTextCompositeCommand{\~}{PU}{o}{\80\365}% U+00F5  
12583 % U+00F6 LATIN SMALL LETTER O WITH DIAERESIS; odieresis  
12584 \DeclareTextCompositeCommand{\"}{PU}{o}{\80\366}% U+00F6  
12585 % U+00F7 DIVISION SIGN; divide  
12586 \DeclareTextCommand{\textdivide}{PU}{\80\367}% U+00F7  
12587 % U+00F8 LATIN SMALL LETTER O WITH STROKE; oslash  
12588 \DeclareTextCommand{\o}{PU}{\80\370}% U+00F8  
12589 % U+00F9 LATIN SMALL LETTER U WITH GRAVE; ugrave  
12590 \DeclareTextCompositeCommand{\`}{PU}{u}{\80\371}% U+00F9  
12591 % U+00FA LATIN SMALL LETTER U WITH ACUTE; uacute  
12592 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\372}% U+00FA  
12593 % U+00FB LATIN SMALL LETTER U WITH CIRCUMFLEX; ucircumflex



12594 \DeclareTextCompositeCommand{\~}{PU}{u}{\80\373}% U+00FB  
 12595 % U+00FC LATIN SMALL LETTER U WITH DIAERESIS; udieresis  
 12596 \DeclareTextCompositeCommand{\"}{PU}{u}{\80\374}% U+00FC  
 12597 % U+00FD LATIN SMALL LETTER Y WITH ACUTE; yacute  
 12598 \DeclareTextCompositeCommand{\'}{PU}{y}{\80\375}% U+00FD  
 12599 % U+00FE LATIN SMALL LETTER THORN; thorn  
 12600 \DeclareTextCommand{\th}{PU}{\80\376}% U+00FE  
 12601 % U+00FF LATIN SMALL LETTER Y WITH DIAERESIS; ydieresis  
 12602 \DeclareTextCompositeCommand{\"}{PU}{y}{\80\377}% U+00FF

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

12603 % U+0100 LATIN CAPITAL LETTER A WITH MACRON; Amacron  
 12604 \DeclareTextCompositeCommand{\=}{PU}{A}{\81\000}% U+0100  
 12605 % U+0101 LATIN SMALL LETTER A WITH MACRON; amacron  
 12606 \DeclareTextCompositeCommand{\=}{PU}{a}{\81\001}% U+0101  
 12607 % U+0102 LATIN CAPITAL LETTER A WITH BREVE; Abreve  
 12608 \DeclareTextCompositeCommand{\u}{PU}{A}{\81\002}% U+0102  
 12609 % U+0103 LATIN SMALL LETTER A WITH BREVE; abreve  
 12610 \DeclareTextCompositeCommand{\u}{PU}{a}{\81\003}% U+0103  
 12611 % U+0104 LATIN CAPITAL LETTER A WITH OGONEK; Aogonek  
 12612 \DeclareTextCompositeCommand{\k}{PU}{A}{\81\004}% U+0104  
 12613 % U+0105 LATIN SMALL LETTER A WITH OGONEK; aogonek  
 12614 \DeclareTextCompositeCommand{\k}{PU}{a}{\81\005}% U+0105  
 12615 % U+0106 LATIN CAPITAL LETTER C WITH ACUTE; Cacute  
 12616 \DeclareTextCompositeCommand{\'}{PU}{C}{\81\006}% U+0106  
 12617 % U+0107 LATIN SMALL LETTER C WITH ACUTE; cacute  
 12618 \DeclareTextCompositeCommand{\'}{PU}{c}{\81\007}% U+0107  
 12619 % U+0108 LATIN CAPITAL LETTER C WITH CIRCUMFLEX; Ccircumflex  
 12620 \DeclareTextCompositeCommand{\^}{PU}{C}{\81\010}% U+0108  
 12621 % U+0109 LATIN SMALL LETTER C WITH CIRCUMFLEX; ccircumflex  
 12622 \DeclareTextCompositeCommand{\^}{PU}{c}{\81\011}% U+0109  
 12623 % U+010A LATIN CAPITAL LETTER C WITH DOT ABOVE; Cdot, Cdotaccent  
 12624 \DeclareTextCompositeCommand{\.}{PU}{C}{\81\012}% U+010A  
 12625 % U+010B LATIN SMALL LETTER C WITH DOT ABOVE; cdot, cdotaccent  
 12626 \DeclareTextCompositeCommand{\.}{PU}{c}{\81\013}% U+010B  
 12627 % U+010C LATIN CAPITAL LETTER C WITH CARON; Ccaron  
 12628 \DeclareTextCompositeCommand{\v}{PU}{C}{\81\014}% U+010C  
 12629 % U+010D LATIN SMALL LETTER C WITH CARON; ccaron  
 12630 \DeclareTextCompositeCommand{\v}{PU}{c}{\81\015}% U+010D  
 12631 % U+010E LATIN CAPITAL LETTER D WITH CARON; Dcaron  
 12632 \DeclareTextCompositeCommand{\v}{PU}{D}{\81\016}% U+010E  
 12633 % U+010F LATIN SMALL LETTER D WITH CARON; dcaron  
 12634 \DeclareTextCompositeCommand{\v}{PU}{d}{\81\017}% U+010F  
 12635 % U+0110 LATIN CAPITAL LETTER D WITH STROKE; Dcroat, Dslash  
 12636 \DeclareTextCommand{\DJ}{PU}{\81\020}% U+0110  
 12637 % U+0111 LATIN SMALL LETTER D WITH STROKE; dcroat, dmacron  
 12638 \DeclareTextCommand{\dj}{PU}{\81\021}% U+0111  
 12639 % U+0112 LATIN CAPITAL LETTER E WITH MACRON; Emacron  
 12640 \DeclareTextCompositeCommand{\=}{PU}{E}{\81\022}% U+0112  
 12641 % U+0113 LATIN SMALL LETTER E WITH MACRON; emacron  
 12642 \DeclareTextCompositeCommand{\=}{PU}{e}{\81\023}% U+0113  
 12643 % U+0114 LATIN CAPITAL LETTER E WITH BREVE; Ebreve  
 12644 \DeclareTextCompositeCommand{\u}{PU}{E}{\81\024}% U+0114  
 12645 % U+0115 LATIN SMALL LETTER E WITH BREVE; ebreve  
 12646 \DeclareTextCompositeCommand{\u}{PU}{e}{\81\025}% U+0115  
 12647 % U+0116 LATIN CAPITAL LETTER E WITH DOT ABOVE; Edot, Edotaccent

12648 \DeclareTextCompositeCommand{\.}{PU}{E}{\81\026}% U+0116  
12649 % U+0117 LATIN SMALL LETTER E WITH DOT ABOVE; edot, edotaccent  
12650 \DeclareTextCompositeCommand{\.}{PU}{e}{\81\027}% U+0117  
12651 % U+0118 LATIN CAPITAL LETTER E WITH OGONEK; Eogonek  
12652 \DeclareTextCompositeCommand{\k}{PU}{E}{\81\030}% U+0118  
12653 % U+0119 LATIN SMALL LETTER E WITH OGONEK; eogonek  
12654 \DeclareTextCompositeCommand{\k}{PU}{e}{\81\031}% U+0119  
12655 % U+011A LATIN CAPITAL LETTER E WITH CARON; Ecaron  
12656 \DeclareTextCompositeCommand{\v}{PU}{E}{\81\032}% U+011A  
12657 % U+011B LATIN SMALL LETTER E WITH CARON; ecaron  
12658 \DeclareTextCompositeCommand{\v}{PU}{e}{\81\033}% U+011B  
12659 % U+011C LATIN CAPITAL LETTER G WITH CIRCUMFLEX; Gcircumflex  
12660 \DeclareTextCompositeCommand{\^}{PU}{G}{\81\034}% U+011C  
12661 % U+011D LATIN SMALL LETTER G WITH CIRCUMFLEX; gcircumflex  
12662 \DeclareTextCompositeCommand{\^}{PU}{g}{\81\035}% U+011D  
12663 % U+011E LATIN CAPITAL LETTER G WITH BREVE; Gbreve  
12664 \DeclareTextCompositeCommand{\u}{PU}{G}{\81\036}% U+011E  
12665 % U+011F LATIN SMALL LETTER G WITH BREVE; gbreve  
12666 \DeclareTextCompositeCommand{\u}{PU}{g}{\81\037}% U+011F  
12667 % U+0120 LATIN CAPITAL LETTER G WITH DOT ABOVE; Gdot, Gdotaccent  
12668 \DeclareTextCompositeCommand{\.}{PU}{G}{\81\040}% U+0120  
12669 % U+0121 LATIN SMALL LETTER G WITH DOT ABOVE; gdot, gdotaccent  
12670 \DeclareTextCompositeCommand{\.}{PU}{g}{\81\041}% U+0121  
12671 % U+0122 LATIN CAPITAL LETTER G WITH CEDILLA; Gcedilla, Gcommaaccent  
12672 \DeclareTextCompositeCommand{\c}{PU}{G}{\81\042}% U+0122  
12673 % U+0123 LATIN SMALL LETTER G WITH CEDILLA; gcedilla, gcommaaccent  
12674 \DeclareTextCompositeCommand{\c}{PU}{g}{\81\043}% U+0123  
12675 % U+0124 LATIN CAPITAL LETTER H WITH CIRCUMFLEX; Hcircumflex  
12676 \DeclareTextCompositeCommand{\^}{PU}{H}{\81\044}% U+0124  
12677 % U+0125 LATIN SMALL LETTER H WITH CIRCUMFLEX; hcircumflex  
12678 \DeclareTextCompositeCommand{\^}{PU}{h}{\81\045}% U+0125  
12679 % U+0126 LATIN CAPITAL LETTER H WITH STROKE; Hbar  
12680 \DeclareTextCommand{\textHslash}{PU}{\81\046}% U+0126  
12681 % U+0127 LATIN SMALL LETTER H WITH STROKE; hbar  
12682 \DeclareTextCommand{\textthslash}{PU}{\81\047}% U+0127  
12683 % U+0128 LATIN CAPITAL LETTER I WITH TILDE; Itilde  
12684 \DeclareTextCompositeCommand{\~}{PU}{I}{\81\050}% U+0128  
12685 % U+0129 LATIN SMALL LETTER I WITH TILDE; itilde  
12686 \DeclareTextCompositeCommand{\~}{PU}{i}{\81\051}% U+0129  
12687 \DeclareTextCompositeCommand{\~}{PU}{\i}{\81\051}% U+0129  
12688 % U+012A LATIN CAPITAL LETTER I WITH MACRON; Imacron  
12689 \DeclareTextCompositeCommand{\=}{PU}{I}{\81\052}% U+012A  
12690 % U+012B LATIN SMALL LETTER I WITH MACRON; imacron  
12691 \DeclareTextCompositeCommand{\=}{PU}{i}{\81\053}% U+012B  
12692 \DeclareTextCompositeCommand{\=}{PU}{\i}{\81\053}% U+012B  
12693 % U+012C LATIN CAPITAL LETTER I WITH BREVE; Ibreve  
12694 \DeclareTextCompositeCommand{\u}{PU}{I}{\81\054}% U+012C  
12695 % U+012D LATIN SMALL LETTER I WITH BREVE; ibreve  
12696 \DeclareTextCompositeCommand{\u}{PU}{i}{\81\055}% U+012D  
12697 \DeclareTextCompositeCommand{\u}{PU}{\i}{\81\055}% U+012D  
12698 % U+012E LATIN CAPITAL LETTER I WITH OGONEK; Iogonek  
12699 \DeclareTextCompositeCommand{\k}{PU}{I}{\81\056}% U+012E  
12700 % U+012F LATIN SMALL LETTER I WITH OGONEK; iogonek  
12701 \DeclareTextCompositeCommand{\k}{PU}{i}{\81\057}% U+012F  
12702 \DeclareTextCompositeCommand{\k}{PU}{\i}{\81\057}% U+012F  
12703 % U+0130 LATIN CAPITAL LETTER I WITH DOT ABOVE; Idot, Idotaccent  
12704 \DeclareTextCompositeCommand{\.}{PU}{I}{\81\060}% U+0130

```

12705 % U+0131 LATIN SMALL LETTER DOTLESS I; dotlessi
12706 \DeclareTextCommand{\i}{PU}{\81\061}% U+0131
12707 % U+0132 LATIN CAPITAL LIGATURE IJ; IJ
12708 \DeclareTextCommand{\IJ}{PU}{\81\062}% U+0132
12709 % U+0133 LATIN SMALL LIGATURE IJ; ij
12710 \DeclareTextCommand{\ij}{PU}{\81\063}% U+0133
12711 % U+0134 LATIN CAPITAL LETTER J WITH CIRCUMFLEX; Jcircumflex
12712 \DeclareTextCompositeCommand{\^}{PU}{J}{\81\064}% U+0134
12713 % U+0135 LATIN SMALL LETTER J WITH CIRCUMFLEX; jcircumflex
12714 \DeclareTextCompositeCommand{\^}{PU}{j}{\81\065}% U+0135
12715 \DeclareTextCompositeCommand{\^}{PU}{j}{\81\065}% U+0135
12716 % U+0136 LATIN CAPITAL LETTER K WITH CEDILLA; Kcedilla, Kcommaaccent
12717 \DeclareTextCompositeCommand{\c}{PU}{K}{\81\066}% U+0136
12718 % U+0137 LATIN SMALL LETTER K WITH CEDILLA; kcedilla, kcommaaccent
12719 \DeclareTextCompositeCommand{\c}{PU}{k}{\81\067}% U+0137

```

The canonical name of U+0138, small letter kra, would be `\textkgreenlandic`, following the glyph naming convention. However `latex/base/inputenc.dtx` has chosen `\textkra`.

```

12720 % U+0138 LATIN SMALL LETTER KRA; kgreenlandic
12721 \DeclareTextCommand{\textkra}{PU}{\81\070}% U+0138
12722 % U+0139 LATIN CAPITAL LETTER L WITH ACUTE; Lacute
12723 \DeclareTextCompositeCommand{\'}{PU}{L}{\81\071}% U+0139
12724 % U+013A LATIN SMALL LETTER L WITH ACUTE; lacute
12725 \DeclareTextCompositeCommand{\'}{PU}{l}{\81\072}% U+013A
12726 % U+013B LATIN CAPITAL LETTER L WITH CEDILLA; Lcedilla, Lcommaaccent
12727 \DeclareTextCompositeCommand{\c}{PU}{L}{\81\073}% U+013B
12728 % U+013C LATIN SMALL LETTER L WITH CEDILLA; lcedilla, lcommaaccent
12729 \DeclareTextCompositeCommand{\c}{PU}{l}{\81\074}% U+013C
12730 % U+013D LATIN CAPITAL LETTER L WITH CARON; Lcaron
12731 \DeclareTextCompositeCommand{\v}{PU}{L}{\81\075}% U+013D
12732 % U+013E LATIN SMALL LETTER L WITH CARON; lcaron
12733 \DeclareTextCompositeCommand{\v}{PU}{l}{\81\076}% U+013E

```

There seems to be no variants of letters ‘L’ and ‘l’ with a dot above (reasonable). Therefore the `\.` accent is reused instead of making a separate accent macro `\textmiddledot`.

```

12734 % U+013F LATIN CAPITAL LETTER L WITH MIDDLE DOT; Ldot, Ldotaccent
12735 \DeclareTextCompositeCommand{\.}{PU}{L}{\81\077}% U+013F
12736 % U+0140 LATIN SMALL LETTER L WITH MIDDLE DOT; ldot, ldotaccent
12737 \DeclareTextCompositeCommand{\.}{PU}{l}{\81\100}% U+0140
12738 % U+0141 LATIN CAPITAL LETTER L WITH STROKE; Lslash
12739 \DeclareTextCommand{\L}{PU}{\81\101}% U+0141
12740 % U+0142 LATIN SMALL LETTER L WITH STROKE; lslash
12741 \DeclareTextCommand{\l}{PU}{\81\102}% U+0142
12742 % U+0143 LATIN CAPITAL LETTER N WITH ACUTE; Nacute
12743 \DeclareTextCompositeCommand{\'}{PU}{N}{\81\103}% U+0143
12744 % U+0144 LATIN SMALL LETTER N WITH ACUTE; nacute
12745 \DeclareTextCompositeCommand{\'}{PU}{n}{\81\104}% U+0144
12746 % U+0145 LATIN CAPITAL LETTER N WITH CEDILLA; Ncedilla, Ncommaaccent
12747 \DeclareTextCompositeCommand{\c}{PU}{N}{\81\105}% U+0145
12748 % U+0146 LATIN SMALL LETTER N WITH CEDILLA; ncedilla, ncommaaccent
12749 \DeclareTextCompositeCommand{\c}{PU}{n}{\81\106}% U+0146
12750 % U+0147 LATIN CAPITAL LETTER N WITH CARON; Ncaron
12751 \DeclareTextCompositeCommand{\v}{PU}{N}{\81\107}% U+0147
12752 % U+0148 LATIN SMALL LETTER N WITH CARON; ncaron
12753 \DeclareTextCompositeCommand{\v}{PU}{n}{\81\110}% U+0148
12754 % U+0149 LATIN SMALL LETTER N PRECEDED BY APOSTROPHE; napostrophe, quoterightn
12755 \DeclareTextCommand{\textnapostrophe}{PU}{\81\111}% U+0149

```

12756 % U+014A LATIN CAPITAL LETTER ENG; Eng  
 12757 \DeclareTextCommand{\NG}{PU}{\81\112}% U+014A  
 12758 % U+014B LATIN SMALL LETTER ENG; eng  
 12759 \DeclareTextCommand{\ng}{PU}{\81\113}% U+014B  
 12760 % U+014C LATIN CAPITAL LETTER O WITH MACRON; Omacron  
 12761 \DeclareTextCompositeCommand{=} {PU}{O}{\81\114}% U+014C  
 12762 % U+014D LATIN SMALL LETTER O WITH MACRON; omacron  
 12763 \DeclareTextCompositeCommand{=} {PU}{o}{\81\115}% U+014D  
 12764 % U+014E LATIN CAPITAL LETTER O WITH BREVE; Obreve  
 12765 \DeclareTextCompositeCommand{\u}{PU}{O}{\81\116}% U+014E  
 12766 % U+014F LATIN SMALL LETTER O WITH BREVE; obreve  
 12767 \DeclareTextCompositeCommand{\u}{PU}{o}{\81\117}% U+014F  
 12768 % U+0150 LATIN CAPITAL LETTER O WITH DOUBLE ACUTE; Odblacute, Ohungarumlaut  
 12769 \DeclareTextCompositeCommand{\H}{PU}{O}{\81\120}% U+0150  
 12770 % U+0151 LATIN SMALL LETTER O WITH DOUBLE ACUTE; odblacute, ohungarumlaut  
 12771 \DeclareTextCompositeCommand{\H}{PU}{o}{\81\121}% U+0151  
 12772 % U+0152 LATIN CAPITAL LIGATURE OE; OE  
 12773 \DeclareTextCommand{\OE}{PU}{\81\122}% U+0152  
 12774 % U+0153 LATIN SMALL LIGATURE OE; oe  
 12775 \DeclareTextCommand{\oe}{PU}{\81\123}% U+0153  
 12776 % U+0154 LATIN CAPITAL LETTER R WITH ACUTE; Racute  
 12777 \DeclareTextCompositeCommand{\'} {PU}{R}{\81\124}% U+0154  
 12778 % U+0155 LATIN SMALL LETTER R WITH ACUTE; racute  
 12779 \DeclareTextCompositeCommand{\'} {PU}{r}{\81\125}% U+0155  
 12780 % U+0156 LATIN CAPITAL LETTER R WITH CEDILLA; Rcedilla, Rcommaaccent  
 12781 \DeclareTextCompositeCommand{\c}{PU}{R}{\81\126}% U+0156  
 12782 % U+0157 LATIN SMALL LETTER R WITH CEDILLA; rcedilla, rcommaaccent  
 12783 \DeclareTextCompositeCommand{\c}{PU}{r}{\81\127}% U+0157  
 12784 % U+0158 LATIN CAPITAL LETTER R WITH CARON; Rcaron  
 12785 \DeclareTextCompositeCommand{\v}{PU}{R}{\81\130}% U+0158  
 12786 % U+0159 LATIN SMALL LETTER R WITH CARON; rcaron  
 12787 \DeclareTextCompositeCommand{\v}{PU}{r}{\81\131}% U+0159  
 12788 % U+015A LATIN CAPITAL LETTER S WITH ACUTE; Sacute  
 12789 \DeclareTextCompositeCommand{\'} {PU}{S}{\81\132}% U+015A  
 12790 % U+015B LATIN SMALL LETTER S WITH ACUTE; sacute  
 12791 \DeclareTextCompositeCommand{\'} {PU}{s}{\81\133}% U+015B  
 12792 % U+015C LATIN CAPITAL LETTER S WITH CIRCUMFLEX; Scircumflex  
 12793 \DeclareTextCompositeCommand{\^}{PU}{S}{\81\134}% U+015C  
 12794 % U+015D LATIN SMALL LETTER S WITH CIRCUMFLEX; scircumflex  
 12795 \DeclareTextCompositeCommand{\^}{PU}{s}{\81\135}% U+015D  
 12796 % U+015E LATIN CAPITAL LETTER S WITH CEDILLA; Scedilla  
 12797 \DeclareTextCompositeCommand{\c}{PU}{S}{\81\136}% U+015E  
 12798 % U+015F LATIN SMALL LETTER S WITH CEDILLA; scedilla  
 12799 \DeclareTextCompositeCommand{\c}{PU}{s}{\81\137}% U+015F  
 12800 % U+0160 LATIN CAPITAL LETTER S WITH CARON; Scaron  
 12801 \DeclareTextCompositeCommand{\v}{PU}{S}{\81\140}% U+0160  
 12802 % U+0161 LATIN SMALL LETTER S WITH CARON; scaron  
 12803 \DeclareTextCompositeCommand{\v}{PU}{s}{\81\141}% U+0161  
 12804 % U+0162 LATIN CAPITAL LETTER T WITH CEDILLA; Tcedilla, Tcommaaccent  
 12805 \DeclareTextCompositeCommand{\c}{PU}{T}{\81\142}% U+0162  
 12806 % U+0163 LATIN SMALL LETTER T WITH CEDILLA; tcedilla, tcommaaccent  
 12807 \DeclareTextCompositeCommand{\c}{PU}{t}{\81\143}% U+0163  
 12808 % U+0164 LATIN CAPITAL LETTER T WITH CARON; Tcaron  
 12809 \DeclareTextCompositeCommand{\v}{PU}{T}{\81\144}% U+0164  
 12810 % U+0165 LATIN SMALL LETTER T WITH CARON; tcaron  
 12811 \DeclareTextCompositeCommand{\v}{PU}{t}{\81\145}% U+0165  
 12812 % U+0166 LATIN CAPITAL LETTER T WITH STROKE; Tbar

12813 \DeclareTextCommand{\textTslash}{PU}{\81\146}% U+0166  
 12814 % U+0167 LATIN SMALL LETTER T WITH STROKE; tbar  
 12815 \DeclareTextCommand{\texttslash}{PU}{\81\147}% U+0167  
 12816 % U+0168 LATIN CAPITAL LETTER U WITH TILDE; Utilde  
 12817 \DeclareTextCompositeCommand{\~}{PU}{U}{\81\150}% U+0168  
 12818 % U+0169 LATIN SMALL LETTER U WITH TILDE; utilde  
 12819 \DeclareTextCompositeCommand{\~}{PU}{u}{\81\151}% U+0169  
 12820 % U+016A LATIN CAPITAL LETTER U WITH MACRON; Umacron  
 12821 \DeclareTextCompositeCommand{\=}{PU}{U}{\81\152}% U+016A  
 12822 % U+016B LATIN SMALL LETTER U WITH MACRON; umacron  
 12823 \DeclareTextCompositeCommand{\=}{PU}{u}{\81\153}% U+016B  
 12824 % U+016C LATIN CAPITAL LETTER U WITH BREVE; Ubreve  
 12825 \DeclareTextCompositeCommand{\u}{PU}{U}{\81\154}% U+016C  
 12826 % U+016D LATIN SMALL LETTER U WITH BREVE; ubreve  
 12827 \DeclareTextCompositeCommand{\u}{PU}{u}{\81\155}% U+016D  
 12828 % U+016E LATIN CAPITAL LETTER U WITH RING ABOVE; Uring  
 12829 \DeclareTextCompositeCommand{\r}{PU}{U}{\81\156}% U+016E  
 12830 % U+016F LATIN SMALL LETTER U WITH RING ABOVE; uring  
 12831 \DeclareTextCompositeCommand{\r}{PU}{u}{\81\157}% U+016F  
 12832 % U+0170 LATIN CAPITAL LETTER U WITH DOUBLE ACUTE; Udblacute, Uhungarumlaut  
 12833 \DeclareTextCompositeCommand{\H}{PU}{U}{\81\160}% U+0170  
 12834 % U+0171 LATIN SMALL LETTER U WITH DOUBLE ACUTE; udblacute, uhungarumlaut  
 12835 \DeclareTextCompositeCommand{\H}{PU}{u}{\81\161}% U+0171  
 12836 % U+0172 LATIN CAPITAL LETTER U WITH OGONEK; Uogonek  
 12837 \DeclareTextCompositeCommand{\k}{PU}{U}{\81\162}% U+0172  
 12838 % U+0173 LATIN SMALL LETTER U WITH OGONEK; uogonek  
 12839 \DeclareTextCompositeCommand{\k}{PU}{u}{\81\163}% U+0173  
 12840 % U+0174 LATIN CAPITAL LETTER W WITH CIRCUMFLEX; Wcircumflex  
 12841 \DeclareTextCompositeCommand{\^}{PU}{W}{\81\164}% U+0174  
 12842 % U+0175 LATIN SMALL LETTER W WITH CIRCUMFLEX; wcircumflex  
 12843 \DeclareTextCompositeCommand{\^}{PU}{w}{\81\165}% U+0175  
 12844 % U+0176 LATIN CAPITAL LETTER Y WITH CIRCUMFLEX; Ycircumflex  
 12845 \DeclareTextCompositeCommand{\^}{PU}{Y}{\81\166}% U+0176  
 12846 % U+0177 LATIN SMALL LETTER Y WITH CIRCUMFLEX; ycircumflex  
 12847 \DeclareTextCompositeCommand{\^}{PU}{y}{\81\167}% U+0177  
 12848 % U+0178 LATIN CAPITAL LETTER Y WITH DIAERESIS; Ydieresis  
 12849 \DeclareTextCompositeCommand{\"}{PU}{Y}{\81\170}% U+0178  
 12850 % U+0179 LATIN CAPITAL LETTER Z WITH ACUTE; Zacute  
 12851 \DeclareTextCompositeCommand{\'}{PU}{Z}{\81\171}% U+0179  
 12852 % U+017A LATIN SMALL LETTER Z WITH ACUTE; zacute  
 12853 \DeclareTextCompositeCommand{\'}{PU}{z}{\81\172}% U+017A  
 12854 % U+017B LATIN CAPITAL LETTER Z WITH DOT ABOVE; Zdot, Zdotaccent  
 12855 \DeclareTextCompositeCommand{\.}{PU}{Z}{\81\173}% U+017B  
 12856 % U+017C LATIN SMALL LETTER Z WITH DOT ABOVE; zdot, zdotaccent  
 12857 \DeclareTextCompositeCommand{\.}{PU}{z}{\81\174}% U+017C  
 12858 % U+017D LATIN CAPITAL LETTER Z WITH CARON; Zcaron  
 12859 \DeclareTextCompositeCommand{\v}{PU}{Z}{\81\175}% U+017D  
 12860 % U+017E LATIN SMALL LETTER Z WITH CARON; zcaron  
 12861 \DeclareTextCompositeCommand{\v}{PU}{z}{\81\176}% U+017E  
 12862 % U+017F LATIN SMALL LETTER LONG S; longs, slong  
 12863 \DeclareTextCommand{\textlongS}{PU}{\81\177}% U+017F

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

12864 % U+0192 LATIN SMALL LETTER F WITH HOOK; florin  
 12865 \DeclareTextCommand{\textflorin}{PU}{\81\222}% U+0192  
 12866 % U+01CD LATIN CAPITAL LETTER A WITH CARON; Acaron  
 12867 \DeclareTextCompositeCommand{\v}{PU}{A}{\81\315}% U+01CD

12868 % U+01CE LATIN SMALL LETTER A WITH CARON; acarón  
12869 \DeclareTextCompositeCommand{\v}{PU}{a}{\81\316}% U+01CE  
12870 % U+01CF LATIN CAPITAL LETTER I WITH CARON; Icarón  
12871 \DeclareTextCompositeCommand{\v}{PU}{I}{\81\317}% U+01CF  
12872 % U+01D0 LATIN SMALL LETTER I WITH CARON; icarón  
12873 \DeclareTextCompositeCommand{\v}{PU}{i}{\81\320}% U+01D0  
12874 \DeclareTextCompositeCommand{\v}{PU}{i}{\81\320}% U+01D0  
12875 % U+01D1 LATIN CAPITAL LETTER O WITH CARON; Ocarón  
12876 \DeclareTextCompositeCommand{\v}{PU}{O}{\81\321}% U+01D1  
12877 % U+01D2 LATIN SMALL LETTER O WITH CARON; ocarón  
12878 \DeclareTextCompositeCommand{\v}{PU}{o}{\81\322}% U+01D2  
12879 % U+01D3 LATIN CAPITAL LETTER U WITH CARON; Ucarón  
12880 \DeclareTextCompositeCommand{\v}{PU}{U}{\81\323}% U+01D3  
12881 % U+01D4 LATIN SMALL LETTER U WITH CARON; ucarón  
12882 \DeclareTextCompositeCommand{\v}{PU}{u}{\81\324}% U+01D4  
12883 % U+01E4 LATIN CAPITAL LETTER G WITH STROKE; Gstroke  
12884 \DeclareTextCommand{\textGslash}{PU}{\81\344}% U+01E4  
12885 % U+01E5 LATIN SMALL LETTER G WITH STROKE; gstroke  
12886 \DeclareTextCommand{\textgslash}{PU}{\81\345}% U+01E5  
12887 % U+01E6 LATIN CAPITAL LETTER G WITH CARON; Gcarón  
12888 \DeclareTextCompositeCommand{\v}{PU}{G}{\81\346}% U+01E6  
12889 % U+01E7 LATIN SMALL LETTER G WITH CARON; gcarón  
12890 \DeclareTextCompositeCommand{\v}{PU}{g}{\81\347}% U+01E7  
12891 % U+01E8 LATIN CAPITAL LETTER K WITH CARON; Kcarón  
12892 \DeclareTextCompositeCommand{\v}{PU}{K}{\81\350}% U+01E8  
12893 % U+01E9 LATIN SMALL LETTER K WITH CARON; kcarón  
12894 \DeclareTextCompositeCommand{\v}{PU}{k}{\81\351}% U+01E9  
12895 % U+01EA LATIN CAPITAL LETTER O WITH OGONEK; Oogonek  
12896 \DeclareTextCompositeCommand{\k}{PU}{O}{\81\352}% U+01EA  
12897 % U+01EB LATIN SMALL LETTER O WITH OGONEK; oogonek  
12898 \DeclareTextCompositeCommand{\k}{PU}{o}{\81\353}% U+01EB  
12899 % U+01F0 LATIN SMALL LETTER J WITH CARON; jcarón  
12900 \DeclareTextCompositeCommand{\v}{PU}{j}{\81\360}% U+01F0  
12901 \DeclareTextCompositeCommand{\v}{PU}{j}{\81\360}% U+01F0  
12902 % U+01F4 LATIN CAPITAL LETTER G WITH ACUTE; Gacute  
12903 \DeclareTextCompositeCommand{\'}{PU}{G}{\81\364}% U+01F4  
12904 % U+01F5 LATIN SMALL LETTER G WITH ACUTE; gacute  
12905 \DeclareTextCompositeCommand{\'}{PU}{g}{\81\365}% U+01F5  
12906 % U+01F8 LATIN CAPITAL LETTER N WITH GRAVE  
12907 \DeclareTextCompositeCommand{\`}{PU}{N}{\81\370}% U+01F8  
12908 % U+01F9 LATIN SMALL LETTER N WITH GRAVE  
12909 \DeclareTextCompositeCommand{\`}{PU}{n}{\81\371}% U+01F9  
12910 % U+01FC LATIN CAPITAL LETTER AE WITH ACUTE; AEacute  
12911 \DeclareTextCompositeCommand{\'}{PU}{AE}{\81\374}% U+01FC  
12912 % U+01FD LATIN SMALL LETTER AE WITH ACUTE; aeacute  
12913 \DeclareTextCompositeCommand{\'}{PU}{ae}{\81\375}% U+01FD  
12914 % U+01FE LATIN CAPITAL LETTER O WITH STROKE AND ACUTE; \*Oslashacute, Ostrokeacut  
12915 \DeclareTextCompositeCommand{\'}{PU}{O}{\81\376}% U+01FE  
12916 % U+01FF LATIN SMALL LETTER O WITH STROKE AND ACUTE; \*oslashacute, ostrokeacut  
12917 \DeclareTextCompositeCommand{\'}{PU}{o}{\81\377}% U+01FF  
12918 % U+0200 LATIN CAPITAL LETTER A WITH DOUBLE GRAVE; Adblgrave  
12919 \DeclareTextCompositeCommand{\G}{PU}{A}{\82\000}% U+0200  
12920 % U+0201 LATIN SMALL LETTER A WITH DOUBLE GRAVE; adblgrave  
12921 \DeclareTextCompositeCommand{\G}{PU}{a}{\82\001}% U+0201  
12922 % U+0204 LATIN CAPITAL LETTER E WITH DOUBLE GRAVE; Edblgrave  
12923 \DeclareTextCompositeCommand{\G}{PU}{E}{\82\004}% U+0204  
12924 % U+0205 LATIN SMALL LETTER E WITH DOUBLE GRAVE; edblgrave

12925 \DeclareTextCompositeCommand{\G}{PU}{e}{\82\005}% U+0205  
 12926 % U+0208 LATIN CAPITAL LETTER I WITH DOUBLE GRAVE; Idblgrave  
 12927 \DeclareTextCompositeCommand{\G}{PU}{I}{\82\010}% U+0208  
 12928 % U+0209 LATIN SMALL LETTER I WITH DOUBLE GRAVE; idblgrave  
 12929 \DeclareTextCompositeCommand{\G}{PU}{i}{\82\011}% U+0209  
 12930 \DeclareTextCompositeCommand{\G}{PU}{O}{\82\011}% U+0209  
 12931 % U+020C LATIN CAPITAL LETTER O WITH DOUBLE GRAVE; Odblgrave  
 12932 \DeclareTextCompositeCommand{\G}{PU}{O}{\82\014}% U+020C  
 12933 % U+020D LATIN SMALL LETTER O WITH DOUBLE GRAVE; odblgrave  
 12934 \DeclareTextCompositeCommand{\G}{PU}{o}{\82\015}% U+020D  
 12935 % U+0210 LATIN CAPITAL LETTER R WITH DOUBLE GRAVE; Rdblgrave  
 12936 \DeclareTextCompositeCommand{\G}{PU}{R}{\82\020}% U+0210  
 12937 % U+0211 LATIN SMALL LETTER R WITH DOUBLE GRAVE; rdblgrave  
 12938 \DeclareTextCompositeCommand{\G}{PU}{r}{\82\021}% U+0211  
 12939 % U+0214 LATIN CAPITAL LETTER U WITH DOUBLE GRAVE; Udblgrave  
 12940 \DeclareTextCompositeCommand{\G}{PU}{U}{\82\024}% U+0214  
 12941 % U+0215 LATIN SMALL LETTER U WITH DOUBLE GRAVE; udblgrave  
 12942 \DeclareTextCompositeCommand{\G}{PU}{u}{\82\025}% U+0215  
 12943 % U+021E LATIN CAPITAL LETTER H WITH CARON  
 12944 \DeclareTextCompositeCommand{\v}{PU}{H}{\82\036}% U+021E  
 12945 % U+021F LATIN SMALL LETTER H WITH CARON  
 12946 \DeclareTextCompositeCommand{\v}{PU}{h}{\82\037}% U+021F  
 12947 % U+0226 LATIN CAPITAL LETTER A WITH DOT ABOVE  
 12948 \DeclareTextCompositeCommand{.}{PU}{A}{\82\046}% U+0226  
 12949 % U+0227 LATIN SMALL LETTER A WITH DOT ABOVE  
 12950 \DeclareTextCompositeCommand{.}{PU}{a}{\82\047}% U+0227  
 12951 % U+0228 LATIN CAPITAL LETTER E WITH CEDILLA  
 12952 \DeclareTextCompositeCommand{\c}{PU}{E}{\82\050}% U+0228  
 12953 % U+0229 LATIN SMALL LETTER E WITH CEDILLA  
 12954 \DeclareTextCompositeCommand{\c}{PU}{e}{\82\051}% U+0229  
 12955 % U+022E LATIN CAPITAL LETTER O WITH DOT ABOVE  
 12956 \DeclareTextCompositeCommand{.}{PU}{O}{\82\056}% U+022E  
 12957 % U+022F LATIN SMALL LETTER O WITH DOT ABOVE  
 12958 \DeclareTextCompositeCommand{.}{PU}{o}{\82\057}% U+022F  
 12959 % U+0232 LATIN CAPITAL LETTER Y WITH MACRON  
 12960 \DeclareTextCompositeCommand{=}{PU}{Y}{\82\062}% U+0232  
 12961 % U+0233 LATIN SMALL LETTER Y WITH MACRON  
 12962 \DeclareTextCompositeCommand{=}{PU}{y}{\82\063}% U+0233  
 12963 % U+0237 LATIN SMALL LETTER DOTLESS J  
 12964 \DeclareTextCommand{\j}{PU}{\82\067}% U+0237

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

12965 % U+02C7 CARON; caron  
 12966 \DeclareTextCommand{\textasciicaron}{PU}{\82\307}% U+02C7  
 12967 % U+02D8 BREVE; breve  
 12968 \DeclareTextCommand{\textasciibreve}{PU}{\82\330}% U+02D8  
 12969 % U+02D9 DOT ABOVE; dotaccent  
 12970 \DeclareTextCommand{\textdotaccent}{PU}{\82\331}% U+02D9  
 12971 % U+02DA RING ABOVE; ring  
 12972 \DeclareTextCommand{\textring}{PU}{\82\332}% U+02DA  
 12973 % U+02DB OGONEK; ogonek  
 12974 \DeclareTextCommand{\textogonek}{PU}{\82\333}% U+02DB  
 12975 % U+02DC SMALL TILDE; ilde, \*tilde  
 12976 \DeclareTextCommand{\texttilde}{PU}{\82\334}% U+02DC  
 12977 % U+02DD DOUBLE ACUTE ACCENT; hungarumlaut  
 12978 \DeclareTextCommand{\texthungarumlaut}{PU}{\82\335}% U+02DD  
 12979 \DeclareTextCommand{\textacutedbl}{PU}{\texthungarumlaut}% U+02DD

12980 % U+02F5 MODIFIER LETTER MIDDLE DOUBLE GRAVE ACCENT  
 12981 \DeclareTextCommand{\textgravedbl}{PU}{\82\365}% U+02F5  
 12982 % U+02F7 MODIFIER LETTER LOW TILDE  
 12983 \DeclareTextCommand{\texttildelow}{PU}{\82\367}% U+02F7

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

12984 % U+030F COMBINING DOUBLE GRAVE ACCENT; dblgravecmb  
 12985 \DeclareTextCommand{\textdoublegrave}{PU}{\83\017}% U+030F  
 12986 % U+0311 COMBINING INVERTED BREVE; breveinvertedcmb  
 12987 \DeclareTextCommand{\textnewtie}{PU}{\83\021}% U+0311  
 12988 % U+0323 COMBINING DOT BELOW; dotbelowcmb, \*dotbelowcmb  
 12989 \DeclareTextCommand{\textdotbelow}{PU}{\83\043}% U+0323  
 12990 % U+0331 COMBINING MACRON BELOW; macronbelowcmb  
 12991 \DeclareTextCommand{\textmacronbelow}{PU}{\83\061}% U+0331  
 12992 % U+0361 COMBINING DOUBLE INVERTED BREVE; breveinverteddoublecmb  
 12993 \DeclareTextCommand{\texttie}{PU}{\83\141}% U+0361

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

12994 % U+0374 GREEK NUMERAL SIGN; numeralsigngreek  
 12995 \DeclareTextCommand{\textnumeralsigngreek}{PU}{\83\164}% U+0374  
 12996 % U+0375 GREEK LOWER NUMERAL SIGN; numeralsignlowergreek  
 12997 \DeclareTextCommand{\textnumeralsignlowergreek}{PU}{\83\165}% U+0375  
 12998 % U+0386 GREEK CAPITAL LETTER ALPHA WITH TONOS; Alphatonos  
 12999 \DeclareTextCompositeCommand{\'}{PU}{\textAlpha}{\83\206}% U+0386  
 13000 % U+0388 GREEK CAPITAL LETTER EPSILON WITH TONOS; Epsilontonos  
 13001 \DeclareTextCompositeCommand{\'}{PU}{\textEpsilon}{\83\210}% U+0388  
 13002 % U+0389 GREEK CAPITAL LETTER ETA WITH TONOS; Etatonos  
 13003 \DeclareTextCompositeCommand{\'}{PU}{\textEta}{\83\211}% U+0389  
 13004 % U+038A GREEK CAPITAL LETTER IOTA WITH TONOS; Iotatonos  
 13005 \DeclareTextCompositeCommand{\'}{PU}{\textIota}{\83\212}% U+038A  
 13006 % U+038C GREEK CAPITAL LETTER OMICRON WITH TONOS; Omicrontonos  
 13007 \DeclareTextCompositeCommand{\'}{PU}{\textOmicron}{\83\214}% U+038C  
 13008 % U+038E GREEK CAPITAL LETTER UPSILON WITH TONOS; Upsilontonos  
 13009 \DeclareTextCompositeCommand{\'}{PU}{\textUpsilon}{\83\216}% U+038E  
 13010 % U+038F GREEK CAPITAL LETTER OMEGA WITH TONOS; Omegatonos  
 13011 \DeclareTextCompositeCommand{\'}{PU}{\textOmega}{\83\217}% U+038F  
 13012 % U+0390 GREEK SMALL LETTER IOTA WITH DIALYTIKA AND TONOS; iotadiesisistonos  
 13013 \DeclareTextCompositeCommand{\'}{PU}{\textIotadiesisistonos}{\83\220}% U+0390  
 13014 % U+0391 GREEK CAPITAL LETTER ALPHA; Alpha  
 13015 \DeclareTextCommand{\textAlpha}{PU}{\83\221}% U+0391  
 13016 % U+0392 GREEK CAPITAL LETTER BETA; Beta  
 13017 \DeclareTextCommand{\textBeta}{PU}{\83\222}% U+0392  
 13018 % U+0393 GREEK CAPITAL LETTER GAMMA; Gamma  
 13019 \DeclareTextCommand{\textGamma}{PU}{\83\223}% U+0393  
 13020 % U+0394 GREEK CAPITAL LETTER DELTA; Deltagreek, \*Delta  
 13021 \DeclareTextCommand{\textDelta}{PU}{\83\224}% U+0394  
 13022 % U+0395 GREEK CAPITAL LETTER EPSILON; Epsilon  
 13023 \DeclareTextCommand{\textEpsilon}{PU}{\83\225}% U+0395  
 13024 % U+0396 GREEK CAPITAL LETTER ZETA; Zeta  
 13025 \DeclareTextCommand{\textZeta}{PU}{\83\226}% U+0396  
 13026 % U+0397 GREEK CAPITAL LETTER ETA; Eta  
 13027 \DeclareTextCommand{\textEta}{PU}{\83\227}% U+0397  
 13028 % U+0398 GREEK CAPITAL LETTER THETA; Theta  
 13029 \DeclareTextCommand{\textTheta}{PU}{\83\230}% U+0398  
 13030 % U+0399 GREEK CAPITAL LETTER IOTA; Iota  
 13031 \DeclareTextCommand{\textIota}{PU}{\83\231}% U+0399  
 13032 % U+039A GREEK CAPITAL LETTER KAPPA; Kappa



13033 \DeclareTextCommand{\textKappa}{PU}{\83\232}% U+039A  
13034 % U+039B GREEK CAPITAL LETTER LAMDA; Lambda  
13035 \DeclareTextCommand{\textLambda}{PU}{\83\233}% U+039B  
13036 % U+039C GREEK CAPITAL LETTER MU; Mu  
13037 \DeclareTextCommand{\textMu}{PU}{\83\234}% U+039C  
13038 % U+039D GREEK CAPITAL LETTER NU; Nu  
13039 \DeclareTextCommand{\textNu}{PU}{\83\235}% U+039D  
13040 % U+039E GREEK CAPITAL LETTER XI; Xi  
13041 \DeclareTextCommand{\textXi}{PU}{\83\236}% U+039E  
13042 % U+039F GREEK CAPITAL LETTER OMICRON; Omicron  
13043 \DeclareTextCommand{\textOmicron}{PU}{\83\237}% U+039F  
13044 % U+03A0 GREEK CAPITAL LETTER PI; Pi  
13045 \DeclareTextCommand{\textPi}{PU}{\83\240}% U+03A0  
13046 % U+03A1 GREEK CAPITAL LETTER RHO; Rho  
13047 \DeclareTextCommand{\textRho}{PU}{\83\241}% U+03A1  
13048 % U+03A3 GREEK CAPITAL LETTER SIGMA; Sigma  
13049 \DeclareTextCommand{\textSigma}{PU}{\83\243}% U+03A3  
13050 % U+03A4 GREEK CAPITAL LETTER TAU; Tau  
13051 \DeclareTextCommand{\textTau}{PU}{\83\244}% U+03A4  
13052 % U+03A5 GREEK CAPITAL LETTER UPSILON; Upsilon  
13053 \DeclareTextCommand{\textUpsilon}{PU}{\83\245}% U+03A5  
13054 % U+03A6 GREEK CAPITAL LETTER PHI; Phi  
13055 \DeclareTextCommand{\textPhi}{PU}{\83\246}% U+03A6  
13056 % U+03A7 GREEK CAPITAL LETTER CHI; Chi  
13057 \DeclareTextCommand{\textChi}{PU}{\83\247}% U+03A7  
13058 % U+03A8 GREEK CAPITAL LETTER PSI; Psi  
13059 \DeclareTextCommand{\textPsi}{PU}{\83\250}% U+03A8  
13060 % U+03A9 GREEK CAPITAL LETTER OMEGA; Omegagreek, \*Omega  
13061 \DeclareTextCommand{\textOmega}{PU}{\83\251}% U+03A9  
13062 % U+03AA GREEK CAPITAL LETTER IOTA WITH DIALYTIKA; Iotadieresis  
13063 \DeclareTextCommand{\textIotadieresis}{PU}{\83\252}% U+03AA  
13064 \DeclareTextCompositeCommand{"}{PU}{\textIota}{\83\252}% U+03AA  
13065 % U+03AB GREEK CAPITAL LETTER UPSILON WITH DIALYTIKA; Upsilondieresis  
13066 \DeclareTextCompositeCommand{"}{PU}{\textUpsilon}{\83\253}% U+03AB  
13067 % U+03AC GREEK SMALL LETTER ALPHA WITH TONOS; alphanos  
13068 \DeclareTextCompositeCommand{'}{PU}{\textalpha}{\83\254}% U+03AC  
13069 % U+03AD GREEK SMALL LETTER EPSILON WITH TONOS; epsilon  
13070 \DeclareTextCompositeCommand{'}{PU}{\textepsilon}{\83\255}% U+03AD  
13071 % U+03AE GREEK SMALL LETTER ETA WITH TONOS; etanos  
13072 \DeclareTextCompositeCommand{'}{PU}{\texteta}{\83\256}% U+03AE  
13073 % U+03AF GREEK SMALL LETTER IOTA WITH TONOS; iotanos  
13074 \DeclareTextCompositeCommand{'}{PU}{\textiota}{\83\257}% U+03AF  
13075 % U+03B0 GREEK SMALL LETTER UPSILON WITH DIALYTIKA AND TONOS; upsilondieresis  
13076 \DeclareTextCompositeCommand{"}{PU}{\textupsilon}{\83\260}% U+03B0  
13077 % U+03B1 GREEK SMALL LETTER ALPHA; alpha  
13078 \DeclareTextCommand{\textalpha}{PU}{\83\261}% U+03B1  
13079 % U+03B2 GREEK SMALL LETTER BETA; beta  
13080 \DeclareTextCommand{\textbeta}{PU}{\83\262}% U+03B2  
13081 % U+03B3 GREEK SMALL LETTER GAMMA; gamma  
13082 \DeclareTextCommand{\textgamma}{PU}{\83\263}% U+03B3  
13083 % U+03B4 GREEK SMALL LETTER DELTA; delta  
13084 \DeclareTextCommand{\textdelta}{PU}{\83\264}% U+03B4  
13085 % U+03B5 GREEK SMALL LETTER EPSILON; epsilon  
13086 \DeclareTextCommand{\textepsilon}{PU}{\83\265}% U+03B5  
13087 % U+03B6 GREEK SMALL LETTER ZETA; zeta  
13088 \DeclareTextCommand{\textzeta}{PU}{\83\266}% U+03B6  
13089 % U+03B7 GREEK SMALL LETTER ETA; eta

13090 \DeclareTextCommand{\texteta}{PU}{\83\267}% U+03B7  
13091 % U+03B8 GREEK SMALL LETTER THETA; theta  
13092 \DeclareTextCommand{\texttheta}{PU}{\83\270}% U+03B8  
13093 % U+03B9 GREEK SMALL LETTER IOTA; iota  
13094 \DeclareTextCommand{\textiota}{PU}{\83\271}% U+03B9  
13095 % U+03BA GREEK SMALL LETTER KAPPA; kappa  
13096 \DeclareTextCommand{\textkappa}{PU}{\83\272}% U+03BA  
13097 % U+03BB GREEK SMALL LETTER LAMDA; lambda  
13098 \DeclareTextCommand{\textlambda}{PU}{\83\273}% U+03BB  
13099 % U+03BC GREEK SMALL LETTER MU; mugreek, \*mu  
13100 \DeclareTextCommand{\textmugreek}{PU}{\83\274}% U+03BC  
13101 % U+03BD GREEK SMALL LETTER NU; nu  
13102 \DeclareTextCommand{\textnu}{PU}{\83\275}% U+03BD  
13103 % U+03BE GREEK SMALL LETTER XI; xi  
13104 \DeclareTextCommand{\textxi}{PU}{\83\276}% U+03BE  
13105 % U+03BF GREEK SMALL LETTER OMICRON; omicron  
13106 \DeclareTextCommand{\textomicron}{PU}{\83\277}% U+03BF  
13107 % U+03C0 GREEK SMALL LETTER PI; pi  
13108 \DeclareTextCommand{\textpi}{PU}{\83\300}% U+03C0  
13109 % U+03C1 GREEK SMALL LETTER RHO; rho  
13110 \DeclareTextCommand{\textrho}{PU}{\83\301}% U+03C1  
13111 % U+03C2 GREEK SMALL LETTER FINAL SIGMA; \*sigma1, sigmafinal  
13112 \DeclareTextCommand{\textvarsigma}{PU}{\83\302}% U+03C2  
13113 % U+03C3 GREEK SMALL LETTER SIGMA; sigma  
13114 \DeclareTextCommand{\textsigma}{PU}{\83\303}% U+03C3  
13115 % U+03C4 GREEK SMALL LETTER TAU; tau  
13116 \DeclareTextCommand{\texttau}{PU}{\83\304}% U+03C4  
13117 % U+03C5 GREEK SMALL LETTER UPSILON; upsilon  
13118 \DeclareTextCommand{\textupsilon}{PU}{\83\305}% U+03C5  
13119 % U+03C6 GREEK SMALL LETTER PHI; phi  
13120 \DeclareTextCommand{\textphi}{PU}{\83\306}% U+03C6  
13121 % U+03C7 GREEK SMALL LETTER CHI; chi  
13122 \DeclareTextCommand{\textchi}{PU}{\83\307}% U+03C7  
13123 % U+03C8 GREEK SMALL LETTER PSI; psi  
13124 \DeclareTextCommand{\textpsi}{PU}{\83\310}% U+03C8  
13125 % U+03C9 GREEK SMALL LETTER OMEGA; omega  
13126 \DeclareTextCommand{\textomega}{PU}{\83\311}% U+03C9  
13127 % U+03CA GREEK SMALL LETTER IOTA WITH DIALYTIKA; iotadieresis  
13128 \DeclareTextCompositeCommand{"}{PU}{\textiota}{\83\312}% U+03CA  
13129 % U+03CB GREEK SMALL LETTER UPSILON WITH DIALYTIKA; upsilondieresis  
13130 \DeclareTextCompositeCommand{"}{PU}{\textupsilon}{\83\313}% U+03CB  
13131 % U+03CC GREEK SMALL LETTER OMICRON WITH TONOS; microntonos  
13132 \DeclareTextCompositeCommand{'}{PU}{\textomicron}{\83\314}% U+03CC  
13133 % U+03CD GREEK SMALL LETTER UPSILON WITH TONOS; upsilontonos  
13134 \DeclareTextCommand{\textupsilonacute}{PU}{\83\315}% U+03CD  
13135 \DeclareTextCompositeCommand{'}{PU}{\textupsilon}{\83\315}% U+03CD  
13136 % U+03CE GREEK SMALL LETTER OMEGA WITH TONOS; omegatonos  
13137 \DeclareTextCompositeCommand{'}{PU}{\textomega}{\83\316}% U+03CE  
13138 % U+03DA GREEK LETTER STIGMA; Stigmagreek  
13139 \DeclareTextCommand{\textStigmagreek}{PU}{\83\332}% U+03DA  
13140 % U+03DB GREEK SMALL LETTER STIGMA  
13141 \DeclareTextCommand{\textstigmagreek}{PU}{\83\333}% U+03DB  
13142 % U+03DC GREEK LETTER DIGAMMA; Digammagreek  
13143 \DeclareTextCommand{\textDigammagreek}{PU}{\83\334}% U+03DC  
13144 % U+03DD GREEK SMALL LETTER DIGAMMA  
13145 \DeclareTextCommand{\textdigammagreek}{PU}{\83\335}% U+03DD  
13146 % U+03DE GREEK LETTER KOPPA; Koppagreek

```

13147 \DeclareTextCommand{\textKoppagreek}{PU}{\83\336}% U+03DE
13148 % U+03DF GREEK SMALL LETTER KOPPA
13149 \DeclareTextCommand{\textkoppagreek}{PU}{\83\337}% U+03DF
13150 % U+03E0 GREEK LETTER SAMPI; Sampigreek
13151 \DeclareTextCommand{\textsampigreek}{PU}{\83\340}% U+03E0
13152 % U+03E1 GREEK SMALL LETTER SAMPI
13153 \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.

```

13154 % U+0400 CYRILLIC CAPITAL LETTER IE WITH GRAVE
13155 \DeclareTextCompositeCommand{\'}{PU}{\CYRE}{\84\000}% U+0400
13156 % U+0401 CYRILLIC CAPITAL LETTER IO; Iocyrrillic, *afii10023
13157 \DeclareTextCommand{\CYRYO}{PU}{\84\001}% U+0401
13158 \DeclareTextCompositeCommand{\"}{PU}{\CYRE}{\84\001}% ???
13159 % U+0402 CYRILLIC CAPITAL LETTER DJE; Djecyrillic, *afii10051
13160 \DeclareTextCommand{\CYRDJE}{PU}{\84\002}% U+0402
13161 % U+0403 CYRILLIC CAPITAL LETTER GJE; Gjecyrillic, *afii10052
13162 \DeclareTextCompositeCommand{\'}{PU}{\CYRG}{\84\003}% U+0403
13163 % U+0404 CYRILLIC CAPITAL LETTER UKRAINIAN IE; Ecyrrillic, *afii10053
13164 \DeclareTextCommand{\CYRIE}{PU}{\84\004}% U+0404
13165 % U+0405 CYRILLIC CAPITAL LETTER DZE; Dzecyrillic, *afii10054
13166 \DeclareTextCommand{\CYRDZE}{PU}{\84\005}% U+0405
13167 % U+0406 CYRILLIC CAPITAL LETTER BYELORUSSIAN-UKRAINIAN I; Icyrrillic, *afii10055
13168 \DeclareTextCommand{\CYRII}{PU}{\84\006}% U+0406
13169 % U+0407 CYRILLIC CAPITAL LETTER YI; Yicyrrillic, *afii10056
13170 \DeclareTextCommand{\CYRYI}{PU}{\84\007}% U+0407
13171 \DeclareTextCompositeCommand{\"}{PU}{\CYRII}{\84\007}% U+0407
13172 % U+0408 CYRILLIC CAPITAL LETTER JE; Jecyrillic, *afii10057
13173 \DeclareTextCommand{\CYRJE}{PU}{\84\010}% U+0408
13174 % U+0409 CYRILLIC CAPITAL LETTER LJE; Ljecyrillic, *afii10058
13175 \DeclareTextCommand{\CYRLJE}{PU}{\84\011}% U+0409
13176 % U+040A CYRILLIC CAPITAL LETTER NJE; Njecyrillic, *afii10059
13177 \DeclareTextCommand{\CYRNJE}{PU}{\84\012}% U+040A
13178 % U+040B CYRILLIC CAPITAL LETTER TSHE; Tshecyrillic, *afii10060
13179 \DeclareTextCommand{\CYRTSHE}{PU}{\84\013}% U+040B
13180 % U+040C CYRILLIC CAPITAL LETTER KJE; Kjecyrillic, *afii10061
13181 \DeclareTextCompositeCommand{\'}{PU}{\CYRK}{\84\014}% U+040C
13182 % U+040D CYRILLIC CAPITAL LETTER I WITH GRAVE
13183 \DeclareTextCompositeCommand{\'}{PU}{\CYRI}{\84\015}% U+040D
13184 % U+040E CYRILLIC CAPITAL LETTER SHORT U; Ushortcyrrillic, *afii10062
13185 \DeclareTextCommand{\CYRUSHRT}{PU}{\84\016}% U+040E
13186 \DeclareTextCompositeCommand{\U}{PU}{\CYRU}{\84\016}% U+040E
13187 % U+040F CYRILLIC CAPITAL LETTER DZHE; Dzhecyrillic, *afii10145
13188 \DeclareTextCommand{\CYRDZHE}{PU}{\84\017}% U+040F
13189 % U+0410 CYRILLIC CAPITAL LETTER A; Acyrillic, *afii10017
13190 \DeclareTextCommand{\CYRA}{PU}{\84\020}% U+0410
13191 % U+0411 CYRILLIC CAPITAL LETTER BE; Becyrillic, *afii10018
13192 \DeclareTextCommand{\CYRB}{PU}{\84\021}% U+0411
13193 % U+0412 CYRILLIC CAPITAL LETTER VE; Vecyrillic, *afii10019
13194 \DeclareTextCommand{\CYRV}{PU}{\84\022}% U+0412
13195 % U+0413 CYRILLIC CAPITAL LETTER GHE; Gecyrillic, *afii10020
13196 \DeclareTextCommand{\CYRG}{PU}{\84\023}% U+0413
13197 % U+0414 CYRILLIC CAPITAL LETTER DE; Decyrillic, *afii10021
13198 \DeclareTextCommand{\CYRD}{PU}{\84\024}% U+0414
13199 % U+0415 CYRILLIC CAPITAL LETTER IE; Iecyrillic, *afii10022

```

13200 \DeclareTextCommand{\CYRE}{PU}{\84\025}% U+0415  
13201 % U+0416 CYRILLIC CAPITAL LETTER ZHE; Zhecyrillic, \*afii10024  
13202 \DeclareTextCommand{\CYRZH}{PU}{\84\026}% U+0416  
13203 % U+0417 CYRILLIC CAPITAL LETTER ZE; Zecyrillic, \*afii10025  
13204 \DeclareTextCommand{\CYRZ}{PU}{\84\027}% U+0417  
13205 % U+0418 CYRILLIC CAPITAL LETTER I; Iicyrillic, \*afii10026  
13206 \DeclareTextCommand{\CYRI}{PU}{\84\030}% U+0418  
13207 % U+0419 CYRILLIC CAPITAL LETTER SHORT I; Iishortcyrillic, \*afii10027  
13208 \DeclareTextCommand{\CYRISHRT}{PU}{\84\031}% U+0419  
13209 \DeclareTextCompositeCommand{\U}{PU}{\CYRI}{\84\031}% U+0419  
13210 % U+041A CYRILLIC CAPITAL LETTER KA; Kacyrillic, \*afii10028  
13211 \DeclareTextCommand{\CYRK}{PU}{\84\032}% U+041A  
13212 % U+041B CYRILLIC CAPITAL LETTER EL; Elcyrillic, \*afii10029  
13213 \DeclareTextCommand{\CYRL}{PU}{\84\033}% U+041B  
13214 % U+041C CYRILLIC CAPITAL LETTER EM; Emcyrillic, \*afii10030  
13215 \DeclareTextCommand{\CYRM}{PU}{\84\034}% U+041C  
13216 % U+041D CYRILLIC CAPITAL LETTER EN; Encyrillic, \*afii10031  
13217 \DeclareTextCommand{\CYRN}{PU}{\84\035}% U+041D  
13218 % U+041E CYRILLIC CAPITAL LETTER O; Ocyrillic, \*afii10032  
13219 \DeclareTextCommand{\CYRO}{PU}{\84\036}% U+041E  
13220 % U+041F CYRILLIC CAPITAL LETTER PE; Pecyrillic, \*afii10033  
13221 \DeclareTextCommand{\CYRP}{PU}{\84\037}% U+041F  
13222 % U+0420 CYRILLIC CAPITAL LETTER ER; Ercyrillic, \*afii10034  
13223 \DeclareTextCommand{\CYRR}{PU}{\84\040}% U+0420  
13224 % U+0421 CYRILLIC CAPITAL LETTER ES; Escyrillic, \*afii10035  
13225 \DeclareTextCommand{\CYRS}{PU}{\84\041}% U+0421  
13226 % U+0422 CYRILLIC CAPITAL LETTER TE; Tecyrillic, \*afii10036  
13227 \DeclareTextCommand{\CYRT}{PU}{\84\042}% U+0422  
13228 % U+0423 CYRILLIC CAPITAL LETTER U; Ucyrillic, \*afii10037  
13229 \DeclareTextCommand{\CYRU}{PU}{\84\043}% U+0423  
13230 % U+0424 CYRILLIC CAPITAL LETTER EF; Efcyrillic, \*afii10038  
13231 \DeclareTextCommand{\CYRF}{PU}{\84\044}% U+0424  
13232 % U+0425 CYRILLIC CAPITAL LETTER HA; Khacyrillic, \*afii10039  
13233 \DeclareTextCommand{\CYRH}{PU}{\84\045}% U+0425  
13234 % U+0426 CYRILLIC CAPITAL LETTER TSE; Tsecyrillic, \*afii10040  
13235 \DeclareTextCommand{\CYRC}{PU}{\84\046}% U+0426  
13236 % U+0427 CYRILLIC CAPITAL LETTER CHE; Checyrillic, \*afii10041  
13237 \DeclareTextCommand{\CYRCH}{PU}{\84\047}% U+0427  
13238 % U+0428 CYRILLIC CAPITAL LETTER SHA; Shacyrillic, \*afii10042  
13239 \DeclareTextCommand{\CYRSH}{PU}{\84\050}% U+0428  
13240 % U+0429 CYRILLIC CAPITAL LETTER SHCHA; Shchacyrillic, \*afii10043  
13241 \DeclareTextCommand{\CYRSHCH}{PU}{\84\051}% U+0429  
13242 % U+042A CYRILLIC CAPITAL LETTER HARD SIGN; Hardsigncyrillic, \*afii10044  
13243 \DeclareTextCommand{\CYRHRDSN}{PU}{\84\052}% U+042A  
13244 % U+042B CYRILLIC CAPITAL LETTER YERU; Yericyrillic, \*afii10045  
13245 \DeclareTextCommand{\CYRERY}{PU}{\84\053}% U+042B  
13246 % U+042C CYRILLIC CAPITAL LETTER SOFT SIGN; Softsigncyrillic, \*afii10046  
13247 \DeclareTextCommand{\CYRSFTSN}{PU}{\84\054}% U+042C  
13248 % U+042D CYRILLIC CAPITAL LETTER E; Ereversedcyrillic, \*afii10047  
13249 \DeclareTextCommand{\CYREREV}{PU}{\84\055}% U+042D  
13250 % U+042E CYRILLIC CAPITAL LETTER YU; IUcyrillic, \*afii10048  
13251 \DeclareTextCommand{\CYRYU}{PU}{\84\056}% U+042E  
13252 % U+042F CYRILLIC CAPITAL LETTER YA; IAcyrillic, \*afii10049  
13253 \DeclareTextCommand{\CYRYA}{PU}{\84\057}% U+042F  
13254 % U+0430 CYRILLIC SMALL LETTER A; acyrillic, \*afii10065  
13255 \DeclareTextCommand{\cyra}{PU}{\84\060}% U+0430  
13256 % U+0431 CYRILLIC SMALL LETTER BE; \*afii10066, becyrillic

13257 \DeclareTextCommand{\cyrb}{PU}{\84\061}% U+0431  
13258 % U+0432 CYRILLIC SMALL LETTER VE; \*afii10067, vecyrillic  
13259 \DeclareTextCommand{\cyrv}{PU}{\84\062}% U+0432  
13260 % U+0433 CYRILLIC SMALL LETTER GHE; \*afii10068, gecyrillic  
13261 \DeclareTextCommand{\cyrg}{PU}{\84\063}% U+0433  
13262 % U+0434 CYRILLIC SMALL LETTER DE; \*afii10069, decyrillic  
13263 \DeclareTextCommand{\cyrd}{PU}{\84\064}% U+0434  
13264 % U+0435 CYRILLIC SMALL LETTER IE; \*afii10070, iecyrillic  
13265 \DeclareTextCommand{\cyre}{PU}{\84\065}% U+0435  
13266 % U+0436 CYRILLIC SMALL LETTER ZHE; \*afii10072, zhecyrillic  
13267 \DeclareTextCommand{\cyrz}{PU}{\84\066}% U+0436  
13268 % U+0437 CYRILLIC SMALL LETTER ZE; \*afii10073, zecyrillic  
13269 \DeclareTextCommand{\cyrz}{PU}{\84\067}% U+0437  
13270 % U+0438 CYRILLIC SMALL LETTER I; \*afii10074, iicyrillic  
13271 \DeclareTextCommand{\cyri}{PU}{\84\070}% U+0438  
13272 % U+0439 CYRILLIC SMALL LETTER SHORT I; \*afii10075, iishortcyrillic  
13273 \DeclareTextCommand{\cyrishrt}{PU}{\84\071}% U+0439  
13274 \DeclareTextCompositeCommand{\U}{PU}{\cyri}{\84\071}% U+0439  
13275 % U+043A CYRILLIC SMALL LETTER KA; \*afii10076, kacyrillic  
13276 \DeclareTextCommand{\cyrk}{PU}{\84\072}% U+043A  
13277 % U+043B CYRILLIC SMALL LETTER EL; \*afii10077, elcyrillic  
13278 \DeclareTextCommand{\cyrl}{PU}{\84\073}% U+043B  
13279 % U+043C CYRILLIC SMALL LETTER EM; \*afii10078, emcyrillic  
13280 \DeclareTextCommand{\cyrm}{PU}{\84\074}% U+043C  
13281 % U+043D CYRILLIC SMALL LETTER EN; \*afii10079, encyrillic  
13282 \DeclareTextCommand{\cyrn}{PU}{\84\075}% U+043D  
13283 % U+043E CYRILLIC SMALL LETTER O; \*afii10080, ocyrillic  
13284 \DeclareTextCommand{\cyro}{PU}{\84\076}% U+043E  
13285 % U+043F CYRILLIC SMALL LETTER PE; \*afii10081, pecyrillic  
13286 \DeclareTextCommand{\cyrp}{PU}{\84\077}% U+043F  
13287 % U+0440 CYRILLIC SMALL LETTER ER; \*afii10082, ercyrillic  
13288 \DeclareTextCommand{\cyrr}{PU}{\84\100}% U+0440  
13289 % U+0441 CYRILLIC SMALL LETTER ES; \*afii10083, escyrillic  
13290 \DeclareTextCommand{\cyrs}{PU}{\84\101}% U+0441  
13291 % U+0442 CYRILLIC SMALL LETTER TE; \*afii10084, tecyrillic  
13292 \DeclareTextCommand{\cyrt}{PU}{\84\102}% U+0442  
13293 % U+0443 CYRILLIC SMALL LETTER U; \*afii10085, ucyrillic  
13294 \DeclareTextCommand{\cyru}{PU}{\84\103}% U+0443  
13295 % U+0444 CYRILLIC SMALL LETTER EF; \*afii10086, efcyrillic  
13296 \DeclareTextCommand{\cyrf}{PU}{\84\104}% U+0444  
13297 % U+0445 CYRILLIC SMALL LETTER HA; \*afii10087, khacyrillic  
13298 \DeclareTextCommand{\cyrh}{PU}{\84\105}% U+0445  
13299 % U+0446 CYRILLIC SMALL LETTER TSE; \*afii10088, tsecyrillic  
13300 \DeclareTextCommand{\cyrc}{PU}{\84\106}% U+0446  
13301 % U+0447 CYRILLIC SMALL LETTER CHE; \*afii10089, checyrillic  
13302 \DeclareTextCommand{\cyrch}{PU}{\84\107}% U+0447  
13303 % U+0448 CYRILLIC SMALL LETTER SHA; \*afii10090, shacyrillic  
13304 \DeclareTextCommand{\cyrsh}{PU}{\84\110}% U+0448  
13305 % U+0449 CYRILLIC SMALL LETTER SHCHA; \*afii10091, shchacyrillic  
13306 \DeclareTextCommand{\cyrshch}{PU}{\84\111}% U+0449  
13307 % U+044A CYRILLIC SMALL LETTER HARD SIGN; \*afii10092, hardsigncyrillic  
13308 \DeclareTextCommand{\cyrhdsn}{PU}{\84\112}% U+044A  
13309 % U+044B CYRILLIC SMALL LETTER YERU; \*afii10093, yericyrillic  
13310 \DeclareTextCommand{\cyrery}{PU}{\84\113}% U+044B  
13311 % U+044C CYRILLIC SMALL LETTER SOFT SIGN; \*afii10094, softsigncyrillic  
13312 \DeclareTextCommand{\cyrsftsn}{PU}{\84\114}% U+044C  
13313 % U+044D CYRILLIC SMALL LETTER E; \*afii10095, ereversedcyrillic

13314 \DeclareTextCommand{\cyrerev}{PU}{\84\115}% U+044D  
13315 % U+044E CYRILLIC SMALL LETTER YU; \*afii10096, iucyrillic  
13316 \DeclareTextCommand{\cyrju}{PU}{\84\116}% U+044E  
13317 % U+044F CYRILLIC SMALL LETTER YA; \*afii10097, iacyrillic  
13318 \DeclareTextCommand{\cyrja}{PU}{\84\117}% U+044F  
13319 % U+0450 CYRILLIC SMALL LETTER IE WITH GRAVE  
13320 \DeclareTextCompositeCommand{\'}{PU}{\cyre}{\84\120}% U+0450  
13321 % U+0451 CYRILLIC SMALL LETTER IO; \*afii10071, iocyrillic  
13322 \DeclareTextCommand{\cyrjo}{PU}{\84\121}% U+0451  
13323 \DeclareTextCompositeCommand{\"}{PU}{\cyre}{\84\121}% U+0451  
13324 % U+0452 CYRILLIC SMALL LETTER DJE; \*afii10099, djecyrillic  
13325 \DeclareTextCommand{\cyrdje}{PU}{\84\122}% U+0452  
13326 % U+0453 CYRILLIC SMALL LETTER GJE; \*afii10100, gjecyrillic  
13327 \DeclareTextCompositeCommand{\'}{PU}{\cyrg}{\84\123}% U+0453  
13328 % U+0454 CYRILLIC SMALL LETTER UKRAINIAN IE; \*afii10101, ecyrillic  
13329 \DeclareTextCommand{\cyrie}{PU}{\84\124}% U+0454  
13330 % U+0455 CYRILLIC SMALL LETTER DZE; \*afii10102, dzecyrillic  
13331 \DeclareTextCommand{\cyrdze}{PU}{\84\125}% U+0455  
13332 % U+0456 CYRILLIC SMALL LETTER BYELORUSSIAN-UKRAINIAN I; \*afii10103, icyrillic  
13333 \DeclareTextCommand{\cyrri}{PU}{\84\126}% U+0456  
13334 % U+0457 CYRILLIC SMALL LETTER YI; \*afii10104, yicyrillic  
13335 \DeclareTextCommand{\cyrji}{PU}{\84\127}% U+0457  
13336 \DeclareTextCompositeCommand{\"}{PU}{\cyrri}{\84\127}% U+0457  
13337 % U+0458 CYRILLIC SMALL LETTER JE; \*afii10105, jecyrillic  
13338 \DeclareTextCommand{\cyrje}{PU}{\84\130}% U+0458  
13339 % U+0459 CYRILLIC SMALL LETTER LJE; \*afii10106, ljecyrillic  
13340 \DeclareTextCommand{\cyrlje}{PU}{\84\131}% U+0459  
13341 % U+045A CYRILLIC SMALL LETTER NJE; \*afii10107, njecyrillic  
13342 \DeclareTextCommand{\cyrnje}{PU}{\84\132}% U+045A  
13343 % U+045B CYRILLIC SMALL LETTER TSHE; \*afii10108, tshecyrillic  
13344 \DeclareTextCommand{\cyrtshe}{PU}{\84\133}% U+045B  
13345 % U+045C CYRILLIC SMALL LETTER KJE; \*afii10109, kjecyrillic  
13346 \DeclareTextCompositeCommand{\'}{PU}{\cyrk}{\84\134}% U+045C  
13347 % U+045D CYRILLIC SMALL LETTER I WITH GRAVE  
13348 \DeclareTextCompositeCommand{\'}{PU}{\cyri}{\84\135}% U+045D  
13349 % U+045E CYRILLIC SMALL LETTER SHORT U; \*afii10110, ushortcyrillic  
13350 \DeclareTextCommand{\cyrushrt}{PU}{\84\136}% U+045E  
13351 \DeclareTextCompositeCommand{\U}{PU}{\curu}{\84\136}% U+045E  
13352 % U+045F CYRILLIC SMALL LETTER DZHE; \*afii10193, dzhecyrillic  
13353 \DeclareTextCommand{\cyrdzhe}{PU}{\84\137}% U+045F  
13354 % U+0460 CYRILLIC CAPITAL LETTER OMEGA; Omegacyrillic  
13355 \DeclareTextCommand{\CYROMEGA}{PU}{\84\140}% U+0460  
13356 % U+0461 CYRILLIC SMALL LETTER OMEGA; omegacyrillic  
13357 \DeclareTextCommand{\cyromega}{PU}{\84\141}% U+0461  
13358 % U+0462 CYRILLIC CAPITAL LETTER YAT; Yatcyrillic, \*afii10146  
13359 \DeclareTextCommand{\CYRYAT}{PU}{\84\142}% U+0462  
13360 % U+0463 CYRILLIC SMALL LETTER YAT; \*afii10194, yatcyrillic  
13361 \DeclareTextCommand{\cyrjat}{PU}{\84\143}% U+0463  
13362 % U+0464 CYRILLIC CAPITAL LETTER IOTIFIED E; Eiotifiedcyrillic  
13363 \DeclareTextCommand{\CYRIOTE}{PU}{\84\144}% U+0464  
13364 % U+0465 CYRILLIC SMALL LETTER IOTIFIED E; eiotifiedcyrillic  
13365 \DeclareTextCommand{\cyriote}{PU}{\84\145}% U+0465  
13366 % U+0466 CYRILLIC CAPITAL LETTER LITTLE YUS; Yuslittlecyrillic  
13367 \DeclareTextCommand{\CYRLYUS}{PU}{\84\146}% U+0466  
13368 % U+0467 CYRILLIC SMALL LETTER LITTLE YUS; yuslittlecyrillic  
13369 \DeclareTextCommand{\cyrlyus}{PU}{\84\147}% U+0467  
13370 % U+0468 CYRILLIC CAPITAL LETTER IOTIFIED LITTLE YUS; Yuslittleiotifiedcyrillic

13371 \DeclareTextCommand{\CYRIOTLYUS}{PU}{\84\150}% U+0468  
13372 % U+0469 CYRILLIC SMALL LETTER IOTIFIED LITTLE YUS; yuslittleiotifiedcyrillic  
13373 \DeclareTextCommand{\cyriotlyus}{PU}{\84\151}% U+0469  
13374 % U+046A CYRILLIC CAPITAL LETTER BIG YUS; Yusbigcyrillic  
13375 \DeclareTextCommand{\CYRBYUS}{PU}{\84\152}% U+046A  
13376 % U+046B CYRILLIC SMALL LETTER BIG YUS; yusbigcyrillic  
13377 \DeclareTextCommand{\cyrbyus}{PU}{\84\153}% U+046B  
13378 % U+046C CYRILLIC CAPITAL LETTER IOTIFIED BIG YUS; Yusbigiotifiedcyrillic  
13379 \DeclareTextCommand{\CYRIOTBYUS}{PU}{\84\154}% U+046C  
13380 % U+046D CYRILLIC SMALL LETTER IOTIFIED BIG YUS; yusbigiotifiedcyrillic  
13381 \DeclareTextCommand{\cyriotbyus}{PU}{\84\155}% U+046D  
13382 % U+046E CYRILLIC CAPITAL LETTER KSI; Ksicyrillic  
13383 \DeclareTextCommand{\CYRKSI}{PU}{\84\156}% U+046E  
13384 % U+046F CYRILLIC SMALL LETTER KSI; ksicyrillic  
13385 \DeclareTextCommand{\cyrksi}{PU}{\84\157}% U+046F  
13386 % U+0470 CYRILLIC CAPITAL LETTER PSI; Psicyrillic  
13387 \DeclareTextCommand{\CYRPSI}{PU}{\84\160}% U+0470  
13388 % U+0471 CYRILLIC SMALL LETTER PSI; psicyrillic  
13389 \DeclareTextCommand{\cyrpsi}{PU}{\84\161}% U+0471  
13390 % U+0472 CYRILLIC CAPITAL LETTER FITA; Fitacyrillic, \*afii10147  
13391 \DeclareTextCommand{\CYRFITA}{PU}{\84\162}% U+0472  
13392 % U+0473 CYRILLIC SMALL LETTER FITA; \*afii10195, fitacyrillic  
13393 \DeclareTextCommand{\cyrfita}{PU}{\84\163}% U+0473  
13394 % U+0474 CYRILLIC CAPITAL LETTER IZHITSA; Izhitsacyrillic, \*afii10148  
13395 \DeclareTextCommand{\CYRIZH}{PU}{\84\164}% U+0474  
13396 % U+0475 CYRILLIC SMALL LETTER IZHITSA; \*afii10196, izhitsacyrillic  
13397 \DeclareTextCommand{\cyrizh}{PU}{\84\165}% U+0475  
13398 % U+0476 CYRILLIC CAPITAL LETTER IZHITSA WITH DOUBLE GRAVE ACCENT; Izhitsadblgravecyrillic  
13399 \DeclareTextCompositeCommand{\C}{PU}{\CYRIZH}{\84\166}% U+0476  
13400 % U+0477 CYRILLIC SMALL LETTER IZHITSA WITH DOUBLE GRAVE ACCENT; izhitsadblgravecyrillic  
13401 \DeclareTextCompositeCommand{\C}{PU}{\cyrizh}{\84\167}% U+0477  
13402 % U+0478 CYRILLIC CAPITAL LETTER UK; Ukcyrillic  
13403 \DeclareTextCommand{\CYRUK}{PU}{\84\170}% U+0478  
13404 % U+0479 CYRILLIC SMALL LETTER UK; ukcyrillic  
13405 \DeclareTextCommand{\cyruk}{PU}{\84\171}% U+0479  
13406 % U+047A CYRILLIC CAPITAL LETTER ROUND OMEGA; Omegaroundcyrillic  
13407 \DeclareTextCommand{\CYROMEGARND}{PU}{\84\172}% U+047A  
13408 % U+047B CYRILLIC SMALL LETTER ROUND OMEGA; omegaroundcyrillic  
13409 \DeclareTextCommand{\cyromegarnd}{PU}{\84\173}% U+047B  
13410 % U+047C CYRILLIC CAPITAL LETTER OMEGA WITH TITLO; Omegatitlocyrillic  
13411 \DeclareTextCommand{\CYROMEGATITLO}{PU}{\84\174}% U+047C  
13412 % U+047D CYRILLIC SMALL LETTER OMEGA WITH TITLO; omegatitlocyrillic  
13413 \DeclareTextCommand{\cyromegatitlo}{PU}{\84\175}% U+047D  
13414 % U+047E CYRILLIC CAPITAL LETTER OT; Otcyrillic  
13415 \DeclareTextCommand{\CYROT}{PU}{\84\176}% U+047E  
13416 % U+047F CYRILLIC SMALL LETTER OT; otcyrillic  
13417 \DeclareTextCommand{\cyrot}{PU}{\84\177}% U+047F  
13418 % U+0480 CYRILLIC CAPITAL LETTER KOPPA; Koppacyrillic  
13419 \DeclareTextCommand{\CYRKOPPA}{PU}{\84\200}% U+0480  
13420 % U+0481 CYRILLIC SMALL LETTER KOPPA; koppacyrillic  
13421 \DeclareTextCommand{\cyrkoppa}{PU}{\84\201}% U+0481  
13422 % U+0482 CYRILLIC THOUSANDS SIGN; thousandcyrillic  
13423 \DeclareTextCommand{\cyrthousands}{PU}{\84\202}% U+0482  
\84\203: U+0483 COMBINING CYRILLIC TITLO; titlocyrilliccmb  
\84\204: U+0484 COMBINING CYRILLIC PALATALIZATION; palatalizationcyrilliccmb  
\84\205: U+0485 COMBINING CYRILLIC DASIA PNEUMATA; dasiapneumata-

cyrillicmb  
 \84\206: U+0486 COMBINING CYRILLIC PSILI PNEUMATA; psilipneumatacyrillicmb  
 \84\207: U+0487 COMBINING CYRILLIC POKRYTIE  
 \84\210: U+0488 COMBINING CYRILLIC HUNDRED THOUSANDS SIGN  
 \84\211: U+0489 COMBINING CYRILLIC MILLIONS SIGN  
 13424 % U+048A CYRILLIC CAPITAL LETTER SHORT I WITH TAIL  
 13425 \DeclareTextCommand{\CYRISHRTDSC}{PU}{\84\212}% U+048A  
 13426 % U+048B CYRILLIC SMALL LETTER SHORT I WITH TAIL  
 13427 \DeclareTextCommand{\cyrishrtdsc}{PU}{\84\213}% U+048B  
 13428 % U+048C CYRILLIC CAPITAL LETTER SEMISOFT SIGN  
 13429 \DeclareTextCommand{\CYRSEMISFTSN}{PU}{\84\214}% U+048C  
 13430 % U+048D CYRILLIC SMALL LETTER SEMISOFT SIGN  
 13431 \DeclareTextCommand{\cyrsemisftsn}{PU}{\84\215}% U+048D  
 13432 % U+048E CYRILLIC CAPITAL LETTER ER WITH TICK  
 13433 \DeclareTextCommand{\CYRRTICK}{PU}{\84\216}% U+048E  
 13434 % U+048F CYRILLIC SMALL LETTER ER WITH TICK  
 13435 \DeclareTextCommand{\cyrrtick}{PU}{\84\217}% U+048F  
 13436 % U+0490 CYRILLIC CAPITAL LETTER GHE WITH UPTURN; Gheupturncyrillic, \*afii10050  
 13437 \DeclareTextCommand{\CYRGUP}{PU}{\84\220}% U+0490  
 13438 % U+0491 CYRILLIC SMALL LETTER GHE WITH UPTURN; \*afii10098, gheupturncyrillic  
 13439 \DeclareTextCommand{\cyrgup}{PU}{\84\221}% U+0491  
 13440 % U+0492 CYRILLIC CAPITAL LETTER GHE WITH STROKE; Ghestrokecyrillic  
 13441 \DeclareTextCommand{\CYRGHCRS}{PU}{\84\222}% U+0492  
 13442 % U+0493 CYRILLIC SMALL LETTER GHE WITH STROKE; ghestrokecyrillic  
 13443 \DeclareTextCommand{\cyrghcrs}{PU}{\84\223}% U+0493  
 13444 % U+0494 CYRILLIC CAPITAL LETTER GHE WITH MIDDLE HOOK; Ghemiddlehookcyrillic  
 13445 \DeclareTextCommand{\CYRGHK}{PU}{\84\224}% U+0494  
 13446 % U+0495 CYRILLIC SMALL LETTER GHE WITH MIDDLE HOOK; ghemiddlehookcyrillic  
 13447 \DeclareTextCommand{\cyrghk}{PU}{\84\225}% U+0495  
 13448 % U+0496 CYRILLIC CAPITAL LETTER ZHE WITH DESCENDER; Zhedescendercyrillic  
 13449 \DeclareTextCommand{\CYRZHDSC}{PU}{\84\226}% U+0496  
 13450 % U+0497 CYRILLIC SMALL LETTER ZHE WITH DESCENDER; zhedescendercyrillic  
 13451 \DeclareTextCommand{\cyrzhdsc}{PU}{\84\227}% U+0497  
 13452 % U+0498 CYRILLIC CAPITAL LETTER ZE WITH DESCENDER; Zedescendercyrillic  
 13453 \DeclareTextCommand{\CYRZDSC}{PU}{\84\230}% U+0498  
 13454 \DeclareTextCompositeCommand{\c}{PU}{\CYRZ}{\84\230}% U+0498  
 13455 % U+0499 CYRILLIC SMALL LETTER ZE WITH DESCENDER; zedescendercyrillic  
 13456 \DeclareTextCommand{\cyrzds}{PU}{\84\231}% U+0499  
 13457 \DeclareTextCompositeCommand{\c}{PU}{\cyrz}{\84\231}% U+0499  
 13458 % U+049A CYRILLIC CAPITAL LETTER KA WITH DESCENDER; Kadescendercyrillic  
 13459 \DeclareTextCommand{\CYRKDSC}{PU}{\84\232}% U+049A  
 13460 % U+049B CYRILLIC SMALL LETTER KA WITH DESCENDER; kadescendercyrillic  
 13461 \DeclareTextCommand{\cyrkdsc}{PU}{\84\233}% U+049B  
 13462 % U+049C CYRILLIC CAPITAL LETTER KA WITH VERTICAL STROKE; Kavertikalstrokecyrillic  
 13463 \DeclareTextCommand{\CYRKVCRS}{PU}{\84\234}% U+049C  
 13464 % U+049D CYRILLIC SMALL LETTER KA WITH VERTICAL STROKE; kavertikalstrokecyrillic  
 13465 \DeclareTextCommand{\cyrkvcrs}{PU}{\84\235}% U+049D  
 13466 % U+049E CYRILLIC CAPITAL LETTER KA WITH STROKE; Kastrokecyrillic  
 13467 \DeclareTextCommand{\CYRKHCRS}{PU}{\84\236}% U+049E  
 13468 % U+049F CYRILLIC SMALL LETTER KA WITH STROKE; kastrokecyrillic  
 13469 \DeclareTextCommand{\cyrkhcrs}{PU}{\84\237}% U+049F  
 13470 % U+04A0 CYRILLIC CAPITAL LETTER BASHKIR KA; Kabashkircyrillic  
 13471 \DeclareTextCommand{\CYRKBEAK}{PU}{\84\240}% U+04A0  
 13472 % U+04A1 CYRILLIC SMALL LETTER BASHKIR KA; kabashkircyrillic  
 13473 \DeclareTextCommand{\cyrkbeak}{PU}{\84\241}% U+04A1  
 13474 % U+04A2 CYRILLIC CAPITAL LETTER EN WITH DESCENDER; Endescendercyrillic



13475 \DeclareTextCommand{\CYRNDSC}{PU}{\84\242}% U+04A2  
13476 % U+04A3 CYRILLIC SMALL LETTER EN WITH DESCENDER; endscendercyrillic  
13477 \DeclareTextCommand{\cyrndsc}{PU}{\84\243}% U+04A3  
13478 % U+04A4 CYRILLIC CAPITAL LIGATURE EN GHE; Enghecyrillic  
13479 \DeclareTextCommand{\CYRNG}{PU}{\84\244}% U+04A4  
13480 % U+04A5 CYRILLIC SMALL LIGATURE EN GHE; enghecyrillic  
13481 \DeclareTextCommand{\cyrng}{PU}{\84\245}% U+04A5  
13482 % U+04A6 CYRILLIC CAPITAL LETTER PE WITH MIDDLE HOOK; Pemiddlehookcyrillic  
13483 \DeclareTextCommand{\CYRPHK}{PU}{\84\246}% U+04A6  
13484 % U+04A7 CYRILLIC SMALL LETTER PE WITH MIDDLE HOOK; pemiddlehookcyrillic  
13485 \DeclareTextCommand{\cyrphk}{PU}{\84\247}% U+04A7  
13486 % U+04A8 CYRILLIC CAPITAL LETTER ABKHASIAN HA; Haabkhasiancyrillic  
13487 \DeclareTextCommand{\CYRABHHA}{PU}{\84\250}% U+04A8  
13488 % U+04A9 CYRILLIC SMALL LETTER ABKHASIAN HA; haabkhasiancyrillic  
13489 \DeclareTextCommand{\cyrabhha}{PU}{\84\251}% U+04A9  
13490 % U+04AA CYRILLIC CAPITAL LETTER ES WITH DESCENDER; Esdescendercyrillic  
13491 \DeclareTextCommand{\CYRSDSC}{PU}{\84\252}% U+04AA  
13492 \DeclareTextCompositeCommand{\CYRSDSC}{PU}{\CYRS}{\84\252}% U+04AA  
13493 % U+04AB CYRILLIC SMALL LETTER ES WITH DESCENDER; esdescendercyrillic  
13494 \DeclareTextCommand{\cyrsdsc}{PU}{\84\253}% U+04AB  
13495 \DeclareTextCompositeCommand{\k}{PU}{\cyr}{\84\253}% U+04AB  
13496 % U+04AC CYRILLIC CAPITAL LETTER TE WITH DESCENDER; Tedescendercyrillic  
13497 \DeclareTextCommand{\CYRTDSC}{PU}{\84\254}% U+04AC  
13498 % U+04AD CYRILLIC SMALL LETTER TE WITH DESCENDER; tedescendercyrillic  
13499 \DeclareTextCommand{\cyrtddsc}{PU}{\84\255}% U+04AD  
13500 % U+04AE CYRILLIC CAPITAL LETTER STRAIGHT U; Ustraightcyrillic  
13501 \DeclareTextCommand{\CYRY}{PU}{\84\256}% U+04AE  
13502 % U+04AF CYRILLIC SMALL LETTER STRAIGHT U; ustraightcyrillic  
13503 \DeclareTextCommand{\cyry}{PU}{\84\257}% U+04AF  
13504 % U+04B0 CYRILLIC CAPITAL LETTER STRAIGHT U WITH STROKE; Ustraightstrokecyrillic  
13505 \DeclareTextCommand{\CYRYHCRS}{PU}{\84\260}% U+04B0  
13506 % U+04B1 CYRILLIC SMALL LETTER STRAIGHT U WITH STROKE; ustraightstrokecyrillic  
13507 \DeclareTextCommand{\cyrhcrs}{PU}{\84\261}% U+04B1  
13508 % U+04B2 CYRILLIC CAPITAL LETTER HA WITH DESCENDER; Hadesendercyrillic  
13509 \DeclareTextCommand{\CYRHDSC}{PU}{\84\262}% U+04B2  
13510 % U+04B3 CYRILLIC SMALL LETTER HA WITH DESCENDER; hadescendercyrillic  
13511 \DeclareTextCommand{\cyrhdsc}{PU}{\84\263}% U+04B3  
13512 % U+04B4 CYRILLIC CAPITAL LIGATURE TE TSE; Tetsecyrillic  
13513 \DeclareTextCommand{\CYRTETSE}{PU}{\84\264}% U+04B4  
13514 % U+04B5 CYRILLIC SMALL LIGATURE TE TSE; tetsecyrillic  
13515 \DeclareTextCommand{\cyrtetse}{PU}{\84\265}% U+04B5  
13516 % U+04B6 CYRILLIC CAPITAL LETTER CHE WITH DESCENDER; Chedescendercyrillic  
13517 \DeclareTextCommand{\CYRCHRDSC}{PU}{\84\266}% U+04B6  
13518 % U+04B7 CYRILLIC SMALL LETTER CHE WITH DESCENDER; chedescendercyrillic  
13519 \DeclareTextCommand{\cyrchrdsc}{PU}{\84\267}% U+04B7  
13520 % U+04B8 CYRILLIC CAPITAL LETTER CHE WITH VERTICAL STROKE; Cheverticalstrokecyrillic  
13521 \DeclareTextCommand{\CYRCHVCRS}{PU}{\84\270}% U+04B8  
13522 % U+04B9 CYRILLIC SMALL LETTER CHE WITH VERTICAL STROKE; cheverticalstrokecyrillic  
13523 \DeclareTextCommand{\cyrchvcrs}{PU}{\84\271}% U+04B9  
13524 % U+04BA CYRILLIC CAPITAL LETTER SHHA; Shhacyrillic  
13525 \DeclareTextCommand{\CYRSHHA}{PU}{\84\272}% U+04BA  
13526 % U+04BB CYRILLIC SMALL LETTER SHHA; shhacyrillic  
13527 \DeclareTextCommand{\cyrshha}{PU}{\84\273}% U+04BB  
13528 % U+04BC CYRILLIC CAPITAL LETTER ABKHASIAN CHE; Cheabkhasiancyrillic  
13529 \DeclareTextCommand{\CYRABHCH}{PU}{\84\274}% U+04BC  
13530 % U+04BD CYRILLIC SMALL LETTER ABKHASIAN CHE; cheabkhasiancyrillic  
13531 \DeclareTextCommand{\cyrabhch}{PU}{\84\275}% U+04BD

13532 % U+04BE CYRILLIC CAPITAL LETTER ABKHASIAN CHE WITH DESCENDER; Chedescenderabkhasiancyrillic  
 13533 \DeclareTextCommand{\CYRABHCHDSC}{PU}{\84\276}% U+04BE  
 13534 \DeclareTextCompositeCommand{\k}{PU}{\CYRABHCH}{\84\276}% U+04BE  
 13535 % U+04BF CYRILLIC SMALL LETTER ABKHASIAN CHE WITH DESCENDER; chedescenderabkhasiancyrillic  
 13536 \DeclareTextCommand{\cyrabhchdsc}{PU}{\84\277}% U+04BF  
 13537 \DeclareTextCompositeCommand{\k}{PU}{\cyrabhch}{\84\277}% U+04BF  
 13538 % U+04C0 CYRILLIC LETTER PALOCHKA; palochkacyrillic  
 13539 \DeclareTextCommand{\CYRpalochka}{PU}{\84\300}% U+04C0  
 13540 % U+04C1 CYRILLIC CAPITAL LETTER ZHE WITH BREVE; Zhebrevecyrillic  
 13541 \DeclareTextCompositeCommand{\U}{PU}{\CYRZH}{\84\301}% U+04C1  
 13542 % U+04C2 CYRILLIC SMALL LETTER ZHE WITH BREVE; zhebrevecyrillic  
 13543 \DeclareTextCompositeCommand{\U}{PU}{\cyrzh}{\84\302}% U+04C2  
 13544 % U+04C3 CYRILLIC CAPITAL LETTER KA WITH HOOK; Kahookcyrillic  
 13545 \DeclareTextCommand{\CYRKHK}{PU}{\84\303}% U+04C3  
 13546 % U+04C4 CYRILLIC SMALL LETTER KA WITH HOOK; kahookcyrillic  
 13547 \DeclareTextCommand{\cyrkhk}{PU}{\84\304}% U+04C4  
 13548 % U+04C5 CYRILLIC CAPITAL LETTER EL WITH TAIL  
 13549 \DeclareTextCommand{\CYRLDSC}{PU}{\84\305}% U+04C5  
 13550 % U+04C6 CYRILLIC SMALL LETTER EL WITH TAIL  
 13551 \DeclareTextCommand{\cyrlldsc}{PU}{\84\306}% U+04C6  
 13552 % U+04C7 CYRILLIC CAPITAL LETTER EN WITH HOOK; Enhookcyrillic  
 13553 \DeclareTextCommand{\CYRNHK}{PU}{\84\307}% U+04C7  
 13554 % U+04C8 CYRILLIC SMALL LETTER EN WITH HOOK; enhookcyrillic  
 13555 \DeclareTextCommand{\cyrnhk}{PU}{\84\310}% U+04C8  
 13556 % U+04CB CYRILLIC CAPITAL LETTER KHAKASSIAN CHE; Chekhakassiancyrillic  
 13557 \DeclareTextCommand{\CYRCHLDSC}{PU}{\84\313}% U+04CB  
 13558 % U+04CC CYRILLIC SMALL LETTER KHAKASSIAN CHE; chekhakassiancyrillic  
 13559 \DeclareTextCommand{\cyrchldsc}{PU}{\84\314}% U+04CC  
 13560 % U+04CD CYRILLIC CAPITAL LETTER EM WITH TAIL  
 13561 \DeclareTextCommand{\CYRMDSC}{PU}{\84\315}% U+04CD  
 13562 % U+04CE CYRILLIC SMALL LETTER EM WITH TAIL  
 13563 \DeclareTextCommand{\cyrmdsc}{PU}{\84\316}% U+04CE  
 \84\317: U+04CF CYRILLIC SMALL LETTER PALOCHKA  
 13564 % U+04D0 CYRILLIC CAPITAL LETTER A WITH BREVE; Abrevecyrillic  
 13565 \DeclareTextCompositeCommand{\U}{PU}{\CYRA}{\84\320}% U+04D0  
 13566 % U+04D1 CYRILLIC SMALL LETTER A WITH BREVE; abrevecyrillic  
 13567 \DeclareTextCompositeCommand{\U}{PU}{\cyra}{\84\321}% U+04D1  
 13568 % U+04D2 CYRILLIC CAPITAL LETTER A WITH DIAERESIS; Adieresiscyrillic  
 13569 \DeclareTextCompositeCommand{\U}{PU}{\CYRA}{\84\322}% U+04D2  
 13570 % U+04D3 CYRILLIC SMALL LETTER A WITH DIAERESIS; adieresiscyrillic  
 13571 \DeclareTextCompositeCommand{\U}{PU}{\cyra}{\84\323}% U+04D3  
 13572 % U+04D4 CYRILLIC CAPITAL LIGATURE A IE; Aiecyrillic  
 13573 \DeclareTextCommand{\CYRAE}{PU}{\84\324}% U+04D4  
 13574 % U+04D5 CYRILLIC SMALL LIGATURE A IE; aiecyrillic  
 13575 \DeclareTextCommand{\cyrae}{PU}{\84\325}% U+04D5  
 13576 % U+04D6 CYRILLIC CAPITAL LETTER IE WITH BREVE; Iebrevecyrillic  
 13577 \DeclareTextCompositeCommand{\U}{PU}{\CYRE}{\84\326}% U+04D6  
 13578 % U+04D7 CYRILLIC SMALL LETTER IE WITH BREVE; iebrevecyrillic  
 13579 \DeclareTextCompositeCommand{\U}{PU}{\cyre}{\84\327}% U+04D7  
 13580 % U+04D8 CYRILLIC CAPITAL LETTER SCHWA; Schwacyrillic  
 13581 \DeclareTextCommand{\CYRSCHWA}{PU}{\84\330}% U+04D8  
 13582 % U+04D9 CYRILLIC SMALL LETTER SCHWA; \*afii10846, schwacyrillic  
 13583 \DeclareTextCommand{\cyrschwa}{PU}{\84\331}% U+04D9  
 13584 % U+04DA CYRILLIC CAPITAL LETTER SCHWA WITH DIAERESIS; Schwadiescyrillic  
 13585 \DeclareTextCompositeCommand{\U}{PU}{\CYRSCHWA}{\84\332}% U+04DA  
 13586 % U+04DB CYRILLIC SMALL LETTER SCHWA WITH DIAERESIS; schwadiescyrillic  
 13587 \DeclareTextCompositeCommand{\U}{PU}{\cyrschwa}{\84\333}% U+04DB

13588 % U+04DC CYRILLIC CAPITAL LETTER ZHE WITH DIAERESIS; Zhedieresiscyrillic  
13589 \DeclareTextCompositeCommand{"}{PU}{\CYRZH}{\84\334}% U+04DC  
13590 % U+04DD CYRILLIC SMALL LETTER ZHE WITH DIAERESIS; zhedieresiscyrillic  
13591 \DeclareTextCompositeCommand{"}{PU}{\cyrz}{\84\335}% U+04DD  
13592 % U+04DE CYRILLIC CAPITAL LETTER ZE WITH DIAERESIS; Zedieresiscyrillic  
13593 \DeclareTextCompositeCommand{"}{PU}{\CYRZ}{\84\336}% U+04DE  
13594 % U+04DF CYRILLIC SMALL LETTER ZE WITH DIAERESIS; zedieresiscyrillic  
13595 \DeclareTextCompositeCommand{"}{PU}{\cyrz}{\84\337}% U+04DF  
13596 % U+04E0 CYRILLIC CAPITAL LETTER ABKHASIAN DZE; Dzeabkhasiancyrillic  
13597 \DeclareTextCommand{\CYRABHDZE}{PU}{\84\340}% U+04E0  
13598 % U+04E1 CYRILLIC SMALL LETTER ABKHASIAN DZE; dzeabkhasiancyrillic  
13599 \DeclareTextCommand{\cyrabhdze}{PU}{\84\341}% U+04E1  
13600 % U+04E2 CYRILLIC CAPITAL LETTER I WITH MACRON; Imacroncyrillic  
13601 \DeclareTextCompositeCommand{=}{PU}{\CYRI}{\84\342}% U+04E2  
13602 % U+04E3 CYRILLIC SMALL LETTER I WITH MACRON; imacroncyrillic  
13603 \DeclareTextCompositeCommand{=}{PU}{\cyri}{\84\343}% U+04E3  
13604 % U+04E4 CYRILLIC CAPITAL LETTER I WITH DIAERESIS; Idieresiscyrillic  
13605 \DeclareTextCompositeCommand{"}{PU}{\CYRI}{\84\344}% U+04E4  
13606 % U+04E5 CYRILLIC SMALL LETTER I WITH DIAERESIS; idieresiscyrillic  
13607 \DeclareTextCompositeCommand{"}{PU}{\cyri}{\84\345}% U+04E5  
13608 % U+04E6 CYRILLIC CAPITAL LETTER O WITH DIAERESIS; Odieresiscyrillic  
13609 \DeclareTextCompositeCommand{"}{PU}{\CYRO}{\84\346}% U+04E6  
13610 % U+04E7 CYRILLIC SMALL LETTER O WITH DIAERESIS; odieresiscyrillic  
13611 \DeclareTextCompositeCommand{"}{PU}{\cyro}{\84\347}% U+04E7  
13612 % U+04E8 CYRILLIC CAPITAL LETTER BARRED O; Obarredcyrillic  
13613 \DeclareTextCommand{\CYROTLD}{PU}{\84\350}% U+04E8  
13614 % U+04E9 CYRILLIC SMALL LETTER BARRED O; obarredcyrillic  
13615 \DeclareTextCommand{\cyrotld}{PU}{\84\351}% U+04E9  
13616 % U+04EA CYRILLIC CAPITAL LETTER BARRED O WITH DIAERESIS; Obarreddieresiscyrillic  
13617 \DeclareTextCompositeCommand{"}{PU}{\CYROTLD}{\84\352}% U+04EA  
13618 % U+04EB CYRILLIC SMALL LETTER BARRED O WITH DIAERESIS; obarreddieresiscyrillic  
13619 \DeclareTextCompositeCommand{"}{PU}{\cyrotld}{\84\353}% U+04EB  
13620 % U+04EC CYRILLIC CAPITAL LETTER E WITH DIAERESIS  
13621 \DeclareTextCompositeCommand{"}{PU}{\CYREREV}{\84\354}% U+04EC  
13622 % U+04ED CYRILLIC SMALL LETTER E WITH DIAERESIS  
13623 \DeclareTextCompositeCommand{"}{PU}{\cyreref}{\84\355}% U+04ED  
13624 % U+04EE CYRILLIC CAPITAL LETTER U WITH MACRON; Umacroncyrillic  
13625 \DeclareTextCompositeCommand{=}{PU}{\CYRU}{\84\356}% U+04EE  
13626 % U+04EF CYRILLIC SMALL LETTER U WITH MACRON; umacroncyrillic  
13627 \DeclareTextCompositeCommand{=}{PU}{\cyru}{\84\357}% U+04EF  
13628 % U+04F0 CYRILLIC CAPITAL LETTER U WITH DIAERESIS; Udieresiscyrillic  
13629 \DeclareTextCompositeCommand{"}{PU}{\CYRU}{\84\360}% U+04F0  
13630 % U+04F1 CYRILLIC SMALL LETTER U WITH DIAERESIS; udieresiscyrillic  
13631 \DeclareTextCompositeCommand{"}{PU}{\cyru}{\84\361}% U+04F1  
13632 % U+04F2 CYRILLIC CAPITAL LETTER U WITH DOUBLE ACUTE; Uhungarumlautcyrillic  
13633 \DeclareTextCompositeCommand{\H}{PU}{\CYRU}{\84\362}% U+04F2  
13634 % U+04F3 CYRILLIC SMALL LETTER U WITH DOUBLE ACUTE; uhungarumlautcyrillic  
13635 \DeclareTextCompositeCommand{\H}{PU}{\cyru}{\84\363}% U+04F3  
13636 % U+04F4 CYRILLIC CAPITAL LETTER CHE WITH DIAERESIS; Chedieresiscyrillic  
13637 \DeclareTextCompositeCommand{"}{PU}{\CYRCH}{\84\364}% U+04F4  
13638 % U+04F5 CYRILLIC SMALL LETTER CHE WITH DIAERESIS; chedieresiscyrillic  
13639 \DeclareTextCompositeCommand{"}{PU}{\cyrch}{\84\365}% U+04F5  
13640 % U+04F6 CYRILLIC CAPITAL LETTER GHE WITH DESCENDER  
13641 \DeclareTextCommand{\CYRGDSC}{PU}{\84\366}% U+04F6  
13642 % U+04F7 CYRILLIC SMALL LETTER GHE WITH DESCENDER  
13643 \DeclareTextCommand{\cyrgdsc}{PU}{\84\367}% U+04F7  
13644 % U+04F8 CYRILLIC CAPITAL LETTER YERU WITH DIAERESIS; Yerudieresiscyrillic

13645 \DeclareTextCompositeCommand{\"}{PU}{\CYRERY}{\84\370}% U+04F8  
 13646 % U+04F9 CYRILLIC SMALL LETTER YERU WITH DIAERESIS; yerudieresis Cyrillic  
 13647 \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  
 13648 % U+04FC CYRILLIC CAPITAL LETTER HA WITH HOOK  
 13649 \DeclareTextCommand{\CYRHHK}{PU}{\84\374}% U+04FC  
 13650 % U+04FD CYRILLIC SMALL LETTER HA WITH HOOK  
 13651 \DeclareTextCommand{\cyrrhkh}{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

13652 % U+0E3F THAI CURRENCY SYMBOL BAHT; bahtthai  
 13653 \DeclareTextCommand{\textbaht}{PU}{\9016\077}% U+0E3F

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

13654 % U+1E02 LATIN CAPITAL LETTER B WITH DOT ABOVE; Bdotaccent  
 13655 \DeclareTextCompositeCommand{\.}{PU}{B}{\9036\002}% U+1E02  
 13656 % U+1E03 LATIN SMALL LETTER B WITH DOT ABOVE; bdotaccent  
 13657 \DeclareTextCompositeCommand{\.}{PU}{b}{\9036\003}% U+1E03  
 13658 % U+1E06 LATIN CAPITAL LETTER B WITH LINE BELOW; Blinebelow  
 13659 \DeclareTextCompositeCommand{\b}{PU}{B}{\9036\006}% U+1E06  
 13660 % U+1E07 LATIN SMALL LETTER B WITH LINE BELOW; blinebelow  
 13661 \DeclareTextCompositeCommand{\b}{PU}{b}{\9036\007}% U+1E07  
 13662 % U+1E0A LATIN CAPITAL LETTER D WITH DOT ABOVE; Ddotaccent  
 13663 \DeclareTextCompositeCommand{\.}{PU}{D}{\9036\012}% U+1E0A  
 13664 % U+1E0B LATIN SMALL LETTER D WITH DOT ABOVE; ddotaccent  
 13665 \DeclareTextCompositeCommand{\.}{PU}{d}{\9036\013}% U+1E0B  
 13666 % U+1E0E LATIN CAPITAL LETTER D WITH LINE BELOW; Dlinebelow  
 13667 \DeclareTextCompositeCommand{\b}{PU}{D}{\9036\016}% U+1E0E  
 13668 % U+1E0F LATIN SMALL LETTER D WITH LINE BELOW; dlinebelow  
 13669 \DeclareTextCompositeCommand{\b}{PU}{d}{\9036\017}% U+1E0F  
 13670 % U+1E10 LATIN CAPITAL LETTER D WITH CEDILLA; Dcedilla  
 13671 \DeclareTextCompositeCommand{\c}{PU}{D}{\9036\020}% U+1E10  
 13672 % U+1E11 LATIN SMALL LETTER D WITH CEDILLA; dcedilla  
 13673 \DeclareTextCompositeCommand{\c}{PU}{d}{\9036\021}% U+1E11  
 13674 % U+1E1E LATIN CAPITAL LETTER F WITH DOT ABOVE; Fdotaccent  
 13675 \DeclareTextCompositeCommand{\.}{PU}{F}{\9036\036}% U+1E1E  
 13676 % U+1E1F LATIN SMALL LETTER F WITH DOT ABOVE; fdotaccent  
 13677 \DeclareTextCompositeCommand{\.}{PU}{f}{\9036\037}% U+1E1F  
 13678 % U+1E20 LATIN CAPITAL LETTER G WITH MACRON; Gmacron  
 13679 \DeclareTextCompositeCommand{\=}{PU}{G}{\9036\040}% U+1E20  
 13680 % U+1E21 LATIN SMALL LETTER G WITH MACRON; gmacron  
 13681 \DeclareTextCompositeCommand{\=}{PU}{g}{\9036\041}% U+1E21  
 13682 % U+1E22 LATIN CAPITAL LETTER H WITH DOT ABOVE; Hdotaccent  
 13683 \DeclareTextCompositeCommand{\.}{PU}{H}{\9036\042}% U+1E22  
 13684 % U+1E23 LATIN SMALL LETTER H WITH DOT ABOVE; hdotaccent  
 13685 \DeclareTextCompositeCommand{\.}{PU}{h}{\9036\043}% U+1E23  
 13686 % U+1E26 LATIN CAPITAL LETTER H WITH DIAERESIS; Hdieresis  
 13687 \DeclareTextCompositeCommand{\"}{PU}{H}{\9036\046}% U+1E26  
 13688 % U+1E27 LATIN SMALL LETTER H WITH DIAERESIS; hdieresis  
 13689 \DeclareTextCompositeCommand{\"}{PU}{h}{\9036\047}% U+1E27  
 13690 % U+1E28 LATIN CAPITAL LETTER H WITH CEDILLA; Hcedilla  
 13691 \DeclareTextCompositeCommand{\c}{PU}{H}{\9036\050}% U+1E28

13692 % U+1E29 LATIN SMALL LETTER H WITH CEDILLA; hcedilla  
13693 \DeclareTextCompositeCommand{\c}{PU}{h}{\9036\051}% U+1E29  
13694 % U+1E30 LATIN CAPITAL LETTER K WITH ACUTE; Kacute  
13695 \DeclareTextCompositeCommand{\'}{PU}{K}{\9036\060}% U+1E30  
13696 % U+1E31 LATIN SMALL LETTER K WITH ACUTE; kacute  
13697 \DeclareTextCompositeCommand{\'}{PU}{k}{\9036\061}% U+1E31  
13698 % U+1E34 LATIN CAPITAL LETTER K WITH LINE BELOW; Klinebelow  
13699 \DeclareTextCompositeCommand{\b}{PU}{K}{\9036\064}% U+1E34  
13700 % U+1E35 LATIN SMALL LETTER K WITH LINE BELOW; klinebelow  
13701 \DeclareTextCompositeCommand{\b}{PU}{k}{\9036\065}% U+1E35  
13702 % U+1E3A LATIN CAPITAL LETTER L WITH LINE BELOW; Llinebelow  
13703 \DeclareTextCompositeCommand{\b}{PU}{L}{\9036\072}% U+1E3A  
13704 % U+1E3B LATIN SMALL LETTER L WITH LINE BELOW; llinebelow  
13705 \DeclareTextCompositeCommand{\b}{PU}{l}{\9036\073}% U+1E3B  
13706 % U+1E3E LATIN CAPITAL LETTER M WITH ACUTE; Macute  
13707 \DeclareTextCompositeCommand{\'}{PU}{M}{\9036\076}% U+1E3E  
13708 % U+1E3F LATIN SMALL LETTER M WITH ACUTE; macute  
13709 \DeclareTextCompositeCommand{\'}{PU}{m}{\9036\077}% U+1E3F  
13710 % U+1E40 LATIN CAPITAL LETTER M WITH DOT ABOVE; Mdotaccent  
13711 \DeclareTextCompositeCommand{\.}{PU}{M}{\9036\100}% U+1E40  
13712 % U+1E41 LATIN SMALL LETTER M WITH DOT ABOVE; mdotaccent  
13713 \DeclareTextCompositeCommand{\.}{PU}{m}{\9036\101}% U+1E41  
13714 % U+1E44 LATIN CAPITAL LETTER N WITH DOT ABOVE; Ndotaccent  
13715 \DeclareTextCompositeCommand{\.}{PU}{N}{\9036\104}% U+1E44  
13716 % U+1E45 LATIN SMALL LETTER N WITH DOT ABOVE; ndotaccent  
13717 \DeclareTextCompositeCommand{\.}{PU}{n}{\9036\105}% U+1E45  
13718 % U+1E48 LATIN CAPITAL LETTER N WITH LINE BELOW; Nlinebelow  
13719 \DeclareTextCompositeCommand{\b}{PU}{N}{\9036\110}% U+1E48  
13720 % U+1E49 LATIN SMALL LETTER N WITH LINE BELOW; nlinebelow  
13721 \DeclareTextCompositeCommand{\b}{PU}{n}{\9036\111}% U+1E49  
13722 % U+1E54 LATIN CAPITAL LETTER P WITH ACUTE; Pacute  
13723 \DeclareTextCompositeCommand{\'}{PU}{P}{\9036\124}% U+1E54  
13724 % U+1E55 LATIN SMALL LETTER P WITH ACUTE; pacute  
13725 \DeclareTextCompositeCommand{\'}{PU}{p}{\9036\125}% U+1E55  
13726 % U+1E56 LATIN CAPITAL LETTER P WITH DOT ABOVE; Pdotaccent  
13727 \DeclareTextCompositeCommand{\.}{PU}{P}{\9036\126}% U+1E56  
13728 % U+1E57 LATIN SMALL LETTER P WITH DOT ABOVE; pdotaccent  
13729 \DeclareTextCompositeCommand{\.}{PU}{p}{\9036\127}% U+1E57  
13730 % U+1E58 LATIN CAPITAL LETTER R WITH DOT ABOVE; Rdotaccent  
13731 \DeclareTextCompositeCommand{\.}{PU}{R}{\9036\130}% U+1E58  
13732 % U+1E59 LATIN SMALL LETTER R WITH DOT ABOVE; rdotaccent  
13733 \DeclareTextCompositeCommand{\.}{PU}{r}{\9036\131}% U+1E59  
13734 % U+1E5E LATIN CAPITAL LETTER R WITH LINE BELOW; Rlinebelow  
13735 \DeclareTextCompositeCommand{\b}{PU}{R}{\9036\136}% U+1E5E  
13736 % U+1E5F LATIN SMALL LETTER R WITH LINE BELOW; rlinebelow  
13737 \DeclareTextCompositeCommand{\b}{PU}{r}{\9036\137}% U+1E5F  
13738 % U+1E60 LATIN CAPITAL LETTER S WITH DOT ABOVE; Sdotaccent  
13739 \DeclareTextCompositeCommand{\.}{PU}{S}{\9036\140}% U+1E60  
13740 % U+1E61 LATIN SMALL LETTER S WITH DOT ABOVE; sdotaccent  
13741 \DeclareTextCompositeCommand{\.}{PU}{s}{\9036\141}% U+1E61  
13742 % U+1E6E LATIN CAPITAL LETTER T WITH LINE BELOW; Tlinebelow  
13743 \DeclareTextCompositeCommand{\b}{PU}{T}{\9036\156}% U+1E6E  
13744 % U+1E6F LATIN SMALL LETTER T WITH LINE BELOW; tlinebelow  
13745 \DeclareTextCompositeCommand{\b}{PU}{t}{\9036\157}% U+1E6F  
13746 % U+1E7C LATIN CAPITAL LETTER V WITH TILDE; Vtilde  
13747 \DeclareTextCompositeCommand{\~}{PU}{V}{\9036\174}% U+1E7C  
13748 % U+1E7D LATIN SMALL LETTER V WITH TILDE; vtilde

13749 \DeclareTextCompositeCommand{\~}{PU}{v}{\9036\175}% U+1E7D  
13750 % U+1E80 LATIN CAPITAL LETTER W WITH GRAVE; Wgrave  
13751 \DeclareTextCompositeCommand{\'}{PU}{w}{\9036\200}% U+1E80  
13752 % U+1E81 LATIN SMALL LETTER W WITH GRAVE; wgrave  
13753 \DeclareTextCompositeCommand{\'}{PU}{w}{\9036\201}% U+1E81  
13754 % U+1E82 LATIN CAPITAL LETTER W WITH ACUTE; Wacute  
13755 \DeclareTextCompositeCommand{\'}{PU}{w}{\9036\202}% U+1E82  
13756 % U+1E83 LATIN SMALL LETTER W WITH ACUTE; wacute  
13757 \DeclareTextCompositeCommand{\'}{PU}{w}{\9036\203}% U+1E83  
13758 % U+1E84 LATIN CAPITAL LETTER W WITH DIAERESIS; Wdieresis  
13759 \DeclareTextCompositeCommand{\"}{PU}{w}{\9036\204}% U+1E84  
13760 % U+1E85 LATIN SMALL LETTER W WITH DIAERESIS; wdieresis  
13761 \DeclareTextCompositeCommand{\"}{PU}{w}{\9036\205}% U+1E85  
13762 % U+1E86 LATIN CAPITAL LETTER W WITH DOT ABOVE; Wdotaccent  
13763 \DeclareTextCompositeCommand{\.}{PU}{w}{\9036\206}% U+1E86  
13764 % U+1E87 LATIN SMALL LETTER W WITH DOT ABOVE; wdotaccent  
13765 \DeclareTextCompositeCommand{\.}{PU}{w}{\9036\207}% U+1E87  
13766 % U+1E8A LATIN CAPITAL LETTER X WITH DOT ABOVE; Xdotaccent  
13767 \DeclareTextCompositeCommand{\.}{PU}{X}{\9036\212}% U+1E8A  
13768 % U+1E8B LATIN SMALL LETTER X WITH DOT ABOVE; xdotaccent  
13769 \DeclareTextCompositeCommand{\.}{PU}{x}{\9036\213}% U+1E8B  
13770 % U+1E8C LATIN CAPITAL LETTER X WITH DIAERESIS; Xdieresis  
13771 \DeclareTextCompositeCommand{\"}{PU}{X}{\9036\214}% U+1E8C  
13772 % U+1E8D LATIN SMALL LETTER X WITH DIAERESIS; xdieresis  
13773 \DeclareTextCompositeCommand{\"}{PU}{x}{\9036\215}% U+1E8D  
13774 % U+1E8E LATIN CAPITAL LETTER Y WITH DOT ABOVE; Ydotaccent  
13775 \DeclareTextCompositeCommand{\.}{PU}{Y}{\9036\216}% U+1E8E  
13776 % U+1E8F LATIN SMALL LETTER Y WITH DOT ABOVE; ydotaccent  
13777 \DeclareTextCompositeCommand{\.}{PU}{y}{\9036\217}% U+1E8F  
13778 % U+1E90 LATIN CAPITAL LETTER Z WITH CIRCUMFLEX; Zcircumflex  
13779 \DeclareTextCompositeCommand{\^}{PU}{Z}{\9036\220}% U+1E90  
13780 % U+1E91 LATIN SMALL LETTER Z WITH CIRCUMFLEX; zcircumflex  
13781 \DeclareTextCompositeCommand{\^}{PU}{z}{\9036\221}% U+1E91  
13782 % U+1E94 LATIN CAPITAL LETTER Z WITH LINE BELOW; Zlinebelow  
13783 \DeclareTextCompositeCommand{\b}{PU}{Z}{\9036\224}% U+1E94  
13784 % U+1E95 LATIN SMALL LETTER Z WITH LINE BELOW; zlinebelow  
13785 \DeclareTextCompositeCommand{\b}{PU}{z}{\9036\225}% U+1E95  
13786 % U+1E96 LATIN SMALL LETTER H WITH LINE BELOW; hlinebelow  
13787 \DeclareTextCompositeCommand{\b}{PU}{h}{\9036\226}% U+1E96  
13788 % U+1E97 LATIN SMALL LETTER T WITH DIAERESIS; tdieresis  
13789 \DeclareTextCompositeCommand{\"}{PU}{t}{\9036\227}% U+1E97  
13790 % U+1E98 LATIN SMALL LETTER W WITH RING ABOVE; wring  
13791 \DeclareTextCompositeCommand{\r}{PU}{w}{\9036\230}% U+1E98  
13792 % U+1E99 LATIN SMALL LETTER Y WITH RING ABOVE; yring  
13793 \DeclareTextCompositeCommand{\r}{PU}{y}{\9036\231}% U+1E99  
13794 % U+1E9B LATIN SMALL LETTER LONG S WITH DOT ABOVE; slongdotaccent  
13795 \DeclareTextCompositeCommand{\.}{PU}{\textlongs}{\9036\233}% U+1E9B  
13796 % U+1EBC LATIN CAPITAL LETTER E WITH TILDE; Etilde  
13797 \DeclareTextCompositeCommand{\~}{PU}{E}{\9036\274}% U+1EBC  
13798 % U+1EBD LATIN SMALL LETTER E WITH TILDE; etilde  
13799 \DeclareTextCompositeCommand{\~}{PU}{e}{\9036\275}% U+1EBD  
13800 % U+1EF2 LATIN CAPITAL LETTER Y WITH GRAVE; Ygrave  
13801 \DeclareTextCompositeCommand{\'}{PU}{Y}{\9036\362}% U+1EF2  
13802 % U+1EF3 LATIN SMALL LETTER Y WITH GRAVE; ygrave  
13803 \DeclareTextCompositeCommand{\'}{PU}{y}{\9036\363}% U+1EF3  
13804 % U+1EF8 LATIN CAPITAL LETTER Y WITH TILDE; Ytilde  
13805 \DeclareTextCompositeCommand{\~}{PU}{Y}{\9036\370}% U+1EF8

13806 % U+1EF9 LATIN SMALL LETTER Y WITH TILDE; ytilde  
 13807 \DeclareTextCompositeCommand{\~}{PU}{y}{\9036\371}% U+1EF9

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

13808 % U+200C ZERO WIDTH NON-JOINER; \*afii61664, zerowidthnonjoiner  
 13809 \DeclareTextCommand{\textcompwordmark}{PU}{\9040\014}% U+200C  
 13810 % U+2013 EN DASH; endash  
 13811 \DeclareTextCommand{\textendash}{PU}{\9040\023}% U+2013  
 13812 % U+2014 EM DASH; emdash  
 13813 \DeclareTextCommand{\textemdash}{PU}{\9040\024}% U+2014  
 13814 % U+2016 DOUBLE VERTICAL LINE; dblverticalbar  
 13815 \DeclareTextCommand{\textbardbl}{PU}{\9040\026}% U+2016  
 13816 % U+2018 LEFT SINGLE QUOTATION MARK; quoteleft  
 13817 \DeclareTextCommand{\textquoteleft}{PU}{\9040\030}% U+2018  
 13818 % U+2019 RIGHT SINGLE QUOTATION MARK; quoteright  
 13819 \DeclareTextCommand{\textquoteright}{PU}{\9040\031}% U+2019  
 13820 % U+201A SINGLE LOW-9 QUOTATION MARK; quotesinglbase  
 13821 \DeclareTextCommand{\quotesinglbase}{PU}{\9040\032}% U+201A  
 13822 % U+201C LEFT DOUBLE QUOTATION MARK; quotedblleft  
 13823 \DeclareTextCommand{\textquotedblleft}{PU}{\9040\034}% U+201C  
 13824 % U+201D RIGHT DOUBLE QUOTATION MARK; quotedblright  
 13825 \DeclareTextCommand{\textquotedblright}{PU}{\9040\035}% U+201D  
 13826 % U+201E DOUBLE LOW-9 QUOTATION MARK; quotedblbase  
 13827 \DeclareTextCommand{\quotedblbase}{PU}{\9040\036}% U+201E  
 13828 % U+2020 DAGGER; dagger  
 13829 \DeclareTextCommand{\textdagger}{PU}{\9040\040}% U+2020  
 13830 % U+2021 DOUBLE DAGGER; daggerdbl  
 13831 \DeclareTextCommand{\textdaggerdbl}{PU}{\9040\041}% U+2021  
 13832 % U+2022 BULLET; bullet  
 13833 \DeclareTextCommand{\textbullet}{PU}{\9040\042}% U+2022  
 13834 % U+2026 HORIZONTAL ELLIPSIS; ellipsis  
 13835 \DeclareTextCommand{\textellipsis}{PU}{\9040\046}% U+2026  
 13836 % U+2030 PER MILLE SIGN; perthousand  
 13837 \DeclareTextCommand{\textperthousand}{PU}{\9040\060}% U+2030  
 13838 % U+2031 PER TEN THOUSAND SIGN  
 13839 \DeclareTextCommand{\textpertenthousand}{PU}{\9040\061}% U+2031  
 13840 % U+2039 SINGLE LEFT-POINTING ANGLE QUOTATION MARK; guilsinglleft  
 13841 \DeclareTextCommand{\guilsinglleft}{PU}{\9040\071}% U+2039  
 13842 % U+203A SINGLE RIGHT-POINTING ANGLE QUOTATION MARK; guilsinglright  
 13843 \DeclareTextCommand{\guilsinglright}{PU}{\9040\072}% U+203A  
 13844 % U+203B REFERENCE MARK; referencemark  
 13845 \DeclareTextCommand{\textreferencemark}{PU}{\9040\073}% U+203B  
 13846 % U+203D INTERROBANG  
 13847 \DeclareTextCommand{\textinterrobang}{PU}{\9040\075}% U+203D  
 13848 % U+2044 FRACTION SLASH; fraction  
 13849 \DeclareTextCommand{\textfractionsolidus}{PU}{\9040\104}% U+2044  
 13850 % U+2045 LEFT SQUARE BRACKET WITH QUILL  
 13851 \DeclareTextCommand{\textlquill}{PU}{\9040\105}% U+2045  
 13852 % U+2046 RIGHT SQUARE BRACKET WITH QUILL  
 13853 \DeclareTextCommand{\textrquill}{PU}{\9040\106}% U+2046  
 13854 % U+2052 COMMERCIAL MINUS SIGN  
 13855 \DeclareTextCommand{\textdiscount}{PU}{\9040\122}% U+2052

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

13856 % U+2070 SUPERSCRIPT ZERO; zerosuperior  
 13857 \DeclareTextCommand{\textzerosuperior}{PU}{\9040\160}% U+2070  
 13858 % U+2074 SUPERSCRIPT FOUR; foursuperior

13859 \DeclareTextCommand{\textfoursuperior}{PU}{\9040\164}% U+2074  
 13860 % U+2075 SUPERSCRIPT FIVE; fivesuperior  
 13861 \DeclareTextCommand{\textfivesuperior}{PU}{\9040\165}% U+2075  
 13862 % U+2076 SUPERSCRIPT SIX; sixsuperior  
 13863 \DeclareTextCommand{\textsixsuperior}{PU}{\9040\166}% U+2076  
 13864 % U+2077 SUPERSCRIPT SEVEN; sevenuperior  
 13865 \DeclareTextCommand{\textsevensuperior}{PU}{\9040\167}% U+2077  
 13866 % U+2078 SUPERSCRIPT EIGHT; eightsuperior  
 13867 \DeclareTextCommand{\texteightsuperior}{PU}{\9040\170}% U+2078  
 13868 % U+2079 SUPERSCRIPT NINE; ninesuperior  
 13869 \DeclareTextCommand{\textninesuperior}{PU}{\9040\171}% U+2079  
 13870 % U+207A SUPERSCRIPT PLUS SIGN; plussuperior  
 13871 \DeclareTextCommand{\textplussuperior}{PU}{\9040\172}% U+207A  
 13872 % U+207B SUPERSCRIPT MINUS  
 13873 \DeclareTextCommand{\textminussuperior}{PU}{\9040\173}  
 13874 % U+207C SUPERSCRIPT EQUALS SIGN; equalsuperior  
 13875 \DeclareTextCommand{\textequalsuperior}{PU}{\9040\174}  
 13876 % U+207D SUPERSCRIPT LEFT PARENTHESIS; parenleftsuperior  
 13877 \DeclareTextCommand{\textparenleftsuperior}{PU}{\9040\175}  
 13878 % U+207E SUPERSCRIPT RIGHT PARENTHESIS; parenrightsuperior  
 13879 \DeclareTextCommand{\textparenrightsuperior}{PU}{\9040\176}  
 13880 % U+207F SUPERSCRIPT LATIN SMALL LETTER N; nsuperior  
 13881 \DeclareTextCommand{\textnsuperior}{PU}{\9040\177}  
 13882 % U+2080 SUBSCRIPT ZERO; zeroinferior  
 13883 \DeclareTextCommand{\textzeroinferior}{PU}{\9040\200}% U+2080  
 13884 % U+2081 SUBSCRIPT ONE; oneinferior  
 13885 \DeclareTextCommand{\textoneinferior}{PU}{\9040\201}% U+2081  
 13886 % U+2082 SUBSCRIPT TWO; twoinferior  
 13887 \DeclareTextCommand{\texttwoinferior}{PU}{\9040\202}% U+2082  
 13888 % U+2083 SUBSCRIPT THREE; threeinferior  
 13889 \DeclareTextCommand{\textthreeinferior}{PU}{\9040\203}% U+2083  
 13890 % U+2084 SUBSCRIPT FOUR; fourinferior  
 13891 \DeclareTextCommand{\textfourinferior}{PU}{\9040\204}% U+2084  
 13892 % U+2085 SUBSCRIPT FIVE; fiveinferior  
 13893 \DeclareTextCommand{\textfiveinferior}{PU}{\9040\205}% U+2085  
 13894 % U+2086 SUBSCRIPT SIX; sixinferior  
 13895 \DeclareTextCommand{\textsixinferior}{PU}{\9040\206}% U+2086  
 13896 % U+2087 SUBSCRIPT SEVEN; seveninferior  
 13897 \DeclareTextCommand{\textseveninferior}{PU}{\9040\207}% U+2087  
 13898 % U+2088 SUBSCRIPT EIGHT; eightinferior  
 13899 \DeclareTextCommand{\texteightinferior}{PU}{\9040\210}% U+2088  
 13900 % U+2089 SUBSCRIPT NINE; nineinferior  
 13901 \DeclareTextCommand{\textnineinferior}{PU}{\9040\211}% U+2089  
 13902 % U+208D SUBSCRIPT LEFT PARENTHESIS; parenleftinferior  
 13903 \DeclareTextCommand{\textparenleftinferior}{PU}{\9040\215}% U+208D  
 13904 % U+208E SUBSCRIPT RIGHT PARENTHESIS; parenrightinferior  
 13905 \DeclareTextCommand{\textparenrightinferior}{PU}{\9040\216}% U+208E

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

13906 % U+20A1 COLON SIGN; \*colonmonetary, colonsign  
 13907 \DeclareTextCommand{\textcolonmonetary}{PU}{\9040\241}% U+20A1  
 13908 % U+20A4 LIRA SIGN; afii08941, \*lira  
 13909 \DeclareTextCommand{\textlira}{PU}{\9040\244}% U+20A4  
 13910 % U+20A6 NAIRA SIGN  
 13911 \DeclareTextCommand{\textnaira}{PU}{\9040\246}% U+20A6  
 13912 % U+20A7 PESETA SIGN; peseta  
 13913 \DeclareTextCommand{\textpeseta}{PU}{\9040\247}% U+20A7



13914 % U+20A9 WON SIGN; won  
 13915 \DeclareTextCommand{\textwon}{PU}{\9040\251}% U+20A9  
 13916 % U+20AB DONG SIGN; dong  
 13917 \DeclareTextCommand{\textdong}{PU}{\9040\253}% U+20AB  
 13918 % U+20AC EURO SIGN; \*Euro, euro  
 13919 \DeclareTextCommand{\texteuro}{PU}{\9040\254}% U+20AC  
 13920 % U+20B1 PESO SIGN  
 13921 \DeclareTextCommand{\textpeso}{PU}{\9040\261}% U+20B1  
 13922 % U+20B2 GUARANI SIGN  
 13923 \DeclareTextCommand{\textguarani}{PU}{\9040\262}% U+20B2

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

13924 % U+2103 DEGREE CELSIUS; centigrade  
 13925 \DeclareTextCommand{\textcelsius}{PU}{\9041\003}% U+2103  
 13926 % U+2116 NUMERO SIGN; \*afii61352, numero  
 13927 \DeclareTextCommand{\textnumero}{PU}{\9041\026}% U+2116  
 13928 % U+2117 SOUND RECORDING COPYRIGHT  
 13929 \DeclareTextCommand{\textcircledP}{PU}{\9041\027}% U+2117  
 13930 % U+211E PRESCRIPTION TAKE; prescription  
 13931 \DeclareTextCommand{\textrecipe}{PU}{\9041\036}% U+211E  
 13932 % U+2120 SERVICE MARK  
 13933 \DeclareTextCommand{\textservicemark}{PU}{\9041\040}% U+2120  
 13934 % U+2122 TRADE MARK SIGN; trademark  
 13935 \DeclareTextCommand{\texttrademark}{PU}{\9041\042}% U+2122  
 13936 % U+2126 OHM SIGN; Ohm, Omega  
 13937 \DeclareTextCommand{\textohm}{PU}{\9041\046}% U+2126  
 13938 % U+2127 INVERTED OHM SIGN  
 13939 \DeclareTextCommand{\textmho}{PU}{\9041\047}% U+2127  
 13940 % U+212B ANGSTROM SIGN; angstrom  
 13941 \DeclareTextCommand{\textangstrom}{PU}{\9041\053}% U+212B  
 13942 % U+212E ESTIMATED SYMBOL; estimated  
 13943 \DeclareTextCommand{\textestimated}{PU}{\9041\056}% U+212E  
 13944 % U+2135 ALEF SYMBOL; aleph  
 13945 \DeclareTextCommand{\textaleph}{PU}{\9041\065}% U+2135

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

13946 % U+2190 LEFTWARDS ARROW; arrowleft  
 13947 \DeclareTextCommand{\textleftarrow}{PU}{\9041\220}% U+2190  
 13948 % U+2191 UPWARDS ARROW; arrowup  
 13949 \DeclareTextCommand{\textuparrow}{PU}{\9041\221}% U+2191  
 13950 % U+2192 RIGHTWARDS ARROW; arrowright  
 13951 \DeclareTextCommand{\textrightarrow}{PU}{\9041\222}% U+2192  
 13952 % U+2193 DOWNWARDS ARROW; arrowdown  
 13953 \DeclareTextCommand{\textdownarrow}{PU}{\9041\223}% U+2193

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

13954 % U+2212 MINUS SIGN; minus  
 13955 \DeclareTextCommand{\textminus}{PU}{\9042\022}% U+2212  
 13956 % U+221A SQUARE ROOT; radical  
 13957 \DeclareTextCommand{\textsurd}{PU}{\9042\032}% U+221A

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

13958 % U+2329 LEFT-POINTING ANGLE BRACKET; angleleft  
 13959 \DeclareTextCommand{\textlangle}{PU}{\9043\051}% U+2329  
 13960 % U+232A RIGHT-POINTING ANGLE BRACKET; angleright  
 13961 \DeclareTextCommand{\textrangle}{PU}{\9043\052}% U+232A

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

13962 % U+2422 BLANK SYMBOL  
13963 \DeclareTextCommand{\textblank}{PU}{\9044\042}% U+2422  
13964 % U+2423 OPEN BOX; blank  
13965 \DeclareTextCommand{\textvisiblespace}{PU}{\9044\043}% U+2423

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

13966 % U+2460 CIRCLED DIGIT ONE; onecircle  
13967 \DeclareTextCompositeCommand{\textcircled}{PU}{1}{\9044\140}% U+2460  
13968 % U+2461 CIRCLED DIGIT TWO; twocircle  
13969 \DeclareTextCompositeCommand{\textcircled}{PU}{2}{\9044\141}% U+2461  
13970 % U+2462 CIRCLED DIGIT THREE; threecircle  
13971 \DeclareTextCompositeCommand{\textcircled}{PU}{3}{\9044\142}% U+2462  
13972 % U+2463 CIRCLED DIGIT FOUR; fourcircle  
13973 \DeclareTextCompositeCommand{\textcircled}{PU}{4}{\9044\143}% U+2463  
13974 % U+2464 CIRCLED DIGIT FIVE; fivecircle  
13975 \DeclareTextCompositeCommand{\textcircled}{PU}{5}{\9044\144}% U+2464  
13976 % U+2465 CIRCLED DIGIT SIX; sixcircle  
13977 \DeclareTextCompositeCommand{\textcircled}{PU}{6}{\9044\145}% U+2465  
13978 % U+2466 CIRCLED DIGIT SEVEN; sevendigit  
13979 \DeclareTextCompositeCommand{\textcircled}{PU}{7}{\9044\146}% U+2466  
13980 % U+2467 CIRCLED DIGIT EIGHT; eightcircle  
13981 \DeclareTextCompositeCommand{\textcircled}{PU}{8}{\9044\147}% U+2467  
13982 % U+2468 CIRCLED DIGIT NINE; ninecircle  
13983 \DeclareTextCompositeCommand{\textcircled}{PU}{9}{\9044\150}% U+2468  
13984 % U+2469 CIRCLED NUMBER TEN; tencircle  
13985 \DeclareTextCompositeCommand{\textcircled}{PU}{10}{\9044\151}% U+2469  
13986 % U+246A CIRCLED NUMBER ELEVEN; elevencircle  
13987 \DeclareTextCompositeCommand{\textcircled}{PU}{11}{\9044\152}% U+246A  
13988 % U+246B CIRCLED NUMBER TWELVE; twelvecircle  
13989 \DeclareTextCompositeCommand{\textcircled}{PU}{12}{\9044\153}% U+246B  
13990 % U+246C CIRCLED NUMBER THIRTEEN; thirteencircle  
13991 \DeclareTextCompositeCommand{\textcircled}{PU}{13}{\9044\154}% U+246C  
13992 % U+246D CIRCLED NUMBER FOURTEEN; fourteencircle  
13993 \DeclareTextCompositeCommand{\textcircled}{PU}{14}{\9044\155}% U+246D  
13994 % U+246E CIRCLED NUMBER FIFTEEN; fifteencircle  
13995 \DeclareTextCompositeCommand{\textcircled}{PU}{15}{\9044\156}% U+246E  
13996 % U+246F CIRCLED NUMBER SIXTEEN; sixteencircle  
13997 \DeclareTextCompositeCommand{\textcircled}{PU}{16}{\9044\157}% U+246F  
13998 % U+2470 CIRCLED NUMBER SEVENTEEN; seventeencircle  
13999 \DeclareTextCompositeCommand{\textcircled}{PU}{17}{\9044\160}% U+2470  
14000 % U+2471 CIRCLED NUMBER EIGHTEEN; eighteencircle  
14001 \DeclareTextCompositeCommand{\textcircled}{PU}{18}{\9044\161}% U+2471  
14002 % U+2472 CIRCLED NUMBER NINETEEN; nineteencircle  
14003 \DeclareTextCompositeCommand{\textcircled}{PU}{19}{\9044\162}% U+2472  
14004 % U+2473 CIRCLED NUMBER TWENTY; twentycircle  
14005 \DeclareTextCompositeCommand{\textcircled}{PU}{20}{\9044\163}% U+2473  
14006 % U+24B6 CIRCLED LATIN CAPITAL LETTER A; Acircle  
14007 \DeclareTextCompositeCommand{\textcircled}{PU}{A}{\9044\266}% U+24B6  
14008 % U+24B7 CIRCLED LATIN CAPITAL LETTER B; Bcircle  
14009 \DeclareTextCompositeCommand{\textcircled}{PU}{B}{\9044\267}% U+24B7  
14010 % U+24B8 CIRCLED LATIN CAPITAL LETTER C; Ccircle  
14011 \DeclareTextCompositeCommand{\textcircled}{PU}{C}{\9044\270}% U+24B8  
14012 % U+24B9 CIRCLED LATIN CAPITAL LETTER D; Dcircle  
14013 \DeclareTextCompositeCommand{\textcircled}{PU}{D}{\9044\271}% U+24B9  
14014 % U+24BA CIRCLED LATIN CAPITAL LETTER E; Ecircle  
14015 \DeclareTextCompositeCommand{\textcircled}{PU}{E}{\9044\272}% U+24BA

14016 % U+24BB CIRCLED LATIN CAPITAL LETTER F; Fcircle  
14017 \DeclareTextCompositeCommand{\textcircled}{PU}{F}{\9044\273}% U+24BB  
14018 % U+24BC CIRCLED LATIN CAPITAL LETTER G; Gcircle  
14019 \DeclareTextCompositeCommand{\textcircled}{PU}{G}{\9044\274}% U+24BC  
14020 % U+24BD CIRCLED LATIN CAPITAL LETTER H; Hcircle  
14021 \DeclareTextCompositeCommand{\textcircled}{PU}{H}{\9044\275}% U+24BD  
14022 % U+24BE CIRCLED LATIN CAPITAL LETTER I; Icircle  
14023 \DeclareTextCompositeCommand{\textcircled}{PU}{I}{\9044\276}% U+24BE  
14024 % U+24BF CIRCLED LATIN CAPITAL LETTER J; Jcircle  
14025 \DeclareTextCompositeCommand{\textcircled}{PU}{J}{\9044\277}% U+24BF  
14026 % U+24C0 CIRCLED LATIN CAPITAL LETTER K; Kcircle  
14027 \DeclareTextCompositeCommand{\textcircled}{PU}{K}{\9044\300}% U+24C0  
14028 % U+24C1 CIRCLED LATIN CAPITAL LETTER L; Lcircle  
14029 \DeclareTextCompositeCommand{\textcircled}{PU}{L}{\9044\301}% U+24C1  
14030 % U+24C2 CIRCLED LATIN CAPITAL LETTER M; Mcircle  
14031 \DeclareTextCompositeCommand{\textcircled}{PU}{M}{\9044\302}% U+24C2  
14032 % U+24C3 CIRCLED LATIN CAPITAL LETTER N; Ncircle  
14033 \DeclareTextCompositeCommand{\textcircled}{PU}{N}{\9044\303}% U+24C3  
14034 % U+24C4 CIRCLED LATIN CAPITAL LETTER O; Ocircle  
14035 \DeclareTextCompositeCommand{\textcircled}{PU}{O}{\9044\304}% U+24C4  
14036 % U+24C5 CIRCLED LATIN CAPITAL LETTER P; Pcircle  
14037 \DeclareTextCompositeCommand{\textcircled}{PU}{P}{\9044\305}% U+24C5  
14038 % U+24C6 CIRCLED LATIN CAPITAL LETTER Q; Qcircle  
14039 \DeclareTextCompositeCommand{\textcircled}{PU}{Q}{\9044\306}% U+24C6  
14040 % U+24C7 CIRCLED LATIN CAPITAL LETTER R; Rcircle  
14041 \DeclareTextCompositeCommand{\textcircled}{PU}{R}{\9044\307}% U+24C7  
14042 % U+24C8 CIRCLED LATIN CAPITAL LETTER S; Scircle  
14043 \DeclareTextCompositeCommand{\textcircled}{PU}{S}{\9044\310}% U+24C8  
14044 % U+24C9 CIRCLED LATIN CAPITAL LETTER T; Tcircle  
14045 \DeclareTextCompositeCommand{\textcircled}{PU}{T}{\9044\311}% U+24C9  
14046 % U+24CA CIRCLED LATIN CAPITAL LETTER U; Ucircle  
14047 \DeclareTextCompositeCommand{\textcircled}{PU}{U}{\9044\312}% U+24CA  
14048 % U+24CB CIRCLED LATIN CAPITAL LETTER V; Vcircle  
14049 \DeclareTextCompositeCommand{\textcircled}{PU}{V}{\9044\313}% U+24CB  
14050 % U+24CC CIRCLED LATIN CAPITAL LETTER W; Wcircle  
14051 \DeclareTextCompositeCommand{\textcircled}{PU}{W}{\9044\314}% U+24CC  
14052 % U+24CD CIRCLED LATIN CAPITAL LETTER X; Xcircle  
14053 \DeclareTextCompositeCommand{\textcircled}{PU}{X}{\9044\315}% U+24CD  
14054 % U+24CE CIRCLED LATIN CAPITAL LETTER Y; Ycircle  
14055 \DeclareTextCompositeCommand{\textcircled}{PU}{Y}{\9044\316}% U+24CE  
14056 % U+24CF CIRCLED LATIN CAPITAL LETTER Z; Zcircle  
14057 \DeclareTextCompositeCommand{\textcircled}{PU}{Z}{\9044\317}% U+24CF  
14058 % U+24D0 CIRCLED LATIN SMALL LETTER A; acircle  
14059 \DeclareTextCompositeCommand{\textcircled}{PU}{a}{\9044\320}% U+24D0  
14060 % U+24D1 CIRCLED LATIN SMALL LETTER B; bcircle  
14061 \DeclareTextCompositeCommand{\textcircled}{PU}{b}{\9044\321}% U+24D1  
14062 % U+24D2 CIRCLED LATIN SMALL LETTER C; ccircle  
14063 \DeclareTextCompositeCommand{\textcircled}{PU}{c}{\9044\322}% U+24D2  
14064 % U+24D3 CIRCLED LATIN SMALL LETTER D; dcircle  
14065 \DeclareTextCompositeCommand{\textcircled}{PU}{d}{\9044\323}% U+24D3  
14066 % U+24D4 CIRCLED LATIN SMALL LETTER E; ecircle  
14067 \DeclareTextCompositeCommand{\textcircled}{PU}{e}{\9044\324}% U+24D4  
14068 % U+24D5 CIRCLED LATIN SMALL LETTER F; fcircle  
14069 \DeclareTextCompositeCommand{\textcircled}{PU}{f}{\9044\325}% U+24D5  
14070 % U+24D6 CIRCLED LATIN SMALL LETTER G; gcircle  
14071 \DeclareTextCompositeCommand{\textcircled}{PU}{g}{\9044\326}% U+24D6  
14072 % U+24D7 CIRCLED LATIN SMALL LETTER H; hcircle

14073 \DeclareTextCompositeCommand{\textcircled}{PU}{h}{\9044\327}% U+24D7  
 14074 % U+24D8 CIRCLED LATIN SMALL LETTER I; icircle  
 14075 \DeclareTextCompositeCommand{\textcircled}{PU}{i}{\9044\330}% U+24D8  
 14076 % U+24D9 CIRCLED LATIN SMALL LETTER J; jcicle  
 14077 \DeclareTextCompositeCommand{\textcircled}{PU}{j}{\9044\331}% U+24D9  
 14078 % U+24DA CIRCLED LATIN SMALL LETTER K; kcicle  
 14079 \DeclareTextCompositeCommand{\textcircled}{PU}{k}{\9044\332}% U+24DA  
 14080 % U+24DB CIRCLED LATIN SMALL LETTER L; lcicle  
 14081 \DeclareTextCompositeCommand{\textcircled}{PU}{l}{\9044\333}% U+24DB  
 14082 % U+24DC CIRCLED LATIN SMALL LETTER M; mcicle  
 14083 \DeclareTextCompositeCommand{\textcircled}{PU}{m}{\9044\334}% U+24DC  
 14084 % U+24DD CIRCLED LATIN SMALL LETTER N; ncicle  
 14085 \DeclareTextCompositeCommand{\textcircled}{PU}{n}{\9044\335}% U+24DD  
 14086 % U+24DE CIRCLED LATIN SMALL LETTER O; ocicle  
 14087 \DeclareTextCompositeCommand{\textcircled}{PU}{o}{\9044\336}% U+24DE  
 14088 % U+24DF CIRCLED LATIN SMALL LETTER P; pcicle  
 14089 \DeclareTextCompositeCommand{\textcircled}{PU}{p}{\9044\337}% U+24DF  
 14090 % U+24E0 CIRCLED LATIN SMALL LETTER Q; qcicle  
 14091 \DeclareTextCompositeCommand{\textcircled}{PU}{q}{\9044\340}% U+24E0  
 14092 % U+24E1 CIRCLED LATIN SMALL LETTER R; rcicle  
 14093 \DeclareTextCompositeCommand{\textcircled}{PU}{r}{\9044\341}% U+24E1  
 14094 % U+24E2 CIRCLED LATIN SMALL LETTER S; scicle  
 14095 \DeclareTextCompositeCommand{\textcircled}{PU}{s}{\9044\342}% U+24E2  
 14096 % U+24E3 CIRCLED LATIN SMALL LETTER T; tcicle  
 14097 \DeclareTextCompositeCommand{\textcircled}{PU}{t}{\9044\343}% U+24E3  
 14098 % U+24E4 CIRCLED LATIN SMALL LETTER U; ucicle  
 14099 \DeclareTextCompositeCommand{\textcircled}{PU}{u}{\9044\344}% U+24E4  
 14100 % U+24E5 CIRCLED LATIN SMALL LETTER V; vcicle  
 14101 \DeclareTextCompositeCommand{\textcircled}{PU}{v}{\9044\345}% U+24E5  
 14102 % U+24E6 CIRCLED LATIN SMALL LETTER W; wcicle  
 14103 \DeclareTextCompositeCommand{\textcircled}{PU}{w}{\9044\346}% U+24E6  
 14104 % U+24E7 CIRCLED LATIN SMALL LETTER X; xcicle  
 14105 \DeclareTextCompositeCommand{\textcircled}{PU}{x}{\9044\347}% U+24E7  
 14106 % U+24E8 CIRCLED LATIN SMALL LETTER Y; ycicle  
 14107 \DeclareTextCompositeCommand{\textcircled}{PU}{y}{\9044\350}% U+24E8  
 14108 % U+24E9 CIRCLED LATIN SMALL LETTER Z; zcicle  
 14109 \DeclareTextCompositeCommand{\textcircled}{PU}{z}{\9044\351}% U+24E9  
 14110 % U+24EA CIRCLED DIGIT ZERO  
 14111 \DeclareTextCompositeCommand{\textcircled}{PU}{0}{\9044\352}% U+24EA

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

14112 % U+25E6 WHITE BULLET; \*openbullet, whitebullet  
 14113 \DeclareTextCommand{\textopenbullet}{PU}{\9045\346}% U+25E6  
 14114 % U+25EF LARGE CIRCLE; largecircle  
 14115 \DeclareTextCommand{\textbigcircle}{PU}{\9045\357}% U+25EF

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

14116 % U+266A EIGHTH NOTE; musicalnote  
 14117 \DeclareTextCommand{\textmusicalnote}{PU}{\9046\152}% U+266A  
 14118 % U+26AD MARRIAGE SYMBOL  
 14119 \DeclareTextCommand{\textmarried}{PU}{\9046\255}% U+26AD  
 14120 % U+26AE DIVORCE SYMBOL  
 14121 \DeclareTextCommand{\textdivorced}{PU}{\9046\256}% U+26AE

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

14122 % U+27E6 MATHEMATICAL LEFT WHITE SQUARE BRACKET  
 14123 \DeclareTextCommand{\textlbrackdbl}{PU}{\9047\346}% U+27E6

```

14124 % U+27E7 MATHEMATICAL RIGHT WHITE SQUARE BRACKET
14125 \DeclareTextCommand{\textrbrackdbl}{PU}{\9047\347}% U+27E7

```

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

```

14126 % U+FB01 LATIN SMALL LIGATURE FI; fi
14127 \DeclareTextCommand{\textfi}{PU}{\9373\001}% U+FB01
14128 % U+FB02 LATIN SMALL LIGATURE FL; fl
14129 \DeclareTextCommand{\textfl}{PU}{\9373\002}% U+FB02

```

### 50.2.25 Miscellaneous

```

14130 \DeclareTextCommand{\SS}{PU}{SS}

```

### 50.2.26 Aliases

Aliases (german.sty)

```

14131 \DeclareTextCommand{\textglqq}{PU}{\quotedblbase}
14132 \DeclareTextCommand{\textgrqq}{PU}{\textquotedblleft}
14133 \DeclareTextCommand{\textglq}{PU}{\quotesinglbase}
14134 \DeclareTextCommand{\textgrq}{PU}{\textquoteleft}
14135 \DeclareTextCommand{\textflqq}{PU}{\guillemotleft}
14136 \DeclareTextCommand{\textfrqq}{PU}{\guillemotright}
14137 \DeclareTextCommand{\textflq}{PU}{\guilsinglleft}
14138 \DeclareTextCommand{\textfrq}{PU}{\guilsinglright}

```

Aliases (math names)

```

14139 \DeclareTextCommand{\textneg}{PU}{\textlogicalnot}
14140 \DeclareTextCommand{\texttimes}{PU}{\textmultiply}
14141 \DeclareTextCommand{\textdiv}{PU}{\textdivide}
14142 \DeclareTextCommand{\textpm}{PU}{\textplusminus}
14143 \DeclareTextCommand{\textcdot}{PU}{\textperiodcentered}
14144 \</puenc>

```

## 50.3 PU encoding, additions for VnTeX

This file is provided by Han The Thanh.

```

14145 <*puvnenc>

14146 \DeclareTextCommand{\abreve}{PU}{\81\003}
14147 \DeclareTextCommand{\acircumflex}{PU}{\80\342}
14148 \DeclareTextCommand{\dj}{PU}{\81\021}
14149 \DeclareTextCommand{\ecircumflex}{PU}{\80\352}
14150 \DeclareTextCommand{\ocircumflex}{PU}{\80\364}
14151 \DeclareTextCommand{\ohorn}{PU}{\81\241}
14152 \DeclareTextCommand{\uhorn}{PU}{\81\260}
14153 \DeclareTextCommand{\ABREVE}{PU}{\81\002}
14154 \DeclareTextCommand{\ACIRCUMFLEX}{PU}{\80\302}
14155 \DeclareTextCommand{\DJ}{PU}{\81\020}
14156 \DeclareTextCommand{\ECIRCUMFLEX}{PU}{\80\312}
14157 \DeclareTextCommand{\OCIRCUMFLEX}{PU}{\80\324}
14158 \DeclareTextCommand{\OHORN}{PU}{\81\240}
14159 \DeclareTextCommand{\UHORN}{PU}{\81\257}

14160 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\341}
14161 \DeclareTextCompositeCommand{\d}{PU}{a}{\9036\241}
14162 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\340}
14163 \DeclareTextCompositeCommand{\h}{PU}{a}{\9036\243}
14164 \DeclareTextCompositeCommand{\~}{PU}{a}{\80\343}
14165 \DeclareTextCompositeCommand{\'}{PU}{\abreve}{\9036\257}

```

14166 \DeclareTextCompositeCommand{\d}{PU}{\abreve}{\9036\267}  
14167 \DeclareTextCompositeCommand{\'}{PU}{\abreve}{\9036\261}  
14168 \DeclareTextCompositeCommand{\h}{PU}{\abreve}{\9036\263}  
14169 \DeclareTextCompositeCommand{\~}{PU}{\abreve}{\9036\265}  
14170 \DeclareTextCompositeCommand{\'}{PU}{\acircumflex}{\9036\245}  
14171 \DeclareTextCompositeCommand{\d}{PU}{\acircumflex}{\9036\255}  
14172 \DeclareTextCompositeCommand{\'}{PU}{\acircumflex}{\9036\247}  
14173 \DeclareTextCompositeCommand{\h}{PU}{\acircumflex}{\9036\251}  
14174 \DeclareTextCompositeCommand{\~}{PU}{\acircumflex}{\9036\253}  
14175 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\351}  
14176 \DeclareTextCompositeCommand{\d}{PU}{e}{\9036\271}  
14177 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\350}  
14178 \DeclareTextCompositeCommand{\h}{PU}{e}{\9036\273}  
14179 \DeclareTextCompositeCommand{\~}{PU}{e}{\9036\275}  
14180 \DeclareTextCompositeCommand{\'}{PU}{\ecircumflex}{\9036\277}  
14181 \DeclareTextCompositeCommand{\d}{PU}{\ecircumflex}{\9036\307}  
14182 \DeclareTextCompositeCommand{\'}{PU}{\ecircumflex}{\9036\301}  
14183 \DeclareTextCompositeCommand{\h}{PU}{\ecircumflex}{\9036\303}  
14184 \DeclareTextCompositeCommand{\~}{PU}{\ecircumflex}{\9036\305}  
14185 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\355}  
14186 \DeclareTextCompositeCommand{\d}{PU}{i}{\9036\313}  
14187 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\354}  
14188 \DeclareTextCompositeCommand{\h}{PU}{i}{\9036\311}  
14189 \DeclareTextCompositeCommand{\~}{PU}{i}{\81\051}  
14190 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\363}  
14191 \DeclareTextCompositeCommand{\d}{PU}{o}{\9036\315}  
14192 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\362}  
14193 \DeclareTextCompositeCommand{\h}{PU}{o}{\9036\317}  
14194 \DeclareTextCompositeCommand{\~}{PU}{o}{\80\365}  
14195 \DeclareTextCompositeCommand{\'}{PU}{\ocircumflex}{\9036\321}  
14196 \DeclareTextCompositeCommand{\d}{PU}{\ocircumflex}{\9036\331}  
14197 \DeclareTextCompositeCommand{\'}{PU}{\ocircumflex}{\9036\323}  
14198 \DeclareTextCompositeCommand{\h}{PU}{\ocircumflex}{\9036\325}  
14199 \DeclareTextCompositeCommand{\~}{PU}{\ocircumflex}{\9036\327}  
14200 \DeclareTextCompositeCommand{\'}{PU}{\ohorn}{\9036\333}  
14201 \DeclareTextCompositeCommand{\d}{PU}{\ohorn}{\9036\343}  
14202 \DeclareTextCompositeCommand{\'}{PU}{\ohorn}{\9036\335}  
14203 \DeclareTextCompositeCommand{\h}{PU}{\ohorn}{\9036\337}  
14204 \DeclareTextCompositeCommand{\~}{PU}{\ohorn}{\9036\341}  
14205 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\372}  
14206 \DeclareTextCompositeCommand{\d}{PU}{u}{\9036\345}  
14207 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\371}  
14208 \DeclareTextCompositeCommand{\h}{PU}{u}{\9036\347}  
14209 \DeclareTextCompositeCommand{\~}{PU}{u}{\81\151}  
14210 \DeclareTextCompositeCommand{\'}{PU}{\uhorn}{\9036\351}  
14211 \DeclareTextCompositeCommand{\d}{PU}{\uhorn}{\9036\361}  
14212 \DeclareTextCompositeCommand{\'}{PU}{\uhorn}{\9036\353}  
14213 \DeclareTextCompositeCommand{\h}{PU}{\uhorn}{\9036\355}  
14214 \DeclareTextCompositeCommand{\~}{PU}{\uhorn}{\9036\357}  
14215 \DeclareTextCompositeCommand{\'}{PU}{y}{\80\375}  
14216 \DeclareTextCompositeCommand{\d}{PU}{y}{\9036\365}  
14217 \DeclareTextCompositeCommand{\'}{PU}{y}{\9036\363}  
14218 \DeclareTextCompositeCommand{\h}{PU}{y}{\9036\367}  
14219 \DeclareTextCompositeCommand{\~}{PU}{y}{\9036\371}  
14220 \DeclareTextCompositeCommand{\'}{PU}{A}{\80\301}  
14221 \DeclareTextCompositeCommand{\d}{PU}{A}{\9036\240}  
14222 \DeclareTextCompositeCommand{\'}{PU}{A}{\80\300}

14223 \DeclareTextCompositeCommand{\h}{PU}{A}{\9036\242}  
14224 \DeclareTextCompositeCommand{\~}{PU}{A}{\80\303}  
14225 \DeclareTextCompositeCommand{\'}{PU}{\ABREVE}{\9036\256}  
14226 \DeclareTextCompositeCommand{\d}{PU}{\ABREVE}{\9036\266}  
14227 \DeclareTextCompositeCommand{\'}{PU}{\ABREVE}{\9036\260}  
14228 \DeclareTextCompositeCommand{\h}{PU}{\ABREVE}{\9036\262}  
14229 \DeclareTextCompositeCommand{\~}{PU}{\ABREVE}{\9036\264}  
14230 \DeclareTextCompositeCommand{\'}{PU}{\ACIRCUMFLEX}{\9036\244}  
14231 \DeclareTextCompositeCommand{\d}{PU}{\ACIRCUMFLEX}{\9036\254}  
14232 \DeclareTextCompositeCommand{\'}{PU}{\ACIRCUMFLEX}{\9036\246}  
14233 \DeclareTextCompositeCommand{\h}{PU}{\ACIRCUMFLEX}{\9036\250}  
14234 \DeclareTextCompositeCommand{\~}{PU}{\ACIRCUMFLEX}{\9036\252}  
14235 \DeclareTextCompositeCommand{\'}{PU}{E}{\80\311}  
14236 \DeclareTextCompositeCommand{\d}{PU}{E}{\9036\270}  
14237 \DeclareTextCompositeCommand{\'}{PU}{E}{\80\310}  
14238 \DeclareTextCompositeCommand{\h}{PU}{E}{\9036\272}  
14239 \DeclareTextCompositeCommand{\~}{PU}{E}{\9036\274}  
14240 \DeclareTextCompositeCommand{\'}{PU}{\ECIRCUMFLEX}{\9036\276}  
14241 \DeclareTextCompositeCommand{\d}{PU}{\ECIRCUMFLEX}{\9036\306}  
14242 \DeclareTextCompositeCommand{\'}{PU}{\ECIRCUMFLEX}{\9036\300}  
14243 \DeclareTextCompositeCommand{\h}{PU}{\ECIRCUMFLEX}{\9036\302}  
14244 \DeclareTextCompositeCommand{\~}{PU}{\ECIRCUMFLEX}{\9036\304}  
14245 \DeclareTextCompositeCommand{\'}{PU}{I}{\80\315}  
14246 \DeclareTextCompositeCommand{\d}{PU}{I}{\9036\312}  
14247 \DeclareTextCompositeCommand{\'}{PU}{I}{\80\314}  
14248 \DeclareTextCompositeCommand{\h}{PU}{I}{\9036\310}  
14249 \DeclareTextCompositeCommand{\~}{PU}{I}{\81\050}  
14250 \DeclareTextCompositeCommand{\'}{PU}{O}{\80\323}  
14251 \DeclareTextCompositeCommand{\d}{PU}{O}{\9036\314}  
14252 \DeclareTextCompositeCommand{\'}{PU}{O}{\80\322}  
14253 \DeclareTextCompositeCommand{\h}{PU}{O}{\9036\316}  
14254 \DeclareTextCompositeCommand{\~}{PU}{O}{\80\325}  
14255 \DeclareTextCompositeCommand{\'}{PU}{\OCIRCUMFLEX}{\9036\320}  
14256 \DeclareTextCompositeCommand{\d}{PU}{\OCIRCUMFLEX}{\9036\330}  
14257 \DeclareTextCompositeCommand{\'}{PU}{\OCIRCUMFLEX}{\9036\322}  
14258 \DeclareTextCompositeCommand{\h}{PU}{\OCIRCUMFLEX}{\9036\324}  
14259 \DeclareTextCompositeCommand{\~}{PU}{\OCIRCUMFLEX}{\9036\326}  
14260 \DeclareTextCompositeCommand{\'}{PU}{\OHORN}{\9036\332}  
14261 \DeclareTextCompositeCommand{\d}{PU}{\OHORN}{\9036\342}  
14262 \DeclareTextCompositeCommand{\'}{PU}{\OHORN}{\9036\334}  
14263 \DeclareTextCompositeCommand{\h}{PU}{\OHORN}{\9036\336}  
14264 \DeclareTextCompositeCommand{\~}{PU}{\OHORN}{\9036\340}  
14265 \DeclareTextCompositeCommand{\'}{PU}{U}{\80\332}  
14266 \DeclareTextCompositeCommand{\d}{PU}{U}{\9036\344}  
14267 \DeclareTextCompositeCommand{\'}{PU}{U}{\80\331}  
14268 \DeclareTextCompositeCommand{\h}{PU}{U}{\9036\346}  
14269 \DeclareTextCompositeCommand{\~}{PU}{U}{\81\150}  
14270 \DeclareTextCompositeCommand{\'}{PU}{\UHORN}{\9036\350}  
14271 \DeclareTextCompositeCommand{\d}{PU}{\UHORN}{\9036\360}  
14272 \DeclareTextCompositeCommand{\'}{PU}{\UHORN}{\9036\352}  
14273 \DeclareTextCompositeCommand{\h}{PU}{\UHORN}{\9036\354}  
14274 \DeclareTextCompositeCommand{\~}{PU}{\UHORN}{\9036\356}  
14275 \DeclareTextCompositeCommand{\'}{PU}{Y}{\80\335}  
14276 \DeclareTextCompositeCommand{\d}{PU}{Y}{\9036\364}  
14277 \DeclareTextCompositeCommand{\'}{PU}{Y}{\9036\362}  
14278 \DeclareTextCompositeCommand{\h}{PU}{Y}{\9036\366}  
14279 \DeclareTextCompositeCommand{\~}{PU}{Y}{\9036\370}

14280 </puvnenc>

## 50.4 PU encoding, additions for Arabi

This file is provided and maintained by Youssef Jabri.

14281 <\*puarenc>

```
14282 \DeclareTextCommand{\hamza}{PU}{\86\041}% 0621;afii57409;ARABIC LETTER HAMZA
14283 \DeclareTextCommand{\alefmadda}{PU}{\86\042}% 0622;afii57410;ARABIC LETTER ALEF WITH MADDA A
14284 \DeclareTextCommand{\alefhamza}{PU}{\86\043}% 0623;afii57411;ARABIC LETTER ALEF WITH HAMZA A
14285 \DeclareTextCommand{\wawhamza}{PU}{\86\044}% 0624;afii57412;ARABIC LETTER WAW WITH HAMZA AE
14286 \DeclareTextCommand{\aleflowerhamza}{PU}{\86\045}% 0625;afii57413;ARABIC LETTER ALEF WITH HA
14287 \DeclareTextCommand{\yahamza}{PU}{\86\046}% 0626;afii57414;ARABIC LETTER YEH WITH HAMZA ABOVE
14288 \DeclareTextCommand{\alef}{PU}{\86\047}% 0627;afii57415;ARABIC LETTER ALEF
14289 \DeclareTextCommand{\baa}{PU}{\86\050}% 0628;afii57416;ARABIC LETTER BEH
14290 \DeclareTextCommand{\T}{PU}{\86\051}% 0629;afii57417;ARABIC LETTER TEH MARBUTA
14291 \DeclareTextCommand{\taa}{PU}{\86\052}% 062A;afii57418;ARABIC LETTER TEH
14292 \DeclareTextCommand{\thaa}{PU}{\86\053}% 062B;afii57419;ARABIC LETTER THEH
14293 \DeclareTextCommand{\jeem}{PU}{\86\054}% 062C;afii57420;ARABIC LETTER JEEM
14294 \DeclareTextCommand{\Haa}{PU}{\86\055}% 062D;afii57421;ARABIC LETTER HAH
14295 \DeclareTextCommand{\kha}{PU}{\86\056}% 062E;afii57422;ARABIC LETTER KHAH
14296 \DeclareTextCommand{\dal}{PU}{\86\057}% 062F;afii57423;ARABIC LETTER DAL
14297 \DeclareTextCommand{\dhal}{PU}{\86\060}% 0630;afii57424;ARABIC LETTER THAL
14298 \DeclareTextCommand{\ra}{PU}{\86\061}% 0631;afii57425;ARABIC LETTER REH
14299 \DeclareTextCommand{\zay}{PU}{\86\062}% 0632;afii57426;ARABIC LETTER ZAIN
14300 \DeclareTextCommand{\seen}{PU}{\86\063}% 0633;afii57427;ARABIC LETTER SEEN
14301 \DeclareTextCommand{\sheen}{PU}{\86\064}% 0634;afii57428;ARABIC LETTER SHEEN
14302 \DeclareTextCommand{\sad}{PU}{\86\065}% 0635;afii57429;ARABIC LETTER SAD
14303 \DeclareTextCommand{\dad}{PU}{\86\066}% 0636;afii57430;ARABIC LETTER DAD
14304 \DeclareTextCommand{\Ta}{PU}{\86\067}% 0637;afii57431;ARABIC LETTER TAH
14305 \DeclareTextCommand{\za}{PU}{\86\070}% 0638;afii57432;ARABIC LETTER ZAH
14306 \DeclareTextCommand{\ayn}{PU}{\86\071}% 0639;afii57433;ARABIC LETTER AIN
14307 \DeclareTextCommand{\ghayn}{PU}{\86\072}% 063A;afii57434;ARABIC LETTER GHAIN
14308 \DeclareTextCommand{\tatweel}{PU}{\86\100}% 0640;afii57440;ARABIC TATWEEL
14309 \DeclareTextCommand{\fa}{PU}{\86\101}% 0641;afii57441;ARABIC LETTER FEH
14310 \DeclareTextCommand{\qaf}{PU}{\86\102}% 0642;afii57442;ARABIC LETTER QAF
14311 \DeclareTextCommand{\kaf}{PU}{\86\103}% 0643;afii57443;ARABIC LETTER KAF
14312 \DeclareTextCommand{\lam}{PU}{\86\104}% 0644;afii57444;ARABIC LETTER LAM
14313 \DeclareTextCommand{\meem}{PU}{\86\105}% 0645;afii57445;ARABIC LETTER MEEM
14314 \DeclareTextCommand{\nun}{PU}{\86\106}% 0646;afii57446;ARABIC LETTER NOON
14315 \DeclareTextCommand{\ha}{PU}{\86\107}% 0647;afii57470;ARABIC LETTER HEH
14316 \DeclareTextCommand{\waw}{PU}{\86\110}% 0648;afii57448;ARABIC LETTER WAW
14317 \DeclareTextCommand{\alefmaqsura}{PU}{\86\111}% 0649;afii57449;ARABIC LETTER ALEF MAKSURA
14318 \DeclareTextCommand{\ya}{PU}{\86\112}% 064A;afii57450;ARABIC LETTER YEH

14319 \DeclareTextCommand{\nasb}{PU}{\86\113}% 064B;afii57451;ARABIC FATHATAN
14320 \DeclareTextCommand{\raff}{PU}{\86\114}% 064C;afii57452;ARABIC DAMMATAN
14321 \DeclareTextCommand{\jarr}{PU}{\86\115}% 064D;afii57453;ARABIC KASRATAN
14322 \DeclareTextCommand{\fatha}{PU}{\86\116}% 064E;afii57454;ARABIC FATHA
14323 \DeclareTextCommand{\damma}{PU}{\86\117}% 064F;afii57455;ARABIC DAMMA
14324 \DeclareTextCommand{\kasra}{PU}{\86\120}% 0650;afii57456;ARABIC KASRA
14325 \DeclareTextCommand{\shadda}{PU}{\86\121}% 0651;afii57457;ARABIC SHADDA
14326 \DeclareTextCommand{\sukun}{PU}{\86\122}% 0652;afii57458;ARABIC SUKUN

Farsi
14327 \DeclareTextCommand{\peh}{PU}{\86\176}% 067E;afii57506;ARABIC LETTER PEH
14328 \DeclareTextCommand{\tcheh}{PU}{\86\206}% 0686;afii57507;ARABIC LETTER TCHEH
14329 \DeclareTextCommand{\jeh}{PU}{\86\230}% 0698;afii57508;ARABIC LETTER JEH
```



```

14330 \DeclareTextCommand{\farsikaf}{PU}{\86\251}% 06A9???;afii????;FARSI LETTER KAF
14331 \DeclareTextCommand{\gaf}{PU}{\86\257}% 06AF;afii57509;ARABIC LETTER GAF
14332 \DeclareTextCommand{\farsiya}{PU}{\86\314}% 06CC;afii????;FARSI LETTER YEH

14333 \DeclareTextCommand{\ZWNJ}{PU}{\9040\014}% 200C;ZWNJ%
14334 \DeclareTextCommand{\noboundary}{PU}{\86\325}% 200D;ZWJ

14335 \puarenc

```

## 51 End of file hyccheck.tex

```

14336 \*check
14337 \typeout{}
14338 \begin{document}
14339 \end{document}
14340 \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	
\"	202, 227, 2375, 11574, 11880, 11892, 11904, 12025, 12111, 12125, 12133, 12148, 12160, 12176, 12190, 12201, 12202, 12216, 12228, 12234, 12285, 12313, 12332, 12353, 12480, 12494, 12502, 12516, 12528, 12544, 12558, 12569, 12570, 12584, 12596, 12602, 12849, 13064, 13066, 13076, 13128, 13130, 13158, 13171, 13323, 13336, 13569, 13571, 13585, 13587, 13589, 13591, 13593, 13595, 13605, 13607, 13609, 13611, 13617, 13619, 13621, 13623, 13629, 13631, 13637, 13639, 13645, 13647, 13687, 13689, 13759, 13761, 13771, 13773, 13789	
\#	405, 1528, 1529, 3426, 3436, 3438, 3452, 3484, 3499, 3569, 6722, 6724, 7438, 7447, 7474, 8131, 9548, 9557, 9584, 9808, 9817, 9843	
\\$	184, 209, 406, 3428, 3498	
\%	407, 1503, 1504, 3425, 3433, 3435, 3485, 6724	
\&	185, 210, 408, 3439, 9594	
\'	203, 228, 2315, 2329, 2370, 2372, 2373, 2374, 2375, 2380, 2381, 2383, 2388, 2394, 2398, 2399, 2402, 2445, 2446, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2460, 2464, 2477, 11572, 11877, 11889, 11901, 12105, 12121, 12129, 12142, 12156, 12162, 12170, 12186, 12195, 12196, 12210, 12224, 12230, 12253, 12255, 12256, 12257, 12260, 12262, 12263, 12264, 12272, 12310, 12329, 12350, 12474, 12490, 12498, 12510, 12524, 12530, 12538, 12554, 12563, 12564, 12578, 12592, 12598, 12616, 12618, 12723, 12725, 12743, 12745, 12777, 12779, 12789, 12791, 12851, 12853, 12903, 12905, 12911, 12913, 12915, 12917, 12999, 13001, 13003, 13005, 13007, 13009, 13011, 13013, 13068, 13070, 13072, 13074, 13132, 13135, 13137, 13162, 13181, 13327, 13346, 13695, 13697, 13707, 13709, 13723, 13725, 13755, 13757, 14160, 14165, 14170, 14175, 14180, 14185, 14190, 14195, 14200, 14205, 14210, 14215, 14220, 14225, 14230, 14235, 14240, 14245, 14250, 14255, 14260, 14265, 14270, 14275	
\(	190, 215, 589, 592, 594, 11638, 11948	
\)	191, 216, 561, 567, 570, 11639, 11950	
\+	200, 225	
\-	201, 226	
\.	198, 223, 11883, 11895, 11907, 11967, 12258, 12265, 12283, 12316, 12335, 12359, 12399, 12400, 12624, 12626, 12648, 12650, 12668, 12670, 12704, 12735, 12737, 12855, 12857, 12948, 12950, 12956, 12958, 13655, 13657, 13663, 13665, 13675, 13677, 13683, 13685, 13711, 13713, 13715, 13717, 13727, 13729, 13731, 13733, 13739, 13741, 13763, 13765, 13767, 13769, 13775, 13777, 13795	
\/	194, 219, 504, 505, 506, 572, 1246	
\:	189, 214	
\;	199, 224, 6420	
\<	196, 221	
\=	167, 173, 180, 183, 11885, 11897, 11909, 12278, 12320, 12339, 12358, 12604, 12606, 12640, 12642, 12689, 12691, 12692, 12761, 12763, 12821, 12823, 12960, 12962, 13601, 13603, 13625, 13627, 13679, 13681	
\>	197, 222	
\@	2366	
\@@	1704	
\@BOOKMARK	11567, 11568, <u>11616</u> , 11665, 11670	
\@ListBox	10147, 10167, 10599, 10630, 10936, <u>10969</u>	
\@Menu	10355, 10363	
\@PasswordField	10304, 10310	
\@Radio	10132, 10153, 10353, 10377, 10584, 10605, 10921, <u>10942</u>	
\@TextField	10306, 10321	
\@commahyperpage	6232, 6233	
\@hyperref	3533, 3534	
\@latextohtmlX	2211, 3709	
\@wrindex	6179, 6180	
\@writetorep	11487, 11493	
\@Alph	5075, 5076, 5079, 5080	
\@Alph@bul	5079	
\@BIBLABEL	5682, 5688, 5694	
\@BOOKMARK	11567, 11568	
\@CITE	5759, 5767	
\@CITE X	5761	
\@CheckBox	4364, 8191, 10244, 10274, 10408, 10717, <u>11072</u>	
\@ChoiceMenu	4361, 8194, 10084, 10277, 10343, 10535, <u>10872</u>	
\@Form	4167, 8183, 9871, 10266, 10287, 10460, <u>10797</u>	
\@Gauge	4370, 8185, 10053, 10268, 10292, 10429, <u>10794</u>	
\@Localurlfalse	8138	
\@Localurltrue	8135	
\@M	798, 1743	
\@MM	5472	
\@PushButton	4367, 8197, 10174, 10280, 10389, 10639, <u>10983</u>	
\@Refstar	6532, 6539	
\@Reset	4376, 8200, 10220, 10283, 10405, 10692, <u>11042</u>	
\@Roman	466	
\@SCTR	6279, 6331	
\@SetMaxRnhefLabel	5756	
\@Submit	4373, 8203, 10202, 10284, 10402, 10669, <u>11018</u>	
\@TextField	4358, 8188, 10056, 10271, 10295, 10506, <u>10835</u>	
\@addchap	11836	
\@addtoreset	6096, 6097, 6111, 6276	
\@afterheading	11854	
\@alph	5082, 5083	
\@alph@bul	5082	
\@anchorcolor	7409, 7493, 8247, 9519, 9780	
\@arabic	768, 773, 777, 5076, 5080, 5083	
\@auxout	1698, 3568, 4567, 4569, 5136, 5164, 5702, 5717, 5733,	

5743, 5773, 5796, 5822, 5828,  
5852  
\@backslashchar 1423, 1427, 1430,  
3447, 6737, 6747  
\@baseurl 2649, 2651, 3661, 7153,  
7156, 7395, 7397, 7636, 7638,  
8059, 8069, 8105, 8107, 8593,  
8595, 8933, 8947, 9505, 9507,  
9687, 9701, 9767, 9769  
\@bibitem ..... 5709, 5740  
\@biblabel ..... 5682, 5729  
\@bookmarkopenstatus 3264, 3281,  
11541  
\@bookmarksopenlevel 2612, 2614,  
3267  
\@bsphack ..... 1691, 3566, 5826  
\@capstartfalse ..... 5584  
\@caption 5553, 5565, 5599, 5633,  
5635  
\@capter 1700, 5548, 5552, 5556,  
5563, 5570, 5603, 5626, 5630,  
5633  
\@car 1030, 1046, 1064, 1084, 2591,  
3785, 7105, 7116  
\@cdr ..... 7106, 7117  
\@chapter ..... 11768, 11769  
\@cite .... 5759, 5790, 5887, 5893  
\@cite@opt 5888, 5894, 5898, 5908  
\@citea .. 5762, 5769, 5770, 5789,  
5792, 5793  
\@citeb .. 5768, 5771, 5773, 5775,  
5779, 5782, 5791, 5794, 5796,  
5798, 5802, 5805  
\@citebordercolor ..... 2891  
\@citedata@opt . 5889, 5895, 5897  
\@citedatax ..... 5904, 5909  
\@citedatax@opt .... 5901, 5907  
\@citeseppen ..... 5886, 5892  
\@citex ..... 5788  
\@commahyperpage ... 6227, 6232  
\@currDisplay 4221, 10096, 10158,  
10372, 10386, 10547, 10610,  
10884, 10948  
\@currValue .. 4223, 4225, 10162,  
10372, 10383, 10617, 10959,  
11367  
\@currentHlabel 5087, 5089, 5092,  
5213, 5224, 5395, 5406, 5409,  
5411, 5456, 5483  
\@currentHref .....  
1706, 4466, 5046, 5091, 5096,  
5176, 5179, 5214, 5225, 5227,  
5266, 5277, 5281, 5288, 5312,  
5396, 5407, 5410, 5412, 5457,  
5484, 5568, 5590, 5592, 5604,  
5606, 5831, 5978, 6001, 6010,  
6016, 6067, 6068, 6092, 6093,  
11476, 11477, 11761, 11763,  
11772, 11774, 11804, 11806,  
11813, 11818, 11846, 11848  
\@currentlabel 5475, 5824, 5831,  
6073, 6080, 6285, 6337  
\@currentlabelname . 1696, 5397,  
5458, 5485, 5572  
\@currentlabstr .... 1695, 1703  
\@curropt .. 10093, 10094, 10155,  
10156, 10361, 10368, 10369,  
10371, 10378, 10379, 10381,  
10544, 10545, 10607, 10608,  
10881, 10882, 10945, 10946  
\@dblarg ..... 1796, 5563, 5633  
\@definecounter .... 6052, 6053  
\@ehc ..... 2023, 3010, 3625,  
3879, 4003, 4198, 4313, 4349,  
10184, 10232, 10650, 10704,  
10994, 11054  
\@ehd ..... 63, 5549, 5627  
\@endForm .... 4168, 8184, 10052,  
10267, 10291, 10505, 10821  
\@eqnocr ..... 5296  
\@eqnstarfalse ..... 5272, 5299  
\@eqnstartrue ..... 5296  
\@eqnswtrue ..... 5242, 5251  
\@esphack . 1712, 3571, 5836, 6202  
\@extra@b@citeb 5667, 5670, 5687,  
5692, 5712, 5760, 5782, 5798,  
5805  
\@extra@binfo .. 5666, 5669, 5673  
\@fifthoffive . 2970, 3379, 3560,  
6486, 6601  
\@filebordercolor .. 2889, 7022,  
7024, 7931, 7933, 8318, 8320,  
9243  
\@filecolor .. 2641, 7042, 7588,  
7600, 7943, 8324  
\@firstoffive . 3375, 3384, 6525,  
6606  
\@firstofone ..... 423, 424, 425,  
426, 427, 428, 429, 430, 431,  
432, 433, 458, 878, 882, 886,  
2811, 3266, 4134, 4140, 4962,  
5073, 5086, 5123, 5561, 5631,  
5771, 5794, 5920, 5977, 7313,  
11152, 11169, 11186  
\@firstoftwo . 475, 642, 760, 1162,  
4545  
\@footnotemark 5356, 5402, 5491,  
5493, 5505, 5506, 5536, 5538  
\@footnotetext 5355, 5362, 5387,  
5492, 5494, 5508, 5509, 5529  
\@for 2668, 3775, 5768, 5791, 10093,  
10155, 10361, 10368, 10378,  
10544, 10607, 10881, 10945  
\@fourthoffive 3378, 3561, 6596,  
6603  
\@gobble ..... 49, 56, 117, 456,  
478, 479, 480, 489, 649, 784,  
788, 791, 968, 981, 985, 1047,  
1110, 1111, 1118, 1123, 1137,  
1142, 1146, 1733, 1969, 1981,  
2799, 2958, 2960, 3012, 3416,  
4119, 4511, 4515, 4531, 4533,  
4549, 4550, 4551, 4553, 4554,  
4556, 4941, 4956, 4960, 5550,  
5628, 5976, 6660, 7315, 8473,  
8476, 10461, 10798, 11533,  
11534, 11535, 11664  
\@gobblefour .. 513, 894, 895, 896,  
6400  
\@gobbleopt ..... 4556, 4558  
\@gobbletwo 482, 507, 514, 515, 893,  
1065, 1142, 1146, 1150, 1847,  
2962, 4065, 4535, 4544, 4552,  
4556, 6584, 11759  
\@harvarditem ..... 5841, 5843  
\@hyper@anchor .... 3670, 3671  
\@hyper@itemfalse .. 4992, 5008,  
5022  
\@hyper@itemtrue ..... 4993  
\@hyper@launch 3631, 3640, 7046,  
8376, 9255  
\@hyper@linkfile ... 3612, 3615,  
3619, 3651  
\@hyper@readexternallink 3606,  
3610  
\@hyperdef ..... 3541, 3542  
\@hyperpage ..... 6224, 6225  
\@hyperref ..... 3522, 3533  
\@ifclasslater ... 11860, 11865  
\@ifclassloaded 1683, 4887, 5108,  
5145, 5751, 6260, 6264, 7318,  
11859, 11864  
\@ifnextchar ..... 12,  
88, 103, 123, 508, 509, 1141,  
3492, 3522, 3541, 3579, 4167,  
4358, 4361, 4364, 4367, 4370,  
4373, 4376, 4556, 4612, 4621,  
5495, 5513, 5841, 5899, 8958,  
9181, 9195, 11567, 11568  
\@ifpackagelater ... 1714, 3034,  
6121  
\@ifpackageloaded .. 359, 1686,  
2075, 2949, 3033, 3122, 5030,  
5100, 5111, 5173, 5192, 5196,  
5204, 5238, 5352, 5419, 5464,  
5600, 5811, 5884, 5966, 5970,  
6064, 6120, 6156, 6157, 6269,  
6531, 6673, 6677, 9759  
\@ifpackagewith .... 2950, 6088

<code>\@ifstar</code> . . . 66, 3400, 3402, 6539, 6565, 6584	<code>\@mkboth</code> 482, 6382, 11759, 11839, 11841	9222, 9241, 9266, 9294, 9369, 9457, 9600
<code>\@ifundefined</code> . . . . . 34, 240, 459, 499, 573, 608, 627, 632, 645, 648, 666, 672, 678, 683, 688, 695, 701, 707, 712, 718, 723, 733, 739, 745, 751, 1000, 1094, 1095, 1687, 1720, 1824, 1943, 2008, 2088, 2535, 2543, 2550, 2563, 2589, 2911, 2925, 3027, 3028, 3029, 3874, 4193, 4649, 4972, 5034, 5039, 5060, 5074, 5198, 5207, 5261, 5283, 5301, 5307, 5344, 5554, 5665, 5676, 5759, 5775, 5798, 6061, 6101, 6109, 6110, 6123, 6124, 6131, 6573, 6574, 6618, 6619, 6621, 6622, 6777, 6961, 6970, 7341, 8214, 8268, 8348, 8657, 8658, 8700, 8730, 8817, 8979, 10461, 10798, 11161, 11767, 11778	<code>\@mpfn</code> . . . . . 5359, 5514, 5526	<code>\@pdfcreationdate</code> . . 2786, 2897, 7215, 7217, 7612, 7614, 8005, 8007, 8844, 8846, 9612, 9614
<code>\@indexfile</code> . . . 6183, 6191, 6195	<code>\@mpfootnotetext</code> . . . 5362, 5375, 5376	<code>\@pdfcreator</code> . . 2782, 2896, 7214, 7611, 8004, 8635, 8868, 9611
<code>\@inmathwarn</code> . . . . . 399, 400	<code>\@mymcount</code> . . . . . 11618, 11628	<code>\@pdfdirection</code> 7176, 7674, 8039, 8605, 8913, 9667
<code>\@inpenc@undefined@</code> . . . . 1558	<code>\@namedef</code> 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 3885, 3886, 3887, 3888, 4209, 4210, 5109, 5295, 5298, 5816, 5817, 5818, 5819	<code>\@pdfduplex</code> . . 7182, 7680, 8045, 8611, 8919, 9673
<code>\@latex@</code> . . . . . 4643, 4644	<code>\@nameuse</code> . 1700, 2095, 3891, 4201	<code>\@pdfhighlight</code> 2687, 2892, 6942, 6944, 6989, 7018, 7020, 7054, 7056, 7369, 7371, 8743, 8830, 9172, 9220, 9239, 9264
<code>\@latex@error</code> . 2158, 2176, 2186, 2193, 5549, 5627	<code>\@one</code> . . 767, 2042, 2137, 8572, 9362, 10830	<code>\@pdfhightlight</code> . . . . . 6987
<code>\@latex@warning</code> 3555, 5778, 5801, 6461, 6481, 6498, 6612	<code>\@newctr</code> . . . . . 6057, 6058	<code>\@pdfkeywords</code> . 2796, 2900, 7227, 7609, 8018, 8640, 8870, 9609
<code>\@lbbibitem</code> . . . . . 5683, 5728	<code>\@newl@bel</code> . . . . . 4606, 5669	<code>\@pdflang</code> 2878, 2905, 7202, 7204, 7702, 7704, 8079, 8081, 8943, 8945, 9697, 9699
<code>\@linkbordercolor</code> . . 2886, 6978, 8238	<code>\@nil</code> . . . . . 345, 349, 354, 358, 373, 1030, 1048, 1066, 1082, 1084, 1087, 1090, 1093, 1567, 1569, 1585, 1587, 2591, 3469, 3473, 3478, 3785, 4631, 4634, 4641, 4643, 4644, 4729, 4776, 4777, 4779, 4802, 4819, 4867, 4869, 5208, 5218, 5220, 5233, 6211, 6213, 6220, 6243, 6246, 6256, 6465, 6468, 6620, 6650, 6733, 6739, 6743, 6749, 7105, 7106, 7116, 7117, 8439, 8440, 11159, 11172, 11177	<code>\@pdfm@dest</code> . . . 7716, 7772, 7776
<code>\@linkcolor</code> . . . . . 8980	<code>\@nbreakfalse</code> . . . . . 4603	<code>\@pdfm@mark</code> . . . . . 4912, 7715, 7764, 7783, 7797, 7799, 7813, 7815, 7820, 7821, 7848, 7870, 7872, 7877, 7896, 7916, 7925, 7944, 7949, 7966, 7970, 7987, 8000, 8060, 8087, 10800, 10801, 10802, 10819, 10862, 10868, 10954, 10964, 10975, 10981, 11007, 11014, 11033, 11039, 11062, 11068, 11089, 11095, 11099, 11131, 11139, 11690
<code>\@linkdim</code> . 326, 7453, 7454, 7459, 7460, 7461, 7521, 7522, 7531, 7532, 7533, 7550, 7551, 7560, 7561, 7562, 7580, 7581, 7590, 7591, 7592, 9563, 9564, 9569, 9570, 9571, 9823, 9824, 9830, 9831, 9832	<code>\@nbreaktrue</code> . . . . . 6110, 6124	<code>\@pdfmoddate</code> . . 2792, 2898, 7219, 7221, 7616, 7618, 8009, 8011, 8848, 8852, 9616, 9618
<code>\@listctr</code> . . . . . 5718, 5744	<code>\@nocnterr</code> . . . . . 6109, 6123	<code>\@pdfnonfullscreenpagemode</code> . . 7175, 7673, 8038, 8604, 8912, 9666
<code>\@m</code> . . . . . 781, 5770, 5793, 8520	<code>\@number</code> . . . . . 5073, 5123, 5920	<code>\@pdfnumcopies</code> 7191, 7193, 7689, 7691, 8054, 8056, 8620, 8622, 8928, 8930, 9682, 9684
<code>\@mainaux</code> . 4565, 4566, 4924, 4932	<code>\@onx</code> . . . . . 6113, 6127, 6130, 6132	<code>\@pdfpageduration</code> . . 2657, 7263, 7266, 7271, 8529, 8531, 8534, 8780, 8782, 8790
<code>\@makecaption</code> . . 5585, 5587, 5645	<code>\@onelevel@sanitize</code> 1840, 1844, 2057, 2590, 2987, 3017, 3038, 3040, 3875, 4112, 4194, 4829, 4831, 6006, 6511, 7753	<code>\@pdfpagelayout</code> 7201, 7701, 8078, 8625, 8627, 8942, 9696
<code>\@makefnmark</code> . . . . . 5414, 5541	<code>\@outlinefile</code> . . . 11539, 11651, 11652, 11654, 11717, 11718, 11720	<code>\@pdfpagemode</code> . 3110, 3111, 3277, 3278, 3287, 3288, 7155, 7657, 8073, 8592, 8896, 9650
<code>\@makefntext</code> . . . . . 5476	<code>\@pagerefstar</code> . . 3402, 6527, 6555	<code>\@pdfpagescrop</code> 2832, 2901, 7140, 7144, 7640, 7641, 7662, 7664, 8085, 8087, 8581, 8583, 8901, 8903, 9655, 9657
<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, 3439, 6709, 11642	<code>\@pagesetref</code> . . . . . 6477	<code>\@pdfpagetransition</code> 2655, 7239, 7243, 7248, 8420, 8422, 8424,
<code>\@makeschapterhead</code> 11851, 11853	<code>\@parboxrestore</code> 5474, 5577, 5640	
<code>\@menubordercolor</code> . . 2888, 7373, 7375, 7980, 7982, 8407, 8409	<code>\@parcount</code> . . . . . 11620, 11628	
<code>\@menucolor</code> . . . 7386, 7986, 8413	<code>\@part</code> . . . . . 11787, 11794	
	<code>\@pdfauthor</code> . . 2780, 2894, 7211, 7620, 8013, 8632, 8869, 9620	
	<code>\@pdfborder</code> . . 2215, 2694, 2697, 2699, 3347, 6926, 7769, 8236, 8744, 8831, 9173, 9185, 9200, 9221, 9240, 9265, 9293, 9368, 9456, 9599	
	<code>\@pdfborderstyle</code> . . . 2695, 2701, 2703, 3348, 6927, 7770, 8237, 8745, 8832, 9174, 9186, 9201,	

8763, 8765, 8773	\@refstar . . . . . 3400, 6524	\@tempswattrue . 5873, 5876, 5879, 5900
\@pdfpicktraybypdfsize . . 7183, 7185, 7681, 7683, 8046, 8048, 8612, 8614, 8920, 8922, 9674, 9676	\@runbordercolor . . . 2890, 7058, 7060, 8391, 8393, 9268	\@temptokena . . . 2482, 2487, 2490, 2492
\@pdfprintarea 7179, 7677, 8042, 8608, 8916, 9670	\@runcolor . . . . . 7077, 8397	\@tfor . . . . . 5325
\@pdfprintclip 7180, 7678, 8043, 8609, 8917, 9671	\@safe@activesfalse . 464, 3381	\@theH@page . . . . . 5922, 5924
\@pdfprintpagerange 2768, 2904, 7187, 7189, 7685, 7687, 8050, 8052, 8616, 8618, 8924, 8926, 9678, 9680	\@safe@activestrue . . 463, 3380	\@thefnmark . . . 5360, 5371, 5433, 5434, 5475, 5515, 5527, 5534
\@pdfprintscaling . . 7181, 7679, 8044, 8610, 8918, 9672	\@schapter . . . . . 11755, 11756	\@thirdoffive . . . . . 3377
\@pdfproducer . 2781, 2895, 7081, 7223, 7225, 7604, 7605, 7621, 7623, 7990, 7991, 7995, 8014, 8016, 8549, 8550, 8554, 8557, 8558, 8636, 8638, 8855, 8859, 9290, 9291, 9361, 9363, 9365, 9453, 9454, 9604, 9605, 9621, 9623	\@secondoffive 2971, 3376, 3389, 6487, 6488, 6528	\@topnewpage . . . . . 11851
\@pdfstartpage 2820, 2822, 2903, 7161, 7165, 7644, 7649, 8062, 8066, 8585, 8589, 8883, 8888, 9637, 9642	\@secondoftwo . 457, 481, 640, 763, 1160, 2970, 2971	\@undefined 516, 4546, 4570, 4590, 4791, 4809, 4848, 5548, 5602, 5614, 5617, 5626, 6519, 6903, 7085, 7094, 8208, 8560, 8574
\@pdfstartview 2827, 2829, 2902, 7035, 7163, 7165, 7646, 7650, 7938, 8064, 8066, 8587, 8885, 8889, 9249, 9639, 9643	\@sect . . . . . 11809, 11810	\@undottedtocline . . . . . 6446
\@pdfsubject . . 2795, 2899, 7213, 7625, 8003, 8634, 8867, 9625	\@seqncr . . . . . 5296	\@unprocessedoptions . . . . . 3232
\@pdftempa . . . . 3617, 3618, 3621	\@serial@counter . 11570, 11617, 11618, 11619	\@urlbordercolor . . . 2887, 6991, 6993, 7955, 7957, 8337, 8339, 9223
\@pdftempwordfile . . 3608, 3618	\@seteqlabel . . . . . 6089, 6090	\@urlcolor 7006, 7458, 7467, 7558, 7570, 7965, 8343, 9568, 9577, 9829, 9837
\@pdftempwordrun . . 3609, 3621	\@setminipage . . . . . 5579, 5642	\@urltype 7428, 7432, 8110, 8134, 8263, 8274, 9538, 9542, 9798, 9802
\@pdftitle 2779, 2893, 7212, 7610, 8002, 8633, 8866, 9610	\@setref . 3384, 3389, 6456, 6457, 6494	\@vpageref . . . . . 6549
\@pdfview 2801, 6912, 6919, 7721, 7725, 7729, 7733, 7737, 7741, 7742, 7745, 7746, 7749, 7753, 7754, 7768, 8235, 8244, 8255, 8694, 8712, 9295, 9370, 9458, 9709	\@sharp . . . . . 5208, 5215	\@whilenum . . . . . 910
\@pdfviewarea . 7177, 7675, 8040, 8606, 8914, 9668	\@skiphyperrreffalse 5009, 5698, 5710	\@wrintex . . . . . 6162, 6163, 6179
\@pdfviewclip . 7178, 7676, 8041, 8607, 8915, 9669	\@skiphyperrreftrue . 5684, 5710	\@writefile . . . . . 5829
\@pdfviewparams 2803, 2805, 8694, 8712, 9296, 9371, 9459, 9710	\@spart . . . . . 11800, 11801	\@xsf . . . . . 5404, 5416, 5540, 5542
\@percentchar . . 3434, 3435, 3485	\@sssect . . . . . 11750, 11751	\@xfootnote . . . . . 5513
\@processme . . 4217, 4218, 7245, 7251, 7268, 7274, 7289, 7295, 8961, 8962, 9031, 9032, 9035, 9036	\@startlos . . . . 6394, 6401, 6450	\@xfootnotemark . . . . 5368, 5531
\@protected@testopt . . . . . 510	\@starttoc . . . . . 4591	\@xfootnotenext . . . . 5357, 5524
\@protected@testopt@xargs 511	\@tempa . . . . . 5421, 5425, 5428, 5444	\@exp . 6079, 6112, 6113, 6126, 6127, 6129, 6130
	\@tempb . . . . . 5324, 5328	\[ . . . . . 192, 217
	\@tempboxa 7452, 7453, 7459, 7518, 7521, 7524, 7525, 7531, 7536, 7537, 7548, 7550, 7553, 7554, 7560, 7565, 7566, 7578, 7580, 7583, 7584, 7590, 7595, 7596, 9562, 9563, 9569, 9822, 9823, 9830	\{ . . . . . 402
	\@tempcnta . 11499, 11500, 11501, 11502, 11503, 11505, 11508, 11509, 11510, 11516, 11518, 11520, 11552, 11553, 11554, 11557, 11558, 11559, 11560, 11561, 11739, 11740, 11741	\} . . . . . 403
	\@tempdima . . . . . 1746, 4398, 4399, 4400, 4401, 4402, 4403, 4404, 4405, 6905, 10092, 10097, 10099, 10136, 10137, 10138, 10142, 10143, 10144, 10145, 10543, 10548, 10550, 10588, 10589, 10590, 10594, 10595, 10596, 10597, 10880, 10885, 10887, 10925, 10926, 10927, 10931, 10932, 10933, 10934	\] . . . . . 193, 218
	\@tempdimb . 10096, 10097, 10547, 10548, 10884, 10885	\^ 186, 211, 2393, 3423, 3424, 3431, 11878, 11890, 11902, 12107, 12123, 12131, 12144, 12158, 12172, 12188, 12198, 12199, 12212, 12226, 12274, 12311, 12330, 12351, 12476, 12492, 12500, 12512, 12526, 12540, 12556, 12566, 12567, 12580, 12594, 12620, 12622, 12660, 12662, 12676, 12678, 12712, 12714, 12715, 12793, 12795, 12841, 12843, 12845, 12847, 13779, 13781
	\@tempswafalse . . . . . 5903	\_ . 187, 212, 410, 3427, 3441, 3442
		\' . . . . . 166, 172, 179, 182, 2329, 2463, 2466, 2468, 2476, 11876, 11888, 11900, 12103, 12119, 12127, 12140, 12154,

12168, 12184, 12192, 12193,  
12208, 12222, 12270, 12309,  
12328, 12349, 12472, 12488,  
12496, 12508, 12522, 12536,  
12552, 12560, 12561, 12576,  
12590, 12907, 12909, 13155,  
13183, 13320, 13348, 13751,  
13753, 13801, 13803, 14162,  
14167, 14172, 14177, 14182,  
14187, 14192, 14197, 14202,  
14207, 14212, 14217, 14222,  
14227, 14232, 14237, 14242,  
14247, 14252, 14257, 14262,  
14267, 14272, 14277

\| 188, 213, 1369, 1485, 2275, 2939,  
6159, 6708, 6718

\~ . . . . . 409, 912, 1546, 2387,  
2395, 2396, 2397, 3031, 3445,  
11879, 11891, 11903, 12109,  
12138, 12146, 12174, 12206,  
12214, 12276, 12312, 12331,  
12352, 12478, 12506, 12514,  
12542, 12574, 12582, 12684,  
12686, 12687, 12817, 12819,  
13747, 13749, 13797, 13799,  
13805, 13807, 14164, 14169,  
14174, 14179, 14184, 14189,  
14194, 14199, 14204, 14209,  
14214, 14219, 14224, 14229,  
14234, 14239, 14244, 14249,  
14254, 14259, 14264, 14269,  
14274, 14279

**Numbers**

\3 . . . . . 387, 954, 955, 956,  
957, 958, 959, 960, 961, 1660,  
11637, 12103, 12105, 12107,  
12109, 12111, 12113, 12115,  
12117, 12119, 12121, 12123,  
12125, 12127, 12129, 12131,  
12133, 12135, 12136, 12138,  
12140, 12142, 12144, 12146,  
12148, 12150, 12152, 12154,  
12156, 12158, 12160, 12162,  
12164, 12166, 12168, 12170,  
12172, 12174, 12176, 12178,  
12180, 12182, 12184, 12186,  
12188, 12190, 12192, 12193,  
12195, 12196, 12198, 12199,  
12201, 12202, 12204, 12206,  
12208, 12210, 12212, 12214,  
12216, 12218, 12220, 12222,  
12224, 12226, 12228, 12230,  
12232, 12234, 12235, 12308,  
12472, 12474, 12476, 12478,  
12480, 12482, 12484, 12486,  
12488, 12490, 12492, 12494,  
12496, 12498, 12500, 12502,  
12504, 12506, 12508, 12510,  
12512, 12514, 12516, 12518,  
12520, 12522, 12524, 12526,  
12528, 12530, 12532, 12534,  
12536, 12538, 12540, 12542,  
12544, 12546, 12548, 12550,  
12552, 12554, 12556, 12558,  
12560, 12561, 12563, 12564,  
12566, 12567, 12569, 12570,  
12572, 12574, 12576, 12578,  
12580, 12582, 12584, 12586,  
12588, 12590, 12592, 12594,  
12596, 12598, 12600, 12602,  
12867, 12869, 12871, 12873,  
12874, 12876, 12878, 12880,  
12882, 12884, 12886, 12888,  
12890, 12892, 12894, 12896,  
12898, 12900, 12901, 12903,  
12905, 12907, 12909, 12911,  
12913, 12915, 12917, 12966,  
12968, 12970, 12972, 12974,  
12976, 12978, 12981, 12983,  
13108, 13110, 13112, 13114,  
13116, 13118, 13120, 13122,  
13124, 13126, 13128, 13130,  
13132, 13134, 13135, 13137,  
13139, 13141, 13143, 13145,  
13147, 13149, 13151, 13153,  
13539, 13541, 13543, 13545,  
13547, 13549, 13551, 13553,  
13555, 13557, 13559, 13561,  
13563, 13565, 13567, 13569,  
13571, 13573, 13575, 13577,  
13579, 13581, 13583, 13585,  
13587, 13589, 13591, 13593,  
13595, 13597, 13599, 13601,  
13603, 13605, 13607, 13609,  
13611, 13613, 13615, 13617,  
13619, 13621, 13623, 13625,  
13627, 13629, 13631, 13633,  
13635, 13637, 13639, 13641,  
13643, 13645, 13647, 13649,  
13651, 13801, 13803, 13805,  
13807, 14027, 14029, 14031,  
14033, 14035, 14037, 14039,  
14041, 14043, 14045, 14047,  
14049, 14051, 14053, 14055,  
14057, 14059, 14061, 14063,  
14065, 14067, 14069, 14071,  
14073, 14075, 14077, 14079,  
14081, 14083, 14085, 14087,  
14089, 14091, 14093, 14095,  
14097, 14099, 14101, 14103,  
14105, 14107, 14109, 14111,  
14113, 14115, 14123, 14125,  
14147, 14149, 14150, 14154,  
14156, 14157, 14160, 14162,  
14164, 14175, 14177, 14181,  
14182, 14183, 14184, 14185,  
14186, 14187, 14188, 14190,  
14191, 14192, 14193, 14194,  
14195, 14196, 14197, 14198,  
14199, 14200, 14201, 14202,  
14203, 14204, 14205, 14206,  
14207, 14208, 14210, 14211,  
14212, 14213, 14214, 14215,  
14216, 14217, 14218, 14219,  
14220, 14222, 14224, 14235,  
14237, 14241, 14242, 14243,  
14244, 14245, 14246, 14247,  
14248, 14250, 14251, 14252,  
14253, 14254, 14255, 14256,  
14257, 14258, 14259, 14260,  
14261, 14262, 14263, 14264,  
14265, 14266, 14267, 14268,  
14270, 14271, 14272, 14273,  
14274, 14275, 14276, 14277,  
14278, 14279, 14332, 14334

\9 390, 1588, 1603, 1612, 1640, 1660,  
12308, 13653, 13655, 13657,  
13659, 13661, 13663, 13665,  
13667, 13669, 13671, 13673,  
13675, 13677, 13679, 13681,  
13683, 13685, 13687, 13689,  
13691, 13693, 13695, 13697,  
13699, 13701, 13703, 13705,  
13707, 13709, 13711, 13713,  
13715, 13717, 13719, 13721,  
13723, 13725, 13727, 13729,  
13731, 13733, 13735, 13737,  
13739, 13741, 13743, 13745,  
13747, 13749, 13751, 13753,  
13755, 13757, 13759, 13761,  
13763, 13765, 13767, 13769,  
13771, 13773, 13775, 13777,  
13779, 13781, 13783, 13785,  
13787, 13789, 13791, 13793,  
13795, 13797, 13799, 13801,  
13803, 13805, 13807, 13809,  
13811, 13813, 13815, 13817,  
13819, 13821, 13823, 13825,  
13827, 13829, 13831, 13833,  
13835, 13837, 13839, 13841,  
13843, 13845, 13847, 13849,  
13851, 13853, 13855, 13857,  
13859, 13861, 13863, 13865,  
13867, 13869, 13871, 13873,  
13875, 13877, 13879, 13881,  
13883, 13885, 13887, 13889,  
13891, 13893, 13895, 13897,  
13899, 13901, 13903, 13905,  
13907, 13909, 13911, 13913,  
13915, 13917, 13919, 13921,  
13923, 13925, 13927, 13929,



13931, 13933, 13935, 13937, 13939, 13941, 13943, 13945, 13947, 13949, 13951, 13953, 13955, 13957, 13959, 13961, 13963, 13965, 13967, 13969, 13971, 13973, 13975, 13977, 13979, 13981, 13983, 13985, 13987, 13989, 13991, 13993, 13995, 13997, 13999, 14001, 14003, 14005, 14007, 14009, 14011, 14013, 14015, 14017, 14019, 14021, 14023, 14025, 14027, 14029, 14031, 14033, 14035, 14037, 14039, 14041, 14043, 14045, 14047, 14049, 14051, 14053, 14055, 14057, 14059, 14061, 14063, 14065, 14067, 14069, 14071, 14073, 14075, 14077, 14079, 14081, 14083, 14085, 14087, 14089, 14091, 14093, 14095, 14097, 14099, 14101, 14103, 14105, 14107, 14109, 14111, 14113, 14115, 14117, 14119, 14121, 14123, 14125, 14127, 14129, 14161, 14163, 14165, 14166, 14167, 14168, 14169, 14170, 14171, 14172, 14173, 14174, 14176, 14178, 14179, 14180, 14181, 14182, 14183, 14184, 14186, 14188, 14191, 14193, 14195, 14196, 14197, 14198, 14199, 14200, 14201, 14202, 14203, 14204, 14206, 14208, 14210, 14211, 14212, 14213, 14214, 14216, 14217, 14218, 14219, 14221, 14223, 14225, 14226, 14227, 14228, 14229, 14230, 14231, 14232, 14233, 14234, 14236, 14238, 14239, 14240, 14241, 14242, 14243, 14244, 14246, 14248, 14251, 14253, 14255, 14256, 14257, 14258, 14259, 14260, 14261, 14262, 14263, 14264, 14266, 14268, 14270, 14271, 14272, 14273, 14274, 14276, 14277, 14278, 14279, 14333	12344, 12345, 12346	
<b>A</b>		
\ABREVE . . . . .	14153, 14225, 14226, 14227, 14228, 14229	
\abreve . . . . .	14146, 14165, 14166, 14167, 14168, 14169	
\AccFancyVerbLineautorefname . 	2437	
\Accfootnoteautorefname .	2417	
\Acctheoremautorefname . .	2441	
\ACIRCUMFLEX	14154, 14230, 14231, 14232, 14233, 14234	
\acircumflex .	2468, 14147, 14170, 14171, 14172, 14173, 14174	
\Acrobatmenu . .	1735, 2967, 4543, 7364, 7968, 8400, 9167	
\active	890, 897, 3424, 3425, 3426, 3427, 3428, 3431, 3433, 3436, 3442, 11641	
\add@accent . . . . .	401	
\addcontentsline . . .	5573, 5637, 5974, 5980, 6046, 11856	
\addtocontents	6015, 6047, 6277, 6329, 11843, 11844	
\addtocounter .	5120, 5143, 5152, 5163, 5167, 5346	
\addvspace . . . . .	11843, 11844	
\advance . . . . .	324, 325, 911, 3735, 4064, 4110, 4399, 4400, 4403, 4404, 4746, 7130, 7460, 7532, 7561, 7591, 8556, 9570, 9831, 10099, 10143, 10144, 10550, 10595, 10596, 10830, 10887, 10932, 10933, 11500, 11502, 11503, 11509, 11518, 11560, 11740	
\AE . . . . .	12115, 12484, 12911	
\ae . . . . .	12180, 12548, 12913	
\afterassignment . . .	1258, 1264, 1270	
\AfterBeginDocument	240, 2115, 2169, 3101, 3201, 3405, 4468, 4562, 4930, 9346, 9497	
\aftergroup . . . . .	5479	
\alef . . . . .	14288	
\alefhamza . . . . .	14284	
\aleflowerhamza . . . . .	14286	
\alefmadda . . . . .	14283	
\alefmaqsurah . . . . .	14317	
\Alph . . . . .	4795, 5061, 5062	
\alph . . . . .	4796, 5317, 5348	
\AMSautorefname . . . . .	6682	
\anchor@spot . .	3675, 3688, 3695, 3701, 6957, 7409, 7493, 8178, 8247, 8691, 9519, 9780	
\appendix . . . . .	5058, 5059	
\appendixautorefname	2285, 2303, 2321, 2339, 2357, 2375, 2393, 2425, 2426, 2451, 2469, 6692	
\arabic . .	4792, 4967, 4970, 4973, 4974, 4975, 4977, 4978, 4979, 4980, 4982, 4983, 4984, 4985, 4986, 4987, 4990, 5000, 5001, 5040, 5127, 6055, 6061, 6108, 6122, 6265, 6270, 6272	
\AtBeginDocument	241, 2014, 2074, 2211, 2561, 2956, 3047, 3107, 3331, 5107, 5812, 6530, 6676, 6872, 7311, 7856, 8230	
\AtBeginShipout . . . . .	4675	
\AtBeginShipoutBox .	4679, 4682	
\AtBeginShipoutFirst	4686, 8090, 9449	
\AtEndDocument	4582, 4890, 10468	
\AtEndOfPackage	1684, 2534, 2542, 2549, 3089, 3115, 3121, 3260, 3283	
\author . . . . .	4611, 4621	
\autopageref . . . . .	3109, 6564	
\autoref . .	486, 3108, 6583, 9851	
\ayn . . . . .	14306	
<b>B</b>		
\b . . .	11886, 11898, 11910, 12300, 12323, 12342, 13659, 13661, 13667, 13669, 13699, 13701, 13703, 13705, 13719, 13721, 13735, 13737, 13743, 13745, 13783, 13785, 13787	
\baa . . . . .	14289	
\back@none . . . . .	2223, 2233, 2246	
\back@page . . . . .	2225, 2238	
\back@section .	2224, 2230, 2236, 2242	
\back@slide . . . . .	2226, 2235	
\backcite . . . . .	5830	
\backref . . . . .	5861, 9855	
\baselineskip .	1738, 4412, 4413, 4414, 4415, 4416, 4417, 7510, 8708, 8729, 9329	
\bbl@cite@choice . . . . .	5677	
\BeforeTeXIVht . . . . .	2111	
\begin . . . . .	9860, 14338	
\belowpdfbookmark . . . . .	11556	
\bfseries .	438, 5776, 5799, 6460, 6480, 6497, 6611	
\bgroup	505, 3492, 5466, 5478, 8178, 8721, 10299, 10391, 10412	
\bibcite .	5668, 5674, 5678, 5703, 5718, 5734, 5744	
\bitsetGetDec .	3787, 3920, 3938, 3952, 3965, 3981, 4013, 4038	
\bitsetGetHex . . . . .	3788	

\bitsetGetSetBitList . . . . .	3776	\cf@encoding . . . . .	966	\curu . . . . .	13351
\bitsetIsEmpty 3917, 3935, 3949,		\chapterautorefname 2286, 2304,		\cyr . . . . .	465, 2405, 2407, 2410, 2413,
3962, 3978, 4010, 4035		2322, 2340, 2358, 2376, 2394,		2416, 2417, 2418, 2419, 2420,	
\bitsetReset . . . . .	3890, 3924, 3943,	2423, 2452, 2470, 6693		2421, 2422, 2423, 2424, 2425,	
3957, 3970, 3986, 4018		\chapternumberline 11531, 11535		2427, 2429, 2430, 2431, 2432,	
\bitsetSetValue . . . . .	3756, 3766	\char . . . . .	10495, 11576, 11613	2433, 2434, 2435, 2436, 2437,	
\BOOKMARK . . . . .	11540, 11567	\chardef . . . . .	1933, 1934, 1935, 1936,	2438, 2439, 2440, 2441, 2442	
\box . . . . .	4406, 4682, 6891, 7875, 9014	2137, 2139		\CYRA . . . . .	13190, 13565, 13569
\bullet . . . . .	6412, 6420, 6430, 6438	\check@b@number . . . . .	11675, 11683,	\cyra . . . . .	2407, 2414, 2416, 2421,
		11731, 11739		2424, 2429, 2430, 2436, 2440,	
		\CheckBox . . . . .	4363	13255, 13567, 13571	
<b>C</b>		\CheckCommand . . . . .	5420	\CYRABHCH . . . . .	13529, 13534
\C . . . . .	12294, 13399, 13401	\checkcommand . . . . .	42, 5162, 5524,	\cyrabhch . . . . .	13531, 13537
\c . . . . .	2387,	5531, 5538, 5625, 5635, 5728,		\CYRABHCHDSC . . . . .	13533
	2395, 2396, 2397, 4634, 4641,	5740, 6046, 6049, 6108, 6494		\cyrabhchdsc . . . . .	13536
	11884, 11896, 11908, 12117,	\checklatex . . . . .	4, 5523, 5624, 5727,	\CYRABHDZE . . . . .	13597
	12182, 12302, 12317, 12336,	6045, 6493		\cyrabhdze . . . . .	13599
	12347, 12486, 12550, 12672,	\checkpackage . . . . .	9, 5161, 6107	\CYRABHHA . . . . .	13487
	12674, 12717, 12719, 12727,	\ChoiceBox . . . . .	4114	\cyrabhha . . . . .	13489
	12729, 12747, 12749, 12781,	\ChoiceMenu . . . . .	4360	\CYRAE . . . . .	13573
	12783, 12797, 12799, 12805,	\citation . . . . .	5773, 5796, 5822	\cyrae . . . . .	13575
	12807, 12952, 12954, 13454,	\citeauthoryear . . . . .	5888, 5894	\CYRB . . . . .	13192
	13457, 13671, 13673, 13691,	\citeN . . . . .	5885	\cyrb . . . . .	2421, 13257
	13693	\CJK@char . . . . .	893	\CYRBYUS . . . . .	13375
\c@footnote 5370, 5423, 5431, 5533		\CJK@charx . . . . .	894	\cyrbyus . . . . .	13377
\c@page . . . . .	4728, 4746, 4747, 4751,	\CJK@ignorespaces . . . . .	892	\CYRC . . . . .	13235
	4763, 4765, 4770, 4777, 4779,	\CJK@punctchar . . . . .	895	\cyrc . . . . .	13300
	4781, 4810, 5917	\CJK@punctcharx . . . . .	896	\CYRCH . . . . .	13237, 13637
\c@secnumdepth . . . . .	11777, 11795,	\clear@document . . . . .	4888	\cyrch . . . . .	2413, 2414, 2422, 13302,
11811, 11816		\clearpage . . . . .	4890	13639	
\c@slidesection 6278, 6406, 6407		\close@pdflink 6956, 6968, 6976,		\CYRCHLDSC . . . . .	13557
\c@slidesubsection . . . . .	6330	7007, 7043, 7078, 7387		\cyrchldsc . . . . .	13559
\c@tocdepth . . . . .	2582, 2587	\closeout . . . . .	4565	\CYRCHRDSC . . . . .	13517
\calc@b@number . . . . .	11665, 11738	\codeof . . . . .	5852	\cyrchrdsc . . . . .	13519
\calculate@pdfview . . . . .	2797, 2800	\color@endbox . . . . .	6884, 7452, 7518,	\CYRCHVCRS . . . . .	13521
\capitalacute . . . . .	12350	7548, 7578, 7868, 9562, 9822		\cyrchvcrs . . . . .	13523
\capitalbreve . . . . .	12357	\color@hbox . . . . .	6877, 7452, 7518,	\CYRD . . . . .	13198
\capitalcaron . . . . .	12356	7548, 7578, 7861, 9562, 9822		\cyrd . . . . .	2410, 2413, 2424, 2429, 2430,
\capitalcedilla . . . . .	12347	\columnwidth . . . . .	5473	13263	
\capitalcircumflex . . . . .	12351	\comma@entry . . . . .	4105, 4112, 4114	\CYRDJE . . . . .	13160
\capitaldieresis . . . . .	12353	\comma@parse . . . . .	4104	\cyrdje . . . . .	13325
\capitaldotaccent . . . . .	12359	\contentsline . . . . .	4571, 4572, 4583,	\CYRDZE . . . . .	13166
\capitalgrave . . . . .	12349	6016, 6020, 6047, 6049		\cyrdze . . . . .	13331
\capitalhungarumlaut . . . . .	12354	\copy . . . . .	5220, 5229, 6887, 7871	\CYRDZHE . . . . .	13188
\capitalmacron . . . . .	12358	\count@ . . . . .	909, 910, 911, 912, 1259,	\cyrdzhe . . . . .	13353
\capitalnewtie . . . . .	12361	2598, 2599, 2604, 2605, 3734,		\CYRE . . . . .	13155, 13158, 13200, 13577
\capitalogonek . . . . .	12348	3735, 3750, 4047, 4062, 4064,		\cyre . . . . .	2407, 2413,
\capitalring . . . . .	12355	4088, 4110, 4126, 7125, 7126,		2414, 2427, 2439, 2440, 2441,	
\capitaltie . . . . .	12360	7127, 7128, 7129, 7130, 7133,		13265, 13320, 13323, 13579	
\capitaltilde . . . . .	12352	8552, 8553, 8554, 8555, 8556,		\cyreref . . . . .	13623
\caption . . . . .	5547, 5549, 5625, 5627	8559		\CYREREV . . . . .	13249, 13621
\catcode . . . . .	172, 173, 184, 185,	\CurrentBorderColor 6946, 6948,		\cyrerev . . . . .	13314
	186, 187, 206, 890, 897, 1369,	6962, 6964, 6971, 6973, 6978,		\CYRERY . . . . .	13245, 13645
	1370, 1485, 1486, 3297, 3299,	8238, 8269, 8271, 8280, 8282,		\cyrery . . . . .	2405, 2407, 13310, 13647
	3423, 3424, 3425, 3426, 3427,	8297, 8299, 8349, 8351, 8364,		\CYRF . . . . .	13231
	3428, 3431, 3433, 3436, 3442,	8366		\cyrf . . . . .	13296
	3452, 3498, 3499, 6708, 8756,	\currentpdfbookmark . . . . .	11548	\CYRFITA . . . . .	13391
	8757, 11572, 11574, 11641				



\cyrfita	13393	\CYRКСI	13383	\CYRS	13225, 13492
\CYRG	13162, 13196	\cyrksi	13385	\cyrс	2410, 2413, 2416, 2417, 2420,
\cyrḡ	2423, 13261, 13327	\CYRKVCRS	13463		2435, 2436, 2437, 2438, 2442,
\CYRGDSC	13641	\cyrkvcrs	13465		13290, 13495
\cyrḡdsc	13643	\CYRL	13213	\CYRSCHWA	13581, 13585
\CYRGHCRS	13441	\cyrḷ 2421, 2423, 2425, 2427,	13278	\cyrschwа	13583, 13587
\cyrḡhcrs	13443	\CYRLDSC	13549	\CYRSDSC	13491, 13492
\CYRGHK	13445	\cyrḷdsc	13551	\cyrsdsc	13494
\cyrḡhk	13447	\CYRLJE	13175	\CYRSEMISFTSN	13429
\CYRGUP	13437	\cyrḷje	13340	\cyrsemisftsn	13431
\cyrḡup	13439	\CYRLYUS	13367	\CYRSFTSN	13247
\CYRH	13233	\cyrḷyus	13369	\cyrсftsn	13312
\cyrh	13298	\CYRM	13215	\CYRSH	13239
\CYRHDSC	13509	\cyrḡ 2410, 2414, 2440, 2441,	13280	\cyrsh	13304
\cyrhdsc	13511	\CYRMDSC	13561	\CYRSHCH	13241
\CYRHHK	13649	\cyrḡdsc	13563	\cyrshch	13306
\cyrhhk	13651	\CYRN	13217	\CYRSHHA	13525
\CYRHRDSN	13243	\cyrn 2407, 2413, 2414, 2416, 2417,		\cyrshha	13527
\cyrhrdsn	13308		2419, 2427, 2433, 2434, 13282	\CYRT	13227
\CYRI	13183, 13206, 13209, 13601,	\CYRNDSC	13475	\cyrt	2410, 2413, 2419, 2421, 2433,
	13605	\cyrndsc	13477		2434, 2435, 2436, 2437, 2438,
\cyri	2407,	\CYRNG	13479		2439, 2440, 2441, 13292
	2410, 2414, 2420, 2425, 2427,	\cyrng	13481	\CYRTDSC	13497
	13271, 13274, 13348, 13603,	\CYRNHK	13553	\cyrtḡdsc	13499
	13607	\cyrnhk	13555	\CYRTETSE	13513
\CYRIE	13164	\CYRNJE	13177	\cyrtetse	13515
\cyrie	13329	\cyrnje	13342	\cyrthousands	13423
\CYRII	13168, 13171	\CYRO	13219, 13609	\CYRTSHE	13179
\cyrii	13333, 13336	\cyro 2410, 2413, 2416, 2417, 2427,		\cyrtshe	13344
\CYRIOTBYUS	13379		2436, 2437, 2439, 2440, 2441,	\CYRU	13186, 13229, 13625, 13629,
\cyriotbyus	13381		13284, 13611		13633
\CYRIOTE	13363	\CYROMEGA	13355	\cyru	2417,
\cyriote	13365	\cyromega	13357		2419, 2433, 2434, 2437, 2441,
\CYRIOTLYUS	13371	\CYROMEGARND	13407		13294, 13627, 13631, 13635
\cyriotlyus	13373	\cyromegarnd	13409	\CYRUK	13403
\CYRISHRT	13208	\CYROMEGATITLO	13411	\cyruk	13405
\cyrishrt	13273	\cyromegatitlo	13413	\CYRUSHRT	13185
\CYRISHRTDSC	13425	\CYROT	13415	\cyrushrt	13350
\cyrishrtdsc	13427	\cyrot	13417	\CYRV	13194
\CYRIZH	13395, 13399	\CYROTLD	13613, 13617	\cyrv	2405, 2407, 13259
\cyrizh	13397, 13401	\cyrotld	13615, 13619	\CYRY	13501
\CYRJE	13173	\CYRP	13221	\cyry	13503
\cyrje	13338	\cyrp 2410, 2413, 2414, 2418, 2419,		\CYRYA	13253
\CYRK	13181, 13211		2425, 2427, 2431, 2432, 2433,	\cyryа	13318
\cyrk	2416, 2417, 2419,		2434, 13286	\CYRYAT	13359
	2433, 2434, 2436, 2437, 2438,	\CYRpalachka	13539	\cyryat	13361
	13276, 13346	\CYRPHK	13483	\CYRYHCRS	13505
\CYRKBEAK	13471	\cyrphk	13485	\cyryhcrs	13507
\cyrkbeak	13473	\CYRPSI	13387	\CYRYI	13170
\CYRKDSC	13459	\cyrpsi	13389	\cyryi	13335
\cyrkdsc	13461	\CYRR	13223	\CYRYO	13157
\CYRKHCRS	13467	\cyrr 2405, 2407, 2410, 2413, 2414,		\cyryo	13322
\cyrkhcrs	13469		2420, 2424, 2425, 2427, 2429,	\CYRYU	13251
\CYRKHK	13545		2430, 2435, 2436, 2437, 2438,	\cyryu	13316
\cyrkhk	13547		2439, 2440, 2441, 13288	\CYRZ	13204, 13454, 13593
\CYRKOPPA	13419	\CYRRTICK	13433	\cyrz	2424, 2429, 2430, 13269,
\cyrkoppa	13421	\cyrrtick	13435		13457, 13595

\CYRZDSC .....	13453	\DefaultOptionsofComboBox	4425	9146, 9148, 9150, 9152, 9154,	
\cyrzdsc .....	13456	\DefaultOptionsofListBox	4424	9155, 9156, 9157, 9158, 9159,	
\CYRZH .....	13202, 13541, 13589	\DefaultOptionsofPopdownBox	.	9160, 9161, 9162, 9163, 9164	
\cyrzh ..	2407, 2427, 13267, 13543, 13591	.....	4426	\df@tag .....	6071, 6077
\CYRZHDSC .....	13449	\DefaultOptionsofPushButton	.	\DH .....	12135, 12504
\cyrzhdsc .....	13451	. 4421, 10179, 10644, 10988		\dh .....	12204, 12572
<b>D</b>		\DefaultOptionsofRadio ..	4427	\dhal .....	14297
\d .....	2465, 2469, 2471, 2472, 2473, 2474, 2475, 2477, 11887, 11899, 11911, 12298, 12324, 12343, 14161, 14166, 14171, 14176, 14181, 14186, 14191, 14196, 14201, 14206, 14211, 14216, 14221, 14226, 14231, 14236, 14241, 14246, 14251, 14256, 14261, 14266, 14271, 14276	\DefaultOptionsofReset ..	4420, 10226, 10698, 11048	\dimen@ .	365, 366, 370, 1265, 1333, 1334, 1337, 1339, 2926, 2927, 2929, 2936, 2937, 8519, 8520, 8522, 9005, 9017, 9020
\dad .....	14303	\DefaultOptionsofSubmit	. 4419, 10208, 10675, 11024	\dimexpr ..	377, 1564, 1566, 1574, 1579, 1582, 1584, 1598, 1600, 1603, 1604, 1611, 1614, 1617, 1618, 1619, 1620, 1630, 1635, 1643, 1647, 1652, 1662, 1665, 1670, 1673, 1678, 1679
\dal .....	14296	\DefaultOptionsofText ...	4423, 10071, 10521, 10850	\DingObject .....	10617
\damma .....	14323	\DefaultWidthofCheckBox	. 4413, 10248, 10721, 11076	\discretionary .....	507
\declare@shorthand	668, 669, 674, 675, 680, 690, 691, 692, 697, 698, 703, 704, 709, 714, 715, 720, 725, 726, 727, 728, 729, 730, 735, 736, 741, 742, 747, 748	\DefaultWidthofChoiceMenu	4415, 10088, 10539, 10876	\divide .....	7126, 8553
\DeclareFontEncoding ...	11875, 12268	\DefaultWidthofReset ....	4411, 10222, 10694, 11044	\DJ ...	2477, 12136, 12636, 14155
\DeclareFontFamily ..	628, 633, 2009	\DefaultWidthofSubmit ...	4409, 10204, 10671, 11020	\dj ....	2474, 2475, 12638, 14148
\DeclareFontShape	629, 634, 2010	\DefaultWidthofText	4418, 10060, 10510, 10839	\do .....	910, 1842, 1847, 1852, 2668, 2689, 2690, 2691, 2692, 2707, 2708, 2709, 2710, 2711, 2712, 2715, 2716, 2717, 2718, 2719, 2720, 2723, 2724, 2727, 2728, 2729, 2730, 2731, 2734, 2735, 2736, 2737, 2738, 2741, 2742, 2743, 2744, 2745, 2748, 2749, 2750, 2751, 2752, 2755, 2756, 2759, 2760, 2761, 2764, 2765, 2771, 2772, 2773, 2774, 2870, 2871, 2872, 2873, 2874, 2875, 3776, 5328, 5768, 5791, 10093, 10155, 10361, 10368, 10378, 10544, 10607, 10881, 10945, 11640
\DeclareFontSubstitution	. 630, 635, 2011	\define@key ..	1825, 1827, 1870, 1885, 1888, 1891, 1895, 1899, 1903, 1907, 1911, 1915, 1919, 1922, 1925, 1942, 1954, 1956, 1959, 1962, 1979, 1983, 1986, 1989, 1992, 1995, 1998, 2030, 2087, 2107, 2108, 2122, 2125, 2128, 2131, 2134, 2142, 2145, 2148, 2151, 2155, 2183, 2199, 2204, 2207, 2210, 2213, 2217, 2220, 2227, 2256, 2272, 2275, 2501, 2532, 2540, 2548, 2555, 2558, 2573, 2576, 2579, 2583, 2611, 2616, 2620, 2623, 2630, 2642, 2650, 2653, 2656, 2658, 2661, 2670, 2680, 2687, 2694, 2695, 2767, 2776, 2779, 2780, 2781, 2782, 2783, 2789, 2795, 2796, 2797, 2798, 2818, 2825, 2832, 2833, 2836, 2839, 2842, 2845, 2848, 2851, 2854, 2877, 2880, 2883, 3728, 3816, 3872, 4174, 4179, 4191, 4228, 4231, 4234, 4237, 4240, 4243, 4246, 4250, 4253, 4256, 4259, 4262, 4265, 4268, 4271, 4274, 4277, 4280, 4283, 4286, 4289, 4292, 4310, 4316, 4330, 4346, 4352, 9042, 9044, 9047, 9049, 9051, 9060, 9068, 9075, 9077, 9079, 9081, 9083, 9085, 9094, 9104, 9106, 9108, 9109, 9115, 9124, 9126, 9128, 9130, 9132, 9134, 9136, 9138, 9140, 9142, 9144,		
\DeclareRobustCommand ...	3400, 3401, 3491, 3508, 3510, 3512, 3521, 4357, 4360, 4363, 4366, 4369, 4372, 4375, 6538, 6564, 6583			\documentclass .....	2
\DeclareTextAccent	11876, 11877, 11878, 11879, 11880, 11881, 11882, 11883, 11884, 11885, 11886, 11887			\dospecials .....	11645
\DefaultHeightofCheckBox	4412, 10249, 10722, 11077			\dots .....	413
\DefaultHeightofChoiceMenu ..	. 4414, 10089, 10540, 10877			\dp .	4402, 4405, 5471, 7453, 7521, 7550, 7580, 9006, 9009, 9563, 9823, 10825
\DefaultHeightofReset ...	4410, 10223, 10695, 11045			\dvipdfm@setdim ..	10822, 10864, 10956, 10977, 11009, 11035, 11064, 11091
\DefaultHeightofSubmit ...	4408, 10205, 10672, 11021			<b>E</b>	
\DefaultHeightofText ....	4416, 10065, 10515, 10844			\ECIRCUMFLEX	14156, 14240, 14241, 14242, 14243, 14244
\DefaultHeightofTextMultiline	. 4417, 10063, 10513, 10842			\ecircumflex	14149, 14180, 14181, 14182, 14183, 14184
\DefaultOptionsofCheckBox	4422, 10252, 10725, 11080			\EdefEscapeString .....	613
				\EdefUnescapeString .....	610
				\egroup ..	506, 8178, 8752, 10308, 10400, 10425
				\em .....	444

<code>\emph</code> .....	423	<code>\Field@toks</code> ..	4214, 4215, 4217, 10069, 10100, 10177, 10203, 10221, 10250, 10300, 10317, 10328, 10339, 10349, 10366, 10384, 10392, 10397, 10413, 10422, 10519, 10551, 10642, 10670, 10693, 10723, 10848, 10888, 10986, 11019, 11043, 11078	10608, 10882, 10946
<code>\empty</code> .....	892, 2586	<code>\Field@Width</code> .....	4154, 4248	<code>\Fld@choices</code> ..
<code>\enc@html</code> .....	4178, 4181	<code>\figureautorefname</code> ..	2282, 2300, 2318, 2336, 2354, 2372, 2390, 2420, 2448, 2466, 6689	4044, 4052, 4054, 4058, 4067, 4075, 4080, 4128, 4130, 4138, 4139, 11339
<code>\enc@update</code> .....	398	<code>\filename@area</code> .....	3657	<code>\Fld@color</code> ...
<code>\END</code> ...	991, 992, 1017, 1018, 1033, 1034, 1051, 1052, 1069, 1070, 1442, 1448, 1453, 1537, 1539, 7242, 7255, 7259, 7265, 7278, 7282, 7287, 7299, 7303	<code>\filename@base</code> .....	3657	4159, 4293, 11226, 11338, 11366, 11403
<code>\end</code> .....	14339	<code>\filename@ext</code> ..	3654, 3655, 3657, 3658	<code>\Fld@default</code> .....
<code>\endeqnarray</code> ...	5274, 5292, 5299	<code>\filename@parse</code> .....	3653	4069, 4072, 4074, 4272, 10058, 10075, 10086, 10127, 10246, 10298, 10316, 10330, 10338, 10345, 10371, 10381, 10411, 10421, 10508, 10526, 10537, 10579, 10719, 10837, 10855, 10874, 10916, 11074, 11367, 11368, 11404
<code>\endequation</code> .....	5237, 5269	<code>\find@pdfink</code> ..	6929, 6966, 6975	<code>\Fld@disabledfalse</code> .....
<code>\endForm</code> .....	4168	<code>\Fld@@additionalactions</code> ..	11258, 11301, 11305	4152
<code>\endinput</code> ..	64, 2119, 2159, 2160, 2173, 2177, 2178, 2187, 2188, 2194, 2195, 3105, 3205, 6454, 8700, 9858, 11746	<code>\Fld@additionalactions</code> ..	11258, 11340, 11372, 11406	<code>\Fld@export</code> ..
<code>\endlinechar</code> .....	3422	<code>\Fld@align</code> ...	4158, 4275, 11208, 11315, 11380	3881, 3884, 3891, 4183
<code>\endNoHyper</code> .....	4526	<code>\Fld@annotflags</code> ....	3936, 3938, 11204, 11234, 11311, 11344, 11376, 11411, 11445	<code>\Fld@findlength</code> ..
<code>\EndPreamble</code> .....	9861	<code>\Fld@bcolor</code> ..	4160, 4287, 11219, 11221, 11331, 11333, 11359, 11361, 11384, 11396, 11398	10348, 10359
<code>\endsubeqnarray</code> ....	5303, 5314	<code>\fld@bcolor</code> .....	11319	<code>\Fld@flags</code> .....
<code>\eqnarray</code> ....	5273, 5275, 5296	<code>\Fld@bordercolor</code> ...	4161, 4290, 11215, 11217, 11241, 11249, 11251, 11318, 11327, 11329, 11355, 11357, 11383, 11392, 11394, 11418, 11426, 11428, 11452, 11460, 11462	3950, 3952, 3963, 3965, 3979, 3981, 4011, 4013, 4036, 4038, 11207, 11237, 11314, 11347, 11379, 11414, 11448
<code>\equal</code> .....	5849	<code>\Fld@bordersep</code> ....	4162, 4269	<code>\Fld@format@code</code> ..
<code>\equation</code> ..	5236, 5245, 5249, 5258	<code>\Fld@borderstyle</code> ...	4164, 4266, 11209, 11239, 11316, 11349, 11381, 11416, 11468	4295, 11263, 11265
<code>\equationautorefname</code> ..	2279, 2297, 2315, 2333, 2351, 2369, 2387, 2405, 2406, 2445, 2463, 6682, 6686	<code>\Fld@borderwidth</code> ...	4163, 4263, 4396, 4399, 4400, 4403, 4404, 10143, 10144, 10595, 10596, 10932, 10933, 11209, 11239, 11316, 11349, 11381, 11416, 11468	<code>\Fld@getmethodfalse</code> ....
<code>\errmessage</code> .....	2498	<code>\Fld@calculate@code</code> ..	4297, 11271, 11273	4202
<code>\es@roman</code> .....	466	<code>\Fld@cbsymbol</code> ..	4165, 4281, 11223	<code>\Fld@getmethodtrue</code> .....
<code>\escapechar</code> ..	383, 5321, 11663, 11664, 11713	<code>\Fld@charsize</code> ..	4155, 4156, 4260, 10142, 10594, 10931, 11225, 11337, 11365, 11402, 11450	4204
<code>\eTeX</code> .....	419, 9866	<code>\Fld@checkedfalse</code> .....	4151	<code>\Fld@height</code> ..
<code>\etex@unexpanded</code> ...	1197, 1204	<code>\Fld@checkequals</code> ..	4220, 10094, 10156, 10369, 10379, 10545,	4257, 10061, 10078, 10089, 10145, 10160, 10170, 10205, 10223, 10249, 10258, 10511, 10530, 10540, 10597, 10622, 10635, 10672, 10695, 10722, 10733, 10840, 10857, 10877, 10934, 10944, 10971, 11021, 11045, 11077, 11085
<code>\eTeXversion</code> ...	7085, 7087, 7089			<code>\Fld@hiddenfalse</code> .....
<code>\evensidemargin</code> .....	5939			3839
<code>\ExecuteOptions</code> ..	2941, 2942, 2946			<code>\Fld@hiddentrue</code> .....
<code>\ext@figure</code> .....	6262			3840
<code>\ext@table</code> .....	6261			<code>\Fld@invisiblefalse</code> ....
<code>\extra@b@citeb</code> .....	5775			3835
<code>\extrasvietnam</code> .....	2541			<code>\Fld@invisibletrue</code> .....
<code>\extrasvietnamese</code> .....	2533			3836
				<code>\Fld@keystroke@code</code> ..
				4298, 11259, 11261
				<code>\Fld@listcount</code> ...
				10154, 10157, 10166, 10606, 10609, 10623, 10629, 10943, 10947, 10951, 10955, 10963, 10968
				<code>\Fld@loc</code> .....
				4229
				<code>\Fld@maxlen</code> ..
				4157, 4251, 11407
				<code>\Fld@menulength</code> ....
				4153, 4254, 10091, 10095, 10142, 10360, 10361, 10364, 10542, 10546, 10594, 10879, 10883, 10931
				<code>\Fld@name</code> ...
				4244, 10057, 10085, 10175, 10245, 10297, 10302, 10313, 10314, 10325, 10326, 10335, 10336, 10344, 10365, 10382, 10390, 10395, 10410, 10419, 10507, 10536, 10640,

## F

`\fa` .....

`\FancyVerbLineautorefname` ..

`\farsikaf` .....

`\farsiya` .....

`\fatha` .....

`\fbox` .....

`\Field@addtoks` ..

`\Field@boolkey` ..



7454, 7461, 7522, 7533, 7551, 7562, 7581, 7592, 8721, 9009, 9020, 9564, 9571, 9824, 9832, 10437, 10856, 10944, 10971, 11000, 11029, 11059, 11085	\hvtex@produce@trans 8483, 8489 \hvtex@token . . 8441, 8452, 8458, 8465, 8470, 8473, 8476, 8478 \hvtex@trans@code . . 8428, 8429, 8430, 8431, 8432, 8433, 8434, 8445, 8491, 8492, 8494, 8496, 8498, 8500, 8502, 8504, 8506, 8507, 8508, 8509, 8510, 8512 \hvtex@trans@effect@Blinds . . . . . . . 8428 \hvtex@trans@effect@Box . 8429 \hvtex@trans@effect@Dissolve . . . . . . 8430 \hvtex@trans@effect@Glitter . . . . . . 8431 \hvtex@trans@effect@R . . . 8434 \hvtex@trans@effect@Split 8432 \hvtex@trans@effect@Wipe 8433 \hvtex@trans@par . . 8465, 8469, 8471, 8474, 8477 \hvtex@trans@params 8459, 8461, 8485 \Hy@boolkey . . . . . 1796, 1797 \Hy@DefNameKey . . . 1867, 1869 \Hy@escapeform . . 11159, 11172, 11177 \Hy@temp . 2627, 2629, 4306, 4308 \Hy@abspage 4709, 4774, 4884, 4923 \Hy@Acrobatmenu 2983, 3024, 7365, 7969, 8401, 9168 \Hy@activeanchorfalse . . 3420, 6959, 7411, 7425, 7494, 7503, 7779, 8164, 8180, 8248, 8260, 8715, 9521, 9535, 9782, 9795 \Hy@activeanchortrue 6958, 7408, 7421, 7492, 7500, 7775, 8160, 8177, 8246, 8257, 8705, 9518, 9531, 9779, 9791 \Hy@ActiveCarriageReturn 3453, 3456 \Hy@appendixstring . 5056, 5063 \Hy@author . . . . . 4623, 4627 \Hy@babelnormalise . 3522, 3524 \Hy@backout 3416, 4511, 4515, 5651 \Hy@backreffalse 288, 2247, 2266, 3113 \Hy@backreftrue 2240, 2244, 2263 \Hy@bibcite . . . . . 5674, 5678 \Hy@bookmarksdepth . 2582, 2587, 2599, 2605, 11485 \Hy@bookmarksnumberedfalse 289 \Hy@bookmarksopenfalse . . 290 \Hy@bookmarkstrue . . . . . 291 \Hy@bookmarkstype . . 2617, 2619, 5988, 11496 \Hy@boolkey . . 1796, 1886, 1889, 1892, 1920, 1923, 1926, 1957,	1960, 1963, 1980, 1984, 1987, 1990, 1993, 1996, 1999, 2218, 2221, 2273, 2556, 2559, 2574, 2577, 2580, 2621, 2624, 2662, 2777, 2834, 2837, 2840, 2843, 2846, 2849, 2852, 2860, 2881, 2884 \Hy@BorderArrayPatch 9055, 9058, 9297, 9714 \Hy@breaklinks@unsupported . . . . . . . 1968, 6867 \Hy@breaklinksfalse . . . . . 292 \Hy@breaklinksunhbox 8996, 9012 \Hy@CatcodeWrapper . 3292, 3351, 3395, 3408 \Hy@centerwindowfalse . . . . 293 \Hy@chapapp . . 5057, 5063, 5070, 11761, 11772, 11846 \Hy@chapterstring . . 5052, 5054, 5057, 5069 \Hy@CheckOptionValue 1837, 1874 \Hy@CJKbookmarksfalse . . . . 294 \Hy@cjkpu . . . . . 903, 905, 924 \Hy@colorlink . 3355, 3363, 3367, 6873, 6951, 7006, 7042, 7077, 7386, 7409, 7430, 7458, 7467, 7493, 7507, 7528, 7540, 7558, 7570, 7588, 7600, 7857, 7912, 7943, 7965, 7986, 8247, 8267, 8324, 8343, 8370, 8397, 8413, 8723, 8980, 8982, 9519, 9540, 9568, 9577, 9780, 9800, 9829, 9837 \Hy@ColorList . . . . . 2667, 2668 \Hy@CounterExists . . 4953, 4966, 4969 \Hy@currentbookmarklevel 11491, 11501, 11502, 11508, 11515, 11549, 11552, 11557, 11561 \Hy@defaultdriver . . 3190, 3214, 3220 \Hy@DefFormAction . . 4175, 4177 \Hy@DefNameKey 1866, 2688, 2706, 2714, 2722, 2726, 2733, 2740, 2747, 2754, 2758, 2763, 2770, 2869 \Hy@DEST . . . . . 8997, 9022 \Hy@DestName . . . . . 6919, 6923 \Hy@DisableOption . . 1823, 2976, 2977, 2978, 2980, 3094, 3120, 3243, 3244, 3245, 3246, 3247, 3248, 3249, 3250, 3251, 3252, 3253, 3254, 3255, 3256, 3257, 3258, 3259, 3261, 3291, 3344, 3372, 3373, 3418, 3419, 4472, 4473, 4474, 4475, 4476, 4477, 4478, 4479, 4480, 4481, 4482,
\hc@currentHref . . . . . 5568 \HCode 10289, 10291, 10302, 10311, 10323, 10331, 10333, 10364, 10370, 10375, 10380, 10394, 10399, 10403, 10406, 10415 \headerps@out . 4898, 9288, 9299, 9359, 9373, 9426, 9435, 9448, 9461, 9499, 9602, 9716, 9873 \hfill . . . 4390, 4391, 4392, 4393, 5696, 5729 \Hfootnoteautorefname . . . 6683 \hhyperref . . . . . 3710 \hoffset . . . . . 5935 \href . 481, 3491, 3704, 3705, 4551 \href@ . . . . . 3492, 3495, 3500 \href@split . . . . . 3500, 3501 \hsize . . . . . 5473 \hskip . . . 1268, 1346, 1786, 1787, 4396, 10437 \hspace . . . . . 477, 5855, 5856 \hss . . . . . 5943 \ht . 4398, 4401, 7459, 7525, 7531, 7537, 7554, 7560, 7566, 7584, 7590, 7596, 9005, 9569, 9830, 10823 \htmladding . . . . . 3703 \htmladdnormallink . . . . 3704 \htmladdnormallinkfoot . . 3705 \htmlref . . . . . 3706 \Huge . . . . . 446 \huge . . . . . 450 \Hurl . . . . . 3507, 3509, 3511 \hv@pdf@char 11571, 11634, 11635, 11636, 11637 \hvtex@buffer . 8439, 8442, 8450, 8453, 8462, 8466, 8482 \hvtex@gettoken 8439, 8451, 8455, 8464, 8468 \hvtex@gettoken@ . . 8439, 8440 \hvtex@par@dimension 8435, 8474 \hvtex@par@direction 8436, 8477 \hvtex@par@duration 8437, 8469 \hvtex@par@motion . . 8438, 8471 \hvtex@param@dimension . . 8446, 8475, 8493, 8496 \hvtex@param@direction . . 8447, 8478, 8504, 8512 \hvtex@param@duration . . . 8448, 8470, 8517, 8519 \hvtex@param@motion 8449, 8472, 8493, 8500 \hvtex@parse@trans . 8424, 8444		



4483, 4484, 4485, 4486, 4487,  
 4488, 4489, 4490, 4491, 4492,  
 4493, 4494, 4495, 4647, 4842,  
 5520, 6151, 6207, 6208, 6799,  
 6900, 7229, 7230, 7231, 7232,  
 7233, 7234, 7235, 7236, 7362,  
 7626, 7627, 7628, 7629, 7630,  
 7631, 7632, 7633, 7884, 8021,  
 8022, 8023, 8024, 8025, 8026,  
 8027, 8028, 8096, 8232, 8641,  
 8642, 8643, 8644, 8645, 8646,  
 8647, 8648, 8872, 8873, 8874,  
 8875, 8876, 8877, 8878, 8879,  
 9352, 9626, 9627, 9628, 9629,  
 9630, 9631, 9632, 9633  
 \Hy@displaydoctitlefalse . 322  
 \Hy@DistillerDestFix 5913, 8652,  
 8654  
 \Hy@draftfalse . . . . . 254  
 \Hy@drafttrue . . . . . 255  
 \Hy@driver 327, 1973, 2112, 2123,  
 2126, 2129, 2132, 2143, 2146,  
 2149, 2152, 2163, 2166, 2191,  
 2200, 2205, 2208, 2214, 3123,  
 3126, 3130, 3133, 3137, 3140,  
 3142, 3146, 3150, 3154, 3157,  
 3161, 3165, 3169, 3172, 3176,  
 3179, 3181, 3185, 3189, 3192,  
 3195, 3198, 3209, 3212, 3214,  
 3220, 3222, 3227, 3229, 3231  
 \Hy@DvipdfmxOutlineOpentru .  
 . . . . . 3240  
 \Hy@endcolorlink . . . 3359, 3364,  
 3368, 6882, 6956, 7409, 7444,  
 7462, 7469, 7493, 7515, 7529,  
 7541, 7558, 7570, 7588, 7600,  
 7866, 7915, 7943, 7965, 7986,  
 8247, 8307, 8324, 8343, 8370,  
 8397, 8413, 8749, 8989, 9519,  
 9554, 9572, 9579, 9780, 9814,  
 9829, 9837  
 \Hy@endWrap 3293, 3295, 3296, 3329  
 \Hy@escapeform . . . 10077, 10159,  
 10169, 10194, 10213, 10237,  
 10257, 10528, 10612, 10633,  
 10660, 10681, 10709, 10731,  
 10861, 10950, 10973, 11006,  
 11031, 11060, 11088, 11153,  
 11182, 11189  
 \Hy@escapeformfalse . . . . . 295  
 \Hy@escapestring . 11150, 11223,  
 11255, 11261, 11265, 11269,  
 11273, 11277, 11281, 11285,  
 11289, 11293, 11297, 11404,  
 11405, 11436  
 \Hy@EveryPageAnchor 5912, 5950  
 \Hy@EveryPageBoxHook 4673, 4677,  
 4681, 5949, 8543, 8807  
 \Hy@EveryPageHook . . 4672, 4676,  
 4840, 7306  
 \Hy@ExchangeLeftParenthesis .  
 . . . . . 6733, 6739  
 \Hy@ExchangeRightParenthesis .  
 . . . . . 6743, 6749  
 \Hy@false . 1732, 1804, 2232, 2265  
 \Hy@figuresfalse . . . . . 296  
 \Hy@finalfalse . . . . . 255  
 \Hy@finaltrue . . . . . 254  
 \Hy@FirstPage . . . . . 2994  
 \Hy@FirstPageHook . . 4674, 4687,  
 4689, 4896, 4897, 9298, 9372,  
 9434, 9715, 9872  
 \Hy@fitwindowfalse . . . . . 297  
 \Hy@float@caption . . 5558, 5599,  
 5601  
 \Hy@float@currentHref . . . 5602,  
 5604, 5606, 5614, 5616, 5617  
 \Hy@footnote@currentHlabel . .  
 . . 5395, 5409, 5441, 5483  
 \Hy@footnote@currentHref 4467,  
 5379, 5382, 5390, 5393, 5396,  
 5410, 5413, 5440, 5481, 5484  
 \Hy@Gin@setfile . . . . 6146, 6148  
 \Hy@GlobalStepCount . . . . .  
 . . . . . 325, 4774, 5095,  
 5175, 5927, 6066, 6317, 6368,  
 11475, 11760, 11771, 11803,  
 11812, 11845  
 \Hy@gtemp . . 624, 625, 4074, 4075,  
 4079, 4080, 4091, 4105, 6757,  
 6759, 11198, 11200  
 \Hy@href . . . . . 3492, 3494  
 \Hy@hyperfootnotesfalse . 5352  
 \Hy@hyperfootnotestrue . . . 298  
 \Hy@hyperindextrue . . . . . 299  
 \Hy@hypertexnamesfalse . . 1688  
 \Hy@hypertexnamestrue . . . . 300  
 \Hy@implicittrue . . . . . 301  
 \Hy@Info . . 239, 1812, 3064, 3066,  
 3069, 3071, 3074, 3076, 3079,  
 3081, 3084, 3086, 3276, 3282,  
 3360, 3365, 3369, 3783, 4429,  
 4431, 4434, 4436, 4439, 4441,  
 4444, 4446, 4449, 4451, 4454,  
 4456, 4459, 4461, 5752, 5813,  
 5993  
 \Hy@LastPage . . . . . 2997  
 \Hy@level . . 11497, 11499, 11510,  
 11515, 11516, 11517, 11541  
 \Hy@levelcheck . . . 11498, 11513  
 \Hy@linkcounter . . . . .  
 . . 329, 331, 5095, 5096, 5175,  
 5176, 6066, 6067, 6092, 6317,  
 6318, 6322, 6368, 6369, 6373,  
 11475, 11476, 11760, 11761,  
 11771, 11772, 11803, 11804,  
 11812, 11813, 11845, 11846  
 \Hy@linkfileprefix . 2652, 3642,  
 3663, 7447, 8131, 9557, 9817  
 \Hy@linktoc . . 1928, 1930, 1938,  
 1940, 1950, 6024  
 \Hy@linktoc@all . . . . . 1936  
 \Hy@linktoc@none . . . . . 1933  
 \Hy@linktoc@page . . . 1928, 1935,  
 1938  
 \Hy@linktoc@section 1930, 1934,  
 1940  
 \Hy@linktocpagefalse . . . . . 302  
 \Hy@LT@currentHlabel 5213, 5224  
 \Hy@LT@currentHref . 5214, 5225  
 \Hy@LT@footnotetext 5438, 5448  
 \Hy@make@anchor 6065, 6072, 6078  
 \Hy@make@df@tag@@ . . 6070, 6085  
 \Hy@make@df@tag@@@ . 6076, 6086  
 \Hy@maketitle@end . . 5497, 5502,  
 5504  
 \Hy@maketitle@optarg 5495, 5500  
 \Hy@MaybeStopNow . . . 2154, 2159,  
 2177, 2187, 2194, 2947  
 \Hy@menubartrue . . . . . 303  
 \Hy@naturalnamesfalse . . . . 304  
 \Hy@nestingfalse . . . . . 305  
 \Hy@newline@author . . . . . 4666  
 \Hy@newline@title . . . . . 4665  
 \Hy@newwindowfalse . . . . . 307  
 \Hy@newwindowsetfalse 306, 2857  
 \Hy@newwindowsettrue . . . . 2859  
 \Hy@next 4790, 4800, 4805, 11770,  
 11780, 11783  
 \Hy@nextfalse . . . . . 3026, 6155  
 \Hy@NextPage . . . . . 2988  
 \Hy@nexttrue . . 3027, 3028, 3029,  
 6156, 6157  
 \Hy@number . . . . . 2810, 2814, 2822  
 \Hy@numberline . . . 11492, 11529,  
 11530, 11531  
 \Hy@ocgcolor . . 6876, 6890, 7860,  
 7874  
 \Hy@ocgcolorlinksfalse . . 3339  
 \Hy@org@chapter . . 11768, 11784  
 \Hy@OutlineName . . 11674, 11727  
 \Hy@pageanchortrue . . . . . 308  
 \Hy@pagecounter . 330, 332, 5133,  
 5927, 5928  
 \Hy@pageheight 1897, 1901, 1905,  
 1909, 1913, 1917, 2937, 9374,  
 9462  
 \Hy@pagelabelsfalse . . . . 4696  
 \Hy@pagelabelstrue . . . . . 309  
 \Hy@param 5068, 5069, 5070, 5092,  
 5096

\Hy@PatchLanguageShorthands . . . . . 3035, 3054	\Hy@RemoveHidPageAttr . . . 7287, 7299	\Hy@setpdfborder . . . 2696, 6941, 6986, 7017, 7053, 7368, 7901, 7930, 7954, 7979, 8279, 8296, 8317, 8336, 8363, 8390, 8406
\Hy@pdfafalse . . . . . 323	\Hy@RemovePercentCr 3469, 3473, 3478	\Hy@setpdfversiontrue . . . 2094
\Hy@pdfencoding@pdfdoc . . 2069	\Hy@RemoveTransPageAttr . 7241, 7255	\Hy@setref@link . . . . 6465, 6468
\Hy@pdfmarkerrorfalse . . . 8960	\Hy@reserved@a 3578, 5276, 5305, 10296, 10346, 10409	\Hy@slidetitle 6294, 6296, 6303, 6311, 6321, 6345, 6347, 6354, 6362, 6372
\Hy@pdfmarkerrortrue 9088, 9097	\Hy@RestoreCatcodes 205, 2943, 3233	\Hy@StartlinkName . . 6939, 6953
\Hy@pdfminorversion 6766, 6772, 6775, 6783, 6788, 6790, 6793, 6797	\Hy@RestoreLastskip 1754, 6920, 7412, 7426, 7495, 7504, 7766, 8165, 8181, 8249, 8261, 8698, 8716, 9522, 9536, 9783, 9796	\Hy@StepCount . 324, 4751, 10095, 10157, 10361, 10546, 10609, 10883, 10947, 11553, 11558, 11619
\Hy@pdfpagehiddenfalse . . . 310	\Hy@ReturnAfterElseFi 333, 3457	\Hy@temp . . . . . 520, 527, 2626, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2668, 2669, 2670, 2673, 2675, 2678, 2855, 2856, 3015, 3019, 3020, 3021, 3022, 3128, 3130, 3135, 3137, 3140, 3152, 3154, 3159, 3161, 3167, 3169, 3174, 3176, 3179, 3221, 3222, 3773, 3777, 3778, 3789, 3873, 3874, 3875, 3877, 3881, 4192, 4193, 4194, 4196, 4200, 4201, 4305, 4321, 4322, 4323, 4324, 4325, 4326, 4327, 4328, 4329, 4334, 4335, 4336, 4337, 4338, 4339, 4340, 4341, 4342, 4343, 4344, 4731, 4734, 4743, 4745, 4749, 4753, 4797, 4799, 5127, 5130, 5133, 5139, 5239, 5245, 6216, 6217, 7168, 7197, 7199, 7643, 7648, 7654, 7658, 7661, 7666, 7697, 7699, 8031, 8074, 8076, 8843, 8846, 8850, 8851, 8857, 8858, 8864, 8882, 8887, 8893, 8897, 8900, 8905, 8938, 8940, 9052, 9053, 9061, 9062, 9636, 9641, 9647, 9651, 9654, 9659, 9692, 9694, 11158, 11159, 11671, 11677, 11685, 11700
\Hy@pdfstringdef 623, 4049, 4057	\Hy@ReturnAfterElseFiFiEnd 337, 1231	\Hy@temp@a . 551, 552, 1215, 1217, 1228, 1230, 1235, 1236, 1239, 6168, 6169, 6170, 6187, 6188, 6189
\Hy@pdfstringfalse . . 311, 4497	\Hy@ReturnAfterFi 333, 353, 1409, 3461, 3477, 6219, 6255, 6738, 6748, 11176	\Hy@temp@B . . . . . 1216, 1217
\Hy@pdfstringtrue . . . 493, 4469	\Hy@ReturnAfterFiFiEnd . . . 336, 1223, 1237, 1315, 1322	\Hy@tempa 1798, 1799, 1800, 1802, 1804, 1806, 1809, 1812, 1813, 2228, 2229, 2230, 2232, 2233, 2235, 2236, 2238, 2242, 2246, 2257, 2258, 2259, 2261, 2265, 3455, 3456, 3467, 3471, 3527, 3531, 3583, 3586, 3595, 3597, 4180, 4181, 4780, 4782, 4820, 4822, 4923, 4925, 5323, 5325,
\Hy@pdfversion 2095, 2106, 4051, 6788, 6790, 6794, 6797, 11193	\Hy@ReturnEnd 335, 336, 337, 1243, 1327	
\Hy@plainpagesfalse . . . . 312	\Hy@safe@activesfalse 338, 3385, 3390, 3592, 6599	
\Hy@PrevPage . . . . . 2991	\Hy@safe@activetrue 338, 3383, 3388, 3449, 3486, 3526, 3584, 6509, 6588	
\Hy@ps@CR 9416, 9423, 9428, 9429, 9446, 9466, 9467, 9468, 9474, 9481, 9488, 9495	\Hy@samed@currentHlabel . 5406, 5411	
\Hy@pstringB . . 7153, 7158, 8059, 8071, 8933, 8949, 9687, 9703	\Hy@samed@currentHref . . . 5407, 5412	
\Hy@pstringD . . 7013, 7037, 7923, 7938, 9233, 9249	\Hy@samed@footnotemark . . 5491, 5506	
\Hy@pstringdef 6703, 6918, 6935, 6981, 7012, 7013, 7048, 7049, 7153, 7719, 7892, 7922, 7923, 7947, 8059, 8266, 8329, 8377, 8378, 8933, 9086, 9095, 9214, 9232, 9233, 9257, 9258, 9687, 11175, 11673, 11689	\Hy@samed@footnotetext . . 5492, 5509	
\Hy@pstringDest 6918, 6919, 7719, 7764, 9086, 9087, 9091, 9095, 9096, 9100	\Hy@samed@hook . . . . . 4651, 4661	
\Hy@pstringF . . 7012, 7031, 7048, 7067, 7072, 7922, 7937, 8377, 8384, 8386, 9232, 9248, 9257, 9273, 9276	\Hy@SaveLastskip . . . 1754, 6917, 7401, 7415, 7487, 7498, 7717, 8153, 8168, 8240, 8252, 8689, 8702, 9512, 9525, 9773, 9786	
\Hy@pstringName . . 11673, 11674, 11689, 11703	\Hy@scanauthor . . . . . 4621, 4626	
\Hy@pstringP . . 7049, 7072, 8378, 8386, 9258, 9276	\Hy@scanoptauthor . . 4621, 4622	
\Hy@pstringURI 6981, 7002, 7947, 7961, 8266, 8276, 8329, 8333, 9214, 9224	\Hy@scanopttitle . . . 4612, 4613	
\Hy@PutCatalog . 4836, 4844, 4912	\Hy@scantitle . . . . . 4612, 4617	
\Hy@raisedlink . . . . . 1739, 5045, 5178, 5184, 5185, 5186, 5189, 5226, 5266, 5269, 5381, 5392, 5453, 5480, 5592, 5662, 5686, 5691, 5711, 6068, 6093, 9286, 9357, 9598, 9758, 11477, 11762, 11773, 11805, 11817, 11847	\Hy@secnum@part . . 11790, 11792, 11795	
\Hy@raiselinksfalse . 313, 5814	\Hy@seminarslidesfalse . . 6267	
\Hy@RemoveDurPageAttr . . . 7265, 7278	\Hy@seminarslidestrue . . . 6265	
	\Hy@setbreaklinks . . 1965, 1969, 1981, 6765, 7713	
	\Hy@SetCatcodes . 181, 231, 2945	
	\Hy@SetNewWindow . . . 2863, 7033, 7069, 7939, 8385, 9247, 9272	
	\Hy@setouterhbox . . . 8995, 9001	
	\Hy@setpagesizetrue . . . . . 314	

5326, 5329, 5330, 5331, 5553,  
5558, 5563, 5987, 5988, 6005,  
6006, 6009, 6281, 6282, 6333,  
6334, 7431, 7432, 8134, 8273,  
8274, 9541, 9542, 9801, 9802,  
11495, 11496, 11519, 11521,  
11537, 11542, 11835, 11861,  
11866, 11869, 11872  
\Hy@tempb 4781, 4782, 4821, 4822,  
11520, 11521, 11542  
\Hy@tempcolor . 8731, 8733, 8746,  
8818, 8820, 8828  
\Hy@TempPageAnchor . 5917, 5924,  
5928, 5942  
\Hy@testname . . 6931, 6932, 6933,  
6935, 6936, 6950, 7888, 7889,  
7890, 7892, 7893, 7908, 8287,  
8288, 8289, 8293, 8354, 8355,  
8356, 8360, 8823, 8824, 8825,  
8836  
\Hy@texhtfalse . . . . . 315  
\Hy@texhttrue . . . . . 2109, 3124  
\Hy@title . . . . . 4614, 4618  
\Hy@toclevel . . . 5998, 6002, 6011  
\Hy@toolbartrue . . . . . 316  
\Hy@true . 1731, 1800, 1802, 2259,  
2261  
\Hy@typexmlfalse . . . . . 317  
\Hy@undefinedname . . 6928, 6933,  
7886, 7890, 8264, 8289, 8356,  
8815, 8825  
\Hy@unicodfalse 318, 615, 2025,  
2026, 2034, 2785, 2791, 5129,  
5921, 11195  
\Hy@unicodetrue . . . . . 2026  
\Hy@useHidKeyfalse . . . . 2660  
\Hy@useHidKeytrue . . . . . 2664  
\Hy@UseMaketitleInfos . . 4667,  
7209, 7608, 7999, 8631, 8842,  
9608  
\Hy@UseMaketitleString . . 4648,  
4668, 4669  
\Hy@UseNameKey 1879, 7175, 7176,  
7177, 7178, 7179, 7180, 7181,  
7182, 7201, 7673, 7674, 7675,  
7676, 7677, 7678, 7679, 7680,  
7701, 8038, 8039, 8040, 8041,  
8042, 8043, 8044, 8045, 8078,  
8604, 8605, 8606, 8607, 8608,  
8609, 8610, 8611, 8912, 8913,  
8914, 8915, 8916, 8917, 8918,  
8919, 8942, 9666, 9667, 9668,  
9669, 9670, 9671, 9672, 9673,  
9696  
\Hy@usetitlefalse . . . . . 319  
\Hy@variorefundefined . . 5195,  
5199, 6594  
\Hy@verbosefalse . . . . . 320  
\Hy@vt@PutCatalog . . 4867, 4869  
\Hy@VTeXversion 4847, 4859, 8313,  
8417, 8551, 11573  
\Hy@Warning 237, 360, 1155, 1817,  
1832, 1857, 1944, 2053, 2058,  
2565, 2595, 3335, 3598, 3830,  
5979, 6575, 6624, 7750, 7754,  
9089, 9098, 11504, 11522  
\Hy@WarningNoLine . . 238, 1971,  
2079, 2646, 2684, 2930, 2974,  
3132, 3141, 3156, 3171, 3180,  
3673, 4595, 4697, 4861, 4937,  
5114, 5989, 6138, 8968  
\Hy@WarningPageBorderColor . .  
. . . . 2681, 2683, 2685  
\Hy@WarningPageColor 2643, 2645,  
2647  
\Hy@WarnOptionDisabled . . 1829,  
1831  
\Hy@WarnOptionValue 1810, 1816,  
2249, 2268  
\Hy@windowuitrue . . . . . 321  
\Hy@writebookmark . . 1736, 5999,  
6301, 6309, 6319, 6352, 6360,  
6370, 11481, 11564  
\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 . . . . . 354, 358  
\HyCal@scan . . . . . 345, 349, 373  
\HyColor@FieldBColor 4287, 4290  
\HyColor@FieldColor . . . . 4293  
\HyColor@HyperrefBorderColor .  
. . . . . 2671  
\HyColor@HyperrefColor . . 2631  
\HyColor@UseColor . . 3357, 6879,  
6890, 7863, 7874  
\HyField@PDFChoices 4069, 4070,  
4085  
\HyField@@SetFlag . . 3763, 3765  
\HyField@@UseFlag . . 3753, 3755  
\HyField@AddToFields . . 10442,  
10449, 10531, 10624, 10637,  
10664, 10689, 10713, 10735  
\HyField@AdvanceAnnotCount . .  
10829, 10859, 10952, 10974,  
11003, 11032, 11061, 11086  
\HyField@afields . 10439, 10450,  
10451, 10453, 10471  
\HyField@AnnotCount . . . 10827,  
10830, 10833  
\HyField@FlagsAnnot 3923, 3942,  
3956, 3969, 3985, 4017  
\HyField@FlagsCheckBox . . 3955,  
10254, 10728, 11083  
\HyField@FlagsChoice . . . 4016,  
10135, 10587, 10924  
\HyField@FlagsPushButton 3941,  
10190, 10210, 10235, 10656,  
10677, 10707, 11001, 11026,  
11057  
\HyField@FlagsRadioButton 3968,  
10131, 10583, 10920  
\HyField@FlagsSubmit . . . 3889,  
10211, 10678, 11027  
\HyField@FlagsText 3984, 10073,  
10524, 10853  
\HyField@NewBitsetFlag . . 3721,  
3724, 3732  
\HyField@NewFlag . . . 3719, 3795,  
3796, 3797, 3798, 3799, 3800,  
3801, 3802, 3803, 3804, 3805,  
3806, 3807, 3808, 3809, 3810,  
3811, 3812, 3813, 3814, 3819,  
3820, 3821, 3822, 3823, 3824,  
3825, 3826, 3827, 3860, 3862,  
3863, 3865, 3866, 3868, 3869,  
3870, 3871  
\HyField@NewFlagOnly 3723, 3861,  
3864, 3867



\HyField@NewOption . 3720, 3726	2520, 2521, 2522, 2523, 2524,	11477, 11565, 11763, 11774,
\HyField@PDFAFlagWarning 3829,	2525, 2526, 2527, 2528, 2529,	11806, 11818, 11848
3837, 3841, 3845, 3849, 3853,	2530, 2531	\hyper@chars . . 3483, 6982, 7404,
3857	\HyLang@english . . . . . 2296	7417, 7436, 7455, 7465, 7478,
\HyField@PDFChoices 4042, 10168,	\HyLang@french . . . . . 2314	7546, 7576, 8120, 8140, 8155,
10631, 10970	\HyLang@german . . . . . 2332	8171, 8243, 8254, 8330, 9215,
\HyField@PrintFlags 3770, 3916,	\HyLang@italian . . . . . 2350	9527, 9546, 9565, 9575, 9588,
3934, 3948, 3961, 3977, 4009,	\HyLang@magyar . . . . . 2368	9788, 9806, 9826, 9835, 9847
4034	\HyLang@portuges . . . . . 2386	\hyper@currentanchor 8704, 8713,
\HyField@SetFlag . . . 3762, 3902,	\HyLang@russian . . . . . 2404	8725, 8742
3908, 3913, 3947, 3975	\HyLang@spanish . . . . . 2444	\hyper@currentlinktype . . 8726,
\HyField@SetKeys . . 4146, 10070,	\HyLang@vietnamese . 2462, 2533,	8730, 8734
10102, 10105, 10124, 10178,	2541	\hyper@hash . . 3437, 3438, 3484,
10207, 10225, 10251, 10520,	\HyOrg@addtoreset . . 6096, 6098,	3634, 3646, 3663, 3666, 4463,
10553, 10556, 10575, 10643,	6125	8114
10674, 10697, 10724, 10849,	\HyOrg@appendix . . . . 5058, 5064	\hyper@image . . 3512, 3513, 7476,
10890, 10893, 10912, 10987,	\HyOrg@author . . 4611, 4624, 4628	8373, 8812, 9586, 9845
11023, 11047, 11079	\HyOrg@float@makebox 5610, 5612	\hyper@last . . . . . 4586, 4590
\HyField@TheAnnotCount . 10832,	\HyOrg@languageshorthands 3044,	\hyper@link . . 2959, 3587, 4502,
10863, 10868, 10955, 10964,	3051, 3057	4503, 4517, 4527, 4532, 6969,
10976, 10981, 11008, 11014,	\HyOrg@make@df@tag@@ . . . . 6083	7473, 7517, 7918, 8111, 8347,
11034, 11039, 11063, 11068,	\HyOrg@make@df@tag@@@ . . . 6084	8816, 9583, 9842
11090, 11095	\HyOrg@maketitle . . . 5489, 5496,	\hyper@link@ . . 2966, 3579, 3581,
\HyField@UseFlag . . . 3752, 3893,	5501	4500, 4510, 4514, 4524, 4539
3894, 3895, 3896, 3897, 3898,	\HyOrg@subequations 5340, 5347	\hyper@linkend 2963, 4507, 4521,
3899, 3900, 3903, 3904, 3905,	\HyOrg@title . . 4610, 4615, 4619	4536, 5415, 5656, 5659, 6028,
3906, 3909, 3910, 3911, 3914,	\HyOrg@url . . . . . 3506	6032, 6036, 6038, 6968, 7442,
3925, 3926, 3927, 3928, 3929,	\hyper@@@anchor 2958, 3516, 3518,	7514, 7914, 7919, 8145, 8305,
3930, 3931, 3932, 3933, 3944,	3544, 3546, 3573, 3575, 3670,	8728, 9552, 9812
3945, 3946, 3958, 3959, 3960,	4501, 4516, 4531, 5379, 5382,	\hyper@linkfile 2965, 3659, 4509,
3971, 3972, 3973, 3974, 3976,	5390, 5393, 5451, 5454, 5481,	4523, 4538, 7010, 7446, 7574,
3987, 3988, 3989, 3990, 3991,	5590, 5592, 5616, 5917, 5924,	7921, 8130, 8309, 9230, 9556,
3992, 3993, 3994, 4005, 4008,	5928, 6300, 6308, 6318, 6351,	9816
4019, 4020, 4021, 4022, 4024,	6359, 6369	\hyper@linkstart . . . 2962, 4506,
4026, 4027, 4030, 4033	\hyper@@@link . . 3489, 3502, 3539,	4520, 4535, 5413, 5652, 5659,
\HyInd@@hyperpage . . 6214, 6224	3558, 3560, 3578, 5670, 5816,	6028, 6032, 6036, 6038, 6960,
\HyInd@@wrintex . . . . 6163, 6164	5817, 5818, 5866, 5868, 5870,	7429, 7506, 7887, 7919, 8133,
\HyInd@EncapChar . . . 2276, 2939,	6470, 6485, 6584	8265, 8718, 9539, 9799
6159	\hyper@@normalise . . 3458, 3462,	\hyper@linkurl 2964, 3511, 3634,
\HyInd@hyperpage . . . 6211, 6213,	3466	3641, 3662, 3666, 4508, 4522,
6220	\hyper@anchor . 3697, 4570, 6957,	4537, 6979, 7447, 7449, 7474,
\HyInd@org@wrintex . 6162, 6166,	7400, 7486, 7771, 8167, 8239,	7544, 7946, 8118, 8131, 8327,
6172, 6174	8688, 9511, 9772	8374, 8813, 9212, 9557, 9559,
\HyInd@pagelink 6229, 6235, 6237,	\hyper@anchorend . . . 2961, 4496,	9584, 9817, 9819, 9843
6240	4505, 4519, 4534, 5046, 5179,	\hyper@livelink . . . . 4502, 4527
\HyInd@ParenLeft . . . 6153, 6169,	5227, 5269, 5288, 5312, 5664,	\hyper@makecurrent . 5042, 5066,
6188	5689, 5692, 5712, 5845, 6068,	5212, 5265, 5287, 5311, 5408,
\HyInd@ParenRight . . 6154, 6170,	6093, 6959, 7423, 7502, 7778,	5570, 5603
6189	8162, 8259, 8707, 9533, 9793,	\hyper@n@rmalise . . . 3450, 3454
\HyInd@removespaces 6243, 6246,	11477, 11565, 11763, 11774,	\hyper@nat@current . . . . 5653
6256	11806, 11818, 11848	\hyper@nat@anchorend . . . . 5664
\HyLang@addto . 2480, 2502, 2533,	\hyper@anchorstart . 2960, 4496,	\hyper@nat@anchorstart . . . 5661
2541	4504, 4518, 4533, 5046, 5179,	\hyper@nat@linkbreak . . . . 5658
\HyLang@afrikaans . . . . . 2278	5227, 5266, 5288, 5312, 5662,	\hyper@nat@linkend . . . . . 5655
\HyLang@DeclareLang 2494, 2509,	5687, 5692, 5712, 5845, 6068,	\hyper@nat@linkstart . . . . 5650
2510, 2511, 2512, 2513, 2514,	6093, 6958, 7414, 7497, 7774,	\hyper@normalise . . . 2941, 2946,
2515, 2516, 2517, 2518, 2519,	8152, 8251, 8701, 9524, 9785,	3429, 3492, 3495, 3508, 3510,

3512, 3533, 4175  
 \hyper@pageduration [7262](#), [7308](#),  
     [8528](#), [8545](#), [8779](#), [8809](#)  
 \hyper@pagehidden . . [7285](#), [7309](#),  
     [8538](#), [8546](#), [8796](#), [8810](#)  
 \hyper@pagetransition . . . [7238](#),  
     [7307](#), [8419](#), [8544](#), [8762](#), [8808](#)  
 \hyper@quote . . [4465](#), [7406](#), [7419](#),  
     [7433](#), [7438](#), [7456](#), [7466](#), [7479](#),  
     [8114](#), [8124](#), [8136](#), [8158](#), [8175](#),  
     [9516](#), [9529](#), [9543](#), [9548](#), [9566](#),  
     [9576](#), [9589](#), [9777](#), [9789](#), [9803](#),  
     [9808](#), [9826](#), [9836](#), [9848](#)  
 \hyper@readexternallink . [3589](#),  
     [3605](#)  
 \hyper@refstepcounter . . . [5021](#),  
     [5024](#), [5031](#)  
 \hyper@tilde . . [3444](#), [3445](#), [3446](#),  
     [4464](#)  
 \hyperbaseurl . . [2649](#), [2650](#), [4550](#)  
 \hypercalcbp . . . . . [340](#), [340](#)  
 \hypercalcbpdef . [342](#), [379](#), [2829](#)  
 \hyperdef . . . . . [3541](#), [4552](#)  
 \HyperDestNameFilter [2910](#), [6918](#),  
     [6936](#), [7406](#), [7419](#), [7438](#), [7474](#),  
     [7719](#), [7893](#), [8114](#), [8124](#), [8141](#),  
     [8158](#), [8175](#), [8244](#), [8255](#), [8292](#),  
     [8359](#), [9086](#), [9095](#), [9516](#), [9529](#),  
     [9548](#), [9584](#), [9777](#), [9789](#), [9808](#),  
     [9843](#), [11628](#), [11673](#), [11689](#)  
 \hypergetpageref . . . . . [5172](#)  
 \hypergetref . . . . . [5171](#)  
 \hyperimage . . . [3512](#), [3703](#), [6148](#)  
 \hyperlink [3488](#), [4553](#), [6252](#), [6390](#),  
     [6398](#), [6413](#), [6421](#), [6431](#), [6439](#),  
     [6446](#)  
 \hyperlinkfileprefix [2652](#), [2653](#),  
     [2654](#), [9764](#)  
 \hyperpage . . . . . [4559](#), [6210](#)  
 \HyperRaiseLinkDefault . . [1738](#),  
     [1747](#)  
 \HyperRaiseLinkHook [1737](#), [1748](#)  
 \HyperRaiseLinkLength . . [1746](#),  
     [1747](#), [1750](#)  
 \hyperref [3521](#), [3710](#), [3711](#), [4555](#),  
     [6542](#), [6546](#), [6556](#), [6570](#)  
 \hypersetup . . [2046](#), [2518](#), [2940](#),  
     [2942](#), [4549](#)  
 \hypertarget . . . . . [3514](#), [4554](#)  
 \HyPL@@@CheckThePage [4801](#), [4819](#)  
 \HyPL@@CheckThePage [4777](#), [4779](#)  
 \HyPL@Alph . . . . . [4717](#)  
 \HyPL@alph . . . . . [4718](#)  
 \HyPL@arabic . . . . . [4714](#)  
 \HyPL@CheckThePage . [4729](#), [4776](#)  
 \HyPL@Entry [4925](#), [4933](#), [4941](#), [4943](#)  
 \HyPL@EveryPage . . . [4719](#), [4840](#)  
 \HyPL@Format . . [4792](#), [4793](#), [4794](#),  
     [4795](#), [4796](#), [4808](#)  
 \HyPL@found . . [4791](#), [4798](#), [4802](#),  
     [4809](#), [4819](#), [4821](#)  
 \HyPL@Labels . . [4708](#), [4831](#), [4832](#),  
     [4834](#), [4836](#), [4881](#), [4882](#), [4936](#),  
     [4944](#), [4945](#)  
 \HyPL@LastNumber . . . [4712](#), [4747](#),  
     [4770](#)  
 \HyPL@LastPrefix . . . [4713](#), [4741](#),  
     [4772](#)  
 \HyPL@LastType . [4711](#), [4732](#), [4771](#)  
 \HyPL@page [4722](#), [4724](#), [4729](#), [4737](#)  
 \HyPL@Prefix . . [4737](#), [4739](#), [4741](#),  
     [4755](#), [4758](#), [4760](#), [4772](#), [4786](#),  
     [4824](#)  
 \HyPL@Roman . . . . . [4715](#)  
 \HyPL@roman . . . . . [4716](#)  
 \HyPL@SetPageLabels [4830](#), [4888](#),  
     [4890](#), [4939](#)  
 \HyPL@StorePageLabel [4755](#), [4757](#),  
     [4827](#), [4879](#), [4920](#)  
 \HyPL@thisLabel [4705](#), [4707](#), [4721](#),  
     [4724](#), [4725](#)  
 \HyPL@Type [4727](#), [4732](#), [4736](#), [4754](#),  
     [4762](#), [4771](#), [4785](#), [4823](#)  
 \HyPL@Useless . . . . . [4828](#), [4834](#)  
 \HyPsd@@@autoref . . . [1072](#), [1074](#),  
     [1077](#)  
 \HyPsd@@@nameref . . . [1054](#), [1056](#),  
     [1059](#)  
 \HyPsd@@@pageref . . . [1036](#), [1038](#),  
     [1041](#)  
 \HyPsd@@@ref . . . [1020](#), [1022](#), [1025](#)  
 \HyPsd@@@UTFviii@four . . [1613](#),  
     [1616](#)  
 \HyPsd@@@AppendItalcorr . . [1245](#)  
 \HyPsd@@@autoref . . . [1069](#), [1070](#)  
 \HyPsd@@@autorefname [1090](#), [1093](#)  
 \HyPsd@@@ConvertToUnicode [1539](#)  
 \HyPsd@@@GetNextTwoTokens [1537](#)  
 \HyPsd@@@GlyphProcessWarning .  
     . . . . . [1415](#), [1418](#)  
 \HyPsd@@@GreekNum . [771](#), [780](#), [879](#),  
     [883](#), [887](#)  
 \HyPsd@@@hspace . . . . . [991](#), [992](#)  
 \HyPsd@@@LetCommand . [1114](#), [1135](#)  
 \HyPsd@@@nameref . . . [1051](#), [1052](#)  
 \HyPsd@@@pageref . . . [1033](#), [1034](#)  
 \HyPsd@@@ProtectSpacesFi . [1167](#),  
     [1171](#), [1189](#), [1195](#), [1200](#)  
 \HyPsd@@@ref . . . . . [1017](#), [1018](#)  
 \HyPsd@@@RemoveBraces . . . [1213](#)  
 \HyPsd@@@RemoveBracesFi . [1210](#),  
     [1213](#)  
 \HyPsd@@@RemoveCmdPrefix . [1372](#),  
     [1375](#)  
 \HyPsd@@@ReplaceFi . . [1442](#), [1448](#),  
     [1453](#)  
 \HyPsd@@@UTFviii@four [1597](#), [1602](#)  
 \HyPsd@add@accent . . . . [401](#), [980](#)  
 \HyPsd@AfterCountRemove . [1258](#),  
     [1329](#)  
 \HyPsd@AfterDimenRemove . [1264](#),  
     [1332](#)  
 \HyPsd@AfterSkipRemove . . [1270](#),  
     [1344](#)  
 \HyPsd@AMSclassfix . [476](#), [1001](#),  
     [1003](#)  
 \HyPsd@AppendItalcorr . . . [1229](#),  
     [1236](#), [1245](#)  
 \HyPsd@autoref . . . . . [486](#), [1069](#)  
 \HyPsd@autorefname . [1081](#), [1087](#)  
 \HyPsd@babel@danish . . . . [667](#)  
 \HyPsd@babel@dutch . . . . . [673](#)  
 \HyPsd@babel@finnish . . . . [679](#)  
 \HyPsd@babel@frenchb . . . . [684](#)  
 \HyPsd@babel@german . . . . [689](#)  
 \HyPsd@babel@macedonian . . [696](#)  
 \HyPsd@babel@ngerman . . . . [702](#)  
 \HyPsd@babel@portuges . . . . [708](#)  
 \HyPsd@babel@russian . . . . [713](#)  
 \HyPsd@babel@slovene . . . . [719](#)  
 \HyPsd@babel@spanish . . . . [724](#)  
 \HyPsd@babel@swedish . . . . [734](#)  
 \HyPsd@babel@ukrainian . . . [740](#)  
 \HyPsd@babel@usorbian . . . . [746](#)  
 \HyPsd@CatcodeWarning . . [1274](#),  
     [1291](#), [1294](#), [1297](#), [1300](#), [1356](#)  
 \HyPsd@CheckCatcodes . [538](#), [1251](#)  
 \HyPsd@CJKActiveChars . [907](#), [920](#)  
 \HyPsd@CJKhook . . . . . [491](#), [889](#)  
 \HyPsd@ConvertToUnicode . . [606](#),  
     [1487](#)  
 \HyPsd@DecimalToOctal . [899](#), [928](#)  
 \HyPsd@DefCommand [521](#), [522](#), [523](#),  
     [524](#), [1103](#)  
 \HyPsd@DisableCommands [654](#), [656](#)  
 \HyPsd@DoConvert . . . [1489](#), [1499](#)  
 \HyPsd@DoEscape . . . . . [1513](#)  
 \HyPsd@doxspace . . . . [578](#), [1460](#)  
 \HyPsd@empty . . [563](#), [565](#), [569](#), [570](#),  
     [572](#), [580](#), [587](#)  
 \HyPsd@end . [538](#), [542](#), [1168](#), [1171](#),  
     [1174](#), [1177](#), [1180](#), [1193](#), [1203](#),  
     [1210](#), [1213](#), [1251](#), [1259](#), [1265](#),  
     [1271](#), [1316](#), [1323](#), [1329](#), [1332](#),  
     [1344](#)  
 \HyPsd@endWithElse . . . [970](#), [979](#)  
 \HyPsd@fi . [1185](#), [1191](#), [1195](#), [1201](#)  
 \HyPsd@GetNextTwoTokens . [1537](#)  
 \HyPsd@GetOneBye . . . . . [1532](#)  
 \HyPsd@GetTwoBytes . . . . [1528](#)  
 \HyPsd@GLYPHERR [543](#), [967](#), [981](#), [988](#)

\HyPsd@GlyphProcess 545, 1403, 1416  
\HyPsd@GlyphProcessWarning . . . . . 1410, 1414  
\HyPsd@GobbleFiFi . . . . . 972, 978  
\HyPsd@GreekNum . . . . . 760, 763, 765  
\HyPsd@Greeknumeral . . . . . 756, 762  
\HyPsd@greeknumeral . . . . . 755, 759  
\HyPsd@GreekNumI . . . . . 783, 809, 852, 878  
\HyPsd@GreekNumII 787, 831, 875, 882  
\HyPsd@GreekNumIII 790, 854, 886  
\HyPsd@GreekNumIV . . . . . 799, 877  
\HyPsd@GreekNumV . . . . . 802, 881  
\HyPsd@GreekNumVI . . . . . 804, 885  
\HyPsd@GreekPatch 462, 752, 754  
\HyPsd@hspace . . . . . 477, 991  
\HyPsd@hspacetest 994, 996, 999  
\HyPsd@ifnextchar . . . . . 508, 1140  
\HyPsd@InitUnicode . . . . . 631  
\HyPsd@inmathwarn . . . . . 400, 964  
\HyPsd@ITALCORR . . . . . 500, 504, 988  
\HyPsd@LetCommand 525, 526, 1103  
\HyPsd@LetUnexpandableSpace . . . . . 495, 496, 497, 498, 984, 987  
\HyPsd@LoadStringEnc 2050, 2070, 2072, 2076, 2078  
\HyPsd@LoadUnicode . . . . . 2005, 2007, 2012, 2015, 2017, 2024  
\HyPsd@nameref . . . . . 485, 1051  
\HyPsd@new@ifnextchar 509, 1144  
\HyPsd@pageref . . . . . 484, 1033  
\HyPsd@pdfencoding . . . . . 607, 2001, 2003, 2033, 2045, 2048, 2049, 2054, 2069  
\HyPsd@pdfencoding@auto . . . . . 607, 2039, 2049, 2066  
\HyPsd@pdfencoding@pdfdoc 2032, 2054, 2067  
\HyPsd@pdfencoding@unicode . . . . . 2036, 2068  
\HyPsd@protected@testopt . . . . . 510, 511, 1148  
\HyPsd@ProtectSpaces 531, 1165, 1186, 1235  
\HyPsd@ref . . . . . 483, 1017  
\HyPsd@RemoveBraces 533, 1207, 1224, 1232, 1238  
\HyPsd@RemoveCmdPrefix . . . . . 1365, 1371  
\HyPsd@RemoveMask . . . . . 541, 1174, 1180, 1193, 1203  
\HyPsd@RemoveSpaceWarning 1339, 1351, 1377  
\HyPsd@ReplaceSpaceWarning . . . . . 1334, 1346, 1390  
\HyPsd@Rest . . . . . 1252, 1312, 1320, 1323, 1330, 1335, 1341, 1347, 1353  
\HyPsd@SPACEOPTI . . . . . 535, 550, 551, 553, 555, 557, 558, 597, 599, 1287, 1471  
\HyPsd@spaceopti . . . . . 599, 1434  
\HyPsd@String . . . . . 532, 534, 537, 539, 544, 546, 1218, 1219, 1229, 1281, 1282, 1286, 1287, 1302, 1303, 1333, 1345, 1404, 1405  
\HyPsd@StringSubst 547, 549, 555, 561, 564, 567, 570, 589, 592, 594, 1457  
\HyPsd@Subst . . . . . 543, 552, 556, 562, 568, 572, 576, 581, 582, 583, 584, 585, 586, 590, 593, 1441, 1458  
\HyPsd@temp . . . . . 610, 611, 613, 614, 2031, 2032, 2033, 2036, 2039, 2045, 2057, 2061  
\HyPsd@tocsection . . . . . 1004, 1005, 1006, 1007, 1008, 1009, 1010, 1012  
\HyPsd@UnexpandableSpace . . . . . 987, 1176, 1200, 1335, 1347  
\HyPsd@unichar 1555, 1622, 1628, 1633  
\HyPsd@unichar@first@byte 1641, 1661  
\HyPsd@unichar@octtwo . . . . . 1663, 1671, 1677  
\HyPsd@unichar@second@byte . . . . . 1649, 1669  
\HyPsd@UnicodeReplacementCharacter . . . . . 1625, 1660  
\HyPsd@UTFviii . . . . . 392, 1543, 1548  
\HyPsd@UTFviii@three . . . . . 1578, 1587  
\HyPsd@UTFviii@two 1563, 1569  
\HyPsd@UTFviii@ccxliv@def 1553, 1559  
\HyPsd@UTFviii@ccxliv@undef . . . . . 1552, 1558  
\HyPsd@UTFviii@four 1551, 1596  
\HyPsd@UTFviii@three 1550, 1577  
\HyPsd@UTFviii@two . . . . . 1549, 1562  
\HyPsd@Warning 1152, 1357, 1378, 1391, 1420, 1426  
\HyPsd@XSPACE . . . . . 502, 577, 988  
\HyPsd@xspace . . . . . 575, 577, 578  
\HyRef@StarSetRef . . . . . 6513, 6518  
\HyRef@autopageref . . . . . 6567, 6569  
\HyRef@autopagerefname . . . . . 6566, 6570, 6572  
\HyRef@autoref . . . . . 6584, 6586  
\HyRef@autosetref . . . . . 6589, 6592  
\HyRef@CaseStar . . . . . 6652, 6658  
\HyRef@currentHtag . . . . . 6605, 6623, 6626, 6632, 6638, 6644, 6659  
\HyRef@MakeUppercaseFirstOfFive . . . . . 6533, 6535  
\HyRef@name . . . . . 6621, 6622, 6627, 6633, 6651, 6652, 6653, 6655  
\HyRef@Ref . . . . . 6539, 6541  
\HyRef@ShowKeysInit 6661, 6674, 6678  
\HyRef@ShowKeysRef . . . . . 6593, 6660  
\HyRef@StarSetRef . . . . . 6507, 6525, 6528, 6533  
\HyRef@StripStar . . . . . 6620, 6650  
\HyRef@testreftype . . . . . 6598, 6617  
\HyRef@thisref . . . . . 6595, 6598  
\HyTmp@found . . . . . 4096, 4106, 4109  
\HyTmp@key . . . . . 4090, 4091  
\HyTmp@optitem 4046, 4062, 4089, 4094, 4100, 4121, 4132  
\HyTmp@optlist 4045, 4060, 4061, 4092, 4093, 4098, 4099, 4107, 4108, 4128, 4130, 4137, 4140

## I

\i . . . . . 12030, 12193, 12196, 12199, 12202, 12399, 12561, 12564, 12567, 12570, 12687, 12692, 12697, 12702, 12706, 12873, 12929  
\if . . . . . 1013, 1725, 4745, 4753, 5329, 5330, 8491, 8494, 8498, 8502, 8506, 8508, 8510, 11301  
\if@eqnstar . . . . . 5271, 5279  
\if@files . . . . . 1693, 3567, 4563, 4599, 4921, 4931, 5121, 5699, 5714, 5730, 5742, 5772, 5795, 5822, 5827, 5846, 6181, 11538, 11650, 11716  
\if@hyper@item . . . . . 5006, 5019  
\if@Localurl . . . . . 8102, 8146  
\if@mid@expandable . . . . . 475  
\if@minipage . . . . . 5578, 5641  
\if@nmbrlist . . . . . 4993  
\if@skiphyperref . . . . . 5007, 5017  
\if@twocolumn . . . . . 11850  
\if@twoside . . . . . 11838  
\ifcase . . . . . 816, 838, 861, 929, 1591, 2036, 2592, 3891, 3996, 4126, 4201, 6024, 6169, 6188, 6405, 6594, 8564, 11240, 11317, 11382, 11417, 11451, 11577  
\ifcat . . . . . 1253, 1280, 1285, 1290, 1293, 1296, 1299, 3681, 3683  
\ifdim . . . . . 999, 1333, 1337, 1345, 1349, 1757,

1776, 2912, 2913, 2918, 2919,  
2927, 7322, 7326, 7331, 7335,  
7342, 7346, 7351, 7355, 8215,  
8218, 8222, 8225, 9006, 9017,  
10097, 10136, 10137, 10548,  
10588, 10589, 10885, 10925,  
10926  
\ifetex@unexpanded . . . . . 1159  
\IfFileExists . . . . . 4594, 9858  
\ifFld@checked 4149, 10416, 11228  
\ifFld@comb . . . . . 3995  
\ifFld@combo . . 4023, 4028, 10111,  
10140, 10562, 10592, 10899,  
10929  
\ifFld@disabled . . . 4150, 10417  
\ifFld@edit . . . . . 4029  
\ifFld@fileselect . . . . . 3998  
\ifFld@hidden . . . 10074, 10125,  
10191, 10212, 10236, 10255,  
10315, 10327, 10337, 10420,  
10525, 10577, 10657, 10679,  
10708, 10729, 10854, 10914,  
11002, 11028, 11058, 11084  
\ifFld@multiline . . 3996, 10062,  
10322, 10512, 10841  
\ifFld@multiselect . . . . . 4068  
\ifFld@password . . . 3997, 10303  
\ifFld@popdown . . . 3815, 10112,  
10563, 10900  
\ifFld@radio 10108, 10130, 10352,  
10559, 10582, 10896, 10919  
\ifFld@readonly . . 10324, 10334,  
10418  
\ifForm@html . . . . . 4169  
\ifhmode . 1775, 1784, 5404, 5416,  
5540, 5542  
\ifHy@activeanchor . . 244, 3694  
\ifHy@backref . . 245, 3083, 3413,  
4443, 5823, 5859  
\ifHy@bookmarks . . . . 246, 3275  
\ifHy@bookmarksnumbered . . 247,  
6293, 6344, 11528  
\ifHy@bookmarksopen . 248, 3265  
\ifHy@breaklinks 249, 1970, 8719,  
8750, 9000, 9011  
\ifHy@centerwindow . 250, 7173,  
7671, 8036, 8602, 8910, 9664  
\ifHy@CJKbookmarks . . . 251, 490  
\ifHy@colorlinks 252, 3346, 4448,  
9498  
\ifHy@displaydoctitle 286, 7174,  
7672, 8037, 8603, 8911, 9665  
\ifHy@draft . . . . . 253, 2957  
\ifHy@DvipdfmxOutlineOpen 3235,  
11691  
\ifHy@escapeform . . . 256, 11154,  
11183  
\ifHy@figures . . 257, 3063, 4428,  
6145  
\ifHy@fitwindow 258, 7172, 7670,  
8035, 8601, 8909, 9663  
\ifHy@frenchlinks . . . 259, 3362  
\ifHy@hyperfootnotes . 260, 5353  
\ifHy@hyperindex 261, 3073, 4438,  
6152  
\ifHy@hypertextnames 262, 5072,  
5125, 5915, 6298, 6349  
\ifHy@implicit . 263, 3095, 11744  
\ifHy@linktocpage . . 264, 1927,  
1937  
\ifHy@menubar . . 265, 7170, 7668,  
8033, 8599, 8907, 9661  
\ifHy@naturalnames . 266, 5085,  
6299, 6350  
\ifHy@nesting . . 267, 3068, 3515,  
3543, 3572, 3679, 4433, 5378,  
5389, 5450, 5589  
\ifHy@newwindow . 269, 2866, 8313  
\ifHy@newwindowset . . 268, 2864  
\ifHy@next . . . . . 665, 3030, 6161  
\ifHy@ocgcolorlinks 270, 2564,  
3332, 3342, 4453, 6782, 6800,  
6875, 6883, 7781, 7859, 7867  
\ifHy@pageanchor 271, 5112, 5124,  
5139, 5914  
\ifHy@pagelabels 272, 4693, 4879,  
4919  
\ifHy@pdfa . . . . .  
287, 2981, 3334, 3622, 3828,  
4309, 4345, 4458, 6940, 6998,  
7029, 7065, 7380, 7900, 7929,  
7953, 7974, 8278, 8295, 8316,  
8335, 8362, 8389, 8405, 9110,  
10033, 10181, 10229, 10479,  
10647, 10701, 10813, 10991,  
11051, 11230, 11303, 11441  
\ifHy@pdfmarkerror . 8957, 8965  
\ifHy@pdfpagehidden 273, 2663,  
7288, 8540, 8802  
\ifHy@pdfstring . 274, 639, 5011  
\ifHy@plainpages 275, 3078, 5126,  
5916  
\ifHy@psize . . . . . 276  
\ifHy@raiselinks 277, 7451, 7520,  
7549, 7579, 9561, 9821  
\ifHy@seminarslides . . . . 278  
\ifHy@setpagesize . . 279, 7312,  
8092, 8212, 9348  
\ifHy@setpdfversion 2086, 6787  
\ifHy@texht 280, 3374, 3406, 4496,  
6453  
\ifHy@toolbar . . 281, 7169, 7667,  
8032, 8598, 8906, 9660  
\ifHy@typexml . . 243, 3088, 3349,  
3393, 4564, 11653, 11719  
\ifHy@unicode . 282, 388, 548, 560,  
588, 596, 605, 766, 902, 1359,  
1380, 1393, 1422, 1428, 1623,  
2000, 2047, 11194  
\ifHy@useHidKey 2659, 7286, 8539,  
8797  
\ifHy@usetitle . . . . . 283, 4609  
\ifHy@verbose . . 284, 3771, 6004,  
6914  
\ifHy@windowui . 285, 7171, 7669,  
8034, 8600, 8908, 9662  
\ifmeasuring@ . . . . . 5030, 5043  
\ifnum . . . . . 767, 770, 781,  
782, 786, 794, 798, 801, 811,  
833, 856, 1581, 1624, 1627,  
1639, 2162, 2165, 2190, 2593,  
2594, 3239, 3266, 4051, 4122,  
4133, 4728, 4747, 4763, 4859,  
6407, 6445, 6783, 6788, 7089,  
7096, 7102, 7110, 8313, 8417,  
8551, 8559, 8561, 8562, 8572,  
8575, 8657, 8659, 8759, 9362,  
10463, 10623, 10951, 10955,  
10963, 11193, 11211, 11240,  
11245, 11317, 11323, 11351,  
11382, 11388, 11407, 11417,  
11422, 11451, 11456, 11485,  
11501, 11573, 11641, 11693,  
11777, 11795, 11811, 11816  
\ifodd . . . . . 1605, 1610, 5936  
\ifpdf . . . . . 3129, 3191  
\ifpdfstringunicode . . 393, 396  
\ifportrait . . . . . 7321  
\ifthenelse . . . . . 5849  
\iftrue . . 1166, 1188, 1452, 11779  
\ifvmode . . . . . 1740, 1756, 1765  
\ifvoid . . . . . 5220, 5229  
\ifvtexhtml . . . . . 3168, 3197  
\ifvtexpdf . . . . . 3208  
\ifvtexps . . . . . 3211  
\ifxetex . . . . . 3153, 3194  
\ignorespaces . 5193, 5349, 5486,  
5574, 5585, 5588, 5638, 5645,  
5707, 5722, 5738, 5747, 5857,  
6278, 6330  
\IJ . . . . . 12026, 12708  
\ij . . . . . 12235, 12710  
\immediate . . . 4565, 4566, 4567,  
4569, 4601, 4872, 4924, 4932,  
5136, 5164, 5702, 5717, 5733,  
5743, 5773, 5796, 5822, 5852,  
6801, 6816, 6831, 8662, 9359,  
10433, 10469, 11627, 11652,  
11654, 11718, 11720  
\incr@eqnum . . . . . 5240, 5253

`\index` ..... 479  
`\indexentry` ... 6184, 6192, 6196  
`\input` . 627, 632, 2008, 2536, 2544,  
 2551, 3231, 9289, 9360, 9451,  
 9603  
`\InputIfFileExists` 2944, 11646,  
 11666, 11711, 11713  
`\inputlineno` ... 3686, 6007, 6915  
`\insert` ..... 5466  
`\interfootnotelinepenalty` 5469  
`\interlinepenalty` ..... 5469  
`\item` 4988, 4991, 5729, 5741, 5844  
`\Itemautorefname` ..... 6684  
`\itemautorefname` ... 2281, 2299,  
 2317, 2335, 2353, 2371, 2389,  
 2418, 2419, 2447, 2465, 6684,  
 6685, 6688  
`\itshape` ..... 440

## J

`\j` ..... 12715, 12900, 12964  
`\jarr` ..... 14321  
`\jeem` ..... 14293  
`\jeh` ..... 14329  
`\jobname` . 4566, 4594, 4601, 9858,  
 11646, 11652, 11666, 11711,  
 11713, 11718

## K

`\k` ... 11912, 12252, 12254, 12259,  
 12261, 12304, 12322, 12341,  
 12348, 12612, 12614, 12652,  
 12654, 12699, 12701, 12702,  
 12837, 12839, 12896, 12898,  
 13495, 13534, 13537  
`\kaf` ..... 14311  
`\kasra` ..... 14324  
`\keepPDF@SetupDoc` .. 9502, 9509  
`\kern` 1262, 1334, 1339, 1351, 5931,  
 5932, 5933, 5935, 5936, 5941  
`\kha` ..... 14295  
`\KV@Hyp@draft` ..... 1894  
`\KV@Hyp@nolinks` ..... 1894  
`\kv@key` .. 4049, 4052, 4054, 4058,  
 4062  
`\kv@parse` ..... 4048  
`\kv@value` ..... 4050, 4057, 4058

## L

`\L` ..... 12019, 12739  
`\l` ..... 12032, 12741  
`\l@slide` . 6278, 6388, 6393, 6397,  
 6404  
`\l@subslide` 6330, 6393, 6400, 6444  
`\label` ..... 478, 5976  
`\label@hyperref` ... 3550, 3552  
`\label@hyperdef` .... 3541, 3564  
`\label@hyperref` 3522, 3549, 3707

`\labelsep` ..... 5856  
`\labelwidth` ..... 5855  
`\lam` ..... 14312  
`\language@group` ..... 460  
`\languageshorthands` 3052, 3053,  
 3056  
`\LARGE` ..... 447  
`\Large` ..... 448  
`\large` 451, 6410, 6418, 6428, 6436  
`\lastpage@putlabel` ..... 5107  
`\lastskip` 1757, 1761, 1768, 1776,  
 1780, 1787  
`\LaTeX` ..... 417, 418, 9864, 9865  
`\LaTeXe` ..... 418, 9865  
`\LayoutCheckField` . 4384, 10256,  
 10730, 11087  
`\LayoutChoiceField` 4381, 10129,  
 10581, 10918  
`\LayoutPushButtonField` .. 4387,  
 10185, 10192, 10651, 10658,  
 10995, 11004  
`\LayoutTextField` .. 4378, 10076,  
 10527, 10860  
`\lccode` ..... 912, 1546, 6159  
`\ldots` ..... 412  
`\leavevmode` ..... 487,  
 1735, 2967, 2984, 3024, 3627,  
 4543, 5403, 5539, 5763, 6545,  
 6553, 6930, 6983, 7014, 7050,  
 7450, 7519, 7547, 7577, 7924,  
 7948, 8112, 8121, 8172, 8310,  
 8331, 8353, 8379, 8721, 8999,  
 9216, 9234, 9259, 9560, 9820,  
 10186, 10193, 10228, 10611,  
 10632, 10652, 10659, 10680,  
 10700, 10949, 10972, 10996,  
 11005, 11030, 11050  
`\limits` ..... 3475  
`\listofslides` ..... 6379  
`\listslidenam` 6378, 6381, 6383,  
 6385  
`\literalps@out` 1733, 8651, 8656,  
 8703, 8708, 8724, 8729, 8975,  
 8986, 9007, 9009, 9018, 9020,  
 9287, 9358, 9421, 9601  
`\lower` ... 7454, 7522, 7551, 7581,  
 9009, 9564, 9824  
`\lowercase` 913, 1547, 1798, 2228,  
 2257, 3720, 3721, 3724, 3729,  
 3753, 3763, 3817, 3873, 4192,  
 4232, 4235, 6160, 8758  
`\lslide@flag` .. 6405, 6408, 6426,  
 6445, 6449  
`\LT@array` ..... 5206  
`\LT@firsthead` ..... 5220, 5229  
`\LT@p@ftn` . 5422, 5425, 5429, 5443  
`\LT@p@ftntext` ..... 5420, 5427

`\LT@start` ..... 5222, 5233  
`\luatexrevision` ..... 7133  
`\luatexversion` ..... 7125, 7130

## M

`\m@ne` ... 3735, 5152, 5321, 11713,  
 11777, 11792  
`\make@df@tag@@` ..... 6083, 6085  
`\make@df@tag@@@` ..... 6084, 6086  
`\make@stripped@name` 5035, 5262,  
 5284, 5308, 5319  
`\makeatletter` ..... 3, 653, 4593  
`\MakeButtonField` .. 4394, 10187,  
 10195, 10214, 10233, 10238,  
 10653, 10662, 10687, 10705,  
 10711, 10997, 11000, 11029,  
 11055, 11059  
`\MakeCheckField` ... 4391, 10258,  
 10733, 11085  
`\MakeChoiceField` .. 4393, 10170,  
 10635, 10971  
`\MakeFieldObject` . 10432, 10488,  
 10498, 10501  
`\MakeRadioField` ... 4390, 10160,  
 10622, 10944  
`\makeslideheading` ..... 6288  
`\makeslidesubheading` .... 6340  
`\maketag@@@` ..... 6072  
`\MakeTextField` .... 4392, 10078,  
 10530, 10857  
`\maketitle` ..... 5489, 5490  
`\MakeUppercase` . 6383, 6385, 6536  
`\MathBSuppress` ..... 8122, 8126  
`\mathdisplay` ..... 5243, 5252  
`\mathdisplay@push` .. 5241, 5250  
`\mathversion` ..... 456  
`\maxdimen` ..... 2614, 10437  
`\MaybeStopEarly` 328, 2113, 2167,  
 3099, 3199, 4952  
`\mbox` . 488, 5776, 5799, 6885, 7869  
`\mdseries` ..... 439  
`\meaning` ..... 62, 153,  
 159, 1696, 4633, 5092, 5326,  
 11677, 11685, 11700  
`\measuring@false` ..... 5030  
`\mediaheight` .. 8208, 8210, 8216,  
 8223  
`\mediawidth` ..... 8219, 8226  
`\meem` ..... 14313  
`\message` ..... 6406  
`\MessageBreak` .....  
 361, 1365, 1386, 1399, 1422,  
 1427, 1429, 1818, 1819, 1833,  
 1855, 1858, 1860, 1945, 1946,  
 1972, 1973, 2019, 2020, 2021,  
 2059, 2060, 2080, 2090, 2250,  
 2566, 2932, 3133, 3134, 3142,



3143, 3157, 3158, 3172, 3173, 3181, 3182, 3336, 3774, 3779, 3788, 3831, 3877, 4001, 4115, 4196, 4698, 5115, 5981, 6140, 10444, 10445, 11506, 11524	\ng ..... 12759	\numberline .. 5574, 5638, 11529, 11533
\MF ..... 421, 9867	\noboundary ..... 14334	\numberwithin ..... 6105
\MP ..... 422, 9868	\nobreak . 1758, 1766, 1777, 1785, 5404, 5540	\numexpr . 1571, 1572, 1573, 1575, 1581, 1589, 1590, 1591, 1592, 1593, 1594, 1598, 1600, 1604, 1606, 1608, 1610, 1614, 1617, 1618, 1620, 1629, 1634, 1651, 1665, 1673, 1679, 2815
\multiply ..... 7129, 8520, 8555	\nobreakspace .. 498, 6548, 6577, 6580	\nun ..... 14314
<b>N</b>	\noexpand ..... 22, 93, 95, 108, 116, 169, 171, 172, 173, 176, 206, 663, 924, 1109, 1126, 1253, 1560, 1764, 1765, 1766, 1769, 1783, 1784, 1785, 1788, 2497, 2499, 2501, 2502, 2518, 2670, 2671, 2673, 3051, 3052, 3053, 3054, 3056, 3057, 3469, 3529, 3598, 3681, 3683, 3783, 4801, 4802, 4811, 4813, 4816, 4898, 5149, 5150, 5152, 5325, 5423, 5431, 5432, 5433, 5434, 5435, 5437, 5549, 5627, 5701, 5716, 5732, 6100, 6102, 6513, 6514, 6627, 6628, 6633, 6634, 6639, 6640, 6645, 6646, 7132, 7655, 8894, 8961, 9418, 9648, 10104, 10105, 10106, 10107, 10555, 10556, 10557, 10558, 10892, 10893, 10894, 10895, 11156	\numberline .. 5574, 5638, 11529, 11533
\name@of@eq ..... 5004, 5033	\nofrenchguillemets .. 516, 518	<b>O</b>
\name@of@slide ..... 5005, 5015	\NoHyper ..... 4499	\O ..... 12152, 12520, 12915
\nameref ..... 485	\nohyperpage .. 4542, 6209, 6211, 6213	\o ..... 12220, 12588, 12917
\nasb ..... 14319	\nolinkurl ..... 3508	\obeylines ..... 9417
\netscape ..... 7485	\nolinkurl@ ..... 3508, 3509	\OBJ@acroform .... 10485, 10486
\new@ifnextchar ..... 1145	\NomFancyVerbLineautorefname . ..... 2436	\OBJ@Helv .. 10466, 10475, 10791
\new@pdflink ... 6913, 6957, 6958	\Nomfootnoteautorefname . 2416	\OBJ@OCG@print 6830, 6833, 6841, 6867, 7798, 7800, 7813, 7817, 7826, 7852
\new@refstepcounter 5235, 5267	\Nomtheoremautorefname .. 2440	\OBJ@OCG@view . 6815, 6833, 6866, 7782, 7784, 7797, 7817, 7851
\newblock ..... 5860	\nonumber ..... 5296, 5299	\OBJ@OCGs 6836, 6839, 6845, 6850, 6855, 7814, 7816, 7820, 7824, 7830, 7835, 7840
\newcommand . 4, 9, 42, 1734, 4547, 4967, 4970, 4973, 4974, 4975, 4977, 4978, 4979, 4980, 4982, 4983, 4984, 4985, 4986, 4987, 4996, 4997, 4998, 4999, 5000, 5001, 5317, 6108, 6265, 6270, 6271, 11548, 11551, 11556	\normalfont ..... 434	\OBJ@pdfdocencoding ... 10464, 10772, 10788
\newcount .. 329, 330, 4153, 4709, 10166, 10629, 10827, 10968, 11570	\normalsize .... 452, 5581, 5644	\OBJ@ZaDb .. 10465, 10474, 10781
\newcounter ..... 4989, 5354	\null ..... 5841, 5849, 6502, 6607	\OCIRCUFLEX 14157, 14255, 14256, 14257, 14258, 14259
\newdimen ..... 326, 4154, 4155	\number 784, 788, 791, 799, 802, 804, 1564, 1565, 1566, 1567, 1571, 1572, 1573, 1574, 1575, 1579, 1580, 1581, 1582, 1583, 1584, 1585, 1589, 1590, 1591, 1592, 1593, 1594, 1597, 1599, 1603, 1604, 1606, 1608, 1610, 1613, 1617, 1618, 1619, 1620, 1629, 1630, 1634, 1635, 1642, 1643, 1647, 1650, 1651, 1652, 1662, 1664, 1665, 1670, 1672, 1673, 1678, 1679, 2811, 3267, 3741, 6794, 6797, 7510, 7524, 7525, 7536, 7537, 7553, 7554, 7565, 7566, 7583, 7584, 7595, 7596	\ocircumflex 14150, 14195, 14196, 14197, 14198, 14199
\newif ..... 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 665, 2086, 2659, 3235, 3727, 3815, 4149, 4150, 4169, 5006, 5007, 5030, 5271, 8102, 8957	\number 784, 788, 791, 799, 802, 804, 1564, 1565, 1566, 1567, 1571, 1572, 1573, 1574, 1575, 1579, 1580, 1581, 1582, 1583, 1584, 1585, 1589, 1590, 1591, 1592, 1593, 1594, 1597, 1599, 1603, 1604, 1606, 1608, 1610, 1613, 1617, 1618, 1619, 1620, 1629, 1630, 1634, 1635, 1642, 1643, 1647, 1650, 1651, 1652, 1662, 1664, 1665, 1670, 1672, 1673, 1678, 1679, 2811, 3267, 3741, 6794, 6797, 7510, 7524, 7525, 7536, 7537, 7553, 7554, 7565, 7566, 7583, 7584, 7595, 7596	\oddidemargin ..... 5937
\newlabel 1699, 3569, 4576, 4577, 4584, 4606, 5137, 5165	\number 784, 788, 791, 799, 802, 804, 1564, 1565, 1566, 1567, 1571, 1572, 1573, 1574, 1575, 1579, 1580, 1581, 1582, 1583, 1584, 1585, 1589, 1590, 1591, 1592, 1593, 1594, 1597, 1599, 1603, 1604, 1606, 1608, 1610, 1613, 1617, 1618, 1619, 1620, 1629, 1630, 1634, 1635, 1642, 1643, 1647, 1650, 1651, 1652, 1662, 1664, 1665, 1670, 1672, 1673, 1678, 1679, 2811, 3267, 3741, 6794, 6797, 7510, 7524, 7525, 7536, 7537, 7553, 7554, 7565, 7566, 7583, 7584, 7595, 7596	\OE ..... 12021, 12773
\newlabelxx ..... 4578, 4579	\number 784, 788, 791, 799, 802, 804, 1564, 1565, 1566, 1567, 1571, 1572, 1573, 1574, 1575, 1579, 1580, 1581, 1582, 1583, 1584, 1585, 1589, 1590, 1591, 1592, 1593, 1594, 1597, 1599, 1603, 1604, 1606, 1608, 1610, 1613, 1617, 1618, 1619, 1620, 1629, 1630, 1634, 1635, 1642, 1643, 1647, 1650, 1651, 1652, 1662, 1664, 1665, 1670, 1672, 1673, 1678, 1679, 2811, 3267, 3741, 6794, 6797, 7510, 7524, 7525, 7536, 7537, 7553, 7554, 7565, 7566, 7583, 7584, 7595, 7596	\oe ..... 12034, 12775
\newline ..... 415, 4654	\number 784, 788, 791, 799, 802, 804, 1564, 1565, 1566, 1567, 1571, 1572, 1573, 1574, 1575, 1579, 1580, 1581, 1582, 1583, 1584, 1585, 1589, 1590, 1591, 1592, 1593, 1594, 1597, 1599, 1603, 1604, 1606, 1608, 1610, 1613, 1617, 1618, 1619, 1620, 1629, 1630, 1634, 1635, 1642, 1643, 1647, 1650, 1651, 1652, 1662, 1664, 1665, 1670, 1672, 1673, 1678, 1679, 2811, 3267, 3741, 6794, 6797, 7510, 7524, 7525, 7536, 7537, 7553, 7554, 7565, 7566, 7583, 7584, 7595, 7596	\offinterlineskip ..... 4680
\newname . 5036, 5263, 5285, 5309, 5322, 5331	\number 784, 788, 791, 799, 802, 804, 1564, 1565, 1566, 1567, 1571, 1572, 1573, 1574, 1575, 1579, 1580, 1581, 1582, 1583, 1584, 1585, 1589, 1590, 1591, 1592, 1593, 1594, 1597, 1599, 1603, 1604, 1606, 1608, 1610, 1613, 1617, 1618, 1619, 1620, 1629, 1630, 1634, 1635, 1642, 1643, 1647, 1650, 1651, 1652, 1662, 1664, 1665, 1670, 1672, 1673, 1678, 1679, 2811, 3267, 3741, 6794, 6797, 7510, 7524, 7525, 7536, 7537, 7553, 7554, 7565, 7566, 7583, 7584, 7595, 7596	\OHORN 14158, 14260, 14261, 14262, 14263, 14264
\newsavebox ..... 7714, 8994	\number 784, 788, 791, 799, 802, 804, 1564, 1565, 1566, 1567, 1571, 1572, 1573, 1574, 1575, 1579, 1580, 1581, 1582, 1583, 1584, 1585, 1589, 1590, 1591, 1592, 1593, 1594, 1597, 1599, 1603, 1604, 1606, 1608, 1610, 1613, 1617, 1618, 1619, 1620, 1629, 1630, 1634, 1635, 1642, 1643, 1647, 1650, 1651, 1652, 1662, 1664, 1665, 1670, 1672, 1673, 1678, 1679, 2811, 3267, 3741, 6794, 6797, 7510, 7524, 7525, 7536, 7537, 7553, 7554, 7565, 7566, 7583, 7584, 7595, 7596	\ohorn .. 2463, 2470, 14151, 14200, 14201, 14202, 14203, 14204
\newtie .... 11914, 12296, 12326, 12345, 12361	\number 784, 788, 791, 799, 802, 804, 1564, 1565, 1566, 1567, 1571, 1572, 1573, 1574, 1575, 1579, 1580, 1581, 1582, 1583, 1584, 1585, 1589, 1590, 1591, 1592, 1593, 1594, 1597, 1599, 1603, 1604, 1606, 1608, 1610, 1613, 1617, 1618, 1619, 1620, 1629, 1630, 1634, 1635, 1642, 1643, 1647, 1650, 1651, 1652, 1662, 1664, 1665, 1670, 1672, 1673, 1678, 1679, 2811, 3267, 3741, 6794, 6797, 7510, 7524, 7525, 7536, 7537, 7553, 7554, 7565, 7566, 7583, 7584, 7595, 7596	\oldcontentsline ... 4571, 4574, 4583
\newtoks 90, 4214, 8840, 9027, 9028	\number 784, 788, 791, 799, 802, 804, 1564, 1565, 1566, 1567, 1571, 1572, 1573, 1574, 1575, 1579, 1580, 1581, 1582, 1583, 1584, 1585, 1589, 1590, 1591, 1592, 1593, 1594, 1597, 1599, 1603, 1604, 1606, 1608, 1610, 1613, 1617, 1618, 1619, 1620, 1629, 1630, 1634, 1635, 1642, 1643, 1647, 1650, 1651, 1652, 1662, 1664, 1665, 1670, 1672, 1673, 1678, 1679, 2811, 3267, 3741, 6794, 6797, 7510, 7524, 7525, 7536, 7537, 7553, 7554, 7565, 7566, 7583, 7584, 7595, 7596	\oldnewlabel ... 4576, 4581, 4584
\newwrite ... 4600, 11651, 11717	\number 784, 788, 791, 799, 802, 804, 1564, 1565, 1566, 1567, 1571, 1572, 1573, 1574, 1575, 1579, 1580, 1581, 1582, 1583, 1584, 1585, 1589, 1590, 1591, 1592, 1593, 1594, 1597, 1599, 1603, 1604, 1606, 1608, 1610, 1613, 1617, 1618, 1619, 1620, 1629, 1630, 1634, 1635, 1642, 1643, 1647, 1650, 1651, 1652, 1662, 1664, 1665, 1670, 1672, 1673, 1678, 1679, 2811, 3267, 3741, 6794, 6797, 7510, 7524, 7525, 7536, 7537, 7553, 7554, 7565, 7566, 7583, 7584, 7595, 7596	\OMEGA ..... 9863
\next 5850, 5851, 5852, 8483, 8485, 8487	\number 784, 788, 791, 799, 802, 804, 1564, 1565, 1566, 1567, 1571, 1572, 1573, 1574, 1575, 1579, 1580, 1581, 1582, 1583, 1584, 1585, 1589, 1590, 1591, 1592, 1593, 1594, 1597, 1599, 1603, 1604, 1606, 1608, 1610, 1613, 1617, 1618, 1619, 1620, 1629, 1630, 1634, 1635, 1642, 1643, 1647, 1650, 1651, 1652, 1662, 1664, 1665, 1670, 1672, 1673, 1678, 1679, 2811, 3267, 3741, 6794, 6797, 7510, 7524, 7525, 7536, 7537, 7553, 7554, 7565, 7566, 7583, 7584, 7595, 7596	\openout 4566, 4601, 11652, 11718
\nfss@text 6460, 6480, 6497, 6611	\number 784, 788, 791, 799, 802, 804, 1564, 1565, 1566, 1567, 1571, 1572, 1573, 1574, 1575, 1579, 1580, 1581, 1582, 1583, 1584, 1585, 1589, 1590, 1591, 1592, 1593, 1594, 1597, 1599, 1603, 1604, 1606, 1608, 1610, 1613, 1617, 1618, 1619, 1620, 1629, 1630, 1634, 1635, 1642, 1643, 1647, 1650, 1651, 1652, 1662, 1664, 1665, 1670, 1672, 1673, 1678, 1679, 2811, 3267, 3741, 6794, 6797, 7510, 7524, 7525, 7536, 7537, 7553, 7554, 7565, 7566, 7583, 7584, 7595, 7596	\OpMode .. 2162, 2165, 2176, 2190, 2193, 8572, 8659, 9362
\NG ..... 12757	\number 784, 788, 791, 799, 802, 804, 1564, 1565, 1566, 1567, 1571, 1572, 1573, 1574, 1575, 1579, 1580, 1581, 1582, 1583, 1584, 1585, 1589, 1590, 1591, 1592, 1593, 1594, 1597, 1599, 1603, 1604, 1606, 1608, 1610, 1613, 1617, 1618, 1619, 1620, 1629, 1630, 1634, 1635, 1642, 1643, 1647, 1650, 1651, 1652, 1662, 1664, 1665, 1670, 1672, 1673, 1678, 1679, 2811, 3267, 3741, 6794, 6797, 7510, 7524, 7525, 7536, 7537, 7553, 7554, 7565, 7566, 7583, 7584, 7595, 7596	\or ..... 818, 819, 820, 821, 822, 823, 824, 825, 826, 840, 841, 842, 843, 844, 845, 846, 847, 848, 863, 864, 865, 866, 867, 868, 869, 870, 871, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 3901, 3907, 3912, 4127,

6026, 6030, 6425, 6434, 8565, 11578, 11579, 11580, 11581, 11582, 11583, 11584, 11585, 11586, 11587, 11588, 11589, 11590, 11591, 11592, 11593, 11594, 11595, 11596, 11597, 11598, 11599, 11600, 11601, 11602, 11603, 11604, 11605, 11606, 11607, 11608, 11609	9155, 9156, 9157, 9158, 9159, 9160, 9161, 9162, 9163, 9164	\PDFForm@Submit . . 10213, 10216, 10681, 10683, 11031, 11036, 11409
<b>P</b>	\pdf@addtoksx . . 9024, 9034, 9047	\PDFForm@Text . . . . 10077, 10079, 10528, 10529, 10861, 10864, 11374
\P . . . . . 411	\pdf@box . . 8994, 9001, 9003, 9005, 9006, 9009, 9016	\pdfhorigin . . . . . 7319
\p@ . . . . . 1630, 1635, 4156, 4162, 7460, 7532, 7561, 7591, 8519, 9570, 9831, 10099, 10550, 10887, 11843, 11844	\pdf@defaulttoks . . . 8961, 9028, 9029, 9039	\pdfinfo . . . . . 7210
\p@equation . . . . . 6079	\pdf@docset . . . . . 8840	\pdflastform . . . . . 6907
\PackageError 61, 2018, 3008, 3623, 3876, 4000, 4195, 4311, 4347, 10182, 10230, 10648, 10702, 10992, 11052	\pdf@endanchor . 6922, 6957, 6959	\pdflastlink . . . . . 10456
\PackageInfo . . . 239, 6778, 6792, 10443	\pdf@escapestring . . . . . 6757	\pdflastobj . . 6815, 6830, 6836, 10485, 10772, 10781, 10791
\PackageWarning . 237, 2089, 4113	\PDF@FinishDoc 2116, 2117, 2170, 2171, 2907, 2969, 3102, 3103, 3202, 3203, 4541, 4690, 4691, 7208, 7393, 7607, 7998, 8103, 8630, 8841, 9607, 9765	\pdflastxform 6907, 10435, 10437
\PackageWarningNoLine . . . . 238	\pdf@linktype . 8979, 8983, 9044, 9045	\pdflinkmargin . 6902, 6905, 6910
\pageautorefname . . . 2294, 2312, 2330, 2348, 2366, 2384, 2402, 2442, 2460, 2478, 6580, 6701	\pdf@rect . . . . . 8971, 8985, 8998	\pdfliteral . . . 6886, 6888, 6893
\pagename . . . . . 6577	\PDF@SetupDoc . 2906, 2968, 4470, 4471, 4540, 7139, 7394, 7635, 8030, 8104, 8580, 8881, 9504, 9635, 9766	\pdfm@box . . . 7714, 10823, 10824, 10825, 10856, 10867, 10944, 10962, 10971, 10980, 11000, 11013, 11029, 11038, 11059, 11067, 11085, 11094
\pageref . . 484, 3109, 3401, 5115, 6566, 6570	\PDF@SetupDox . . . . . 7139	\pdfmark . . . . . 4915, 7655, 7664, 7694, 8691, 8709, 8737, 8769, 8786, 8798, 8827, 8863, 8894, 8903, 8934, 8958, 9169, 9183, 9198, 9210, 9217, 9235, 9260, 9648, 9657, 9688, 10078, 10160, 10170, 10195, 10214, 10238, 10258, 11681
\paperheight . . 2913, 2914, 2925, 7326, 7328, 7331, 7333, 7346, 7348, 8215, 8216, 8218	\pdf@toks 8961, 8976, 8987, 9027, 9031, 9035	\pdfmark@ . . . . . 8958, 8959
\paperwidth . . 2912, 2914, 7322, 7324, 7335, 7337, 7342, 7344, 8219	\pdf@type 8963, 8967, 8976, 8987, 9022, 9042	\pdfminorversion . . . . . 6775
\par . 5573, 5596, 5636, 5645, 5843, 5863	\pdfannotlink . . . . . 6904	\PDFNextPage . . . . . 9181
\paragraphautorefname . . . 2290, 2308, 2326, 2344, 2362, 2380, 2398, 2431, 2433, 2456, 2474, 6697	\pdfbookmark . . 1734, 4546, 4547, 11549, 11554, 11559, 11563	\PDFNextPage@ . . . . . 9181, 9182
\partautorefname . . . 2284, 2302, 2320, 2338, 2356, 2374, 2392, 2422, 2450, 2468, 6691	\pdfcatalog . . 4844, 6837, 7154, 7196, 10486	\pdfobj . 6801, 6816, 6831, 10469, 10739, 10773, 10782
\partnumberline . . 11530, 11534	\PDFdefaults . . . . . 9038	\PDFOpen . . . . . 9209
\PassOptionsToPackage . . . 2202, 2239, 2243, 2262, 2951, 3224	\pdfdest . . . . . 6924	\pdfoptionpdfminorversion 6772
\pdf@addtoks . . 9030, 9049, 9055, 9064, 9071, 9075, 9077, 9079, 9081, 9083, 9091, 9100, 9104, 9106, 9108, 9111, 9120, 9124, 9126, 9128, 9130, 9132, 9134, 9136, 9138, 9140, 9142, 9144, 9146, 9148, 9150, 9152, 9154,	\pdfendlink . 6956, 10530, 10622, 10636, 10663, 10688, 10712, 10734	\pdfoutline . . . . . 11728
	\pdfescapestring . . . . . 11184	\pdfpageattr . . 7242, 7246, 7247, 7257, 7265, 7269, 7270, 7280, 7287, 7290, 7291, 7301
	\pdfform . . . . . 6906	\pdfpageheight 7328, 7337, 7348, 7357
	\PDFForm@Check . . . 10257, 10259, 10731, 10732, 11088, 11092, 11202	\pdfpageresources . . . . . 6864
	\PDFForm@List . . . . 10169, 10171, 10633, 10634, 10973, 10978, 11309	\pdfpagesattr . . 7143, 7145, 7147
	\PDFForm@Name . . . . 10523, 10576, 10646, 10727, 10852, 10913, 10990, 11082, 11191	\pdfpagewidth . 7324, 7333, 7344, 7353
	\PDFForm@Push . . . . 10194, 10196, 10660, 10661, 11006, 11010, 11230	\PDFPreviousPage . . . . . 9194
	\PDFForm@Radio . . . 10159, 10162, 10612, 10614, 10950, 10958, 11342	\PDFPreviousPage@ . . 9195, 9197
	\PDFForm@Reset . . . 10237, 10239, 10709, 10710, 11060, 11065, 11441	\pdfrefform . . . . . 6908
		\pdfrefobj . 10464, 10465, 10466
		\pdfrefxform . . . . . 6908, 10437
		\pdfstartlink . . . . . 6903, 6904, 6954, 6984, 7015, 7051, 7366, 10529, 10613, 10634, 10661, 10682, 10710, 10732
		\pdfstringdef . . . 381, 624, 2779, 2780, 2781, 2782, 2786, 2792,

2795, 2796, 4074, 4079, 4105,  
 4657, 4737, 4739, 5130, 5922,  
 11198, 11537  
 \pdfstringdefDisableCommands .  
     . . . . . 651, 4544, 4652  
 \pdfstringdefPostHook . 620, 645  
 \pdfstringdefPreHook . 494, 645,  
     657, 659, 3049, 3050, 4651,  
     4661  
 \pdfstringdefWarn 414, 415, 489,  
     662, 1117, 1122, 1141, 1145,  
     1149  
 \pdfTeXrevision 7099, 7107, 7118  
 \pdfTeXversion 7094, 7096, 7099,  
     7102, 7105, 7106, 7110, 7116,  
     7117, 10463  
 \pdfvorigin . . . . . 7320  
 \pdfxform . . . . . 6906, 10433  
 \peh . . . . . 14327  
 \penalty . . 1256, 1743, 5770, 5793  
 \phantomsection 2908, 4548, 5983,  
     11474, 11526, 11753, 11796  
 \Preamble . . . . . 9859  
 \process@me . . 4631, 4643, 4644,  
     7142, 7151  
 \ProcessKeyvalOptions . . . 2955  
 \protect . 1254, 3554, 5574, 5638,  
     5701, 5716, 5732, 5848, 5855,  
     5856, 6016, 6047, 6278, 6330,  
     6459, 6479, 6485, 6496, 6610,  
     7403, 7489, 8170, 8242, 9514,  
     9775, 11540, 11843, 11844  
 \protected@edef 3583, 4797, 5323,  
     5343, 6931, 7888, 8287, 8354,  
     8823  
 \protected@write . . . 1698, 3568,  
     5828, 6183, 6191, 6195, 11539  
 \protected@xdef 5432, 5434, 5515  
 \providecommand 1715, 1716, 2215,  
     3190, 3380, 3381, 3483, 3513,  
     4827, 4846, 4933, 5666, 5667,  
     5682, 5760, 5967, 5968, 5971,  
     5972, 6261, 6262, 6378, 6682,  
     6683, 6684, 6685, 6686, 6687,  
     6688, 6689, 6690, 6691, 6692,  
     6693, 6694, 6695, 6696, 6697,  
     6698, 6699, 6700, 6701, 6764,  
     6912, 6926, 6927, 7392, 7484,  
     7485, 7712, 7768, 7769, 7770,  
     8100, 8213, 8235, 8236, 8237,  
     8652, 8995, 8996, 9285, 9293,  
     9294, 9295, 9296, 9356, 9368,  
     9369, 9370, 9371, 9415, 9456,  
     9457, 9458, 9459, 9597, 9599,  
     9600, 9709, 9710, 9757  
 \PushButton . . . . . 4366  
 \put@me@back . . . 3676, 3689, 3699

## Q

\qaf . . . . . 14310  
 \quotedblbase . . . . 12001, 12238,  
     13827, 14131  
 \quotesinglbase . . 12011, 12240,  
     13821, 14133

## R

\r . . . 11881, 11893, 11905, 12113,  
     12178, 12287, 12314, 12333,  
     12355, 12482, 12546, 12829,  
     12831, 13791, 13793  
 \ra . . . . . 14298  
 \raff . . . . . 14320  
 \raise . . . 1750, 7461, 7533, 7562,  
     7592, 9020, 9571, 9832  
 \ReadBookmarks 2954, 2972, 3116,  
     3284, 3409, 11632, 11661  
 \real@setref . . . . . 6456, 6522  
 \realfootnote . . . . . 5512  
 \Ref . . . . . 6538, 6542, 6547  
 \ref . . 483, 3108, 3400, 3715, 6557,  
     9851  
 \ref@one . . . . . 3535, 3536  
 \rEfLiNK . . . . . 9852, 9853  
 \refstepcounter 5003, 5010, 5188,  
     5208, 5235, 5259, 5267, 5630  
 \rem@ptetc . . . . . 8759, 8761  
 \renewcommand . 1690, 5611, 6122,  
     11563  
 \RequirePackage . . . . . 22,  
     232, 233, 234, 235, 236, 1158,  
     1684, 2071, 2948, 3090, 3091,  
     3352, 3396, 3414, 3505, 3718,  
     4041, 4671, 6704, 8101, 9762  
 \Reset . . . . . 4375  
 \reset@font . . 5776, 5799, 6460,  
     6480, 6497, 6611  
 \revtex@checking . . . . . 5753  
 \Rightarrow . . . . . 6412  
 \rlap . . . . . 6887, 7871  
 \rm . . . . . 445  
 \rmfamily . . . . . 435  
 \Roman . . . . . 4793  
 \roman . . . . . 4794  
 \rule . . . . . 5477

## S

\sad . . . . . 14302  
 \sbox . . . . 4395, 8995, 9003, 10432  
 \scr@LT@array . . . . . 5207  
 \scriptsize . . . . . 453  
 \scriptstyle . . . . . 5766  
 \scrollmode . . 1173, 1198, 1208,  
     1221, 1313, 1445  
 \scshape . . . . . 441  
 \section . . . . . 6380

\sectionautorefname 2287, 2305,  
     2323, 2341, 2359, 2377, 2395,  
     2424, 2453, 2471, 6694  
 \seen . . . . . 14300  
 \selectfont . . . . . 3363, 10494  
 \setbox . . . . . 1257, 1263, 1269, 2597, 2603,  
     4248, 4679, 6877, 7452, 7518,  
     7548, 7578, 7861, 9562, 9822,  
     10856, 10944, 10971, 11000,  
     11029, 11059, 11085  
 \setkeys . 2110, 2201, 2940, 2982,  
     3223, 3333, 4147, 6784, 8964,  
     10050, 10288, 10301, 10350,  
     10393, 10414, 10462, 10799  
 \setlength . 365, 366, 1747, 7319,  
     7320, 7324, 7328, 7333, 7337,  
     7344, 7348, 7353, 7357, 8216,  
     8219, 8223, 8226, 8519  
 \setpdflinkmargin . . 2798, 2799,  
     6902  
 \settowidth 10096, 10547, 10884  
 \sffamily . . . . . 436  
 \shadda . . . . . 14325  
 \sheen . . . . . 14301  
 \shortciteN . . . . . 5891  
 \SK@ . . . . . 6668  
 \SK@ref . . . . . 6668  
 \SK@ref . . . . . 6665  
 \skip@ . . . 1271, 1345, 1346, 1349,  
     1351, 1761, 1767, 1780, 1786  
 \slide@cline . . 6398, 6411, 6419,  
     6429, 6437  
 \Slide@contents . . . . . 6403  
 \slide@contents . . . . . 6396  
 \slide@heading . . . . . 6274  
 \slide@subheading . . . . . 6327  
 \slide@undottedcline . . . . 6389  
 \slidenumberline . . . 6390, 6398,  
     6412, 6420, 6430, 6438  
 \SliTeX . . . . . 420  
 \slshape . . . . . 442  
 \small . . . . . 454  
 \smash . . . . . 1744  
 \spacefactor . . 5404, 5416, 5540,  
     5542  
 \special@paper 1896, 1900, 1904,  
     1908, 1912, 1916, 2909, 2914,  
     2920, 8091, 8093, 9347, 9349  
 \SpecialDvipdfmxOutlineOpen .  
     . . . . . 2137, 2139, 3239  
 \splitmaxdepth . . . . . 5471  
 \splittopskip . . . . . 5470  
 \SS . . . . . 12236, 14130  
 \ss . . . 2334, 12166, 12251, 12534  
 \st@rredfalse . . . . . 5242, 5251



<code>\stepcounter</code> .. 5020, 5150, 5342, 5405, 5514	<code>\texorpdfstring</code> ..... 638, 4545	13999, 14001, 14003, 14005,
<code>\stockheight</code> .. 2919, 2920, 2925, 7355, 7357, 8222, 8223	<code>\textacute</code> . 11877, 11889, 11901, 12079, 12310, 12329, 12447	14007, 14009, 14011, 14013,
<code>\stockwidth</code> .. 2918, 2920, 7351, 7353, 8225, 8226	<code>\textacutedbl</code> ..... 12979	14015, 14017, 14019, 14021,
<code>\stop@hyper</code> ..... 4513	<code>\textaleph</code> ..... 13945	14023, 14025, 14027, 14029,
<code>\StringEncodingConvertTest</code> 611	<code>\textAlpha</code> ... 818, 12999, 13015	14031, 14033, 14035, 14037,
<code>\strip@period</code> ..... 1703	<code>\textalpha</code> ... 818, 13068, 13078	14039, 14041, 14043, 14045,
<code>\strip@prefix</code> 62, 1696, 4633, 5092, 5326, 11677, 11685, 11700	<code>\textampersand</code> 408, 11946, 12377	14047, 14049, 14051, 14053,
<code>\strip@pt</code> ..... 370, 377, 2937, 7324, 7328, 7333, 7337, 8522, 11225, 11337, 11365, 11402, 11450	<code>\textangstrom</code> ..... 13941	14055, 14057, 14059, 14061,
<code>\strip@pt@and@otherjunk</code> . 8708, 8729, 8761	<code>\textasciicaron</code> .. 11922, 12318, 12337, 12968	14063, 14065, 14067, 14069,
<code>\strutbox</code> ..... 5471	<code>\textasciicircum</code> . 11882, 11894, 11906, 11924, 12315, 12334, 12966	14071, 14073, 14075, 14077,
<code>\sub@label</code> ..... 1690	<code>\textasciidieresis</code> 11880, 11892, 11904, 12056, 12313, 12332, 12424	14079, 14081, 14083, 14085,
<code>\subeqnarray</code> ..... 5302, 5304	<code>\textasciigrave</code> .. 11876, 11888, 11900, 11965, 12309, 12328, 12397	14087, 14089, 14091, 14093,
<code>\subequations</code> ..... 5340, 5341	<code>\textasciimacron</code> . 11885, 11897, 11909, 12069, 12320, 12339, 12437	14095, 14097, 14099, 14101,
<code>\subfig@oldlabel</code> ..... 1692	<code>\textasciitilde</code> 409, 3446, 11975, 12408	14103, 14105, 14107, 14109,
<code>\Submit</code> ..... 4372	<code>\textasteriskcentered</code> .. 12385	14111
<code>\SubmitObject</code> ..... 10684	<code>\textbackslash</code> . 404, 547, 11958, 12391	<code>\textcircledP</code> ..... 13929
<code>\SubmitPObj</code> ..... 10684	<code>\textbaht</code> ..... 13653	<code>\textcircledflex</code> ..... 11926
<code>\subparagraphautorefname</code> 2291, 2309, 2327, 2345, 2363, 2381, 2399, 2432, 2434, 2457, 2475, 6698	<code>\textbar</code> ..... 11971, 12404	<code>\textcolonmonetary</code> .... 13907
<code>\subpdfbookmark</code> ..... 11551	<code>\textbardbl</code> ..... 13815	<code>\textcolor</code> ... 457, 10461, 10499, 10502, 10798
<code>\subsection</code> ..... 9593	<code>\textBeta</code> ..... 819, 13017	<code>\textcompwordmark</code> ..... 13809
<code>\subsectionautorefname</code> .. 2288, 2306, 2324, 2342, 2360, 2378, 2396, 2429, 2454, 2472, 6695	<code>\textbeta</code> .... 819, 12251, 13080	<code>\textcopyright</code> ... 12058, 12426
<code>\subsubsectionautorefname</code> 2289, 2307, 2325, 2343, 2361, 2379, 2397, 2430, 2455, 2473, 6696	<code>\textbf</code> ..... 428	<code>\textCR</code> ..... 11920, 12367
<code>\sukun</code> ..... 14326	<code>\textbigcircle</code> ... 12327, 12346, 14115	<code>\textcurrency</code> .... 12048, 12416
<code>\surd</code> ..... 6420	<code>\textblank</code> ..... 13963	<code>\textdagger</code> ..... 11979, 13829
<b>T</b>	<code>\textbraceleft</code> 402, 11969, 12402	<code>\textdaggerdbl</code> ... 11981, 13831
<code>\T</code> ..... 14290	<code>\textbraceright</code> 403, 11973, 12406	<code>\textdegree</code> 12071, 12237, 12439
<code>\t</code> ... 11913, 12306, 12325, 12344, 12360	<code>\textbrokenbar</code> ... 12052, 12420	<code>\textDelta</code> ..... 821, 13021
<code>\T@pageref</code> .... 3387, 3402, 6555	<code>\textbullet</code> ..... 11977, 13833	<code>\textdelta</code> ..... 821, 13084
<code>\T@ref</code> ..... 3382, 3400	<code>\textcdot</code> ..... 12250, 14143	<code>\textDigammagreek</code> .... 13143
<code>\T@temp</code> ..... 5754, 5757	<code>\textcedilla</code> 11884, 11896, 11908, 12087, 12317, 12336, 12456	<code>\textdigammagreek</code> .... 13145
<code>\Ta</code> ..... 14304	<code>\textcelsius</code> ..... 12237, 13925	<code>\textdiscount</code> ..... 13855
<code>\taa</code> ..... 14291	<code>\textcent</code> ..... 12044, 12412	<code>\textdiv</code> ..... 12248, 14141
<code>\tableautorefname</code> .. 2283, 2301, 2319, 2337, 2355, 2373, 2391, 2421, 2449, 2467, 6690	<code>\textChi</code> ..... 868, 13057	<code>\textdivide</code> 12218, 12248, 12586, 14141
<code>\tagform@</code> ..... 6078	<code>\textchi</code> ..... 868, 13122	<code>\textdivorced</code> ..... 14121
<code>\tatweel</code> ..... 14308	<code>\textcircled</code> 12308, 12327, 12346, 13967, 13969, 13971, 13973, 13975, 13977, 13979, 13981, 13983, 13985, 13987, 13989, 13991, 13993, 13995, 13997,	<code>\textdollar</code> .. 406, 11942, 12373
<code>\tcheh</code> ..... 14328		<code>\textdong</code> ..... 13917
<code>\TeX</code> 416, 417, 419, 420, 9862, 9864, 9866		<code>\textdotaccent</code> ... 11883, 11895, 11907, 11928, 12316, 12335, 12970
		<code>\textdotbelow</code> .... 11887, 11899, 11911, 11952, 12324, 12343, 12989
		<code>\textdoublegrave</code> . 12319, 12338, 12985
		<code>\textdownarrow</code> ..... 13953
		<code>\texteightinferior</code> .... 13899
		<code>\texteightsuperior</code> .... 13867
		<code>\textellipsis</code> .. 412, 413, 11983, 13835
		<code>\textemdash</code> .. 581, 11985, 13813
		<code>\textendash</code> .. 582, 11987, 13811
		<code>\textEpsilon</code> .. 822, 13001, 13023
		<code>\textepsilon</code> .. 822, 13070, 13086
		<code>\textequalsuperior</code> .... 13875
		<code>\textestimated</code> ..... 13943

<code>\textEta</code> . . . . .	825, 13003, 13027	<code>\textlongS</code> . . . . .	12863, 13795	<code>\textpertenthousand</code> . . .	13839
<code>\texteta</code> . . . . .	825, 13072, 13090	<code>\textlquill</code> . . . . .	13851	<code>\textperthousand</code> .	11999, 13837
<code>\texteuro</code> . . . . .	12040, 13919	<code>\textmacronbelow</code> .	11886, 11898, 11910, 11963, 12323, 12342, 12991	<code>\textpeseta</code> . . . . .	13913
<code>\textexclamdown</code> .	585, 729, 12042, 12410	<code>\textmarried</code> . . . . .	14119	<code>\textpeso</code> . . . . .	13921
<code>\textfi</code> . . . . .	583, 12015, 14127	<code>\textmd</code> . . . . .	429	<code>\textPhi</code> . . . . .	867, 13055
<code>\TextField</code> . . . . .	4357	<code>\textmho</code> . . . . .	13939	<code>\textphi</code> . . . . .	867, 13120
<code>\textfiveinferior</code> . . . . .	13893	<code>\textminus</code> . . . . .	11997, 13955	<code>\textPi</code> . . . . .	847, 13045
<code>\textfivesuperior</code> . . . . .	13861	<code>\textminussuperior</code> . . . .	13873	<code>\textpi</code> . . . . .	847, 13108
<code>\textfl</code> . . . . .	584, 12017, 14129	<code>\textMu</code> . . . . .	843, 13037	<code>\textplusminus</code> . . .	12073, 12249, 12441, 14142
<code>\textflorin</code> . . . . .	11989, 12865	<code>\textmu</code> . . . . .	843, 12081, 12450	<code>\textplussuperior</code> . . . . .	13871
<code>\textflq</code> . . . . .	473, 12244, 14137	<code>\textmugreek</code> . . . . .	13100	<code>\textpm</code> . . . . .	12249, 14142
<code>\textflqq</code> . . . . .	471, 12242, 14135	<code>\textmultiply</code> . . . . .	12150, 12247, 12518, 14140	<code>\textPsi</code> . . . . .	869, 13059
<code>\textfourinferior</code> . . . . .	13891	<code>\textmusicalnote</code> . . . . .	14117	<code>\textpsi</code> . . . . .	869, 13124
<code>\textfoursuperior</code> . . . . .	13859	<code>\textnaira</code> . . . . .	13911	<code>\textquestiondown</code> . . .	586, 730, 12101, 12470
<code>\textfractionsolidus</code> . . .	11991, 13849	<code>\textnapostrophe</code> . . . . .	12755	<code>\textquotedbl</code> . . . .	11938, 12369
<code>\textfrq</code> . . . . .	474, 12245, 14138	<code>\textneg</code> . . . . .	12246, 14139	<code>\textquotedblleft</code> . . . .	12003, 12239, 13823, 14132
<code>\textfrqq</code> . . . . .	472, 12243, 14136	<code>\textnewtie</code> . . . . .	12326, 12345, 12987	<code>\textquotedblright</code> . . . .	12005, 13825
<code>\textGamma</code> . . . . .	820, 13019	<code>\textnineinferior</code> . . . . .	13901	<code>\textquoteleft</code> . . . .	12007, 12241, 13817, 14134
<code>\textgamma</code> . . . . .	820, 13082	<code>\textninesuperior</code> . . . . .	13869	<code>\textquoteright</code> . . . .	12009, 13819
<code>\textglq</code> . . . . .	469, 12240, 14133	<code>\textnormal</code> . . . . .	424	<code>\textquotesingle</code> . . . . .	12379
<code>\textglqq</code> . . . . .	467, 12238, 14131	<code>\textnsuperior</code> . . . . .	13881	<code>\texttriangle</code> . . . . .	13961
<code>\textgravedbl</code> . . . . .	12981	<code>\textNu</code> . . . . .	844, 13039	<code>\texttrbrackdbl</code> . . . . .	14125
<code>\textgreater</code> . . . . .	11956, 12389	<code>\textnu</code> . . . . .	844, 13102	<code>\textrecipe</code> . . . . .	13931
<code>\textgrq</code> . . . . .	470, 12241, 14134	<code>\textnumbersign</code> . . . . .	405, 11940, 12371	<code>\textreferencemark</code> . . . .	13845
<code>\textgrqq</code> . . . . .	468, 12239, 14132	<code>\textnumeralsigngreek</code> . . .	795, 12995	<code>\textregistered</code> . .	12067, 12435
<code>\textGslash</code> . . . . .	12884	<code>\textnumeralsignlowergreek</code> .	812, 834, 857, 12997	<code>\textRho</code> . . . . .	863, 13047
<code>\textgslash</code> . . . . .	12886	<code>\textnumero</code> . . . . .	13927	<code>\textrho</code> . . . . .	863, 13110
<code>\textguarani</code> . . . . .	13923	<code>\textogonek</code> . . . . .	11932, 12322, 12341, 12974	<code>\textrightarrow</code> . . . . .	13951
<code>\textHslash</code> . . . . .	12680	<code>\textohm</code> . . . . .	13937	<code>\textring</code> . .	11881, 11893, 11905, 11934, 12314, 12333, 12972
<code>\texthslash</code> . . . . .	12682	<code>\textOmega</code> . . .	870, 13011, 13061	<code>\textrm</code> . . . . .	425
<code>\textHT</code> . . . . .	11916, 12363	<code>\textomega</code> . . .	870, 13126, 13137	<code>\textrquill</code> . . . . .	13853
<code>\texthungarumlaut</code> . . . .	11930, 12321, 12340, 12978, 12979	<code>\textOmicron</code> . .	846, 13007, 13043	<code>\textSampigreek</code> . . . .	871, 13151
<code>\textinterrobang</code> . . . . .	13847	<code>\textomicron</code> . .	846, 13106, 13132	<code>\textsampigreek</code> . . . .	871, 13153
<code>\textIota</code> . . . . .	840, 13005, 13031, 13064	<code>\textonehalf</code> . . . . .	12097, 12466	<code>\textsc</code> . . . . .	431
<code>\textiota</code> . . . . .	840, 13074, 13094, 13128	<code>\textoneinferior</code> . . . . .	13885	<code>\textsection</code> . . . . .	12054, 12422
<code>\textIotadieresis</code> . . . . .	13013, 13063	<code>\textonequarter</code> . .	12095, 12464	<code>\textservicemark</code> . . . . .	13933
<code>\textit</code> . . . . .	430	<code>\textonesuperior</code> . .	12089, 12458	<code>\textseveninferior</code> . . . .	13897
<code>\textKappa</code> . . . . .	841, 13033	<code>\textopenbullet</code> . . . . .	14113	<code>\textsevensuperior</code> . . . .	13865
<code>\textkappa</code> . . . . .	841, 13096	<code>\textordfeminine</code> .	12060, 12428	<code>\textsf</code> . . . . .	426, 10499, 10502
<code>\textKoppagreek</code> . . . .	848, 13147	<code>\textordmasculine</code> .	12091, 12460	<code>\textSigma</code> . . . . .	864, 13049
<code>\textkoppagreek</code> . . . .	848, 13149	<code>\textparagraph</code> . . . .	411, 12083, 12452	<code>\textsigma</code> . . . . .	864, 13114
<code>\textkra</code> . . . . .	12721	<code>\textparenleft</code> .	589, 590, 11948, 12381	<code>\textsixinferior</code> . . . . .	13895
<code>\textLambda</code> . . . . .	842, 13035	<code>\textparenleftinferior</code> .	13903	<code>\textsixsuperior</code> . . . . .	13863
<code>\textlambda</code> . . . . .	842, 13098	<code>\textparenleftsuperior</code> .	13877	<code>\textsl</code> . . . . .	432
<code>\textlangle</code> . . . . .	13959	<code>\textparenright</code> . .	11950, 12383	<code>\textsterling</code> . . . .	12046, 12414
<code>\textlatin</code> . . . . .	458, 5086, 5977	<code>\textparenrightinferior</code> .	13905	<code>\textStigmagreek</code> . . .	823, 13139
<code>\textlbrackdbl</code> . . . . .	14123	<code>\textparenrightsuperior</code> .	13879	<code>\textstigmagreek</code> . . .	823, 13141
<code>\textleftarrow</code> . . . . .	13947	<code>\textpercent</code> . .	407, 11944, 12375	<code>\textsurd</code> . . . . .	13957
<code>\textless</code> . . . . .	11954, 12387	<code>\textperiodcentered</code> . . .	12085, 12250, 12454, 14143	<code>\TextSymbolUnavailable</code> .	11912, 11913, 11914
<code>\textLF</code> . . . . .	11918, 12365			<code>\textTau</code> . . . . .	865, 13051
<code>\textlira</code> . . . . .	13909			<code>\texttau</code> . . . . .	865, 13116
<code>\textlnot</code> . . . . .	12065, 12433				
<code>\textlogicalnot</code> . .	12064, 12246, 12432, 14139				

<code>\textTheta</code> .....	826, 13029	<code>\theHmpfootnote</code> .....	5001	<code>\toclevel@section</code> .....	5959
<code>\texttheta</code> .....	826, 13092	<code>\theHparagraph</code> .....	4984, 4985	<code>\toclevel@subfigure</code> .....	1715
<code>\textthreeminferior</code> .....	13889	<code>\theHparentequation</code> .....	5343, 5348	<code>\toclevel@subparagraph</code> ..	5963
<code>\textthreequarters</code> .....	12099, 12468	<code>\theHpart</code> .....	4970	<code>\toclevel@subsection</code> .....	5960
<code>\textthreesuperior</code> .....	12077, 12445	<code>\theHsection</code> ..	4967, 4973, 4980, 4982, 4986, 4987, 5061	<code>\toclevel@subsection</code> ..	5961
<code>\texttie</code> ...	12325, 12344, 12993	<code>\theHslide</code> .....	6265	<code>\toclevel@subtable</code> .....	1716
<code>\texttilde</code> ..	3031, 11879, 11891, 11903, 11936, 12312, 12331, 12976	<code>\theHslidesection</code> ..	6270, 6272, 6308, 6312	<code>\toclevel@table</code> .....	5965
<code>\texttildelow</code> .....	12983	<code>\theHslidesubsection</code>	6271, 6359, 6363	<code>\tocparagraph</code> .....	1010
<code>\texttimes</code> .....	12247, 14140	<code>\theHsubequation</code> .....	5317	<code>\tocpart</code> .....	1004
<code>\texttrademark</code> ...	12013, 13935	<code>\theHsubparagraph</code> .....	4985	<code>\tocsection</code> .....	1007
<code>\textTslash</code> .....	12813	<code>\theHsubsection</code> ....	4982, 4983	<code>\tocsubsection</code> .....	1008
<code>\texttslash</code> .....	12815	<code>\theHsubsubsection</code> .	4983, 4984	<code>\tocsubsubsection</code> .....	1009
<code>\texttt</code> .....	427	<code>\theHtable</code> .....	4975, 4979	<code>\toks</code> ...	657, 658, 659, 3049, 3055, 3587, 3589, 3591, 3595, 3600, 6470, 6471, 6473
<code>\texttwoinferior</code> .....	13887	<code>\theHtheorem</code> .....	4986	<code>\toks@</code> ..	171, 208, 344, 347, 350, 368, 369, 891, 914, 917, 918, 1181, 1182, 2489, 2490, 2492, 4799, 4801, 4881, 4883, 4896, 4908, 5147, 5151, 6079, 6080, 6242, 6247, 6249, 6252
<code>\texttwosuperior</code> .	12075, 12443	<code>\theHthm</code> .....	4987	<code>\topmargin</code> .....	5932
<code>\textunderscore</code> ..	410, 3440, 3441, 3443, 11962, 12395	<code>\thelisting</code> .....	5971	<code>\tryhyper@link</code> .....	3536, 3538
<code>\textup</code> .....	433	<code>\thelstlisting</code> .....	5967	<code>\ttfamily</code> .....	437
<code>\textuparrow</code> .....	13949	<code>\thempfn</code> .	5360, 5433, 5435, 5515, 5527	<code>\ttl@b</code> .....	5184, 5189
<code>\textUpsilon</code> ..	866, 13009, 13053, 13066	<code>\theoremautorefname</code>	2293, 2311, 2329, 2347, 2365, 2383, 2401, 2439, 2459, 2477, 6700	<code>\ttl@gobblecontents</code> ....	5193
<code>\textupsilon</code> ..	866, 13118, 13130, 13135	<code>\thepage</code> .	1701, 3556, 4699, 4722, 5130, 5138, 5165, 5779, 5802, 5831, 5922, 6016, 6047, 6184, 6192, 6196, 6462, 6482, 6499, 6613	<code>\ttl@Hy@refstepcounter</code> ..	5183
<code>\textupsilonacute</code> ..	13076, 13134	<code>\theslideheading</code> .....	6291	<code>\ttl@Hy@saveanchor</code> .	5177, 5186
<code>\textvarsigma</code> .....	13112	<code>\theslidesection</code> ...	6279, 6286, 6294, 6300, 6302, 6304, 6310, 6320	<code>\ttl@Hy@steplink</code> .....	5174
<code>\textvisiblespace</code> .....	13965	<code>\theslidesubheading</code>	6292, 6343	<code>\typeout</code> ...	5, 6, 7, 19, 26, 27, 36, 131, 155, 158, 159, 160, 2114, 2168, 3096, 3098, 3100, 3200, 3227, 3229, 3685, 4185, 6007, 6915, 8183, 8186, 8189, 8192, 8195, 8198, 8201, 8204, 9760, 10054, 10266, 10269, 10272, 10275, 10278, 10281, 10283, 10284, 10293, 10430, 10795, 11837, 14337
<code>\textwon</code> .....	13915	<code>\theslidesubsection</code>	6331, 6338, 6345, 6351, 6353, 6355, 6361, 6371	<code>\U</code> ...	12281, 13186, 13209, 13274, 13351, 13541, 13543, 13565, 13567, 13577, 13579
<code>\textXi</code> .....	845, 13041	<code>\This@name</code> ..	5014, 5015, 5032, 5033	<code>\u</code> ...	12280, 12318, 12337, 12357, 12608, 12610, 12644, 12646, 12664, 12666, 12694, 12696, 12697, 12765, 12767, 12825, 12827
<code>\textxi</code> .....	845, 13104	<code>\thispdfpagelabel</code> .....	4704	<code>\UHORN</code> ..	14159, 14270, 14271, 14272, 14273, 14274
<code>\textyen</code> .....	12050, 12418	<code>\ThisShouldNotHappen</code> ...	11163	<code>\uhorn</code> ..	2463, 2470, 14152, 14210, 14211, 14212, 14213, 14214
<code>\textzeroinferior</code> .....	13883	<code>\tiny</code> .....	455	<code>\UnDef</code> .....	9852
<code>\textzerosuperior</code> .....	13857	<code>\title</code> .....	4610, 4612	<code>\undefined</code> .....	2486
<code>\textZeta</code> .....	824, 13025	<code>\TMP@EnsureCode</code>	3294, 3301, 3302, 3303, 3304, 3305, 3306, 3307, 3308, 3309, 3310, 3311, 3312, 3313, 3314, 3315, 3316, 3317, 3318, 3319, 3320, 3321, 3322, 3323, 3324, 3325, 3326, 3327	<code>\unhbox</code> ..	8996, 10867, 10980, 11013, 11038, 11067, 11094
<code>\textzeta</code> .....	824, 13088	<code>\tocappendix</code> .....	1006		
<code>\TH</code> .....	12164, 12532	<code>\tocchapter</code> .....	1005		
<code>\th</code> .....	12232, 12600	<code>\toclevel@chapter</code> .....	5958		
<code>\thaa</code> .....	14292	<code>\toclevel@figure</code> .....	5964		
<code>\theequation</code> ..	5035, 5262, 5284, 5308, 5344	<code>\toclevel@listing</code> .....	5972		
<code>\thefootnote</code> .....	5371, 5534	<code>\toclevel@lstlisting</code> ....	5968		
<code>\theHchapter</code> ..	4977, 4978, 4979, 4980, 5062	<code>\toclevel@paragraph</code> ....	5962		
<code>\theHenumi</code> .....	4996	<code>\toclevel@part</code> .....	5954, 5956		
<code>\theHenumii</code> .....	4997				
<code>\theHenumiii</code> .....	4998				
<code>\theHenumiv</code> .....	4999				
<code>\theHequation</code> .	4967, 5036, 5263, 5285, 5309, 5317, 5344, 5348				
<code>\theHfigure</code> .....	4974, 4978				
<code>\theHHfootnote</code> .....	5000, 5002				
<code>\theHHmpfootnote</code> .....	5002				
<code>\theHItem</code> .....	4990, 4996, 4997, 4998, 4999				
<code>\theHlisting</code> .....	5971				
<code>\theHlstlisting</code> .....	5967				

\unhcopy ..... 10962  
 \unichar ..... 1555  
 \unrestored@protected@xdef ..  
     .. 5360, 5371, 5527, 5534  
 \unskip .. 5764, 6545, 6549, 6553,  
     6558  
 \upshape ..... 443  
 \Url ..... 3507  
 \url ..... 3506, 3510  
 \url@ ..... 3510, 3511  
 \use@file . 3657, 3659, 3663, 3666  
 \usepackage ..... 2111  
 \UTFviii@four@octets 1551, 1560  
 \UTFviii@three@octets ... 1550  
 \UTFviii@two@octets .... 1549  
  
**V**  
 \v ... 11882, 11894, 11906, 12023,  
     12028, 12036, 12038, 12291,  
     12315, 12334, 12356, 12628,  
     12630, 12632, 12634, 12656,  
     12658, 12731, 12733, 12751,  
     12753, 12785, 12787, 12801,  
     12803, 12809, 12811, 12859,  
     12861, 12867, 12869, 12871,  
     12873, 12874, 12876, 12878,  
     12880, 12882, 12888, 12890,  
     12892, 12894, 12900, 12901,  
     12944, 12946  
 \V@@@footnotetext ..... 5479  
 \V@footnotetext ..... 5465  
 \value .... 5718, 5744, 5936, 6102  
 \vbox 4390, 4391, 4392, 4393, 4679,  
     5930  
 \vfill .... 4390, 4391, 4392, 4393  
 \voffset ..... 5931  
 \vpageref ..... 6558  
 \Vr@f ..... 6544  
 \vr@f ..... 6552  
 \vref@pagenum ..... 5197  
 \vref@space ... 6545, 6548, 6553  
 \vskip ..... 1767, 1768  
 \vss ..... 5945

\vtex@trans@special 8490, 8492,  
     8495, 8499, 8503, 8507, 8509,  
     8511, 8515, 8521, 8522, 8525  
 \VTeXInitMediaSize . 8213, 8230  
 \VTeXOS ... 8560, 8561, 8562, 8564  
 \VTeXversion .. 4848, 4851, 4854,  
     8552, 8556  
  
**W**  
 \waw ..... 14316  
 \wawhamza ..... 14285  
 \wd . 7524, 7536, 7553, 7565, 7583,  
     7595, 10824  
 \write ... 4567, 4569, 4924, 4932,  
     5136, 5164, 5702, 5717, 5733,  
     5743, 5773, 5796, 5822, 5852,  
     11654, 11720  
 \WriteBookmarks .....  
     .... 2973, 3117, 3263, 3285,  
     11483, 11648, 11667, 11668,  
     11710, 11714  
 \wwwbrowser ... 7485, 7555, 7567  
  
**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, 367,  
     372, 1104, 1132, 1762, 1772,  
     1781, 1791, 1839, 1840, 1845,  
     1861, 2496, 2506, 2585, 2586,  
     2589, 2590, 2591, 2595, 2598,  
     2604, 2925, 2926, 2931, 2932,  
     2986, 2987, 2988, 2991, 2994,  
     2997, 3037, 3038, 3042, 3585,  
     3596, 3600, 3603, 3736, 3750,  
     3775, 3779, 3782, 3792, 4632,  
     4633, 4638, 5148, 5155, 5208,  
     5218, 5220, 5233, 6249, 6250,  
     6472, 6475, 6510, 6511, 6512,  
     6514, 6516, 6863, 6871, 7127,  
     7128, 7131, 7133, 7136, 7720,  
     7721, 7722, 7724, 7725, 7726,  
     7728, 7729, 7730, 7732, 7733,

7734, 7736, 7737, 7738  
 7741, 7742, 7744, 7745  
 7748, 7749, 7751, 7755  
 8656, 8661, 8665, 9117  
 10103, 10123, 10554  
 10891, 10911  
 \XeTeXrevision .....  
 \XeTeXversion .....  
 \XR@dURL ..... 1722  
 \XR@addURL .....  
 \XR@ext .. 1954, 1955, 3655  
     4846, 6764, 7392, 7484  
     8100, 9285, 9356, 9415  
     9757  
 \XR@URL .....  
 \xspace ..... 50  
  
**Y**  
 \y .. 1841, 1846, 1851, 2591  
     2593, 2594, 2989, 2992  
     2998, 3000, 3006, 3039  
     3042, 4633, 4641, 5206  
     5210, 5218  
 \ya .....  
 \yahamza .....  
  
**Z**  
 \z ..... 1843, 1844  
 \z@ . 794, 811, 833, 856, 999  
     1263, 1269, 1333, 1337  
     1349, 1757, 1776, 2037  
     2139, 2597, 2603, 2912  
     2918, 2919, 2927, 3239  
     4852, 5477, 7322, 7326  
     7335, 7342, 7346, 7351  
     8551, 8575, 8759, 9006  
     10092, 10543, 10828,  
     11211, 11240, 11245,  
     11323, 11351, 11382,  
     11407, 11417, 11422,  
     11456, 11693, 11790  
 \za .....  
 \zay .....  
 \ZWNJ .....