

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

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## 1 Documentation overview for `hyperref`

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

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

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


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

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

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

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### 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{%
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\textP\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
457 \let\phantom\@gobble
458 \let\vphantom\@gobble
459 \let\hphantom\@gobble

```

**Package color.**

```

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

```

**Upper- and lowercase.**

```

461 \def\MakeUppercase{\MakeUppercaseIsNotSupportedInPdfStrings}%
462 \def\MakeLowercase{\MakeLowercaseIsNotSupportedInPdfStrings}%

```

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

```

463 \let\textlatin\@firstofone
464 \@ifundefined{language@group}{\{%
465 \csname HyPsd@babel@language@group\endcsname
466 }%
467 \HyPsd@GreekPatch

```

```

468 \let\@safe@activetrue\relax
469 \let\@safe@activesfalse\relax
    Disable \cyr, used in russianb.ldf.
470 \let\cyr\relax
    Redefine \es@roman, used in spanish.ldf.
471 \let\es@roman\@Roman

```

#### Package german.

```

472 \let\glqq\textglqq
473 \let\grqq\textgrqq
474 \let\glq\textglq
475 \let\grq\textgrq
476 \let\flqq\textflqq
477 \let\frqq\textfrqq
478 \let\flq\textflq
479 \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}
480 \let\if@mid@expandable\@firstoftwo

```

#### AMS classes.

```

481 \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.

```

482 \let\hspace\HyPsd@hspace

```

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

```

483 \let\label\@gobble
484 \let\index\@gobble
485 \let\glossary\@gobble
486 \let\href\@secondoftwo
487 \let\@mkboth\@gobbletwo

```

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

```

488 \let\ref\HyPsd@ref
489 \let\pageref\HyPsd@pageref
490 \let\nameref\HyPsd@nameref
491 \let\autoref\HyPsd@autoref

```

#### Miscellaneous commands.

```

492 \let\leavevmode\@empty
493 \let\mbox\@empty

```

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

```

494 \def\halign{\pdfstringdefWarn\halign\@gobble}%
495 \let\ignorespaces\HyPsd@ignorespaces

```

### Patch for cjk bookmarks.

```
496 \ifHy@CJKbookmarks
497 \HyPsd@CJKhook
498 \fi
```

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

```
499 \Hy@pdfstringtrue
500 \pdfstringdefPreHook
```

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

```
501 \HyPsd@LetUnexpandableSpace\space
502 \HyPsd@LetUnexpandableSpace\ %
503 \HyPsd@LetUnexpandableSpace~%
504 \HyPsd@LetUnexpandableSpace\nobreakspace
```

### Package xspace.

```
505 \@ifundefined{@xspace}{%
506 \let\xspace\HyPsd@ITALCORR
507 }{%
508 \let\xspace\HyPsd@XSPACE
509 }%
510 \let\/\HyPsd@ITALCORR
511 \let\bgroup\/%
512 \let\egroup\/%
```

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

```
513 \let\discretionary\@gobbletwo
\@ifstar is defined in  $\text{\LaTeX}$  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 expandable 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:

```
514 \def\@ifnextchar{\HyPsd@ifnextchar\@ifnextchar}%
515 \def\kernel@ifnextchar{\HyPsd@ifnextchar\kernel@ifnextchar}%
516 \def\new@ifnextchar{\HyPsd@ifnextchar\new@ifnextchar}%
517 \let\@protected@testopt\HyPsd@protected@testopt
```

Support for package 'xargs':

```
518 \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 be 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).

```
519 \begingroup
520 \let\GenericError\@gobblefour
521 \let\GenericWarning\@gobbletwo
522 \let\GenericInfo\@gobbletwo
```

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

```
523 \ifx\nofrenchguillemets\@undefined
524 \else
525 \nofrenchguillemets
526 \fi
```

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

```
527 \let\Hy@temp\xdef
528 \let\def\HyPsd@DefCommand
529 \let\gdef\HyPsd@DefCommand
```

```

530      \let\edef\HyPsd@DefCommand
531      \let\xdef\HyPsd@DefCommand
532      \let\futurelet\HyPsd@LetCommand
533      \let\let\HyPsd@LetCommand
534      \Hy@temp#1{#2}%
535  \endgroup

```

### 6.2.3 Postprocessing

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

```

536      \ifx#1\@empty
537      \else

```

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

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

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

```

538      \HyPsd@ProtectSpaces#1%
539      \let\HyPsd@String\@empty
540      \expandafter\HyPsd@RemoveBraces\expandafter{#1|}%
541      \global\let#1\HyPsd@String

```

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

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

After  $\backslash\text{HyPsd@CheckCatcodes}$  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.

```

542 \let\HyPsd@SPACEOPTI\relax
543 {%
544 \let\HyPsd@String\@empty
545 \expandafter\HyPsd@CheckCatcodes#1\HyPsd@End
546 \global\let#1\HyPsd@String
547 }%
548 \expandafter\HyPsd@RemoveMask\expandafter
549 |\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.

```

550 \expandafter\HyPsd@Subst\expandafter{\HyPsd@GLYPHERR}{\relax}#1%
551 \let\HyPsd@String\@empty
552 \expandafter\HyPsd@GlyphProcess#1\relax\@empty
553 \global\let#1\HyPsd@String

```

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

```
554 \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.1df can produce an additional space before \guillemotright, because \lastskip and \unskip do not work. Therefore it is removed here.

```

555 \ifHy@unicode
556 \expandafter\HyPsd@StringSubst\csname 80\040\endcsname
557 \HyPsd@SPACEOPTI#1%
558 \edef\Hy@temp@A{\HyPsd@SPACEOPTI\HyPsd@SPACEOPTI\80\273}%
559 \expandafter\HyPsd@Subst\expandafter{\Hy@temp@A}%
560 {\HyPsd@SPACEOPTI\80\273}#1%
561 \else
562 \HyPsd@StringSubst{\040}\HyPsd@SPACEOPTI#1%
563 \expandafter\HyPsd@Subst\expandafter{%
564 \expandafter\HyPsd@SPACEOPTI\expandafter\HyPsd@SPACEOPTI
565 \string\273}{\HyPsd@SPACEOPTI\273}#1%
566 \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.

```

567 \ifHy@unicode
568 \HyPsd@StringSubst{\}){\80\051}#1%
569 \HyPsd@Subst){\80\051}#1%
570 \let\HyPsd@empty\relax
571 \expandafter\HyPsd@StringSubst\csname 80\051\endcsname
572 {\HyPsd@empty\80\051}#1%
573 \else
574 \HyPsd@StringSubst{\}){\051}#1%
575 \HyPsd@Subst){\051}#1%
576 \let\HyPsd@empty\relax
577 \HyPsd@StringSubst{\051}{\HyPsd@empty\string\})#1%
578 \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`.

```

579 \expandafter\HyPsd@Subst\expandafter{\//}\HyPsd@empty#1%
580 \@ifundefined{@xspace}{%
581 }{%
582 \let\HyPsd@xspace\relax
583 \expandafter\HyPsd@Subst\expandafter
584 {\HyPsd@XSPACE}\HyPsd@xspace#1%
585 \let\HyPsd@xspace\HyPsd@doxspace
586 }%
587 \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.

```

588 \HyPsd@Subst{---}\textemdash#1%
589 \HyPsd@Subst{--}\textendash#1%
590 % \HyPsd@Subst{fi}\textfi#1%
591 % \HyPsd@Subst{fl}\textfl#1%
592 \HyPsd@Subst{!'}\texttexclamdown#1%
593 \HyPsd@Subst{?'}\textquestiondown#1%

```

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

```

594 \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.

```

595     \ifHy@unicode
596         \HyPsd@StringSubst\(\textparenleft#1%
597         \HyPsd@Subst(\textparenleft#1%
598     \else
599         \HyPsd@StringSubst\({\050}#1%
600         \HyPsd@Subst({\050}#1%
601         \HyPsd@StringSubst{\050}{\string\()}#1%
602     \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.

```

603     \ifHy@unicode
604         \edef\HyPsd@SPACEOPTI{\80\040}%
605     \else
606         \let\HyPsd@SPACEOPTI\HyPsd@spaceopti
607     \fi
608     \xdef#1{#1\@empty}%
609 \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.

```

610 \endgroup
611 \begingroup
612     \ifHy@unicode
613         \HyPsd@ConvertToUnicode#1%

```

**Try conversion back to PDFDocEncoding.**

```

614     \ifx\HyPsd@pdfencoding\HyPsd@pdfencoding@auto
615         \ifundefined{StringEncodingConvertTest}{%
616             }{%
617                 \EdefUnescapeString\HyPsd@temp#1%
618                 \StringEncodingConvertTest\HyPsd@temp\HyPsd@temp
619                                     {utf16be}{pdfdoc}{%
620                     \EdefEscapeString\HyPsd@temp\HyPsd@temp
621                     \global\let#1\HyPsd@temp
622                     \Hy@unicodedefalse
623                 }{}%
624             }%
625         \fi
626     \fi

```

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

```

627     \pdfstringdefPostHook#1%
628 \endgroup
629 }

```

`\Hy@pdfstringdef`

```
630 \def\Hy@pdfstringdef#1#2{%
631   \pdfstringdef\Hy@gtemp{#2}%
632   \let#1\Hy@gtemp
633 }
```

## 6.3 Encodings

### 6.3.1 Workaround for package linguex

```
634 \@ifpackageloaded{linguex}{%
635   \let\HyLinguex@OrgB\b
636   \let\HyLinguex@OrgC\c
637   \let\HyLinguex@OrgD\d
638   \def\HyLinguex@Restore{%
639     \let\b\HyLinguex@OrgB
640     \let\c\HyLinguex@OrgC
641     \let\d\HyLinguex@OrgD
642   }%
643   \AtEndOfPackage{%
644     \pdfstringdefDisableCommands{%
645       \@ifundefined{oldb}{\let\b\oldb}%
646       \@ifundefined{oldc}{\let\c\oldc}%
647       \@ifundefined{oldd}{\let\d\oldd}%
648     }%
649   }%
650 }{%
651   \let\HyLinguex@Restore\relax
652 }%
```

### 6.3.2 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.

```
653 \@ifundefined{T@PD1}{%
654   \input{pd1enc.def}%
655   \HyLinguex@Restore
656 }{}
657 \DeclareFontFamily{PD1}{pdf}{}
658 \DeclareFontShape{PD1}{pdf}{m}{n}{ <-> cmr10 }{}
659 \DeclareFontSubstitution{PD1}{pdf}{m}{n}
```

### 6.3.3 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.

```
660 \def\HyPsd@InitUnicode{%
661   \@ifundefined{T@PU}{%
```

```

662 \input{puenc.def}%
663 \HyLinguex@Restore
664 }{}%
665 \DeclareFontFamily{PU}{pdf}{}%
666 \DeclareFontShape{PU}{pdf}{m}{n}{ <-> cmr10 }{}%
667 \DeclareFontSubstitution{PU}{pdf}{m}{n}%
668 \let\HyPsd@InitUnicode\relax
669 }

```

## 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.

```

670 \def\texorpdfstring{%
671   \ifHy@pdfstring
672     \expandafter\@secondoftwo
673   \else
674     \expandafter\@firstoftwo
675   \fi
676 }

```

### 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`.

```

677 \@ifundefined{pdfstringdefPreHook}{%
678   \let\pdfstringdefPreHook\@empty
679 }{}
680 \@ifundefined{pdfstringdefPostHook}{%
681   \let\pdfstringdefPostHook\@gobble
682 }{}

```

`\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`.

```

683 \def\pdfstringdefDisableCommands{%
684   \begingroup
685     \makeatletter
686     \HyPsd@DisableCommands
687 }

```

`\HyPsd@DisableCommands`

```
688 \long\def\HyPsd@DisableCommands#1{%
689   \toks0=\expandafter{\pdfstringdefPreHook}%
690   \toks1={#1}%
691   \xdef\pdfstringdefPreHook{\the\toks0 \the\toks1}%
692 \endgroup
693 }
```

`\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`.

```
694 \def\pdfstringdefWarn#1{%
695   \expandafter\noexpand\csname\<>-string#1\endcsname
696 }
```

## 6.5 Help macros for expansion

### 6.5.1 `\ignorespaces`

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

```
697 \begingroup
698   \catcode0=12 %
699   \def\x{\endgroup
700     \def\HyPsd@ignorespaces{%
701       \romannumeral\expandafter'\expandafter^^@%
702       \romannumeral'^^@%
703     }%
704   }%
705 \x
```

### 6.5.2 Babel languages

```
706 \newif\ifHy@next

Nothing to do for english.
707 \@ifundefined{danish@sh@"@sel}{-}{%
708   \def\HyPsd@babel@danish{%
709     \declare@shorthand{danish}{"}{-}%
710     \declare@shorthand{danish}{"}{-}%
711   }%
712 }
713 \@ifundefined{dutch@sh@"@sel}{-}{%
714   \def\HyPsd@babel@dutch{%
715     \declare@shorthand{dutch}{"}{-}%
716     \declare@shorthand{dutch}{"}{-}%
717   }%
718 }
```

```

719 \@ifundefined{finnish@sh@"@sel}{-}{%
720   \def\HyPsd@babel@finnish{%
721     \declare@shorthand{finnish}{-}{-}%
722   }%
723 }
724 \@ifundefined{french@sh@:@sel}{-}{%
725   \def\HyPsd@babel@frenchb{%
726     \def\guill@spacing{ }%
727   }%
728 }
729 \@ifundefined{german@sh@"@sel}{-}{%
730   \def\HyPsd@babel@german{%
731     \declare@shorthand{german}{-f}{-f}%
732     \declare@shorthand{german}{-}{-}%
733     \declare@shorthand{german}{-~}{-}%
734   }%
735 }
736 \@ifundefined{macedonian@sh@"@sel}{-}{%
737   \def\HyPsd@babel@macedonian{%
738     \declare@shorthand{macedonian}{-}{-}%
739     \declare@shorthand{macedonian}{-~}{-}%
740   }%
741 }{-}
742 \@ifundefined{ngerman@sh@"@sel}{-}{%
743   \def\HyPsd@babel@ngerman{%
744     \declare@shorthand{ngerman}{-}{-}%
745     \declare@shorthand{ngerman}{-~}{-}%
746   }%
747 }
748 \@ifundefined{portuges@sh@"@sel}{-}{%
749   \def\HyPsd@babel@portuges{%
750     \declare@shorthand{portuges}{-}{-}%
751   }%
752 }
753 \@ifundefined{russian@sh@"@sel}{-}{%
754   \def\HyPsd@babel@russian{%
755     \declare@shorthand{russian}{-}{-}%
756     \declare@shorthand{russian}{-~}{-}%
757   }%
758 }
759 \@ifundefined{slovene@sh@"@sel}{-}{%
760   \def\HyPsd@babel@slovene{%
761     \declare@shorthand{slovene}{-}{-}%
762   }%
763 }

```

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

```

764 \@ifundefined{spanish@sh@>@sel}{-}{%
765   \def\HyPsd@babel@spanish{%
766     \declare@shorthand{spanish}{<<}{\guillemotleft}%
767     \declare@shorthand{spanish}{>>}{\guillemotright}%
768     \declare@shorthand{spanish}{=}{-}%
769     \declare@shorthand{spanish}{~}{-}%
770     \declare@shorthand{spanish}{!}{\textexclamdown}%
771     \declare@shorthand{spanish}{?}{\textquestiondown}%
772   }%
773 }
774 \@ifundefined{swedish@sh@"@sel}{-}{%

```

```

775 \def\HyPsd@babel@swedish{%
776   \declare@shorthand{swedish}{"}{|}%
777   \declare@shorthand{swedish}{"}{|}%
778 }%
779 }
780 \@ifundefined{ukrainian@sh@"@sel}{|}%
781 \def\HyPsd@babel@ukrainian{%
782   \declare@shorthand{ukrainian}{"}{|}%
783   \declare@shorthand{ukrainian}{"}{|}%
784 }%
785 }
786 \@ifundefined{usorbian@sh@"@sel}{|}%
787 \def\HyPsd@babel@usorbian{%
788   \declare@shorthand{usorbian}{"}{|}%
789   \declare@shorthand{usorbian}{"}{|}%
790 }%
791 }
792 \@ifundefined{greek@sh@\string~@sel}{|}%
793 \let\HyPsd@GreekPatch\empty
794 }{|}%
795 \def\HyPsd@GreekPatch{%
796   \let\greeknumeral\HyPsd@greeknumeral
797   \let\Greeknumeral\HyPsd@Greeknumeral
798 }%
799 }
800 \def\HyPsd@greeknumeral#1{%
801   \HyPsd@GreekNum\@firstoftwo{#1}%
802 }
803 \def\HyPsd@Greeknumeral#1{%
804   \HyPsd@GreekNum\@secondoftwo{#1}%
805 }
806 \def\HyPsd@GreekNum#1#2{%
807   \ifHy@unicode
808     \ifnum#2<\@one
809       \@arabic{#2}%
810     \else
811       \ifnum#2<1000000 %
812         \HyPsd@@GreekNum#1{#2}%
813       \else
814         \@arabic{#2}%
815       \fi
816     \fi
817   \else
818     \@arabic{#2}%
819   \fi
820 }
821 \def\HyPsd@@GreekNum#1#2{%
822   \ifnum#2<\@m
823     \ifnum#2<10 %
824       \expandafter\HyPsd@GreekNumI
825       \expandafter\@gobble\expandafter#1\number#2%
826     \else
827       \ifnum#2<100 %
828         \expandafter\HyPsd@GreekNumII
829         \expandafter\@gobble\expandafter#1\number#2%
830       \else
831         \expandafter\HyPsd@GreekNumIII

```

```

832         \expandafter\@gobble\expandafter#1\number#2%
833     \fi
834 \fi
835 \ifnum#2>\z@
836     \textnumeralsigngreek
837 \fi
838 \else
839     \ifnum#2<\@M
840         \expandafter\HyPsd@GreekNumIV\expandafter#1\number#2%
841     \else
842         \ifnum#2<100000 %
843             \expandafter\HyPsd@GreekNumV\expandafter#1\number#2%
844         \else
845             \expandafter\HyPsd@GreekNumVI\expandafter#1\number#2%
846         \fi
847     \fi
848 \fi
849 }
850 \def\HyPsd@GreekNumI#1#2#3{%
851     #1{%
852         \ifnum#3>\z@
853             \textnumeralsignlowergreek
854         \fi
855     }%
856     \expandafter#2%
857     \ifcase#3 %
858         {}{}%
859     \or\textalpha\textAlpha
860     \or\textbeta\textBeta
861     \or\textgamma\textGamma
862     \or\textdelta\textDelta
863     \or\textepsilon\textEpsilon
864     \or\textstigmagreek\textStigmagreek
865     \or\textzeta\textZeta
866     \or\texteta\textEta
867     \or\texttheta\textTheta
868     \else
869         {}{}%
870     \fi
871 }
872 \def\HyPsd@GreekNumII#1#2#3#4{%
873     #1{%
874         \ifnum#3>\z@
875             \textnumeralsignlowergreek
876         \fi
877     }%
878     \expandafter#2%
879     \ifcase#3 %
880         {}{}%
881     \or\textiota\textIota
882     \or\textkappa\textKappa
883     \or\textlambda\textLambda
884     \or\textmu\textMu
885     \or\textnu\textNu
886     \or\textxi\textXi
887     \or\textomicron\textOmicron
888     \or\textpi\textPi

```

```

889 \or\textkoppagreek\textKoppagreek
890 \else
891   {}{}%
892 \fi
893 \HyPsd@GreekNumI#1#2#4%
894 }
895 \def\HyPsd@GreekNumIII#1#2#3#4#5{%
896   #1{%
897     \ifnum#3>\z@
898       \textnumeralsignlowergreek
899     \fi
900   }%
901   \expandafter#2%
902   \ifcase#3 %
903     {}{}%
904   \or\textrho\textRho
905   \or\textsigma\textSigma
906   \or\texttau\textTau
907   \or\textupsilon\textUpsilon
908   \or\textphi\textPhi
909   \or\textchi\textChi
910   \or\textpsi\textPsi
911   \or\textomega\textOmega
912   \or\textsampigreek\textSampigreek
913   \else
914     {}{}%
915   \fi
916   \HyPsd@GreekNumII#1#2#4#5%
917 }
918 \def\HyPsd@GreekNumIV#1#2#3#4#5{%
919   \HyPsd@GreekNumI\@firstofone#1#2%
920   \HyPsd@@GreekNum#1{#3#4#5}%
921 }
922 \def\HyPsd@GreekNumV#1#2#3#4#5#6{%
923   \HyPsd@GreekNumII\@firstofone#1#2#3%
924   \HyPsd@@GreekNum#1{#4#5#6}%
925 }
926 \def\HyPsd@GreekNumVI#1#2#3#4#5#6#7{%
927   \HyPsd@GreekNumIII\@firstofone#1#2#3#4%
928   \HyPsd@@GreekNum#1{#5#6#7}%
929 }

```

### 6.5.3 CJK bookmarks

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

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

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

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

```

930 \begingroup
931   \catcode"7F=\active
932   \toks@{%
933     \let\CJK@ignorespaces\empty

```

```

934 \def\CJK@char#1{\@gobbletwo}%
935 \let\CJK@charx\@gobblefour
936 \let\CJK@punctchar\@gobblefour
937 \def\CJK@punctcharx#1{\@gobblefour}%
938 \catcode"7F=\active
939 \def^^7f#1^^7f#2^^7f{%
940   \string #1\HyPsd@DecimalToOctal{#2}%
941 }%
942 % ... ?
943 \ifHy@unicode
944   \def\Hy@cjkpu{\80}%
945   \else
946     \let\Hy@cjkpu\@empty
947   \fi
948   \HyPsd@CJKActiveChars
949 }%
950 \count@=127 %
951 \@whilenum\count@<255 \do{%
952   \advance\count@ by 1 %
953   \lccode'\~=\count@
954   \lowercase{%
955     \toks@\expandafter{\the\toks@ ~}%
956   }%
957 }%
958 \toks@\expandafter{\the\toks@ !}%
959 \xdef\HyPsd@CJKhook{\the\toks@}%
960 \endgroup

```

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

```

961 \def\HyPsd@CJKActiveChars#1{%
962   \ifx#1!%
963     \let\HyPsd@CJKActiveChars\relax
964   \else
965     \edef#1{\noexpand\Hy@cjkpu\string#1}%
966   \fi
967   \HyPsd@CJKActiveChars
968 }

```

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

```

969 \def\HyPsd@DecimalToOctal#1{%
970   \ifcase #1 %
971     \000\or \001\or \002\or \003\or \004\or \005\or \006\or \007%
972     \or \010\or \011\or \012\or \013\or \014\or \015\or \016\or \017%
973     \or \020\or \021\or \022\or \023\or \024\or \025\or \026\or \027%
974     \or \030\or \031\or \032\or \033\or \034\or \035\or \036\or \037%
975     \or \040\or \041\or \042\or \043\or \044\or \045\or \046\or \047%
976     \or \050\or \051\or \052\or \053\or \054\or \055\or \056\or \057%
977     \or 0\or 1\or 2\or 3\or 4\or 5\or 6\or 7%
978     \or 8\or 9\or \072\or \073\or \074\or \075\or \076\or \077%
979     \or @\or A\or B\or C\or D\or E\or F\or G%
980     \or H\or I\or J\or K\or L\or M\or N\or O%
981     \or P\or Q\or R\or S\or T\or U\or V\or W%
982     \or X\or Y\or Z\or \133\or \134\or \135\or \136\or \137%
983     \or \140\or a\or b\or c\or d\or e\or f\or g%
984     \or h\or i\or j\or k\or l\or m\or n\or o%
985     \or p\or q\or r\or s\or t\or u\or v\or w%

```

```

986 \or x\or y\or z\or \173\or \174\or \175\or \176\or \177%
987 \or \200\or \201\or \202\or \203\or \204\or \205\or \206\or \207%
988 \or \210\or \211\or \212\or \213\or \214\or \215\or \216\or \217%
989 \or \220\or \221\or \222\or \223\or \224\or \225\or \226\or \227%
990 \or \230\or \231\or \232\or \233\or \234\or \235\or \236\or \237%
991 \or \240\or \241\or \242\or \243\or \244\or \245\or \246\or \247%
992 \or \250\or \251\or \252\or \253\or \254\or \255\or \256\or \257%
993 \or \260\or \261\or \262\or \263\or \264\or \265\or \266\or \267%
994 \or \270\or \271\or \272\or \273\or \274\or \275\or \276\or \277%
995 \or \300\or \301\or \302\or \303\or \304\or \305\or \306\or \307%
996 \or \310\or \311\or \312\or \313\or \314\or \315\or \316\or \317%
997 \or \320\or \321\or \322\or \323\or \324\or \325\or \326\or \327%
998 \or \330\or \331\or \332\or \333\or \334\or \335\or \336\or \337%
999 \or \340\or \341\or \342\or \343\or \344\or \345\or \346\or \347%
1000 \or \350\or \351\or \352\or \353\or \354\or \355\or \356\or \357%
1001 \or \360\or \361\or \362\or \363\or \364\or \365\or \366\or \367%
1002 \or \370\or \371\or \372\or \373\or \374\or \375\or \376\or \377%
1003 \fi
1004 }

```

#### 6.5.4 \@inmathwarn-Patch

`\HyPsd@inmathwarn` The patch of `\@inmathwarn` is needed to get rid of the infinite error loop with glyphs of other encodings (see the explanation above). Potentially the patch is dangerous, if the code in `ltoutenc.dtx` changes. Checked with  $\text{\LaTeX} 2_{\epsilon}$  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 ( $\text{\LaTeX} 2_{\epsilon}$  release [1998/12/01]). In the normal case `\pdfstringdef` is executed in a context where `\protect` has the meaning of `\@typesetprotect` (`=\relax`).

```

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

```

```

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

1005 \def\HyPsd@inmathwarn#1#2{%
1006   \ifx#2\expandafter
1007     \expandafter\ifx\csname\cf@encoding\string#1\endcsname\relax
1008       \HyPsd@GLYPHERR
1009       \expandafter\@gobble\string#1%
1010       >%
1011       \expandafter\expandafter\expandafter\HyPsd@EndWithElse
1012     \else
1013       \expandafter\expandafter\expandafter\HyPsd@GobbleFiFi
1014     \fi
1015   \else
1016     \expandafter#2%
1017   \fi
1018 }
1019 \def\HyPsd@GobbleFiFi#1\fi#2\fi{}
1020 \def\HyPsd@EndWithElse#1\else\else{}

```

`\HyPsd@add@accent`

```

1021 \def\HyPsd@add@accent#1#2{%
1022   \HyPsd@GLYPHERR\expandafter\@gobble\string#1+\string#2>%
1023   #2%
1024 }%

```

### 6.5.5 Unexpandable spaces

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

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

These properties are used in `\HyPsd@CheckCatcodes`.

```

1025 \def\HyPsd@LetUnexpandableSpace#1{%
1026   \expandafter\futurelet\expandafter#1\expandafter\@gobble\space\relax
1027 }

```

`\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.

```

1028 \HyPsd@LetUnexpandableSpace\HyPsd@UnexpandableSpace

```

### 6.5.6 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.

`\HyPsd@ITALCORR`  
`\HyPsd@GLYPHERR`

```

1029 \edef\HyPsd@XSPACE{\string#\string X}
1030 \edef\HyPsd@ITALCORR{\string#\string I}
1031 \edef\HyPsd@GLYPHERR{\string#\string G}

```

### 6.5.7 \hspace fix

\HyPsd@hspace

```
1032 \def\HyPsd@hspace#1{\HyPsd@@hspace#1*\END}
```

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

```
1033 \def\HyPsd@@hspace#1*#2\END{%
1034   \ifx\#2\%
1035     \HyPsd@hspacetest{#1}%
1036   \else
1037     \expandafter\HyPsd@hspacetest
1038   \fi
1039 }
```

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

```
1040 \def\HyPsd@hspacetest#1{\ifdim#1>\z@\space\fi}
```

### 6.5.8 Fix for AMS classes

```
1041 \@ifundefined{tocsection}{%
1042   \let\HyPsd@AMSclassfix\relax
1043 }{%
1044   \def\HyPsd@AMSclassfix{%
1045     \let\tocpart\HyPsd@tocsection
1046     \let\tocchapter\HyPsd@tocsection
1047     \let\tocappendix\HyPsd@tocsection
1048     \let\tocsection\HyPsd@tocsection
1049     \let\tocsubsection\HyPsd@tocsection
1050     \let\tocsubsubsection\HyPsd@tocsection
1051     \let\tocparagraph\HyPsd@tocsection
1052   }%
1053   \def\HyPsd@tocsection#1#2#3{%
1054     \if @#2@\else\if @#1@\else#1 \fi#2. \fi
1055     #3%
1056   }%
1057 }
```

### 6.5.9 Reference commands

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

```
1058 \def\HyPsd@ref#1{\HyPsd@@ref#1*\END}%
```

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

```
1059 \def\HyPsd@@ref#1*#2\END{%
1060   \ifx\#2\%
1061     \HyPsd@@@ref{#1}%
1062   \else
1063     \expandafter\HyPsd@@@ref
1064   \fi
1065 }
```

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

```
1066 \def\HyPsd@@@ref#1{%
1067   \expandafter\ifx\csname r@#1\endcsname\relax
1068     ??%
```

```

1069 \else
1070 \expandafter\expandafter\expandafter
1071 \@car\csname r@#1\endcsname\@nil
1072 \fi
1073 }

\HyPsd@pageref Macro \HyPsd@pageref calls the macro \HyPsd@@pageref for star checking. The same
methods like in \HyPsd@hspace is used.
1074 \def\HyPsd@pageref#1{\HyPsd@@pageref#1*\END}

\HyPsd@@pageref Macro \HyPsd@@pageref checks if a star is present.
1075 \def\HyPsd@@pageref#1*#2\END{%
1076 \ifx\#2\%
1077 \HyPsd@@@pageref{#1}%
1078 \else
1079 \expandafter\HyPsd@@@pageref
1080 \fi
1081 }

\HyPsd@@@pageref \HyPsd@@@pageref does the work and extracts the second argument.
1082 \def\HyPsd@@@pageref#1{%
1083 \expandafter\ifx\csname r@#1\endcsname\relax
1084 ??%
1085 \else
1086 \expandafter\expandafter\expandafter\expandafter
1087 \expandafter\expandafter\expandafter\@car
1088 \expandafter\expandafter\expandafter\@gobble
1089 \csname r@#1\endcsname{}\@nil
1090 \fi
1091 }

\HyPsd@nameref Macro \HyPsd@nameref calls the macro \HyPsd@@nameref for star checking. The same
methods like in \HyPsd@hspace is used.
1092 \def\HyPsd@nameref#1{\HyPsd@@nameref#1*\END}

\HyPsd@@nameref Macro \HyPsd@@nameref checks if a star is present.
1093 \def\HyPsd@@nameref#1*#2\END{%
1094 \ifx\#2\%
1095 \HyPsd@@@nameref{#1}%
1096 \else
1097 \expandafter\HyPsd@@@nameref
1098 \fi
1099 }

\HyPsd@@@nameref \HyPsd@@@nameref does the work and extracts the third argument.
1100 \def\HyPsd@@@nameref#1{%
1101 \expandafter\ifx\csname r@#1\endcsname\relax
1102 ??%
1103 \else
1104 \expandafter\expandafter\expandafter\expandafter
1105 \expandafter\expandafter\expandafter\@car
1106 \expandafter\expandafter\expandafter\@gobbletwo
1107 \csname r@#1\endcsname{}\@nil
1108 \fi
1109 }

```

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

```
1110 \def\HyPsd@autoref#1{\HyPsd@@autoref#1*\END}
```

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

```
1111 \def\HyPsd@@autoref#1*#2\END{%
1112   \ifx\#2\%
1113     \HyPsd@@@autoref{#1}%
1114   \else
1115     \expandafter\HyPsd@@@autoref
1116   \fi
1117 }
```

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

```
1118 \def\HyPsd@@@autoref#1{%
1119   \expandafter\ifx\csname r@#1\endcsname\relax
1120     ??%
1121   \else
1122     \expandafter\expandafter\expandafter\HyPsd@autorefname
1123       \csname r@#1\endcsname{}{}{}{}\@nil
1124     \expandafter\expandafter\expandafter
1125       \@car\csname r@#1\endcsname\@nil
1126   \fi
1127 }
```

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

```
1128 \def\HyPsd@autorefname#1#2#3#4#5\@nil{%
1129   \ifx\#4\%
1130   \else
1131     \HyPsd@@autorefname#4.\@nil
1132   \fi
1133 }
```

`\HyPsd@@autorefname`

```
1134 \def\HyPsd@@autorefname#1.#2\@nil{%
1135   \@ifundefined{#1autorefname}{%
1136     \@ifundefined{#1name}{%
1137       }{%
1138         \csname#1name\endcsname\space
1139       }%
1140     }{%
1141       \csname#1autorefname\endcsname\space
1142     }%
1143 }
```

### 6.5.10 Redefining the defining commands

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

Active characters cannot be defined with this trick. It is possible to define all undefined active characters (perhaps that they have the meaning of `\relax`). To avoid side

effects this should be done in `\pdfstringdef` shortly before the `\xdef` job. But checking and defining all possible active characters of the full range (0 until 255) would take a while. `\pdfstringdef` is slow enough, so this isn't done.

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

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

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

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

```
\HyPsd@DefCommand
\HyPsd@LetCommand 1144 \begingroup
1145   \def\x#1#2{%
1146     \endgroup
1147     \let#1\def
1148     \def\HyPsd@DefCommand##1##2##{%
1149       #1%
1150       \expandafter\noexpand
1151       \csname\expandafter@gobble\string##1\@empty\endcsname
1152       \@gobble
1153     }%
1154     \let#2\let
1155     \def\HyPsd@@LetCommand##1{%
1156       \expandafter\ifx\csname##1\expandafter\endcsname
1157         \csname iftrue\endcsname
1158         \pdfstringdefWarn\let
1159         \expandafter@gobble
1160       \else
1161         \expandafter\ifx\csname##1\expandafter\endcsname
1162           \csname iffalse\endcsname
1163           \pdfstringdefWarn\let
1164           \expandafter\expandafter\expandafter@gobble
1165         \else
1166           #2%
1167           \expandafter\noexpand
1168           \csname##1\expandafter\expandafter\expandafter\endcsname
1169         \fi
1170       \fi
1171     }%
1172   }%
1173   \expandafter\x\csname <def>-command\expandafter\endcsname
1174     \csname <let>-command\endcsname
1175   \def\HyPsd@LetCommand#1{%
1176     \expandafter\expandafter\expandafter\HyPsd@@LetCommand
1177     \expandafter\expandafter\expandafter{%
1178     \expandafter@gobble\string#1\@empty
```

```

1179 }%
1180 }

```

### 6.5.11 \ifnextchar

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

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

```

1181 \def\HyPsd@ifnextchar#1{%
1182   \pdfstringdefWarn#1%
1183   \expandafter\@gobbletwo\@gobble
1184 }

```

### 6.5.12 \@protected@testoptifnextchar

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

```

1185 \def\HyPsd@protected@testopt#1{%
1186   \pdfstringdefWarn#1%
1187   \@gobbletwo
1188 }

```

## 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:

```

1189 \def\HyPsd@Warning#1{%
1190   \begingroup
1191     \def\space{ }%
1192     \Hy@Warning{#1}%
1193   \endgroup
1194 }

```

### 6.6.2 Protecting spaces

```

1195 \RequirePackage{etexcmds}[2007/09/09]
1196 \ifetex@unexpanded
1197   \expandafter\@secondoftwo
1198 \else
1199   \expandafter\@firstoftwo
1200 \fi
1201 {%

```

`\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`.

```

1202 \def\HyPsd@ProtectSpaces#1{%
1203   \iftrue
1204     \expandafter\HyPsd@@ProtectSpacesFi
1205     \expandafter|\expandafter\@empty#1| \HyPsd@End#1%
1206   \fi
1207 }%

```

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

```

1208 \def\HyPsd@@ProtectSpacesFi#1 #2\HyPsd@End#3\fi{%
1209   \fi
1210   \ifx\scrollmode#2\scrollmode
1211     \HyPsd@RemoveMask#1\HyPsd@End#3%
1212   \else
1213     \gdef#3{#1\HyPsd@UnexpandableSpace#2}%
1214     \expandafter\HyPsd@@ProtectSpacesFi#3\HyPsd@End#3%
1215   \fi
1216 }%

```

### 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.

```

1217 \def\HyPsd@RemoveMask|#1|\HyPsd@End#2{%
1218   \toks@{\expandafter{#1}}%
1219   \xdef#2{\the\toks@}%
1220 }%

1221 }{%
1222 \let\HyPsd@fi\fi
1223 \def\HyPsd@ProtectSpaces#1{%
1224   \xdef#1{%
1225     \iftrue
1226       \expandafter\HyPsd@@ProtectSpacesFi
1227       \expandafter|\expandafter\@empty#1| %
1228     \HyPsd@fi
1229   }%
1230   \expandafter\HyPsd@RemoveMask#1\HyPsd@End#1%
1231 }%
1232 \def\HyPsd@@ProtectSpacesFi#1 #2\HyPsd@fi{%
1233   \fi
1234   \etex@unexpanded{#1}%
1235   \ifx\scrollmode#2\scrollmode
1236   \else
1237     \HyPsd@@ProtectSpacesFi\HyPsd@UnexpandableSpace#2%
1238   \HyPsd@fi
1239 }%
1240 \def\HyPsd@RemoveMask|#1|\HyPsd@End#2{%
1241   \xdef#2{\etex@unexpanded\expandafter{#1}}%
1242 }%
1243 }

```

### 6.6.3 Remove grouping braces

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

```

1244 \def\HyPsd@RemoveBraces#1{%
1245   \ifx\scrollmode#1\scrollmode
1246   \else
1247     \HyPsd@@RemoveBracesFi#1\HyPsd@End{#1}%
1248   \fi
1249 }

```

`\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`.

```

1250 \def\HyPsd@@RemoveBracesFi#1#2\HyPsd@End#3\fi{%
1251   \fi
1252   \def\Hy@temp@A{#1#2}%
1253   \def\Hy@temp@B{#3}%
1254   \ifx\Hy@temp@A\Hy@temp@B
1255     \expandafter\def\expandafter\HyPsd@String\expandafter{%
1256       \HyPsd@String#1%
1257     }%
1258     \ifx\scrollmode#2\scrollmode
1259     \else
1260       \Hy@ReturnAfterFiFiEnd{%
1261         \HyPsd@RemoveBraces{#2}%
1262       }%
1263     \fi
1264   \else
1265     \def\Hy@temp@A{#1}%
1266     \HyPsd@AppendItalcorr\HyPsd@String
1267     \ifx\Hy@temp@A\@empty
1268       \Hy@ReturnAfterElseFiFiEnd{%
1269         \HyPsd@RemoveBraces{#2}%
1270       }%
1271     \else
1272       \HyPsd@ProtectSpaces\Hy@temp@A
1273       \HyPsd@AppendItalcorr\Hy@temp@A
1274       \Hy@ReturnAfterFiFiEnd{%
1275         \expandafter\HyPsd@RemoveBraces\expandafter
1276           {\Hy@temp@A#2}%
1277       }%
1278     \fi
1279   \fi
1280   \Hy@ReturnEnd
1281 }

```

`\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`.

```

1282 \def\HyPsd@AppendItalcorr#1{%
1283   \expandafter\HyPsd@@AppendItalcorr\expandafter{\/}#1%
1284 }
1285 \def\HyPsd@@AppendItalcorr#1#2{%
1286   \expandafter\def\expandafter#2\expandafter{#2#1}%
1287 }

```

## 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`).

```

1288 \def\HyPsd@CheckCatcodes#1#2\HyPsd@End{%
1289   \global\let\HyPsd@Rest\relax
1290   \ifcat\relax\noexpand#1\relax
1291     \ifx#1\protect
1292     \else
1293       \ifx#1\penalty
1294         \setbox\z@=\hbox{%
1295           \afterassignment\HyPsd@AfterCountRemove
1296           \count@=#2\HyPsd@End
1297         }%
1298       \else
1299         \ifx#1\kern
1300         \setbox\z@=\hbox{%
1301           \afterassignment\HyPsd@AfterDimenRemove
1302           \dimen@=#2\HyPsd@End
1303         }%
1304       \else
1305         \ifx#1\hskip
1306         \setbox\z@=\hbox{%
1307           \afterassignment\HyPsd@AfterSkipRemove
1308           \skip@=#2\HyPsd@End
1309         }%
1310       \else
1311         \HyPsd@CatcodeWarning{#1}%
1312       \fi
1313     \fi
1314   \fi
1315 \fi
1316 \else
1317   \ifcat#1A% letter
1318   \expandafter\def\expandafter\HyPsd@String\expandafter{%
1319     \HyPsd@String#1%
1320   }%
1321 \else
1322   \ifcat#1 % SPACE
1323   \expandafter\def\expandafter\HyPsd@String\expandafter{%
1324     \HyPsd@String\HyPsd@SPACEOPTI
1325   }%
1326 \else
1327   \ifcat$#1%
1328   \HyPsd@CatcodeWarning{math shift}%
1329 \else
1330   \ifcat&#1%
1331   \HyPsd@CatcodeWarning{alignment tab}%

```

```

1332         \else
1333         \ifcat^#1%
1334         \HyPsd@CatcodeWarning{superscript}%
1335         \else
1336         \ifcat_#1%
1337         \HyPsd@CatcodeWarning{subscript}%
1338         \else
1339         \expandafter\def\expandafter\HyPsd@String\expandafter{%
1340         \HyPsd@String#1%
1341         }%
1342         \fi
1343         \fi
1344         \fi
1345         \fi
1346         \fi
1347         \fi
1348         \fi
1349         \ifx\HyPsd@Rest\relax
1350         \ifx\scrollmode#2\scrollmode
1351         \else
1352         \Hy@ReturnAfterFiFiEnd{%
1353         \HyPsd@CheckCatcodes#2\HyPsd@End
1354         }%
1355         \fi
1356         \else
1357         \ifx\HyPsd@Rest\@empty
1358         \else
1359         \Hy@ReturnAfterFiFiEnd{%
1360         \expandafter\HyPsd@CheckCatcodes\HyPsd@Rest\HyPsd@End
1361         }%
1362         \fi
1363         \fi
1364         \Hy@ReturnEnd
1365 }

```

### Remove counts, dimens, skips.

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

```

1366 \def\HyPsd@AfterCountRemove#1\HyPsd@End{%
1367   \gdef\HyPsd@Rest{#1}%
1368 }

```

\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.

```

1369 \def\HyPsd@AfterDimenRemove#1\HyPsd@End{%
1370   \ifdim\ifx\HyPsd@String\@empty\z@\else\dimen@ \fi>1ex %
1371   \HyPsd@ReplaceSpaceWarning{\string\kern\space\the\dimen@}%
1372   \gdef\HyPsd@Rest{\HyPsd@UnexpandableSpace #1}%
1373   \else
1374   \ifdim\dimen@=\z@
1375   \else
1376   \HyPsd@RemoveSpaceWarning{\string\kern\space\the\dimen@}%
1377   \fi
1378   \gdef\HyPsd@Rest{#1}%
1379   \fi

```

1380 }

`\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).

```
1381 \def\HyPsd@AfterSkipRemove#1\HyPsd@end{%
1382   \ifdim\ifx\HyPsd@String\@empty\z@else\skip@fi>1ex %
1383     \HyPsd@ReplaceSpaceWarning{\string\hskip\space\the\skip@}%
1384     \gdef\HyPsd@Rest{\HyPsd@UnexpandableSpace #1}%
1385   \else
1386     \ifdim\skip@=\z@
1387     \else
1388       \HyPsd@RemoveSpaceWarning{\string\kern\space\the\skip@}%
1389     \fi
1390     \gdef\HyPsd@Rest{#1}%
1391   \fi
1392 }
```

### Catcode warnings.

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

```
1393 \def\HyPsd@CatcodeWarning#1{%
1394   \HyPsd@Warning{%
1395     Token not allowed in a PDF string (%
1396     \ifHy@unicode
1397       Unicode%
1398     \else
1399       PDFDocEncoding%
1400     \fi
1401     ):%
1402     \MessageBreak removing ‘\HyPsd@RemoveCmdPrefix#1’%
1403   }%
1404 }
1405 \begingroup
1406   \catcode'\|=0 %
1407   \catcode'\|=12 %
1408   \gdef\HyPsd@RemoveCmdPrefix#1{%
1409     \expandafter\HyPsd@@RemoveCmdPrefix
1410     \string#1\@empty\<>-|\@empty|\@empty
1411   }%
1412   \gdef\HyPsd@@RemoveCmdPrefix#1\<>-#2|\@empty#3|\@empty{#1#2}%
1413 \endgroup
```

`\HyPsd@RemoveSpaceWarning`

```
1414 \def\HyPsd@RemoveSpaceWarning#1{%
1415   \HyPsd@Warning{%
1416     Token not allowed in a PDF string (%
1417     \ifHy@unicode
1418       Unicode%
1419     \else
1420       PDFDocEncoding%
1421     \fi
1422     ):%
1423     \MessageBreak #1\MessageBreak
1424     removed%
1425   }%
1426 }
```

\HyPsd@ReplaceSpaceWarning

```
1427 \def\HyPsd@ReplaceSpaceWarning#1{%
1428   \HyPsd@Warning{%
1429     Token not allowed in a PDF string (%)
1430     \ifHy@unicode
1431       Unicode%
1432     \else
1433       PDFDocEncoding%
1434     \fi
1435   }:%
1436   \MessageBreak #1\MessageBreak
1437   replaced by space%
1438 }%
1439 }
```

### 6.6.5 Check for wrong glyphs

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

```
1440 \def\HyPsd@GlyphProcess#1\relax#2\@empty{%
1441   \expandafter\def\expandafter\HyPsd@String\expandafter{%
1442     \HyPsd@String#1%
1443   }%
1444   \ifx\#2\%
1445   \else
1446     \Hy@ReturnAfterFi{%
1447       \HyPsd@GlyphProcessWarning#2\@empty
1448     }%
1449   \fi
1450 }
1451 \def\HyPsd@GlyphProcessWarning#1>#2\@empty{%
1452   \HyPsd@@GlyphProcessWarning#1++>%
1453   \HyPsd@GlyphProcess#2\@empty
1454 }
1455 \def\HyPsd@@GlyphProcessWarning#1+#2+#3>{%
1456   \ifx\#2\%
1457     \HyPsd@Warning{%
1458       Glyph not defined in %
1459       P\ifHy@unicode U\else D1\fi\space encoding,\MessageBreak
1460       removing ‘\@backslashchar#1’%
1461     }%
1462   \else
1463     \HyPsd@Warning{%
1464       Composite letter ‘\@backslashchar#1+#2’\MessageBreak
1465       not defined in P\ifHy@unicode U\else D1\fi\space encoding,%
1466       \MessageBreak
1467       removing ‘\@backslashchar#1’%
1468     }%
1469   \fi
1470 }
```

### 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.

```

1471 \def\HyPsd@spaceopti#1{ % first space
1472   \ifx\HyPsd@spaceopti#1%
1473     \040%
1474   \else
1475     #1%
1476   \fi
1477 }%

```

### 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.

```

1478 \def\HyPsd@Subst#1#2#3{%
1479   \def\HyPsd@@ReplaceFi##1#1##2\END\fi{%
1480     \fi
1481     ##1%
1482     \ifx\scrollmode##2\scrollmode
1483     \else
1484       #2%
1485       \HyPsd@@ReplaceFi##2\END
1486     \fi
1487   }%
1488   \xdef#3{%
1489     \iftrue
1490       \expandafter\HyPsd@@ReplaceFi#3#1\END
1491     \fi
1492   }%
1493 }

```

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

```

1494 \def\HyPsd@StringSubst#1{%
1495   \expandafter\HyPsd@Subst\expandafter{\string#1}%
1496 }

```

### 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.

```

1497 \def\HyPsd@doxspace#1{%
1498   \ifx#1\relax\else
1499   \ifx#1.\else
1500   \ifx#1:\else
1501   \ifx#1,\else
1502   \ifx#1;\else
1503   \ifx#1!\else
1504   \ifx#1?\else
1505   \ifx#1/\else
1506   \ifx#1-\else
1507   \ifx#1'\else
1508     \HyPsd@SPACEOPTI
1509   \fi

```

```

1510         \fi
1511         \fi
1512         \fi
1513         \fi
1514         \fi
1515         \fi
1516         \fi
1517         \fi
1518         \fi
1519         #1%
1520 }%

```

## 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.

```

1521 \begingroup
1522   \catcode'\|=0 %
1523   \catcode'\|=12 %

```

\HyPsd@ConvertToUnicode

```

1524 |gdef|HyPsd@ConvertToUnicode#1{%
1525   |xdef#1{%
1526     |expandafter|HyPsd@DoConvert#1|@empty|@empty|@empty
1527   }%
1528   |ifx#1|@empty
1529   |else
1530     |xdef#1{%
1531       \376\377%
1532       #1%
1533     }%
1534   |fi
1535 }%

```

\HyPsd@DoConvert

```

1536 |gdef|HyPsd@DoConvert#1{%
1537   |ifx#1|@empty
1538   |else
1539     |Hy@ReturnAfterFi{%
1540       |ifx#1\%%
1541       \%%
1542       |expandafter|HyPsd@DoEscape
1543     |else
1544       |HyPsd@Char{#1}%
1545       |expandafter|HyPsd@DoConvert
1546     |fi
1547   }%
1548   |fi
1549 }%

```

\HyPsd@DoEscape

```

1550 |gdef|HyPsd@DoEscape#1{%
1551   |ifx#19%
1552   |expandafter|HyPsd@GetTwoBytes
1553   |else

```

```

1554 |Hy@ReturnAfterFi{%
1555 |ifx#18%
1556 00%
1557 |expandafter|HyPsd@GetTwoBytes
1558 |else
1559 #1%
1560 |expandafter|HyPsd@GetOneByte
1561 |fi
1562 }%
1563 |fi
1564 }%

```

\HyPsd@GetTwoBytes

```

1565 |gdef|HyPsd@GetTwoBytes#1\#2#3#4{%
1566 #1\#2#3#4%
1567 |HyPsd@DoConvert
1568 }%

```

\HyPsd@GetOneByte

```

1569 |gdef|HyPsd@GetOneByte#1#2{%
1570 #1#2%
1571 |HyPsd@DoConvert
1572 }%
1573 |endgroup

```

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

```

1574 \def\HyPsd@GetNextTwoTokens#1#2#3\END#4{%
1575 \xdef#4{#4#1#2}%
1576 \HyPsd@@ConvertToUnicode#3\END#4%
1577 }

```

\HyPsd@Char

```

1578 \begingroup
1579 \catcode0=9 %
1580 \catcode'\^=7 %
1581 \catcode'\^^=12 %
1582 \def\x{^^^0000}%
1583 \expandafter\endgroup
1584 \ifx\x\@empty
1585 \def\HyPsd@Char#1{%
1586 \ifnum'#1<128 %
1587 \@backslashchar 000#1%
1588 \else
1589 \ifnum'#1<65536 %
1590 \expandafter\HyPsd@CharTwoByte\number'#1!%
1591 \else
1592 \expandafter\expandafter\expandafter\HyPsd@CharSurrogate
1593 \intcalcSub{ '#1}{65536}!%
1594 \fi
1595 \fi
1596 }%
1597 \def\HyPsd@CharTwoByte#1!{%
1598 \expandafter\expandafter\expandafter\HyPsd@CharOctByte
1599 \IntCalcDiv#1!256!!%
1600 \expandafter\expandafter\expandafter\HyPsd@CharOctByte
1601 \IntCalcMod#1!256!!%
1602 }%

```

```

1603 \def\HyPsd@CharOctByte#1!{%
1604   \@backslashchar
1605   \IntCalcDiv#1!64!%
1606   \intcalcDiv{\IntCalcMod#1!64!}{8}%
1607   \IntCalcMod#1!8!%
1608 }%
1609 \def\HyPsd@CharSurrogate#1!{%
1610   \@backslashchar 33%
1611   \IntCalcDiv#1!262144!%
1612   \expandafter\expandafter\expandafter\HyPsd@CharOctByte
1613   \intcalcDiv{\IntCalcMod#1!262144!}{1024}!%
1614   \@backslashchar 33%
1615   \expandafter\expandafter\expandafter\IntCalcAdd
1616   \intcalcDiv{\IntCalcMod#1!1024!}{256}!4!%
1617   \expandafter\expandafter\expandafter\HyPsd@CharOctByte
1618   \IntCalcMod#1!256!%
1619 }%
1620 \else
1621   \def\HyPsd@Char#1{%
1622     \@backslashchar 000#1%
1623   }%
1624 \fi

```

### 6.6.9 Support for UTF-8 input encoding

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

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

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

```

1625 \begingroup\expandafter\expandafter\expandafter\endgroup
1626 \expandafter\ifx\csname numexpr\endcsname\relax
1627   \let\HyPsd@UTFviii\relax
1628 \else
1629   \begingroup
1630     \lccode'\~='^^f4\relax
1631   \lowercase{\endgroup
1632     \def\HyPsd@UTFviii{%
1633       \let\UTFviii@two@octets\HyPsd@UTFviii@two
1634       \let\UTFviii@three@octets\HyPsd@UTFviii@three
1635       \let\UTFviii@four@octets\HyPsd@UTFviii@four
1636       \ifx~\HyPsd@UTFviii@ccxliv@undef
1637         \let~\HyPsd@UTFviii@ccxliv@def
1638       \fi
1639       \let\unichar\HyPsd@unichar
1640     }%
1641   }%
1642   \def\HyPsd@UTFviii@ccxliv@undef{\@inpencl@undefined@{utf8}}%
1643   \edef\HyPsd@UTFviii@ccxliv@def{%
1644     \noexpand\UTFviii@four@octets\string ^^f4%
1645   }%

```

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.

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

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

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

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

$$(5)$$

```

1646 \def\HyPsd@UTFviii@two#1#2{%
1647   \expandafter\HyPsd@UTFviii@@two
1648   \number\dimexpr.25\dimexpr'#1sp\expandafter\relax\expandafter|
1649   \number'#1\expandafter|
1650   \number\dimexpr.125\dimexpr'#2sp\expandafter\relax\expandafter|
1651   \number'#2 \@nil
1652 }%
1653 \def\HyPsd@UTFviii@@two#1|#2|#3|#4\@nil{%
1654   \expandafter\8%
1655   \number\numexpr #1-48\expandafter\relax
1656   \csname\number\numexpr #2-4*#1\relax\expandafter\endcsname
1657   \number\numexpr #3-8*%
1658   \number\dimexpr.125\dimexpr#3sp\relax\relax\expandafter\relax
1659   \number\numexpr #4-8*#3\relax
1660 }%
```

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

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

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

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

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

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

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

$$(12)$$

```

1661 \def\HyPsd@UTFviii@three#1#2#3{%
1662   \expandafter\HyPsd@UTFviii@@three
1663   \number\dimexpr.25\dimexpr'#1sp\expandafter\relax\expandafter|
1664   \number'#1\expandafter|
1665   \number\ifnum\numexpr'#2-128\relax <32 0\else 1\fi\expandafter|
1666   \number\dimexpr.25\dimexpr'#2sp\expandafter\relax\expandafter|
1667   \number'#2\expandafter|
1668   \number\dimexpr.125\dimexpr'#3sp\expandafter\relax\expandafter|
1669   \number'#3 \@nil
1670 }%
1671 \def\HyPsd@UTFviii@@three#1|#2|#3|#4|#5|#6|#7\@nil{%
1672   \expandafter\9%
1673   \number\numexpr #1-56\expandafter\relax
1674   \number\numexpr 2*(#2-4*#1)+#3\expandafter\relax
1675   \number\numexpr #4 - 32 -\ifcase#3 0\else 8\fi\expandafter\relax
1676   \csname\number\numexpr #5-4*#4\relax\expandafter\endcsname
1677   \number\numexpr #6-16\expandafter\relax
1678   \number\numexpr #7-8*#6\relax
1679 }%
```

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
```

```
1680 \def\HyPsd@UTFviii@four#1#2{%
1681   \expandafter\HyPsd@UTFviii@four\number
1682   \numexpr-1+('#1-240)*4+\dimexpr.0625\dimexpr'#2sp-128sp%
1683   \expandafter|\number
1684   \numexpr'#2-16*\dimexpr.0625\dimexpr'#2sp|%
1685 }%
1686 \def\HyPsd@@UTFviii@four#1|#2|#3{%
1687   \933\number\dimexpr.25\dimexpr#1sp\relax\relax
1688   \csname\number\numexpr#1-4*\dimexpr.25\dimexpr#1sp\endcsname
1689   \ifodd#2 %
1690     \number\numexpr(#2-1)/2\relax
1691   \else
1692     \number\numexpr#2/2\relax
1693   \fi
1694   \number\numexpr\ifodd#2 4+\fi
1695   \dimexpr.0625\dimexpr'#3sp-128sp\relax\relax\relax
1696   \933%
1697   \expandafter\HyPsd@@@UTFviii@four\number
1698   \numexpr'#3-16*\dimexpr.0625\dimexpr'#3sp|%
1699 }%
1700 \def\HyPsd@@@UTFviii@four#1|#2{%
1701   \number\numexpr4+\dimexpr.25\dimexpr#1sp\relax\relax\relax
1702   \csname\number\numexpr#1-4*\dimexpr.25\dimexpr#1sp\endcsname
1703   \number\dimexpr.125\dimexpr'#2sp-128sp\relax\relax
1704   \number\numexpr'#2-8*\dimexpr.125\dimexpr'#2sp\relax\relax\relax
1705 }%
```

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

```
1706 \def\HyPsd@unichar#1{%
1707   \ifHy@unicode
1708     \ifnum#1>"10FFFF %
1709       \HyPsd@UnicodeReplacementCharacter % illegal
1710     \else
1711       \ifnum#1>"FFFF %
```

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

```
1712   \expandafter\HyPsd@unichar\expandafter{%
1713     \number\numexpr 55296+%
1714     \dimexpr.0009765625\dimexpr\number#1sp-\p@
1715     \relax\relax\relax
1716   }%
```

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

```
1717   \expandafter\HyPsd@unichar\expandafter{%
1718     \number\numexpr#1-9216%
1719     -1024*\dimexpr.0009765625\dimexpr\number#1sp-\p@
1720     \relax\relax\relax
1721   }%
1722   \else
1723     \ifnum#1>"7FF %
```

```

1724         \9%
1725         \expandafter\HyPsd@unichar@first@byte\expandafter{%
1726         \number
1727         \dimexpr.00390625\dimexpr\number#1sp\relax\relax
1728     }%
1729     \else
1730         \8%
1731         \number\dimexpr.00390625\dimexpr\number#1sp\relax\relax
1732     \fi
1733     \expandafter\HyPsd@unichar@second@byte\expandafter{%
1734     \number
1735     \numexpr#1-256*\number
1736     \dimexpr.00390625\dimexpr\number#1sp\relax\relax\relax
1737 }%
1738 \fi
1739 \fi
1740 \else
1741     .% unsupported (Unicode -> PDF Doc Encoding)
1742 \fi
1743 }%
1744 \def\HyPsd@UnicodeReplacementCharacter{\9377\375}%
1745 \def\HyPsd@unichar@first@byte#1{%
1746     \number\dimexpr.015625\dimexpr#1sp\relax\relax
1747     \expandafter\HyPsd@unichar@octtwo\expandafter{%
1748     \number
1749     \numexpr#1-64*\number\dimexpr.015625\dimexpr#1sp%
1750     \relax\relax\relax
1751 }%
1752 }%
1753 \def\HyPsd@unichar@second@byte#1{%
1754     \csname\number\dimexpr.015625\dimexpr#1sp\relax\relax\endcsname
1755     \expandafter\HyPsd@unichar@octtwo\expandafter{%
1756     \number
1757     \numexpr#1-64*\number\dimexpr.015625\dimexpr#1sp%
1758     \relax\relax\relax
1759 }%
1760 }%
1761 \def\HyPsd@unichar@octtwo#1{%
1762     \number\dimexpr.125\dimexpr#1sp\relax\relax
1763     \number\numexpr#1-8*\number\dimexpr.125\dimexpr#1sp%
1764     \relax\relax\relax
1765 }%
1766 \fi

```

## 7 Support of other packages

### 7.1 Class memoir

```

1767 \@ifclassloaded{memoir}{%
1768     \AtEndOfPackage{\RequirePackage{memhfixc}}}%
1769 }{}

```

### 7.2 Package subfigure

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

```

1770 \@ifpackageloaded{subfigure}{%
1771     \@ifundefined{sub@label}{%

```

```

1772 \Hy@hypertextnamesfalse
1773 }{%
1774 \renewcommand*{\sub@label}[1]{%
1775 \@bsphack
1776 \subfig@oldlabel{#1}%
1777 \if@filesw
1778 \begingroup
1779 \edef\@currentlabstr{%
1780 \expandafter\strip@prefix\meaning\@currentlabelname
1781 }%
1782 \protected@write\@auxout{}{%
1783 \string\newlabel{sub@#1}{%
1784 {\@nameuse{\@thesub\@captertype}}%
1785 {\thepage}%
1786 }%
1787 \expandafter\strip@period\@currentlabstr
1788 \relax.\relax\@@%
1789 }%
1790 {\@currentHref}%
1791 {}%
1792 }%
1793 }%
1794 \endgroup
1795 \fi
1796 \@esphack
1797 }%
1798 \@ifpackagelater{subfigure}{2002/03/26}{-}{%
1799 \providecommand*{\toclevel@subfigure}{1}%
1800 \providecommand*{\toclevel@subtable}{1}%
1801 }%
1802 }%
1803 }{}

```

### 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:

```
1804 \@ifundefined{XR@addURL}{%
1805 }{%
```

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.

```

1806 \def\XR@addURL#1{\XR@dURL#1{-}{-}{-}\}%
1807 \def\XR@dURL#1#2#3#4#5\{\%
1808   {#1}{#2}%
1809   \if!#4!%
1810   \else
1811     {#3}{#4}{\XR@URL}%
1812   \fi
1813 }%
1814 }

```

```
1815 \def\Hy@true{true}
1816 \def\Hy@false{false}
```

Providing dummy definitions.

```
1817 \let\literalps@out\@gobble
1818 \newcommand\pdfbookmark[3] [] {}
```

```

1819 \def\Acrobatmenu#1#2{\leavevmode#2}
1820 \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

```

1821 \let\HyperRaiseLinkHook\@empty
1822 \def\HyperRaiseLinkDefault{\baselineskip}

```

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

```

1823 \def\Hy@raisedlink#1{%
1824   \ifvmode
1825     #1%
1826   \else
1827     \penalty\@M
1828     \smash{%
1829       \begingroup
1830         \let\HyperRaiseLinkLength\@tempdima
1831         \setlength\HyperRaiseLinkLength\HyperRaiseLinkDefault
1832         \HyperRaiseLinkHook
1833       \expandafter\endgroup
1834       \expandafter\raise\the\HyperRaiseLinkLength\hbox{#1}%
1835     }%
1836   \fi
1837 }

```

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

```

\Hy@RestoreLastskip
1838 \def\Hy@SaveLastskip{%
1839   \let\Hy@RestoreLastskip\relax
1840   \ifvmode
1841     \ifdim\lastskip=\z@
1842       \let\Hy@RestoreLastskip\nobreak
1843     \else
1844       \begingroup
1845         \skip@=-\lastskip
1846         \edef\x{%
1847           \endgroup
1848           \def\noexpand\Hy@RestoreLastskip{%
1849             \noexpand\ifvmode
1850               \noexpand\nobreak
1851               \vskip\the\skip@
1852               \vskip\the\lastskip\relax
1853             \noexpand\fi
1854           }%
1855         }%

```

```

1856     \x
1857     \fi
1858   \else
1859     \ifhmode
1860       \ifdim\lastskip=\z@
1861         \let\Hy@RestoreLastskip\nobreak
1862       \else
1863         \begingroup
1864           \skip@=-\lastskip
1865           \edef\x{%
1866             \endgroup
1867             \def\noexpand\Hy@RestoreLastskip{%
1868               \noexpand\ifhmode
1869                 \noexpand\nobreak
1870                 \hskip\the\skip@
1871                 \hskip\the\lastskip\relax
1872             \noexpand\fi
1873           }%
1874         }%
1875       \x
1876     \fi
1877   \fi
1878 \fi
1879 }%

```

## 9 Options

### 9.1 Help macros

\Hy@boolkey

```

1880 \def\Hy@boolkey{\@dblarg\Hy@boolkey}
1881 \def\Hy@boolkey[#1]#2#3{%
1882   \edef\Hy@tempa{#3}%
1883   \lowercase\expandafter{%
1884     \expandafter\def\expandafter\Hy@tempa\expandafter{\Hy@tempa}%
1885   }%
1886   \ifx\Hy@tempa\@empty
1887     \let\Hy@tempa\Hy@true
1888   \fi
1889   \ifx\Hy@tempa\Hy@true
1890   \else
1891     \ifx\Hy@tempa\Hy@false
1892     \else
1893       \let\Hy@tempa\relax
1894     \fi
1895   \fi
1896   \ifx\Hy@tempa\relax
1897     \Hy@WarnOptionValue{#3}{#1}{‘true’ or ‘false’}%
1898   \else
1899     \Hy@Info{Option ‘#1’ set ‘\Hy@tempa’}%
1900     \csname Hy@#2\Hy@tempa\endcsname
1901   \fi
1902 }

```

\Hy@WarnOptionValue

```

1903 \def\Hy@WarnOptionValue#1#2#3{%

```

```

1904 \Hy@Warning{%
1905   Unexpected value ‘#1’\MessageBreak
1906   of option ‘#2’ instead of\MessageBreak
1907   #3%
1908 }%
1909 }

```

\Hy@DisableOption

```

1910 \def\Hy@DisableOption#1{%
1911   \@ifundefined{KV@Hyp@#1@default}{%
1912     \define@key{Hyp}{#1}%
1913   }{%
1914     \define@key{Hyp}{#1}[]%
1915   }%
1916   {\Hy@WarnOptionDisabled{#1}}%
1917 }

```

\Hy@WarnOptionDisabled

```

1918 \def\Hy@WarnOptionDisabled#1{%
1919   \Hy@Warning{%
1920     Option ‘#1’ has already been used,\MessageBreak
1921     setting the option has no effect%
1922   }%
1923 }

```

\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.

```

1924 \def\Hy@CheckOptionValue#1#2#3{%
1925   \begingroup
1926     \edef\x{#1}%
1927     \@onelevel@sanitize\x
1928     \let\y=y%
1929     \def\do##1##2{%
1930       \def\z{##1}%
1931       \@onelevel@sanitize\z
1932       \ifx\x\z
1933         \let\y=n%
1934         \let\do\@gobbletwo
1935       \fi
1936     }%
1937     #3%
1938     \ifx\y y%
1939       \def\do##1##2{%
1940         * ‘##1’%
1941         \ifx\\##2\\\else\space(##2)\fi
1942         \MessageBreak
1943       }%
1944       \Hy@Warning{%
1945         Values of option ‘#2’:\MessageBreak
1946         #3%
1947         * An empty value disables the option.\MessageBreak
1948         Unknown value ‘\x’%
1949       }%
1950     \fi
1951   \endgroup
1952 }

```

```

\Hy@DefNameKey #1: option name
#2: \do list with known values, first argument of \do is value, second argument is a
comment.
1953 \def\Hy@DefNameKey#1{%
1954   \expandafter\Hy@@DefNameKey\csname @#1\endcsname{#1}%
1955 }

\Hy@@DefNameKey #1: macro for value storage
#2: option name
#3: \do list with known values.
1956 \def\Hy@@DefNameKey#1#2#3{%
1957   \define@key{Hyp}{#2}{%
1958     \edef#1{##1}%
1959     \ifx#1\@empty
1960     \else
1961       \Hy@CheckOptionValue{##1}{#2}{#3}%
1962     \fi
1963   }%
1964   \let#1\@empty
1965 }

\Hy@UseNameKey
1966 \def\Hy@UseNameKey#1#2{%
1967   \ifx#2\@empty
1968   \else
1969     /#1/#2%
1970   \fi
1971 }

```

## 9.2 Defining the options

```

1972 \define@key{Hyp}{implicit}[true]{%
1973   \Hy@boolkey{implicit}{#1}%
1974 }
1975 \define@key{Hyp}{draft}[true]{%
1976   \Hy@boolkey{draft}{#1}%
1977 }
1978 \define@key{Hyp}{final}[true]{%
1979   \Hy@boolkey{final}{#1}%
1980 }
1981 \let\KV@Hyp@nolinks\KV@Hyp@draft
1982 \define@key{Hyp}{a4paper}[true]{%
1983   \def\special@paper{210mm,297mm}%
1984   \def\Hy@pageheight{842}%
1985 }
1986 \define@key{Hyp}{a5paper}[true]{%
1987   \def\special@paper{148mm,210mm}%
1988   \def\Hy@pageheight{595}%
1989 }
1990 \define@key{Hyp}{b5paper}[true]{%
1991   \def\special@paper{176mm,250mm}%
1992   \def\Hy@pageheight{709}%
1993 }
1994 \define@key{Hyp}{letterpaper}[true]{%
1995   \def\special@paper{8.5in,11in}%
1996   \def\Hy@pageheight{792}%

```

```

1997 }
1998 \define@key{Hyp}{legalpaper}[true]{%
1999   \def\special@paper{8.5in,14in}%
2000   \def\Hy@pageheight{1008}%
2001 }
2002 \define@key{Hyp}{executivepaper}[true]{%
2003   \def\special@paper{7.25in,10.5in}%
2004   \def\Hy@pageheight{720}%
2005 }
2006 \define@key{Hyp}{setpagesize}[true]{%
2007   \Hy@boolkey{setpagesize}{#1}%
2008 }
2009 \define@key{Hyp}{debug}[true]{%
2010   \Hy@boolkey[debug]{verbose}{#1}%
2011 }
2012 \define@key{Hyp}{linktocpage}[true]{%
2013   \Hy@boolkey{linktocpage}{#1}%
2014   \ifHy@linktocpage
2015     \let\Hy@linktoc\Hy@linktoc@page
2016   \else
2017     \let\Hy@linktoc\Hy@linktoc@section
2018   \fi
2019 }
2020 \chardef\Hy@linktoc@none=0 %
2021 \chardef\Hy@linktoc@section=1 %
2022 \chardef\Hy@linktoc@page=2 %
2023 \chardef\Hy@linktoc@all=3 %
2024 \ifHy@linktocpage
2025   \let\Hy@linktoc\Hy@linktoc@page
2026 \else
2027   \let\Hy@linktoc\Hy@linktoc@section
2028 \fi
2029 \define@key{Hyp}{linktoc}{%
2030   \@ifundefined{Hy@linktoc@#1}{%
2031     \Hy@Warning{%
2032       Unexpected value ‘#1’ of\MessageBreak
2033       option ‘linktoc’ instead of ‘none’,\MessageBreak
2034       ‘section’, ‘page’ or ‘all’%
2035     }%
2036   }{%
2037     \expandafter\let\expandafter\Hy@linktoc
2038     \csname Hy@linktoc@#1\endcsname
2039   }%
2040 }
2041 \define@key{Hyp}{extension}{\def\XR@ext{#1}}
2042 \let\XR@ext\relax
2043 \define@key{Hyp}{verbose}[true]{%
2044   \Hy@boolkey{verbose}{#1}%
2045 }
2046 \define@key{Hyp}{typexml}[true]{%
2047   \Hy@boolkey{typexml}{#1}%
2048 }

```

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.

```

2049 \define@key{Hyp}{raiselinks}[true]{%

```

```

2050 \Hy@boolkey{raiselinks}{#1}%
2051 }

```

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

```

2052 \def\Hy@setbreaklinks#1{%
2053   \csname breaklinks#1\endcsname
2054 }

2055 \def\Hy@breaklinks@unsupported{%
2056   \ifx\Hy@setbreaklinks@gobble
2057     \ifHy@breaklinks
2058       \Hy@WarningNoLine{%
2059         You have enabled option 'breaklinks'.\MessageBreak
2060         But driver '\Hy@driver.def' does not support this.\MessageBreak
2061         Expect trouble with the link areas of broken links%
2062       }%
2063     \fi
2064   \fi
2065 }

2066 \define@key{Hyp}{breaklinks}[true]{%
2067   \Hy@boolkey{breaklinks}{#1}%
2068   \let\Hy@setbreaklinks@gobble
2069 }

```

Determines whether an automatic anchor is put on each page

```

2070 \define@key{Hyp}{pageanchor}[true]{%
2071   \Hy@boolkey{pageanchor}{#1}%
2072 }

```

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.

```

2073 \define@key{Hyp}{plainpages}[true]{%
2074   \Hy@boolkey{plainpages}{#1}%
2075 }

```

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

```

2076 \define@key{Hyp}{naturalnames}[true]{%
2077   \Hy@boolkey{naturalnames}{#1}%
2078 }

```

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

```

2079 \define@key{Hyp}{hypertextnames}[true]{%
2080   \Hy@boolkey{hypertextnames}{#1}%
2081 }

```

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

```

2082 \define@key{Hyp}{nesting}[true]{%
2083   \Hy@boolkey{nesting}{#1}%
2084 }

2085 \define@key{Hyp}{unicode}[true]{%
2086   \Hy@boolkey{unicode}{#1}%
2087   \ifHy@unicode
2088     \def\HyPsd@pdfencoding{unicode}%
2089   \else
2090     \def\HyPsd@pdfencoding{pdfdoc}%
2091   \fi
2092   \HyPsd@LoadUnicode
2093 }

2094 \def\HyPsd@LoadUnicode{%

```

```

2095 \@ifundefined{T@PU}{%
2096   \input{puenc.def}%
2097   \HyLingutex@Restore
2098 }{}%
2099 \DeclareFontFamily{PU}{pdf}{}%
2100 \DeclareFontShape{PU}{pdf}{m}{n}{ <-> cmr10 }{}%
2101 \DeclareFontSubstitution{PU}{pdf}{m}{n}%
2102 \global\let\HyPsd@LoadUnicode\relax
2103 }
2104 \AtBeginDocument{%
2105   \ifx\HyPsd@LoadUnicode\relax
2106   \else
2107     \def\HyPsd@LoadUnicode{%
2108       \PackageError{hyperref}{%
2109         Unicode support for bookmarks is not available.\MessageBreak
2110         Activate unicode support by using one of the options\MessageBreak
2111         'unicode', 'pdfencoding=unicode', 'pdfencoding=auto'\MessageBreak
2112         in the preamble%
2113       }@ehc
2114       \global\let\HyPsd@LoadUnicode\relax
2115       \global\Hy@unicodedefalse
2116       \global\let\Hy@unicodetrue\Hy@unicodedefalse
2117     }%
2118   \fi
2119 }
2120 \define@key{Hyp}{pdfencoding}{%
2121   \edef\HyPsd@temp{#1}%
2122   \ifx\HyPsd@temp\HyPsd@pdfencoding@pdfdoc
2123     \let\HyPsd@pdfencoding\HyPsd@temp
2124     \Hy@unicodedefalse
2125   \else
2126     \ifcase\ifx\HyPsd@temp\HyPsd@pdfencoding@unicode
2127       \z@
2128     \else
2129       \ifx\HyPsd@temp\HyPsd@pdfencoding@auto
2130         \z@
2131       \else
2132         \@ne
2133       \fi
2134     \fi
2135     \let\HyPsd@pdfencoding\HyPsd@temp
2136     \hypersetup{unicode}%
2137     \ifHy@unicode
2138       \def\HyPsd@pdfencoding{#1}%
2139       \ifx\HyPsd@pdfencoding\HyPsd@pdfencoding@auto
2140         \HyPsd@LoadStringEncoding
2141       \fi
2142     \else
2143       \Hy@Warning{Cannot switch to unicode bookmarks}%
2144       \let\HyPsd@pdfencoding\HyPsd@pdfencoding@pdfdoc
2145     \fi
2146   \else
2147     \@onelevel@sanitize\HyPsd@temp
2148     \Hy@Warning{%
2149       Values of option 'pdfencoding':\MessageBreak
2150       'pdfdoc', 'unicode', 'auto'.\MessageBreak
2151       Ignoring unknown value '\HyPsd@temp'%

```

```

2152     }%
2153     \fi
2154 \fi
2155 }
2156 \def\HyPsd@pdfencoding@auto{auto}
2157 \def\HyPsd@pdfencoding@pdfdoc{pdfdoc}
2158 \def\HyPsd@pdfencoding@unicode{unicode}
2159 \let\HyPsd@pdfencoding\Hy@pdfencoding@pdfdoc
2160 \def\HyPsd@LoadStringEnc{%
2161   \RequirePackage{stringenc}[2007/06/14]%
2162   \let\HyPsd@LoadStringEnc\relax
2163 }
2164 \AtBeginDocument{%
2165   \ifpackageloaded{stringenc}{%
2166     \let\HyPsd@LoadStringEnc\relax
2167   }{%
2168     \def\HyPsd@LoadStringEnc{%
2169       \Hy@WarningNoLine{%
2170         Missing package ‘stringenc’. Use ‘pdfencoding=auto’\MessageBreak
2171         in the preamble or load the package there%
2172       }%
2173     }%
2174   }%
2175 }

2176 \newif\ifHy@setpdfversion
2177 \define@key{Hyp}{pdfversion}{%
2178   \ifundefined{Hy@pdfversion@#1}{%
2179     \PackageWarning{hyperref}{%
2180       Unsupported PDF version ‘#1’.\MessageBreak
2181       Valid values: 1.2 until 1.9%
2182     }%
2183   }{%
2184     \Hy@setpdfversiontrue
2185     \edef\Hy@pdfversion{\@nameuse{Hy@pdfversion@#1}}%
2186   }%
2187 }

2188 \@namedef{Hy@pdfversion@1.2}{2}%
2189 \@namedef{Hy@pdfversion@1.3}{3}%
2190 \@namedef{Hy@pdfversion@1.4}{4}%
2191 \@namedef{Hy@pdfversion@1.5}{5}%
2192 \@namedef{Hy@pdfversion@1.6}{6}%
2193 \@namedef{Hy@pdfversion@1.7}{7}%
2194 \@namedef{Hy@pdfversion@1.8}{8}%
2195 \@namedef{Hy@pdfversion@1.9}{9}%
2196 \def\Hy@pdfversion{2}

```

## 10 Options for different drivers

```

2197 \define@key{Hyp}{hyperref}[true]{}
2198 \define@key{Hyp}{tex4ht}[true]{}
2199 \Hy@texhttrue
2200 \setkeys{Hyp}{colorlinks=true}%
2201 \def\BeforeTeXIVht{\usepackage{color}}%
2202 \def\Hy@driver{htex4ht}%
2203 \def\MaybeStopEarly{%
2204   \typeout{Hyperref stopped early}%
2205   \AfterBeginDocument{}

```

```

2206     \PDF@FinishDoc
2207     \gdef\PDF@FinishDoc{%
2208     }%
2209     \endinput
2210 }%
2211 }
2212 \define@key{Hyp}{pdftex}[true]{%
2213   \def\Hy@driver{hpdftex}%
2214 }
2215 \define@key{Hyp}{nativepdf}[true]{%
2216   \def\Hy@driver{hdvips}%
2217 }
2218 \define@key{Hyp}{dvipdfm}[true]{%
2219   \def\Hy@driver{hdvipdfm}%
2220 }
2221 \define@key{Hyp}{dvipdfmx}[true]{%
2222   \def\Hy@driver{hdvipdfm}%
2223 }
2224 \define@key{Hyp}{dvipdfmx-outline-open}[true]{%
2225   \expandafter\ifx\csname if#1\expandafter\endcsname
2226     \csname iftrue\endcsname
2227     \chardef\SpecialDvipdfmxOutlineOpen\@ne
2228   \else
2229     \chardef\SpecialDvipdfmxOutlineOpen\z@
2230   \fi
2231 }
2232 \define@key{Hyp}{xetex}[true]{%
2233   \def\Hy@driver{hdvipdfm}%
2234 }
2235 \define@key{Hyp}{pdfmark}[true]{%
2236   \def\Hy@driver{hdvips}%
2237 }
2238 \define@key{Hyp}{dvips}[true]{%
2239   \def\Hy@driver{hdvips}%
2240 }
2241 \define@key{Hyp}{hypertex}[true]{%
2242   \def\Hy@driver{hypertex}%
2243 }
2244 \let\Hy@MaybeStopNow\relax
2245 \define@key{Hyp}{vtex}[true]{%
2246   \begingroup\expandafter\expandafter\expandafter\endgroup
2247   \expandafter\ifx\csname OpMode\endcsname\relax
2248     \@latex@error{Non-VTeX processor}{}%
2249     \global\let\Hy@MaybeStopNow\endinput
2250   \endinput
2251   \else
2252     \ifnum 0\ifnum\OpMode<1 1\fi \ifnum\OpMode>3 1\fi =0 %
2253     \def\Hy@driver{hvtex}%
2254   \else
2255     \ifnum\OpMode=10\relax
2256       \def\Hy@driver{hvtexhtm}%
2257       \def\MaybeStopEarly{%
2258         \typeout{Hyperref stopped early}%
2259         \AfterBeginDocument{%
2260           \PDF@FinishDoc
2261           \gdef\PDF@FinishDoc{%
2262             }%

```

```

2263         \endinput
2264     }%
2265     \else
2266         \@latex@error{Mode (\the\OpMode) has no hyperref driver}{}%
2267         \global\let\Hy@MaybeStopNow\endinput
2268         \endinput
2269     \fi
2270 \fi
2271 \fi
2272 }
2273 \define@key{Hyp}{vtexpdfmark}[true]{%
2274     \begingroup\expandafter\expandafter\expandafter\endgroup
2275     \expandafter\ifx\cname OpMode\endcsname\relax
2276         \@latex@error{Non-VTeX processor}{}%
2277         \let\Hy@MaybeStopNow\endinput
2278         \endinput
2279     \else
2280         \ifnum 0\ifnum\OpMode<1 1\fi \ifnum\OpMode>3 1\fi =0 %
2281         \def\Hy@driver{hvtexmrk}%
2282     \else
2283         \@latex@error{Mode (\the\OpMode) has no hyperref driver}{}%
2284         \let\Hy@MaybeStopNow\endinput
2285         \endinput
2286     \fi
2287 \fi
2288 }
2289 \define@key{Hyp}{dviwindo}[true]{%
2290     \def\Hy@driver{hdviwind}%
2291     \setkeys{Hyp}{colorlinks}%
2292     \PassOptionsToPackage{dviwindo}{color}%
2293 }
2294 \define@key{Hyp}{dvipsone}[true]{%
2295     \def\Hy@driver{hdvipson}%
2296 }
2297 \define@key{Hyp}{textures}[true]{%
2298     \def\Hy@driver{htexture}%
2299 }
2300 \define@key{Hyp}{latex2html}[true]{%
2301     \AtBeginDocument{\@@latextohtmlX}%
2302 }

```

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

```

2303 \define@key{Hyp}{ps2pdf}[true]{%
2304     \def\Hy@driver{hdvips}%
2305     \providecommand*\@pdfborder{0 0 1}%
2306 }

```

## 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.

```

2307 \define@key{Hyp}{hyperfigures}[true]{%
2308     \Hy@boolkey[hyperfigures]{figures}{#1}%
2309 }

```

The automatic footnote linking can be disabled by option hyperfootnotes.

```

2310 \define@key{Hyp}{hyperfootnotes}[true]{%
2311     \Hy@boolkey[hyperfootnotes]{#1}%

```

2312 }

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

```
2313 \def\back@none{none}
2314 \def\back@section{section}
2315 \def\back@page{page}
2316 \def\back@slide{slide}
2317 \define@key{Hyp}{backref}[section]{%
2318   \lowercase{\def\Hy@tempa{#1}}%
2319   \ifx\Hy@tempa\@empty
2320     \let\Hy@tempa\back@section
2321   \fi
2322   \ifx\Hy@tempa\Hy@false
2323     \let\Hy@tempa\back@none
2324   \fi
2325   \ifx\Hy@tempa\back@slide
2326     \let\Hy@tempa\back@section
2327   \fi
2328   \ifx\Hy@tempa\back@page
2329     \PassOptionsToPackage{hyperpageref}{backref}%
2330     \Hy@backreftrue
2331   \else
2332     \ifx\Hy@tempa\back@section
2333       \PassOptionsToPackage{hyperref}{backref}%
2334       \Hy@backreftrue
2335     \else
2336       \ifx\Hy@tempa\back@none
2337         \Hy@backreffalse
2338       \else
2339         \Hy@WarnOptionValue{#1}{backref}{%
2340           'section', 'slide', 'page', 'none', \MessageBreak
2341           or 'false'}%
2342       \fi
2343     \fi
2344   \fi
2345 }
2346 \define@key{Hyp}{pagebackref}[true]{%
2347   \edef\Hy@tempa{#1}%
2348   \lowercase\expandafter{%
2349     \expandafter\def\expandafter\Hy@tempa\expandafter{\Hy@tempa}%
2350   }%
2351   \ifx\Hy@tempa\@empty
2352     \let\Hy@tempa\Hy@true
2353   \fi
2354   \ifx\Hy@tempa\Hy@true
2355     \PassOptionsToPackage{hyperpageref}{backref}%
2356     \Hy@backreftrue
2357   \else
2358     \ifx\Hy@tempa\Hy@false
2359       \Hy@backreffalse
2360     \else
2361       \Hy@WarnOptionValue{#1}{pagebackref}{'true' or 'false'}%
2362     \fi
2363   \fi
2364 }
```

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

```

2365 \define@key{Hyp}{hyperindex}[true]{%
2366   \Hy@boolkey{hyperindex}{#1}%
2367 }

```

Configuration of encap char.

```

2368 \define@key{Hyp}{encap}[|]{%
2369   \def\HyInd@EncapChar{#1}%
2370 }

```

## 12 Language options

The \autoref feature depends on the language.

```

2371 \def\HyLang@afrikaans{%
2372   \def\equationautorefname{Vergelyking}%
2373   \def\footnoteautorefname{Voetnota}%
2374   \def\itemautorefname{Item}%
2375   \def\figureautorefname{Figuur}%
2376   \def\tableautorefname{Tabel}%
2377   \def\partautorefname{Deel}%
2378   \def\appendixautorefname{Bylae}%
2379   \def\chapterautorefname{Hoofstuk}%
2380   \def\sectionautorefname{Afdeling}%
2381   \def\subsectionautorefname{Subafdeling}%
2382   \def\subsubsectionautorefname{Subsubafdeling}%
2383   \def\paragraphautorefname{Paragraaf}%
2384   \def\subparagraphautorefname{Subparagraaf}%
2385   \def\FancyVerbLineautorefname{Lyn}%
2386   \def\theoremautorefname{Teorema}%
2387   \def\pageautorefname{Bladsy}%
2388 }
2389 \def\HyLang@english{%
2390   \def\equationautorefname{Equation}%
2391   \def\footnoteautorefname{footnote}%
2392   \def\itemautorefname{item}%
2393   \def\figureautorefname{Figure}%
2394   \def\tableautorefname{Table}%
2395   \def\partautorefname{Part}%
2396   \def\appendixautorefname{Appendix}%
2397   \def\chapterautorefname{chapter}%
2398   \def\sectionautorefname{section}%
2399   \def\subsectionautorefname{subsection}%
2400   \def\subsubsectionautorefname{subsubsection}%
2401   \def\paragraphautorefname{paragraph}%
2402   \def\subparagraphautorefname{subparagraph}%
2403   \def\FancyVerbLineautorefname{line}%
2404   \def\theoremautorefname{Theorem}%
2405   \def\pageautorefname{page}%
2406 }
2407 \def\HyLang@french{%
2408   \def\equationautorefname{\`Equation}%
2409   \def\footnoteautorefname{note}%
2410   \def\itemautorefname{item}%
2411   \def\figureautorefname{Figure}%
2412   \def\tableautorefname{Tableau}%
2413   \def\partautorefname{Partie}%
2414   \def\appendixautorefname{Appendice}%
2415   \def\chapterautorefname{chapitre}%

```

```

2416 \def\sectionautorefname{section}%
2417 \def\subsectionautorefname{sous-section}%
2418 \def\subsubsectionautorefname{sous-sous-section}%
2419 \def\paragraphautorefname{paragraphe}%
2420 \def\subparagraphautorefname{sous-paragraphe}%
2421 \def\FancyVerbLineautorefname{ligne}%
2422 \def\theoremautorefname{Th\'eor\'eme}%
2423 \def\pageautorefname{page}%
2424 }
2425 \def\HyLang@german{%
2426 \def\equationautorefname{Gleichung}%
2427 \def\footnoteautorefname{Fu\ss note}%
2428 \def\itemautorefname{Punkt}%
2429 \def\figureautorefname{Abbildung}%
2430 \def\tableautorefname{Tabelle}%
2431 \def\partautorefname{Teil}%
2432 \def\appendixautorefname{Anhang}%
2433 \def\chapterautorefname{Kapitel}%
2434 \def\sectionautorefname{Abschnitt}%
2435 \def\subsectionautorefname{Unterabschnitt}%
2436 \def\subsubsectionautorefname{Unterunterabschnitt}%
2437 \def\paragraphautorefname{Absatz}%
2438 \def\subparagraphautorefname{Unterabsatz}%
2439 \def\FancyVerbLineautorefname{Zeile}%
2440 \def\theoremautorefname{Theorem}%
2441 \def\pageautorefname{Seite}%
2442 }
2443 \def\HyLang@italian{%
2444 \def\equationautorefname{Equazione}%
2445 \def\footnoteautorefname{nota}%
2446 \def\itemautorefname{punto}%
2447 \def\figureautorefname{Figura}%
2448 \def\tableautorefname{Tabella}%
2449 \def\partautorefname{Parte}%
2450 \def\appendixautorefname{Appendice}%
2451 \def\chapterautorefname{Capitolo}%
2452 \def\sectionautorefname{sezione}%
2453 \def\subsectionautorefname{sottosezione}%
2454 \def\subsubsectionautorefname{sottosottosezione}%
2455 \def\paragraphautorefname{paragrafo}%
2456 \def\subparagraphautorefname{sottoparagrafo}%
2457 \def\FancyVerbLineautorefname{linea}%
2458 \def\theoremautorefname{Teorema}%
2459 \def\pageautorefname{Pag.\@}%
2460 }
2461 \def\HyLang@magyar{%
2462 \def\equationautorefname{Egyenlet}%
2463 \def\footnoteautorefname{l\'abjegyzet}%
2464 \def\itemautorefname{Elem}%
2465 \def\figureautorefname{\`Abra}%
2466 \def\tableautorefname{T\'abl\'azat}%
2467 \def\partautorefname{R\'esz}%
2468 \def\appendixautorefname{F\'uggel\'ek}%
2469 \def\chapterautorefname{fejezet}%
2470 \def\sectionautorefname{szakasz}%
2471 \def\subsectionautorefname{alszakasz}%
2472 \def\subsubsectionautorefname{alalszakasz}%

```

```

2473 \def\paragraphautorefname{bekezd\'}es}%
2474 \def\subparagraphautorefname{albekezd\'}es}%
2475 \def\FancyVerbLineautorefname{sor}%
2476 \def\theoremautorefname{T\'}etel}%
2477 \def\pageautorefname{oldal}%
2478 }
2479 \def\HyLang@portuges{%
2480 \def\equationautorefname{Equa\c c\~ao}%
2481 \def\footnoteautorefname{Nota de rodap\'}e}%
2482 \def\itemautorefname{Item}%
2483 \def\figureautorefname{Figura}%
2484 \def\tableautorefname{Tabela}%
2485 \def\partautorefname{Parte}%
2486 \def\appendixautorefname{Ap\'}endice}%
2487 \def\chapterautorefname{Cap\'}itulo}%
2488 \def\sectionautorefname{Se\c c\~ao}%
2489 \def\subsectionautorefname{Subse\c c\~ao}%
2490 \def\subsubsectionautorefname{Subsubse\c c\~ao}%
2491 \def\paragraphautorefname{par\'}agrafo}%
2492 \def\subparagraphautorefname{subpar\'}agrafo}%
2493 \def\FancyVerbLineautorefname{linha}%
2494 \def\theoremautorefname{Teorema}%
2495 \def\pageautorefname{P\'}agina}%
2496 }

```

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`.

```

2497 \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`?

```

2498 \def\equationautorefname{\cyr\cyrv\cyrery\cyr.}%

```

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

```

2499 % \def\equationautorefname{%
2500 % \cyr\cyrv\cyrery\cyr\cyrzh\cyre\cyrn\cyri\cyre
2501 % }%

```

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

```

2502 \def\footnoteautorefname{%
2503 \cyr\cyrp\cyro\cyrd\cyrs\cyrt\cyr. \cyrp\cyr\cyri\cyr. %
2504 }%

```

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}`”

```

2505 % \def\footnoteautorefname{%
2506 % \cyr\cyrp\cyro\cyrd\cyrs\cyrt\cyr\cyrh\cyrn\cyro\cyre \ %
2507 % \cyrp\cyr\cyri\cyr\cyrh\cyr\cyrh\cyr\cyrn\cyri\cyre
2508 % }%

```

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

```
2509 % \def\Nomfootnoteautorefname{\cyr\cyrs\cyrn\cyro\cyrs\cyrk\cyra}%
2510 % \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.

```
2511 \def\itemautorefname{\cyr\cyrp.}%
2512 % \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.

```
2513 \def\figureautorefname{\cyr\cyrr\cyri\cyrs.}%
2514 \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.

```
2515 \def\partautorefname{\cyr\cyrch.}%
2516 \def\chapterautorefname{\cyr\cyrg\cyrl.}%
2517 \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.

```
2518 \def\appendixautorefname{\cyr\cyrp\cyrr\cyri\cyrl.}%
2519 % \def\appendixautorefname{%
2520 % \cyr\cyrp\cyrr\cyri\cyrl\cyro\cyrz\cyre\cyrn\cyri\cyre
2521 % }%
```

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.

```
2522 \def\subsectionautorefname{\cyr\cyrr\cyra\cyrz\cyrd.}%
2523 \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.

```
2524 \def\paragraphautorefname{\cyr\cyrp.}%
2525 \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.

```
2526 % \def\paragraphautorefname{\cyr\cyrp\cyru\cyrn\cyrk\cyrt}%
2527 % \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.

```
2528 \def\FancyVerbLineautorefname{\cyr\cyrs\cyrt\cyrr.}%
```

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

```
2529 % \def\NomFancyVerbLineautorefname{\cyr\cyrs\cyrt\cyrr\cyro\cyrk\cyra}%
2530 % \def\AccFancyVerbLineautorefname{\cyr\cyrs\cyrt\cyrr\cyro\cyrk\cyru}%
```

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

```
2531 % \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 ...

```
2532 \def\theoremautorefname{\cyr\cyrt\cyre\cyro\cyrr.}%
```

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

```
2533 % \def\Nomtheoremautorefname{\cyr\cyrt\cyre\cyro\cyrr\cyre\cym\cyrk}%
```

```
2534 % \def\Acctheoremautorefname{\cyr\cyrt\cyre\cyro\cyrr\cyre\cym\cyrk}%
```

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

```
2535 \def\pageautorefname{\cyr\cyrs.}%
```

```
2536 }
```

```
2537 \def\HyLang@spanish{%
```

```
2538 \def\equationautorefname{Ecuaci'on}%
```

```
2539 \def\footnoteautorefname{Nota a pie de p'agina}%
```

```
2540 \def\itemautorefname{Elemento}%
```

```
2541 \def\figureautorefname{Figura}%
```

```
2542 \def\tableautorefname{Tabla}%
```

```
2543 \def\partautorefname{Parte}%
```

```
2544 \def\appendixautorefname{Ap'endice}%
```

```
2545 \def\chapterautorefname{Cap'itulo}%
```

```
2546 \def\sectionautorefname{Secci'on}%
```

```
2547 \def\subsectionautorefname{Subsecci'on}%
```

```
2548 \def\subsubsectionautorefname{Subsubsecci'on}%
```

```
2549 \def\paragraphautorefname{P'arrafo}%
```

```
2550 \def\subparagraphautorefname{Subp'arrafo}%
```

```
2551 \def\FancyVerbLineautorefname{L'inea}%
```

```
2552 \def\theoremautorefname{Teorema}%
```

```
2553 \def\pageautorefname{P'agina}%
```

```
2554 }
```

```
2555 \def\HyLang@vietnamese{%
```

```
2556 \def\equationautorefname{Ph\uhorn{}\ohorn{}ng tr'inh}%
```

```
2557 \def\footnoteautorefname{Ch'u th'ich}%
```

```
2558 \def\itemautorefname{m\du{c}}%
```

```
2559 \def\figureautorefname{H'inh}%
```

```
2560 \def\tableautorefname{B\h{a}ng}%
```

```
2561 \def\partautorefname{Ph'\acircumflex{n}}%
```

```
2562 \def\appendixautorefname{Ph\du{1}\du{c}}%
```

```
2563 \def\chapterautorefname{ch\uhorn{}\ohorn{}ng}%
```

```
2564 \def\sectionautorefname{m\du{c}}%
```

```
2565 \def\subsectionautorefname{m\du{c}}%
```

```
2566 \def\subsubsectionautorefname{m\du{c}}%
```

```
2567 \def\paragraphautorefname{dj{o}\da{n}}%
```

```
2568 \def\subparagraphautorefname{dj{o}\da{n}}%
```

```
2569 \def\FancyVerbLineautorefname{d'ong}%
```

```
2570 \def\theoremautorefname{DJ\di{nh} l'y}%
```

```
2571 \def\pageautorefname{Trang}%
```

```
2572 }
```

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

```
2573 \def\HyLang@addto#1#2{%
```

```
2574 #2%
```

```
2575 \@temptokena{#2}%
```

```

2576 \ifx#1\relax
2577   \let#1\@empty
2578 \fi
2579 \ifx#1\undefined
2580   \edef#1{\the\@temptokena}%
2581 \else
2582   \toks@\expandafter{#1}%
2583   \edef#1{\the\toks@\the\@temptokena}%
2584 \fi
2585 \@temptokena{}\toks@\@temptokena
2586 }

2587 \def\HyLang@DeclareLang#1#2#3{%
2588   \begingroup
2589   \edef\x##1##2{%
2590     \noexpand\ifx##2\relax
2591       \errmessage{No definitions for language #2' found!}%
2592     \noexpand\fi
2593   \endgroup
2594   \noexpand\define@key{Hyp}{#1}[]{%
2595     \noexpand\HyLang@addto{\noexpand##1}{\noexpand##2}%
2596     #3%
2597   }%
2598   }%
2599   \expandafter\x\csname extras#1\expandafter\endcsname
2600     \csname HyLang@#2\endcsname
2601 }

2602 \HyLang@DeclareLang{english}{english}{}
2603 \HyLang@DeclareLang{UKenglish}{english}{}
2604 \HyLang@DeclareLang{british}{english}{}
2605 \HyLang@DeclareLang{USenglish}{english}{}
2606 \HyLang@DeclareLang{american}{english}{}
2607 \HyLang@DeclareLang{german}{german}{}
2608 \HyLang@DeclareLang{austrian}{german}{}
2609 \HyLang@DeclareLang{ngerman}{german}{}
2610 \HyLang@DeclareLang{naustrian}{german}{}
2611 \HyLang@DeclareLang{russian}{russian}{\noexpand\hypersetup{unicode}}
2612 \HyLang@DeclareLang{brazil}{portuges}{}
2613 \HyLang@DeclareLang{brazilian}{portuges}{}
2614 \HyLang@DeclareLang{portuguese}{portuges}{}
2615 \HyLang@DeclareLang{spanish}{spanish}{}
2616 \HyLang@DeclareLang{afrikaans}{afrikaans}{}
2617 \HyLang@DeclareLang{french}{french}{}
2618 \HyLang@DeclareLang{frenchb}{french}{}
2619 \HyLang@DeclareLang{français}{french}{}
2620 \HyLang@DeclareLang{acadian}{french}{}
2621 \HyLang@DeclareLang{canadien}{french}{}
2622 \HyLang@DeclareLang{italian}{italian}{}
2623 \HyLang@DeclareLang{magyar}{magyar}{}
2624 \HyLang@DeclareLang{hungarian}{magyar}{}

```

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

```

2625 \define@key{Hyp}{vietnamese}[]{}
2626 \HyLang@addto\extravietnamese\HyLang@vietnamese
2627 \AtEndOfPackage{%
2628   \ifundefined{T@PU}{}{}
2629   \input{puvnenc.def}%
2630 }%

```

```

2631 }%
2632 }
2633 \define@key{Hyp}{vietnam}[]{%
2634   \HyLang@addto\extravietnam\HyLang@vietnamese
2635   \AtEndOfPackage{%
2636     \ifundefined{T@PU}{-}{%
2637       \input{puvnenc.def}%
2638     }%
2639   }%
2640 }

```

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

```

2641 \define@key{Hyp}{arabic}[]{%
2642   \AtEndOfPackage{%
2643     \ifundefined{T@PU}{-}{%
2644       \input{puarenc.def}%
2645     }%
2646   }%
2647 }

```

## 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.

```

2648 \define@key{Hyp}{colorlinks}[true]{%
2649   \Hy@boolkey{colorlinks}{#1}%
2650 }
2651 \define@key{Hyp}{ocgcolorlinks}[true]{%
2652   \Hy@boolkey{ocgcolorlinks}{#1}%
2653 }
2654 \AtBeginDocument{%
2655   \begingroup
2656     \ifundefined{OBJ@OCG@view}{%
2657       \ifHy@ocgcolorlinks
2658         \Hy@Warning{%
2659           Driver does not support ‘ocgcolorlinks’,\MessageBreak
2660           using ‘colorlinks’ instead%
2661         }%
2662       \fi
2663     }{}%
2664   \endgroup
2665 }
2666 \define@key{Hyp}{frenchlinks}[true]{%
2667   \Hy@boolkey{frenchlinks}{#1}%
2668 }

```

## 14 Bookmarking

```

2669 \begingroup\expandafter\expandafter\expandafter\endgroup
2670 \expandafter\ifx\csname chapter\endcsname\relax
2671   \def\toclevel@part{0}%
2672 \else
2673   \def\toclevel@part{-1}%
2674 \fi
2675 \def\toclevel@chapter{0}
2676 \def\toclevel@section{1}

```

```

2677 \def\toclevel@subsection{2}
2678 \def\toclevel@subsubsection{3}
2679 \def\toclevel@paragraph{4}
2680 \def\toclevel@subparagraph{5}
2681 \def\toclevel@figure{0}
2682 \def\toclevel@table{0}
2683 \@ifpackageloaded{listings}{%
2684   \providecommand*\theHlstlisting{\thelstlisting}%
2685   \providecommand*\toclevel@lstlisting{0}%
2686 }{}
2687 \@ifpackageloaded{listing}{%
2688   \providecommand*\theHlisting{\thelisting}%
2689   \providecommand*\toclevel@listing{0}%
2690 }{}

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

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

```

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.

```

2697 \let\Hy@bookmarksdepth\c@tocdepth
2698 \define@key{Hyp}{bookmarksdepth}[]{%
2699   \begingroup
2700     \edef\x{#1}%
2701     \ifx\x\empty
2702       \global\let\Hy@bookmarksdepth\c@tocdepth
2703     \else
2704       \@ifundefined{toclevel@\x}{%
2705         \@onelevel@sanitize\x
2706         \edef\y{\expandafter\@car\x\@nil}%
2707         \ifcase 0\expandafter\ifx\y-1\fi
2708           \expandafter\ifnum\expandafter'\y>47 %
2709             \expandafter\ifnum\expandafter'\y<58 1\fi\fi\relax
2710           \Hy@Warning{Unknown document division name (\x)}%
2711         \else
2712           \setbox\z@=\hbox{%
2713             \count@=\x
2714             \xdef\Hy@bookmarksdepth{\the\count@}%
2715           }%
2716         \fi
2717       }{%
2718         \setbox\z@=\hbox{%
2719           \count@=\csname toclevel@\x\endcsname
2720           \xdef\Hy@bookmarksdepth{\the\count@}%
2721         }%

```

```

2722     }%
2723     \fi
2724   \endgroup
2725 }

```

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

```

2726 \define@key{Hyp}{bookmarksopenlevel}{%
2727   \def\@bookmarksopenlevel{#1}%
2728 }
2729 \def\@bookmarksopenlevel{\maxdimen}
2730 % ‘bookmarkstyle’ to specify which ‘toc’ file to mimic
2731 \define@key{Hyp}{bookmarkstyle}{%
2732   \def\Hy@bookmarkstyle{#1}%
2733 }
2734 \def\Hy@bookmarkstyle{toc}

```

Richard Curnow [richard@curnow.demon.co.uk](mailto:richard@curnow.demon.co.uk) suggested this functionality. It adds section numbers etc to bookmarks.

```

2735 \define@key{Hyp}{bookmarksnumbered}[true]{%
2736   \Hy@boolkey{bookmarksnumbered}{#1}%
2737 }

```

Option CJKbookmarks enables the patch for CJK bookmarks.

```

2738 \define@key{Hyp}{CJKbookmarks}[true]{%
2739   \Hy@boolkey{CJKbookmarks}{#1}%
2740 }
2741 \def\Hy@temp#1{%
2742   \expandafter\Hy@@temp\csname @#1color\endcsname{#1}%
2743 }
2744 \def\Hy@@temp#1#2#3{%
2745   \define@key{Hyp}{#2color}{%
2746     \HyColor@HyperrefColor{##1}#1%
2747   }%
2748   \def#1{#3}%
2749 }
2750 \Hy@temp{link}{red}
2751 \Hy@temp{anchor}{black}
2752 \Hy@temp{cite}{green}
2753 \Hy@temp{file}{cyan}
2754 \Hy@temp{url}{magenta}
2755 \Hy@temp{menu}{red}
2756 \Hy@temp{run}{\@filecolor}
2757 \define@key{Hyp}{pagecolor}{%
2758   \Hy@WarningPageColor
2759 }
2760 \def\Hy@WarningPageColor{%
2761   \Hy@WarningNoLine{Option ‘pagecolor’ is not available anymore}%
2762   \global\let\Hy@WarningPageColor\relax
2763 }
2764 \def\hyperbaseurl#1{\def\@baseurl{#1}}
2765 \define@key{Hyp}{baseurl}{\hyperbaseurl{#1}}
2766 \let\@baseurl\empty
2767 \def\hyperlinkfileprefix#1{\def\Hy@linkfileprefix{#1}}
2768 \define@key{Hyp}{linkfileprefix}{\hyperlinkfileprefix{#1}}
2769 \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.

```
2770 \let\pdfpagetransition\relax
2771 \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.

```
2772 \let\pdfpageduration\relax
2773 \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.

```
2774 \newif\ifHy@useHidKey
2775 \Hy@useHidKeyfalse
2776 \define@key{Hyp}{pdfpagehidden}[true]{%
2777   \Hy@boolkey{pdfpagehidden}{#1}%
2778   \ifHy@pdfpagehidden
2779     \global\Hy@useHidKeytrue
2780   \fi
2781 }
```

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).

```
2782 \def\Hy@ColorList{cite,file,link,menu,run,url}
2783 \for\Hy@temp:=\Hy@ColorList\do{%
2784   \edef\Hy@temp{%
2785     \noexpand\define@key{Hyp}{\Hy@temp bordercolor}{%
2786       \noexpand\HyColor@HyperrefBorderColor
2787         {##1}%
2788       \expandafter\noexpand\csname @\Hy@temp bordercolor\endcsname
2789         {hyperref}%
2790       {\Hy@temp bordercolor}%
2791     }%
2792   }%
2793   \Hy@temp
2794 }
2795 \define@key{Hyp}{pagebordercolor}{%
2796   \Hy@WarningPageBorderColor
2797 }
2798 \def\Hy@WarningPageBorderColor{%
2799   \Hy@WarningNoLine{Option 'pagebordercolor' is not available anymore}%
2800   \global\let\Hy@WarningPageBorderColor\relax
2801 }
2802 \define@key{Hyp}{pdfhighlight}{\def\pdfhighlight{#1}}
2803 \Hy@DefNameKey{pdfhighlight}{%
2804   \do{/I}{Invert}%
```

```

2805 \do{/N}{None}%
2806 \do{/O}{Outline}%
2807 \do{/P}{Push}%
2808 }
2809 \define@key{Hyp}{pdfborder}{\def\@pdfborder{#1}}
2810 \define@key{Hyp}{pdfborderstyle}{\def\@pdfborderstyle{#1}}
2811 \def\Hy@setpdfborder{%
2812   \ifx\@pdfborder\@empty
2813   \else
2814     /Border[\@pdfborder]%
2815   \fi
2816   \ifx\@pdfborderstyle\@empty
2817   \else
2818     /BS<<\@pdfborderstyle>>%
2819   \fi
2820 }
2821 \Hy@DefNameKey{pdfpagemode}{%
2822   \do{UseNone}{}%
2823   \do{UseOutlines}{}%
2824   \do{UseThumbs}{}%
2825   \do{FullScreen}{}%
2826   \do{UseOC}{PDF 1.5}%
2827   \do{UseAttachments}{PDF 1.6}%
2828 }
2829 \Hy@DefNameKey{pdfnonfullscreenpagemode}{%
2830   \do{UseNone}{}%
2831   \do{UseOutlines}{}%
2832   \do{UseThumbs}{}%
2833   \do{FullScreen}{}%
2834   \do{UseOC}{PDF 1.5}%
2835   \do{UseAttachments}{PDF 1.6}%
2836 }
2837 \Hy@DefNameKey{pdfdirection}{%
2838   \do{L2R}{Left to right}%
2839   \do{R2L}{Right to left}%
2840 }
2841 \Hy@DefNameKey{pdfviewarea}{%
2842   \do{MediaBox}{}%
2843   \do{CropBox}{}%
2844   \do{BleedBox}{}%
2845   \do{TrimBox}{}%
2846   \do{ArtBox}{}%
2847 }
2848 \Hy@DefNameKey{pdfviewclip}{%
2849   \do{MediaBox}{}%
2850   \do{CropBox}{}%
2851   \do{BleedBox}{}%
2852   \do{TrimBox}{}%
2853   \do{ArtBox}{}%
2854 }
2855 \Hy@DefNameKey{pdfprintarea}{%
2856   \do{MediaBox}{}%
2857   \do{CropBox}{}%
2858   \do{BleedBox}{}%
2859   \do{TrimBox}{}%
2860   \do{ArtBox}{}%
2861 }

```

```

2862 \Hy@DefNameKey{pdfprintclip}{%
2863   \do{MediaBox}{}%
2864   \do{CropBox}{}%
2865   \do{BleedBox}{}%
2866   \do{TrimBox}{}%
2867   \do{ArtBox}{}%
2868 }
2869 \Hy@DefNameKey{pdfprintscaling}{%
2870   \do{AppDefault}{}%
2871   \do{None}{}%
2872 }
2873 \Hy@DefNameKey{pdfduplex}{%
2874   \do{Simplex}{}%
2875   \do{DuplexFlipShortEdge}{}%
2876   \do{DuplexFlipLongEdge}{}%
2877 }
2878 \Hy@DefNameKey{pdfpicktraybypdfsize}{%
2879   \do{true}{}%
2880   \do{false}{}%
2881 }
2882 \define@key{Hyp}{pdfprintpagerange}{%
2883   \def\@pdfprintpagerange{#1}%
2884 }
2885 \Hy@DefNameKey{pdfnumcopies}{%
2886   \do{2}{two copies}%
2887   \do{3}{three copies}%
2888   \do{4}{four copies}%
2889   \do{5}{five copies}%
2890 }
2891 \define@key{Hyp}{pdfusetitle}[true]{%
2892   \Hy@boolkey[pdfusetitle]{usetitle}{#1}%
2893 }
2894 \define@key{Hyp}{pdftitle}{\pdfstringdef\@pdftitle{#1}}
2895 \define@key{Hyp}{pdfauthor}{\pdfstringdef\@pdfauthor{#1}}
2896 \define@key{Hyp}{pdfproducer}{\pdfstringdef\@pdfproducer{#1}}
2897 \define@key{Hyp}{pdfcreator}{\pdfstringdef\@pdfcreator{#1}}
2898 \define@key{Hyp}{pdfcreationdate}{%
2899   \begingroup
2900     \Hy@unicodedefalse
2901     \pdfstringdef\@pdfcreationdate{#1}%
2902   \endgroup
2903 }
2904 \define@key{Hyp}{pdfmoddate}{%
2905   \begingroup
2906     \Hy@unicodedefalse
2907     \pdfstringdef\@pdfmoddate{#1}%
2908   \endgroup
2909 }
2910 \define@key{Hyp}{pdfsubject}{\pdfstringdef\@pdfsubject{#1}}
2911 \define@key{Hyp}{pdfkeywords}{\pdfstringdef\@pdfkeywords{#1}}
2912 \define@key{Hyp}{pdfview}{\calculate@pdfview#1 \\\}
2913 \define@key{Hyp}{pdflinkmargin}{\setpdflinkmargin{#1}}
2914 \let\setpdflinkmargin\@gobble
2915 \def\calculate@pdfview#1 #2\{\%
2916   \def\@pdfview{#1}%
2917   \ifx\#2\%
2918     \def\@pdfviewparams{ -32768}%

```

```

2919 \else
2920   \def\@pdfviewparams{ #2}%
2921 \fi
2922 }
2923 \begingroup\expandafter\expandafter\expandafter\endgroup
2924 \expandafter\ifx\csname numexpr\endcsname\relax
2925   \def\Hy@number#1{%
2926     \expandafter\@firstofone\expandafter{\number#1}%
2927   }%
2928 \else
2929   \def\Hy@number#1{%
2930     \the\numexpr#1\relax
2931   }%
2932 \fi
2933 \define@key{Hyp}{pdfstartpage}{%
2934   \ifx\#1\%
2935     \def\@pdfstartpage{%
2936   \else
2937     \edef\@pdfstartpage{\Hy@number{#1}}%
2938   \fi
2939 }%
2940 \define@key{Hyp}{pdfstartview}{%
2941   \ifx\#1\%
2942     \def\@pdfstartview{%
2943   \else
2944     \hypercalcbpdef\@pdfstartview{ /#1 }%
2945   \fi
2946 }
2947 \define@key{Hyp}{pdfpagescrop}{\edef\@pdfpagescrop{#1}}
2948 \define@key{Hyp}{pdftoolbar}[true]{%
2949   \Hy@boolkey[pdftoolbar]{toolbar}{#1}%
2950 }
2951 \define@key{Hyp}{pdfmenubar}[true]{%
2952   \Hy@boolkey[pdfmenubar]{menubar}{#1}%
2953 }
2954 \define@key{Hyp}{pdfwindowui}[true]{%
2955   \Hy@boolkey[pdfwindowui]{windowui}{#1}%
2956 }
2957 \define@key{Hyp}{pdffitwindow}[true]{%
2958   \Hy@boolkey[pdffitwindow]{fitwindow}{#1}%
2959 }
2960 \define@key{Hyp}{pdfcenterwindow}[true]{%
2961   \Hy@boolkey[pdfcenterwindow]{centerwindow}{#1}%
2962 }
2963 \define@key{Hyp}{pdfdisplaydoctitle}[true]{%
2964   \Hy@boolkey[pdfdisplaydoctitle]{displaydoctitle}{#1}%
2965 }
2966 \define@key{Hyp}{pdfa}[true]{%
2967   \Hy@boolkey{pdfa}{#1}%
2968 }
2969 \define@key{Hyp}{pdfnewwindow}[true]{%
2970   \def\Hy@temp{#1}%
2971   \ifx\Hy@temp\@empty
2972     \Hy@newwindowsetfalse
2973   \else
2974     \Hy@newwindowsettrue
2975     \Hy@boolkey[pdfnewwindow]{newwindow}{#1}%

```

```

2976 \fi
2977 }
2978 \def\Hy@SetNewWindow{%
2979 \ifHy@newwindowset
2980 /NewWindow %
2981 \ifHy@newwindow true\else false\fi
2982 \fi
2983 }
2984 \Hy@DefNameKey{pdfpagelayout}{%
2985 \do{SinglePage}{}%
2986 \do{OneColumn}{}%
2987 \do{TwoColumnLeft}{}%
2988 \do{TwoColumnRight}{}%
2989 \do{TwoPageLeft}{PDF 1.5}%
2990 \do{TwoPageRight}{PDF 1.5}%
2991 }
2992 \define@key{Hyp}{pdflang}{%
2993 \def\@pdflang{#1}%
2994 }
2995 \define@key{Hyp}{pdfpagelabels}[true]{%
2996 \Hy@boolkey[pdfpagelabels]{pagelabels}{#1}%
2997 }
2998 \define@key{Hyp}{pdfescapeform}[true]{%
2999 \Hy@boolkey[pdfescapeform]{escapeform}{#1}%
3000 }

```

Default values:

```

3001 \def\@linkbordercolor{1 0 0}
3002 \def\@urlbordercolor{0 1 1}
3003 \def\@menubordercolor{1 0 0}
3004 \def\@filebordercolor{0 .5 .5}
3005 \def\@runbordercolor{0 .7 .7}
3006 \def\@citebordercolor{0 1 0}
3007 \def\@pdfhighlight{/I}
3008 \def\@pdftitle{}
3009 \def\@pdfauthor{}
3010 \let\@pdfproducer\relax
3011 \def\@pdfcreator{LaTeX with hyperref package}
3012 \def\@pdfcreationdate{}
3013 \def\@pdfmoddate{}
3014 \def\@pdfsubject{}
3015 \def\@pdfkeywords{}
3016 \def\@pdfpagescrop{}
3017 \def\@pdfstartview{/Fit }
3018 \def\@pdfstartpage{1}
3019 \def\@pdfprintpagerange{}
3020 \def\@pdflang{}
3021 \let\PDF@SetupDoc\@empty
3022 \let\PDF@FinishDoc\@empty
3023 \let\phantomsection\@empty
3024 \let\special@paper\@empty
3025 \def\HyperDestNameFilter#1{#1}
3026 \@ifundefined{stockwidth}{%
3027 \ifdim\paperwidth>\z@
3028 \ifdim\paperheight>\z@
3029 \edef\special@paper{\the\paperwidth,\the\paperheight}%
3030 \fi
3031 \fi

```

```

3032 }{%
3033   \ifdim\stockwidth>\z@
3034     \ifdim\stockheight>\z@
3035       \edef\special@paper{\the\stockwidth,\the\stockheight}%
3036     \fi
3037   \fi
3038 }
3039 \begingroup
3040 \edef\x{\@ifundefined{stockheight}\paperheight\stockheight}%
3041 \dimen@=\x\relax
3042 \ifdim\dimen@>\z@
3043   \else
3044     \dimen@=11in\relax
3045     \Hy@WarningNoLine{%
3046       Height of page (\expandafter\string\x) %
3047       is invalid (\the\x),\MessageBreak
3048       using 11in%
3049     }%
3050   \fi
3051   \dimen@=0.99626401\dimen@
3052   \xdef\Hy@pageheight{\strip@pt\dimen@}%
3053 \endgroup
3054 \def\HyInd@EncapChar{\|}
3055 \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.

```

3056 \let\hyper@normalise\ExecuteOptions
3057 \let\ExecuteOptions\hypersetup
3058 \Hy@RestoreCatcodes
3059 \InputIfFileExists{hyperref.cfg}{-}{-}
3060 \Hy@SetCatcodes
3061 \let\ExecuteOptions\hyper@normalise
3062 \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`.

```

3063 \RequirePackage{kvoptions}[2006/08/17]
3064 \AddOption{tex4ht}{}
3065 \@ifpackageloaded{tex4ht}{%
3066   \@ifpackagewith{hyperref}{tex4ht}{-}{-}
3067   \PassOptionsToPackage{tex4ht}{hyperref}%
3068 }{}
3069 \let\ReadBookmarks\relax
3070 \ProcessKeyvalOptions{Hyp}

```

After processing options.

```

3071 \AtBeginDocument{%
3072   \ifHy@draft
3073     \let\hyper@@anchor@gobble
3074     \gdef\hyper@link#1#2#3{#3}%
3075     \let\hyper@anchorstart@gobble

```

```

3076 \let\hyper@anchorend\@empty
3077 \let\hyper@linkstart\@gobbletwo
3078 \let\hyper@linkend\@empty
3079 \def\hyper@linkurl#1#2{#1}%
3080 \def\hyper@linkfile#1#2#3{#1}%
3081 \def\hyper@link@[#1]#2#3{}%
3082 \def\Acrobatmenu#1#2{\leavevmode#2}%
3083 \let\PDF@SetupDoc\@empty
3084 \let\PDF@FinishDoc\@empty
3085 \let\@fifthoffive\@secondoftwo
3086 \let\@secondoffive\@secondoftwo
3087 \let\ReadBookmarks\relax
3088 \let\WriteBookmarks\relax
3089 \Hy@WarningNoLine{ draft mode on}%
3090 \fi
3091 \Hy@DisableOption{draft}%
3092 \Hy@DisableOption{nolinks}%
3093 \Hy@DisableOption{final}%
3094 }

```

## 15.1 PDF/A

```

3095 \Hy@DisableOption{pdfa}

3096 \ifHy@pdfa
3097 \setkeys{Hyp}{pdfversion=1.4}%
3098 \def\Hy@Acrobatmenu#1#2{%
3099 \leavevmode
3100 \begingroup
3101 \edef\x{#1}%
3102 \@onelevel@sanitize\x
3103 \ifx\x\Hy@NextPage
3104 \let\y=Y%
3105 \else
3106 \ifx\x\Hy@PrevPage
3107 \let\y=Y%
3108 \else
3109 \ifx\x\Hy@FirstPage
3110 \let\y=Y%
3111 \else
3112 \ifx\x\Hy@LastPage
3113 \let\y=Y%
3114 \else
3115 \let\y=N%
3116 \fi
3117 \fi
3118 \fi
3119 \fi
3120 \expandafter\endgroup
3121 \ifx\y Y%
3122 \else
3123 \PackageError{hyperref}{%
3124 PDF/A: Named action ‘#1’ is not permitted%
3125 }\@ehc
3126 {#2}%
3127 \expandafter\@gobble
3128 \fi
3129 }%

```

```

3130 \def\Hy@temp#1{%
3131   \expandafter\def\csname Hy@#1\endcsname{#1}%
3132   \expandafter\@onelevel@sanitize\csname Hy@#1\endcsname
3133 }%
3134 \Hy@temp{NextPage}%
3135 \Hy@temp{PrevPage}%
3136 \Hy@temp{FirstPage}%
3137 \Hy@temp{LastPage}%
3138 \else
3139   \def\Hy@Acrobatmenu#1#2{\leavevmode}%
3140 \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.

```

3141 \Hy@nextfalse
3142 \@ifundefined{spanish@sh@"@sel}{\Hy@nexttrue}
3143 \@ifundefined{galician@sh@"@sel}{\Hy@nexttrue}
3144 \@ifundefined{estonian@sh@"@sel}{\Hy@nexttrue}
3145 \ifHy@next
3146   \let\texttilde~%
3147 \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.

```

3148 \@ifpackageloaded{babel}{%
3149   \@ifpackagelater{babel}{2008/03/16}{%
3150     \def\Hy@PatchLanguageShorthands#1{%
3151       \begingroup
3152       \edef\x{#1}%
3153       \@onelevel@sanitize\x
3154       \def\y{system}%
3155       \@onelevel@sanitize\y
3156       \expandafter\endgroup
3157       \ifx\x\y
3158       \else
3159         \HyOrg@languageshorthands{#1}%
3160       \fi
3161     }%
3162     \AtBeginDocument{%
3163       \begingroup
3164       \toks0=\expandafter{\pdfstringdefPreHook}%
3165       \xdef\pdfstringdefPreHook{%
3166         \let\noexpand\HyOrg@languageshorthands
3167         \noexpand\languageshorthands
3168         \let\noexpand\languageshorthands
3169         \noexpand\Hy@PatchLanguageShorthands
3170         \the\toks0 %
3171         \let\noexpand\languageshorthands
3172         \noexpand\HyOrg@languageshorthands
3173       }%
3174       \endgroup
3175     }%
3176   }{}%

```

```

3177 }{}
3178 \ifHy@figures
3179   \Hy@Info{Hyper figures ON}%
3180 \else
3181   \Hy@Info{Hyper figures OFF}%
3182 \fi
3183 \ifHy@nesting
3184   \Hy@Info{Link nesting ON}%
3185 \else
3186   \Hy@Info{Link nesting OFF}%
3187 \fi
3188 \ifHy@hyperindex
3189   \Hy@Info{Hyper index ON}%
3190 \else
3191   \Hy@Info{Hyper index OFF}%
3192 \fi
3193 \ifHy@plainpages
3194   \Hy@Info{Plain pages ON}%
3195 \else
3196   \Hy@Info{Plain pages OFF}%
3197 \fi
3198 \ifHy@backref
3199   \Hy@Info{Backreferencing ON}%
3200 \else
3201   \Hy@Info{Backreferencing OFF}%
3202 \fi
3203 \ifHy@typexml
3204   \AtEndOfPackage{%
3205     \RequirePackage{color}%
3206     \RequirePackage{nameref}%
3207   }%
3208 \fi
3209 \Hy@DisableOption{typexml}
3210 \ifHy@implicit
3211   \typeout{Implicit mode ON; LaTeX internals redefined}%
3212 \else
3213   \typeout{Implicit mode OFF; no redefinition of LaTeX internals}%
3214   \def\MaybeStopEarly{%
3215     \typeout{Hyperref stopped early}%
3216     \AfterBeginDocument{%
3217       \PDF@FinishDoc
3218       \gdef\PDF@FinishDoc{}}%
3219   }%
3220   \endinput
3221 }%
3222 \AtBeginDocument{%
3223   \let\autoref\ref
3224   \let\autopageref\pageref
3225   \ifx\@pdfpagemode\@empty
3226     \gdef\@pdfpagemode{UseNone}%
3227   \fi
3228   \global\Hy@backreffalse
3229 }%
3230 \AtEndOfPackage{%
3231   \global\let\ReadBookmarks\relax
3232   \global\let\WriteBookmarks\relax
3233 }%

```

```

3234 \fi
3235 \Hy@DisableOption{implicit}

```

### 15.3.1 Driver loading

```

3236 \AtEndOfPackage{%
3237   \@ifpackageloaded{tex4ht}{%
3238     \def\Hy@driver{htex4ht}%
3239     \Hy@texhttrue
3240   }{}%

```

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.

```

3241   \ifx\Hy@driver\@empty
3242   \else
3243     \def\Hy@temp{hpdftex}%
3244     \ifpdf
3245       \ifx\Hy@driver\Hy@temp
3246       \else
3247         \Hy@WarningNoLine{%
3248           Wrong driver ‘\Hy@driver.def’;\MessageBreak
3249           pdfTeX is running in PDF mode.\MessageBreak
3250           Forcing driver ‘\Hy@temp.def’%
3251         }%
3252         \let\Hy@driver\Hy@temp
3253       \fi
3254     \else
3255       \ifx\Hy@driver\Hy@temp
3256       \Hy@WarningNoLine{%
3257         Wrong driver ‘\Hy@driver.def’;\MessageBreak
3258         pdfTeX is not running in PDF mode.\MessageBreak
3259         Using default driver%
3260       }%
3261       \let\Hy@driver\@empty
3262     \fi
3263   \fi
3264 \fi
3265 \ifx\Hy@driver\@empty
3266 \else
3267   \def\Hy@temp{hdvipdfm}%
3268   \ifxetex
3269     \ifx\Hy@driver\Hy@temp
3270     \else
3271       \Hy@WarningNoLine{%
3272         Wrong driver ‘\Hy@driver.def’;\MessageBreak
3273         XeTeX is running.\MessageBreak
3274         Forcing driver ‘\Hy@temp.def’ for XeTeX%
3275       }%
3276       \let\Hy@driver\Hy@temp
3277     \fi
3278   \fi
3279 \fi
3280 \ifx\Hy@driver\@empty
3281 \else
3282   \def\Hy@temp{hvtexhtm}%
3283   \ifvtexhtml
3284     \ifx\Hy@driver\Hy@temp
3285     \else

```

```

3286     \Hy@WarningNoLine{%
3287       Wrong driver '\Hy@driver.def';\MessageBreak
3288       VTeX is running in HTML mode.\MessageBreak
3289       Forcing driver '\Hy@temp.def'%
3290     }%
3291     \let\Hy@driver\Hy@temp
3292   \fi
3293 \else
3294   \ifx\Hy@driver\Hy@temp
3295     \Hy@WarningNoLine{%
3296       Wrong driver '\Hy@driver.def';\MessageBreak
3297       VTeX is not running in HTML mode.\MessageBreak
3298       Using default driver%
3299     }%
3300     \let\Hy@driver\@empty
3301   \fi
3302 \fi
3303 \fi

```

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

```

3304 \ifx\Hy@driver\@empty
3305   \providecommand*{\Hy@defaultdriver}{hypertex}%
3306   \ifpdf
3307     \def\Hy@driver{hpdfptex}%
3308   \else
3309     \ifxetex
3310       \def\Hy@driver{hdvipdfm}%
3311     \else
3312       \ifvtexhtml
3313         \def\Hy@driver{hvtexhtm}%
3314         \def\MaybeStopEarly{%
3315           \typeout{Hyperref stopped early}%
3316           \AfterBeginDocument{%
3317             \PDF@FinishDoc
3318             \gdef\PDF@FinishDoc{}}%
3319         }%
3320         \endinput
3321       }%
3322     \else
3323       \ifvtexpdf
3324         \def\Hy@driver{hvtex}%
3325       \else
3326         \ifvtexps
3327           \def\Hy@driver{hvtex}%
3328         \else
3329           \let\Hy@driver\Hy@defaultdriver
3330         \fi
3331       \fi
3332     \fi
3333   \fi
3334 \fi
3335 \ifx\Hy@driver\Hy@defaultdriver
3336   \def\Hy@temp{hdviwind}%
3337   \ifx\Hy@temp\Hy@driver
3338     \setkeys{Hyp}{colorlinks}%
3339     \PassOptionsToPackage{dviwindo}{color}%
3340   \fi
3341 \fi

```

```

3342 \typeout{*hyperref using default driver \Hy@driver*}%
3343 \else
3344 \typeout{*hyperref using driver \Hy@driver*}%
3345 \fi
3346 \input{\Hy@driver.def}%
3347 \let\@unprocessedoptions\relax
3348 \Hy@RestoreCatcodes
3349 }

```

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

```

3350 \newif\ifHy@DvipdfmxOutlineOpen
3351 \ifxetex
3352 \ifdim\number\XeTeXversion\XeTeXrevision in<0.9995in %
3353 \else
3354 \Hy@DvipdfmxOutlineOpentrue
3355 \fi
3356 \fi
3357 \begingroup\expandafter\expandafter\expandafter\endgroup
3358 \expandafter\ifx\csname SpecialDvipdfmxOutlineOpen\endcsname\relax
3359 \else
3360 \ifnum\SpecialDvipdfmxOutlineOpen>\z@
3361 \Hy@DvipdfmxOutlineOpentrue
3362 \fi
3363 \fi
3364 \Hy@DisableOption{tex4ht}
3365 \Hy@DisableOption{pdftex}
3366 \Hy@DisableOption{nativepdf}
3367 \Hy@DisableOption{dvipdfm}
3368 \Hy@DisableOption{dvipdfmx}
3369 \Hy@DisableOption{dvipdfmx-outline-open}
3370 \Hy@DisableOption{pdfmark}
3371 \Hy@DisableOption{dvips}
3372 \Hy@DisableOption{hypertex}
3373 \Hy@DisableOption{vtex}
3374 \Hy@DisableOption{vtexpdfmark}
3375 \Hy@DisableOption{dviwindo}
3376 \Hy@DisableOption{dvipsone}
3377 \Hy@DisableOption{textures}
3378 \Hy@DisableOption{latex2html}
3379 \Hy@DisableOption{ps2pdf}
3380 \Hy@DisableOption{xetex}
3381 \AtEndOfPackage{%
3382 \Hy@DisableOption{pdfversion}%
3383 }

```

### 15.3.2 Bookmarks

```

3384 \def\WriteBookmarks{0}
3385 \def\@bookmarkopenstatus#1{%
3386 \ifHy@bookmarksopen

```

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

```

3387 \ifnum#1<\expandafter\@firstofone\expandafter
3388 \{number\@bookmarkopenlevel\} % explicit space
3389 \else
3390 -%

```

```

3391 \fi
3392 \else
3393 -%
3394 \fi
3395 }
3396 \ifHy@bookmarks
3397 \Hy@Info{Bookmarks ON}%
3398 \ifx\@pdfpagemode\@empty
3399 \def\@pdfpagemode{UseOutlines}%
3400 \fi
3401 \else
3402 \def\@bookmarkopenstatus#1{%
3403 \Hy@Info{Bookmarks OFF}%
3404 \AtEndOfPackage{%
3405 \global\let\ReadBookmarks\relax
3406 \global\let\WriteBookmarks\relax
3407 }%
3408 \ifx\@pdfpagemode\@empty
3409 \def\@pdfpagemode{UseNone}%
3410 \fi
3411 \fi
3412 \Hy@DisableOption{bookmarks}

Add wrapper for setting standard catcodes (babel's shorthands).
3413 \def\Hy@CatcodeWrapper#1{%
3414 \def\Hy@endWrap{%
3415 \def\TMP@EnsureCode##1##2{%
3416 \edef\Hy@endWrap{%
3417 \Hy@endWrap
3418 \catcode##1 \the\catcode##1\relax
3419 }%
3420 \catcode##1 ##2\relax
3421 }%
3422 \TMP@EnsureCode{10}{12}% ^^J
3423 \TMP@EnsureCode{33}{12}% !
3424 \TMP@EnsureCode{34}{12}% "
3425 \TMP@EnsureCode{36}{3}% $ (math)
3426 \TMP@EnsureCode{38}{4}% & (alignment)
3427 \TMP@EnsureCode{39}{12}% '
3428 \TMP@EnsureCode{40}{12}% (
3429 \TMP@EnsureCode{41}{12}% )
3430 \TMP@EnsureCode{42}{12}% *
3431 \TMP@EnsureCode{43}{12}% +
3432 \TMP@EnsureCode{44}{12}% ,
3433 \TMP@EnsureCode{45}{12}% -
3434 \TMP@EnsureCode{46}{12}% .
3435 \TMP@EnsureCode{47}{12}% /
3436 \TMP@EnsureCode{58}{12}% :
3437 \TMP@EnsureCode{59}{12}% ;
3438 \TMP@EnsureCode{60}{12}% <
3439 \TMP@EnsureCode{61}{12}% =
3440 \TMP@EnsureCode{62}{12}% >
3441 \TMP@EnsureCode{63}{12}% ?
3442 \TMP@EnsureCode{91}{12}% [
3443 \TMP@EnsureCode{93}{12}% ]
3444 \TMP@EnsureCode{94}{7}% ^ (superscript)
3445 \TMP@EnsureCode{95}{8}% _ (subscript)
3446 \TMP@EnsureCode{96}{12}% '

```

```

3447 \TMP@EnsureCode{124}{12}% |
3448 \TMP@EnsureCode{126}{13}% ~ (active)
3449 #1\relax
3450 \Hy@endWrap
3451 }

```

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

```

3452 \AtBeginDocument{%
3453   \ifHy@ocgcolorlinks
3454     \setkeys{Hyp}{colorlinks}%
3455     \ifHy@pdfa
3456       \Hy@Warning{%
3457         PDF/A: Optional Content Groups are prohibited,\MessageBreak
3458         using 'colorlinks' instead of 'ocgcolorlinks'%
3459       }%
3460       \Hy@ocgcolorlinksfalse
3461     \fi
3462   \fi
3463   \ifHy@ocgcolorlinks
3464   \else
3465     \Hy@DisableOption{ocgcolorlinks}%
3466   \fi
3467   \ifHy@colorlinks
3468     \def\@pdfborder{0 0 0}%
3469     \let\@pdfborderstyle\@empty
3470     \ifHy@typexml
3471     \else
3472       \Hy@CatcodeWrapper{%
3473         \RequirePackage{color}%
3474       }%
3475     \fi
3476     \def\Hy@colorlink#1{%
3477       \begingroup
3478       \HyColor@UseColor#1%
3479     }%
3480     \def\Hy@endcolorlink{\endgroup}%
3481     \Hy@Info{Link coloring ON}%
3482   \else
3483     \ifHy@frenchlinks
3484       \def\Hy@colorlink#1{\begingroup\fontshape{sc}\selectfont}%
3485       \def\Hy@endcolorlink{\endgroup}%
3486       \Hy@Info{French linking ON}%
3487     \else

```

for grouping consistency:

```

3488     \def\Hy@colorlink#1{\begingroup}%
3489     \def\Hy@endcolorlink{\endgroup}%
3490     \Hy@Info{Link coloring OFF}%
3491   \fi
3492 \fi
3493 \Hy@DisableOption{colorlinks}%
3494 \Hy@DisableOption{frenchlinks}%
3495 \ifHy@texht
3496   \long\def\@firstoffive#1#2#3#4#5{#1}%
3497   \long\def\@secondoffive#1#2#3#4#5{#2}%
3498   \long\def\@thirdoffive#1#2#3#4#5{#3}%
3499   \long\def\@fourthoffive#1#2#3#4#5{#4}%
3500   \long\def\@fifthoffive#1#2#3#4#5{#5}%

```

```

3501 \providecommand*\@safe@activetrue{%
3502 \providecommand*\@safe@activetruefalse{%
3503 \def\T@ref#1{%
3504 \Hy@safe@activetrue
3505 \expandafter\@setref\csname r@#1\endcsname\@firstoffive{#1}%
3506 \Hy@safe@activetruefalse
3507 }%
3508 \def\T@pageref#1{%
3509 \Hy@safe@activetrue
3510 \expandafter\@setref\csname r@#1\endcsname\@secondoffive{#1}%
3511 \Hy@safe@activetruefalse
3512 }%
3513 \else
3514 \ifHy@typexml
3515 \else
3516 \Hy@CatcodeWrapper{%
3517 \RequirePackage{nameref}%
3518 }%
3519 \fi
3520 \fi
3521 \DeclareRobustCommand\ref{\@ifstar\@refstar\T@ref}%
3522 \DeclareRobustCommand\pageref{%
3523 \@ifstar\@pagerefstar\T@pageref
3524 }%
3525 }
3526 \AfterBeginDocument{%
3527 \ifHy@texht
3528 \else
3529 \Hy@CatcodeWrapper{%
3530 \ReadBookmarks
3531 }%
3532 \fi
3533 }
3534 \ifHy@backref
3535 \RequirePackage{backref}%
3536 \else
3537 \let\Hy@backout\@gobble
3538 \fi
3539 \Hy@DisableOption{backref}
3540 \Hy@DisableOption{pagebackref}
3541 \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.

```

3542 \begingroup
3543 \endlinechar=-1 %
3544 \catcode'\^^A=14 %
3545 \catcode'\^^M\active
3546 \catcode'\%\active
3547 \catcode'\#\active

```

```

3548 \catcode'\_ \active
3549 \catcode'\$ \active
3550 \catcode'\& \active
3551 \gdef\hyper@normalise{^^A
3552   \begingroup
3553   \catcode'\^^M \active
3554   \def^^M{ }^^A
3555   \catcode'\% \active
3556   \let%\@percentchar
3557   \let\%\@percentchar
3558   \catcode'\# \active
3559   \def#{\hyper@hash}^^A
3560   \def\#{\hyper@hash}^^A
3561   \@makeother\&^^A
3562   \edef&{\string&}^^A
3563   \edef&{\string&}^^A
3564   \edef\textunderscore{\string_}^^A
3565   \let\_ \textunderscore
3566   \catcode'\_ \active
3567   \let\_ \textunderscore
3568   \let~\hyper@tilde
3569   \let~\hyper@tilde
3570   \let\textasciitilde\hyper@tilde
3571   \let\\ \@backslashchar
3572   \edef$\string$}^^A
3573   \Hy@safe@activestrue
3574   \hyper@n@rmalise
3575 }^^A
3576 \catcode'\#=6 ^^A
3577 \gdef\Hy@ActiveCarriageReturn{^^M}^^A
3578 \gdef\hyper@n@rmalise#1#2{^^A
3579   \def\Hy@tempa{#2}^^A
3580   \ifx\Hy@tempa\Hy@ActiveCarriageReturn
3581     \Hy@ReturnAfterElseFi{^^A
3582       \hyper@@normalise{#1}^^A
3583     }^^A
3584   \else
3585     \Hy@ReturnAfterFi{^^A
3586       \hyper@@normalise{#1}{#2}^^A
3587     }^^A
3588   \fi
3589 }^^A
3590 \gdef\hyper@@normalise#1#2{^^A
3591   \edef\Hy@tempa{^^A
3592     \endgroup
3593     \noexpand#1{\Hy@RemovePercentCr#2%\^^M\@nil}^^A
3594   }^^A
3595   \Hy@tempa
3596 }^^A
3597 \gdef\Hy@RemovePercentCr#1%\^^M#2\@nil{^^A
3598   #1^^A
3599   \ifx\limits#2\limits
3600   \else
3601     \Hy@ReturnAfterFi{^^A
3602       \Hy@RemovePercentCr #2\@nil
3603     }^^A
3604   \fi

```

```

3605 }^^A
3606 \endgroup
3607 \providecommand*\hyper@chars{%
3608   \let\#\hyper@hash
3609   \let%\@percentchar
3610   \Hy@safe@activetrue
3611 }

3612 \def\hyperlink#1#2{%
3613   \hyper@@link{#1}{#2}%
3614 }

3615 \DeclareRobustCommand*\href{%
3616   \@ifnextchar\bgroup\Hy@href{\hyper@normalise\href@}%
3617 }
3618 \def\Hy@href#1{%
3619   \hyper@normalise\href@
3620 }
3621 \begingroup
3622   \catcode'\$=6 %
3623   \catcode'\#=12 %
3624   \gdef\href@#1{\expandafter\href@split$1##\}%
3625   \gdef\href@split$1#$2#$3\{%
3626     \hyper@@link{#1}{#2}%
3627   }%
3628 \endgroup

```

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

```

3629 \RequirePackage{url}
3630 \let\HyOrg@url\url
3631 \def\Hurl{\begingroup \Url}
3632 \DeclareRobustCommand*\nolinkurl{\hyper@normalise\nolinkurl@}
3633 \def\nolinkurl@#1{\Hurl{#1}}
3634 \DeclareRobustCommand*\url{\hyper@normalise\url@}
3635 \def\url@#1{\hyper@linkurl{\Hurl{#1}}{#1}}

3636 \DeclareRobustCommand*\hyperimage{\hyper@normalise\hyper@image}
3637 \providecommand\hyper@image[2]{#2}

3638 \def\hypertarget#1#2{%
3639   \ifHy@nesting
3640     \hyper@@anchor{#1}{#2}%
3641   \else
3642     \hyper@@anchor{#1}{\relax}#2%
3643   \fi
3644 }

```

`\hyperref` is more complicated, as it includes the concept of a category of link, used to make the name. This is not really used in this package. `\hyperdef` sets up an anchor in the same way. They each have three parameters of category, linkname, and marked text, and `\hyperref` also has a first parameter of URL. If there is an optional first parameter to `\hyperdef`, it is the name of a  $\text{\LaTeX}$  label which can be used in a short form of `\hyperref` later, to avoid remembering the name and category.

```

3645 \DeclareRobustCommand*\hyperref{%
3646   \@ifnextchar[{\Hy@babelnormalise\label@hyperref}\@hyperref
3647 }
3648 \def\Hy@babelnormalise#1[#2]{%
3649   \begingroup
3650     \Hy@safe@activetrue
3651     \edef\Hy@tempa{%

```

```

3652     \endgroup
3653     \noexpand#1[{#2}]%
3654 }%
3655 \Hy@tempa
3656 }
3657 \def\@hyperref{\hyper@normalise\@hyperref}
3658 \def\@hyperref#1#2#3{%
3659   \edef\ref@one{\ifx\#2\\\else#2.\fi#3}%
3660   \expandafter\tryhyper@link\ref@one\{#1}%
3661 }
3662 \def\tryhyper@link#1\#2{%
3663   \hyper@@link{#2}{#1}%
3664 }
3665 \def\hyperdef{\@ifnextchar[{\label@hyperdef}{\@hyperdef}}
3666 \def\@hyperdef#1#2#3{%, category, name, text
3667   \ifx\#1\%
3668     \def\Hy@AnchorName{#2}%
3669   \else
3670     \def\Hy@AnchorName{#1.#2}%
3671   \fi
3672   \ifHy@nesting
3673     \expandafter\hyper@@anchor\expandafter{\Hy@AnchorName}{#3}%
3674   \else
3675     \expandafter\hyper@@anchor\expandafter{\Hy@AnchorName}{\relax}#3%
3676   \fi
3677 }

```

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

```

3678 \def\label@hyperref[#1]{%
3679   \expandafter\label@@hyperref\csname r@#1\endcsname{#1}%
3680 }%
3681 \def\label@@hyperref#1#2#3{%
3682   \ifx#1\relax
3683     \protect\G@refundefinedtrue
3684     \latex@warning{%
3685       Hyper reference ‘#2’ on page \thepage \space undefined%
3686     }%
3687     \hyper@@link{}{??}{#3}%
3688   \else
3689     \hyper@@link{\expandafter\@fifthoffive#1}%
3690     {\expandafter\@fourthoffive#1\@empty\@empty}{#3}%
3691   \fi
3692 }
3693 \def\label@hyperdef[#1]#2#3#4{ label name, category, name,
3694                               % anchor text
3695   \bsphack
3696   \ifx\#2\%
3697     \def\Hy@AnchorName{#3}%
3698   \else
3699     \def\Hy@AnchorName{#2.#3}%
3700   \fi
3701   \if@filesw
3702     \protected@write\@auxout{}{%
3703       \string\newlabel{#1}{{}{}}{\Hy@AnchorName}{}%
3704     }%
3705   \fi

```

```

3706 \@esphack
3707 \ifHy@nesting
3708   \expandafter\hyper@@anchor\expandafter{\Hy@AnchorName}{#4}%
3709 \else
3710   \expandafter\hyper@@anchor\expandafter{\Hy@AnchorName}{\relax}#4%
3711 \fi
3712 }

```

## 17 Underlying basic hypertext macros

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

```

3713 \def\hyper@link{\let\Hy@reserved@a\relax
3714   \ifnextchar[{\hyper@link@{\hyper@link@[link]}}%
3715 }
3716 \def\hyper@link@[#1]#2#3#4{%
3717   \begingroup
3718     \protected@edef\Hy@tempa{#2}%
3719     \Hy@safe@activestrue
3720     \edef\x{#3}%
3721     \ifx\Hy@tempa\@empty
3722       \toks0{\hyper@link{#1}}%
3723     \else
3724       \toks0{\expandafter\hyper@readexternallink#2\{#1}}%
3725     \fi
3726     \toks2{%
3727       \Hy@safe@activesfalse
3728       #4%
3729     }%
3730     \edef\Hy@tempa{\the\toks2}%
3731     \edef\x{\endgroup
3732       \ifx\Hy@tempa\@empty
3733         \noexpand\Hy@Warning{Suppressing empty link}%
3734       \else
3735         \the\toks0 {\x}{\the\toks2}}%
3736     \fi
3737   }%
3738   \x
3739 }

```

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.

```

3740 \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.

```
3741 \expandafter\@hyper@readexternallink{#2}{#3}{#4}#1:.\{#1}%
3742 }
```

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

```
3743 \def\@pdftempwordfile{file}%
3744 \def\@pdftempwordrun{run}%
3745 \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:

```
3746 \ifx\\#6\\%
3747 \expandafter\@hyper@linkfile file:#7\\{#3}{#2}%
3748 \else
3749 \ifx\\#4\\%
3750 \expandafter\@hyper@linkfile file:#7\\{#3}{#2}%
3751 \else
```

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

```
3752 \def\@pdftempa{#4}%
3753 \ifx\@pdftempa\@pdftempwordfile
3754 \expandafter\@hyper@linkfile#7\\{#3}{#2}%
3755 \else
```

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

```
3756 \ifx\@pdftempa\@pdftempwordrun
3757 \ifHy@pdfa
3758 \PackageError{hyperref}{%
3759 PDF/A: Launch action is prohibited%
3760 }\@ehc
3761 \begingroup
3762 \leavevmode
3763 #2%
3764 \endgroup
3765 \else
3766 \expandafter\@hyper@launch#7\\{#3}{#2}%
3767 \fi
3768 \else
```

otherwise its a URL

```
3769 \hyper@linkurl{#3}{#7\ifx\\#2\\%else\hyper@hash#2\fi}%
3770 \fi
3771 \fi
3772 \fi
3773 \fi
3774 }
```

By default, turn run: into file:

```
3775 \def\@hyper@launch run:#1\\#2#3{% filename, anchor text, linkname
3776 \hyper@linkurl{#2}{%
3777 \Hy@linkfileprefix
3778 #1%
3779 \ifx\\#3\\%
3780 \else
```

```

3781     \hyper@hash
3782     #3%
3783     \fi
3784 }%
3785 }

```

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

```

3786 \def\@hyper@linkfile file:#1\|#2#3{%
3787     %file url,link string, name
3788     \filename@parse{#1}%
3789     \ifx\filename@ext\relax
3790         \edef\filename@ext{\XR@ext}%
3791     \fi
3792     \def\use@file{\filename@area\filename@base.\filename@ext}%
3793     \ifx\filename@ext\XR@ext
3794         \hyper@linkfile{#2}{\use@file}{#3}%
3795     \else
3796         \ifx\@baseurl\@empty
3797             \hyper@linkurl{#2}{%
3798                 \Hy@linkfileprefix\use@file\ifx\|#3\\\else\hyper@hash#3\fi
3799             }%
3800         \else
3801             \hyper@linkurl{#2}{\use@file\ifx\|#3\\\else\hyper@hash#3\fi}%
3802         \fi
3803     \fi
3804 }

```

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.

```

3805 \long\def\hyper@@anchor#1#2{\@hyper@@anchor#1\relax#2\relax}
3806 \long\def\@hyper@@anchor#1\relax#2#3\relax{%
3807     \ifx\|#1\|
3808         #2\Hy@WarningNoLine{empty link? #1: #2#3}%
3809     \else
3810         \def\anchor@spot{#2#3}%
3811         \let\put@me@back\@empty
3812         \ifx\relax#2\relax
3813             \else
3814                 \ifHy@nesting
3815                     \else
3816                         \ifcat a\noexpand#2\relax
3817                             \else
3818                                 \ifcat 0\noexpand#2 \relax
3819                                     \else
3820 %
3821 %
3822 %
3823 %
3824 %
3825 %
3826 %
3827 %

```

```

3828 \fi
3829 \ifHy@activeanchor
3830 \anchor@spot
3831 \else
3832 \hyper@anchor{#1}%
3833 \fi
3834 \expandafter\put@me@back
3835 \fi
3836 \let\anchor@spot\@empty
3837 }

```

## 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.

```

3838 \let\htmladding\hyperimage
3839 \def\htmladdnormallink#1#2{\href{#2}{#1}}
3840 \def\htmladdnormallinkfoot#1#2{\href{#2}{#1}\footnote{#2}}
3841 \def\htmlref#1#2{% anchor text, label
3842 \label@hyperref[{#2}]{#1}%
3843 }

```

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.

```

3844 \def\@latextohtmlX{%
3845 \let\hhyperref\hyperref
3846 \def\hyperref##1##2##3##4{% anchor text for HTML
3847 % text to print before label in print
3848 % label
3849 % post-label text in print
3850 ##2\ref{##4}##3%
3851 }%
3852 }

```

## 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.

```

3853 \RequirePackage{bitset}

```

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

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

`\HyField@NewFlag` #1: type: F annot flags, Ff field flags  
#2: PDF name  
#3: PDF position

```
3854 \def\HyField@NewFlag#1#2{%
3855   \lowercase{\HyField@NewOption{#2}}%
3856   \lowercase{\HyField@NewBitsetFlag{#2}}{#2}{#1}%
3857 }
```

`\HyField@NewFlagOnly`

```
3858 \def\HyField@NewFlagOnly#1#2{%
3859   \lowercase{\HyField@NewBitsetFlag{#2}}{#2}{#1}%
3860 }
```

`\HyField@NewOption` #1: option name

```
3861 \def\HyField@NewOption#1{%
3862   \expandafter\newif\csname ifFld@#1\endcsname
3863   \define@key{Field}{#1}[true]{%
3864     \lowercase{\Field@boolkey{##1}}{#1}%
3865   }%
3866 }
```

`\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

```
3867 \def\HyField@NewBitsetFlag#1#2#3#4{%
3868   \begingroup
3869     \count@=#4\relax
3870     \advance\count@\m@ne
3871     \def\x##1{%
3872       \endgroup
3873       \expandafter\def\csname HyField@#3@#1\endcsname{##1}%
3874       \expandafter\ifx\csname HyField@#3@#1\endcsname\relax
3875         \expandafter\edef\csname HyField@#3@#1\endcsname{%
3876           (\number#4) #2%
3877         }%
3878       \else
3879         \expandafter\edef\csname HyField@#3@#1\endcsname{%
3880           \csname HyField@#3@#1\endcsname
3881           /#2%
3882         }%
3883       \fi
3884     }%
3885     \expandafter\x\expandafter{\the\count@}%
3886 }
```

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

```
3887 \def\HyField@UseFlag#1#2{%
3888   \lowercase{\HyField@UseFlag{#2}}{#1}%
3889 }
```

\HyField@@UseFlag

```
3890 \def\HyField@@UseFlag#1#2{%
3891   \bitsetSetValue{HyField@#2}{%
3892     \csname HyField@#2@#1\endcsname
3893   }{%
3894     \csname ifFld@#1\endcsname 1\else 0\fi
3895   }%
3896 }
```

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

```
3897 \def\HyField@SetFlag#1#2{%
3898   \lowercase{\HyField@@SetFlag{#2}}{#1}%
3899 }
```

\HyField@@SetFlag

```
3900 \def\HyField@@SetFlag#1#2{%
3901   \bitsetSetValue{HyField@#2}{%
3902     \csname HyField@#2@#1\endcsname
3903   }{1}%
3904 }
```

\HyField@PrintFlags

```
3905 \def\HyField@PrintFlags#1#2{%
3906   \ifHy@verbose
3907     \begingroup
3908       \let\Hy@temp\@empty
3909       \let\MessageBreak\relax
3910       \expandafter\@for\expandafter\x\expandafter:\expandafter=%
3911       \bitsetGetSetBitList{HyField@#1}\do{%
3912         \edef\Hy@temp{%
3913           \Hy@temp
3914           \csname HyField@#1@\x\endcsname\MessageBreak
3915         }%
3916       }%
3917     \edef\x{\endgroup
3918       \noexpand\Hy@Info{%
3919         Field flags: %
3920         \expandafter\ifx\@car#1\@nil S\else/\fi
3921         #1 %
3922         \bitsetGetDec{HyField@#1} %
3923         (0x\bitsetGetHex{HyField@#1}{32})\MessageBreak
3924         \Hy@temp
3925         for #2%
3926       }%
3927     }\x
3928   \fi
3929 }
```

### 19.1.1 Declarations of field flags

“Table 8.70 Field flags common to all field types”

```
3930 \HyField@NewFlag{Ff}{ReadOnly}{1}
3931 \HyField@NewFlag{Ff}{Required}{2}
3932 \HyField@NewFlag{Ff}{NoExport}{3}
```

“Table 8.75 Field flags specific to button fields”

```
3933 \HyField@NewFlag{Ff}{NoToggleToOff}{15}
3934 \HyField@NewFlag{Ff}{Radio}{16}
3935 \HyField@NewFlag{Ff}{Pushbutton}{17}
3936 \HyField@NewFlag{Ff}{RadiosInUnison}{26}
```

“Table 8.77 Field flags specific to text fields”

```
3937 \HyField@NewFlag{Ff}{Multiline}{13}
3938 \HyField@NewFlag{Ff}{Password}{14}
3939 \HyField@NewFlag{Ff}{FileSelect}{21}% PDF 1.4
3940 \HyField@NewFlag{Ff}{DoNotSpellCheck}{23}% PDF 1.4
3941 \HyField@NewFlag{Ff}{DoNotScroll}{24}% PDF 1.4
3942 \HyField@NewFlag{Ff}{Comb}{25}% PDF 1.4
3943 \HyField@NewFlag{Ff}{RichText}{26}% PDF 1.5
```

“Table 8.79 field flags specific to choice fields”

```
3944 \HyField@NewFlag{Ff}{Combo}{18}
3945 \HyField@NewFlag{Ff}{Edit}{19}
3946 \HyField@NewFlag{Ff}{Sort}{20}
3947 \HyField@NewFlag{Ff}{MultiSelect}{22}% PDF 1.4
3948 % \HyField@NewFlag{Ff}{DoNotSpellCheck}{23}% PDF 1.4
3949 \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.

```
3950 \newif\ifFld@popdown
3951 \define@key{Field}{popdown}[true]{%
3952 \lowercase{\Field@boolkey{#1}}{popdown}%
3953 }
```

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.

```
3954 \HyField@NewFlag{F}{Invisible}{1}
3955 \HyField@NewFlag{F}{Hidden}{2}% PDF 1.2
3956 \HyField@NewFlag{F}{Print}{3}% PDF 1.2
3957 \HyField@NewFlag{F}{NoZoom}{4}% PDF 1.2
3958 \HyField@NewFlag{F}{NoRotate}{5}% PDF 1.3
3959 \HyField@NewFlag{F}{NoView}{6}% PDF 1.3
3960 \HyField@NewFlag{F}{Locked}{8}% PDF 1.4
3961 \HyField@NewFlag{F}{ToggleNoView}{9}% PDF 1.5
3962 \HyField@NewFlag{F}{LockedContents}{10}% PDF 1.7

3963 \ifHy@pdfa
3964 \def\HyField@PDFAFldWarning#1#2{%
3965 \Hy@Warning{%
3966 PDF/A: Annotation flag ‘#1’ must\MessageBreak
3967 be set to ‘#2’%
3968 }%
3969 }%
3970 \Fld@invisiblefalse
3971 \def\Fld@invisibletrue{%
3972 \HyField@PDFAFldWarning{invisible}{false}%
3973 }%
3974 \Fld@hiddenfalse
3975 \def\Fld@hiddentrue{%
```

```

3976 \HyField@PDFAFIWarning{hidden}{false}%
3977 }%
3978 \Fld@printtrue
3979 \def\Fld@printfalse{%
3980 \HyField@PDFAFIWarning{print}{true}%
3981 }%
3982 \Fld@nozoomtrue
3983 \def\Fld@nozoomfalse{%
3984 \HyField@PDFAFIWarning{nozoom}{true}%
3985 }%
3986 \Fld@norotatetrue
3987 \def\Fld@norotatefalse{%
3988 \HyField@PDFAFIWarning{norotate}{true}%
3989 }%
3990 \Fld@noviewfalse
3991 \def\Fld@noviewtrue{%
3992 \HyField@PDFAFIWarning{noview}{false}%
3993 }%
3994 \fi

```

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

```

3995 \HyField@NewFlag{Submit}{IncludeNoValueFields}{2}
3996 \HyField@NewFlagOnly{Submit}{ExportFormat}{3}
3997 \HyField@NewFlag{Submit}{GetMethod}{4}
3998 \HyField@NewFlag{Submit}{SubmitCoordinates}{5}
3999 \HyField@NewFlagOnly{Submit}{XFDF}{6}
4000 \HyField@NewFlag{Submit}{IncludeAppendSaves}{7}
4001 \HyField@NewFlag{Submit}{IncludeAnnotations}{8}
4002 \HyField@NewFlagOnly{Submit}{SubmitPDF}{9}
4003 \HyField@NewFlag{Submit}{CanonicalFormat}{10}
4004 \HyField@NewFlag{Submit}{ExclNonUserAnnots}{11}
4005 \HyField@NewFlag{Submit}{ExclFKey}{12}
4006 \HyField@NewFlag{Submit}{EmbedForm}{14}

4007 \define@key{Field}{export}{%
4008 \lowercase{\def\Hy@temp{#1}}%
4009 \@ifundefined{Fld@export@Hy@temp}{%
4010 \onelevel@sanitize\Hy@temp
4011 \PackageError{hyperref}{%
4012 \Known export format '\Hy@temp'.\MessageBreak
4013 \Known formats are 'FDF', 'HTML', 'XFDF', and 'PDF'%
4014 }{\@ehc
4015 }{%
4016 \let\Fld@export\Hy@temp
4017 }%
4018 }
4019 \def\Fld@export{fdf}
4020 \@namedef{Fld@export@fdf}{0}%
4021 \@namedef{Fld@export@html}{1}%
4022 \@namedef{Fld@export@xfdf}{2}%
4023 \@namedef{Fld@export@pdf}{3}%

```

## 19.1.2 Set submit flags

\HyField@FlagsSubmit

```

4024 \def\HyField@FlagsSubmit{%
4025 \bitsetReset{HyField@Submit}%
4026 \ifcase\@nameuse{Fld@export@Fld@export} %

```

```

4027 % FDF
4028 \HyField@UseFlag{Submit}{IncludeNoValueFields}%
4029 \HyField@UseFlag{Submit}{SubmitCoordinates}%
4030 \HyField@UseFlag{Submit}{IncludeAppendSaves}%
4031 \HyField@UseFlag{Submit}{IncludeAnnotations}%
4032 \HyField@UseFlag{Submit}{CanonicalFormat}%
4033 \HyField@UseFlag{Submit}{ExclNonUserAnnots}%
4034 \HyField@UseFlag{Submit}{ExclFKey}%
4035 \HyField@UseFlag{Submit}{EmbedForm}%
4036 \or % HTML
4037 \HyField@SetFlag{Submit}{ExportFormat}%
4038 \HyField@UseFlag{Submit}{IncludeNoValueFields}%
4039 \HyField@UseFlag{Submit}{GetMethod}%
4040 \HyField@UseFlag{Submit}{SubmitCoordinates}%
4041 \HyField@UseFlag{Submit}{CanonicalFormat}%
4042 \or % XFDF
4043 \HyField@SetFlag{Submit}{XFDF}%
4044 \HyField@UseFlag{Submit}{IncludeNoValueFields}%
4045 \HyField@UseFlag{Submit}{SubmitCoordinates}%
4046 \HyField@UseFlag{Submit}{CanonicalFormat}%
4047 \or % PDF
4048 \HyField@SetFlag{Submit}{SubmitPDF}%
4049 \HyField@UseFlag{Submit}{GetMethod}%
4050 \fi
4051 \HyField@PrintFlags{Submit}{submit button field}%
4052 \bitsetIsEmpty{HyField@Submit}{%
4053 \def\Fld@submitflags{%
4054 }{%
4055 \edef\Fld@submitflags{/Flags \bitsetGetDec{HyField@Submit}}%
4056 }%
4057 }

```

### 19.1.3 Set annot flags in fields

\HyField@FlagsAnnot

```

4058 \def\HyField@FlagsAnnot#1{%
4059 \bitsetReset{HyField@F}%
4060 \HyField@UseFlag{F}{Invisible}%
4061 \HyField@UseFlag{F}{Hidden}%
4062 \HyField@UseFlag{F}{Print}%
4063 \HyField@UseFlag{F}{NoZoom}%
4064 \HyField@UseFlag{F}{NoRotate}%
4065 \HyField@UseFlag{F}{NoView}%
4066 \HyField@UseFlag{F}{Locked}%
4067 \HyField@UseFlag{F}{ToggleNoView}%
4068 \HyField@UseFlag{F}{LockedContents}%
4069 \HyField@PrintFlags{F}{#1}%
4070 \bitsetIsEmpty{HyField@F}{%
4071 \def\Fld@annotflags{%
4072 }{%
4073 \edef\Fld@annotflags{/F \bitsetGetDec{HyField@F}}%
4074 }%
4075 }

```

#### 19.1.4 Pushbutton field

\HyField@FlagsPushButton

```
4076 \def\HyField@FlagsPushButton{%
4077   \HyField@FlagsAnnot{push button field}%
4078   \bitsetReset{HyField@Ff}%
4079   \HyField@UseFlag{Ff}{ReadOnly}%
4080   \HyField@UseFlag{Ff}{Required}%
4081   \HyField@UseFlag{Ff}{NoExport}%
4082   \HyField@SetFlag{Ff}{PushButton}%
4083   \HyField@PrintFlags{Ff}{push button field}%
4084   \bitsetIsEmpty{HyField@Ff}{%
4085     \def\Fld@flags{%
4086     }{%
4087     \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
4088     }%
4089 }
```

#### 19.1.5 Check box field

\HyField@FlagsCheckBox

```
4090 \def\HyField@FlagsCheckBox{%
4091   \HyField@FlagsAnnot{check box field}%
4092   \bitsetReset{HyField@Ff}%
4093   \HyField@UseFlag{Ff}{ReadOnly}%
4094   \HyField@UseFlag{Ff}{Required}%
4095   \HyField@UseFlag{Ff}{NoExport}%
4096   \HyField@PrintFlags{Ff}{check box field}%
4097   \bitsetIsEmpty{HyField@Ff}{%
4098     \def\Fld@flags{%
4099     }{%
4100     \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
4101     }%
4102 }
```

#### 19.1.6 Radio button field

\HyField@FlagsRadioButton

```
4103 \def\HyField@FlagsRadioButton{%
4104   \HyField@FlagsAnnot{radio button field}%
4105   \bitsetReset{HyField@Ff}%
4106   \HyField@UseFlag{Ff}{ReadOnly}%
4107   \HyField@UseFlag{Ff}{Required}%
4108   \HyField@UseFlag{Ff}{NoExport}%
4109   \HyField@UseFlag{Ff}{NoToggleToOff}%
4110   \HyField@SetFlag{Ff}{Radio}%
4111   \HyField@UseFlag{Ff}{RadiosInUnison}%
4112   \HyField@PrintFlags{Ff}{radio button field}%
4113   \bitsetIsEmpty{HyField@Ff}{%
4114     \def\Fld@flags{%
4115     }{%
4116     \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
4117     }%
4118 }
```

### 19.1.7 Text fields

\HyField@FlagsText

```
4119 \def\HyField@FlagsText{%
4120   \HyField@FlagsAnnot{text field}%
4121   \bitsetReset{HyField@Ff}%
4122   \HyField@UseFlag{Ff}{ReadOnly}%
4123   \HyField@UseFlag{Ff}{Required}%
4124   \HyField@UseFlag{Ff}{NoExport}%
4125   \HyField@UseFlag{Ff}{Multiline}%
4126   \HyField@UseFlag{Ff}{Password}%
4127   \HyField@UseFlag{Ff}{FileSelect}%
4128   \HyField@UseFlag{Ff}{DoNotSpellCheck}%
4129   \HyField@UseFlag{Ff}{DoNotScroll}%
4130   \ifFld@comb
4131     \ifcase0\ifFld@multiline
4132       \else\ifFld@password
4133       \else\ifFld@fileselect
4134       \else 1\fi\fi\fi\relax
4135     \PackageError{hyperref}{%
4136       Field option ‘comb’ cannot used together with\MessageBreak
4137       ‘multiline’, ‘password’, or ‘fileselect’%
4138     }\@ehc
4139   \else
4140     \HyField@UseFlag{Ff}{Comb}%
4141   \fi
4142 \fi
4143 \HyField@UseFlag{Ff}{RichText}%
4144 \HyField@PrintFlags{Ff}{text field}%
4145 \bitsetIsEmpty{HyField@Ff}{%
4146   \def\Fld@flags{%
4147   }{%
4148   \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
4149   }%
4150 }
```

### 19.1.8 Choice fields

\HyField@FlagsChoice

```
4151 \def\HyField@FlagsChoice{%
4152   \HyField@FlagsAnnot{choice field}%
4153   \bitsetReset{HyField@Ff}%
4154   \HyField@UseFlag{Ff}{ReadOnly}%
4155   \HyField@UseFlag{Ff}{Required}%
4156   \HyField@UseFlag{Ff}{NoExport}%
4157   \HyField@UseFlag{Ff}{Combo}%
4158   \ifFld@combo
4159     \HyField@UseFlag{Ff}{Edit}%
4160   \fi
4161   \HyField@UseFlag{Ff}{Sort}%
4162   \HyField@UseFlag{Ff}{MultiSelect}%
4163   \ifFld@combo
4164     \ifFld@edit
4165       \HyField@UseFlag{Ff}{DoNotSpellCheck}%
4166     \fi
4167   \fi
4168   \HyField@UseFlag{Ff}{CommitOnSelChange}%

```

```

4169 \HyField@PrintFlags{Ff}{choice field}%
4170 \bitsetIsEmpty{HyField@Ff}{%
4171   \def\Fld@flags{%
4172 }{%
4173   \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
4174 }%
4175 }

```

## 19.2 Choice field

```

4176 \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.

```

4177 \def\HyField@PDFChoices#1{%
4178   \begingroup
4179   \gdef\Fld@choices{%
4180     \def\HyTmp@optlist{%
4181       \let\HyTmp@optitem\relax
4182       \count@=0 %
4183       \kv@parse{#1}{%
4184         \Hy@pdfstringdef\kv@key\kv@key
4185         \ifx\kv@value\relax
4186           \ifnum\Hy@pdfversion<3 % implementation note 122, PDF spec 1.7
4187             \xdef\Fld@choices{\Fld@choices[(\kv@key)(\kv@key)]}%
4188           \else
4189             \xdef\Fld@choices{\Fld@choices(\kv@key)}%
4190           \fi
4191         \else
4192           \Hy@pdfstringdef\kv@value\kv@value
4193           \xdef\Fld@choices{\Fld@choices[(\kv@value)(\kv@key)]}%
4194         \fi
4195       \edef\HyTmp@optlist{%
4196         \HyTmp@optlist
4197         \HyTmp@optitem{the\count@}{\kv@key}0%
4198       }%
4199       \advance\count@ by 1 %
4200       \@gobbletwo
4201     }%
4202     \xdef\Fld@choices{/Opt[\Fld@choices]}%
4203     \ifFld@multiselect
4204       \HyField@@PDFChoices{DV}\Fld@default
4205       \HyField@@PDFChoices{V}\Fld@value
4206     \else
4207       \ifx\Fld@default\relax
4208       \else
4209         \pdfstringdef\Hy@gtemp\Fld@default
4210         \xdef\Fld@choices{\Fld@choices/DV(\Hy@gtemp)}%
4211       \fi
4212       \ifx\Fld@value\relax
4213       \else
4214         \pdfstringdef\Hy@gtemp\Fld@value
4215         \xdef\Fld@choices{\Fld@choices/V(\Hy@gtemp)}%
4216       \fi
4217     \fi
4218   \endgroup

```

4219 }

\HyField@@PDFChoices

```
4220 \def\HyField@@PDFChoices#1#2{%
4221   \ifx#2\relax
4222   \else
4223     \count@=0 %
4224     \def\HyTmp@optitem##1##2##3{%
4225       \def\HyTmp@key{##2}%
4226       \ifx\HyTmp@key\Hy@gtemp
4227         \expandafter\def\expandafter\HyTmp@optlist\expandafter{%
4228           \HyTmp@optlist
4229           \HyTmp@optitem{##1}{##2}1%
4230         }%
4231         \let\HyTmp@found=Y%
4232       \else
4233         \expandafter\def\expandafter\HyTmp@optlist\expandafter{%
4234           \HyTmp@optlist
4235           \HyTmp@optitem{##1}{##2}##3%
4236         }%
4237       \fi
4238     }%
4239     \expandafter\comma@parse\expandafter{#2}{%
4240       \pdfstringdef\Hy@gtemp\comma@entry
4241       \let\HyTmp@found=N %
4242       \expandafter\let\expandafter\HyTmp@optlist\expandafter\@empty
4243       \HyTmp@optlist
4244       \ifx\HyTmp@found Y%
4245         \advance\count@ by 1 %
4246       \else
4247         \@onelevel@sanitize\comma@entry
4248         \PackageWarning{hyperref}{%
4249           \string\ChoiceBox: Ignoring value ‘\comma@entry’,%
4250           \MessageBreak
4251           it cannot be found in the choices%
4252         }%
4253       \fi
4254       \@gobble
4255     }%
4256     \def\HyTmp@optitem##1##2##3{%
4257       \ifnum##3=1 %
4258         (##2)%
4259       \fi
4260     }%
4261     \ifcase\count@
4262     \or
4263       \xdef\Fld@choices{\Fld@choices/#1\HyTmp@optlist}%
4264     \else
4265       \xdef\Fld@choices{\Fld@choices/#1[\HyTmp@optlist]}%
4266       \ifx#1V%
4267         \def\HyTmp@optitem##1##2##3{%
4268           \ifnum##3=1 %
4269             \@firstofone{ ##1}%
4270           \fi
4271         }%
4272       \edef\HyTmp@optlist{\HyTmp@optlist}%
4273       \xdef\Fld@choices{%
```

```

4274         \Fld@choices
4275         /I[\expandafter\@firstofone\HyTmp@optlist]%
4276     }%
4277     \fi
4278     \fi
4279     \fi
4280 }

```

## 19.3 Forms

\HyField@SetKeys

```

4281 \def\HyField@SetKeys{%
4282   \setkeys{Field}%
4283 }

4284 \newif\ifFld@checked
4285 \newif\ifFld@disabled
4286 \Fld@checkedfalse
4287 \Fld@disabledfalse
4288 \newcount\Fld@menulength
4289 \newdimen\Fld@Width
4290 \newdimen\Fld@charsize
4291 \Fld@charsize=10\p@
4292 \def\Fld@maxlen{0}
4293 \def\Fld@align{0}
4294 \def\Fld@color{0 0 0 rg}
4295 \def\Fld@bcolor{1 1 1}
4296 \def\Fld@bordercolor{1 0 0}
4297 \def\Fld@bordersep{1\p@}
4298 \def\Fld@borderwidth{1}
4299 \def\Fld@borderstyle{S}
4300 \def\Fld@cbsymbol{4}
4301 \def\Fld@radiosymbol{H}
4302 \def\Fld@rotation{0}
4303 \def\Form{\@ifnextchar[{\@Form}{\@Form[]}}
4304 \def\endForm{\@endForm}
4305 \newif\ifForm@html
4306 \Form@htmlfalse
4307 \def\Form@boolkey#1#2{%
4308   \csname Form@#2\ifx\relax#1\relax true\else#1\fi\endcsname
4309 }
4310 \define@key{Form}{action}{%
4311   \hyper@normalise\Hy@DefFormAction{#1}%
4312 }
4313 \def\Hy@DefFormAction{\def\Form@action}
4314 \def\enc@html{html}
4315 \define@key{Form}{encoding}{%
4316   \def\Hy@tempa{#1}%
4317   \ifx\Hy@tempa\enc@html
4318     \Form@htmltrue
4319     \def\Fld@export{html}%
4320   \else
4321     \typeout{hyperref: form 'encoding' key set to #1 %
4322     -- unknown type%
4323   }%
4324   \Form@htmlfalse
4325   \fi

```

```

4326 }
4327 \define@key{Form}{method}{%
4328   \lowercase{\def\Hy@temp{#1}}%
4329   \@ifundefined{Form@method@\Hy@temp}{%
4330     \@onelevel@sanitize\Hy@temp
4331     \PackageError{hyperref}{%
4332       Unknown method '\Hy@temp'.\MessageBreak
4333       Known values are 'post' and 'get'%
4334     }\@ehc
4335   }{%
4336     \let\Form@method\Hy@temp
4337     \ifcase\@nameuse{Form@method@\Hy@temp} %
4338       \Fld@getmethodfalse
4339     \else
4340       \Fld@getmethodtrue
4341     \fi
4342   }%
4343 }
4344 \def\Form@method{}
4345 \@namedef{Form@method@post}{0}
4346 \@namedef{Form@method@get}{1}
4347 \def\Fld@boolkey#1#2{%
4348   \csname Fld@#2\ifx\relax#1\relax true\else#1\fi\endcsname
4349 }
4350 \newtoks\Fld@toks
4351 \Fld@toks={ }%
4352 \def\Fld@addtoks#1#2{%
4353   \edef\@processme{\Fld@toks{\the\Fld@toks\space #1="#2"}}%
4354   \@processme
4355 }
4356 \def\Fld@checkequals#1=#2=#3\\{%
4357   \def\@currDisplay{#1}%
4358   \ifx\#2\\%
4359     \def\@currValue{#1}%
4360   \else
4361     \def\@currValue{#2}%
4362   \fi
4363 }
4364 \define@key{Field}{loc}{%
4365   \def\Fld@loc{#1}%
4366 }
4367 \define@key{Field}{checked}[true]{%
4368   \lowercase{\Fld@boolkey{#1}}{checked}%
4369 }
4370 \define@key{Field}{disabled}[true]{%
4371   \lowercase{\Fld@boolkey{#1}}{disabled}%
4372 }
4373 \define@key{Field}{accesskey}{%
4374   \Fld@addtoks{accesskey}{#1}%
4375 }
4376 \define@key{Field}{tabkey}{%
4377   \Fld@addtoks{tabkey}{#1}%
4378 }
4379 \define@key{Field}{name}{%
4380   \def\Fld@name{#1}%
4381 }
4382 \define@key{Field}{width}{%

```

```

4383 \def\Fld@width{#1}%
4384 \Fld@Width#1\setbox0=\hbox{m}%
4385 }
4386 \define@key{Field}{maxlen}{%
4387 \def\Fld@maxlen{#1}%
4388 }
4389 \define@key{Field}{menulength}{%
4390 \Fld@menulength=#1\relax
4391 }
4392 \define@key{Field}{height}{%
4393 \def\Fld@height{#1}%
4394 }
4395 \define@key{Field}{charsize}{%
4396 \Fld@charsize#1%
4397 }
4398 \define@key{Field}{borderwidth}{%
4399 \def\Fld@borderwidth{#1}%
4400 }
4401 \define@key{Field}{borderstyle}{%
4402 \def\Fld@borderstyle{#1}%
4403 }
4404 \define@key{Field}{bordersep}{%
4405 \def\Fld@bordersep{#1}%
4406 }
4407 \define@key{Field}{default}{%
4408 \def\Fld@default{#1}%
4409 }
4410 \define@key{Field}{align}{%
4411 \def\Fld@align{#1}%
4412 }
4413 \define@key{Field}{value}{%
4414 \def\Fld@value{#1}%
4415 }
4416 \define@key{Field}{checkboxsymbol}{%
4417 \Fld@DingDef\Fld@cbsymbol{#1}%
4418 }
4419 \define@key{Field}{radiosymbol}{%
4420 \Fld@DingDef\Fld@radiosymbol{#1}%
4421 }
4422 \def\Fld@DingDef#1#2{%
4423 \def\Fld@temp{}%
4424 \Fld@@DingDef#2\ding{}\@nil
4425 \let#1\Fld@temp
4426 }
4427 \def\Fld@@DingDef#1\ding#2#3\@nil{%
4428 \expandafter\def\expandafter\Fld@temp\expandafter{%
4429 \Fld@temp
4430 #1%
4431 }%
4432 \ifx\#3\%
4433 \expandafter\@gobble
4434 \else
4435 \begingroup
4436 \lccode'0=#2\relax
4437 \lowercase\endgroup
4438 \expandafter\def\expandafter\Fld@temp\expandafter{%
4439 \Fld@temp

```

```

4440         0%
4441     }%
4442 }%
4443 \expandafter\@firstofone
4444 \fi
4445 {%
4446     \Fld@@DingDef#3\@nil
4447 }%
4448 }

4449 \define@key{Field}{rotation}{%
4450     \def\Fld@rotation{#1}%
4451 }

4452 \define@key{Field}{backgroundcolor}{%
4453     \HyColor@FieldBColor{#1}\Fld@bcolor{hyperref}{backgroundcolor}%
4454 }
4455 \define@key{Field}{bordercolor}{%
4456     \HyColor@FieldBColor{#1}\Fld@bordercolor{hyperref}{bordercolor}%
4457 }
4458 \define@key{Field}{color}{%
4459     \HyColor@FieldColor{#1}\Fld@color{hyperref}{color}%
4460 }

4461 \def\Fld@onclick@code{}
4462 \def\Fld@format@code{}
4463 \def\Fld@validate@code{}
4464 \def\Fld@calculate@code{}
4465 \def\Fld@keystroke@code{}
4466 \def\Fld@onfocus@code{}
4467 \def\Fld@onblur@code{}
4468 \def\Fld@onmousedown@code{}
4469 \def\Fld@onmouseup@code{}
4470 \def\Fld@onenter@code{}
4471 \def\Fld@onexit@code{}
4472 \def\Hy@temp#1{%
4473     \expandafter\Hy@@temp\csname Fld@#1@code\endcsname{#1}%
4474 }
4475 \def\Hy@@temp#1#2{%
4476     \ifHy@pdfa
4477         \define@key{Field}{#2}{%
4478             \PackageError{hyperref}{%
4479                 PDF/A: Additional action ‘#2’ is prohibited%
4480             }\@ehc
4481         }%
4482     \else
4483         \define@key{Field}{#2}{%
4484             \def#1{##1}%
4485         }%
4486     \fi
4487 }
4488 \Hy@temp{keystroke}
4489 \Hy@temp{format}
4490 \Hy@temp{validate}
4491 \Hy@temp{calculate}
4492 \Hy@temp{onfocus}
4493 \Hy@temp{onblur}
4494 \Hy@temp{onenter}
4495 \Hy@temp{onexit}

```

```

4496 \def\Hy@temp#1{%
4497   \define@key{Field}{#1}{%
4498     \Field@addtoks{#1}{##1}%
4499   }%
4500 }
4501 \Hy@temp{onselect}
4502 \Hy@temp{onchange}
4503 \Hy@temp{ondblclick}
4504 \Hy@temp{onmousedown}
4505 \Hy@temp{onmouseup}
4506 \Hy@temp{onmouseover}
4507 \Hy@temp{onmousemove}
4508 \Hy@temp{onmouseout}
4509 \Hy@temp{onkeypress}
4510 \Hy@temp{onkeydown}
4511 \Hy@temp{onkeyup}
4512 \ifHy@pdfa
4513   \define@key{Field}{onclick}{%
4514     \PackageError{hyperref}{%
4515       PDF/A: Action 'onclick' is prohibited%
4516     }\@ehc
4517   }%
4518 \else
4519   \define@key{Field}{onclick}{%
4520     \def\Fld@onclick@code{#1}%
4521     \Field@addtoks{onclick}{#1}%
4522   }%
4523 \fi
4524 \DeclareRobustCommand\TextField{%
4525   \@ifnextchar[{\@TextField}{\@TextField[]}%
4526 }
4527 \DeclareRobustCommand\ChoiceMenu{%
4528   \@ifnextchar[{\@ChoiceMenu}{\@ChoiceMenu[]}%
4529 }
4530 \DeclareRobustCommand\CheckBox{%
4531   \@ifnextchar[{\@CheckBox}{\@CheckBox[]}%
4532 }
4533 \DeclareRobustCommand\PushButton{%
4534   \@ifnextchar[{\@PushButton}{\@PushButton[]}%
4535 }
4536 \DeclareRobustCommand\Gauge{%
4537   \@ifnextchar[{\@Gauge}{\@Gauge[]}%
4538 }
4539 \DeclareRobustCommand\Submit{%
4540   \@ifnextchar[{\@Submit}{\@Submit[]}%
4541 }
4542 \DeclareRobustCommand\Reset{%
4543   \@ifnextchar[{\@Reset}{\@Reset[]}%
4544 }
4545 \def\LayoutTextField#1#2{% label, field
4546   #1 #2%
4547 }
4548 \def\LayoutChoiceField#1#2{% label, field
4549   #1 #2%
4550 }
4551 \def\LayoutCheckField#1#2{% label, field
4552   #1 #2%

```

```

4553 }
4554 \def\LayoutPushButtonField#1{% button
4555   #1%
4556 }
4557 \def\MakeRadioField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
4558 \def\MakeCheckField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
4559 \def\MakeTextField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
4560 \def\MakeChoiceField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
4561 \def\MakeButtonField#1{%
4562   \sbox0{%
4563     \hskip\Fld@borderwidth bp#1\hskip\Fld@borderwidth bp%
4564   }%
4565   \@tempdima\ht0 %
4566   \advance\@tempdima by \Fld@borderwidth bp %
4567   \advance\@tempdima by \Fld@borderwidth bp %
4568   \ht0\@tempdima
4569   \@tempdima\dp0 %
4570   \advance\@tempdima by \Fld@borderwidth bp %
4571   \advance\@tempdima by \Fld@borderwidth bp %
4572   \dp0\@tempdima
4573   \box0\relax
4574 }
4575 \def\DefaultHeightofSubmit{14pt}
4576 \def\DefaultWidthofSubmit{2cm}
4577 \def\DefaultHeightofReset{14pt}
4578 \def\DefaultWidthofReset{2cm}
4579 \def\DefaultHeightofCheckBox{\baselineskip}
4580 \def\DefaultWidthofCheckBox{\baselineskip}
4581 \def\DefaultHeightofChoiceMenu{\baselineskip}
4582 \def\DefaultWidthofChoiceMenu{\baselineskip}
4583 \def\DefaultHeightofText{\baselineskip}
4584 \def\DefaultHeightofTextMultiline{4\baselineskip}
4585 \def\DefaultWidthofText{3cm}
4586 \def\DefaultOptionsofSubmit{print,name=Submit,noexport}
4587 \def\DefaultOptionsofReset{print,name=Reset,noexport}
4588 \def\DefaultOptionsofPushButton{print}
4589 \def\DefaultOptionsofCheckBox{print}
4590 \def\DefaultOptionsofText{print}

```

Default options for the types of \ChoiceMenu.

```

4591 \def\DefaultOptionsofListBox{print}
4592 \def\DefaultOptionsofComboBox{print,edit,sort}
4593 \def\DefaultOptionsofPopdownBox{print}
4594 \def\DefaultOptionsofRadio{print,notoggletooff}

```

## 20 Setup

```

4595 \ifHy@figures
4596   \Hy@Info{Hyper figures ON}%
4597 \else
4598   \Hy@Info{Hyper figures OFF}%
4599 \fi
4600 \ifHy@nesting
4601   \Hy@Info{Link nesting ON}%
4602 \else
4603   \Hy@Info{Link nesting OFF}%
4604 \fi

```

```

4605 \ifHy@hyperindex
4606   \Hy@Info{Hyper index ON}%
4607 \else
4608   \Hy@Info{Hyper index OFF}%
4609 \fi
4610 \ifHy@backref
4611   \Hy@Info{backreferencing ON}%
4612 \else
4613   \Hy@Info{backreferencing OFF}%
4614 \fi
4615 \ifHy@colorlinks
4616   \Hy@Info{Link coloring ON}%
4617 \else
4618   \Hy@Info{Link coloring OFF}%
4619 \fi
4620 \ifHy@ocgcolorlinks
4621   \Hy@Info{Link coloring with OCG ON}%
4622 \else
4623   \Hy@Info{Link coloring with OCG OFF}%
4624 \fi
4625 \ifHy@pdfa
4626   \Hy@Info{PDF/A mode ON}%
4627 \else
4628   \Hy@Info{PDF/A mode OFF}%
4629 \fi

```

## 21 Low-level utility macros

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

```

4630 \edef\hyper@hash{\string#}
4631 \edef\hyper@tilde{\string~}
4632 \edef\hyper@quote{\string"}
4633 \let\@currentHref\@empty
4634 \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.

```

4635 \AfterBeginDocument{%
4636   \Hy@pdfstringtrue
4637   \PDF@SetupDoc
4638   \let\PDF@SetupDoc\@empty
4639   \Hy@DisableOption{pdfpagescrop}%
4640   \Hy@DisableOption{pdfpagemode}%
4641   \Hy@DisableOption{pdfnonfullscreenpagemode}%
4642   \Hy@DisableOption{pdfdirection}%
4643   \Hy@DisableOption{pdfviewarea}%
4644   \Hy@DisableOption{pdfviewclip}%
4645   \Hy@DisableOption{pdfprintarea}%
4646   \Hy@DisableOption{pdfprintclip}%
4647   \Hy@DisableOption{pdfprintscaling}%
4648   \Hy@DisableOption{pdfduplex}%
4649   \Hy@DisableOption{pdfpicktraybypdfsize}%
4650   \Hy@DisableOption{pdfprintpagerange}%
4651   \Hy@DisableOption{pdfnumcopies}%
4652   \Hy@DisableOption{pdfstartview}%
4653   \Hy@DisableOption{pdfstartpage}%
4654   \Hy@DisableOption{pdftoolbar}%

```

```

4655 \Hy@DisableOption{pdfmenubar}%
4656 \Hy@DisableOption{pdfwindowui}%
4657 \Hy@DisableOption{pdfitwindow}%
4658 \Hy@DisableOption{pdfcenterwindow}%
4659 \Hy@DisableOption{pdfdisplaydoctitle}%
4660 \Hy@DisableOption{pdfpagelayout}%
4661 \Hy@DisableOption{pdflang}%
4662 \Hy@DisableOption{baseurl}%
4663 \ifHy@texht\else\hyper@anchorstart{Doc-Start}\hyper@anchorend\fi
4664 \Hy@pdfstringfalse
4665 }

```

Ignore star from referencing macros:

```

4666 \let\NoHy@OrgRef\ref
4667 \def\ref{%
4668   \@ifstar\NoHy@OrgRef\NoHy@OrgRef
4669 }
4670 \let\NoHy@OrgPageRef\pageref
4671 \def\pageref{%
4672   \@ifstar\NoHy@OrgPageRef\NoHy@OrgPageRef
4673 }

```

## 22 Localized nullifying of package

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

```

4674 \def\NoHyper{%
4675   \def\hyper@link@{##1}##2##3##4{##4}%
4676   \def\hyper@@anchor##1{%
4677     \global\let\hyper@livelink\hyper@link
4678     \gdef\hyper@link##1##2##3{##3}%
4679     \def\hyper@anchorstart##1{%
4680       \let\hyper@anchorend\@empty
4681       \def\hyper@linkstart##1##2{%
4682         \let\hyper@linkend\@empty
4683         \def\hyper@linkurl##1##2{##1}%
4684         \def\hyper@linkfile##1##2##3{##1}%
4685         \def\hyper@link@{##1}##2##3{%
4686           \let\Hy@backout\@gobble
4687         }
4688       \def\stop@hyper{%
4689         \def\hyper@link@{##1}##2##3##4{##4}%
4690         \let\Hy@backout\@gobble
4691         \def\hyper@@anchor##1{%
4692           \def\hyper@link##1##2##3{##3}%
4693           \def\hyper@anchorstart##1{%
4694             \let\hyper@anchorend\@empty
4695             \def\hyper@linkstart##1##2{%
4696               \let\hyper@linkend\@empty
4697               \def\hyper@linkurl##1##2{##1}%
4698               \def\hyper@linkfile##1##2##3{##1}%
4699               \def\hyper@link@{##1}##2##3{%
4700                 \def\endNoHyper{%
4701                   \def\endNoHyper{%

```

```

4702 \global\let\hyper@link\hyper@livelink
4703 }
4704 \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:

```

4705 \let\hyper@anchor\@gobble
4706 \def\hyper@link#1#2#3{#3}%
4707 \let\hyper@anchorstart\@gobble
4708 \let\hyper@anchorend\@empty
4709 \let\hyper@linkstart\@gobbletwo
4710 \let\hyper@linkend\@empty
4711 \def\hyper@linkurl#1#2{#1}%
4712 \def\hyper@linkfile#1#2#3{#1}%
4713 \def\hyper@link@{#1}#2#3{#1}%
4714 \let\PDF@SetupDoc\@empty
4715 \let\PDF@FinishDoc\@empty
4716 \def\nohyperpage#1{#1}

```

Some top-level commands:

```

4717 \def\Acrobatmenu#1#2{\leavevmode#2}
4718 \let\pdfstringdefDisableCommands\@gobbletwo
4719 \let\texorpdfstring\@firstoftwo
4720 \let\pdfbookmark\@undefined
4721 \newcommand\pdfbookmark[3]{}{}
4722 \let\phantomsection\@empty
4723 \let\hypersetup\@gobble
4724 \let\hyperbaseurl\@gobble
4725 \let\href\@gobble
4726 \let\hyperdef\@gobbletwo
4727 \let\hyperlink\@gobble
4728 \let\hypertarget\@gobble
4729 \def\hyperref{%
4730 \ifnextchar[\@gobbleopt{\expandafter\@gobbletwo\@gobble}%
4731 }
4732 \long\def\@gobbleopt[#1]{}
4733 \let\hyperpage\@empty

```

Ignore star from referencing macros:

```

4734 \let\NoHy@OrgRef\ref
4735 \def\ref{%
4736 \ifstar\NoHy@OrgRef\NoHy@OrgRef
4737 }
4738 \let\NoHy@OrgPageRef\pageref
4739 \def\pageref{%
4740 \ifstar\NoHy@OrgPageRef\NoHy@OrgPageRef
4741 }
4742 \end{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}`

```
4744 <*package>
4745 \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.

```
4746 \if@filesw
4747 \ifHy@typexml
4748 \immediate\closeout\@mainaux
4749 \immediate\openout\@mainaux\jobname.aux\relax
4750 \immediate\write\@auxout{<relaxxml>\relax}%
4751 \fi
4752 \immediate\write\@auxout{%
4753 \string\ifx\string\hyper@anchor\string\@undefined^^J%
4754 \global\let\string\oldcontentsline\string\contentsline^^J%
4755 \gdef\string\contentsline%
4756 \string#1\string#2\string#3\string#4{%
4757 \string\oldcontentsline%
4758 {\string#1}{\string#2}{\string#3}}^^J%
4759 \global\let\string\oldnewlabel\string\newlabel^^J%
4760 \gdef\string\newlabel\string#1\string#2{%
4761 \string\newlabelxx{\string#1}\string#2^^J%
4762 \gdef\string\newlabelxx%
4763 \string#1\string#2\string#3\string#4\string#5\string#6{%
4764 \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.

```
4765 \string\AtEndDocument{%
4766 \let\string\contentsline\string\oldcontentsline^^J%
4767 \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.

```
4768 \string\else^^J%
4769 \global\let\string\hyper@last\relax^^J%
4770 \string\fi^^J%
4771 }%
4772 \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.

```
4773 \ifx\hyper@last\@undefined
4774 \def\@starttoc#1{%
4775 \begingroup
4776 \makeatletter
4777 \IfFileExists{\jobname.#1}{%
4778 \Hy@WarningNoLine{%
4779 old #1 file detected, not used; run LaTeX again%
```

```

4780         }%
4781     }{}%
4782     \if@filesw
4783         \expandafter\newwrite\csname tf@#1\endcsname
4784         \immediate\openout\csname tf@#1\endcsname \jobname.#1\relax
4785     \fi
4786     \@nobeckfalse
4787 \endgroup
4788 }%
4789 \def\newlabel#1#2{\@newl@bel r{#1}{#2}{-}{-}{-}}%
4790 \fi
4791 }

```

## 25 Title strings

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

```

4792 \ifHy@usetitle
4793   \let\HyOrg@title\title
4794   \let\HyOrg@author\author
4795   \def\title{\@ifnextchar[{\Hy@scanopttitle}{\Hy@scantitle}}%
4796   \def\Hy@scanopttitle[#1]{%
4797     \gdef\Hy@title{#1}%
4798     \HyOrg@title[{#1}]%
4799   }%
4800   \def\Hy@scantitle#1{%
4801     \gdef\Hy@title{#1}%
4802     \HyOrg@title{#1}%
4803   }%
4804   \def\author{\@ifnextchar[{\Hy@scanoptauthor}{\Hy@scanauthor}}%
4805   \def\Hy@scanoptauthor[#1]{%
4806     \gdef\Hy@author{#1}%
4807     \HyOrg@author[{#1}]%
4808   }%
4809   \def\Hy@scanauthor#1{%
4810     \gdef\Hy@author{#1}%
4811     \HyOrg@author{#1}%
4812   }%

```

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

```

4813 \begingroup
4814   \def\process@me#1\@nil#2{%
4815     \expandafter\let\expandafter\x\csname @#2\endcsname
4816     \edef\y{\expandafter\strip@prefix\meaning\x}%
4817     \def\c##1##2\@nil{%
4818       \ifx\\##1\\%
4819         \else
4820           \expandafter\gdef\csname Hy@#2\endcsname
4821             \expandafter{\x}%
4822         \fi
4823       }%
4824       \expandafter\c\y\relax#1\@nil
4825     }%
4826     \expandafter\process@me\string\@latex@\@nil{title}%
4827     \expandafter\process@me\string\@latex@\@nil{author}%

```

```

4828 \endgroup
4829 \fi
4830 \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.

```

4831 \def\Hy@UseMaketitleString#1{%
4832   \@ifundefined{Hy@#1}{}%
4833   \begingroup
4834     \let\Hy@saved@hook\pdfstringdefPreHook
4835     \pdfstringdefDisableCommands{%
4836       \expandafter\let\expandafter\\\csname Hy@newline@#1\endcsname
4837       \let\newline\\%
4838     }%
4839     \expandafter\ifx\csname @pdf#1\endcsname\@empty
4840       \expandafter\pdfstringdef\csname @pdf#1\endcsname{%
4841         \csname Hy@#1\endcsname\@empty
4842       }%
4843     \fi
4844     \global\let\pdfstringdefPreHook\Hy@saved@hook
4845   \endgroup
4846 }%
4847 }
4848 \def\Hy@newline@title#1{ #1}
4849 \def\Hy@newline@author#1{, #1}
4850 \def\Hy@UseMaketitleInfos{%
4851   \Hy@UseMaketitleString{title}%
4852   \Hy@UseMaketitleString{author}%
4853 }

```

## 26 Page numbers

This stuff is done by Heiko Oberdiek.

## 27 Every page

```

4854 \RequirePackage{atbegshi}[2007/09/09]
4855 \def\Hy@EveryPageHook{}
4856 \def\Hy@EveryPageBoxHook{}
4857 \def\Hy@FirstPageHook{}
4858 \AtBeginShipout{%
4859   \Hy@EveryPageHook
4860   \ifx\Hy@EveryPageBoxHook\@empty
4861   \else
4862     \setbox\AtBeginShipoutBox=\vbox{%
4863       \offinterlineskip
4864       \Hy@EveryPageBoxHook
4865       \box\AtBeginShipoutBox

```

```

4866 }%
4867 \fi
4868 }
4869 \AtBeginShipoutFirst{%
4870 \Hy@FirstPageHook
4871 }
4872 \g@addto@macro\Hy@FirstPageHook{%
4873 \PDF@FinishDoc
4874 \gdef\PDF@FinishDoc{}}%
4875 }

```

## 27.1 PDF /PageLabels

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

```

4876 \ifHy@pagelabels
4877 \begingroup\expandafter\expandafter\expandafter\endgroup
4878 \expandafter\ifx\csname thepage\endcsname\relax
4879 \Hy@pagelabelsfalse
4880 \Hy@WarningNoLine{%
4881 Option 'pdfpagelabels' is turned off\MessageBreak
4882 because \string\thepage\space is undefined%
4883 }%
4884 \csname fi\endcsname
4885 \csname iffalse\expandafter\endcsname
4886 \fi

```

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

```

4887 \def\thispdfpagelabel#1{%
4888 \gdef\HyPL@thisLabel{#1}%
4889 }%
4890 \global\let\HyPL@thisLabel\relax

```

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

```

4891 \def\HyPL@Labels{}%

```

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

```

4892 \newcount\Hy@abspage
4893 \Hy@abspage=0 %

```

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

```

4894 \def\HyPL@LastType{init}%
4895 \def\HyPL@LastNumber{0}%
4896 \def\HyPL@LastPrefix{}%

```

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

```

4897 \def\HyPL@arabic{D}%
4898 \def\HyPL@Roman{R}%
4899 \def\HyPL@roman{r}%
4900 \def\HyPL@Alph{A}%
4901 \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.

```

4902 \def\HyPL@EveryPage{%
4903 \begingroup
4904 \ifx\HyPL@thisLabel\relax

```

```

4905     \let\HyPL@page\thepage
4906   \else
4907     \let\HyPL@page\HyPL@thisLabel
4908     \global\let\HyPL@thisLabel\relax
4909   \fi
4910   \let\HyPL@Type\relax
4911   \ifnum\the\c@page>0 %
4912     \expandafter\HyPL@CheckThePage\HyPL@page\@nil
4913   \fi
4914   \let\Hy@temp Y%
4915   \ifx\HyPL@Type\HyPL@LastType
4916   \else
4917     \let\Hy@temp N%
4918   \fi
4919   \ifx\HyPL@Type\relax
4920     \pdfstringdef\HyPL@Prefix{\HyPL@page}%
4921   \else
4922     \pdfstringdef\HyPL@Prefix\HyPL@Prefix
4923   \fi
4924   \ifx\HyPL@Prefix\HyPL@LastPrefix
4925   \else
4926     \let\Hy@temp N%
4927   \fi
4928   \if Y\Hy@temp
4929     \advance\c@page by -1 %
4930     \ifnum\HyPL@LastNumber=\the\c@page\relax
4931     \else
4932       \let\Hy@temp N%
4933     \fi
4934     \Hy@StepCount\c@page
4935   \fi
4936   \if N\Hy@temp
4937     \ifx\HyPL@Type\relax
4938       \HyPL@StorePageLabel{/P(\HyPL@Prefix)}%
4939     \else
4940       \HyPL@StorePageLabel{%
4941         \ifx\HyPL@Prefix\@empty
4942         \else
4943           /P(\HyPL@Prefix)%
4944         \fi
4945         /S/\csname HyPL\HyPL@Type\endcsname
4946         \ifnum\the\c@page=1 %
4947         \else
4948           \space/St \the\c@page
4949         \fi
4950       }%
4951     \fi
4952   \fi
4953   \xdef\HyPL@LastNumber{\the\c@page}%
4954   \global\let\HyPL@LastType\HyPL@Type
4955   \global\let\HyPL@LastPrefix\HyPL@Prefix
4956 \endgroup
4957 \Hy@GlobalStepCount\Hy@abspage
4958 }%

```

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

```

4959 \def\HyPL@CheckThePage#1\@nil{%

```

```

4960 \HyPL@@CheckThePage{#1}#1\csname\endcsname\c@page\@nil
4961 }%

```

`\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`.

```

4962 \def\HyPL@@CheckThePage#1#2\csname#3\endcsname\c@page#4\@nil{%
4963 \def\Hy@tempa{#4}%
4964 \def\Hy@tempb{\csname\endcsname\c@page}%
4965 \ifx\Hy@tempa\Hy@tempb
4966 \expandafter\ifx\csname HyPL#3\endcsname\relax
4967 \else
4968 \def\HyPL@Type{#3}%
4969 \def\HyPL@Prefix{#2}%
4970 \fi
4971 \else
4972 \begingroup
4973 \let\Hy@next\endgroup
4974 \let\HyPL@found\@undefined
4975 \def\arabic{\HyPL@Format{arabic}}%
4976 \def\Roman{\HyPL@Format{Roman}}%
4977 \def\roman{\HyPL@Format{roman}}%
4978 \def\Alph{\HyPL@Format{Alph}}%
4979 \def\alph{\HyPL@Format{alph}}%
4980 \protected@edef\Hy@temp{#1}%
4981 \ifx\HyPL@found\relax
4982 \toks@{\expandafter{\Hy@temp}%
4983 \edef\Hy@next{\endgroup
4984 \noexpand\HyPL@@CheckThePage\the\toks@
4985 \noexpand\HyPL@found\relax\noexpand\@nil
4986 }%
4987 \fi
4988 \Hy@next
4989 \fi
4990 }%

```

`\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`.

```

4991 \def\HyPL@Format#1#2{%
4992 \ifx\HyPL@found\@undefined
4993 \expandafter\ifx\csname c@#2\endcsname\c@page
4994 \expandafter\noexpand\csname HyPL@found\endcsname{#1}%
4995 \else
4996 \expandafter\noexpand\csname#1\endcsname{#2}%
4997 \fi
4998 \else
4999 \expandafter\noexpand\csname#1\endcsname{#2}%
5000 \fi
5001 }%

```

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

```

5002 \def\HyPL@@@CheckThePage#1\HyPL@found#2#3\@nil{%
5003 \def\Hy@tempa{#3}%
5004 \def\Hy@tempb{\HyPL@found\relax}%

```

```

5005 \ifx\Hy@tempa\Hy@tempb
5006 \def\HyPL@Type{#2}%
5007 \def\HyPL@Prefix{#1}%
5008 \fi
5009 }%

```

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

```

5010 \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`.

```

5011 \def\HyPL@Useless{0<</S/D>>}%
5012 \@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.

```

5013 \def\HyPL@SetPageLabels{%
5014 \onelevel@sanitize\HyPL@Labels
5015 \ifx\HyPL@Labels\empty
5016 \else
5017 \ifx\HyPL@Labels\HyPL@Useless
5018 \else
5019 \Hy@PutCatalog{/PageLabels<</Nums[\HyPL@Labels]>>}%
5020 \fi
5021 \fi
5022 }%

```

```

5023 \g@addto@macro\Hy@EveryPageHook{\HyPL@EveryPage}%
5024 \fi

```

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

```

5025 \Hy@DisableOption{pdfpagelabels}
5026 </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`

```

5027 <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.

```

5028 <*vTeX>
5029 \providecommand*\XR@ext{pdf}
5030 \edef\Hy@VTeXversion{%
5031 \ifx\VTeXversion\undefined
5032 \z@
5033 \else
5034 \ifx\VTeXversion\relax
5035 \z@
5036 \else
5037 \VTeXversion

```

```

5038   \fi
5039   \fi
5040 }
5041 \beginngroup
5042   \ifnum\Hy@VTeXversion<660 %
5043     \gdef\Hy@PutCatalog#1{%
5044       \Hy@WarningNoLine{%
5045         VTeX 6.59g or above required for pdfpagelabels%
5046       }%
5047     }%
5048   \else
5049     \gdef\Hy@PutCatalog#1{%
5050       \Hy@vt@PutCatalog#1/PageLabels<<>>\@nil
5051     }%
5052     \gdef\Hy@vt@PutCatalog#1/PageLabels<<#2>>#3\@nil{%
5053       \ifx\#2\%
5054         \else
5055           \immediate\special{!pdfpagelabels #2}%
5056         \fi
5057       }%
5058     \fi
5059   \endgroup
5060 \</vtex>

5061 \<*pdftex | vtex>

```

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

```

5062 \ifHy@pagelabels
5063   \def\HyPL@StorePageLabel#1{%
5064     \toks@\expandafter{\HyPL@Labels}%
5065     \xdef\HyPL@Labels{%
5066       \the\toks@
5067       \the\Hy@abspage<<#1>>%
5068     }%
5069   }%

```

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.

```

5070 \@ifclassloaded{revtex4}{%
5071   \g@addto@macro\clear@document{\HyPL@SetPageLabels}%
5072 }{%
5073   \AtEndDocument{\clearpage\HyPL@SetPageLabels}%
5074 }%

5075 \fi
5076 \</pdftex | vtex>

```

### 27.1.2 pdfmarkbase, dvipdfm

```

5077 \<*pdfmarkbase>
5078 \beginngroup
5079   \toks@\expandafter{\Hy@FirstPageHook}%
5080   \xdef\Hy@FirstPageHook{%
5081     \noexpand\headerps@out{%
5082       systemdict /pdfmark known%
5083     }%
5084     userdict /?pdfmark systemdict /exec get put%
5085   }%

```

```

5086      userdict /?pdfmark systemdict /pop get put %
5087      userdict /pdfmark systemdict /cleartomark get put%
5088    }%
5089    ifelse%
5090  }%
5091  \the\toks@
5092 }%
5093 \endgroup
5094 \pdfmarkbase>

```

\Hy@PutCatalog

```

5095 <dvipdfm>\def\Hy@PutCatalog#1{\pdfmark{docview << #1 >>}}
5096 <*pdfmarkbase>
5097 \def\Hy@PutCatalog#1{%
5098   \pdfmark{pdfmark=/PUT,Raw={\string{Catalog\string} << #1 >>}}%
5099 }
5100 \pdfmarkbase>

5101 <*pdfmarkbase | dvipdfm>
5102 \ifHy@pagelabels

```

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

```

5103 \def\HyPL@StorePageLabel#1{%
5104   \if@filesw
5105     \begingroup
5106       \edef\Hy@tempa{\the\Hy@abspage<<#1>>}%
5107       \immediate\write\@mainaux{%
5108         \string\HyPL@Entry{\Hy@tempa}%
5109       }%
5110     \endgroup
5111   \fi
5112 }%

```

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.

```

5113 \AfterBeginDocument{%
5114   \if@filesw
5115     \immediate\write\@mainaux{%
5116       \string\providecommand\string*\string\HyPL@Entry[1]{}%
5117     }%
5118   \fi
5119   \ifx\HyPL@Labels\@empty
5120     \Hy@WarningNoLine{Rerun to get /PageLabels entry}%
5121   \else
5122     \HyPL@SetPageLabels
5123   \fi
5124   \let\HyPL@Entry\@gobble
5125 }%

```

\HyPL@Entry

```

5126 \def\HyPL@Entry#1{%
5127   \expandafter\gdef\expandafter\HyPL@Labels\expandafter{%
5128     \HyPL@Labels
5129     #1%
5130   }%
5131 }%

```

```

5132 \fi
5133 </pdfmarkbase | dvipdfm>
5134 <*package>
5135 \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 it's 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

```

5136 \def\Hy@CounterExists#1{%
5137   \begingroup\expandafter\expandafter\expandafter\endgroup
5138   \expandafter\ifx\csname c@#1\endcsname\relax
5139     \expandafter\@gobble
5140   \else
5141     \begingroup\expandafter\expandafter\expandafter\endgroup
5142     \expandafter\ifx\csname the#1\endcsname\relax
5143       \expandafter\expandafter\expandafter\@gobble
5144     \else
5145       \expandafter\expandafter\expandafter\@firstofone
5146     \fi
5147   \fi
5148 }
5149 \Hy@CounterExists{section}{%
5150   \newcommand\theHequation{\theHsection.\arabic{equation}}%
5151 }
5152 \Hy@CounterExists{part}{%
5153   \newcommand\theHpart{\arabic{part}}%
5154 }
5155 \@ifundefined{thechapter}{%
5156   \newcommand\theHsection    {\arabic{section}}%
5157   \newcommand\theHfigure     {\arabic{figure}}%
5158   \newcommand\theHtable      {\arabic{table}}%
5159 }{%
5160   \newcommand\theHchapter     {\arabic{chapter}}%
5161   \newcommand\theHfigure      {\theHchapter.\arabic{figure}}%
5162   \newcommand\theHtable       {\theHchapter.\arabic{table}}%
5163   \newcommand\theHsection     {\theHchapter.\arabic{section}}%
5164 }
5165 \newcommand\theHsubsection    {\theHsection.\arabic{subsection}}
5166 \newcommand\theHsubsubsection{\theHsubsection.\arabic{subsubsection}}

```

```

5167 \newcommand\theHparagraph    {\theHsubsubsection.\arabic{paragraph}}
5168 \newcommand\theHsubparagraph {\theHparagraph.\arabic{subparagraph}}
5169 \newcommand\theHtheorem      {\theHsection.\arabic{theorem}}
5170 \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.

```

5171 \let\H@item\item
5172 \newcounter{Item}
5173 \def\theHItem{\arabic{Item}}
5174 \def\item{%
5175   \@hyper@itemfalse
5176   \if@nmbrlist\@hyper@itemtrue\fi
5177   \H@item
5178 }

5179 \newcommand\theHenumi      {\theHItem}
5180 \newcommand\theHenumii     {\theHItem}
5181 \newcommand\theHenumiii    {\theHItem}
5182 \newcommand\theHenumiv     {\theHItem}
5183 \newcommand\theHHfootnote  {\arabic{Hfootnote}}
5184 \newcommand\theHmpfootnote{\arabic{mpfootnote}}
5185 \let\theHHmpfootnote\theHHfootnote

```

Tanmoy asked for this default handling of undefined \theH<name> situations. It really isn't clear what would be ideal, whether to turn off hyperizing of unknown elements, to pick up the textual definition of the counter, or to default it to something like \arabic{name}. We take the latter course, slightly worriedly.

```

5186 \let\H@refstepcounter\refstepcounter
5187 \edef\name@of@eq{equation}%
5188 \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.

```

5189 \newif\if@hyper@item
5190 \newif\if@skiphyperref
5191 \@hyper@itemfalse
5192 \@skiphyperreffalse
5193 \def\refstepcounter#1{%
5194   \ifHy@pdfstring
5195   \else
5196     \H@refstepcounter{#1}%
5197     \edef\This@name{#1}%
5198     \ifx\This@name\name@of@slide
5199     \else
5200       \if@skiphyperref
5201       \else
5202         \if@hyper@item
5203           \stepcounter{Item}%
5204           \hyper@refstepcounter{Item}%
5205           \@hyper@itemfalse
5206         \else
5207           \hyper@refstepcounter{#1}%
5208         \fi
5209       \fi
5210     \fi
5211   \fi
5212 }

```

AMST<sub>EX</sub> 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.

```
5213 \ifpackageloaded{amsmath}{\newif\ifmeasuring@\measuring@false}
```

`\hyper@refstepcounter`

```
5214 \def\hyper@refstepcounter#1{%
5215   \edef\This@name{#1}%
5216   \ifx\This@name\name@of@eq
5217     \@ifundefined{theHequation}{%
5218       \make@stripped@name{\theequation}%
5219       \let\theHequation\newname
5220     }{%
5221   \fi
5222   \@ifundefined{theH#1}{%
5223     \expandafter\def\csname theH#1\endcsname{\arabic{#1}}%
5224   }{%
5225   \hyper@makecurrent{#1}%
5226   \ifmeasuring@
5227   \else
5228     \Hy@raisedlink{%
5229       \hyper@anchorstart{\@currentHref}\hyper@anchorend
5230     }%
5231   \fi
5232 }
```

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`.

```
5233 \begingroup\expandafter\expandafter\expandafter\endgroup
5234 \expandafter\ifx\csname chapter\endcsname\relax
5235   \def\Hy@chapterstring{section}%
5236 \else
5237   \def\Hy@chapterstring{chapter}%
5238 \fi
5239 \def\Hy@appendixstring{appendix}
5240 \def\Hy@chapapp{\Hy@chapterstring}
5241 \let\HyOrg@appendix\appendix
5242 \def\appendix{%
5243   \@ifundefined{chapter}%
5244     {\gdef\theHsection{\Alph{section}}}%
5245     {\gdef\theHchapter{\Alph{chapter}}}%
5246   \xdef\Hy@chapapp{\Hy@appendixstring}%
5247   \HyOrg@appendix
5248 }
```

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

```
5249 \def\hyper@makecurrent#1{%
5250   \begingroup
5251     \edef\Hy@param{#1}%
5252     \ifx\Hy@param\Hy@chapterstring
5253       \let\Hy@param\Hy@chapapp
```

```

5254 \fi
5255 \ifHy@hypertextnames
5256 \let\@number\@firstofone
5257 \@ifundefined{latin@Alph}{\fi}%
5258 \ifx\@Alph\greek@Alph
5259 \def\@Alph{Alph\@arabic}%
5260 \fi
5261 }%
5262 \ifx\@Alph\@Alph@bul
5263 \def\@Alph{Alph\@arabic}%
5264 \fi
5265 \ifx\@alph\@alph@bul
5266 \def\@alph{alph\@arabic}%
5267 \fi
5268 \ifHy@naturalnames
5269 \let\textlatin\@firstofone
5270 \xdef\@currentHlabel{\csname the#1\endcsname}%
5271 \else
5272 \xdef\@currentHlabel{%
5273 \csname
5274 the%
5275 \expandafter\ifx\csname theH#1\endcsname\relax\else H\fi
5276 #1%
5277 \endcsname
5278 }%
5279 \fi
5280 \xdef\@currentHref{%
5281 \Hy@param.\expandafter\strip@prefix\meaning\@currentHlabel
5282 }%
5283 \else
5284 \Hy@GlobalStepCount\Hy@linkcounter
5285 \xdef\@currentHref{\Hy@param.\the\Hy@linkcounter}%
5286 \fi
5287 \endgroup
5288 }

5289 \@ifpackageloaded{fancyvrb}{\fi}%
5290 \@ifpackagelater{fancyvrb}{1998/05/20}{\fi}%
5291 \def\FV@StepLineNo{%
5292 \FV@SetLineNo
5293 \def\FV@StepLineNo{\H@refstepcounter{FancyVerbLine}}%
5294 \FV@StepLineNo
5295 }%
5296 }%
5297 }{}

```

## 29 Package lastpage support

Package lastpage directly writes the `\newlabel` command to the aux file. Because package hyperref requires additional arguments, the internal command `\lastpage@putlabel` is redefined. The patch is deferred by `\AtBeginDocument`, because it is possible that package lastpage is loaded after package hyperref. The same algorithm (options hypertextnames and plainpages) is used to get the page anchor name as in `\Hy@EveryPageAnchor` (see sec. 38). The link will not work if option pageanchor is set to false.

```
\lastpage@putlabel
```

```

5298 \AtBeginDocument{%
5299   \@ifclassloaded{revtex4}{%
5300     \@namedef{ver@lastpage.sty}{1994/06/25}%
5301   }{}%
5302   \@ifpackageloaded{lastpage}{%
5303     \ifHy@pageanchor
5304     \else
5305       \Hy@WarningNoLine{%
5306         The \string\pageref{LastPage} link doesn't work\MessageBreak
5307         with disabled option 'pageanchor'%
5308       }%
5309     \fi
5310     \def\lastpage@putlabel{%
5311       \addtocounter{page}{-1}%
5312       \if@filesw
5313         \begingroup
5314           \let\@number\@firstofone
5315           \ifHy@pageanchor
5316             \ifHy@hypertextnames
5317               \ifHy@plainpages
5318                 \def\Hy@temp{\arabic{page}}%
5319               \else
5320                 \Hy@unicodedefalse
5321                 \pdfstringdef\Hy@temp{\thepage}%
5322               \fi
5323             \else
5324               \def\Hy@temp{\the\Hy@pagecounter}%
5325             \fi
5326           \fi
5327           \immediate\write\@auxout{%
5328             \string\newlabel
5329             {LastPage}{\the\Hy@temp}{\thepage}{\the\Hy@temp}{\the\Hy@temp}{\the\Hy@temp}%
5330             \ifHy@pageanchor page.\Hy@temp\fi}{\the\Hy@temp}{\the\Hy@temp}%
5331           }%
5332         \endgroup
5333       \fi
5334       \addtocounter{page}{1}%
5335     }%
5336   \@ifclassloaded{revtex4}{%
5337     \begingroup
5338       \toks@{\expandafter\lastpage@putlabel}%
5339       \edef\x{\endgroup
5340         \def\noexpand\lastpage@putlabel{%
5341           \noexpand\stepcounter{page}%
5342           \the\toks@
5343           \noexpand\addtocounter{page}\noexpand\m@ne
5344         }%
5345       }%
5346     \x
5347   }{}%
5348 }{}%
5349 }
5350 \end{package}
5351 \checkpackage{lastpage}[1994/06/25]
5352 \checkcommand\def\lastpage@putlabel{%
5353   \addtocounter{page}{-1}%

```

```

5355 \immediate\write\@auxout{%
5356   \string\newlabel{LastPage}{\thepage}%
5357 }%
5358 \addtocounter{page}{1}%
5359 }
5360 </check>
5361 <*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.

```

5362 \def\hypergetref#1{\getrefbykeydefault{#1}{??}}
5363 \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:

```

5364 \@ifpackageloaded{titlesec}{%
5365   \def\ttl@Hy@steplink#1{%
5366     \Hy@GlobalStepCount\Hy@linkcounter
5367     \xdef\@currentHref{#1*.\the\Hy@linkcounter}%
5368     \def\ttl@Hy@saveanchor{%
5369       \Hy@raisedlink{%
5370         \hyper@anchorstart{\@currentHref}\hyper@anchorend
5371       }%
5372     }%
5373   }%
5374   \def\ttl@Hy@refstepcounter#1{%
5375     \let\ttl@b\Hy@raisedlink
5376     \def\Hy@raisedlink##1{%
5377       \def\ttl@Hy@saveanchor{\Hy@raisedlink{##1}}%
5378     }%
5379     \refstepcounter{#1}%
5380     \let\Hy@raisedlink\ttl@b
5381   }%
5382 }{}

```

Package titletoc support:

```

5383 \@ifpackageloaded{titletoc}{%
5384   \def\ttl@gobblecontents#1#2#3#4{\ignorespaces}%
5385 }{}

```

## 32 Package varioref support

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

```

5386 \def\Hy@varioref@undefined{??}{?}{-}{-}
5387 \@ifpackageloaded{varioref}{%
5388   \def\vref#1#2{%
5389     \ifundefined{r@#2}{%

```

```

5390     \expandafter\let\csname r@#2\endcsname\Hy@varioref@undefined
5391   }{}%
5392     \edef#1{\getpagerefnumber{#2}}%
5393   }%
5394 }{}

```

### 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

```

5395 \@ifpackageloaded{longtable}{%
5396   \begingroup
5397     \def\y{\LT@array}%
5398     \@ifundefined{scr@LT@array}{\def\y{\scr@LT@array}}%
5399     \long\def\x\refstepcounter#1#2\@sharp#3#4\@nil{%
5400       \expandafter\endgroup
5401       \expandafter\def\y[#1]##2{%
5402         \H@refstepcounter{#1}%
5403         \hyper@makecurrent{table}%
5404         \let\Hy@LT@currentHlabel\@currentHlabel
5405         \let\Hy@LT@currentHref\@currentHref
5406         #2\@sharp####4%
5407       }%
5408     }%
5409   \expandafter\expandafter\expandafter\x\y[#{1}]{#2}\@nil

```

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

```

5410   \begingroup
5411     \def\x#1\ifvoid\LT@firsthead\copy#2\@nil{%
5412     \endgroup
5413     \def\LT@start{%
5414       #1%
5415       \let\@currentHlabel\Hy@LT@currentHlabel
5416       \let\@currentHref\Hy@LT@currentHref
5417       \Hy@raisedlink{%
5418         \hyper@anchorstart{\@currentHref}\hyper@anchorend
5419       }%
5420       \ifvoid\LT@firsthead\copy
5421       #2%
5422     }%
5423   }%
5424   \expandafter\x\LT@start\@nil
5425 }{}

```

### 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 execution is that we move the equation incrementation inside the `math` environment to avoid specials outside and a wrong vertical spacing of equation environments.

```

5426 \let\new@refstepcounter\refstepcounter
5427 \let\H@equation\equation
5428 \let\H@endequation\endequation

5429 \@ifpackageloaded{amsmath}{%
5430   \long\def\Hy@temp{%
5431     \incr@eqnum
5432     \mathdisplay@push
5433     \st@rredfalse \global\@eqnswtrue
5434     \mathdisplay{equation}%
5435   }%
5436   \ifx\Hy@temp\equation
5437     \expandafter\ifx\csname if@fleqn\expandafter\endcsname
5438       \csname iftrue\endcsname
5439   \else
5440     \long\def\equation{%
5441       \mathdisplay@push
5442       \st@rredfalse \global\@eqnswtrue
5443       \mathdisplay{equation}%
5444       \incr@eqnum
5445     }%
5446   \fi
5447 \fi
5448 }{%
5449 \def\equation{%
5450   \let\refstepcounter\H@refstepcounter
5451   \H@equation
5452   \@ifundefined{theHequation}{%
5453     \make@stripped@name{\theequation}%
5454     \let\theHequation\newname
5455   }{%
5456     \hyper@makecurrent{equation}%
5457     \Hy@raisedlink{\hyper@anchorstart{\@currentHref}}%
5458     \let\refstepcounter\new@refstepcounter
5459   }%
5460 \def\endequation{\Hy@raisedlink{\hyper@anchorend}\H@endequation}%
5461 }

```

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.

```

5462 \newif\if@eqnstar
5463 \@eqnstarfalse
5464 \let\H@eqnarray\eqnarray
5465 \let\H@endeqnarray\endeqnarray
5466 \def\eqnarray{%
5467   \let\Hy@reserved@a\relax
5468   \def\@currentHref{}%
5469   \H@eqnarray
5470   \if@eqnstar
5471   \else
5472     \ifx\\\@currentHref\\%
5473     \else
5474       \@ifundefined{theHequation}{%
5475         \make@stripped@name{\theequation}%
5476         \let\theHequation\newname

```

```

5477     }{}%
5478     \hyper@makecurrent{equation}%
5479     \hyper@anchorstart{\@currentHref}{ }\hyper@anchorend
5480   \fi
5481 \fi
5482 }
5483 \def\endeqnarray{%
5484   \H@endeqnarray
5485 }

```

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.

```

5486 \@namedef{eqnarray*}{%
5487   \def\@eqnocr{\nonumber\@seqnocr}\@eqnstartrue\eqnarray
5488 }
5489 \@namedef{endeqnarray*}{%
5490   \nonumber\endeqnarray\@eqnstarfalse
5491 }

```

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

```

5492 \@ifundefined{subeqnarray}{ }{%
5493   \let\H@subeqnarray\subeqnarray
5494   \let\H@endsubeqnarray\endsubeqnarray
5495   \def\subeqnarray{%
5496     \let\Hy@reserved@a\relax
5497     \H@subeqnarray
5498     \@ifundefined{theHequation}{%
5499       \make@stripped@name{\theequation}%
5500       \let\theHequation\newname
5501     }{}%
5502     \hyper@makecurrent{equation}%
5503     \hyper@anchorstart{\@currentHref}{ }\hyper@anchorend
5504   }%
5505   \def\endsubeqnarray{%
5506     \H@endsubeqnarray
5507   }%
5508   \newcommand\theHsubequation{\theHequation\alph{subequation}}%
5509 }

```

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

```

5510 \def\make@stripped@name#1{%
5511   \begingroup
5512     \escapechar\m@ne
5513     \global\let\newname\empty
5514     \protected@edef\Hy@tempa{#1}%
5515     \edef\@tempb{%
5516       \noexpand\@tfor\noexpand\Hy@tempa:=%
5517       \expandafter\strip@prefix\meaning\Hy@tempa
5518     }%
5519     \@tempb\do{%
5520       \if{\Hy@tempa\else
5521         \if}\Hy@tempa\else
5522         \xdef\newname{\newname\Hy@tempa}%
5523       \fi
5524     \fi
5525   }%
5526 \endgroup
5527 }

```

Support for amsmath's subequations:

```

5528 \begingroup\expandafter\expandafter\expandafter\endgroup
5529 \expandafter\ifx\csname subequations\endcsname\relax
5530 \else
5531   \let\HyOrg@subequations\subequations
5532   \def\subequations{%
5533     \stepcounter{equation}%
5534     \protected@edef\theHparentequation{%
5535       \ifundefined{theHequation}\theequation\theHequation
5536     }%
5537     \addtocounter{equation}{-1}%
5538     \HyOrg@subequations
5539     \def\theHequation{\theHparentequation\alph{equation}}%
5540     \ignorespaces
5541   }%
5542 \fi

```

Support for package amsthm (Daniel Müllner):

```

5543 \@ifpackageloaded{amsthm}{%
5544   \def\@thm#1#2#3{%
5545     \ifhmode
5546       \unskip\unskip\par
5547     \fi
5548     \normalfont
5549     \trivlist
5550     \let\thmheadnl\relax
5551     \let\thm@swap\@gobble
5552     \thm@notefont{\fontseries\mddefault\upshape}%
5553     \thm@headpunct{.}% add period after heading
5554     \thm@headsep 5\p@ plus\p@ minus\p@\relax
5555     \thm@space@setup
5556     #1% style overrides
5557     \@topsep \thm@preskip           % used by thm head
5558     \@topsepadd \thm@postskip      % used by \endparenv
5559     \def\dth@counter{#2}%
5560     \ifx\@empty\dth@counter
5561       \def\@tempa{%
5562         \@oparg{\@begintheorem{#3}{}} []%
5563       }%
5564     \else
5565       \H@refstepcounter{#2}%
5566       \hyper@makecurrent{#2}%
5567       \def\@tempa{%
5568         \@oparg{\@begintheorem{#3}{\csname the#2\endcsname}} []%
5569       }%
5570     \fi
5571     \@tempa
5572   }%
5573   \dth@everypar={%
5574     \@minipagefalse
5575     \global\@newlistfalse
5576     \@noparitemfalse
5577     \if@inlabel
5578       \global\@inlabelfalse
5579     \begingroup
5580       \setbox\z@\lastbox
5581       \ifvoid\z@
5582         \kern-\itemindent

```

```

5583     \fi
5584   \endgroup
5585   \ifx\@empty\dth@counter
5586   \else
5587     \Hy@raisedlink{%
5588       \hyper@anchorstart{\@currentHref}\hyper@anchorend
5589     }%
5590   \fi
5591   \unhbox\@labels
5592 \fi
5593 \if@nobreak
5594   \clubpenaltyfalse \clubpenalty\@M
5595 \else
5596   \clubpenalty\@clubpenalty \everypar{}%
5597 \fi
5598 }%
5599 }{}

```

## 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.

```

5600 \ifpackageloaded{tabularx}{\Hy@hyperfootnotesfalse}{}
5601 \ifHy@hyperfootnotes
5602   \newcounter{Hfootnote}%
5603   \let\H@@footnotetext\@footnotetext
5604   \let\H@@footnotemark\@footnotemark
5605   \def\@xfootnotenext[#1]{%
5606     \begingroup
5607       \csname c@\@mpfn\endcsname #1\relax
5608       \unrestored@protected@xdef\@thefnmark{\thempfn}%
5609     \endgroup
5610     \ifx\@footnotetext\@mpfootnotetext
5611       \expandafter\H@@mpfootnotetext
5612     \else
5613       \expandafter\H@@footnotetext
5614     \fi
5615   }%
5616   \def\@xfootnotemark[#1]{%
5617     \begingroup
5618       \c@footnote #1\relax
5619       \unrestored@protected@xdef\@thefnmark{\thefnmark}%
5620     \endgroup
5621     \H@@footnotemark
5622   }%
5623   \let\H@@mpfootnotetext\@mpfootnotetext
5624   \long\def\@mpfootnotetext#1{%
5625     \H@@mpfootnotetext{%
5626       \ifHy@nesting
5627         \expandafter\hyper@@anchor\expandafter{\Hy@footnote@currentHref}{#1}%
5628       \else
5629         \Hy@raisedlink{%
5630           \expandafter\hyper@@anchor\expandafter{\Hy@footnote@currentHref}{\relax}%

```

```

5631     }#1%
5632   \fi
5633 }%
5634 }%
5635 \long\def\@footnotetext#1{%
5636   \H@footnotetext{%
5637     \ifHy@nesting
5638       \expandafter\hyper@@anchor\expandafter{\Hy@footnote@currentHref}{#1}%
5639     \else
5640       \Hy@raisedlink{%
5641         \expandafter\hyper@@anchor\expandafter{\Hy@footnote@currentHref}{\relax}%
5642       }%
5643       \let\@currentHlabel\Hy@footnote@currentHlabel
5644       \let\@currentHref\Hy@footnote@currentHref
5645       \let\@currentlabelname\@empty
5646     #1%
5647   \fi
5648 }%
5649 }%

```

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.

```

5650 \def\@footnotemark{%
5651   \leavevmode
5652   \ifhmode\edef\x@sf{\the\spacefactor}\nobreak\fi
5653   \stepcounter{Hfootnote}%
5654   \global\let\Hy@saved@currentHlabel\@currentHlabel
5655   \global\let\Hy@saved@currentHref\@currentHref
5656   \hyper@makecurrent{Hfootnote}%
5657   \global\let\Hy@footnote@currentHlabel\@currentHlabel
5658   \global\let\Hy@footnote@currentHref\@currentHref
5659   \global\let\@currentHlabel\Hy@saved@currentHlabel
5660   \global\let\@currentHref\Hy@saved@currentHref
5661   \hyper@linkstart{link}{\Hy@footnote@currentHref}%
5662   \@makefnmark
5663   \hyper@linkend
5664   \ifhmode\spacefactor\x@sf\fi
5665   \relax
5666 }%

```

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

```

5667 \ifpackageloaded{longtable}{%
5668   \CheckCommand*\LT@p@ftntext}[1]{%
5669     \edef\@tempa{%
5670       \the\LT@p@ftn
5671       \noexpand\footnotetext[\the\c@footnote]%
5672     }%
5673     \global\LT@p@ftn\expandafter{\@tempa{#1}}%
5674   }%
5675   \long\def\LT@p@ftntext#1{%
5676     \edef\@tempa{%
5677       \the\LT@p@ftn
5678     }

```

```

5679 \noexpand\c@footnote=\the\c@footnote\relax
5680 \noexpand\protected@xdef
5681 \noexpand\@thefnmark{\noexpand\thempfn}%
5682 \noexpand\protected@xdef\noexpand\@thefnmark{%
5683 \noexpand\thempfn
5684 }%
5685 \expandafter\expandafter\expandafter\noexpand
5686 \expandafter\expandafter\expandafter\Hy@LT@footnotetext
5687 \expandafter\expandafter\expandafter{%
5688 \expandafter\Hy@footnote@currentHref\expandafter
5689 }\expandafter{\Hy@footnote@currentHlabel}%
5690 }%
5691 \global\LT@p@ftn\expandafter{%
5692 \@tempa{#1}%
5693 \endgroup
5694 }%
5695 }%
5696 \long\def\Hy@LT@footnotetext#1#2#3{%
5697 \H@@footnotetext{%
5698 \ifHy@nesting
5699 \hyper@@anchor{#1}{#3}%
5700 \else
5701 \Hy@raisedlink{%
5702 \hyper@@anchor{#1}{\relax}%
5703 }%
5704 \def\@currentHlabel{#2}%
5705 \def\@currentHref{#1}%
5706 \let\@currentlabelname\@empty
5707 #3%
5708 \fi
5709 }%
5710 }%
5711 }{}%

```

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

```

5712 \@ifpackageloaded{fancyvrb}{%
5713 \def\V@@footnotetext{%
5714 \insert\footins\bgroup
5715 \csname reset@font\endcsname
5716 \footnotesize
5717 \interlinepenalty\interfootnotelinepenalty
5718 \splittopskip\footnotesep
5719 \splitmaxdepth\dp\strutbox
5720 \floatingpenalty \@MM
5721 \hsize\columnwidth
5722 \@parboxrestore
5723 \edef\@currentlabel{\csname p@footnote\endcsname\@thefnmark}%
5724 \@makefntext{}%
5725 \rule{\z@}{\footnotesep}%
5726 \bgroup
5727 \aftergroup\V@@footnotetext
5728 \Hy@raisedlink{%
5729 \expandafter\hyper@@anchor\expandafter{\Hy@footnote@currentHref}{\relax}%
5730 }%
5731 \let\@currentHlabel\Hy@footnote@currentHlabel
5732 \let\@currentHref\Hy@footnote@currentHref
5733 \let\@currentlabelname\@empty
5734 \ignorespaces

```

```

5735 }%
5736 }{}%

```

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.

```

5737 \let\HyOrg@maketitle\maketitle
5738 \def\maketitle{%
5739   \let\Hy@saved@footnotemark\@footnotemark
5740   \let\Hy@saved@footnotetext\@footnotetext
5741   \let\@footnotemark\H@@footnotemark
5742   \let\@footnotetext\H@@footnotetext
5743   \@ifnextchar[\Hy@maketitle@optarg{% ]
5744     \HyOrg@maketitle
5745     \Hy@maketitle@end
5746 }%
5747 }%
5748 \def\Hy@maketitle@optarg[#1]{%
5749   \HyOrg@maketitle[#1]}%
5750 \Hy@maketitle@end
5751 }%
5752 \def\Hy@maketitle@end{%
5753   \ifx\@footnotemark\H@@footnotemark
5754     \let\@footnotemark\Hy@saved@footnotemark
5755   \fi
5756   \ifx\@footnotetext\H@@footnotetext
5757     \let\@footnotetext\Hy@saved@footnotetext
5758   \fi
5759 }%

```

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

```

5760 \def\realfootnote{%
5761   \@ifnextchar[\@xfootnote{%
5762     \stepcounter{\@mpfn}%
5763     \protected@xdef\@thefnmark{\thempfn}%
5764     \H@@footnotemark\H@@footnotetext
5765   }%
5766 }%

5767 \fi
5768 \Hy@DisableOption{hyperfootnotes}

5769 </package>
5770 <*check>
5771 \checklatex
5772 \checkcommand\def\@xfootnotenext[#1]{%
5773   \begingroup
5774     \csname c@\@mpfn\endcsname #1\relax
5775     \unrestored@protected@xdef\@thefnmark{\thempfn}%
5776   \endgroup
5777   \@footnotetext
5778 }
5779 \checkcommand\def\@xfootnotemark[#1]{%
5780   \begingroup
5781     \c@footnote #1\relax
5782     \unrestored@protected@xdef\@thefnmark{\thefnmark}%
5783   \endgroup
5784   \@footnotemark
5785 }

```

```

5786 \checkcommand\def\@footnotemark{%
5787   \leavevmode
5788   \ifhmode\edef\@x@sf{\the\spacefactor}\nobreak\fi
5789   \@makefnmark
5790   \ifhmode\spacefactor\@x@sf\fi
5791   \relax
5792 }
5793 \end{check}
5794 \end{package}

```

## 36 Float captions

Make the float caption the hypertext anchor; curiously enough, we can't just copy the definition of \@caption. Its all to do with expansion. It screws up. Sigh.

```

5795 \def\caption{%
5796   \ifx\@captive\@undefined
5797     \@latexerror{\noexpand\caption outside float}\@ehd
5798     \expandafter\@gobble
5799   \else
5800     \H@refstepcounter\@captive
5801     \let\Hy@tempa\@caption
5802     \ifundefined{float@caption}{%
5803       {%
5804         \expandafter\ifx\csname @float@c@\@captive\endcsname
5805           \float@caption
5806         \let\Hy@tempa\Hy@float@caption
5807       \fi
5808     }%
5809     \expandafter\@firstofone
5810   \fi
5811   {\@dblarg{\Hy@tempa\@captive}}}%
5812 }
5813 \long\def\@caption#1[#2]#3{%
5814   \expandafter\ifx\csname if@capstart\expandafter\endcsname
5815     \csname iftrue\endcsname
5816     \global\let\@currentHref\hc@currentHref
5817   \else
5818     \hyper@makecurrent{\@captive}%
5819   \fi
5820   \def\@currentlabelname{#2}%
5821   \par\addcontentsline{\csname ext@#1\endcsname}{#1}{%
5822     \protect\numberline{\csname the#1\endcsname}{\ignorespaces #2}%
5823   }%
5824   \begingroup
5825     \@parboxrestore
5826     \if@minipage
5827       \setminipage
5828     \fi
5829     \normalsize
5830     \expandafter\ifx\csname if@capstart\expandafter\endcsname
5831       \csname iftrue\endcsname
5832       \global\@capstartfalse
5833       \makecaption{\csname fnum@#1\endcsname}{\ignorespaces#3}%
5834     \else
5835       \makecaption{\csname fnum@#1\endcsname}{%
5836         \ignorespaces

```

If we cannot have nesting, the anchor is empty.

```

5837     \ifHy@nesting
5838     \expandafter\hyper@@anchor\expandafter{\@currentHref}{#3}%
5839     \else
5840     \Hy@raisedlink{%
5841     \expandafter\hyper@@anchor\expandafter{\@currentHref}{\relax}%
5842     }%
5843     #3%
5844     \fi
5845   }%
5846 \fi
5847 \par
5848 \endgroup
5849 }

```

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.

```

5850 \let\Hy@float@caption\@caption
5851 \@ifpackageloaded{float}{%
5852   \def\Hy@float@caption{%
5853     \ifx\Hy@float@currentHref\@undefined
5854     \hyper@makecurrent{\@capttype}%
5855     \global\let\Hy@float@currentHref\@currentHref
5856     \else
5857     \let\@currentHref\Hy@float@currentHref
5858     \fi
5859     \float@caption
5860   }%
5861   \let\HyOrg@float@makebox\float@makebox
5862   \renewcommand{\float@makebox}[1]{%
5863     \HyOrg@float@makebox{%
5864       #1\relax
5865       \ifx\Hy@float@currentHref\@undefined
5866       \else
5867       \expandafter\hyper@@anchor\expandafter{\Hy@float@currentHref}{\relax}%
5868       \global\let\Hy@float@currentHref\@undefined
5869       \fi
5870     }%
5871   }%
5872 }{}

5873 \</package>
5874 \<*check>
5875 \checklatex[1999/06/01 - 2000/06/01]
5876 \checkcommand\def\caption{%
5877   \ifx\@capttype\@undefined
5878   \latex@error{\noexpand\caption outside float}\@ehd
5879   \expandafter\@gobble
5880   \else
5881   \refstepcounter\@capttype
5882   \expandafter\@firstofone
5883   \fi
5884   {\@dblarg{\@caption\@capttype}}}%
5885 }

5886 \checkcommand\long\def\@caption#1[#2]#3{%
5887   \par
5888   \addcontentsline{\csname ext@#1\endcsname}{#1}%
5889   {\protect\numberline{\csname the#1\endcsname}{\ignorespaces #2}}%

```

```

5890 \begingroup
5891   \@parboxrestore
5892   \if@minipage
5893     \@setminipage
5894   \fi
5895   \normalsize
5896   \@makecaption{\csname fnum@#1\endcsname}{\ignorespaces #3}\par
5897 \endgroup
5898 }
5899 </check>
5900 <*package>

```

## 37 Bibliographic references

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

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

```

5901 \def\hyper@natlinkstart#1{%
5902   \Hy@backout{#1}%
5903   \hyper@linkstart{cite}{cite.#1}%
5904   \def\hyper@nat@current{#1}%
5905 }
5906 \def\hyper@natlinkend{%
5907   \hyper@linkend
5908 }
5909 \def\hyper@natlinkbreak#1#2{%
5910   \hyper@linkend#1\hyper@linkstart{cite}{cite.#2}%
5911 }
5912 \def\hyper@natanchorstart#1{%
5913   \Hy@raisedlink{\hyper@anchorstart{cite.#1}}%
5914 }
5915 \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.

```

5916 \ifundefined{NAT@parse}{%
5917   \providecommand*\@extra@binfo{}%
5918   \providecommand*\@extra@b@citeb{}%
5919   \def\bibcite#1#2{%
5920     \newlabel{b}{#1\@extra@binfo}%
5921     \hyper@link[cite]{}{cite.#1\@extra@b@citeb}{#2}%
5922   }%
5923 }%
5924 \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.”.

```

5925 \let\Hy@bibcite\bibcite
5926 \begingroup

```

```

5927 \@ifundefined{bbl@cite@choice}{}{%
5928 \g@addto@macro\bbl@cite@choice{%
5929 \let\bibcite\Hy@bibcite
5930 }%
5931 }%
5932 \endgroup
\@BIBLABEL is working around a ‘feature’ of RevTeX.
5933 \providecommand*{\@BIBLABEL}{\@biblabel}%
5934 \def\@lbibitem[#1]#2{%
5935 \@skiphyperreftrue
5936 \H@item[%
5937 \ifx\Hy@raisedlink\@empty
5938 \hyper@anchorstart{cite.#2\@extra@b@citeb}%
5939 \@BIBLABEL{#1}%
5940 \hyper@anchorend
5941 \else
5942 \Hy@raisedlink{%
5943 \hyper@anchorstart{cite.#2\@extra@b@citeb}\hyper@anchorend
5944 }%
5945 \@BIBLABEL{#1}%
5946 \fi
5947 \hfill
5948 ]%
5949 \@skiphyperreffalse
5950 \if@filesw
5951 \begingroup
5952 \let\protect\noexpand
5953 \immediate\write\@auxout{%
5954 \string\bibcite{#2}{#1}%
5955 }%
5956 \endgroup
5957 \fi
5958 \ignorespaces
5959 }%

```

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

```

5960 \def\@bibitem#1{%
5961 \@skiphyperreftrue\H@item\@skiphyperreffalse
5962 \Hy@raisedlink{%
5963 \hyper@anchorstart{cite.#1\@extra@b@citeb}\relax\hyper@anchorend
5964 }%
5965 \if@filesw
5966 \begingroup
5967 \let\protect\noexpand
5968 \immediate\write\@auxout{%
5969 \string\bibcite{#1}{\the\value{\@listctr}}}%
5970 }%
5971 \endgroup
5972 \fi
5973 \ignorespaces
5974 }%
5975 }{}

5976 \</package>
5977 \<*check>
5978 \checklatex
5979 \checkcommand\def\@lbibitem[#1]#2{%

```

```

5980 \item[\@biblabel{#1}\hfill]%
5981 \if@filesw
5982   {%
5983     \let\protect\noexpand
5984     \immediate\write\@auxout{%
5985       \string\bibcite{#2}{#1}%
5986     }%
5987   }%
5988 \fi
5989 \ignorespaces
5990 }
5991 \checkcommand\def\@bibitem#1{%
5992 \item
5993 \if@filesw
5994   \immediate\write\@auxout{%
5995     \string\bibcite{#1}{\the\value{\@listctr}}%
5996   }%
5997 \fi
5998 \ignorespaces
5999 }
6000 </check>
6001 <*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.

```

6002 \@ifclassloaded{revtex}{%
6003   \Hy@Info{*** compatibility with revtex **** }%
6004   \def\revtex@checking#1#2{%
6005     \expandafter\let\expandafter\T@temp\csname b@#1\endcsname
6006     \expandafter\def\csname b@#1\endcsname{#2}%
6007     \@SetMaxRnhefLabel{#1}%
6008     \expandafter\let\csname b@#1\endcsname\T@temp
6009   }%

```

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

```

6010 \@ifundefined{CITE}{\def\CITE{\@cite}}{}%
6011 \providecommand*\@extra@b@citeb{}%
6012 \def\CITE[#1]#2{%
6013   \let\@citea\@empty
6014   \leavevmode
6015   \unskip
6016   $^{}%
6017   \scriptstyle
6018   \CITE{%
6019     \@for\@citeb:=#2\do{%
6020       \@citea
6021       \def\@citea{\penalty\@m\ }%
6022       \edef\@citeb{\expandafter\@firstofone\@citeb}%
6023       \if@filesw
6024         \immediate\write\@auxout{\string\citation{\@citeb}}%
6025       \fi
6026       \@ifundefined{b@\@citeb\extra@b@citeb}{%
6027         \mbox{\reset@font\bfseries ?}%
6028         \G@refundefinedtrue
6029         \@latex@warning{%
6030           Citation ‘\@citeb’ on page \thepage \space undefined%

```

```

6031         }%
6032     }{%
6033         {\csname b@\@citeb\@extra@b@citeb\endcsname}%
6034     }%
6035 }%
6036 }{#1}%
6037 }$%
6038 }%

```

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.

```

6039 \def\@citex[#1]#2{%
6040     \let\@citea\@empty
6041     \@cite{%
6042         \@for\@citeb:=#2\do{%
6043             \@citea
6044             \def\@citea{,\penalty\@m\ }%
6045             \edef\@citeb{\expandafter\@firstofone\@citeb}%
6046             \if@filesw
6047                 \immediate\write\@auxout{\string\citation{\@citeb}}%
6048             \fi
6049             \ifundefined{b@\@citeb\@extra@b@citeb}{%
6050                 \mbox{\reset@font\bfseries ?}%
6051                 \G@refundefinedtrue
6052                 \@latex@warning{%
6053                     Citation ‘\@citeb’ on page \thepage \space undefined%
6054                 }%
6055             }{%
6056                 \hbox{\csname b@\@citeb\@extra@b@citeb\endcsname}%
6057             }%
6058         }%
6059     }{#1}%
6060 }%
6061 }{}

```

### 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.

```

6062 \@ifpackageloaded{harvard}{%
6063     \AtBeginDocument{%
6064         \Hy@Info{*** compatibility with harvard *** }%
6065         \Hy@raiselinksfalse
6066         \def\harvardcite#1#2#3#4{%
6067             \global\@namedef{HAR@fn@#1}{\hyper@link[cite]{}{cite.#1}{#2}}%
6068             \global\@namedef{HAR@an@#1}{\hyper@link[cite]{}{cite.#1}{#3}}%
6069             \global\@namedef{HAR@yr@#1}{\hyper@link[cite]{}{cite.#1}{#4}}%
6070             \global\@namedef{HAR@df@#1}{\csname HAR@fn@#1\endcsname}%
6071         }%
6072         \def\HAR@citetoaux#1{%
6073             \if@filesw\immediate\write\@auxout{\string\citation{#1}}\fi%
6074             \ifHy@backref
6075                 \ifx\@empty\@currentlabel

```

```

6076     \else
6077     \@bsphack
6078     \if@filesw
6079         \protected@write\@auxout{}\{
6080             \string\@writefile{brf}\{
6081                 \string\backcite{#1}\{
6082                     {\thepage}\{\@currentlabel}\{\@currentHref}\}
6083                 }\}
6084             }\}
6085         }\}
6086     \fi
6087     \@esphack
6088 \fi
6089 \fi
6090 }%
6091 \def\harvarditem{%
6092     \@ifnextchar[\{\@harvarditem\}\@harvarditem[\null]\}%
6093 }%
6094 \def\@harvarditem[#1]#2#3#4#5\par{%
6095     \item[]%
6096     \hyper@anchorstart{cite.#4}\relax\hyper@anchorend
6097     \if@filesw
6098         \begingroup
6099             \def\protect##1{\string ##1\space}%
6100             \ifthenelse{\equal{#1}\{\null\}}%
6101                 {\def\next{{#4}{#2}{#2}{#3}}}%
6102                 {\def\next{{#4}{#2}{#1}{#3}}}%
6103             \immediate\write\@auxout{\string\harvardcite\codeof\next}%
6104         \endgroup
6105     \fi
6106     \protect\hspace*{-\labelwidth}%
6107     \protect\hspace*{-\labelsep}%
6108     \ignorespaces
6109     #5%
6110     \ifHy@backref
6111         \newblock
6112         \backref{\csname br@#4\endcsname}%
6113     \fi
6114     \par
6115 }%

```

\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:

```

6116 \long\def\HAR@checkcitations#1#2#3#4{%
6117     \def\HAR@tempa{\hyper@@link[cite]\{\cite.#1\}{#2}\}%
6118     \expandafter\ifx\csname HAR@fn@#1\endcsname\HAR@tempa
6119         \def\HAR@tempa{\hyper@@link[cite]\{\cite.#1\}{#3}\}%
6120         \expandafter\ifx\csname HAR@an@#1\endcsname\HAR@tempa
6121             \def\HAR@tempa{\hyper@@link[cite]\{\cite.#1\}{#4}\}%
6122             \expandafter\ifx\csname HAR@yr@#1\endcsname\HAR@tempa
6123                 \else
6124                     \@tempwattrue
6125                 \fi
6126             \else
6127                 \@tempwattrue
6128             \fi

```

```

6129     \else
6130         \@tempswatrue
6131     \fi
6132 }%
6133 }%

6134 }{}

```

## 37.2 Package chicago

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

```

6135 \@ifpackageloaded{chicago}{%

```

`\citeN`

```

6136 \def\citeN{%
6137     \def\@citesep{-1000}%
6138     \def\@cite##1##2{##1}%
6139     \def\citeauthoryear##1##2##3{##1 (##3\@cite@opt)}%
6140     \@citedata@opt
6141 }%

```

`\shortciteN`

```

6142 \def\shortciteN{%
6143     \def\@citesep{-1000}%
6144     \def\@cite##1##2{##1}%
6145     \def\citeauthoryear##1##2##3{##2 (##3\@cite@opt)}%
6146     \@citedata@opt
6147 }%

```

`\@citedata@opt`

```

6148 \def\@citedata@opt{%
6149     \let\@cite@opt\empty
6150     \@ifnextchar [{%
6151         \@tempswatrue
6152         \@citedatax@opt
6153     }{%
6154         \@tempswafalse
6155         \@citedatax[]%
6156     }%
6157 }%

```

`\@citedatax@opt`

```

6158 \def\@citedatax@opt[#1]{%
6159     \def\@cite@opt{, #1}%
6160     \@citedatax[{#1}]%
6161 }%

6162 }{}

```

## 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.

```

6163 \def\Hy@EveryPageAnchor{%
6164   \Hy@DistillerDestFix
6165   \ifHy@pageanchor
6166     \ifHy@hypertextnames
6167       \ifHy@plainpages
6168         \def\Hy@TempPageAnchor{\hyper@@anchor{page.\the\c@page}}%
6169       \else
6170         \begingroup
6171         \let\@number\@firstofone
6172         \Hy@unicodedefalse
6173         \pdfstringdef\@the@H@page{\the@H@page}%
6174       \endgroup
6175       \def\Hy@TempPageAnchor{\hyper@@anchor{page.\@the@H@page}}%
6176     \fi
6177   \else
6178     \Hy@GlobalStepCount\Hy@pagecounter
6179     \def\Hy@TempPageAnchor{\hyper@@anchor{page.\the\Hy@pagecounter}}%
6180   \fi
6181   \vbox to 0pt{%
6182     \kern\voffset
6183     \kern\topmargin
6184     \kern-1bp\relax
6185     \hbox to 0pt{%
6186       \kern\hoffset
6187       \kern\ifodd\value{page}%
6188         \oddsidemargin
6189       \else
6190         \evensidemargin
6191       \fi
6192       \kern-1bp\relax
6193       \Hy@TempPageAnchor
6194     \hss
6195   }%
6196   \vss
6197 }%
6198 \fi
6199 }
6200 \g@addto@macro\Hy@EveryPageBoxHook{%
6201   \Hy@EveryPageAnchor
6202 }

```

## 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.

```

6203 \def\addcontentsline#1#2#3{% toc extension, type, tag
6204   \begingroup
6205     \let\label\@gobble
6206     \ifx\@currentHref\@empty
6207       \Hy@Warning{%
6208         No destination for bookmark of \string\addcontentsline,%

```

```

6209         \MessageBreak destination is added%
6210     }%
6211     \phantomsection
6212 \fi
6213 \expandafter\ifx\csname toplevel@#2\endcsname\relax
6214     \begingroup
6215         \def\Hy@tempa{#1}%
6216         \ifx\Hy@tempa\Hy@bookmarkstype
6217             \Hy@WarningNoLine{%
6218                 bookmark level for unknown #2 defaults to 0%
6219             }%
6220         \else
6221             \Hy@Info{bookmark level for unknown #2 defaults to 0}%
6222         \fi
6223     \endgroup
6224 \expandafter\gdef\csname toplevel@#2\endcsname{0}%
6225 \fi
6226 \edef\Hy@toclevel{\csname toplevel@#2\endcsname}%
6227 \Hy@writebookmark{\csname the#2\endcsname}%
6228     {#3}%
6229     {\@currentHref}%
6230     {\Hy@toclevel}%
6231     {#1}%
6232 \ifHy@verbose
6233     \def\Hy@tempa{#3}%
6234     \@onelevel@sanitize\Hy@tempa
6235     \typeout{pdfTeX: bookmark at \the\inputlineno: %
6236         {\csname the#2\endcsname}%
6237         {\Hy@tempa}%
6238         {\@currentHref}%
6239         {\Hy@toclevel}%
6240         {#1}%
6241     }%
6242 \fi
6243 \addtocontents{#1}{%
6244     \protect\contentsline{#2}{#3}{\thepage}{\@currentHref}%
6245 }%
6246 \endgroup
6247 }
6248 \def\contentsline#1#2#3#4{%
6249     \ifx\#4\%
6250         \csname l@#1\endcsname{#2}{#3}%
6251     \else
6252         \ifcase\Hy@linktoc % none
6253             \csname l@#1\endcsname{#2}{#3}%
6254         \or % section
6255             \csname l@#1\endcsname{%
6256                 \hyper@linkstart{link}{#4}{#2}\hyper@linkend
6257             }{#3}%
6258         \or % page
6259             \csname l@#1\endcsname{#2}{#3}%
6260             \hyper@linkstart{link}{#4}{#3}\hyper@linkend
6261         }%
6262     \else % all
6263         \csname l@#1\endcsname{%
6264             \hyper@linkstart{link}{#4}{#2}\hyper@linkend
6265         }{#3}%

```

```

6266      \hyper@linkstart{link}{#4}{#3}\hyper@linkend
6267      }%
6268      \fi
6269      \fi
6270 }

6271 </package>
6272 <*check>
6273 \checklatex
6274 \checkcommand\def\addcontentsline#1#2#3{%
6275   \addtocontents{#1}{\protect\contentsline{#2}{#3}{\thepage}}%
6276 }
6277 \checkcommand\def\contentsline#1{\csname l@#1\endcsname}
6278 </check>
6279 <*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.

```

6280 \let\H@definecounter\@definecounter
6281 \def\@definecounter#1{%
6282   \H@definecounter{#1}%
6283   \expandafter\def\csname theH#1\endcsname{\arabic{#1}}%
6284 }

```

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.

```

6285 \let\H@newctr\@newctr
6286 \def\@newctr#1[#2]{%
6287   \H@newctr#1[#2]%
6288   \expandafter\def\csname theH#1\endcsname{%
6289     \csname the\@ifundefined{theH#2}{H}{H}#2\endcsname.\arabic{#1}%
6290   }%
6291 }

```

## 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.

```

6292 \@ifpackageloaded{amsmath}{%
6293   \def\Hy@make@anchor{%
6294     \Hy@GlobalStepCount\Hy@linkcounter
6295     \xdef\@currentHref{AMS.\the\Hy@linkcounter}%
6296     \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
6297   }%
6298   \def\Hy@make@df@tag@#1{%
6299     \gdef\df@tag{%
6300       \maketag@@@{\Hy@make@anchor#1}%
6301     \def\@currentlabel{#1}%
6302   }%

```

```

6303 }%
6304 \def\Hy@make@df@tag@@@#1{%
6305   \gdef\df@tag{%
6306     \tagform@{\Hy@make@anchor#1}%
6307     \toks@{\xp{\p@equation{#1}}}%
6308     \edef\@currentlabel{\the\toks@}%
6309   }%
6310 }%
6311 \let\HyOrg@make@df@tag@@\make@df@tag@@
6312 \let\HyOrg@make@df@tag@@@make@df@tag@@@
6313 \let\make@df@tag@@\Hy@make@df@tag@@
6314 \let\make@df@tag@@@Hy@make@df@tag@@@
6315 }{}

```

Only play with `\seteqlebal` if we are using pdf<sub>tex</sub>. Other drivers cause problems; requested by Michael Downes (AMS).

```

6316 \ifpackagewith{hyperref}{pdftex}{%
6317   \let\H@seteqlabel\@seteqlabel
6318   \def\@seteqlabel#1{%
6319     \H@seteqlabel{#1}%
6320     \xdef\@currentHref{AMS.\the\Hy@linkcounter}%
6321     \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
6322   }%
6323 }{}

```

This code I simply cannot remember what I was trying to achieve. The final result seems to do nothing anyway.

```

\let\H@tagform@tagform@
\def\tagform@#1{%
  \maketag@@{\hyper@anchor{\@currentHref}%
    {\ignorespaces#1\unskip}}}%
}
\def\eqref#1{\textup{\H@tagform@{\ref{#1}}}}

```

#### 41.1 `\@addtoreset` and `\numberwithin` patches

`\@addtoreset` puts a counter to the reset list of another counter. After a reset the counter starts again with perhaps already used values. Therefore the hyperref version of the counter print command `\theHcounter` is redefined in order to add the parent counter.

```

6324 \let\HyOrg@addtoreset\@addtoreset
6325 \def\@addtoreset#1#2{%
6326   \HyOrg@addtoreset{#1}{#2}%
6327   \expandafter\xdef\csname theH#1\endcsname{%
6328     \expandafter\noexpand
6329     \csname the\@ifundefined{theH#2}{H#2}\endcsname
6330     .\noexpand\the\noexpand\value{#1}%
6331   }%
6332 }

```

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

```

6333 </package>
6334 <*check>
6335 \checkpackage{amsmath}[1999/12/14 - 2000/06/06]
6336 \checkcommand\newcommand{\numberwithin}[3][\varabic]{%
6337   \@ifundefined{c@#2}{\@nocounterr{#2}}{%
6338     \@ifundefined{c@#3}{\@nocnterr{#3}}{%

```

```

6339     \@addtoreset{#2}{#3}%
6340     \@xp\xdef\csname the#2\endcsname{%
6341         \@xp\@nx\csname the#3\endcsname .\@nx#1{#2}%
6342     }%
6343 }%
6344 }%
6345 }%
6346 \</check>
6347 \<*package>
6348 \<@ifpackageloaded{amsmath}{%
6349     \<@ifpackagelater{amsmath}{1999/12/14}{%
6350         \renewcommand*{\numberwithin}[3][\arabic]{%
6351             \<@ifundefined{c@#2}{\@nocounterr{#2}}{%
6352                 \<@ifundefined{c@#3}{\@nocnterr{#3}}{%
6353                     \HyOrg@addtoreset{#2}{#3}%
6354                     \@xp\xdef\csname the#2\endcsname{%
6355                         \@xp\@nx\csname the#3\endcsname .\@nx#1{#2}%
6356                     }%
6357                     \@xp\xdef\csname theH#2\endcsname{%
6358                         \@xp\@nx
6359                         \csname the\@ifundefined{theH#3}{}H#3\endcsname
6360                         .\@nx#1{#2}%
6361                     }%
6362                 }%
6363             }%
6364         }%
6365     }{%
6366         \Hy@WarningNoLine{%
6367             \string\numberwithin\space of package ‘amsmath’ %
6368             only fixed\MessageBreak
6369             for version 2000/06/06 v2.12 or newer%
6370         }%
6371     }%
6372 }{}

```

## 42 Included figures

Simply intercept the low level graphics package macro.

```

6373 \ifHy@figures
6374   \let\Hy@Gin@setfile\Gin@setfile
6375   \def\Gin@setfile#1#2#3{%
6376       \hyperimage{#3}{\Hy@Gin@setfile{#1}{#2}{#3}}%
6377   }%
6378 \fi
6379 \Hy@DisableOption{hyperfigures}

```

## 43 hyperindex entries

Internal command names are prefixed with \HyInd@.

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

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

```

6380 \ifHy@hyperindex
6381   \def\HyInd@ParenLeft{()}%
6382   \def\HyInd@ParenRight{)}%
6383   \def\hyperindexformat#1#2{%
6384     \let\HyOrg@hyperpage\hyperpage
6385     \let\hyperpage\@firstofone
6386     #1{\HyOrg@hyperpage{#2}}%
6387     \let\hyperpage\HyOrg@hyperpage
6388   }%
6389   \Hy@nextfalse
6390   \@ifpackageloaded{multind}{\Hy@nexttrue}{}%
6391   \@ifpackageloaded{index}{\Hy@nexttrue}{}%
6392   \@ifpackageloaded{amsmidx}{\Hy@nexttrue}{}%
6393   \begingroup
6394     \lccode'\|=\expandafter'\HyInd@EncapChar\relax
6395     \lccode'\|=\'\relax
6396   \lowercase{\endgroup
6397     \ifHy@next
6398       \let\HyInd@org@wrindex\@wrindex
6399       \def\@wrindex#1#2{\HyInd@wrindex{#1}#2||\}%
6400       \def\HyInd@wrindex#1#2|#3|#4\{\%
6401         \ifx\|#3\%
6402           \HyInd@org@wrindex{#1}{#2|hyperpage}%
6403         \else
6404           \HyInd@@@wrindex{#1}{#2}#3\%
6405         \fi
6406       }%
6407       \def\HyInd@@@wrindex#1#2#3#4\{\%
6408         \def\Hy@temp@A{#3}%
6409         \ifcase0\ifx\Hy@temp@A\HyInd@ParenLeft 1\fi
6410           \ifx\Hy@temp@A\HyInd@ParenRight 1\fi
6411           \relax
6412         \HyInd@org@wrindex{#1}{\%
6413           #2|hyperindexformat{/#3#4}%
6414         }%
6415       \else
6416         \ifx\|#4\%
6417           \ifx\Hy@temp@A\HyInd@ParenRight
6418             \HyInd@org@wrindex{#1}{#2|#3}%
6419           \else
6420             \HyInd@org@wrindex{#1}{#2|#3hyperpage}%
6421           \fi
6422         \else
6423           \HyInd@org@wrindex{#1}{\%
6424             #2|#3hyperindexformat{/#4}%
6425           }%
6426         \fi
6427       \fi
6428     }%
6429   \else
6430     \def\@wrindex#1{\@wrindex#1||\}%
6431     \def\@wrindex#1|#2|#3\{\%
6432       \if@filesw
6433         \ifx\|#2\%
6434           \protected@write\@indexfile{}\%

```

```

6435         \string\indexentry{#1|hyperpage}{\thepage}%
6436     }%
6437     \else
6438         \HyInd@@@wrindex{#1}#2\%
6439     \fi
6440 \fi
6441 \endgroup
6442 \@esphack
6443 }%
6444 \def\HyInd@@@wrindex#1#2#3\{%
6445     \def\Hy@temp@A{#2}%
6446     \ifcase0\ifx\Hy@temp@A\HyInd@ParenLeft 1\fi
6447         \ifx\Hy@temp@A\HyInd@ParenRight 1\fi
6448         \relax
6449     \protected@write\@indexfile{}\{%
6450         \string\indexentry{%
6451             #1|hyperindexformat{/#2#3}%
6452         }\thepage}%
6453     }%
6454     \else
6455         \ifx\#3\%
6456             \ifx\Hy@temp@A\HyInd@ParenRight
6457                 \protected@write\@indexfile{}\{%
6458                     \string\indexentry{#1|#2}{\thepage}%
6459                 }%
6460             \else
6461                 \protected@write\@indexfile{}\{%
6462                     \string\indexentry{#1|#2hyperpage}{\thepage}%
6463                 }%
6464             \fi
6465         \else
6466             \protected@write\@indexfile{}\{%
6467                 \string\indexentry{%
6468                     #1|#2hyperindexformat{/#3}%
6469                 }\thepage}%
6470             }%
6471         \fi
6472     \fi
6473 }%
6474 \fi
6475 }%
6476 \fi
6477 \Hy@DisableOption{hyperindex}
6478 \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.

```

6479 \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.

```

6480 \def\hyperpage#1{%
6481     \HyInd@hyperpage#1\nohyperpage{}\@nil
6482 }
6483 \def\HyInd@hyperpage#1\nohyperpage#2#3\@nil{%
6484     \HyInd@@@hyperpage{#1}%
6485     #2%

```

```

6486 \def\Hy@temp{#3}%
6487 \ifx\Hy@temp\@empty
6488 \else
6489 \Hy@ReturnAfterFi{%
6490 \HyInd@hyperpage#3\@nil
6491 }%
6492 \fi
6493 }
6494 \def\HyInd@@hyperpage#1{\@hyperpage#1----\}
6495 \def\@hyperpage#1--#2--#3\{\%
6496 \ifx\#2\%
6497 \@commahyperpage{#1}%
6498 \else
6499 \HyInd@pagelink{#1}--\HyInd@pagelink{#2}%
6500 \fi
6501 }
6502 \def\@commahyperpage#1{\@commahyperpage#1, ,\}
6503 \def\@commahyperpage#1, #2,#3\{\%
6504 \ifx\#2\%
6505 \HyInd@pagelink{#1}%
6506 \else
6507 \HyInd@pagelink{#1}, \HyInd@pagelink{#2}%
6508 \fi
6509 }

```

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

```

6510 \def\HyInd@pagelink#1{%
6511 \begingroup
6512 \toks@={}%
6513 \HyInd@removespaces#1 \@nil
6514 \endgroup
6515 }
6516 \def\HyInd@removespaces#1 #2\@nil{%
6517 \toks@=\expandafter{\the\toks@#1}%
6518 \ifx\#2\%
6519 \edef\x{\the\toks@}%
6520 \ifx\x\@empty
6521 \else
6522 \hyperlink{page.\the\toks@}{\the\toks@}%
6523 \fi
6524 \else
6525 \Hy@ReturnAfterFi{%
6526 \HyInd@removespaces#2\@nil
6527 }%
6528 \fi
6529 }

```

## 44 Compatibility with foiltex

```

6530 \@ifclassloaded{foils}{%
6531 \providecommand*\ext@table{lot}%
6532 \providecommand*\ext@figure{lof}%
6533 }{}

```

## 45 Compatibility with seminar slide package

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

```
6534 \@ifclassloaded{seminar}{%
6535   \Hy@seminarslidestrue\newcommand\theHslide{\arabic{slide}}%
6536 }{%
6537   \Hy@seminarslidesfalse
6538 }
6539 \@ifpackageloaded{slidesec}{%
6540   \newcommand\theHslidesection {\arabic{slidesection}}%
6541   \newcommand\theHslidesubsection{%
6542     \theHslidesection.\arabic{slidesubsection}}%
6543 }%
6544 \def\slide@heading[#1]#2{%
6545   \H@refstepcounter{slidesection}%
6546   \@addtoreset{slidesubsection}{slidesection}%
6547   \addtocontents{los}{%
6548     \protect\l@slide{\the\c@slidesection}{\ignorespaces#1}%
6549     {\@SCTR}{\slideheading.\theslidesection}}%
6550 }%
6551 \def\Hy@tempa{#2}%
6552 \ifx\Hy@tempa\@empty
6553 \else
6554   {%
6555     \edef\@currentlabel{%
6556       \csname p@slidesection\endcsname\theslidesection
6557     }%
6558     \makeslideheading{#2}%
6559   }%
6560 \fi
6561 \gdef\theslideheading{#1}%
6562 \gdef\theslidesubheading{}%
6563 \ifHy@bookmarksnumbered
6564   \def\Hy@slidetitle{\theslidesection\space #1}%
6565 \else
6566   \def\Hy@slidetitle{#1}%
6567 \fi
6568 \ifHy@hypertextnames
6569   \ifHy@naturalnames
6570     \hyper@@anchor{slideheading.\theslidesection}{\relax}%
6571     \Hy@writebookmark
6572       {\theslidesection}%
6573       {\Hy@slidetitle}%
6574       {slideheading.\theslidesection}%
6575       {1}%
6576       {toc}%
6577   \else
6578     \hyper@@anchor{slideheading.\theHslidesection}{\relax}%
6579     \Hy@writebookmark
6580       {\theslidesection}%
6581       {\Hy@slidetitle}%
6582       {slideheading.\theHslidesection}%
6583       {1}%
6584       {toc}%
6585   \fi
6586 \else
```

```

6587 \Hy@GlobalStepCount\Hy@linkcounter
6588 \hyper@@anchor{slideheading.\the\Hy@linkcounter}{\relax}%
6589 \Hy@writebookmark
6590 {\theslidesubsection}%
6591 {\Hy@slidetitle}%
6592 {slideheading.\the\Hy@linkcounter}%
6593 {1}%
6594 {toc}%
6595 \fi
6596 }%
6597 \def\slide@subheading[#1]#2{%
6598 \H@refstepcounter{slidesubsection}%
6599 \addtocontents{los}{%
6600 \protect\l@subslide{\the\c@slidesubsection}{\ignorespaces#1}%
6601 {\SCTR}{slideheading.\theslidesubsection}%
6602 }%
6603 \def\Hy@tempa{#2}%
6604 \ifx\Hy@tempa\@empty
6605 \else
6606 {%
6607 \edef\@currentlabel{%
6608 \csname p@slidesubsection\endcsname\theslidesubsection
6609 }%
6610 \makeslidesubheading{#2}%
6611 }%
6612 \fi
6613 \gdef\theslidesubheading{#1}%
6614 \ifHy@bookmarksnumbered
6615 \def\Hy@slidetitle{\theslidesubsection\space #1}%
6616 \else
6617 \def\Hy@slidetitle{#1}%
6618 \fi
6619 \ifHy@hypertextnames
6620 \ifHy@naturalnames
6621 \hyper@@anchor{slideheading.\theslidesubsection}{\relax}%
6622 \Hy@writebookmark
6623 {\theslidesubsection}%
6624 {\Hy@slidetitle}%
6625 {slideheading.\theslidesubsection}%
6626 {2}%
6627 {toc}%
6628 \else
6629 \hyper@@anchor{slideheading.\theHslidesubsection}{\relax}%
6630 \Hy@writebookmark
6631 {\theslidesubsection}%
6632 {\Hy@slidetitle}%
6633 {slideheading.\theHslidesubsection}%
6634 {2}%
6635 {toc}%
6636 \fi
6637 \else
6638 \Hy@GlobalStepCount\Hy@linkcounter
6639 \hyper@@anchor{slideheading.\the\Hy@linkcounter}{\relax}%
6640 \Hy@writebookmark
6641 {\theslidesubsection}%
6642 {\Hy@slidetitle}%
6643 {slideheading.\the\Hy@linkcounter}%

```

```

6644         {1}%
6645         {toc}%
6646     \fi
6647 }%
6648 \providecommand*{\listslidenamename}{List of Slides}%
6649 \def\listofslides{%
6650     \section*{%
6651         \listslidenamename
6652         \@mkboth{%
6653             \expandafter\MakeUppercase\listslidenamename
6654         }{%
6655             \expandafter\MakeUppercase\listslidenamename
6656         }%
6657     }%
6658     \def\l@slide##1##2##3##4{%
6659         \slide@undottedcline{%
6660             \slidenumberline{##3}{\hyperlink{##4}{##2}}}%
6661         }{}%
6662     }%
6663     \let\l@subslide\l@slide
6664     \@startlos
6665 }%
6666 \def\slide@contents{%
6667     \def\l@slide##1##2##3##4{%
6668         \slide@ccline{\slidenumberline{##3}{\hyperlink{##4}{##2}}}{##3}%
6669     }%
6670     \let\l@subslide\@gobblefour
6671     \@startlos
6672 }%
6673 \def\Slide@contents{%
6674     \def\l@slide##1##2##3##4{%
6675         \ifcase\lslide@flag
6676             \message{##1 ** \the\c@slidesection}%
6677             \ifnum##1>\c@slidesection
6678                 \def\lslide@flag{1}%
6679                 {%
6680                     \large
6681                     \slide@ccline{%
6682                         \slidenumberline{$\rightarrow\bullet$}%
6683                         {\hyperlink{##4}{##2}}}%
6684                     }{##3}%
6685                 }%
6686             \else
6687                 {%
6688                     \large
6689                     \slide@ccline{%
6690                         \slidenumberline{$\surd\;\bullet$}%
6691                         {\hyperlink{##4}{##2}}}%
6692                     }{##3}%
6693                 }%
6694             \fi
6695         \or
6696         \def\lslide@flag{2}%
6697         {%
6698             \large
6699             \slide@ccline{%
6700                 \slidenumberline{$\bullet$}%

```

```

6701         {\hyperlink{##4}{##2}}%
6702     }{##3}%
6703 }%
6704 \or
6705 {%
6706     \large
6707     \slide@cline{%
6708         \slidenumberline{$\bullet$}%
6709         {\hyperlink{##4}{##2}}%
6710     }{##3}%
6711 }%
6712 \fi
6713 }%
6714 \def\l@subslide##1##2##3##4{%
6715     \ifnum\lslide@flag=1 %
6716         \@undottedtocline{2}{3.8em}{3.2em}{\hyperlink{##4}{##2}}{}%
6717     \fi
6718 }%
6719 \def\lslide@flag{0}%
6720 \@startlos
6721 }%
6722 }{}

```

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.)

```

6723 \ifHy@texht
6724     \expandafter\endinput
6725 \fi
6726 \let\real@setref\@setref
6727 \def\@setref#1#2#3{% csname, extract group, refname
6728     \ifx#1\relax
6729         \protect\G@refundefinedtrue
6730         \nfss@text{\reset@font\bfseries ??}%
6731         \@latex@warning{%
6732             Reference ‘#3’ on page \thepage \space undefined%
6733         }%
6734     \else
6735         \expandafter\Hy@setref@link#1\@empty\@empty\@nil{#2}%
6736     \fi
6737 }

```

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

```

6738 \def\Hy@setref@link#1#2#3#4#5#6\@nil#7{%
6739     \begingroup
6740     \toks0={\hyper@@link{#5}{#4}}%
6741     \toks1=\expandafter{#7{#1}{#2}{#3}{#4}{#5}}%
6742     \edef\x{\endgroup
6743         \the\toks0 {\the\toks1 }%
6744     }%
6745     \x
6746 }
6747 \def\@pagesetref#1#2#3{% csname, extract macro, ref
6748     \ifx#1\relax
6749         \protect\G@refundefinedtrue
6750         \nfss@text{\reset@font\bfseries ??}%
6751         \@latex@warning{%

```

```

6752     Reference ‘#3’ on page \thepage \space undefined%
6753   }%
6754 \else
6755   \protect\hyper@@link
6756     {\expandafter\@fifthoffive#1}%
6757     {page.\expandafter\@secondoffive#1}%
6758     {\expandafter\@secondoffive#1}%
6759 \fi
6760 }

6761 </package>
6762 <*check>
6763 \checklatex
6764 \checkcommand\def\@setref#1#2#3{%
6765   \ifx#1\relax
6766     \protect\G@refundefinedtrue
6767     \nfss@text{\reset@font\bfseries ??}%
6768     \@latex@warning{%
6769       Reference ‘#3’ on page \thepage\space undefined%
6770     }%
6771   \else
6772     \expandafter#2#1\relax
6773   \fi
6774 }
6775 </check>
6776 <*package>

```

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

```

6777 \def\HyRef@StarSetRef#1{%
6778   \begin@group
6779     \Hy@safe@activestrue
6780     \edef\x{#1}%
6781     \@onelevel@sanitize\x
6782     \edef\x{\endgroup
6783       \noexpand\HyRef@@StarSetRef
6784       \expandafter\noexpand\csname r@\x\endcsname\x}%
6785   }%
6786   \x
6787 }

6788 \def\HyRef@@StarSetRef#1#2#3{%
6789   \ifx#1\@undefined
6790     \let#1\relax
6791   \fi
6792   \real@setref#1#3{#2}%
6793 }

6794 \def\@refstar#1{%
6795   \HyRef@StarSetRef{#1}\@firstoffive
6796 }

6797 \def\@pagerefstar#1{%
6798   \HyRef@StarSetRef{#1}\@secondoffive
6799 }

6800 \AtBeginDocument{%
6801   \@ifpackageloaded{varioref}{%
6802     \def\@Refstar#1{%
6803       \HyRef@StarSetRef{#1}\HyRef@MakeUppercaseFirstOfFive
6804     }%
6805     \def\HyRef@MakeUppercaseFirstOfFive#1#2#3#4#5{%

```

```

6806     \MakeUppercase#1%
6807   }%
6808   \DeclareRobustCommand*{\Ref}{%
6809     \@ifstar\@Refstar\HyRef@Ref
6810   }%
6811   \def\HyRef@Ref#1{%
6812     \hyperref[#{1}]{\Ref*{#1}}%
6813   }%
6814   \def\Vr@f#1{%
6815     \leavevmode\unskip\vref@space
6816     \hyperref[#{1}]{%
6817       \Ref*{#1}%
6818       \let\vref@space\nobreakspace
6819       \@vpageref[\unskip]{#1}%
6820     }%
6821   }%
6822   \def\vr@f#1{%
6823     \leavevmode\unskip\vref@space
6824     \begingroup
6825       \let\T@pageref\@pagerefstar
6826       \hyperref[#{1}]{%
6827         \ref*{#1}%
6828         \vpageref[\unskip]{#1}%
6829       }%
6830     \endgroup
6831   }%
6832 }{}%
6833 }
6834 \DeclareRobustCommand*{\autopageref}{%
6835   \@ifstar{%
6836     \HyRef@autopagerefname\pageref*%
6837   }\HyRef@autopageref
6838 }
6839 \def\HyRef@autopageref#1{%
6840   \hyperref[#{1}]{\HyRef@autopagerefname\pageref*{#1}}%
6841 }
6842 \def\HyRef@autopagerefname{%
6843   \@ifundefined{pageautorefname}{%
6844     \@ifundefined{pagename}{%
6845       \Hy@Warning{No autoref name for ‘page’}%
6846     }{%
6847       \pagename\nobreakspace
6848     }%
6849   }{%
6850     \pageautorefname\nobreakspace
6851   }%
6852 }
6853 \DeclareRobustCommand*{\autoref}{%
6854   \@ifstar{\HyRef@autoref\@gobbletwo}{\HyRef@autoref\hyper@@link}%
6855 }
6856 \def\HyRef@autoref#1#2{%
6857   \begingroup
6858     \Hy@safe@activetrue
6859     \expandafter\HyRef@autosetref\csname r@#2\endcsname{#2}{#1}%
6860   \endgroup
6861 }
6862 \def\HyRef@autosetref#1#2#3{% link command, csname, refname

```

```

6863 \HyRef@ShowKeysRef{#2}%
6864 \ifcase 0\ifx#1\relax 1\fi\ifx#1\Hy@varioref@undefined 1\fi\relax
6865 \edef\HyRef@thisref{%
6866 \expandafter\@fourthoffive#1\@empty\@empty\@empty
6867 }%
6868 \expandafter\HyRef@testreftype\HyRef@thisref.\.%
6869 \Hy@safe@activesfalse
6870 #3{%
6871 \expandafter\@fifthoffive#1\@empty\@empty\@empty
6872 }{%
6873 \expandafter\@fourthoffive#1\@empty\@empty\@empty
6874 }{%
6875 \HyRef@currentHtag
6876 \expandafter\@firstoffive#1\@empty\@empty\@empty
6877 \null
6878 }%
6879 \else
6880 \protect\G@refundefinedtrue
6881 \nfss@text{\reset@font\bfseries ??}%
6882 \@latex@warning{%
6883 Reference ‘#2’ on page \thepage\space undefined%
6884 }%
6885 \fi
6886 }
6887 \def\HyRef@testreftype#1.#2\{%
6888 \@ifundefined{#1autorefname}{%
6889 \@ifundefined{#1name}{%
6890 \HyRef@StripStar#1\*\@nil{#1}%
6891 \@ifundefined{\HyRef@name autorefname}{%
6892 \@ifundefined{\HyRef@name name}{%
6893 \def\HyRef@currentHtag{%
6894 \Hy@Warning{No autoref name for ‘#1’}%
6895 }{%
6896 \edef\HyRef@currentHtag{%
6897 \expandafter\noexpand\csname\HyRef@name name\endcsname
6898 \noexpand~%
6899 }%
6900 }%
6901 }{%
6902 \edef\HyRef@currentHtag{%
6903 \expandafter\noexpand\csname\HyRef@name autorefname\endcsname
6904 \noexpand~%
6905 }%
6906 }%
6907 }{%
6908 \edef\HyRef@currentHtag{%
6909 \expandafter\noexpand\csname#1name\endcsname
6910 \noexpand~%
6911 }%
6912 }%
6913 }{%
6914 \edef\HyRef@currentHtag{%
6915 \expandafter\noexpand\csname#1autorefname\endcsname
6916 \noexpand~%
6917 }%
6918 }%
6919 }

```

```

6920 \def\HyRef@StripStar#1*\#2\@nil#3{%
6921   \def\HyRef@name{#2}%
6922   \ifx\HyRef@name\HyRef@CaseStar
6923     \def\HyRef@name{#1}%
6924   \else
6925     \def\HyRef@name{#3}%
6926   \fi
6927 }
6928 \def\HyRef@CaseStar{*\\}
6929 \def\HyRef@currentHtag{}

```

Support for package showkeys.

\HyRef@ShowKeysRef

```

6930 \let\HyRef@ShowKeysRef\@gobble
6931 \def\HyRef@ShowKeysInit{%
6932   \begingroup\expandafter\expandafter\expandafter\endgroup
6933   \expandafter\ifx\csname SK@@label\endcsname\relax
6934   \else
6935     \ifx\SK@ref\@empty
6936     \else
6937       \def\HyRef@ShowKeysRef{%
6938         \SK@\SK@@ref
6939       }%
6940     \fi
6941   \fi
6942 }
6943 \@ifpackageloaded{showkeys}{%
6944   \HyRef@ShowKeysInit
6945 }{%
6946   \AtBeginDocument{%
6947     \@ifpackageloaded{showkeys}{%
6948       \HyRef@ShowKeysInit
6949     }{%
6950     }%
6951 }

```

Defaults for the names that \autoref uses.

```

6952 \providecommand*{\AMSautorefname}{\equationautorefname}
6953 \providecommand*{\Hfootnoteautorefname}{\footnoteautorefname}
6954 \providecommand*{\Itemautorefname}{\itemautorefname}
6955 \providecommand*{\itemautorefname}{item}
6956 \providecommand*{\equationautorefname}{Equation}
6957 \providecommand*{\footnoteautorefname}{footnote}
6958 \providecommand*{\itemautorefname}{item}
6959 \providecommand*{\figureautorefname}{Figure}
6960 \providecommand*{\tableautorefname}{Table}
6961 \providecommand*{\partautorefname}{Part}
6962 \providecommand*{\appendixautorefname}{Appendix}
6963 \providecommand*{\chapterautorefname}{chapter}
6964 \providecommand*{\sectionautorefname}{section}
6965 \providecommand*{\subsectionautorefname}{subsection}
6966 \providecommand*{\subsubsectionautorefname}{subsubsection}
6967 \providecommand*{\paragraphautorefname}{paragraph}
6968 \providecommand*{\subparagraphautorefname}{subparagraph}
6969 \providecommand*{\FancyVerbLineautorefname}{line}
6970 \providecommand*{\theoremautorefname}{Theorem}
6971 \providecommand*{\pageautorefname}{page}

```

6972  $\langle$ /package $\rangle$

## 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.

$\backslash$ Hy@pstringdef Therefore such strings should be passed through  $\backslash$ 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 $\TeX$  offers  $\backslash$ pdfescapestring.

```
6973  $\langle$ *pdf $\TeX$  | dvipdfm | vtex | pdfmarkbase | dviwindo $\rangle$ 
6974 \RequirePackage{pdf $\TeX$ cmds}[2009/04/10]
6975 \begingroup\expandafter\expandafter\expandafter\endgroup
6976 \expandafter\ifx\csname pdf@escapestring\endcsname\relax
6977   \begingroup
6978     \catcode'\!=0 %
6979     \@makeother\%
6980   \@firstofone{\endgroup
6981     |def|Hy@pstringdef#1#2{%
6982       |begingroup
6983         |edef~{|string~}%
6984         |xdef|Hy@gtemp{#2}%
6985       |endgroup
6986       |let#1|Hy@gtemp
6987       |@onelevel@sanitize#1%
6988       |edef#1{|expandafter|Hy@ExchangeBackslash#1\|@nil}%
6989       |edef#1{|expandafter|Hy@ExchangeLeftParenthesis#1(|@nil}%
6990       |edef#1{|expandafter|Hy@ExchangeRightParenthesis#1)|@nil}%
6991     }%
6992     |def|Hy@ExchangeBackslash#1\#2|@nil{%
6993       #1%
6994       |ifx|\#2\|}%
6995     |else
6996       \|%
6997       |Hy@ReturnAfterFi{%
6998         |Hy@ExchangeBackslash#2|@nil
6999       }%
7000     |fi
7001   }%
7002 }%
7003 \def\Hy@ExchangeLeftParenthesis#1(#2\@nil{%
7004   #1%
7005   \ifx\#2\|%
7006   \else
7007     \@backslashchar(%
7008     \Hy@ReturnAfterFi{%
7009       \Hy@ExchangeLeftParenthesis#2\@nil
7010     }%
7011   \fi
7012 }%
7013 \def\Hy@ExchangeRightParenthesis#1)#2\@nil{%
7014   #1%
7015   \ifx\#2\|%
```

```

7016 \else
7017 \backslashchar)%
7018 \Hy@ReturnAfterFi{%
7019 \Hy@ExchangeRightParenthesis#2\@nil
7020 }%
7021 \fi
7022 }%
7023 \else
7024 \def\Hy@pstringdef#1#2{%
7025 \begingroup
7026 \edef~{\string~}%
7027 \xdef\Hy@gtemp{\pdf@escapestring{#2}}%
7028 \endgroup
7029 \let#1\Hy@gtemp
7030 }%
7031 \fi
7032 </pdfTeX | dvipdfm | vTeX | pdfmarkbase | dviwindo>

```

## 46.2 pdfTeX

```

7033 <*pdfTeX>
7034 \providecommand*{\XR@ext}{pdf}
7035 \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`

```

7036 \let\Hy@pdfminorversion\relax
7037 \begingroup\expandafter\expandafter\expandafter\endgroup
7038 \expandafter\ifx\csname pdfminorversion\endcsname\relax
7039 \begingroup\expandafter\expandafter\expandafter\endgroup
7040 \expandafter\ifx\csname pdfoptionpdfminorversion\endcsname\relax
7041 \else
7042 \def\Hy@pdfminorversion{\pdfoptionpdfminorversion}%
7043 \fi
7044 \else
7045 \def\Hy@pdfminorversion{\pdfminorversion}%
7046 \fi
7047 \@ifundefined{Hy@pdfminorversion}{%
7048 \PackageInfo{hyperref}{%
7049 PDF version is not set, because pdfTeX is too old (<1.10a)%
7050 }%
7051 }{%
7052 \ifHy@ocgcolorlinks
7053 \ifnum\Hy@pdfminorversion<5 %
7054 \setkeys{Hyp}{pdfversion=1.5}%
7055 \fi
7056 \fi
7057 \ifHy@setpdfversion
7058 \ifnum\Hy@pdfminorversion=\Hy@pdfversion\relax
7059 \else
7060 \Hy@pdfminorversion=\Hy@pdfversion\relax
7061 \fi

```

```

7062 \PackageInfo{hyperref}{%
7063 \expandafter\string\Hy@pdfminorversion
7064 :=\number\Hy@pdfversion\space
7065 }%
7066 \fi
7067 \edef\Hy@pdfversion{\number\Hy@pdfminorversion}%
7068 }
7069 \Hy@DisableOption{pdfversion}%

7070 \ifHy@ocgcolorlinks
7071 \immediate\pdfobj{%
7072 <<%
7073 /Type/OCG%
7074 /Name(View)%
7075 /Usage<<%
7076 /Print<<%
7077 /PrintState/OFF%
7078 >>%
7079 /View<<%
7080 /ViewState/ON%
7081 >>%
7082 >>%
7083 >>%
7084 }%
7085 \edef\OBJ@OCG@view{\the\pdflastobj\space 0 R}%
7086 \immediate\pdfobj{%
7087 <<%
7088 /Type/OCG%
7089 /Name(Print)%
7090 /Usage<<%
7091 /Print<<%
7092 /PrintState/ON%
7093 >>%
7094 /View<<%
7095 /ViewState/OFF%
7096 >>%
7097 >>%
7098 >>%
7099 }%
7100 \edef\OBJ@OCG@print{\the\pdflastobj\space 0 R}%
7101 \immediate\pdfobj{%
7102 [%
7103 \OBJ@OCG@view\space\OBJ@OCG@print
7104 ]%
7105 }%
7106 \edef\OBJ@OCGs{\the\pdflastobj\space 0 R}%
7107 \pdfcatalog{%
7108 /OCProperties<<%
7109 /OCGs \OBJ@OCGs
7110 /D<<%
7111 /OFF[\OBJ@OCG@print]%
7112 /AS[%
7113 <<%
7114 /Event/View%
7115 /OCGs \OBJ@OCGs
7116 /Category[/View]%
7117 >>%
7118 <<%

```

```

7119         /Event/Print%
7120         /OCGs \OBJ@OCGs
7121         /Category[/Print]%
7122     >>%
7123     <<%
7124         /Event/Export%
7125         /OCGs \OBJ@OCGs
7126         /Category[/Print]%
7127     >>%
7128     ]%
7129     >>%
7130     >>%
7131 }%
7132 \begingroup
7133 \edef\x{\endgroup
7134 \pdfpageresources{
7135     /Properties<<%
7136     /OCView \OBJ@OCG@view
7137     /OCPrint \OBJ@OCG@print
7138     >>%
7139 }%
7140 }%
7141 \x
7142 \AtBeginDocument{%
7143     \def\Hy@colorlink#1{%
7144         \begingroup
7145         \ifHy@ocgcolorlinks
7146             \def\Hy@ocgcolor{#1}%
7147             \setbox0=\color@hbox
7148         \else
7149             \HyColor@UseColor#1%
7150         \fi
7151     }%
7152     \def\Hy@endcolorlink{%
7153         \ifHy@ocgcolorlinks
7154             \color@endbox
7155             \mbox{%
7156                 \pdfliteral page{/OC/OCPrint BDC}%
7157                 \rlap{\copy0}%
7158                 \pdfliteral page{EMC/OC/OCView BDC}%
7159                 \begingroup
7160                     \expandafter\HyColor@UseColor\Hy@ocgcolor
7161                 \box0 %
7162             \endgroup
7163             \pdfliteral page{EMC}%
7164         }%
7165         \fi
7166     \endgroup
7167 }%
7168 }%
7169 \else
7170 \Hy@DisableOption{ocgcolorlinks}%
7171 \fi

```

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

```

7172 \def\setpdflinkmargin#1{\pdflinkmargin#1}
7173 \ifx\pdfstartlink\undefined% less than version 14
7174 \let\pdfstartlink\pdfannotlink

```

```

7175 \let\pdflinkmargin\@tempdima
7176 \let\pdfxform\pdfform
7177 \let\pdflastxform\pdfastform
7178 \let\pdfrefxform\pdfreform
7179 \else
7180 \pdflinkmargin1pt %
7181 \fi

```

First set up the default linking

```
7182 \providecommand*\@pdfview{XYZ}
```

First define the anchors:

```

7183 \def\new@pdflink#1{%
7184 \ifHy@verbose
7185 \typeout{pdftex: define anchor at line \the\inputlineno: #1}%
7186 \fi
7187 \Hy@SaveLastskip
7188 \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
7189 \Hy@DestName\Hy@pstringDest\@pdfview
7190 \Hy@RestoreLastskip
7191 }
7192 \let\pdf@endanchor\@empty

```

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

```

7193 \def\Hy@DestName#1#2{%
7194 \pdfdest name{#1}#2\relax
7195 }

```

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.

```

7196 \providecommand*\@pdfborder{0 0 1}
7197 \providecommand*\@pdfborderstyle{}
7198 \def\Hy@undefinedname{UNDEFINED}
7199 \def\find@pdflink#1#2{%
7200 \leavevmode
7201 \protected@edef\Hy@testname{#2}%
7202 \ifx\Hy@testname\@empty
7203 \Hy@Warning{%
7204 Empty destination name,\MessageBreak
7205 using '\Hy@undefinedname'%
7206 }%
7207 \let\Hy@testname\Hy@undefinedname
7208 \else
7209 \Hy@pstringdef\Hy@testname{%
7210 \expandafter\HyperDestNameFilter\expandafter{\Hy@testname}%
7211 }%
7212 \fi
7213 \Hy@StartlinkName{%
7214 \ifHy@pdfa /F 4\fi
7215 \Hy@setpdfborder
7216 \ifx\@pdfhighlight\@empty
7217 \else
7218 /H\@pdfhighlight
7219 \fi
7220 \ifx\CurrentBorderColor\relax

```

```

7221     \else
7222         /C[\CurrentBorderColor]%
7223     \fi
7224 } \Hy@testname
7225 \expandafter \Hy@colorlink \csname @#1color\endcsname
7226 }
7227 \def \Hy@StartlinkName#1#2{%
7228     \pdfstartlink attr{#1}goto name{#2}\relax
7229 }
7230 \def \close@pdflink{\Hy@endcolorlink\pdfendlink}
7231 \def \hyper@anchor#1{\new@pdflink{#1}\anchor@spot\pdf@endanchor}
7232 \def \hyper@anchorstart#1{\new@pdflink{#1}\Hy@activeanchortrue}
7233 \def \hyper@anchorend{\pdf@endanchor\Hy@activeanchorfalse}
7234 \def \hyper@linkstart#1#2{%
7235     \ifundefined{@#1bordercolor}{%
7236         \let \CurrentBorderColor \relax
7237     }{%
7238         \edef \CurrentBorderColor{\csname @#1bordercolor\endcsname}%
7239     }%
7240     \find@pdflink{#1}{#2}%
7241 }
7242 \def \hyper@linkend{\close@pdflink}
7243 \def \hyper@link#1#2#3{%
7244     \ifundefined{@#1bordercolor}{%
7245         \let \CurrentBorderColor \relax
7246     }{%
7247         \edef \CurrentBorderColor{\csname @#1bordercolor\endcsname}%
7248     }%
7249     \find@pdflink{#1}{#2}#3%
7250     \close@pdflink
7251 }
7252 \let \CurrentBorderColor \@linkbordercolor
7253 \def \hyper@linkurl#1#2{%
7254     \begingroup
7255     \Hy@pstringdef \Hy@pstringURI{#2}%
7256     \hyper@chars
7257     \leavevmode
7258     \pdfstartlink
7259     attr{%
7260         \Hy@setpdfborder
7261         \ifx \@pdfhighlight \@empty
7262             \else
7263                 /H \@pdfhighlight
7264             \fi
7265         \ifx \@urlbordercolor \relax
7266             \else
7267                 /C [\@urlbordercolor]%
7268             \fi
7269     }%
7270     user{%
7271         /Subtype /Link%
7272         \ifHy@pdfa /F 4 \fi
7273         /A <<%
7274             /Type /Action%
7275             /S /URI%
7276             /URI (\Hy@pstringURI)%
7277         >>%

```

```

7278     }%
7279     \relax
7280     \Hy@colorlink\@urlcolor#1%
7281     \close@pdflink
7282 \endgroup
7283 }
7284 \def\hyper@linkfile#1#2#3{% anchor text, filename, linkname
7285   \begingroup
7286     \Hy@pstringdef\Hy@pstringF{#2}%
7287     \Hy@pstringdef\Hy@pstringD{#3}%
7288     \leavevmode
7289     \pdfstartlink
7290     attr{%
7291       \Hy@setpdfborder
7292       \ifx\@pdfhighlight\@empty
7293       \else
7294         /H\@pdfhighlight
7295       \fi
7296       \ifx\@filebordercolor\relax
7297       \else
7298         /C[\@filebordercolor]%
7299       \fi
7300     }%
7301     user {%
7302       /Subtype/Link%
7303       \ifHy@pdfa /F 4\fi
7304       /A<<%
7305         /F(\Hy@pstringF)%
7306         /S/GoToR%
7307         \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}

```

```

7308     \ifx\#3\%
7309     /D[0 \@pdfstartview]%
7310     \else
7311     /D(\Hy@pstringD)%
7312     \fi
7313     >>%
7314     }%
7315     \relax
7316     \Hy@colorlink\@filecolor#1%
7317     \close@pdflink
7318 \endgroup
7319 }
7320 \def\@hyper@launch run:#1\#2#3{% filename, anchor text linkname
7321   \begingroup
7322     \Hy@pstringdef\Hy@pstringF{#1}%
7323     \Hy@pstringdef\Hy@pstringP{#3}%

```

```

7324 \leavevmode
7325 \pdfstartlink
7326   attr{%
7327     \Hy@setpdfborder
7328     \ifx\@pdfhighlight\@empty
7329     \else
7330       /H\@pdfhighlight
7331     \fi
7332     \ifx\@runbordercolor\relax
7333     \else
7334       /C[\@runbordercolor]%
7335     \fi
7336   }%
7337   user {%
7338     /Subtype/Link%
7339     \ifHy@pdfa /F 4\fi
7340     /A<<%
7341       /F(\Hy@pstringF)%
7342       /S/Launch%
7343       \Hy@SetNewWindow
7344       \ifx\#3\%
7345       \else
7346         /Win<</P(\Hy@pstringP)/F(\Hy@pstringF)>>%
7347       \fi
7348     >>%
7349   }%
7350   \relax
7351   \Hy@colorlink\@runcolor#2%
7352   \close@pdflink
7353 \endgroup
7354 }

```

\@pdfproducer

```

7355 \ifx\@pdfproducer\relax
7356 \begin{group}\expandafter\expandafter\expandafter\endgroup
7357 \expandafter\ifx\csname luatexversion\endcsname\relax
7358   \def\@pdfproducer{pdfTeX}%
7359   \ifx\@eTeXversion\@undefined
7360   \else
7361     \ifx\@eTeXversion\relax
7362     \else
7363       \ifnum\@eTeXversion>0 %
7364       \def\@pdfproducer{pdfTeX}%
7365     \fi
7366   \fi
7367 \fi
7368 \ifx\pdfTeXversion\@undefined
7369 \else
7370   \ifnum\pdfTeXversion<100 %
7371   \edef\@pdfproducer{%
7372     \@pdfproducer
7373     \the\pdfTeXversion.\pdfTeXrevision
7374   }%
7375 \else
7376   \ifnum\pdfTeXversion<130 %
7377   \edef\@pdfproducer{%
7378     \@pdfproducer-

```

```

7379         \expandafter\@car\the\pdfTeXversion\@empty\@nil.%
7380         \expandafter\@cdr\the\pdfTeXversion\@empty\@nil
7381         \pdfTeXrevision
7382     }%
7383 \else
7384     \ifnum\pdfTeXversion<140 %
7385     \else
7386         \def\@pdfproducer{pdfTeX}%
7387     \fi
7388     \edef\@pdfproducer{%
7389         \@pdfproducer-%
7390         \expandafter\@car\the\pdfTeXversion\@empty\@nil.%
7391         \expandafter\@cdr\the\pdfTeXversion\@empty\@nil.%
7392         \pdfTeXrevision
7393     }%
7394 \fi
7395 \fi
7396 \fi
7397 \else
7398     \begingroup
7399         \count@=\luatexversion
7400         \divide\count@ by 100 %
7401         \edef\x{\the\count@}%
7402         \count@=-\x\relax
7403         \multiply\count@ by 100 %
7404         \advance\count@ by \luatexversion
7405         \edef\x{\endgroup
7406             \def\noexpand\@pdfproducer{%
7407                 LuaTeX-\x.\the\count@.\luatexrevision
7408             }%
7409         }%
7410     \x
7411 \fi
7412 \fi

```

\PDF@SetupDox

```

7413 \def\PDF@SetupDoc{%
7414     \ifx\@pdfpagescrop\@empty
7415     \else
7416         \edef\process@me{%
7417             \pdfpagesattr={%
7418                 /CropBox[\@pdfpagescrop]%
7419                 \expandafter\ifx\expandafter\\the\pdfpagesattr\\%
7420                 \else
7421                     ^^J\the\pdfpagesattr
7422                 \fi
7423             }%
7424         }%
7425         \process@me
7426     \fi
7427     \Hy@pstringdef\Hy@pstringB{\@baseurl}%
7428     \pdfcatalog{%
7429         /PageMode/\@pdfpagemode
7430         \ifx\@baseurl\@empty
7431         \else
7432             /URI<</Base(\Hy@pstringB)>>%
7433         \fi

```

```

7434 }%
7435 \ifx\@pdfstartpage\@empty
7436 \else
7437   \ifx\@pdfstartview\@empty
7438   \else
7439     openaction goto page\@pdfstartpage{\@pdfstartview}%
7440   \fi
7441 \fi
7442 \edef\Hy@temp{%
7443   \ifHy@toolbar\else /HideToolbar true\fi
7444   \ifHy@menubar\else /HideMenubar true\fi
7445   \ifHy>windowui\else /HideWindowUI true\fi
7446   \ifHy@fitwindow /FitWindow true\fi
7447   \ifHy@centerwindow /CenterWindow true\fi
7448   \ifHy@displaydoctitle /DisplayDocTitle true\fi
7449   \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
7450   \Hy@UseNameKey{Direction}\@pdfdirection
7451   \Hy@UseNameKey{ViewArea}\@pdfviewarea
7452   \Hy@UseNameKey{ViewClip}\@pdfviewclip
7453   \Hy@UseNameKey{PrintArea}\@pdfprintarea
7454   \Hy@UseNameKey{PrintClip}\@pdfprintclip
7455   \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
7456   \Hy@UseNameKey{Duplex}\@pdfduplex
7457   \ifx\@pdfpicktraybypdfsize\@empty
7458   \else
7459     /PickTrayByPDFSize \@pdfpicktraybypdfsize
7460   \fi
7461   \ifx\@pdfprintpagerange\@empty
7462   \else
7463     /PrintPageRange[\@pdfprintpagerange]%
7464   \fi
7465   \ifx\@pdfnumcopies\@empty
7466   \else
7467     /NumCopies \@pdfnumcopies
7468   \fi
7469 }%
7470 \pdfcatalog{%
7471   \ifx\Hy@temp\@empty
7472   \else
7473     /ViewerPreferences<<\Hy@temp>>%
7474   \fi
7475   \Hy@UseNameKey{PageLayout}\@pdfpagelayout
7476   \ifx\@pdflang\@empty
7477   \else
7478     /Lang(\@pdflang)%
7479   \fi
7480 }%
7481 }

```

\PDF@FinishDoc

```

7482 \def\PDF@FinishDoc{%
7483   \Hy@UseMaketitleInfos
7484   \pdfinfo{%
7485     /Author(\@pdfauthor)%
7486     /Title(\@pdftitle)%
7487     /Subject(\@pdfsubject)%
7488     /Creator(\@pdfcreator)%

```

```

7489 \ifx\@pdfcreationdate\@empty
7490 \else
7491 /CreationDate(\@pdfcreationdate)%
7492 \fi
7493 \ifx\@pdfmoddate\@empty
7494 \else
7495 /ModDate(\@pdfmoddate)%
7496 \fi
7497 \ifx\@pdfproducer\relax
7498 \else
7499 /Producer(\@pdfproducer)%
7500 \fi
7501 /Keywords(\@pdfkeywords)%
7502 }%
7503 \Hy@DisableOption{pdfauthor}%
7504 \Hy@DisableOption{pdftitle}%
7505 \Hy@DisableOption{pdfsubject}%
7506 \Hy@DisableOption{pdfcreator}%
7507 \Hy@DisableOption{pdfcreationdate}%
7508 \Hy@DisableOption{pdfmoddate}%
7509 \Hy@DisableOption{pdfproducer}%
7510 \Hy@DisableOption{pdfkeywords}%
7511 }

```

`\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`.

```

7512 \def\hyper@pagetransition{%
7513 \ifx\@pdfpagetransition\relax
7514 \else
7515 \expandafter\Hy@RemoveTransPageAttr
7516 \the\pdfpageattr^^J/Trans{>>\END
7517 \ifx\@pdfpagetransition\@empty
7518 \else
7519 \edef\@processme{%
7520 \global\pdfpageattr{%
7521 \the\pdfpageattr
7522 ^^J/Trans << /S /\@pdfpagetransition\space >>%
7523 }%
7524 }%
7525 \@processme
7526 \fi
7527 \fi
7528 }

```

`\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.

```

7529 \gdef\Hy@RemoveTransPageAttr#1^^J/Trans#2#3>>#4\END{%
7530 \ifx\#2\%
7531 \global\pdfpageattr{#1}%
7532 \else
7533 \Hy@RemoveTransPageAttr#1#4\END
7534 \fi
7535 }

```

`\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`.

```

7536 \def\hyper@pageduration{%
7537   \ifx\@pdfpageduration\relax
7538   \else
7539     \expandafter\Hy@RemoveDurPageAttr\the\pdfpageattr^^J/Dur{} \END
7540     \ifx\@pdfpageduration\@empty
7541     \else
7542       \edef\@processme{%
7543         \global\pdfpageattr{%
7544           \the\pdfpageattr
7545             ^^J/Dur \@pdfpageduration\space
7546         }%
7547       }%
7548       \@processme
7549     \fi
7550   \fi
7551 }
```

`\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.

```

7552 \gdef\Hy@RemoveDurPageAttr#1^^J/Dur#2#3 #4\END{%
7553   \ifx\#2\%
7554     \global\pdfpageattr{#1}%
7555   \else
7556     \Hy@RemoveDurPageAttr#1#4\END
7557   \fi
7558 }
```

`\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).

```

7559 \def\hyper@pagehidden{%
7560   \ifHy@useHidKey
7561     \expandafter\Hy@RemoveHidPageAttr\the\pdfpageattr^^J/Hid{} \END
7562     \ifHy@pdfpagehidden
7563     \edef\@processme{%
7564       \global\pdfpageattr{%
7565         \the\pdfpageattr
7566           ^^J/Hid true % SPACE
7567       }%
7568     }%
7569     \@processme
7570   \fi
7571 \fi
7572 }
```

`\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.

```

7573 \gdef\Hy@RemoveHidPageAttr#1^^J/Hid#2#3 #4\END{%
7574   \ifx\#2\%
7575     \global\pdfpageattr{#1}%
7576   \else
7577     \Hy@RemoveHidPageAttr#1#4\END
7578   \fi
7579 }
```

```

7575 \global\pdfpageattr{#1}%
7576 \else
7577 \Hy@RemoveHidPageAttr#1#4\END
7578 \fi
7579 }

7580 \g@addto@macro\Hy@EveryPageHook{%
7581 \hyper@pagetransition
7582 \hyper@pageduration
7583 \hyper@pagehidden
7584 }

7585 \AtBeginDocument{%
7586 \ifHy@setpagesize
7587 \expandafter\@firstofone
7588 \else
7589 \expandafter\@gobble
7590 \fi
7591 {%
7592 \@ifclassloaded{seminar}{%
7593 \setlength{\pdfhorigin}{1truein}%
7594 \setlength{\pdfvorigin}{1truein}%
7595 \ifportrait
7596 \ifdim\paperwidth=\z@
7597 \else
7598 \setlength{\pdfpagewidth}{\strip@pt\paperwidth truept}%
7599 \fi
7600 \ifdim\paperheight=\z@
7601 \else
7602 \setlength{\pdfpageheight}{\strip@pt\paperheight truept}%
7603 \fi
7604 \else
7605 \ifdim\paperheight=\z@
7606 \else
7607 \setlength{\pdfpagewidth}{\strip@pt\paperheight truept}%
7608 \fi
7609 \ifdim\paperwidth=\z@
7610 \else
7611 \setlength{\pdfpageheight}{\strip@pt\paperwidth truept}%
7612 \fi
7613 \fi
7614 }{%
7615 \@ifundefined{stockwidth}{%
7616 \ifdim\paperwidth=\z@
7617 \else
7618 \setlength{\pdfpagewidth}{\paperwidth}%
7619 \fi
7620 \ifdim\paperheight=\z@
7621 \else
7622 \setlength{\pdfpageheight}{\paperheight}%
7623 \fi
7624 }{%
7625 \ifdim\stockwidth=\z@
7626 \else
7627 \setlength{\pdfpagewidth}{\stockwidth}%
7628 \fi
7629 \ifdim\stockheight=\z@
7630 \else
7631 \setlength{\pdfpageheight}{\stockheight}%

```

```

7632         \fi
7633     }%
7634 }%
7635 }%
7636 \Hy@DisableOption{setpagesize}%
7637 }
7638 \def\Acrobatmenu#1#2{%
7639 \Hy@Acrobatmenu{#1}{#2}{%
7640     \pdfstartlink
7641     attr{%
7642         \Hy@setpdfborder
7643         \ifx\@pdfhighlight\@empty
7644             \else
7645                 /H\@pdfhighlight
7646             \fi
7647         \ifx\@menubordercolor\relax
7648             \else
7649                 /C[\@menubordercolor]%
7650             \fi
7651         }%
7652     user{%
7653         /Subtype/Link%
7654         \ifHy@pdfa /F 4\fi
7655         /A<%
7656         /S/Named/N/#1%
7657     >>%
7658     }%
7659     \relax
7660     \Hy@colorlink\@menucolor#2%
7661     \close@pdflink
7662 }%
7663 }

```

#### 46.2.1 Fix for problem with different nesting levels

\AtBeginShipoutFirst adds an additional box layer around the first output page. This disturbs pdfTeX's low level link commands \pdfstartlink and \pdfendlink, if a link is broken across the first and second output page.

The problem could be fixed by replacing \AtBeginShipoutFirst, because the box layer is not necessary for pdfTeX—no \specials need to be inserted. However it's easier to add an additional box level for the pages after the first one. Also \AtBeginShipoutFirst could be invoked independently from hyperref.

```

7664 \def\Hy@FixNotFirstPage{%
7665 \gdef\Hy@FixNotFirstPage{%
7666     \setbox\AtBeginShipoutBox=\hbox{%
7667         \copy\AtBeginShipoutBox
7668     }%
7669 }%
7670 }
7671 \AtBeginShipout{\Hy@FixNotFirstPage}
7672 </pdfTeX>

```

### 46.3 hypertex

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

mands:

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

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

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

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

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

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

The *href* and *name* commands must be paired with an *end* command later in the T<sub>E</sub>X file — the T<sub>E</sub>X commands between the two ends of a pair form an *anchor* in the document. In the case of an *href* command, the *anchor* is to be highlighted in the *dvi* viewer, and when clicked on will cause the scene to shift to the destination specified by *href\_string*. The *anchor* associated with a name command represents a possible location to which other hypertext links may refer, either as local references (of the form href="#name\_string" with the *name\_string* identical to the one in the name command) or as part of a URL (of the form URL#name\_string). Here *href\_string* is a valid URL or local identifier, while name\_string could be any string at all: the only caveat is that ‘’ characters should be escaped with a backslash (\), and if it looks like a URL name it may cause problems.

```
7673 \*hypertex>
7674 \providecommand*{\XR@ext}{dvi}
7675 \def\PDF@FinishDoc{}
7676 \def\PDF@SetupDoc{%
7677   \ifx\@baseurl\@empty
7678   \else
7679     \special{html:<base href="\@baseurl">}%
7680   \fi
7681 }
7682 \def\hyper@anchor#1{%
7683   \Hy@SaveLastskip
7684   \begingroup
7685     \let\protect=\string
7686     \hyper@chars
7687     \special{html:<a name=%
7688       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
7689   \endgroup
7690   \Hy@activeanchortrue
7691   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
7692   \special{html:</a>}%
7693   \Hy@activeanchorfalse
7694   \Hy@RestoreLastskip
7695 }
7696 \def\hyper@anchorstart#1{%
7697   \Hy@SaveLastskip
7698   \begingroup
7699     \hyper@chars
7700     \special{html:<a name=%
```

```

7701      \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
7702 \endgroup
7703 \Hy@activeanchortrue
7704 }
7705 \def\hyper@anchorend{%
7706 \special{html:</a>}}%
7707 \Hy@activeanchorfalse
7708 \Hy@RestoreLastskip
7709 }
7710 \def\@urltype{url}
7711 \def\hyper@linkstart#1#2{%
7712 \expandafter\Hy@colorlink\csname @#1color\endcsname
7713 \def\Hy@tempa{#1}%
7714 \ifx\Hy@tempa\@urltype
7715 \special{html:<a href=\hyper@quote#2\hyper@quote>}}%
7716 \else
7717 \begingroup
7718 \hyper@chars
7719 \special{html:<a href=%
7720 \hyper@quote\#\HyperDestNameFilter{#2}\hyper@quote>}}%
7721 \endgroup
7722 \fi
7723 }
7724 \def\hyper@linkend{%
7725 \special{html:</a>}}%
7726 \Hy@endcolorlink
7727 }
7728 \def\hyper@linkfile#1#2#3{%
7729 \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\#3\\\else\##3\fi}%
7730 }
7731 \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.

```

7732 \leavevmode
7733 \ifHy@raiselinks
7734 \setbox\@tempboxa=\color@hbox #1\color@endbox
7735 \@linkdim\dp\@tempboxa
7736 \lower\@linkdim\hbox{%
7737 \hyper@chars
7738 \special{html:<a href=\hyper@quote#2\hyper@quote>}}%
7739 }%
7740 \Hy@colorlink\@urlcolor#1%
7741 \@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).

```

7742 \advance\@linkdim by -6.5\p@
7743 \raise\@linkdim\hbox{\special{html:</a>}}%
7744 \Hy@endcolorlink
7745 \else
7746 \begingroup
7747 \hyper@chars
7748 \special{html:<a href=\hyper@quote#2\hyper@quote>}}%
7749 \Hy@colorlink\@urlcolor#1%
7750 \special{html:</a>}}%

```

```

7751      \Hy@endcolorlink
7752      \endgroup
7753      \fi
7754 }

```

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

```

7755 \def\hyper@link#1#2#3{%
7756   \hyper@linkurl{#3}{\# \HyperDestNameFilter{#2}}}%
7757 }

7758 \def\hyper@image#1#2{%
7759   \begingroup
7760     \hyper@chars
7761     \special{html:<img src=\hyper@quote#1\hyper@quote>}%
7762   \endgroup
7763 }
7764 </hypertex>
7765 <*dviwindo>

```

## 46.4 dviwindo

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

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

```

7766 \providecommand*\XR@ext{dvi}
7767 \providecommand*\wwwbrowser{c:\string\netscape\string\netscape}
7768 \def\hyper@anchor#1{%
7769   \Hy@SaveLastskip
7770   \begingroup
7771     \let\protect=\string
7772     \special{mark: #1}%
7773   \endgroup
7774   \Hy@activeanchortrue
7775   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
7776   \Hy@activeanchorfalse
7777   \Hy@RestoreLastskip
7778 }
7779 \def\hyper@anchorstart#1{%
7780   \Hy@SaveLastskip
7781   \special{mark: #1}%
7782   \Hy@activeanchortrue
7783 }
7784 \def\hyper@anchorend{%
7785   \Hy@activeanchorfalse
7786   \Hy@RestoreLastskip
7787 }
7788 \def\hyper@linkstart#1#2{%
7789   \expandafter\Hy@colorlink\csname @#1color\endcsname
7790   \special{button: %
7791     10000000 %

```

```

7792 \number\baselineskip\space
7793 #2%
7794 }%
7795 }
7796 \def\hyper@linkend{%
7797 \Hy@endcolorlink
7798 }
7799 \def\hyper@link#1#2#3{%
7800 \setbox\@tempboxa=\color@hbox #3\color@endbox
7801 \leavevmode
7802 \ifHy@raiselinks
7803 \@linkdim\dp\@tempboxa
7804 \lower\@linkdim\hbox{%
7805 \special{button: %
7806 \number\wd\@tempboxa\space
7807 \number\ht\@tempboxa\space
7808 #2%
7809 }%
7810 \expandafter\Hy@colorlink\csname @#1color\endcsname#3%
7811 \Hy@endcolorlink
7812 }%
7813 \@linkdim\ht\@tempboxa
7814 \advance\@linkdim by -6.5\p@
7815 \raise\@linkdim\hbox{}%
7816 \else
7817 \special{button: %
7818 \number\wd\@tempboxa\space
7819 \number\ht\@tempboxa\space
7820 #2%
7821 }%
7822 \expandafter\Hy@colorlink\csname @#1color\endcsname#3%
7823 \Hy@endcolorlink
7824 \fi
7825 }
7826 \def\hyper@linkurl#1#2{%
7827 \begingroup
7828 \hyper@chars
7829 \leavevmode
7830 \setbox\@tempboxa=\color@hbox #1\color@endbox
7831 \ifHy@raiselinks
7832 \@linkdim\dp\@tempboxa
7833 \lower\@linkdim\hbox{%
7834 \special{button: %
7835 \number\wd\@tempboxa\space
7836 \number\ht\@tempboxa\space
7837 launch: \wwwbrowser\space
7838 #2%
7839 }%
7840 \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
7841 }%
7842 \@linkdim\ht\@tempboxa
7843 \advance\@linkdim by -6.5\p@
7844 \raise\@linkdim\hbox{}%
7845 \else
7846 \special{button: %
7847 \number\wd\@tempboxa\space
7848 \number\ht\@tempboxa\space

```

```

7849         launch: \wwwbrowser\space
7850         #2%
7851     }%
7852     \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
7853 \fi
7854 \endgroup
7855 }
7856 \def\hyper@linkfile#1#2#3{%
7857 \begingroup
7858 \hyper@chars
7859 \leavevmode
7860 \setbox\@tempboxa=\color@hbox #1\color@endbox
7861 \ifHy@raiselinks
7862 \@linkdim\dp\@tempboxa
7863 \lower\@linkdim\hbox{%
7864 \special{button: %
7865 \number\wd\@tempboxa\space
7866 \number\ht\@tempboxa\space
7867 #3,%
7868 file: #2%
7869 }%
7870 \Hy@colorlink\@filecolor#1\Hy@endcolorlink
7871 }%
7872 \@linkdim\ht\@tempboxa
7873 \advance\@linkdim by -6.5\p@
7874 \raise\@linkdim\hbox{}}%
7875 \else
7876 \special{button: %
7877 \number\wd\@tempboxa\space
7878 \number\ht\@tempboxa\space
7879 #3,%
7880 file: #2%
7881 }%
7882 \Hy@colorlink\@filecolor#1\Hy@endcolorlink
7883 \fi
7884 \endgroup
7885 }
7886 \ifx\@pdfproducer\relax
7887 \def\@pdfproducer{dviwindo + Distiller}%
7888 \fi
7889 \def\PDF@FinishDoc{%
7890 \Hy@UseMaketitleInfos
7891 \special{PDF: Keywords \@pdfkeywords}%
7892 \special{PDF: Title \@pdftitle}%
7893 \special{PDF: Creator \@pdfcreator}%
7894 \ifx\@pdfcreationdate\@empty
7895 \else
7896 \special{PDF: CreationDate \@pdfcreationdate}%
7897 \fi
7898 \ifx\@pdfmoddate\@empty
7899 \else
7900 \special{PDF: ModDate \@pdfmoddate}%
7901 \fi
7902 \special{PDF: Author \@pdfauthor}%
7903 \ifx\@pdfproducer\relax
7904 \else
7905 \special{PDF: Producer \@pdfproducer}%

```

```

7906 \fi
7907 \special{PDF: Subject \@pdfsubject}%
7908 \Hy@DisableOption{pdfauthor}%
7909 \Hy@DisableOption{pdftitle}%
7910 \Hy@DisableOption{pdfsubject}%
7911 \Hy@DisableOption{pdfcreator}%
7912 \Hy@DisableOption{pdfcreationdate}%
7913 \Hy@DisableOption{pdfmoddate}%
7914 \Hy@DisableOption{pdfproducer}%
7915 \Hy@DisableOption{pdfkeywords}%
7916 }
7917 \def\PDF@SetupDoc{%
7918   \ifx\@baseurl\@empty
7919   \else
7920     \special{PDF: Base \@baseurl}%
7921   \fi
7922   \ifx\@pdfpagescrop\@empty\else
7923     \special{PDF: BBox \@pdfpagescrop}%
7924   \fi
7925   \def\Hy@temp{%
7926     \ifx\@pdfstartpage\@empty
7927     \else
7928       \ifx\@pdfstartview\@empty
7929       \else
7930         \edef\Hy@temp{%
7931           ,Page=\@pdfstartpage
7932           ,View=\@pdfstartview
7933         }%
7934       \fi
7935     \fi
7936     \edef\Hy@temp{%
7937       \noexpand\pdfmark{%
7938         pdfmark=/DOCVIEW,%
7939         PageMode=/\@pdfpagemode
7940       }\Hy@temp
7941     }%
7942   }%
7943   \Hy@temp
7944   \ifx\@pdfpagescrop\@empty
7945   \else
7946     \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
7947   \fi
7948   \edef\Hy@temp{%
7949     \ifHy@toolbar\else /HideToolbar true\fi
7950     \ifHy@menubar\else /HideMenubar true\fi
7951     \ifHy>windowui\else /HideWindowUI true\fi
7952     \ifHy@fitwindow /FitWindow true\fi
7953     \ifHy@centerwindow /CenterWindow true\fi
7954     \ifHy@displaydoctitle /DisplayDocTitle true\fi
7955     \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
7956     \Hy@UseNameKey{Direction}\@pdfdirection
7957     \Hy@UseNameKey{ViewArea}\@pdfviewarea
7958     \Hy@UseNameKey{ViewClip}\@pdfviewclip
7959     \Hy@UseNameKey{PrintArea}\@pdfprintarea
7960     \Hy@UseNameKey{PrintClip}\@pdfprintclip
7961     \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
7962     \Hy@UseNameKey{Duplex}\@pdfduplex

```

```

7963 \ifx\@pdfpicktraybypdfsize\@empty
7964 \else
7965 /PickTrayByPDFSize \@pdfpicktraybypdfsize
7966 \fi
7967 \ifx\@pdfprintpagerange\@empty
7968 \else
7969 /PrintPageRange[\@pdfprintpagerange]%
7970 \fi
7971 \ifx\@pdfnumcopies\@empty
7972 \else
7973 /NumCopies \@pdfnumcopies
7974 \fi
7975 }%
7976 \pdfmark{pdfmark=/PUT,%
7977 Raw={%
7978 \string{Catalog\string}<<%
7979 \ifx\Hy@temp\@empty
7980 \else
7981 /ViewerPreferences<<\Hy@temp>>%
7982 \fi
7983 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
7984 \ifx\@pdflang\@empty
7985 \else
7986 /Lang(\@pdflang)%
7987 \fi
7988 >>%
7989 }%
7990 }%
7991 }
7992 </dviwindo>
7993 <*dvipdfm>

```

## 46.5 dvipdfm dvi to PDF converter

Provided by Mark Wicks (mwicks@kettering.edu)

```

7994 \providecommand*\XR@ext\{pdf}
7995 \Hy@setbreaklinks{true}
7996 \newsavebox\@pdfm@box
7997 \def\@pdfm@mark#1\{special{pdf:#1}}
7998 \def\@pdfm@dest#1{%
7999 \Hy@SaveLastskip
8000 \begingroup
8001 \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
8002 \def\x{XYZ}%
8003 \ifx\x\@pdfview
8004 \def\x{XYZ @xpos @ypos null}%
8005 \else
8006 \def\x{FitH}%
8007 \ifx\x\@pdfview
8008 \def\x{FitH @ypos}%
8009 \else
8010 \def\x{FitBH}%
8011 \ifx\x\@pdfview
8012 \def\x{FitBH @ypos}%
8013 \else
8014 \def\x{FitV}%
8015 \ifx\x\@pdfview

```

```

8016         \def\x{FitV @xpos}%
8017     \else
8018         \def\x{FitBV}%
8019         \ifx\x\@pdfview
8020             \def\x{FitBV @xpos}%
8021         \else
8022             \def\x{Fit}%
8023             \ifx\x\@pdfview
8024                 \let\x\@pdfview
8025             \else
8026                 \def\x{FitB}%
8027                 \ifx\x\@pdfview
8028                     \let\x\@pdfview
8029                 \else
8030                     \def\x{FitR}%
8031                     \ifx\x\@pdfview
8032                         \Hy@Warning{'pdfview=FitR' is not supported}%
8033                         \def\x{XYZ @xpos @ypos null}%
8034                     \else
8035                         \@onelevel@sanitize\@pdfview
8036                         \Hy@Warning{Unknown value '@pdfview' for pdfview}%
8037                         \def\x{XYZ @xpos @ypos null}%
8038                     \fi
8039                 \fi
8040             \fi
8041         \fi
8042     \fi
8043 \fi
8044 \fi
8045 \fi
8046 \@pdfm@mark{dest (\Hy@pstringDest) [@thispage /\x]}%
8047 \endgroup
8048 \Hy@RestoreLastskip
8049 }
8050 \providecommand*\@pdfview{XYZ}
8051 \providecommand*\@pdfborder{0 0 1}
8052 \providecommand*\@pdfborderstyle{}
8053 \def\hyper@anchor#1{%
8054     \@pdfm@dest{#1}%
8055 }
8056 \def\hyper@anchorstart#1{%
8057     \Hy@activeanchortrue
8058     \@pdfm@dest{#1}%
8059 }
8060 \def\hyper@anchorend{%
8061     \Hy@activeanchorfalse
8062 }
8063 \newcounter{Hy@AnnotLevel}
8064 \ifHy@ocgcolorlinks
8065     \def\OBJ@OCG@view{@OCG@view}%
8066     \@pdfm@mark{%
8067         obj \OBJ@OCG@view <<%
8068             /Type/OCG%
8069             /Name(View)%
8070             /Usage<<%
8071             /Print<<%
8072             /PrintState/OFF%

```

```

8073         >>%
8074         /View<<%
8075         /ViewState/ON%
8076         >>%
8077     >>%
8078 >>%
8079 }%
8080 \@pdfm@mark{close \OBJ@OCG@view}%
8081 \def\OBJ@OCG@print{@OCG@print}%
8082 \@pdfm@mark{%
8083     obj \OBJ@OCG@print <<%
8084     /Type/OCG%
8085     /Name(Print)%
8086     /Usage<<%
8087     /Print<<%
8088     /PrintState/ON%
8089     >>%
8090     /View<<%
8091     /ViewState/OFF%
8092     >>%
8093 >>%
8094 >>%
8095 }%
8096 \@pdfm@mark{close \OBJ@OCG@print}%
8097 \def\OBJ@OCGs{@OCGs}%
8098 \@pdfm@mark{%
8099     obj \OBJ@OCGs [%
8100         \OBJ@OCG@view\space\OBJ@OCG@print
8101     ]%
8102 }%
8103 \@pdfm@mark{close \OBJ@OCGs}%
8104 \@pdfm@mark{%
8105     put @catalog <<%
8106     /OCProperties<<%
8107     /OCGs \OBJ@OCGs
8108     /D<<%
8109     /OFF[\OBJ@OCG@print]%
8110     /AS[%
8111         <<%
8112         /Event/View%
8113         /OCGs \OBJ@OCGs
8114         /Category[/View]%
8115         >>%
8116         <<%
8117         /Event/Print%
8118         /OCGs \OBJ@OCGs
8119         /Category[/Print]%
8120         >>%
8121         <<%
8122         /Event/Export%
8123         /OCGs \OBJ@OCGs
8124         /Category[/Print]%
8125         >>%
8126     ]%
8127     >>%
8128 >>%
8129 >>%

```

```

8130 }%
8131 \AtBeginShipout{%
8132   \setbox\AtBeginShipoutBox=\hbox{%
8133     \copy\AtBeginShipoutBox
8134     \@pdfm@mark{%
8135       put @resources <<%
8136       /Properties<<%
8137       /OCView \OBJ@OCG@view
8138       /OCPrint \OBJ@OCG@print
8139       >>%
8140     >>%
8141   }%
8142 }%
8143 }%
8144 \AtBeginDocument{%
8145   \def\Hy@colorlink#1{%
8146     \begingroup
8147     \ifHy@ocgcolorlinks
8148       \def\Hy@ocgcolor{#1}%
8149       \setbox0=\color@hbox
8150     \else
8151       \HyColor@UseColor#1%
8152     \fi
8153   }%
8154   \def\Hy@endcolorlink{%
8155     \ifHy@ocgcolorlinks
8156       \color@endbox
8157       \mbox{%
8158         \@pdfm@mark{content /OC/OCPrint BDC}%
8159         \rlap{\copy0}%
8160         \@pdfm@mark{content EMC/OC/OCView BDC}%
8161         \begingroup
8162           \expandafter\HyColor@UseColor\Hy@ocgcolor
8163         \box0 %
8164       \endgroup
8165       \@pdfm@mark{content EMC}%
8166     }%
8167   \fi
8168 \endgroup
8169 }%
8170 }%
8171 \else
8172   \Hy@DisableOption{ocgcolorlinks}%
8173 \fi
8174 \def\Hy@BeginAnnot#1{%
8175   \stepcounter{Hy@AnnotLevel}%
8176   \ifnum\value{Hy@AnnotLevel}=\@ne
8177     #1%
8178   \fi
8179 }
8180 \def\Hy@endAnnot{%
8181   \ifnum\value{Hy@AnnotLevel}=\@ne
8182     \Hy@endcolorlink
8183     \@pdfm@mark{eann}%
8184   \fi
8185   \addtocounter{Hy@AnnotLevel}\m@ne
8186 }

```

```

8187 \def\Hy@undefinedname{UNDEFINED}
8188 \def\hyper@linkstart#1#2{%
8189   \Hy@BeginAnnot{%
8190     \protected@edef\Hy@testname{#2}%
8191     \ifx\Hy@testname\@empty
8192       \Hy@Warning{%
8193         Empty destination name,\MessageBreak
8194         using '\Hy@undefinedname'%
8195       }%
8196     \let\Hy@testname\Hy@undefinedname
8197   }else
8198     \Hy@pstringdef\Hy@testname{%
8199       \expandafter\HyperDestNameFilter\expandafter{\Hy@testname}%
8200     }%
8201   \fi
8202   \@pdfm@mark{%
8203     bann<<%
8204     /Type/Annot%
8205     /Subtype/Link%
8206     \ifHy@pdfa /F 4\fi
8207     \Hy@setpdfborder
8208     \expandafter\ifx\csname @#1bordercolor\endcsname\relax
8209     \else
8210       /C[\csname @#1bordercolor\endcsname]%
8211     \fi
8212     /A<<%
8213     /S/GoTo%
8214     /D(\Hy@testname)%
8215     >>%
8216     >>%
8217   }%
8218   \expandafter\Hy@colorlink\csname @#1color\endcsname
8219 }%
8220 }
8221 \def\hyper@linkend{\Hy@EndAnnot}%
8222 \def\hyper@link#1#2#3{%
8223   \hyper@linkstart{#1}{#2}#3\hyper@linkend
8224 }
8225 \def\hyper@linkfile#1#2#3{%
8226   \leavevmode
8227   \Hy@BeginAnnot{%
8228     \Hy@pstringdef\Hy@pstringF{#2}%
8229     \Hy@pstringdef\Hy@pstringD{#3}%
8230     \@pdfm@mark{%
8231       bann<<%
8232       /Type/Annot%
8233       /Subtype/Link%
8234       \ifHy@pdfa /F 4\fi
8235       \Hy@setpdfborder
8236       \ifx\@filebordercolor\relax
8237       \else
8238         /C[\@filebordercolor]%
8239       \fi
8240       /A<<%
8241       /S/GoToR%
8242       /F(\Hy@pstringF)%
8243       /D\ifx\@#3\@0 \@pdfstartview\else(\Hy@pstringD)\fi

```

```

8244         \Hy@SetNewWindow
8245         >>%
8246     >>%
8247 }%
8248 \Hy@colorlink\@filecolor
8249 }%
8250 #1%
8251 \Hy@EndAnnot
8252 }
8253 \def\hyper@linkurl#1#2{%
8254     \leavevmode
8255     \Hy@BeginAnnot{%
8256         \Hy@pstringdef\Hy@pstringURI{#2}%
8257         \@pdfm@mark{%
8258             bann<<%
8259             /Type/Annot%
8260             /Subtype/Link%
8261             \ifHy@pdfa /F 4\fi
8262             \Hy@setpdfborder
8263             \ifx\@urlbordercolor\relax
8264             \else
8265                 /C[\@urlbordercolor]%
8266             \fi
8267             /A<<%
8268             /S/URI%
8269             /URI(\Hy@pstringURI)%
8270             >>%
8271         >>%
8272     }%
8273     \Hy@colorlink\@urlcolor
8274 }%
8275 #1%
8276 \Hy@EndAnnot
8277 }
8278 \def\Acrobatmenu#1#2{%
8279     \Hy@Acrobatmenu{#1}{#2}{%
8280         \Hy@BeginAnnot{%
8281             \@pdfm@mark{%
8282                 bann<<%
8283                 /Type/Annot%
8284                 /Subtype/Link%
8285                 \ifHy@pdfa /F 4\fi
8286                 /A<<%
8287                 /S/Named%
8288                 /N/#1%
8289                 >>%
8290                 \Hy@setpdfborder
8291                 \ifx\@menubordercolor\relax
8292                 \relax
8293                 /C[\@menubordercolor]%
8294             \fi
8295             >>%
8296         }%
8297         \Hy@colorlink\@menucolor
8298     }%
8299     #2%
8300     \Hy@EndAnnot

```

```

8301 }%
8302 }
8303 \ifx\@pdfproducer\relax
8304 \def\@pdfproducer{dvipdfm}%

```

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

```

8305 \begingroup\expandafter\expandafter\expandafter\endgroup
8306 \expandafter\ifx\csname XeTeXversion\endcsname\relax
8307 \else
8308 \edef\@pdfproducer{XeTeX \the\XeTeXversion\XeTeXrevision}%
8309 \fi
8310 \fi
8311 \def\PDF@FinishDoc{%
8312 \Hy@UseMaketitleInfos
8313 \@pdfm@mark{%
8314 docinfo<<%
8315 /Title(\@pdftitle)%
8316 /Subject(\@pdfsubject)%
8317 /Creator(\@pdfcreator)%
8318 \ifx\@pdfcreationdate\empty
8319 \else
8320 /CreationDate(\@pdfcreationdate)%
8321 \fi
8322 \ifx\@pdfmoddate\empty
8323 \else
8324 /ModDate(\@pdfmoddate)%
8325 \fi
8326 /Author(\@pdfauthor)%
8327 \ifx\@pdfproducer\relax
8328 \else
8329 /Producer(\@pdfproducer)%
8330 \fi
8331 /Keywords(\@pdfkeywords)%
8332 >>%
8333 }%
8334 \Hy@DisableOption{pdfauthor}%
8335 \Hy@DisableOption{pdftitle}%
8336 \Hy@DisableOption{pdfsubject}%
8337 \Hy@DisableOption{pdfcreator}%
8338 \Hy@DisableOption{pdfcreationdate}%
8339 \Hy@DisableOption{pdfmoddate}%
8340 \Hy@DisableOption{pdfproducer}%
8341 \Hy@DisableOption{pdfkeywords}%
8342 }
8343 \def\PDF@SetupDoc{%
8344 \edef\Hy@temp{%
8345 \ifHy@toolbar\else /HideToolbar true\fi
8346 \ifHy@menubar\else /HideMenubar true\fi
8347 \ifHy>windowui\else /HideWindowUI true\fi
8348 \ifHy@fitwindow /FitWindow true\fi
8349 \ifHy@centerwindow /CenterWindow true\fi
8350 \ifHy@displaydoctitle /DisplayDocTitle true\fi
8351 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
8352 \Hy@UseNameKey{Direction}\@pdfdirection
8353 \Hy@UseNameKey{ViewArea}\@pdfviewarea
8354 \Hy@UseNameKey{ViewClip}\@pdfviewclip
8355 \Hy@UseNameKey{PrintArea}\@pdfprintarea

```

```

8356 \Hy@UseNameKey{PrintClip}\@pdfprintclip
8357 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
8358 \Hy@UseNameKey{Duplex}\@pdfduplex
8359 \ifx\@pdfpicktraybypdfsize\@empty
8360 \else
8361 /PickTrayByPDFSize \@pdfpicktraybypdfsize
8362 \fi
8363 \ifx\@pdfprintpagerange\@empty
8364 \else
8365 /PrintPageRange[\@pdfprintpagerange]%
8366 \fi
8367 \ifx\@pdfnumcopies\@empty
8368 \else
8369 /NumCopies \@pdfnumcopies
8370 \fi
8371 }%
8372 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
8373 \@pdfm@mark{%
8374 docview<<%
8375 \ifx\@pdfstartpage\@empty
8376 \else
8377 \ifx\@pdfstartview\@empty
8378 \else
8379 /OpenAction[@page\@pdfstartpage\@pdfstartview]%
8380 \fi
8381 \fi
8382 \ifx\@baseurl\@empty
8383 \else
8384 /URI<</Base(\Hy@pstringB)>>%
8385 \fi
8386 /PageMode/\@pdfpagemode
8387 \ifx\Hy@temp\@empty
8388 \else
8389 /ViewerPreferences<<\Hy@temp>>%
8390 \fi
8391 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
8392 \ifx\@pdflang\@empty
8393 \else
8394 /Lang(\@pdflang)%
8395 \fi
8396 >>%
8397 }%
8398 \ifx\@pdfpagescrop\@empty
8399 \else
8400 \@pdfm@mark{put @pages <</CropBox[\@pdfpagescrop]>>}%
8401 \fi
8402 }

8403 \AtBeginShipoutFirst{%
8404 \ifHy@setpagesize
8405 \begingroup
8406 \@ifundefined{stockwidth}{%
8407 \ifx\special@paper\@empty
8408 \special{papersize=\the\paperwidth,\the\paperheight}%
8409 \else
8410 \special{papersize=\special@paper}%
8411 \fi
8412 }{%

```

```

8413         \ifdim\stockwidth=\z@
8414         \else
8415             \special{papersize=\the\stockwidth,\the\stockheight}%
8416         \fi
8417     }%
8418 \endgroup
8419 \fi
8420 \Hy@DisableOption{setpagesize}%
8421 }
8422 </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.

```

8423 <*vtexhtml>
8424 \providecommand*{\XR@ext}{htm}
8425 \RequirePackage{vtexhtml}
8426 \newif\if@Localurl
8427 \def\PDF@FinishDoc{}
8428 \def\PDF@SetupDoc{%
8429     \ifx\@baseurl\@empty
8430     \else
8431         \special{!direct <base href="\@baseurl">}%
8432     \fi
8433 }
8434 \def\@urltype{url}
8435 \def\hyper@link#1#2#3{%
8436     \leavevmode
8437     \special{!direct <a href=%
8438         \hyper@quote\hyper@hash\HyperDestNameFilter{#2}\hyper@quote>}%
8439     #3%
8440     \special{!direct </a>}%
8441 }
8442 \def\hyper@linkurl#1#2{%
8443     \begingroup
8444         \hyper@chars
8445         \leavevmode
8446         \MathBSuppress=1\relax
8447         \special{!direct <a href=%
8448             \hyper@quote\HyperDestNameFilter{#2}\hyper@quote>}%
8449         #1%
8450         \MathBSuppress=0\relax
8451         \special{!direct </a>}%
8452     \endgroup
8453 }
8454 \def\hyper@linkfile#1#2#3{%
8455     \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\else\##3\fi}%
8456 }
8457 \def\hyper@linkstart#1#2{%
8458     \def\Hy@tempa{#1}\ifx\Hy@tempa\@urltype
8459         \@Localurltrue
8460         \special{!direct <a href=\hyper@quote#2\hyper@quote>}%
8461     \else
8462         \@Localurlfalse
8463     \begingroup
8464         \hyper@chars

```

```

8465     \special{!aref \HyperDestNameFilter{#2}}}%
8466   \endgroup
8467 \fi
8468 }
8469 \def\hyper@linkend{%
8470   \if@Localurl
8471     \special{!endaref}%
8472   \else
8473     \special{!direct </a>}%
8474   \fi
8475 }
8476 \def\hyper@anchorstart#1{%
8477   \Hy@SaveLastskip
8478   \begingroup
8479     \hyper@chars
8480     \special{!aname #1}%
8481     \special{!direct <a name=%
8482       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
8483   \endgroup
8484   \Hy@Activeanchortrue
8485 }
8486 \def\hyper@anchorend{%
8487   \special{!direct </a>}%
8488   \Hy@Activeanchorfalse
8489   \Hy@RestoreLastskip
8490 }
8491 \def\hyper@anchor#1{%
8492   \Hy@SaveLastskip
8493   \begingroup
8494     \let\protect=\string
8495     \hyper@chars
8496     \leavevmode
8497     \special{!aname #1}%
8498     \special{!direct <a name=%
8499       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
8500   \endgroup
8501   \Hy@Activeanchortrue
8502   \bgroup\anchor@spot\egroup
8503   \special{!direct </a>}%
8504   \Hy@Activeanchorfalse
8505   \Hy@RestoreLastskip
8506 }
8507 \def\@Form[#1]{\typeout{Sorry, TeXpider does not yet support FORMs}}
8508 \def\@endForm{}
8509 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
8510   \typeout{Sorry, TeXpider does not yet support FORM gauges}%
8511 }
8512 \def\@TextField[#1]#2{% parameters, label
8513   \typeout{Sorry, TeXpider does not yet support FORM text fields}%
8514 }
8515 \def\@CheckBox[#1]#2{% parameters, label
8516   \typeout{Sorry, TeXpider does not yet support FORM checkboxes}%
8517 }
8518 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
8519   \typeout{Sorry, TeXpider does not yet support FORM choice menus}%
8520 }
8521 \def\@PushButton[#1]#2{% parameters, label

```

```

8522 \typeout{Sorry, TeXpider does not yet support FORM pushbuttons}%
8523 }
8524 \def\@Reset[#1]#2{%
8525 \typeout{Sorry, TeXpider does not yet support FORMs}%
8526 }
8527 \def\@Submit[#1]#2{%
8528 \typeout{Sorry, TeXpider does not yet support FORMs}%
8529 }
8530 \</vtexhtml>
8531 \<vtx>

```

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.

```

8532 \ifx\mediaheight\@undefined
8533 \else
8534 \ifx\mediaheight\relax
8535 \else
8536 \ifHy@setpagesize
8537 \providecommand*\VTeXInitMediaSize{%
8538 \ifundefined{stockwidth}{%
8539 \ifdim\paperheight>0pt %
8540 \setlength\mediaheight\paperheight
8541 \fi
8542 \ifdim\paperheight>0pt %
8543 \setlength\mediawidth\paperwidth
8544 \fi
8545 }{%
8546 \ifdim\stockheight>0pt %
8547 \setlength\mediaheight\stockheight
8548 \fi
8549 \ifdim\stockwidth>0pt %
8550 \setlength\mediawidth\stockwidth
8551 \fi
8552 }%
8553 }%
8554 \AtBeginDocument{\VTeXInitMediaSize}%
8555 \fi
8556 \Hy@DisableOption{setpagesize}%
8557 \fi
8558 \fi

```

Older versions of VTeX require xyz in lower case.

```

8559 \providecommand*\@pdfview{xyz}
8560 \providecommand*\@pdfborder{0 0 1}
8561 \providecommand*\@pdfborderstyle{}
8562 \let\CurrentBorderColor\@linkbordercolor
8563 \def\hyper@anchor#1{%
8564 \Hy@SaveLastskip
8565 \begingroup
8566 \let\protect=\string
8567 \hyper@chars
8568 \special{!aname \HyperDestNameFilter{#1};\@pdfview}%
8569 \endgroup
8570 \Hy@activeanchortrue
8571 \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
8572 \Hy@activeanchorfalse
8573 \Hy@RestoreLastskip

```

```

8574 }
8575 \def\hyper@anchorstart#1{%
8576   \Hy@SaveLastskip
8577   \begingroup
8578     \hyper@chars
8579     \special{!aname \HyperDestNameFilter{#1};\@pdfview}%
8580   \endgroup
8581   \Hy@activeanchortrue
8582 }
8583 \def\hyper@anchorend{%
8584   \Hy@activeanchorfalse
8585   \Hy@RestoreLastskip
8586 }
8587 \def\@urltype{url}
8588 \def\Hy@undefinedname{UNDEFINED}
8589 \def\hyper@linkstart#1#2{%
8590   \Hy@pstringdef\Hy@pstringURI{#2}%
8591   \expandafter\Hy@colorlink\csname @#1color\endcsname
8592   \@ifundefined{#1bordercolor}{%
8593     \let\CurrentBorderColor\relax
8594   }{%
8595     \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
8596   }%
8597   \def\Hy@tempa{#1}%
8598   \ifx\Hy@tempa\@urltype
8599     \special{!%
8600       aref <u=/Type /Action /S /URI /URI (\Hy@pstringURI)>;%
8601       a=<%
8602         \ifHy@pdfa /F 4\fi
8603         \Hy@setpdfborder
8604         \ifx\CurrentBorderColor\relax
8605           \else
8606             /C [\CurrentBorderColor]%
8607           \fi
8608         >%
8609       }%
8610   \else
8611     \protected@edef\Hy@testname{#2}%
8612     \ifx\Hy@testname\@empty
8613       \Hy@Warning{%
8614         Empty destination name,\MessageBreak
8615         using '\Hy@undefinedname'%
8616       }%
8617     \let\Hy@testname\Hy@undefinedname
8618     \fi
8619     \special{!%
8620       aref \expandafter\HyperDestNameFilter
8621       \expandafter{\Hy@testname};%
8622       a=<%
8623         \ifHy@pdfa /F 4\fi
8624         \Hy@setpdfborder
8625         \ifx\CurrentBorderColor\relax
8626           \else
8627             /C [\CurrentBorderColor]%
8628           \fi
8629         >%
8630       }%

```

```

8631 \fi
8632 }
8633 \def\hyper@linkend{%
8634 \special{!endaref}%
8635 \Hy@endcolorlink
8636 }
8637 \def\hyper@linkfile#1#2#3{%
8638 \leavevmode
8639 \special{!%
8640 aref <%
8641 \ifnum\Hy@VTeXversion>753 \ifHy@newwindow n\fi\fi
8642 f=#2>#3;%
8643 a=<%
8644 \ifHy@pdfa /F 4\fi
8645 \Hy@setpdfborder
8646 \ifx\@filebordercolor\relax
8647 \else
8648 /C [\@filebordercolor]%
8649 \fi
8650 >%
8651 }%
8652 \Hy@colorlink\@filecolor#1\Hy@endcolorlink
8653 \special{!endaref}%
8654 }
8655 \def\hyper@linkurl#1#2{%
8656 \begingroup
8657 \Hy@pstringdef\Hy@pstringURI{#2}%
8658 \hyper@chars
8659 \leavevmode
8660 \special{!%
8661 aref <u=/Type /Action /S /URI /URI (\Hy@pstringURI)>;%
8662 a=<%
8663 \ifHy@pdfa /F 4\fi
8664 \Hy@setpdfborder
8665 \ifx\@urlbordercolor\relax
8666 \else
8667 /C [\@urlbordercolor]%
8668 \fi
8669 >%
8670 }%
8671 \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
8672 \special{!endaref}%
8673 \endgroup
8674 }
8675 \def\hyper@link#1#2#3{%
8676 \@ifundefined{@#1bordercolor}{%
8677 \let\CurrentBordercolor\relax
8678 }{%
8679 \edef\CurrentBordercolor{\csname @#1bordercolor\endcsname}%
8680 }%
8681 \leavevmode
8682 \protected@edef\Hy@testname{#2}%
8683 \ifx\Hy@testname\@empty
8684 \Hy@Warning{%
8685 Empty destination name,\MessageBreak
8686 using '\Hy@undefinedname'%
8687 }%

```

```

8688 \let\Hy@testname\Hy@undefinedname
8689 \fi
8690 \special{!%
8691   \expandafter\HyperDestNameFilter
8692     \expandafter{\Hy@testname};%
8693   a=<%
8694     \ifHy@pdfa /F 4\fi
8695     \Hy@setpdfborder
8696     \ifx\CurrentBorderColor\relax
8697       \else
8698         /C [\CurrentBorderColor]%
8699       \fi
8700   >%
8701 }%
8702 \expandafter\Hy@colorlink\csname @#1color\endcsname#3\Hy@endcolorlink
8703 \special{!endaref}%
8704 }
8705 \def\hyper@image#1#2{%
8706   \hyper@linkurl{#2}{#1}%
8707 }
8708 \def\@hyper@launch run:#1\#2#3{%
8709   \Hy@pstringdef\Hy@pstringF{#1}%
8710   \Hy@pstringdef\Hy@pstringP{#3}%
8711   \leavevmode
8712   \special{!aref %
8713     <u=%
8714       /Type/Action%
8715       /S/Launch%
8716       /F(\Hy@pstringF)%
8717       \Hy@SetNewWindow
8718       \ifx\#3\else /Win<</F(\Hy@pstringF)/P(\Hy@pstringP)>>\fi%
8719     >;%
8720     a=<%
8721       \ifHy@pdfa /F 4\fi
8722       \Hy@setpdfborder
8723       \ifx\@runbordercolor\relax
8724       \else
8725         /C[\@runbordercolor]%
8726       \fi
8727     >%
8728   }%
8729   \Hy@colorlink\@runcolor#2\Hy@endcolorlink
8730   \special{!endaref}%
8731 }
8732 \def\Acrobatmenu#1#2{%
8733   \Hy@Acrobatmenu{#1}{#2}{%
8734     \special{!%
8735       \aref <u=/S /Named /N /#1>;%
8736       a=<%
8737         \ifHy@pdfa /F 4\fi
8738         \Hy@setpdfborder
8739         \ifx\@menubordercolor\relax
8740         \else
8741           /C[\@menubordercolor]%
8742         \fi
8743       >%
8744     }%

```

```

8745 \Hy@colorlink\@menucolor#2\Hy@endcolorlink
8746 \special{!endaref}%
8747 }%
8748 }

```

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

The code below makes sense for V<sub>T</sub>E<sub>X</sub> 7.02 or later.

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

```

8749 \ifnum\Hy@VTeXversion<702 %
8750 \else
8751 \def\hyper@pagetransition{%
8752 \ifx\@pdfpagetransition\relax
8753 \else
8754 \ifx\@pdfpagetransition\empty

```

Standard incantation.

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

```

8755 \else
8756 \hvtex@parse@trans\@pdfpagetransition
8757 \fi
8758 \fi
8759 }%

```

I have to write an “honest” parser to convert raw PDF code into V<sub>T</sub>E<sub>X</sub> `\special`.  
(AVK)

Syntax of V<sub>T</sub>E<sub>X</sub> `\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:

```

8760 \def\hvtex@trans@effect@Blinds{\def\hvtex@trans@code{B}}%
8761 \def\hvtex@trans@effect@Box{\def\hvtex@trans@code{X}}%
8762 \def\hvtex@trans@effect@Dissolve{\def\hvtex@trans@code{D}}%
8763 \def\hvtex@trans@effect@Glitter{\def\hvtex@trans@code{G}}%
8764 \def\hvtex@trans@effect@Split{\def\hvtex@trans@code{S}}%
8765 \def\hvtex@trans@effect@Wipe{\def\hvtex@trans@code{W}}%
8766 \def\hvtex@trans@effect@R{\def\hvtex@trans@code{R}}%

```

Optional parameters:

```

8767 \def\hvtex@par@dimension{/Dm}%
8768 \def\hvtex@par@direction{/Di}%
8769 \def\hvtex@par@duration{/D}%
8770 \def\hvtex@par@motion{/M}%

```

Tokenizer:

```

8771 \def\hvtex@gettoken{\expandafter\hvtex@gettoken\hvtex@buffer\@nil}%

```

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

```
8772 \def\hvtex@gettoken@#1 #2\@nil{%
8773   \edef\hvtex@token{#1}%
8774   \edef\hvtex@buffer{#2}%
8775 }%
8776 \def\hvtex@parse@trans#1{%
```

Initializing code:

```
8777 \let\hvtex@trans@code\@empty
8778 \let\hvtex@param@dimension\@empty
8779 \let\hvtex@param@direction\@empty
8780 \let\hvtex@param@duration\@empty
8781 \let\hvtex@param@motion\@empty
8782 \edef\hvtex@buffer{#1\space}%
```

First token is the PDF transition name without escape.

```
8783 \hvtex@gettoken
8784 \ifx\hvtex@token\@empty
```

Leading space(s)?

```
8785 \ifx\hvtex@buffer\@empty
```

The buffer is empty, nothing to do.

```
8786 \else
8787   \hvtex@gettoken
8788 \fi
8789 \fi
8790 \csname hvtex@trans@effect@\hvtex@token\endcsname
```

Now is time to parse optional parameters.

```
8791 \hvtex@trans@params
8792 }%
```

Reentrant macro to parse optional parameters.

```
8793 \def\hvtex@trans@params{%
8794   \ifx\hvtex@buffer\@empty
8795   \else
8796     \hvtex@gettoken
8797     \let\hvtex@trans@par\hvtex@token
8798     \ifx\hvtex@buffer\@empty
8799     \else
8800       \hvtex@gettoken
8801       \ifx\hvtex@trans@par\hvtex@par@duration
```

/D is the effect duration in seconds. V<sub>T</sub><sub>E</sub>X special takes it in milliseconds.

```
8802 \let\hvtex@param@duration\hvtex@token
8803 \else \ifx\hvtex@trans@par\hvtex@par@motion
```

/M can be either /I or /O

```
8804 \expandafter\edef\expandafter\hvtex@param@motion
8805 \expandafter{\expandafter\@gobble\hvtex@token}%
8806 \else \ifx\hvtex@trans@par\hvtex@par@dimension
```

/Dm can be either /H or /V

```
8807 \expandafter\edef\expandafter\hvtex@param@dimension
8808 \expandafter{\expandafter\@gobble\hvtex@token}%
8809 \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).

```
8810 \let\hvtex@param@direction\hvtex@token
```

```

8811     \fi\fi\fi\fi
8812     \fi
8813     \fi
8814     \ifx\hvtex@buffer\@empty
8815         \let\next\hvtex@produce@trans
8816     \else
8817         \let\next\hvtex@trans@params
8818     \fi
8819     \next
8820 }%

```

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

```

8821 \def\hvtex@produce@trans{%
8822     \let\vtex@trans@special\@empty
8823     \if S\hvtex@trans@code
8824         \edef\vtex@trans@special{\hvtex@trans@code
8825             \hvtex@param@dimension\hvtex@param@motion}%
8826     \else\if B\hvtex@trans@code
8827         \edef\vtex@trans@special{%
8828             \hvtex@trans@code\hvtex@param@dimension
8829         }%
8830     \else\if X\hvtex@trans@code
8831         \edef\vtex@trans@special{%
8832             \hvtex@trans@code\hvtex@param@motion
8833         }%
8834     \else\if W\hvtex@trans@code
8835         \edef\vtex@trans@special{%
8836             \hvtex@trans@code\hvtex@param@direction
8837         }%
8838     \else\if D\hvtex@trans@code
8839         \let\vtex@trans@special\hvtex@trans@code
8840     \else\if R\hvtex@trans@code
8841         \let\vtex@trans@special\hvtex@trans@code
8842     \else\if G\hvtex@trans@code
8843         \edef\vtex@trans@special{%
8844             \hvtex@trans@code\hvtex@param@direction
8845         }%
8846     \fi\fi\fi\fi\fi\fi\fi
8847     \ifx\vtex@trans@special\@empty
8848     \else
8849         \ifx\hvtex@param@duration\@empty
8850         \else
8851             \setlength{\dimen@}{\hvtex@param@duration\p}%

```

I'm not guilty of possible overflow.

```

8852         \multiply\dimen@\@m
8853         \edef\vtex@trans@special{%
8854             \vtex@trans@special,\strip@pt\dimen@
8855         }%
8856     \fi

```

And all the mess is just for this.

```

8857     \special{!trans \vtex@trans@special}%
8858     \fi
8859 }%

8860 \def\hyper@pageduration{%
8861     \ifx\@pdfpageduration\relax

```

```

8862 \else
8863 \ifx\@pdfpageduration\@empty
8864 \special{!duration-}%
8865 \else
8866 \special{!duration \@pdfpageduration}%
8867 \fi
8868 \fi
8869 }%
8870 \def\hyper@pagehidden{%
8871 \ifHy@useHidKey
8872 \special{!hidden\ifHy@pdfpagehidden +\else -\fi}%
8873 \fi
8874 }%
8875 \g@addto@macro\Hy@EveryPageBoxHook{%
8876 \hyper@pagetransition
8877 \hyper@pageduration
8878 \hyper@pagehidden
8879 }%
8880 \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

```

8881 \ifx\@pdfproducer\relax
8882 \def\@pdfproducer{VTeX}%
8883 \ifnum\Hy@VTeXversion>\z@
8884 \count@\VTeXversion
8885 \divide\count@ 100 %
8886 \edef\@pdfproducer{\@pdfproducer\space v\the\count@}%
8887 \multiply\count@ -100 %
8888 \advance\count@\VTeXversion
8889 \edef\@pdfproducer{%
8890 \@pdfproducer
8891 .\ifnum\count@<10 0\fi\the\count@
8892 \ifx\VTeXOS\@undefined\else
8893 \ifnum\VTeXOS>0 %
8894 \ifnum\VTeXOS<6 %
8895 \space(%
8896 \ifcase\VTeXOS
8897 \or Windows\or Linux\or OS/2\or MacOS\or MacOS/X%
8898 \fi
8899 )%
8900 \fi
8901 \fi
8902 \space
8903 ,\space
8904 \ifnum\OpMode=\@ne PDF\else PS\fi
8905 \space backend%
8906 \ifx\gexmode\@undefined\else
8907 \ifnum\gexmode>\z@\space with GeX\fi

```

```

8908     \fi
8909   }%
8910 \fi
8911 \fi

```

Current !pdfinfo key syntax:

Key	Field	Type
a	Author	String
b	CropBox	String
c	Creator	String
k	Keywords	String
l	PageLayout	PS
p	PageMode	PS
r	Producer	String
s	Subject	String
t	Title	String
u	URI	PS
v	ViewPreferences	PS

Note: PS objects that are dicts are in <<<. .>>> (yuck; no choice).

```

8912 \def\PDF@SetupDoc{%
8913   \ifx\@pdfpagescrop\@empty
8914   \else
8915     \special{!pdfinfo b=<\@pdfpagescrop>}%
8916   \fi
8917   \ifx\@pdfstartpage\@empty
8918   \else
8919     \ifx\@pdfstartview\@empty
8920     \else
8921       \special{!onopen Page\@pdfstartpage}%
8922     \fi
8923   \fi
8924   \special{!pdfinfo p=</\@pdfpagemode>}%
8925   \ifx\@baseurl\@empty
8926   \else
8927     \special{!pdfinfo u=<<</Base (\@baseurl)>>>}%
8928   \fi
8929   \special{!pdfinfo v=<<<%
8930     \ifHy@toolbar\else /HideToolbar true\fi
8931     \ifHy@menubar\else /HideMenubar true\fi
8932     \ifHy@windowui\else /HideWindowUI true\fi
8933     \ifHy@fitwindow /FitWindow true\fi
8934     \ifHy@centerwindow /CenterWindow true\fi
8935     \ifHy@displaydoctitle /DisplayDocTitle true\fi
8936     \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
8937     \Hy@UseNameKey{Direction}\@pdfdirection
8938     \Hy@UseNameKey{ViewArea}\@pdfviewarea
8939     \Hy@UseNameKey{ViewClip}\@pdfviewclip
8940     \Hy@UseNameKey{PrintArea}\@pdfprintarea
8941     \Hy@UseNameKey{PrintClip}\@pdfprintclip
8942     \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
8943     \Hy@UseNameKey{Duplex}\@pdfduplex
8944     \ifx\@pdfpicktraybypdfsize\@empty
8945     \else
8946       /PickTrayByPDFSize \@pdfpicktraybypdfsize
8947     \fi
8948     \ifx\@pdfprintpagerange\@empty
8949     \else

```

```

8950      /PrintPageRange[\@pdfprintpagerange]%
8951      \fi
8952      \ifx\@pdfnumcopies\@empty
8953      \else
8954      /NumCopies \@pdfnumcopies
8955      \fi
8956  >>>}%
8957  \ifx\@pdfpagelayout\@empty
8958  \else
8959      \special{!pdfinfo l=</\@pdfpagelayout\space>}%
8960  \fi
8961 }%
8962 \def\PDF@FinishDoc{%
8963   \Hy@UseMaketitleInfos
8964   \special{!pdfinfo a=<\@pdfauthor>}%
8965   \special{!pdfinfo t=<\@pdftitle>}%
8966   \special{!pdfinfo s=<\@pdfsubject>}%
8967   \special{!pdfinfo c=<\@pdfcreator>}%
8968   \ifx\@pdfproducer\relax
8969   \else
8970       \special{!pdfinfo r=<\@pdfproducer>}%
8971   \fi
8972   \special{!pdfinfo k=<\@pdfkeywords>}%
8973   \Hy@DisableOption{pdfauthor}%
8974   \Hy@DisableOption{pdftitle}%
8975   \Hy@DisableOption{pdfsubject}%
8976   \Hy@DisableOption{pdfcreator}%
8977   \Hy@DisableOption{pdfcreationdate}%
8978   \Hy@DisableOption{pdfmoddate}%
8979   \Hy@DisableOption{pdfproducer}%
8980   \Hy@DisableOption{pdfkeywords}%
8981 }
8982 \</vtx>

```

## 46.7 Fix for Adobe bug number 466320

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

```

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

```

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

```

8983 <dviwindo>\def\literalps@out#1{\special{ps:#1}}%
8984 <package>\providecommand*\Hy@DistillerDestFix{}
8985 <*pdfmark | dviwindo>
8986 \def\Hy@DistillerDestFix{%
8987   \beginpgroup
8988     \let\x\literalps@out

```

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

```

8989   \ifnum \@ifundefined{OpMode}{0}{}%
8990       \@ifundefined{gexmode}{0}{}%
8991       \ifnum\gexmode>0 \OpMode\else 0\fi

```

```

8992         }}>1 %
8993     \def\x##1{%
8994         \immediate\special{!=##1}%
8995     }%
8996 \fi
8997 \x{%
8998     /product where{%
8999         pop %
9000         product(Distiller)search{%
9001             pop pop pop %
9002             version(.)search{%
9003                 exch pop exch pop%
9004                 (3011)eq{%
9005                     gsave %
9006                     newpath 0 0 moveto closepath clip%
9007                     /Courier findfont 10 scalefont setfont %
9008                     72 72 moveto(.)show %
9009                     grestore%
9010                 }if%
9011             }{pop}ifelse%
9012         }{pop}ifelse%
9013     }if%
9014 }%
9015 \endgroup
9016 }
9017 </pdfmark | dviwindo>

```

## 46.8 Direct pdfmark support

Drivers that load pdfmark.def have to provide the correct macro definitions of

```

\@pdfproducer    for document information
\literalps@out   PostScript output
\headerps@out    PostScript output that goes in the header area

```

and the correct definitions of the following PostScript procedures:

```

H.S      start of anchor, link or rect
#1 H.A   end of anchor, argument=baselineskip in pt
#1 H.L   end of link, argument=baselineskip in pt
H.R      end of rect
H.B      raw rect code

```

```

9018 <*pdfmark>
9019 \Hy@breaklinks@unsupported
9020 \def\hyper@anchor#1{%
9021     \Hy@SaveLastskip
9022     \begingroup
9023         \pdfmark[\anchor@spot]{%
9024             pdfmark=/DEST,%
9025             linktype=anchor,%
9026             View=/\@pdfview \@pdfviewparams,%
9027             DestAnchor={#1}%
9028         }%
9029     \endgroup
9030     \Hy@RestoreLastskip
9031 }
9032 \@ifundefined{hyper@anchorstart}{-}{\endinput}

```

```

9033 \def\hyper@anchorstart#1{%
9034   \Hy@SaveLastskip
9035   \literalps@out{H.S}%
9036   \xdef\hyper@currentanchor{#1}%
9037   \Hy@activeanchortrue
9038 }
9039 \def\hyper@anchorend{%
9040   \literalps@out{\strip@pt@and@otherjunk\baselineskip\space H.A}%
9041   \pdfmark{%
9042     pdfmark=/DEST,%
9043     linktype=anchor,%
9044     View=/\@pdfview \@pdfviewparams,%
9045     DestAnchor=\hyper@currentanchor,%
9046   }%
9047   \Hy@activeanchorfalse
9048   \Hy@RestoreLastskip
9049 }
9050 \def\hyper@linkstart#1#2{%
9051   \ifHy@breaklinks
9052   \else
9053     \leavevmode\hbox\bgroup
9054     \fi
9055     \expandafter\Hy@colorlink\csname @#1color\endcsname
9056     \literalps@out{H.S}%
9057     \xdef\hyper@currentanchor{#2}%
9058     \gdef\hyper@currentlinktype{#1}%
9059 }
9060 \def\hyper@linkend{%
9061   \literalps@out{\strip@pt@and@otherjunk\baselineskip\space H.L}%
9062   \@ifundefined{@\hyper@currentlinktype bordercolor}{%
9063     \let\Hy@tempcolor\relax
9064   }{%
9065     \edef\Hy@tempcolor{%
9066       \csname @\hyper@currentlinktype bordercolor\endcsname
9067     }%
9068   }%
9069   \pdfmark{%
9070     pdfmark=/ANN,%
9071     linktype=link,%
9072     Subtype=/Link,%
9073     PDFAFlags=4,%
9074     Dest=\hyper@currentanchor,%
9075     AcroHighlight=\@pdfhighlight,%
9076     Border=\@pdfborder,%
9077     BorderStyle=\@pdfborderstyle,%
9078     Color=\Hy@tempcolor,%
9079     Raw=H.B%
9080   }%
9081   \Hy@endcolorlink
9082   \ifHy@breaklinks
9083   \else
9084     \egroup
9085   \fi
9086 }

```

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.

```
9087 \begingroup
9088   \catcode'P=12 %
9089   \catcode'T=12 %
9090   \lowercase{\endgroup
9091   \gdef\rem@ptetc#1.#2PT#3!{#1\ifnum#2>\z@.#2\fi}%
9092 }
9093 \def\strip@pt@and@otherjunk#1{\expandafter\rem@ptetc\the#1!}
```

\hyper@pagetransition

```
9094 \def\hyper@pagetransition{%
9095   \ifx\@pdfpagetransition\relax
9096   \else
9097     \ifx\@pdfpagetransition\@empty
9098       % 1. Does an old entry have to be deleted?
9099       % 2. If 1=yes, how to delete?
9100     \else
9101       \pdfmark{%
9102         pdfmark=/PUT,%
9103         Raw={%
9104           \string{ThisPage\string}%
9105           <</Trans << /S /\@pdfpagetransition\space >> >>%
9106         }%
9107       }%
9108     \fi
9109   \fi
9110 }
```

\hyper@pageduration

```
9111 \def\hyper@pageduration{%
9112   \ifx\@pdfpageduration\relax
9113   \else
9114     \ifx\@pdfpageduration\@empty
9115       % 1. Does an old entry have to be deleted?
9116       % 2. If 1=yes, how to delete?
9117     \else
9118       \pdfmark{%
9119         pdfmark=/PUT,%
9120         Raw={%
9121           \string{ThisPage\string}%
9122           <</Dur \@pdfpageduration>>%
9123         }%
9124       }%
9125     \fi
9126   \fi
9127 }
```

\hyper@pagehidden

```
9128 \def\hyper@pagehidden{%
9129   \ifHy@useHidKey
9130     \pdfmark{%
9131       pdfmark=/PUT,%
9132       Raw={%
9133         \string{ThisPage\string}%
9134         <</Hid \ifHy@pdfpagehidden true\else false\fi>>%
9135       }%
9136     }%
```

```

9137 \fi
9138 }

9139 \g@addto@macro\Hy@EveryPageBoxHook{%
9140 \hyper@pagetransition
9141 \hyper@pageduration
9142 \hyper@pagehidden
9143 }

9144 \def\hyper@image#1#2{%
9145 \hyper@linkurl{#2}{#1}%
9146 }

9147 \def\Hy@undefinedname{UNDEFINED}
9148 \def\hyper@link#1#2#3{%
9149 \@ifundefined{@#1bordercolor}{%
9150 \let\Hy@tempcolor\relax
9151 }{%
9152 \edef\Hy@tempcolor{\csname @#1bordercolor\endcsname}%
9153 }%
9154 \begin{group}
9155 \protected@edef\Hy@testname{#2}%
9156 \ifx\Hy@testname\@empty
9157 \Hy@Warning{%
9158 Empty destination name,\MessageBreak
9159 using '\Hy@undefinedname'%
9160 }%
9161 \let\Hy@testname\Hy@undefinedname
9162 \fi
9163 \pdfmark[#{#3}]{%
9164 Color=\Hy@tempcolor,%
9165 linktype={#1},%
9166 AcroHighlight=\@pdfhighlight,%
9167 Border=\@pdfborder,%
9168 BorderStyle=\@pdfborderstyle,%
9169 pdfmark=/ANN,%
9170 Subtype=/Link,%
9171 PDFAFlags=4,%
9172 Dest=\Hy@testname
9173 }%
9174 \endgroup
9175 }

9176 \newtoks\pdf@docset
9177 \def\PDF@FinishDoc{%
9178 \Hy@UseMaketitleInfos
9179 \let\Hy@temp\@empty
9180 \ifx\@pdfcreationdate\@empty
9181 \else
9182 \def\Hy@temp{CreationDate=\@pdfcreationdate,}%
9183 \fi
9184 \ifx\@pdfmoddate\@empty
9185 \else
9186 \expandafter\def\expandafter\Hy@temp\expandafter{%
9187 \Hy@temp
9188 ModDate=\@pdfmoddate,%
9189 }%
9190 \fi
9191 \ifx\@pdfproducer\relax
9192 \else
9193 \expandafter\def\expandafter\Hy@temp\expandafter{%

```

```

9194     \Hy@temp
9195     Producer=\@pdfproducer,%
9196 }%
9197 \fi
9198 \expandafter
9199 \pdfmark\expandafter{%
9200     \Hy@temp
9201     pdfmark=/DOCINFO,%
9202     Title=\@pdftitle,%
9203     Subject=\@pdfsubject,%
9204     Creator=\@pdfcreator,%
9205     Author=\@pdfauthor,%
9206     Keywords=\@pdfkeywords
9207 }%
9208 \Hy@DisableOption{pdfauthor}%
9209 \Hy@DisableOption{pdftitle}%
9210 \Hy@DisableOption{pdfsubject}%
9211 \Hy@DisableOption{pdfcreator}%
9212 \Hy@DisableOption{pdfcreationdate}%
9213 \Hy@DisableOption{pdfmoddate}%
9214 \Hy@DisableOption{pdfproducer}%
9215 \Hy@DisableOption{pdfkeywords}%
9216 }
9217 \def\PDF@SetupDoc{%
9218     \def\Hy@temp{%
9219         \ifx\@pdfstartpage\@empty
9220         \else
9221             \ifx\@pdfstartview\@empty
9222             \else
9223                 \edef\Hy@temp{%
9224                     ,Page=\@pdfstartpage
9225                     ,View=\@pdfstartview
9226                 }%
9227             \fi
9228         \fi
9229         \edef\Hy@temp{%
9230             \noexpand\pdfmark{%
9231                 pdfmark=/DOCVIEW,%
9232                 PageMode=/\@pdfpagemode
9233                 \Hy@temp
9234             }%
9235         }%
9236         \Hy@temp
9237         \ifx\@pdfpagescrop\@empty
9238         \else
9239             \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
9240         \fi
9241         \edef\Hy@temp{%
9242             \ifHy@toolbar\else /HideToolbar true\fi
9243             \ifHy@menubar\else /HideMenubar true\fi
9244             \ifHy>windowui\else /HideWindowUI true\fi
9245             \ifHy@fitwindow /FitWindow true\fi
9246             \ifHy@centerwindow /CenterWindow true\fi
9247             \ifHy@displaydoctitle /DisplayDocTitle true\fi
9248             \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
9249             \Hy@UseNameKey{Direction}\@pdfdirection
9250             \Hy@UseNameKey{ViewArea}\@pdfviewarea

```

```

9251 \Hy@UseNameKey{ViewClip}\@pdfviewclip
9252 \Hy@UseNameKey{PrintArea}\@pdfprintarea
9253 \Hy@UseNameKey{PrintClip}\@pdfprintclip
9254 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
9255 \Hy@UseNameKey{Duplex}\@pdfduplex
9256 \ifx\@pdfpicktraybypdfsize\@empty
9257 \else
9258 /PickTrayByPDFSize \@pdfpicktraybypdfsize
9259 \fi
9260 \ifx\@pdfprintpagerange\@empty
9261 \else
9262 /PrintPageRange[\@pdfprintpagerange]%
9263 \fi
9264 \ifx\@pdfnumcopies\@empty
9265 \else
9266 /NumCopies \@pdfnumcopies
9267 \fi
9268 }%
9269 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
9270 \pdfmark{%
9271 pdfmark=/PUT,%
9272 Raw={%
9273 \string{Catalog\string}<<%
9274 \ifx\Hy@temp\@empty
9275 \else
9276 /ViewerPreferences<<\Hy@temp>>%
9277 \fi
9278 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
9279 \ifx\@pdflang\@empty
9280 \else
9281 /Lang(\@pdflang)%
9282 \fi
9283 \ifx\@baseurl\@empty
9284 \else
9285 /URI<</Base(\Hy@pstringB)>>%
9286 \fi
9287 >>%
9288 }%
9289 }%
9290 }
9291 \</pdfmark>
9292 \<*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.

```

9293 \newif\ifHy@pdfmarkerror
9294 \def\pdfmark{\@ifnextchar[{\pdfmark@}{\pdfmark@[]}}
9295 \def\pdfmark@[#1]#2{%
9296 \Hy@pdfmarkerrorfalse
9297 \edef\@processme{\noexpand\pdf@toks={\the\pdf@defaulttoks}}%
9298 \@processme
9299 \let\pdf@type\relax
9300 \setkeys{PDF}{#2}%
9301 \ifHy@pdfmarkerror

```

```

9302 \else
9303   \ifx\pdf@type\relax
9304     \Hy@WarningNoLine{no pdfmark type specified in #2!!}%
9305     \ifx\#1\%
9306       \else
9307         \pdf@rect{#1}%
9308       \fi
9309     \else
9310       \ifx\#1\%
9311         \literalps@out{%
9312           [\the\pdf@toks\space\pdf@type\space pdfmark%
9313         ]}%
9314       \else
9315         \@ifundefined{@\pdf@linktype color}{%
9316           \Hy@colorlink\@linkcolor
9317         }{%
9318           \expandafter\Hy@colorlink
9319             \csname @\pdf@linktype color\endcsname
9320         }%
9321         \pdf@rect{#1}%
9322         \literalps@out{%
9323           [\the\pdf@toks\space\pdf@type\space pdfmark%
9324         ]}%
9325         \Hy@endcolorlink
9326       \fi
9327     \fi
9328 \fi
9329 }

```

The complicated bit is working out the right enclosing rectangle of some piece of  $\text{\TeX}$  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}

```

```

9330 \newsavebox{\pdf@box}
9331 \providecommand*{\Hy@setouterhbox}{\sbox}
9332 \providecommand*{\Hy@breaklinksunhbox}{\unhbox}
9333 \def\Hy@DEST{/DEST}
9334 \def\pdf@rect#1{%
9335   \leavevmode
9336   \ifHy@breaklinks
9337     \Hy@setouterhbox\pdf@box{#1}%
9338   \else
9339     \sbox\pdf@box{#1}%
9340   \fi
9341   \dimen@ht\pdf@box
9342   \ifdim\dp\pdf@box=\z@
9343     \literalps@out{H.S}%
9344   \else
9345     \lower\dp\pdf@box\hbox{\literalps@out{H.S}}%
9346   \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...).

```

9347 \ifHy@breaklinks
9348 \expandafter\Hy@breaklinkssunhbox
9349 \else
9350 \expandafter\box
9351 \fi
9352 \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

9353 \ifdim\dimen@=\z@
9354 \literalps@out{H.R}%
9355 \else
9356 \raise\dimen@\hbox{\literalps@out{H.R}}%
9357 \fi
9358 \ifx\pdf@type\Hy@DEST
9359 \else
9360 \pdf@addtoksx{H.B}%
9361 \fi
9362 }

```

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.

```

9363 \newtoks\pdf@toks
9364 \newtoks\pdf@defaulttoks
9365 \pdf@defaulttoks={}
9366 \def\pdf@addtoks#1#2{%
9367 \edef\@processme{\pdf@toks{\the\pdf@toks/#2 #1}}%
9368 \@processme
9369 }
9370 \def\pdf@addtoksx#1{%
9371 \edef\@processme{\pdf@toks{\the\pdf@toks\space #1}}%
9372 \@processme
9373 }
9374 \def\PDFdefaults#1{%
9375 \pdf@defaulttoks={#1}%
9376 }

```

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

```

9377 % what is the type of pdfmark?
9378 \define@key{PDF}{pdfmark}{\def\pdf@type{#1}}
9379 % what is the link type?
9380 \define@key{PDF}{linktype}{\def\pdf@linktype{#1}}
9381 \def\pdf@linktype{link}
9382 % parameter is a stream of PDF
9383 \define@key{PDF}{Raw}{\pdf@addtoksx{#1}}
9384 % parameter is a name
9385 \define@key{PDF}{Action}{\pdf@addtoks{#1}{Action}}
9386 % parameter is a array
9387 \define@key{PDF}{Border}{%
9388 \edef\Hy@temp{#1}%
9389 \ifx\Hy@temp\@empty
9390 \else
9391 \pdf@addtoks{#1}\Hy@BorderArrayPatch}{Border}% hash-ok

```

```

9392 \fi
9393 }
9394 \let\Hy@BorderArrayPatch\@empty
9395 % parameter is a dictionary
9396 \define@key{PDF}{BorderStyle}{%
9397 \edef\Hy@temp{#1}%
9398 \ifx\Hy@temp\@empty
9399 \else
9400 \pdf@addtoks{<<#1>>}{BS}%
9401 \fi
9402 }
9403 % parameter is a array
9404 \define@key{PDF}{Color}{%
9405 \ifx\relax#1\relax
9406 \else
9407 \pdf@addtoks{[#1]}{Color}% hash-ok
9408 \fi
9409 }
9410 % parameter is a string
9411 \define@key{PDF}{Contents}{\pdf@addtoks{(#1)}{Contents}}
9412 % parameter is a integer
9413 \define@key{PDF}{Count}{\pdf@addtoks{#1}{Count}}
9414 % parameter is a array
9415 \define@key{PDF}{CropBox}{\pdf@addtoks{[#1]}{CropBox}}% hash-ok
9416 % parameter is a string
9417 \define@key{PDF}{DOSFile}{\pdf@addtoks{(#1)}{DOSFile}}
9418 % parameter is a string or file
9419 \define@key{PDF}{DataSource}{\pdf@addtoks{(#1)}{DataSource}}
9420 % parameter is a destination
9421 \define@key{PDF}{Dest}{%
9422 \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
9423 \ifx\Hy@pstringDest\@empty
9424 \Hy@pdfmarkerrortrue
9425 \Hy@Warning{Destination with empty name ignored}%
9426 \else
9427 \pdf@addtoks{(\Hy@pstringDest) cvn}{Dest}%
9428 \fi
9429 }
9430 \define@key{PDF}{DestAnchor}{%
9431 \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
9432 \ifx\Hy@pstringDest\@empty
9433 \Hy@pdfmarkerrortrue
9434 \Hy@Warning{Destination with empty name ignored}%
9435 \else
9436 \pdf@addtoks{(\Hy@pstringDest) cvn}{Dest}%
9437 \fi
9438 }
9439 % parameter is a string
9440 \define@key{PDF}{Dir}{\pdf@addtoks{(#1)}{Dir}}
9441 % parameter is a string
9442 \define@key{PDF}{File}{\pdf@addtoks{(#1)}{File}}
9443 % parameter is a int
9444 \define@key{PDF}{Flags}{\pdf@addtoks{#1}{Flags}}
9445 \define@key{PDF}{PDFAFlags}{%
9446 \ifHy@pdfa
9447 \pdf@addtoks{#1}{F}%
9448 \fi

```

```

9449 }
9450 % parameter is a name
9451 \define@key{PDF}{AcroHighlight}{%
9452   \beginingroup
9453     \edef\x{#1}%
9454     \expandafter\endgroup\ifx\x\@empty
9455     \else
9456       \pdf@addtoks{#1}{H}%
9457     \fi
9458 }
9459 % parameter is a string
9460 \define@key{PDF}{ID}{\pdf@addtoks{[#1]}{ID}}% hash-ok
9461 % parameter is a string
9462 \define@key{PDF}{MacFile}{\pdf@addtoks{(#1)}{MacFile}}
9463 % parameter is a string
9464 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
9465 % parameter is a string
9466 \define@key{PDF}{Op}{\pdf@addtoks{(#1)}{Op}}
9467 % parameter is a Boolean
9468 \define@key{PDF}{Open}{\pdf@addtoks{#1}{Open}}
9469 % parameter is a integer or name
9470 \define@key{PDF}{Page}{\pdf@addtoks{#1}{Page}}
9471 % parameter is a name
9472 \define@key{PDF}{PageMode}{\pdf@addtoks{#1}{PageMode}}
9473 % parameter is a string
9474 \define@key{PDF}{Params}{\pdf@addtoks{(#1)}{Params}}
9475 % parameter is a array
9476 \define@key{PDF}{Rect}{\pdf@addtoks{[#1]}{Rect}}% hash-ok
9477 % parameter is a integer
9478 \define@key{PDF}{SrcPg}{\pdf@addtoks{#1}{SrcPg}}
9479 % parameter is a name
9480 \define@key{PDF}{Subtype}{\pdf@addtoks{#1}{Subtype}}
9481 % parameter is a string
9482 \define@key{PDF}{Title}{\pdf@addtoks{(#1)}{Title}}
9483 % parameter is a string
9484 \define@key{PDF}{Unix}{\pdf@addtoks{(#1)}{Unix}}
9485 % parameter is a string
9486 \define@key{PDF}{UnixFile}{\pdf@addtoks{(#1)}{UnixFile}}
9487 % parameter is an array
9488 \define@key{PDF}{View}{\pdf@addtoks{[#1]}{View}}% hash-ok
9489 % parameter is a string
9490 \define@key{PDF}{WinFile}{\pdf@addtoks{(#1)}{WinFile}}

```

These are the keys used in the DOCINFO section.

```

9491 \define@key{PDF}{Author}{\pdf@addtoks{(#1)}{Author}}
9492 \define@key{PDF}{Creator}{\pdf@addtoks{(#1)}{Creator}}
9493 \define@key{PDF}{CreationDate}{\pdf@addtoks{(#1)}{CreationDate}}
9494 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
9495 \define@key{PDF}{Producer}{\pdf@addtoks{(#1)}{Producer}}
9496 \define@key{PDF}{Subject}{\pdf@addtoks{(#1)}{Subject}}
9497 \define@key{PDF}{Keywords}{\pdf@addtoks{(#1)}{Keywords}}
9498 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
9499 \define@key{PDF}{Base}{\pdf@addtoks{(#1)}{Base}}
9500 \define@key{PDF}{URI}{\pdf@addtoks{#1}{URI}}
9501 </pdfmarkbase>
9502 <*pdfmark>
9503 \def\Acrobatmenu#1#2{%
9504   \Hy@Acrobatmenu{#1}{#2}{%

```

```

9505 \pdfmark[{#2}]{%
9506   linktype=menu,%
9507   pdfmark=/ANN,%
9508   AcroHighlight=\@pdfhighlight,%
9509   Border=\@pdfborder,%
9510   BorderStyle=\@pdfborderstyle,%
9511   Action={<< /Subtype /Named /N /#1 >>},%
9512   Subtype=/Link,%
9513   PDFAFlags=4%
9514 }%
9515 }%
9516 }

```

And now for some useful examples:

```

9517 \def\PDFNextPage{\@ifnextchar[{\PDFNextPage@}{\PDFNextPage@[]}}
9518 \def\PDFNextPage@[#1]#2{%
9519   \pdfmark[{#2}]{%
9520     #1,%
9521     Border=\@pdfborder,%
9522     BorderStyle=\@pdfborderstyle,%
9523     Color=.2 .1 .5,%
9524     pdfmark=/ANN,%
9525     Subtype=/Link,%
9526     PDFAFlags=4,%
9527     Page=/Next%
9528   }%
9529 }
9530 \def\PDFPreviousPage{%
9531   \@ifnextchar[{\PDFPreviousPage@}{\PDFPreviousPage@[]}%
9532 }
9533 \def\PDFPreviousPage@[#1]#2{%
9534   \pdfmark[{#2}]{%
9535     #1,%
9536     Border=\@pdfborder,%
9537     BorderStyle=\@pdfborderstyle,%
9538     Color=.4 .4 .1,%
9539     pdfmark=/ANN,%
9540     Subtype=/Link,%
9541     PDFAFlags=4,%
9542     Page=/Prev%
9543   }%
9544 }
9545 \def\PDFOpen#1{%
9546   \pdfmark{#1,pdfmark=/DOCVIEW}%
9547 }

```

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

```

9548 \def\hyper@linkurl#1#2{%
9549   \begingroup
9550   \Hy@pstringdef\Hy@pstringURI{#2}%
9551   \hyper@chars
9552   \leavevmode
9553   \pdfmark[{#1}]{%
9554     pdfmark=/ANN,%
9555     linktype=url,%
9556     AcroHighlight=\@pdfhighlight,%
9557     Border=\@pdfborder,%
9558     BorderStyle=\@pdfborderstyle,%

```

```

9559     Color=\@urlbordercolor,%
9560     Action={<< /Subtype /URI /URI (\Hy@pstringURI) >>},%
9561     Subtype=/Link,%
9562     PDFAFlags=4%
9563   }%
9564 \endgroup
9565 }
9566 \def\hyper@linkfile#1#2#3{%
9567   \begingroup
9568     \Hy@pstringdef\Hy@pstringF{#2}%
9569     \Hy@pstringdef\Hy@pstringD{#3}%
9570     \leavevmode
9571     \pdfmark[{#1}]{%
9572       pdfmark=/ANN,%
9573       Subtype=/Link,%
9574       PDFAFlags=4,%
9575       AcroHighlight=\@pdfhighlight,%
9576       Border=\@pdfborder,%
9577       BorderStyle=\@pdfborderstyle,%
9578       linktype=file,%
9579       Color=\@filebordercolor,%
9580       Action={%
9581         <<%
9582           /S/GoToR%
9583           \Hy@SetNewWindow
9584           /F(\Hy@pstringF)%
9585           /D\ifx\#3\[\[0 \@pdfstartview]\else(\Hy@pstringD)cvn\fi
9586         >>%
9587       }%
9588     }%
9589   \endgroup
9590 }
9591 \def\@hyper@launch run:#1\#2#3{%
9592   \begingroup
9593     \Hy@pstringdef\Hy@pstringF{#1}%
9594     \Hy@pstringdef\Hy@pstringP{#3}%
9595     \leavevmode
9596     \pdfmark[{#2}]{%
9597       pdfmark=/ANN,%
9598       Subtype=/Link,%
9599       PDFAFlags=4,%
9600       AcroHighlight=\@pdfhighlight,%
9601       Border=\@pdfborder,%
9602       BorderStyle=\@pdfborderstyle,%
9603       linktype=run,%
9604       Color=\@runbordercolor,%
9605       Action={%
9606         <<%
9607           /S/Launch%
9608           \Hy@SetNewWindow
9609           /F(\Hy@pstringF)%
9610           \ifx\#3\[%
9611             \else
9612               /Win<</P(\Hy@pstringP)/F(\Hy@pstringF)>>%
9613             \fi
9614           >>%
9615         }%

```

```

9616    }%
9617  \endgroup
9618 }
9619 </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.

```

9620 <*dvips>
9621 \providecommand*\XR@ext>{pdf}
9622 \def\Hy@raisedlink{}
9623 \def\literalps@out#1{\special{ps:SDict begin #1 end}}%
9624 \def\headerps@out#1{\special{! #1}}%
9625 \input{pdfmark.def}%
9626 \ifx\@pdfproducer\relax
9627   \def\@pdfproducer{dvips + Distiller}%
9628 \fi
9629 \providecommand*\@pdfborder{0 0 1}
9630 \providecommand*\@pdfborderstyle{}
9631 \providecommand*\@pdfview{XYZ}
9632 \providecommand*\@pdfviewparams{ H.V}
9633 \def\Hy@BorderArrayPatch{BorderArrayPatch}
9634 \g@addto@macro\Hy@FirstPageHook{%
9635   \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.

```

9636   /DvipsToPDF{72.27 mul Resolution div} def%
9637   /PDFToDvips{72.27 div Resolution mul} def%
9638   /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.

```

9639   /BorderArrayPatch{%
9640     [exch{%
9641       dup dup type/integertype eq exch type/realtype eq or%
9642       {BPToDvips}if%
9643     }forall]%
9644   }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.

```

9645 /HyperBorder {1 PDFToDvips} def%
9646 /H.V {pdf@hoff pdf@voff null} def%
9647 /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

```

9648 /H.S {%
9649   currentpoint %
9650   HyperBorder add /pdf@lly exch def %
9651   dup DvipsToPDF 72 add /pdf@hoff exch def %
9652   HyperBorder sub /pdf@llx exch def%
9653 } 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`

```

9654 /H.L {%
9655   2 sub dup%
9656 /HyperBasePt exch def %
9657 PDFToDvips /HyperBaseDvips exch def %
9658 currentpoint %
9659 HyperBaseDvips sub /pdf@ury exch def%
9660 /pdf@urx exch def%
9661 } def%
9662 /H.A {%
9663   H.L %
9664 % |pdf@voff| = the distance from the top of the page to a point
9665 % |\baselineskip| above the current point in PDF coordinates
9666   currentpoint exch pop %
9667   vsize 72 sub exch DvipsToPDF %
9668   HyperBasePt sub % baseline skip
9669   sub /pdf@voff exch def%
9670 } def%
9671 /H.R {%
9672   currentpoint %
9673   HyperBorder sub /pdf@ury exch def %
9674   HyperBorder add /pdf@urx exch def %
9675 % |pdf@voff| = the distance from the top of the page to the current point, in
9676 % PDF coordinates
9677   currentpoint exch pop vsize 72 sub %
9678   exch DvipsToPDF sub /pdf@voff exch def%
9679 } def%
9680 }%
9681 }
9682 \AtBeginShipoutFirst{%
9683   \ifHy@setpagesize
9684     \begingroup
9685       \@ifundefined{stockwidth}{%
9686         \ifx\special@paper\empty
9687           \special{papersize=\the\paperwidth,\the\paperheight}%
9688         \else

```

```

9689         \special{papersize=\special@paper}%
9690         \fi
9691     }{%
9692         \ifdim\stockwidth=\z@
9693         \else
9694             \special{papersize=\the\stockwidth,\the\stockheight}%
9695         \fi
9696     }%
9697 \endgroup
9698 \fi
9699 \Hy@DisableOption{setpagesize}%
9700 }
9701 </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.

```

9702 <*vtexpdfmark>
9703 \providecommand*\XR@ext}{pdf}
9704 \def\Hy@raisedlink{}
9705 \def\literalps@out#1{\special{pS:#1}}%
9706 \def\headerps@out#1{\immediate\special{pS:#1}}%
9707 \input{pdfmark.def}%
9708 \ifx\@pdfproducer\relax
9709     \ifnum\OpMode=\@ne
9710         \def\@pdfproducer{VTeX}%
9711     \else
9712         \def\@pdfproducer{VTeX + Distiller}%
9713     \fi
9714 \fi
9715 \providecommand*\@pdfborder{0 0 1}
9716 \providecommand*\@pdfborderstyle{}
9717 \providecommand*\@pdfview{XYZ}
9718 \providecommand*\@pdfviewparams{ H.V}
9719 \g@addto@macro\Hy@FirstPageHook{%
9720     \headerps@out{%
9721         /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.

```

9722     /HyperBorder {1} def%
9723     /H.V {pdf@hoff pdf@voff null} def%
9724     /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:  $\text{pdf@lly} = Y_c - \text{HyperBorder}$ ,  $\text{pdf@hoff} = X_c + 72$ ,  $\text{pdf@llx} = X_c - \text{HyperBorder}$

```

9725     /H.S {%
9726         currentpoint %
9727         HyperBorder sub%
9728         /pdf@lly exch def %
9729         dup 72 add /pdf@hoff exch def %
9730         HyperBorder sub%

```

```

9731      /pdf@llx exch def%
9732    } def%

```

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

```

9733    /H.L {%
9734      2 sub%
9735      /HyperBasePt exch def %
9736      currentpoint %
9737      HyperBasePt add HyperBorder add%
9738      /pdf@ury exch def %
9739      HyperBorder add%
9740      /pdf@urx exch def%
9741    } def%
9742    /H.A {%
9743      H.L %
9744      currentpoint exch pop %
9745      vsize 72 sub exch %
9746      HyperBasePt add add%
9747      /pdf@voff exch def%
9748    } def%

```

$\text{pdf@ury} = Y_c + \text{HyperBorder}$ ,  $\text{pdf@urx} = X_c + \text{HyperBorder}$

```

9749    /H.R {%
9750      currentpoint %
9751      HyperBorder add%
9752      /pdf@ury exch def %
9753      HyperBorder add%
9754      /pdf@urx exch def %
9755      currentpoint exch pop vsize 72 sub add%
9756      /pdf@voff exch def%
9757    } def%
9758  }%
9759 }
9760 </vtxpdfmark>

```

## 46.11 Textures

```

9761 <*textures>
9762 \providecommand*{\XR@ext}{pdf}

```

At the suggestion of Jacques Distler ([distler@golem.ph.utexas.edu](mailto: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](mailto: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.

```

9763 \begingroup
9764   \obeylines %
9765   \gdef\Hy@ps@CR{\noexpand
9766     }%
9767 \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.

```

9768 \def\literalps@out#1{%
9769   \special{postscript 0 0 transform}%
9770   \special{rawpostscript itransform moveto\Hy@ps@CR #1}%
9771 }%
9772 %

```

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.

```

9773 \def\headerps@out#1{%
9774   \special{%
9775     prepostscript TeXdict begin\Hy@ps@CR
9776       #1\Hy@ps@CR
9777     end%
9778   }%
9779 }%
9780 %

```

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.

```

9781 \g@addto@macro\Hy@FirstPageHook{%
9782   \headerps@out{%
9783     /betterpdfmark {%
9784       systemdict begin %
9785         dup /BP eq%
9786         {cleartomark gsave nulldevice []}%
9787         {dup /EP eq%
9788           {cleartomark cleartomark grestore}%
9789           {cleartomark}%
9790           ifelse%
9791         }ifelse %
9792       end%
9793     }def\Hy@ps@CR
9794     __pdfmark__ not{/pdfmark /betterpdfmark load def}if%
9795   }% end of \headerps@out
9796 }% end of \AtBeginShipoutFirst
9797 %
9798 \input{pdfmark.def}%
9799 %
9800 \ifx\@pdfproducer\relax
9801   \def\@pdfproducer{Textures + Distiller}%
9802 \fi
9803 \providecommand*\@pdfborder{0 0 1}
9804 \providecommand*\@pdfborderstyle{}
9805 \providecommand*\@pdfview{XYZ}
9806 \providecommand*\@pdfviewparams{ H.V}
9807 %

```

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 T<sub>E</sub>X.

```
9808 \headerps@out{%
```

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

```
9809 /vsize {\Hy@pageheight} def%
9810 /DvipsToPDF {} def%
9811 /PDFToDvips {} def%
9812 /BPToDvips {} def%
9813 /HyperBorder { 1 PDFToDvips } def\Hy@ps@CR
9814 /H.V {pdf@hoff pdf@voff null} def\Hy@ps@CR
9815 /H.B {/Rect[pdf@llx pdf@lly pdf@urx pdf@ury]} def\Hy@ps@CR
9816 /H.S {%
9817     currentpoint %
9818     HyperBorder add /pdf@lly exch def %
9819     dup DvipsToPDF 72 add /pdf@hoff exch def %
9820     HyperBorder sub /pdf@llx exch def%
9821 } def\Hy@ps@CR
9822 /H.L {%
9823     2 sub %
9824     PDFToDvips /HyperBase exch def %
9825     currentpoint %
9826     HyperBase sub /pdf@ury exch def%
9827     /pdf@urx exch def%
9828 } def\Hy@ps@CR
9829 /H.A {%
9830     H.L %
9831     currentpoint exch pop %
9832     vsize 72 sub exch DvipsToPDF %
9833     HyperBase sub % baseline skip
9834     sub /pdf@voff exch def%
9835 } def\Hy@ps@CR
9836 /H.R {%
9837     currentpoint %
9838     HyperBorder sub /pdf@ury exch def %
9839     HyperBorder add /pdf@urx exch def %
9840     currentpoint exch pop vsize 72 sub %
9841     exch DvipsToPDF sub /pdf@voff exch def%
9842 } def\Hy@ps@CR
9843 }

9844 \AfterBeginDocument{%
9845     \ifHy@colorlinks
9846         \headerps@out{/PDFBorder{/Border [0 0 0]}def}%
9847     \fi
9848 }
```

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.

```
9849 \expandafter\let\expandafter\keepPDF@SetupDoc
9850 \csname PDF@SetupDoc\endcsname
9851 \def\PDF@SetupDoc{%
9852     \ifx\@baseurl\@empty
9853     \else
9854         \special{html:<base href="\@baseurl">}%
9855     \fi
9856     \keepPDF@SetupDoc
```

```

9857 }
9858 \def\hyper@anchor#1{%
9859   \Hy@SaveLastskip
9860   \begingroup
9861     \let\protect=\string
9862     \special{html:<a name=%
9863       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
9864   \endgroup
9865   \Hy@activeanchortrue
9866   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
9867   \special{html:</a>}%
9868   \Hy@activeanchorfalse
9869   \Hy@RestoreLastskip
9870 }
9871 \def\hyper@anchorstart#1{%
9872   \Hy@SaveLastskip
9873   \begingroup
9874     \hyper@chars
9875     \special{html:<a name=%
9876       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
9877   \endgroup
9878   \Hy@activeanchortrue
9879 }
9880 \def\hyper@anchorend{%
9881   \special{html:</a>}%
9882   \Hy@activeanchorfalse
9883   \Hy@RestoreLastskip
9884 }
9885 \def\@urltype{url}
9886 \def\hyper@linkstart#1#2{%
9887   \expandafter\Hy@colorlink\csname @#1color\endcsname
9888   \def\Hy@tempa{#1}%
9889   \ifx\Hy@tempa\@urltype
9890     \special{html:<a href=\hyper@quote#2\hyper@quote>}%
9891   \else
9892     \begingroup
9893       \hyper@chars
9894       \special{html:<a href=%
9895         \hyper@quote\#HyperDestNameFilter{#2}\hyper@quote>}%
9896     \endgroup
9897   \fi
9898 }
9899 \def\hyper@linkend{%
9900   \special{html:</a>}%
9901   \Hy@endcolorlink
9902 }
9903 \def\hyper@linkfile#1#2#3{%
9904   \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\else\##3\fi}%
9905 }
9906 \def\hyper@linkurl#1#2{%
9907   \leavevmode
9908   \ifHy@raiselinks
9909     \setbox\@tempboxa=\color@hbox #1\color@endbox
9910     \@linkdim\dp\@tempboxa
9911     \lower\@linkdim\hbox{%
9912       \hyper@chars
9913       \special{html:<a href=\hyper@quote#2\hyper@quote>}%

```

```

9914    }%
9915    \Hy@colorlink\@urlcolor#1%
9916    \@linkdim\ht\@tempboxa
9917    \advance\@linkdim by -6.5\p@
9918    \raise\@linkdim\hbox{\special{html:</a>}}%
9919    \Hy@endcolorlink
9920  \else
9921    \begingroup
9922      \hyper@chars
9923      \special{html:<a href=\hyper@quote#2\hyper@quote>}%
9924      \Hy@colorlink\@urlcolor#1%
9925      \special{html:</a>}%
9926      \Hy@endcolorlink
9927    \endgroup
9928  \fi
9929 }

```

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

```

9930 \def\hyper@link#1#2#3{%
9931   \hyper@linkurl{#3}{\# \HyperDestNameFilter{#2}}%
9932 }
9933 \def\hyper@image#1#2{%
9934   \begingroup
9935     \hyper@chars
9936     \special{html:<img src=\hyper@quote#1\hyper@quote>}%
9937   \endgroup
9938 }
9939 </textures>

```

## 46.12 dvipsone

```

9940 % \subsection{dvipsone driver}
9941 % Over-ride the default setup macro in pdfmark driver to use Y\&Y
9942 % |\special| commands.
9943 < *dvipsone>
9944 \providecommand*{\XR@ext}{pdf}
9945 \def\Hy@raisedlink{}
9946 \providecommand*{\pdfborder}{0 0 1}
9947 \providecommand*{\pdfborderstyle}{}
9948 \def\literalps@out#1{\special{ps:#1}}%
9949 \def\headerps@out#1{\special{headertext=#1}}%
9950 \input{pdfmark.def}%
9951 \ifx\@pdfproducer\relax
9952   \def\@pdfproducer{dvipsone + Distiller}%
9953 \fi
9954 \def\PDF@FinishDoc{%
9955   \Hy@UseMaketitleInfos
9956   \special{PDF: Keywords \@pdfkeywords}%
9957   \special{PDF: Title \@pdftitle}%
9958   \special{PDF: Creator \@pdfcreator}%
9959   \ifx\@pdfcreationdate\@empty
9960   \else
9961     \special{PDF: CreationDate \@pdfcreationdate}%
9962   \fi
9963   \ifx\@pdfmoddate\@empty
9964   \else
9965     \special{PDF: ModDate \@pdfmoddate}%
9966   \fi

```

```

9967 \special{PDF: Author \@pdfauthor}%
9968 \ifx\@pdfproducer\relax
9969 \else
9970 \special{PDF: Producer \@pdfproducer}%
9971 \fi
9972 \special{PDF: Subject \@pdfsubject}%
9973 \Hy@DisableOption{pdfauthor}%
9974 \Hy@DisableOption{pdftitle}%
9975 \Hy@DisableOption{pdfsubject}%
9976 \Hy@DisableOption{pdfcreator}%
9977 \Hy@DisableOption{pdfcreationdate}%
9978 \Hy@DisableOption{pdfmoddate}%
9979 \Hy@DisableOption{pdfproducer}%
9980 \Hy@DisableOption{pdfkeywords}%
9981 }
9982 \def\PDF@SetupDoc{%
9983 \def\Hy@temp{}%
9984 \ifx\@pdfstartpage\@empty
9985 \else
9986 \ifx\@pdfstartview\@empty
9987 \else
9988 \edef\Hy@temp{%
9989 ,Page=\@pdfstartpage
9990 ,View=\@pdfstartview
9991 }%
9992 \fi
9993 \fi
9994 \edef\Hy@temp{%
9995 \noexpand\pdfmark{%
9996 pdfmark=/DOCVIEW,%
9997 PageMode=/\@pdfpagemode
9998 \Hy@temp
9999 }%
10000 }%
10001 \Hy@temp
10002 \ifx\@pdfpagescrop\@empty
10003 \else
10004 \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
10005 \fi
10006 \edef\Hy@temp{%
10007 \ifHy@toolbar\else /HideToolbar true\fi
10008 \ifHy@menubar\else /HideMenubar true\fi
10009 \ifHy>windowui\else /HideWindowUI true\fi
10010 \ifHy@fitwindow /FitWindow true\fi
10011 \ifHy@centerwindow /CenterWindow true\fi
10012 \ifHy@displaydoctitle /DisplayDocTitle true\fi
10013 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
10014 \Hy@UseNameKey{Direction}\@pdfdirection
10015 \Hy@UseNameKey{ViewArea}\@pdfviewarea
10016 \Hy@UseNameKey{ViewClip}\@pdfviewclip
10017 \Hy@UseNameKey{PrintArea}\@pdfprintarea
10018 \Hy@UseNameKey{PrintClip}\@pdfprintclip
10019 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
10020 \Hy@UseNameKey{Duplex}\@pdfduplex
10021 \ifx\@pdfpicktraybypdfsize\@empty
10022 \else
10023 /PickTrayByPDFSize \@pdfpicktraybypdfsize

```

```

10024 \fi
10025 \ifx\@pdfprintpagerange\@empty
10026 \else
10027 /PrintPageRange[\@pdfprintpagerange]%
10028 \fi
10029 \ifx\@pdfnumcopies\@empty
10030 \else
10031 /NumCopies \@pdfnumcopies
10032 \fi
10033 }%
10034 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
10035 \pdfmark{%
10036 pdfmark=/PUT,%
10037 Raw={%
10038 \string{Catalog\string}<<%
10039 \ifx\Hy@temp\@empty
10040 \else
10041 /ViewerPreferences<<\Hy@temp>>%
10042 \fi
10043 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
10044 \ifx\@pdflang\@empty
10045 \else
10046 /Lang(\@pdflang)%
10047 \fi
10048 \ifx\@baseurl\@empty
10049 \else
10050 /URI<</Base(\Hy@pstringB)>>%
10051 \fi
10052 >>%
10053 }%
10054 }%
10055 }
10056 \providecommand*\@pdfview{XYZ}
10057 \providecommand*\@pdfviewparams{ %
10058 gsave revscl currentpoint grestore %
10059 72 add exch pop null exch null%
10060 }
10061 \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  $\TeX$ .

```

10062 \g@addto@macro\Hy@FirstPageHook{%
10063 \headerps@out{%

```

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

```

10064 /DvipsToPDF { 65781 div } def%
10065 /PDFToDvips { 65781 mul } def%
10066 /BPToDvips{65781 mul}def%
10067 /HyperBorder { 1 PDFToDvips } def%
10068 /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.

```

10069 /BorderArrayPatch{%
10070 [exch{%

```

```

10071      dup dup type/integertype eq exch type/realttype eq or%
10072      {BPToDvips}if%
10073      }forall}%
10074    }def%
10075    /H.S {%
10076      currentpoint %
10077      HyperBorder add /pdf@lly exch def %
10078      dup DvipsToPDF 72 add /pdf@hoff exch def %
10079      HyperBorder sub /pdf@llx exch def%
10080    } def%
10081    /H.L {%
10082      2 sub %
10083      PDFToDvips /HyperBase exch def %
10084      currentpoint %
10085      HyperBase sub /pdf@ury exch def%
10086      /pdf@urx exch def%
10087    } def%
10088    /H.A {%
10089      H.L %
10090      currentpoint exch pop %
10091      HyperBase sub % baseline skip
10092      DvipsToPDF /pdf@voff exch def%
10093    } def%
10094    /H.R {%
10095      currentpoint %
10096      HyperBorder sub /pdf@ury exch def %
10097      HyperBorder add /pdf@urx exch def %
10098      currentpoint exch pop DvipsToPDF /pdf@voff exch def%
10099    } def%
10100  }%
10101 }
10102 </dvipsone>

```

### 46.13 TeX4ht

```

10103 <*tex4ht>
10104 \providecommand*{\XR@ext}{html}
10105 \def\Hy@raisedlink{}
10106 \@ifpackageloaded{tex4ht}{%
10107   \typeout{hyperref tex4ht: tex4ht already loaded}%
10108 }{%
10109   \RequirePackage[hTex4ht]{tex4ht}%
10110 }
10111 \hyperlinkfileprefix{}
10112 \def\PDF@FinishDoc{}
10113 \def\PDF@SetupDoc{%
10114   \ifx\@baseurl\@empty
10115   \else
10116     \special{t4ht=<base href="\@baseurl">}%
10117   \fi
10118 }
10119 \def\hyper@anchor#1{%
10120   \Hy@SaveLastskip
10121   \begingroup
10122     \let\protect=\string
10123     \special{t4ht=<a name=%
10124       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
10125   \endgroup

```

```

10126 \Hy@activeanchortrue
10127 \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
10128 \special{t4ht=</a>}%
10129 \Hy@activeanchorfalse
10130 \Hy@RestoreLastskip
10131 }
10132 \def\hyper@anchorstart#1{%
10133 \Hy@SaveLastskip
10134 \begingroup
10135 \hyper@chars\special{t4ht=<a name=%
10136 \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
10137 \endgroup
10138 \Hy@activeanchortrue
10139 }
10140 \def\hyper@anchorend{%
10141 \special{t4ht=</a>}%
10142 \Hy@activeanchorfalse
10143 \Hy@RestoreLastskip
10144 }
10145 \def\@urlltype{url}
10146 \def\hyper@linkstart#1#2{%
10147 \expandafter\Hy@colorlink\csname @#1color\endcsname
10148 \def\Hy@tempa{#1}%
10149 \ifx\Hy@tempa\@urlltype
10150 \special{t4ht=<a href=\hyper@quote#2\hyper@quote>}%
10151 \else
10152 \begingroup
10153 \hyper@chars
10154 \special{t4ht=<a href=%
10155 \hyper@quote\# \HyperDestNameFilter{#2}\hyper@quote>}%
10156 \endgroup
10157 \fi
10158 }
10159 \def\hyper@linkend{%
10160 \special{t4ht=</a>}%
10161 \Hy@endcolorlink
10162 }
10163 \def\hyper@linkfile#1#2#3{%
10164 \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\else\##3\fi}%
10165 }
10166 \def\hyper@linkurl#1#2{%
10167 \leavevmode
10168 \ifHy@raiselinks
10169 \setbox\@tempboxa=\color@hbox #1\color@endbox
10170 \@linkdim\dp\@tempboxa
10171 \lower\@linkdim\hbox{%
10172 \begingroup
10173 \hyper@chars\special{t4ht=<a href=\hyper@quote#2\hyper@quote>}%
10174 \endgroup
10175 }%
10176 \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
10177 \@linkdim\ht\@tempboxa
10178 \advance\@linkdim by -6.5\p@
10179 \raise\@linkdim\hbox{\special{t4ht=</a>}}%
10180 \else
10181 \begingroup
10182 \hyper@chars

```

```

10183      \special{t4ht=<a href=\hyper@quote#2\hyper@quote>}%
10184      \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
10185      \special{t4ht=</a>}%
10186      \endgroup
10187 \fi
10188 }

```

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

```

10189 \def\hyper@link#1#2#3{%
10190   \hyper@linkurl{#3}{\#\HyperDestNameFilter{#2}}}%
10191 }
10192 \def\hyper@image#1#2{%
10193   \begingroup
10194     \hyper@chars
10195     \special{t4ht=<img src=\hyper@quote#1\hyper@quote>}%
10196   \endgroup
10197 }
10198 \let\autoref\ref
10199 \ifx \rEfLiNK \UnDef
10200   \def\rEfLiNK #1#2{#2}%
10201 \fi
10202 \def\backref#1{}
10203 </tex4ht>
10204 <*tex4htcfg>
10205 \IfFileExists{\jobname.cfg}{\endinput}{}
10206 \Preamble{html}
10207   \begin{document}%
10208 \EndPreamble
10209 \def\TeX{TeX}
10210 \def\OMEGA{\Omega}
10211 \def\LaTeX{LaTeX}
10212 \def\LaTeXe{\LaTeX2e}
10213 \def\eTeX{e-TeX}
10214 \def\MF{Metafont}
10215 \def\MP{MetaPost}
10216 </tex4htcfg>

```

## 47 Driver-specific form support

### 47.1 pdfmarks

```

10217 <*pdfmark>
10218 \long\def\@Form[#1]{%
10219   \g@addto@macro\Hy@FirstPageHook{%
10220     \headerps@out{%
10221 [%
10222   /_objdef{pdfDocEncoding}%
10223   /type/dict%
10224 /OBJ pdfmark%
10225 [%
10226   {pdfDocEncoding}%
10227   <<%
10228     /Type/Encoding%
10229     /Differences[%
10230       24/breve/caron/circumflex/dotaccent/hungarumlaut/ogonek/ring%
10231       /tilde %
10232       39/quotesingle %
10233       96/grave %

```

```

10234      128/bullet/dagger/daggerdbl/ellipsis/emdash/endash/florin%
10235      /fraction/guilsinglleft/guilsinglright/minus/perthousand%
10236      /quotedblbase/quotedblleft/quotedblright/quoteleft%
10237      /quoteright/quotesinglbase/trademark/fi/fl/Lslash/OE/Scaron%
10238      /Ydieresis/Zcaron/dotlessi/lslash/oe/scaron/zcaron %
10239      164/currency %
10240      166/brokenbar %
10241      168/dieresis/copyright/ordfeminine %
10242      172/logicalnot/.notdef/registered/macron/degree/plusminus%
10243      /twosuperior/threesuperior/acute/mu %
10244      183/periodcentered/cedilla/onesuperior/ordmasculine %
10245      188/onequarter/onehalf/threequarters %
10246      192/Aggrave/Aacute/Acircumflex/Atilde/Adieresis/Aring/AE%
10247      /Ccedilla/Egrave/Eacute/Ecircumflex/Edieresis/Igrave%
10248      /Iacute/Icircumflex/Idieresis/Eth/Ntilde/Ograve/Oacute%
10249      /Ocircumflex/Otilde/Odieresis/multiply/Oslash/Ugrave%
10250      /Uacute/Ucircumflex/Udieresis/Yacute/Thorn/germandbls%
10251      /agrave/aacute/acircumflex/atilde/adieresis/aring/ae%
10252      /ccedilla/egrave/eacute/ecircumflex/edieresis/igrave%
10253      /iacute/icircumflex/idieresis/eth/ntilde/ograde/oacute%
10254      /ocircumflex/otilde/odieresis/divide/oslash/ugrave/uacute%
10255      /ucircumflex/udieresis/yacute/thorn/ydieresis%
10256      ]%
10257      >>%
10258 /PUT pdfmark%
10259 [%
10260     /_objdef{ZaDb}%
10261     /type/dict%
10262 /OBJ pdfmark%
10263 [%
10264     {ZaDb}%
10265     <<%
10266         /Type/Font%
10267         /Subtype/Type1%
10268         /Name/ZaDb%
10269         /BaseFont/ZapfDingbats%
10270     >>%
10271 /PUT pdfmark%
10272 [%
10273     /_objdef{Helv}%
10274     /type/dict%
10275 /OBJ pdfmark%
10276 [%
10277     {Helv}%
10278     <<%
10279         /Type/Font%
10280         /Subtype/Type1%
10281         /Name/Helv%
10282         /BaseFont/Helvetica%
10283         /Encoding{pdfDocEncoding}%
10284     >>%
10285 /PUT pdfmark%
10286 [%
10287     /_objdef{aform}%
10288     /type/dict%
10289 /OBJ pdfmark%
10290 [%

```

```

10291  /_objdef{afields}%
10292  /type/array%
10293  /OBJ pdfmark%
10294  {%
10295  [%
10296    /BBox[0 0 100 100]%
10297    /_objdef{Check}%
10298  /BP pdfmark %
10299  1 0 0 setrgbcolor%
10300  /ZapfDingbats 80 selectfont %
10301  20 20 moveto%
10302  (4)show%
10303  [/EP pdfmark%
10304  [%
10305    /BBox[0 0 100 100]%
10306    /_objdef{Cross}%
10307  /BP pdfmark %
10308  1 0 0 setrgbcolor%
10309  /ZapfDingbats 80 selectfont %
10310  20 20 moveto%
10311  (8)show%
10312  [/EP pdfmark%
10313  [%
10314    /BBox[0 0 250 100]%
10315    /_objdef{Submit}%
10316  /BP pdfmark %
10317  0.6 setgray %
10318  0 0 250 100 rectfill %
10319  1 setgray %
10320  2 2 moveto %
10321  2 98 lineto %
10322  248 98 lineto %
10323  246 96 lineto %
10324  4 96 lineto %
10325  4 4 lineto %
10326  fill %
10327  0.34 setgray %
10328  248 98 moveto %
10329  248 2 lineto %
10330  2 2 lineto %
10331  4 4 lineto %
10332  246 4 lineto %
10333  246 96 lineto %
10334  fill%
10335  /Helvetica 76 selectfont %
10336  0 setgray %
10337  8 22.5 moveto%
10338  (Submit)show%
10339  [/EP pdfmark%
10340  [%
10341    /BBox[0 0 250 100]%
10342    /_objdef{SubmitP}%
10343  /BP pdfmark %
10344  0.6 setgray %
10345  0 0 250 100 rectfill %
10346  0.34 setgray %
10347  2 2 moveto %

```

```

10348 2 98 lineto %
10349 248 98 lineto %
10350 246 96 lineto %
10351 4 96 lineto %
10352 4 4 lineto %
10353 fill %
10354 1 setgray %
10355 248 98 moveto %
10356 248 2 lineto %
10357 2 2 lineto %
10358 4 4 lineto %
10359 246 4 lineto %
10360 246 96 lineto %
10361 fill%
10362 /Helvetica 76 selectfont %
10363 0 setgray %
10364 10 20.5 moveto%
10365 (Submit)show%
10366 [/EP pdfmark%
10367 } ?pdfmark%
10368 [%
10369 {aform}%
10370 <<%
10371 /Fields{afields}%
10372 /DR<<%
10373 /Font<<%
10374 /ZaDb{ZaDb}%
10375 /Helv{Helv}%
10376 >>%
10377 >>%
10378 /DA(/Helv 10 Tf 0 g)%
10379 /CO{corder}%
10380 \ifHy@pdfa
10381 \else
10382 /NeedAppearances true%
10383 \fi
10384 >>%
10385 /PUT pdfmark%
10386 [%
10387 {Catalog}%
10388 <<%
10389 /AcroForm{aform}%
10390 >>%
10391 /PUT pdfmark%
10392 [%
10393 /_objdef{corder}%
10394 /type/array%
10395 /OBJ pdfmark% dps
10396 }}%
10397 \setkeys{Form}{#1}%
10398 }
10399 \def\@endForm{}
10400 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
10401 \typeout{Sorry, pdfmark drivers do not support FORM gauges}%
10402 }
10403 \def\@TextField[#1]#2{% parameters, label
10404 \def\Fld@name{#2}%

```

```

10405 \def\Fld@default{}%
10406 \let\Fld@value\empty
10407 \def\Fld@width{\DefaultWidthofText}%
10408 \def\Fld@height{%
10409   \ifFld@multiline
10410     \DefaultHeightofTextMultiline
10411   \else
10412     \DefaultHeightofText
10413   \fi
10414 }%
10415 \begingroup
10416   \Field@toks={ }%
10417   \expandafter\HyField@SetKeys\expandafter{%
10418     \DefaultOptionsofText,#1%
10419   }%
10420   \HyField@FlagsText
10421   \ifFld@hidden\def\Fld@width{1sp}\fi
10422   \ifx\Fld@value\empty\def\Fld@value{\Fld@default}\fi
10423   \LayoutTextField{#2}{%
10424     \Hy@escapeform\PDFForm@Text
10425     \pdfmark[\MakeTextField{\Fld@width}{\Fld@height}]{%
10426       pdfmark=/ANN,Raw={\PDFForm@Text}%
10427     }%
10428   }%
10429 \endgroup
10430 }
10431 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
10432   \def\Fld@name{#2}%
10433   \let\Fld@default\relax
10434   \let\Fld@value\relax
10435   \def\Fld@width{\DefaultWidthofChoiceMenu}%
10436   \def\Fld@height{\DefaultHeightofChoiceMenu}%
10437   \begingroup
10438     \Fld@menulength=0 %
10439     \@tempdima\z@
10440     \@for\@curropt:=#3\do{%
10441       \expandafter\Fld@checkequals\@curropt==\%
10442       \Hy@StepCount\Fld@menulength
10443       \settowidth{\@tempdimb}{\@currDisplay}%
10444       \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
10445     }%
10446     \advance\@tempdima by 15\p@
10447     \Field@toks={ }%
10448     \begingroup
10449       \HyField@SetKeys{#1}%
10450     \edef\x{\endgroup
10451       \noexpand\expandafter
10452       \noexpand\HyField@SetKeys
10453       \noexpand\expandafter{%
10454         \expandafter\noexpand\cename DefaultOptionsof%
10455         \ifFld@radio
10456           Radio%
10457         \else
10458           \ifFld@combo
10459             \ifFld@popdown
10460               PopdownBox%
10461             \else

```

```

10462         ComboBox%
10463         \fi
10464     \else
10465         ListBox%
10466     \fi
10467 \fi
10468 \endcsname
10469 }%
10470 } \x
10471 \HyField@SetKeys{#1}%
10472 \ifFld@hidden\def\Fld@width{1sp}\fi
10473 \ifx\Fld@value\relax
10474     \let\Fld@value\Fld@default
10475 \fi
10476 \LayoutChoiceField{#2}{%
10477     \ifFld@radio
10478         \HyField@FlagsRadioButton
10479         \@@Radio{#3}%
10480     \else
10481         \beginngroup
10482         \HyField@FlagsChoice
10483         \ifdim\Fld@width<\@tempdima
10484             \ifdim\@tempdima<1cm\@tempdima1cm\fi
10485             \edef\Fld@width{\the\@tempdima}%
10486         \fi
10487         \ifFld@combo
10488         \else
10489             \@tempdima=\the\Fld@menulength\Fld@charsize
10490             \advance\@tempdima by \Fld@borderwidth bp %
10491             \advance\@tempdima by \Fld@borderwidth bp %
10492             \edef\Fld@height{\the\@tempdima}%
10493         \fi
10494         \@@Listbox{#3}%
10495     \endgroup
10496 \fi
10497 }%
10498 \endgroup
10499 }
10500 \def\@@Radio#1{%
10501     \Fld@listcount=0 %
10502     \@for\@curropt:=#1\do{%
10503         \expandafter\Fld@checkequals\@curropt==\%
10504         \Hy@StepCount\Fld@listcount
10505         \@currDisplay\space
10506         \Hy@escapeform\PDFForm@Radio
10507         \pdfmark[\MakeRadioField{\Fld@width}{\Fld@height}]{%
10508             pdfmark=/ANN,%
10509             Raw={\PDFForm@Radio /AP <</N <</\@currValue\space {Check}>> >>}}%
10510     } % deliberate space between radio buttons
10511 }%
10512 }
10513 \newcount\Fld@listcount
10514 \def\@@Listbox#1{%
10515     \HyField@PDFChoices{#1}%
10516     \Hy@escapeform\PDFForm@List
10517     \pdfmark[\MakeChoiceField{\Fld@width}{\Fld@height}]{%
10518         pdfmark=/ANN,Raw={\PDFForm@List}%

```

```

10519 }%
10520 }
10521 \def\@PushButton[#1]#2{% parameters, label
10522   \def\Fld@name{#2}%
10523   \begingroup
10524     \Field@toks={ }%
10525     \expandafter\HyField@SetKeys\expandafter{%
10526       \DefaultOptionsofPushButton,#1%
10527     }%
10528     \ifHy@pdfa
10529       \PackageError{hyperref}{%
10530         PDF/A: Push button with JavaScript is prohibited%
10531       }{@ehc
10532         \LayoutPushButtonField{%
10533           \leavevmode
10534           \MakeButtonField{#2}%
10535         }%
10536       \else
10537         \HyField@FlagsPushButton
10538         \ifFld@hidden\def\Fld@width{1sp}\fi
10539         \LayoutPushButtonField{%
10540           \leavevmode
10541           \Hy@escapeform\PDFForm@Push
10542           \pdfmark[\MakeButtonField{#2}]{%
10543             pdfmark=/ANN,Raw={\PDFForm@Push}%
10544           }%
10545         }%
10546       \fi
10547     \endgroup
10548 }
10549 \def\@Submit[#1]#2{%
10550   \Field@toks={ }%
10551   \def\Fld@width{\DefaultWidthofSubmit}%
10552   \def\Fld@height{\DefaultHeightofSubmit}%
10553   \begingroup
10554     \expandafter\HyField@SetKeys\expandafter{%
10555       \DefaultOptionsofSubmit,#1%
10556     }%
10557     \HyField@FlagsPushButton
10558     \HyField@FlagsSubmit
10559     \ifFld@hidden\def\Fld@width{1sp}\fi
10560     \Hy@escapeform\PDFForm@Submit
10561     \pdfmark[\MakeButtonField{#2}]{%
10562       pdfmark=/ANN,%
10563       Raw={\PDFForm@Submit /AP << /N {Submit} /D {SubmitP} >>}%
10564     }%
10565   \endgroup
10566 }
10567 \def\@Reset[#1]#2{%
10568   \Field@toks={ }%
10569   \def\Fld@width{\DefaultWidthofReset}%
10570   \def\Fld@height{\DefaultHeightofReset}%
10571   \begingroup
10572     \expandafter\HyField@SetKeys\expandafter{%
10573       \DefaultOptionsofReset,#1%
10574     }%
10575   \leavevmode

```

```

10576 \ifHy@pdfa
10577 \PackageError{hyperref}{%
10578 PDF/A: Reset action is prohibited%
10579 } \@ehc
10580 \MakeButtonField{#2}%
10581 \else
10582 \HyField@FlagsPushButton
10583 \ifFld@hidden\def\Fld@width{1sp}\fi
10584 \Hy@escapeform\PDFForm@Reset
10585 \pdfmark[\MakeButtonField{#2}]{%
10586 pdfmark=/ANN,Raw={\PDFForm@Reset}%
10587 }%
10588 \fi
10589 \endgroup
10590 }%
10591 \def\@CheckBox[#1]#2{% parameters, label
10592 \def\Fld@name{#2}%
10593 \def\Fld@default{0}%
10594 \begingroup
10595 \def\Fld@width{\DefaultWidthofCheckBox}%
10596 \def\Fld@height{\DefaultHeightofCheckBox}%
10597 \Field@toks={ }%
10598 \expandafter\HyField@SetKeys\expandafter{%
10599 \DefaultOptionsofCheckBox,#1%
10600 }%
10601 \HyField@FlagsCheckBox
10602 \ifFld@hidden\def\Fld@width{1sp}\fi
10603 \LayoutCheckField{#2}{%
10604 \Hy@escapeform\PDFForm@Check
10605 \pdfmark[\MakeCheckField{\Fld@width}{\Fld@height}]{%
10606 pdfmark=/ANN,Raw={\PDFForm@Check}%
10607 }%
10608 }%
10609 \endgroup
10610 }
10611 \</pdfmark>

```

## 47.2 HyperTeX

```

10612 \<hypertex>
10613 \def\@Form[#1]{\typeout{Sorry, HyperTeX does not support FORMs}}
10614 \def\@endForm{}
10615 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
10616 \typeout{Sorry, HyperTeX does not support FORM gauges}%
10617 }
10618 \def\@TextField[#1]#2{% parameters, label
10619 \typeout{Sorry, HyperTeX does not support FORM text fields}%
10620 }
10621 \def\@CheckBox[#1]#2{% parameters, label
10622 \typeout{Sorry, HyperTeX does not support FORM checkboxes}%
10623 }
10624 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
10625 \typeout{Sorry, HyperTeX does not support FORM choice menus}%
10626 }
10627 \def\@PushButton[#1]#2{% parameters, label
10628 \typeout{Sorry, HyperTeX does not support FORM pushbuttons}%
10629 }
10630 \def\@Reset[#1]#2{\typeout{Sorry, HyperTeX does not support FORMs}}

```

```

10631 \def\@Submit[#1]#2{\typeout{Sorry, HyperTeX does not support FORMs}}
10632 \end{hypertex}

```

### 47.3 TeX4ht

```

10633 \def\@Form[#1]{%
10634   \setkeys{Form}{#1}%
10635   \HCode{<form action="\Form@action" method="\Form@method">}%
10636 }
10637 \def\@endForm{\HCode{</form>}}
10638 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
10639   \typeout{Sorry, TeX4ht does not support gauges}%
10640 }
10641 \def\@TextField[#1]#2{% parameters, label
10642   \let\Hy@reserved@a\@empty
10643   \def\Fld@name{#2}%
10644   \def\Fld@default{}%
10645   \bgroup
10646     \Field@toks={ }%
10647     \setkeys{Field}{#1}%
10648     \HCode{<label for="\Fld@name">#2</label>}%
10649     \ifFld@password
10650       \@@PasswordField
10651     \else
10652       \@@TextField
10653     \fi
10654   \egroup
10655 }
10656 \def\@@PasswordField{%
10657   \HCode{%
10658     <input type="password" %
10659       id="\Fld@name" %
10660       name="\Fld@name" %
10661       \ifFld@hidden type="hidden" \fi
10662       value="\Fld@default" %
10663       \the\Field@toks
10664     >%
10665   }%
10666 }
10667 \def\@@TextField{%
10668   \ifFld@multiline
10669     \HCode{<textarea %
10670       \ifFld@readonly readonly \fi
10671       id="\Fld@name" %
10672       name="\Fld@name" %
10673       \ifFld@hidden type="hidden" \fi
10674       \the\Field@toks>%
10675     }%
10676     \Fld@default
10677     \HCode{</textarea>}%
10678   \else
10679     \HCode{<input type="text" %
10680       \ifFld@readonly readonly \fi
10681       id="\Fld@name" %
10682       name="\Fld@name" %
10683       \ifFld@hidden type="hidden" \fi
10684       value="\Fld@default" %
10685     }%
10686   }%
10687 }

```

```

10686     \the\Field@toks>%
10687   }%
10688 \fi
10689 }
10690 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
10691   \def\Fld@name{#2}%
10692   \def\Fld@default{}%
10693   \let\Hy@reserved@a\relax
10694   \begingroup
10695     \expandafter\Fld@findlength#3\\%
10696     \Field@toks={ }%
10697     \setkeys{Field}{#1}%
10698     #2%
10699     \ifFld@radio
10700       \expandafter\@@Radio#3\\%
10701     \else
10702       \expandafter\@@Menu#3\\%
10703     \fi
10704   \endgroup
10705 }
10706 \def\Fld@findlength#1\\{%
10707   \Fld@menulength=0 %
10708   \@for\@curropt:=#1\do{\Hy@StepCount\Fld@menulength}%
10709 }
10710 \def\@@Menu#1\\{%
10711   \HCode{<select size="\the\Fld@menulength" %
10712     name="\Fld@name" %
10713     \the\Field@toks>%
10714   }%
10715   \@for\@curropt:=#1\do{%
10716     \expandafter\Fld@checkequals\@curropt==\\%
10717     \HCode{<option %
10718       \ifx\@curropt\Fld@default selected \fi
10719       value="\@currValue">\@currDisplay</option>%
10720     }%
10721   }%
10722   \HCode{</select>}%
10723 }
10724 \def\@@Radio#1\\{%
10725   \@for\@curropt:=#1\do{%
10726     \expandafter\Fld@checkequals\@curropt==\\%
10727     \HCode{<input type="radio" %
10728       \ifx\@curropt\Fld@default checked \fi
10729       name="\Fld@name" %
10730       value="\@currValue" %
10731       \the\Field@toks>%
10732     }%
10733     \@currDisplay
10734   }%
10735 }
10736 \def\@PushButton[#1]#2{% parameters, label
10737   \def\Fld@name{#2}%
10738   \bgroup
10739     \Field@toks={ }%
10740     \setkeys{Field}{#1}%
10741     \HCode{<input type="button" %
10742       name="\Fld@name" %

```

```

10743         value="#2" %
10744         \the\Field@toks>%
10745     }%
10746     \HCode{</button>}%
10747 \egroup
10748 }
10749 \def\@Submit[#1]#2{%
10750     \HCode{<button type="submit">#2</button>}%
10751 }
10752 \def\@Reset[#1]#2{%
10753     \HCode{<button type="reset">#2</button>}%
10754 }
10755 \def\@CheckBox[#1]#2{% parameters, label
10756     \let\Hy@reserved@a\@empty
10757     \def\Fld@name{#2}%
10758     \def\Fld@default{0}%
10759     \bgroup
10760         \Field@toks={ }%
10761         \setkeys{Field}{#1}%
10762         \HCode{<input type="checkbox" %
10763             \ifFld@checked checked \fi
10764             \ifFld@disabled disabled \fi
10765             \ifFld@readonly readonly \fi
10766             name="\Fld@name" %
10767             \ifFld@hidden type="hidden" \fi
10768             value="\Fld@default" %
10769             \the\Field@toks>%
10770             #2%
10771         }%
10772     \egroup
10773 }
10774 </tex4ht>

```

## 47.4 pdfTeX

```

10775 <*pdftex>
10776 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
10777     \typeout{Sorry, pdftex does not support FORM gauges}%
10778 }
10779 \def\MakeFieldObject#1#2{\sbox0{#1}%
10780     \immediate\pdfxform0 %
10781     \expandafter\edef\csname #2Object\endcsname{%
10782         \the\pdflastxform\space 0 R%
10783     }%
10784     \hbox to Opt{\hskip-\maxdimen{\pdfrefxform \the\pdflastxform}}%
10785 }%
10786 \def\HyField@afields{}
10787 \begingroup\expandafter\expandafter\expandafter\endgroup
10788 \expandafter\ifx\csname pdflastlink\endcsname\relax
10789     \let\HyField@AddToFields\relax
10790     \PackageInfo{hyperref}{%
10791         You need pdfTeX 1.40.0 for setting the /Fields entry.\MessageBreak
10792         Adobe Reader/Acrobat accepts an empty /Field array,\MessageBreak
10793         but other PDF viewers might complain%
10794     }%
10795 \else
10796     \def\HyField@AddToFields{%
10797         \xdef\HyField@afields{%

```

```

10798     \ifx\HyField@afields\@empty
10799     \else
10800     \HyField@afields
10801     \space
10802     \fi
10803     \the\pdflastlink\space 0 R%
10804 }%
10805 }%
10806 \fi
10807 \def\@Form[#1]{%
10808 \ifundefined{textcolor}{\let\textcolor\@gobble}{}}%
10809 \setkeys{Form}{#1}%
10810 \Hy@FormObjects
10811 \ifnum\pdfTeXversion>13 %
10812 \pdfrefobj\OBJ@pdfdocencoding
10813 \pdfrefobj\OBJ@ZaDb
10814 \pdfrefobj\OBJ@Helv
10815 \fi
10816 \AtEndDocument{%
10817 \immediate\pdfobj{%
10818 <<%
10819 /Fields[\HyField@afields]%
10820 /DR<<%
10821 /Font<<%
10822 /ZaDb \OBJ@ZaDb\space 0 R%
10823 /Helv \OBJ@Helv\space 0 R%
10824 >>%
10825 >>%
10826 /DA(/Helv 10 Tf 0 g)%
10827 \ifHy@pdfa
10828 \else
10829 /NeedAppearances true%
10830 \fi
10831 >>%
10832 }%
10833 \edef\OBJ@acroform{\the\pdflastobj}%
10834 \pdfcatalog{/AcroForm \OBJ@acroform\space 0 R}%
10835 }%
10836 \MakeFieldObject{%
Same as \ding{123} of package pifont.
10837 \begingroup
10838 \fontfamily{pzd}%
10839 \fontencoding{U}%
10840 \fontseries{m}%
10841 \fontshape{n}%
10842 \selectfont
10843 \char123 %
10844 \endgroup
10845 }{Ding}%
10846 \MakeFieldObject{%
10847 \fbox{\textcolor{yellow}{\textsf{Submit}}}%
10848 }{Submit}%
10849 \MakeFieldObject{%
10850 \fbox{\textcolor{yellow}{\textsf{SubmitP}}}%
10851 }{SubmitP}%
10852 }
10853 \def\@endForm{}

```

```

10854 \def\@TextField[#1]#2{% parameters, label
10855   \def\Fld@name{#2}%
10856   \def\Fld@default{}%
10857   \let\Fld@value\@empty
10858   \def\Fld@width{\DefaultWidthofText}%
10859   \def\Fld@height{%
10860     \ifFld@multiline
10861       \DefaultHeightofTextMultiline
10862     \else
10863       \DefaultHeightofText
10864     \fi
10865   }%
10866   \begingroup
10867     \Field@toks={ }%
10868     \expandafter\HyField@SetKeys\expandafter{%
10869       \DefaultOptionsofText,#1%
10870     }%
10871     \PDFForm@Name
10872     \HyField@FlagsText
10873     \ifFld@hidden\def\Fld@width{1sp}\fi
10874     \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
10875     \LayoutTextField{#2}{%
10876       \Hy@escapeform\PDFForm@Text
10877       \pdfstartlink user {\PDFForm@Text}\relax
10878       \MakeTextField{\Fld@width}{\Fld@height}\pdfendlink
10879       \HyField@AddToFields
10880     }%
10881   \endgroup
10882 }
10883 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
10884   \def\Fld@name{#2}%
10885   \let\Fld@default\relax
10886   \let\Fld@value\relax
10887   \def\Fld@width{\DefaultWidthofChoiceMenu}%
10888   \def\Fld@height{\DefaultHeightofChoiceMenu}%
10889   \begingroup
10890     \Fld@menulength=0 %
10891     \@tempdima\z@
10892     \@for\@curropt:=#3\do{%
10893       \expandafter\Fld@checkequals\@curropt==\%
10894       \Hy@StepCount\Fld@menulength
10895       \settowidth{\@tempdimb}{\@currDisplay}%
10896       \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
10897     }%
10898     \advance\@tempdima by 15\p@
10899     \Field@toks={ }%
10900     \begingroup
10901       \HyField@SetKeys{#1}%
10902     \edef\x{\endgroup
10903       \noexpand\expandafter
10904       \noexpand\HyField@SetKeys
10905       \noexpand\expandafter{%
10906         \expandafter\noexpand\cname DefaultOptionsof%
10907         \ifFld@radio
10908           Radio%
10909         \else
10910           \ifFld@combo

```

```

10911         \ifFld@popdown
10912         PopdownBox%
10913         \else
10914         ComboBox%
10915         \fi
10916         \else
10917         ListBox%
10918         \fi
10919         \fi
10920     \endcsname
10921 }%
10922 } \x
10923 \HyField@SetKeys{#1}%
10924 \PDFForm@Name
10925 \ifFld@hidden\def\Fld@width{1sp}\fi
10926 \ifx\Fld@value\relax
10927     \let\Fld@value\Fld@default
10928 \fi
10929 \LayoutChoiceField{#2}{%
10930     \ifFld@radio
10931         \HyField@FlagsRadioButton
10932         \@@Radio{#3}%
10933     \else
10934         \begingroup
10935         \HyField@FlagsChoice
10936         \ifdim\Fld@width<\@tempdima
10937             \ifdim\@tempdima<1cm\@tempdima1cm\fi
10938             \edef\Fld@width{\the\@tempdima}%
10939         \fi
10940         \ifFld@combo
10941         \else
10942             \@tempdima=\the\Fld@menulength\Fld@charsize
10943             \advance\@tempdima by \Fld@borderwidth bp %
10944             \advance\@tempdima by \Fld@borderwidth bp %
10945             \edef\Fld@height{\the\@tempdima}%
10946         \fi
10947         \@@Listbox{#3}%
10948     \endgroup
10949 \fi
10950 }%
10951 \endgroup
10952 }
10953 \def\@@Radio#1{%
10954     \Fld@listcount=0 %
10955     \@for\@curropt:=#1\do{%
10956         \expandafter\Fld@checkequals\@curropt==\%
10957         \Hy@StepCount\Fld@listcount
10958         \@currDisplay\space
10959         \leavevmode
10960         \Hy@escapeform\PDFForm@Radio
10961         \pdfstartlink user {%
10962             \PDFForm@Radio
10963             /AP<<%
10964             /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.

```

10965         /\@currValue\space \DingObject
10966         >>%
10967     >>%
10968 }%
10969 \relax
10970 \MakeRadioField{\Fld@width}{\Fld@height}\pdfendlink
10971 \ifnum\Fld@listcount=1 %
10972     \HyField@AddToFields
10973 \fi
10974 \space % deliberate space between radio buttons
10975 }%
10976 }
10977 \newcount\Fld@listcount
10978 \def\@@ListBox#1{%
10979     \HyField@PDFChoices{#1}%
10980     \leavevmode
10981     \Hy@escapeform\PDFForm@List
10982     \pdfstartlink user {\PDFForm@List}\relax
10983     \MakeChoiceField{\Fld@width}{\Fld@height}%
10984     \pdfendlink
10985     \HyField@AddToFields
10986 }
10987 \def\@PushButton[#1]#2{% parameters, label
10988     \def\Fld@name{#2}%
10989     \begingroup
10990         \Field@toks={ }%
10991         \expandafter\HyField@SetKeys\expandafter{%
10992             \DefaultOptionsofPushButton,#1%
10993         }%
10994         \PDFForm@Name
10995         \ifHy@pdfa
10996             \PackageError{hyperref}{%
10997                 PDF/A: Push button with JavaScript is prohibited%
10998             }\@ehc
10999             \LayoutPushButtonField{%
11000                 \leavevmode
11001                 \MakeButtonField{#2}%
11002             }%
11003         \else
11004             \HyField@FlagsPushButton
11005             \ifFld@hidden\def\Fld@width{1sp}\fi
11006             \LayoutPushButtonField{%
11007                 \leavevmode
11008                 \Hy@escapeform\PDFForm@Push
11009                 \pdfstartlink user {\PDFForm@Push}\relax
11010                 \MakeButtonField{#2}%
11011                 \pdfendlink
11012                 \HyField@AddToFields
11013             }%
11014         \fi
11015     \endgroup
11016 }
11017 \def\@Submit[#1]#2{%
11018     \Field@toks={ }%
11019     \def\Fld@width{\DefaultWidthofSubmit}%
11020     \def\Fld@height{\DefaultHeightofSubmit}%
11021     \begingroup

```

```

11022 \expandafter\HyField@SetKeys\expandafter{%
11023 \DefaultOptionsofSubmit,#1%
11024 }%
11025 \HyField@FlagsPushButton
11026 \HyField@FlagsSubmit
11027 \ifFld@hidden\def\Fld@width{1sp}\fi
11028 \leavevmode
11029 \Hy@escapeform\PDFForm@Submit
11030 \pdfstartlink user {%
11031 \PDFForm@Submit
11032 /AP<</N \SubmitObject/D \SubmitPObject>>%
11033 }%
11034 \relax
11035 \MakeButtonField{#2}%
11036 \pdfendlink
11037 \HyField@AddToFields
11038 \endgroup
11039 }
11040 \def\@Reset[#1]#2{%
11041 \Field@toks={ }%
11042 \def\Fld@width{\DefaultWidthofReset}%
11043 \def\Fld@height{\DefaultHeightofReset}%
11044 \begingroup
11045 \expandafter\HyField@SetKeys\expandafter{%
11046 \DefaultOptionsofReset,#1%
11047 }%
11048 \leavevmode
11049 \ifHy@pdfa
11050 \PackageError{hyperref}{%
11051 PDF/A: Reset action is prohibited%
11052 }\@ehc
11053 \MakeButtonField{#2}%
11054 \else
11055 \HyField@FlagsPushButton
11056 \ifFld@hidden\def\Fld@width{1sp}\fi
11057 \Hy@escapeform\PDFForm@Reset
11058 \pdfstartlink user {\PDFForm@Reset}\relax
11059 \MakeButtonField{#2}%
11060 \pdfendlink
11061 \HyField@AddToFields
11062 \fi
11063 \endgroup
11064 }
11065 \def\@CheckBox[#1]#2{% parameters, label
11066 \def\Fld@name{#2}%
11067 \def\Fld@default{0}%
11068 \begingroup
11069 \def\Fld@width{\DefaultWidthofCheckBox}%
11070 \def\Fld@height{\DefaultHeightofCheckBox}%
11071 \Field@toks={ }%
11072 \expandafter\HyField@SetKeys\expandafter{%
11073 \DefaultOptionsofCheckBox,#1%
11074 }%
11075 \PDFForm@Name
11076 \HyField@FlagsCheckBox
11077 \ifFld@hidden\def\Fld@width{1sp}\fi
11078 \LayoutCheckField{#2}{%

```

```

11079 \Hy@escapeform\PDFForm@Check
11080 \pdfstartlink user {\PDFForm@Check}\relax
11081 \MakeCheckField{\Fld@width}{\Fld@height}%
11082 \pdfendlink
11083 \HyField@AddToFields
11084 }%
11085 \endgroup
11086 }
11087 \def\Hy@FormObjects{%
11088 \pdfobj {%
11089 <<%
11090 /Type/Encoding%
11091 /Differences[%
11092 24/breve/caron/circumflex/dotaccent/hungarumlaut/ogonek%
11093 /ring/tilde %
11094 39/quotesingle %
11095 96/grave %
11096 128/bullet/dagger/daggerdbl/ellipsis/emdash/endash/florin%
11097 /fraction/guilsinglleft/guilsinglright/minus/perthousand%
11098 /quotedblbase/quotedblleft/quotedblright/quoteleft%
11099 /quoteright/quotesinglbase/trademark/fi/fl/Lslash/OE%
11100 /Scaron/Ydieresis/Zcaron/dotlessi/lslash/oe/scaron/zcaron %
11101 164/currency %
11102 166/brokenbar %
11103 168/dieresis/copyright/ordfeminine %
11104 172/logicalnot/.notdef/registered/macron/degree/plusminus%
11105 /twosuperior/threesuperior/acute/mu %
11106 183/periodcentered/cedilla/onesuperior/ordmasculine %
11107 188/onequarter/onehalf/threequarters %
11108 192/Agrave/Aacute/Acircumflex/Atilde/Adieresis/Aring/AE%
11109 /Ccedilla/Egrave/Eacute/Ecircumflex/Edieresis/Igrave%
11110 /Iacute/Icircumflex/Idieresis/Eth/Ntilde/Ograve/Oacute%
11111 /Ocircumflex/Otilde/Odieresis/multiply/Oslash/Ugrave%
11112 /Uacute/Ucircumflex/Udieresis/Yacute/Thorn/germandbls%
11113 /agrave/aacute/acircumflex/atilde/adieresis/aring/ae%
11114 /ccedilla/egrave/eacute/ecircumflex/edieresis/igrave%
11115 /iacute/icircumflex/idieresis/eth/ntilde/ograve/oacute%
11116 /ocircumflex/otilde/odieresis/divide/oslash/ugrave%
11117 /uacute/ucircumflex/udieresis/yacute/thorn/ydieresis%
11118 ]%
11119 >>%
11120 }%
11121 \xdef\OBJ@pdfdocencoding{\the\pdflastobj}%
11122 \pdfobj{%
11123 <<%
11124 /Type/Font%
11125 /Subtype/Type1%
11126 /Name/ZaDb%
11127 /BaseFont/ZapfDingbats%
11128 >>%
11129 }%
11130 \xdef\OBJ@ZaDb{\the\pdflastobj}%
11131 \pdfobj{%
11132 <<%
11133 /Type/Font%
11134 /Subtype/Type1%
11135 /Name/Helv%

```

```

11136      /BaseFont/Helvetica%
11137      /Encoding \OBJ@pdfdocencoding\space 0 R%
11138    >>%
11139  }%
11140  \xdef\OBJ@Helv{\the\pdfastobj}%
11141  \global\let\Hy@FormObjects\relax
11142 }
11143 \</pdftex>

```

## 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.

```

11144 \<*dvipdfm>

```

\@Gauge

```

11145 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
11146   \typeout{Sorry, dvipdfm does not support FORM gauges}%
11147 }

```

\@Form

```

11148 \def\@Form[#1]{%
11149   \ifundefined{textcolor}{\let\textcolor\@gobble}{}}%
11150   \setkeys{Form}{#1}%
11151   \Hy@FormObjects
11152   \@pdfm@mark{obj @afields []}%
11153   \@pdfm@mark{obj @corder []}%
11154   \@pdfm@mark{%
11155     obj @aform <<%
11156       /Fields @afields%
11157       /DR<<%
11158       /Font<<%
11159       /ZaDb @OBJZaDb%
11160       /Helv @OBJHelv%
11161       >>%
11162       >>%
11163       /DA(/Helv 10 Tf 0 g)%
11164       /CO @corder%
11165       \ifHy@pdfa
11166       \else
11167         /NeedAppearances true%
11168       \fi
11169     >>%
11170   }%
11171   \@pdfm@mark{put @catalog <</AcroForm @aform>>}}%
11172 }

```

\@endForm

```

11173 \def\@endForm{}

```

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

```

11174 \def\dvipdfm@setdim{%
11175   height \the\ht\pdfm@box\space
11176   width \the\wd\pdfm@box\space
11177   depth \the\dp\pdfm@box\space
11178 }

```

\HyField@AnnotCount

```
11179 \newcount\HyField@AnnotCount
11180 \HyField@AnnotCount=\z@
```

\HyField@AdvanceAnnotCount

```
11181 \def\HyField@AdvanceAnnotCount{%
11182   \global\advance\HyField@AnnotCount\@ne
11183 }
```

\HyField@TheAnnotCount

```
11184 \def\HyField@TheAnnotCount{%
11185   \the\HyField@AnnotCount
11186 }
```

\@TextField

```
11187 \def\@TextField[#1]#2{% parameters, label
11188   \def\Fld@name{#2}%
11189   \def\Fld@default{}%
11190   \let\Fld@value\@empty
11191   \def\Fld@width{\DefaultWidthofText}%
11192   \def\Fld@height{%
11193     \ifFld@multiline
11194       \DefaultHeightofTextMultiline
11195     \else
11196       \DefaultHeightofText
11197     \fi
11198   }%
11199   \begingroup
11200     \Field@toks={ }%
11201     \expandafter\HyField@SetKeys\expandafter{%
11202       \DefaultOptionsofText,#1%
11203     }%
11204     \PDFForm@Name
11205     \HyField@FlagsText
11206     \ifFld@hidden\def\Fld@width{1sp}\fi
11207     \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
11208     \setbox\pdfm@box=\hbox{%
11209       \MakeTextField{\Fld@width}{\Fld@height}%
11210     }%
11211     \HyField@AdvanceAnnotCount
11212     \LayoutTextField{#2}{%
11213       \Hy@escapeform\PDFForm@Text
11214       \@pdfm@mark{%
11215         ann @text\HyField@TheAnnotCount\space
11216         \dvipdfm@setdim << \PDFForm@Text >>%
11217       }%
11218     }%
11219     \unhbox\pdfm@box
11220     \@pdfm@mark{put @afields @text\HyField@TheAnnotCount}%
11221     % record in @afields array
11222   \endgroup
11223 }
```

\@ChoiceMenu

```
11224 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
11225   \def\Fld@name{#2}%
```

```

11226 \let\Fld@default\relax
11227 \let\Fld@value\relax
11228 \def\Fld@width{\DefaultWidthofChoiceMenu}%
11229 \def\Fld@height{\DefaultHeightofChoiceMenu}%
11230 \beginingroup
11231   \Fld@menulength=0 %
11232   \@tempdima\z@
11233   \@for\@curropt:=#3\do{%
11234     \expandafter\Fld@checkequals\@curropt==\%
11235     \Hy@StepCount\Fld@menulength
11236     \settowidth{\@tempdimb}{\@currDisplay}%
11237     \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
11238   }%
11239   \advance\@tempdima by 15\p@
11240   \Field@toks={ }%
11241   \beginingroup
11242     \HyField@SetKeys{#1}%
11243   \edef\x{\endgroup
11244     \noexpand\expandafter
11245     \noexpand\HyField@SetKeys
11246     \noexpand\expandafter{%
11247       \expandafter\noexpand\csname DefaultOptionsof%
11248         \ifFld@radio
11249           Radio%
11250         \else
11251           \ifFld@combo
11252             \ifFld@popdown
11253               PopdownBox%
11254             \else
11255               ComboBox%
11256             \fi
11257           \else
11258             ListBox%
11259           \fi
11260         \fi
11261       \endcsname
11262     }%
11263   }\x
11264   \HyField@SetKeys{#1}%
11265   \PDFForm@Name
11266   \ifFld@hidden\def\Fld@width{1sp}\fi
11267   \ifx\Fld@value\relax
11268     \let\Fld@value\Fld@default
11269   \fi
11270   \LayoutChoiceField{#2}{%
11271     \ifFld@radio
11272       \HyField@FlagsRadioButton
11273       \@@Radio{#3}%
11274     \else
11275       \beginingroup
11276         \HyField@FlagsChoice
11277         \ifdim\Fld@width<\@tempdima
11278           \ifdim\@tempdima<1cm\@tempdima1cm\fi
11279         \edef\Fld@width{\the\@tempdima}%
11280       \fi
11281       \ifFld@combo
11282       \else

```

```

11283         \tempdima=\the\Fld@menulength\Fld@charsize
11284         \advance\tempdima by \Fld@borderwidth bp %
11285         \advance\tempdima by \Fld@borderwidth bp %
11286         \edef\Fld@height{\the\tempdima}%
11287     \fi
11288     \@@ListBox{#3}%
11289 \endgroup
11290 \fi
11291 }%
11292 \endgroup
11293 }

\@@Radio
11294 \def\@@Radio#1{%
11295     \Fld@listcount=0 %
11296     \setbox\pdfm@box=\hbox{\MakeRadioField{\Fld@width}{\Fld@height}}%
11297     \@for\@curropt:=#1\do{%
11298         \expandafter\Fld@checkequals\@curropt==\%
11299         \Hy@StepCount\Fld@listcount
11300         \@currDisplay\space
11301         \leavevmode
11302         \Hy@escapeform\PDFForm@Radio
11303         \ifnum\Fld@listcount=1 %
11304             \HyField@AdvanceAnnotCount
11305         \fi
11306         \@pdfm@mark{%
11307             ann \ifnum\Fld@listcount=1 @radio\HyField@TheAnnotCount\space\fi
11308             \dvipdfm@setdim
11309             <<%
11310                 \PDFForm@Radio
11311                 /AP<</N<</\@currValue /null>>>>%
11312             >>%
11313         }%
11314         \unhcopy\pdfm@box\space% deliberate space between radio buttons
11315         \ifnum\Fld@listcount=1 %
11316             \@pdfm@mark{put @afields @radio\HyField@TheAnnotCount}%
11317         \fi
11318     }%
11319 }

\Fld@listcount
11320 \newcount\Fld@listcount

\@@ListBox
11321 \def\@@ListBox#1{%
11322     \HyField@PDFChoices{#1}%
11323     \setbox\pdfm@box=\hbox{\MakeChoiceField{\Fld@width}{\Fld@height}}%
11324     \leavevmode
11325     \Hy@escapeform\PDFForm@List
11326     \HyField@AdvanceAnnotCount
11327     \@pdfm@mark{%
11328         ann @list\HyField@TheAnnotCount\space
11329         \dvipdfm@setdim
11330         <<\PDFForm@List>>%
11331     }%
11332     \unhbox\pdfm@box
11333     \@pdfm@mark{put @afields @list\HyField@TheAnnotCount}%

```

```

11334 }

\@PushButton
11335 \def\@PushButton[#1]#2{% parameters, label
11336 \def\Fld@name{#2}%
11337 \begingroup
11338 \Field@toks={ }%
11339 \expandafter\HyField@SetKeys\expandafter{%
11340 \DefaultOptionsofPushButton,#1%
11341 }%
11342 \PDFForm@Name
11343 \ifHy@pdfa
11344 \PackageError{hyperref}{%
11345 PDF/A: Push button with JavaScript is prohibited%
11346 }\@ehc
11347 \LayoutPushButtonField{%
11348 \leavevmode
11349 \MakeButtonField{#2}%
11350 }%
11351 \else
11352 \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
11353 \HyField@FlagsPushButton
11354 \ifFld@hidden\def\Fld@width{1sp}\fi
11355 \HyField@AdvanceAnnotCount
11356 \LayoutPushButtonField{%
11357 \leavevmode
11358 \Hy@escapeform\PDFForm@Push
11359 \@pdfm@mark{%
11360 ann @push\HyField@TheAnnotCount\space
11361 \dvipdfm@setdim
11362 <<\PDFForm@Push>>%
11363 }%
11364 }%
11365 \unhbox\pdfm@box
11366 \@pdfm@mark{put @afields @push\HyField@TheAnnotCount}%
11367 \fi
11368 \endgroup
11369 }

\@Submit
11370 \def\@Submit[#1]#2{%
11371 \Field@toks={ }%
11372 \def\Fld@width{\DefaultWidthofSubmit}%
11373 \def\Fld@height{\DefaultHeightofSubmit}%
11374 \begingroup
11375 \expandafter\HyField@SetKeys\expandafter{%
11376 \DefaultOptionsofSubmit,#1%
11377 }%
11378 \HyField@FlagsPushButton
11379 \HyField@FlagsSubmit
11380 \ifFld@hidden\def\Fld@width{1sp}\fi
11381 \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
11382 \leavevmode
11383 \Hy@escapeform\PDFForm@Submit
11384 \HyField@AdvanceAnnotCount
11385 \@pdfm@mark{%
11386 ann @submit\HyField@TheAnnotCount\space

```

```

11387      \dvi pdfm@setdim
11388      <<\PDFForm@Submit>>%
11389    }%
11390    \unhbox\pdfm@box%
11391    \@pdfm@mark{put @afields @submit\HyField@TheAnnotCount}%
11392  \endgroup
11393 }

```

#### \@Reset

```

11394 \def\@Reset[#1]#2{%
11395   \Field@toks={ }%
11396   \def\Fld@width{\DefaultWidthofReset}%
11397   \def\Fld@height{\DefaultHeightofReset}%
11398   \begingroup
11399     \expandafter\HyField@SetKeys\expandafter{%
11400       \DefaultOptionsofReset,#1%
11401     }%
11402     \leavevmode
11403     \ifHy@pdfa
11404       \PackageError{hyperref}{%
11405         PDF/A: Reset action is prohibited%
11406       }\@ehc
11407       \MakeButtonField{#2}%
11408     \else
11409       \HyField@FlagsPushButton
11410       \ifFld@hidden\def\Fld@width{1sp}\fi
11411       \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
11412       \Hy@escapeform\PDFForm@Reset
11413       \HyField@AdvanceAnnotCount
11414       \@pdfm@mark{%
11415         ann @reset\HyField@TheAnnotCount\space
11416         \dvi pdfm@setdim
11417         <<\PDFForm@Reset>>%
11418       }%
11419       \unhbox\pdfm@box
11420       \@pdfm@mark{put @afields @reset\HyField@TheAnnotCount}%
11421     \fi
11422   \endgroup
11423 }

```

#### \@CheckBox

```

11424 \def\@CheckBox[#1]#2{% parameters, label
11425   \def\Fld@name{#2}%
11426   \def\Fld@default{0}%
11427   \begingroup
11428     \def\Fld@width{\DefaultWidthofCheckBox}%
11429     \def\Fld@height{\DefaultHeightofCheckBox}%
11430     \Field@toks={ }%
11431     \expandafter\HyField@SetKeys\expandafter{%
11432       \DefaultOptionsofCheckBox,#1%
11433     }%
11434     \PDFForm@Name
11435     \HyField@FlagsCheckBox
11436     \ifFld@hidden\def\Fld@width{1sp}\fi
11437     \setbox\pdfm@box=\hbox{\MakeCheckField{\Fld@width}{\Fld@height}}%
11438     \HyField@AdvanceAnnotCount
11439     \LayoutCheckField{#2}{%

```

```

11440 \Hy@escapeform\PDFForm@Check
11441 \@pdfm@mark{%
11442   ann @check\HyField@TheAnnotCount\space
11443   \dvipdfm@setdim
11444   <<\PDFForm@Check>>%
11445   }%
11446   \unhbox\pdfm@box
11447   \@pdfm@mark{put @afields @check\HyField@TheAnnotCount}%
11448   }%
11449 \endgroup
11450 }

11451 \def\Hy@FormObjects{%
11452 \@pdfm@mark{obj @OBJpdfdocencoding%
11453   <<%
11454     /Type/Encoding%
11455     /Differences[%
11456       24/breve/caron/circumflex/dotaccent/hungarumlaut/ogonek/ring/tilde %
11457       39/quotesingle %
11458       96/grave %
11459       128/bullet/dagger/daggerdbl/ellipsis/emdash/endash/florin%
11460       /fraction/guilsinglleft/guilsinglright/minus/perthousand%
11461       /quotedblbase/quotedblleft/quotedblright/quoteleft/quoteright%
11462       /quotesinglbase/trademark/fi/fl/Lslash/OE/Scaron/Ydieresis%
11463       /Zcaron/dotlessi/lslash/oe/scaron/zcaron %
11464       164/currency %
11465       166/brokenbar %
11466       168/dieresis/copyright/ordfeminine %
11467       172/logicalnot/.notdef/registered/macron/degree/plusminus%
11468       /twosuperior/threesuperior/acute/mu %
11469       183/periodcentered/cedilla/onesuperior/ordmasculine %
11470       188/onequarter/onehalf/threequarters %
11471       192/Agrave/Aacute/Acircumflex/Atilde/Adieresis/Aring/AE%
11472       /Ccedilla/Egrave/Eacute/Ecircumflex/Edieresis/Igrave/Iacute%
11473       /Icircumflex/Idieresis/Eth/Ntilde/Ograve/Oacute/Ocircumflex%
11474       /Otilde/Odieresis/multiply/Oslash/Ugrave/Uacute/Ucircumflex%
11475       /Udieresis/Yacute/Thorn/germandbls/agrave/aacute/acircumflex%
11476       /atilde/adieresis/aring/ae/ccedilla/egrave/eacute%
11477       /ecircumflex/edieresis/igrave/iacute/icircumflex/idieresis%
11478       /eth/ntilde/ograde/oacute/ocircumflex/otilde/odieresis%
11479       /divide/oslash/ugrave/uacute/ucircumflex/udieresis/yacute%
11480       /thorn/ydieresis%
11481     ]%
11482     >>%
11483   }%
11484 \@pdfm@mark{obj @OBJZaDb%
11485   <<%
11486     /Type/Font%
11487     /Subtype/Type1%
11488     /Name/ZaDb%
11489     /BaseFont/ZapfDingbats%
11490     >>%
11491   }%
11492 \@pdfm@mark{obj @OBJHelv%
11493   <<%
11494     /Type/Font%
11495     /Subtype/Type1%
11496     /Name/Helv%

```

```

11497      /BaseFont/Helvetica%
11498      /Encoding @OBJpdfdocencoding%
11499      >>%
11500  }%
11501  \global\let\Hy@FormObjects\relax
11502 }
11503 </dvipdfm>

```

## 47.6 Common forms part

```

11504 <*pdfform>

```

\Hy@escapestring

```

11505 \begingroup\expandafter\expandafter\expandafter\endgroup
11506 \expandafter\ifx\csname pdfescapestring\endcsname\relax
11507   \let\Hy@escapestring\@firstofone
11508   \def\Hy@escapeform#1{%
11509     \ifHy@escapeform
11510       \def\Hy@escapestring##1{%
11511         \noexpand\Hy@escapestring{\noexpand##1}%
11512       }%
11513       \edef\Hy@temp{#1}%
11514       \expandafter\Hy@@escapeform\Hy@temp\Hy@escapestring{}\@nil
11515       \def\Hy@escapestring##1{%
11516         \@ifundefined{Hy@esc@\string##1}{%
11517           ##1%
11518           \ThisShouldNotHappen
11519         }{%
11520           \csname Hy@esc@\string##1\endcsname
11521         }%
11522       }%
11523     \else
11524       \let\Hy@escapestring\@firstofone
11525     \fi
11526   }%
11527   \def\Hy@@escapeform#1\Hy@escapestring#2#3\@nil{%
11528     \ifx\#3\%
11529       \else
11530         \expandafter\Hy@pstringdef\csname Hy@esc@\string#2\endcsname{#2}%
11531         \Hy@ReturnAfterFi{%
11532           \Hy@@escapeform#3\@nil
11533         }%
11534       \fi
11535     }%
11536   \else
11537     \def\Hy@escapeform#1{%
11538       \ifHy@escapeform
11539         \let\Hy@escapestring\pdfescapestring
11540       \else
11541         \let\Hy@escapestring\@firstofone
11542       \fi
11543     }%
11544     \Hy@escapeform{}%
11545   \fi

```

\PDFForm@Name

```

11546 \def\PDFForm@Name{%

```

```

11547 \begingroup
11548   \ifnum\Hy@pdfversion<5 % implementation note 117, PDF spec 1.7
11549     \ifHy@unicode
11550       \Hy@unicodedefalse
11551     \fi
11552   \fi
11553   \pdfstringdef\Hy@gtemp\Fld@name
11554 \endgroup
11555 \let\Fld@name\Hy@gtemp
11556 }

```

#### \PDFForm@Check

```

11557 \def\PDFForm@Check{%
11558   /Subtype/Widget%
11559   \Fld@annotflags
11560   /T(\Fld@name)%
11561   /FT/Btn%
11562   \Fld@flags
11563   /Q \Fld@align
11564   /BS<</W \Fld@borderwidth /S/\Fld@borderstyle>>%
11565   /MK<<%
11566     \ifnum\Fld@rotation=\z@
11567     \else
11568       /R \Fld@rotation
11569     \fi
11570     \ifx\Fld@bordercolor\relax
11571     \else
11572       /BC[\Fld@bordercolor]%
11573     \fi
11574     \ifx\Fld@bcolor\relax
11575     \else
11576       /BG[\Fld@bcolor]%
11577     \fi
11578     /CA(\Hy@escapestring{\Fld@cbsymbol})%
11579   >>%
11580   /DA(/ZaDb \strip@pt\Fld@charsize\space Tf%
11581     \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
11582   /H/P%
11583   \ifFld@checked /V/Yes\else /V/Off\fi
11584 }

```

#### \PDFForm@Push

```

11585 \ifHy@pdfa
11586 \else
11587   \def\PDFForm@Push{%
11588     /Subtype/Widget%
11589     \Fld@annotflags
11590     /T(\Fld@name)%
11591     /FT/Btn%
11592     \Fld@flags
11593     /H/P%
11594     /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
11595     \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
11596       \ifx\Fld@bordercolor\relax\else 1\fi
11597       \space
11598     \else
11599       /MK<<%

```

```

11600         \ifnum\Fld@rotation=z@
11601         \else
11602             /R \Fld@rotation
11603         \fi
11604         \ifx\Fld@bordercolor\relax
11605         \else
11606             /BC[\Fld@bordercolor]%
11607         \fi
11608     >>%
11609     \fi
11610     /A<</S/JavaScript/JS(\Hy@escapestring{\Fld@onclick@code})>>%
11611 }%
11612 \fi

```

\Fld@additionalactions

```

11613 \def\Fld@@additionalactions{%
K input (keystroke) format
11614 \ifx\Fld@keystroke@code\@empty
11615 \else
11616     /K<</S/JavaScript/JS(\Hy@escapestring{\Fld@keystroke@code})>>%
11617 \fi
F display format
11618 \ifx\Fld@format@code\@empty
11619 \else
11620     /F<</S/JavaScript/JS(\Hy@escapestring{\Fld@format@code})>>%
11621 \fi
V validation
11622 \ifx\Fld@validate@code\@empty
11623 \else
11624     /V<</S/JavaScript/JS(\Hy@escapestring{\Fld@validate@code})>>%
11625 \fi
C calculation
11626 \ifx\Fld@calculate@code\@empty
11627 \else
11628     /C<</S/JavaScript/JS(\Hy@escapestring{\Fld@calculate@code})>>%
11629 \fi
Fo receiving the input focus
11630 \ifx\Fld@onfocus@code\@empty
11631 \else
11632     /Fo<</S/JavaScript/JS(\Hy@escapestring{\Fld@onfocus@code})>>%
11633 \fi
Bl loosing the input focus (blurred)
11634 \ifx\Fld@onblur@code\@empty
11635 \else
11636     /Bl<</S/JavaScript/JS(\Hy@escapestring{\Fld@onblur@code})>>%
11637 \fi
D pressing the mouse button (down)
11638 \ifx\Fld@onmousedown@code\@empty
11639 \else
11640     /D<</S/JavaScript/JS(\Hy@escapestring{\Fld@onmousedown@code})>>%
11641 \fi

```

U releasing the mouse button (up)

```
11642 \ifx\Fld@onmouseup@code\@empty
11643 \else
11644 /U<</S/JavaScript/JS(\Hy@escapestring{\Fld@onmouseup@code})>>%
11645 \fi
```

E cursor enters the annotation's active area.

```
11646 \ifx\Fld@onenter@code\@empty
11647 \else
11648 /E<</S/JavaScript/JS(\Hy@escapestring{\Fld@onenter@code})>>%
11649 \fi
```

X cursor exits the annotation's active area.

```
11650 \ifx\Fld@onexit@code\@empty
11651 \else
11652 /X<</S/JavaScript/JS(\Hy@escapestring{\Fld@onexit@code})>>%
11653 \fi
11654 }
11655 \def\Fld@additionalactions{%
11656 \if-\Fld@@additionalactions-%
11657 \else
11658 \ifHy@pdfa
11659 \else
11660 /AA<<\Fld@@additionalactions>>%
11661 \fi
11662 \fi
11663 }
```

\PDFForm@List

```
11664 \def\PDFForm@List{%
11665 /Subtype/Widget%
11666 \Fld@annotflags
11667 /T(\Fld@name)%
11668 /FT/Ch%
11669 \Fld@flags
11670 /Q \Fld@align
11671 /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
11672 \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
11673 \ifx\Fld@bordercolor\relax\else 1\fi
11674 \ifx\Fld@bcolor\relax \else 1\fi
11675 \space
11676 \else
11677 /MK<<%
11678 \ifnum\Fld@rotation=\z@
11679 \else
11680 /R \Fld@rotation
11681 \fi
11682 \ifx\Fld@bordercolor\relax
11683 \else
11684 /BC[\Fld@bordercolor]%
11685 \fi
11686 \ifx\Fld@bcolor\relax
11687 \else
11688 /BG[\Fld@bcolor]%
11689 \fi
11690 >>%
11691 \fi
11692 /DA(/Helv \strip@pt\Fld@charsize\space Tf%
```

```

11693     \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
11694   \Fld@choices
11695   \Fld@additionalactions
11696 }

```

#### \PDFForm@Radio

```

11697 \def\PDFForm@Radio{%
11698   /Subtype/Widget%
11699   \Fld@annotflags
11700   /T(\Fld@name)%
11701   /FT/Btn%
11702   \Fld@flags
11703   /H/P%
11704   /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
11705   /MK<<%
11706     \ifnum\Fld@rotation=\z@
11707     \else
11708       /R \Fld@rotation
11709     \fi
11710     \ifx\Fld@bordercolor\relax
11711     \else
11712       /BC[\Fld@bordercolor]%
11713     \fi
11714     \ifx\Fld@bcolor\relax
11715     \else
11716       /BG[\Fld@bcolor]%
11717     \fi
11718     /CA(\Fld@radiosymbol)%
11719   >>%
11720   /DA(/ZaDb \strip@pt\Fld@charsize\space Tf%
11721     \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
11722   \ifx\@currValue\Fld@default
11723     /V/\Fld@default
11724   \else
11725     /V/Off%
11726   \fi
11727   \Fld@additionalactions
11728 }

```

#### \PDFForm@Text

```

11729 \def\PDFForm@Text{%
11730   /Subtype/Widget%
11731   \Fld@annotflags
11732   /T(\Fld@name)%
11733   /FT/Tx%
11734   \Fld@flags
11735   /Q \Fld@align
11736   /BS<</W \Fld@borderwidth\space /S /\Fld@borderstyle>>%
11737   \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
11738     \ifx\Fld@bordercolor\relax\else 1\fi
11739     \ifx\Fld@bcolor\relax \else 1\fi
11740     \space
11741   \else
11742     /MK<<%
11743     \ifnum\Fld@rotation=\z@
11744     \else
11745       /R \Fld@rotation

```

```

11746     \fi
11747     \ifx\Fld@bordercolor\relax
11748     \else
11749         /BC[\Fld@bordercolor]%
11750     \fi
11751     \ifx\Fld@bcolor\relax
11752     \else
11753         /BG[\Fld@bcolor]%
11754     \fi
11755     >>%
11756 \fi
11757 /DA(/Helv \strip@pt\Fld@charsize\space Tf%
11758     \ifx\Fld@color\empty\else\space\Fld@color\fi)%
11759 /DV(\Hy@escapestring{\Fld@default})%
11760 /V(\Hy@escapestring{\Fld@value})%
11761 \Fld@additionalactions
11762 \ifnum\Fld@maxlen>\z@/MaxLen \Fld@maxlen \fi
11763 }

```

\PDFForm@Submit

```

11764 \def\PDFForm@Submit{%
11765     /Subtype/Widget%
11766     \Fld@annotflags
11767     /T(\Fld@name)%
11768     /FT/Btn%
11769     \Fld@flags
11770     /H/P%
11771     /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
11772     \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
11773         \ifx\Fld@bordercolor\relax\else 1\fi
11774         \space
11775     \else
11776         /MK<<%
11777         \ifnum\Fld@rotation=\z@
11778         \else
11779             /R \Fld@rotation
11780         \fi
11781         \ifx\Fld@bordercolor\relax
11782         \else
11783             /BC[\Fld@bordercolor]%
11784         \fi
11785         >>%
11786     \fi
11787     /A<<%
11788         /S/SubmitForm%
11789         /F<<%
11790             /FS/URL%
11791             /F(\Hy@escapestring{\Form@action})%
11792         >>%
11793         \Fld@submitflags
11794     >>%
11795 }

```

\PDFForm@Reset

```

11796 \ifHy@pdfa
11797 \else
11798     \def\PDFForm@Reset{%

```

```

11799 /Subtype/Widget%
11800 \Fld@annotflags
11801 /T(\Fld@name)%
11802 /FT/Btn%
11803 \Fld@flags
11804 /H/P%
11805 /DA(/Helv \strip@pt\Fld@charsize\space Tf 0 0 1 rg)%
11806 \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
11807 \ifx\Fld@bordercolor\relax\else 1\fi
11808 \space
11809 \else
11810 /MK<<%
11811 \ifnum\Fld@rotation=\z@
11812 \else
11813 /R \Fld@rotation
11814 \fi
11815 \ifx\Fld@bordercolor\relax
11816 \else
11817 /BC[\Fld@bordercolor]%
11818 \fi
11819 % /CA (Clear)
11820 % /AC (Done)
11821 >>%
11822 \fi
11823 /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
11824 /A<</S/ResetForm>>%
11825 }%
11826 \fi

11827 </pdfform>
11828 <*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`

```

11829 \def\phantomsection{%
11830 \Hy@GlobalStepCount\Hy@linkcounter
11831 \xdef\@currentHref{section*.\the\Hy@linkcounter}%
11832 \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
11833 }
11834 </package>

```

### 48.1 Bookmarks

```
11835 <*outlines>
```

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

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

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

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

```

11836 \def\Hy@writebookmark#1#2#3#4#5{%
11837   % section number, text, label, level, file
11838   \ifx\WriteBookmarks\relax%
11839   \else
11840     \ifnum#4>\Hy@bookmarksdepth\relax
11841     \else
11842       \@writetorep{#1}{#2}{#3}{#4}{#5}%
11843     \fi
11844   \fi
11845 }
11846 \def\Hy@currentbookmarklevel{0}
11847 \def\Hy@numberline#1{#1 }
11848 \def\@writetorep#1#2#3#4#5{%
11849   \begingroup
11850     \edef\Hy@tempa{#5}%
11851     \ifx\Hy@tempa\Hy@bookmarkstype
11852       \edef\Hy@level{#4}%
11853       \ifx\Hy@levelcheck Y%
11854         \@tempcnta\Hy@level\relax
11855         \advance\@tempcnta by -1 %
11856         \ifnum\Hy@currentbookmarklevel<\@tempcnta
11857           \advance\@tempcnta by -\Hy@currentbookmarklevel\relax
11858           \advance\@tempcnta by 1 %
11859           \Hy@Warning{%
11860             Difference (\the\@tempcnta) between bookmark levels is %
11861             greater \MessageBreak than one, level fixed%
11862           }%
11863           \@tempcnta\Hy@currentbookmarklevel
11864           \advance\@tempcnta by 1 %
11865           \edef\Hy@level{\the\@tempcnta}%
11866         \fi
11867       \else
11868         \global\let\Hy@levelcheck Y%
11869       \fi
11870       \global\let\Hy@currentbookmarklevel\Hy@level
11871       \@tempcnta\Hy@level\relax
11872       \expandafter\xdef\csname Parent\Hy@level\endcsname{#3}%
11873       \advance\@tempcnta by -1 %
11874       \edef\Hy@tempa{#3}%
11875       \edef\Hy@tempb{\csname Parent\the\@tempcnta\endcsname}%
11876       \ifx\Hy@tempa\Hy@tempb
11877         \Hy@Warning{%
11878           The anchor of a bookmark and its parent's must not%
11879           \MessageBreak be the same. Added a new anchor%

```

```

11880      }%
11881      \phantomsection
11882    \fi
11883    \ifHy@bookmarksnumbered
11884      \let\numberline\Hy@numberline
11885      \let\partnumberline\Hy@numberline
11886      \let\chapternumberline\Hy@numberline
11887    \else
11888      \let\numberline\@gobble
11889      \let\partnumberline\@gobble
11890      \let\chapternumberline\@gobble
11891    \fi
11892    \pdfstringdef\Hy@tempa{#2}%
11893    \if@files
11894      \stepcounter{bookmark@seq@number}%
11895      \protected@write\@outlinefile{}{%
11896        \protect\BOOKMARK
11897        [\Hy@level] [\@bookmarkopenstatus{\Hy@level}] {#3}%
11898        {\Hy@tempa}{\Hy@tempb}%
11899        \@percentchar\space\thebookmark@seq@number
11900      }%
11901    \fi
11902  \fi
11903 \endgroup
11904 }
11905 \newcounter{bookmark@seq@number}

```

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

```

11906 \newcommand{\currentpdfbookmark}{%
11907   \pdfbookmark[\Hy@currentbookmarklevel]%
11908 }
11909 \newcommand{\subpdfbookmark}{%
11910   \@tempcnta\Hy@currentbookmarklevel
11911   \Hy@StepCount\@tempcnta
11912   \expandafter\pdfbookmark\expandafter[\the\@tempcnta]%
11913 }
11914 \newcommand{\belowpdfbookmark}[2]{%
11915   \@tempcnta\Hy@currentbookmarklevel
11916   \Hy@StepCount\@tempcnta
11917   \expandafter\pdfbookmark\expandafter[\the\@tempcnta]{#1}{#2}%
11918   \advance\@tempcnta by -1 %
11919   \xdef\Hy@currentbookmarklevel{\the\@tempcnta}%
11920 }

```

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.

```

11921 \renewcommand\pdfbookmark[3][0]{%
11922   \Hy@writebookmark{#2}{#3.#1}{#1}{toc}%
11923   \hyper@anchorstart{#3.#1}\hyper@anchorend
11924 }
11925 \def\BOOKMARK{\@ifnextchar[{\@BOOKMARK}{\@BOOKMARK[1] [-]}}
11926 \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 texinfo<sub>pdf</sub> macros.

#### 48.1.1 Rerun warning

`\Hy@OutlineRerunCheck`

```
11927 \def\Hy@OutlineRerunCheck{%
11928   \begingroup
11929     \xdef\Hy@OutlineChecksumBefore{%
11930       \@ifundefined{pdf@filemdfivesum}{-}{%
11931         \pdf@filemdfivesum{\jobname.out}%
11932       }%
11933       :%
11934       \@ifundefined{pdf@filesize}{-}{%
11935         \pdf@filesize{\jobname.out}%
11936       }%
11937     }%
11938   \endgroup
11939   \AtEndDocument{%
11940     \clearpage
11941     \if@filesw
11942       \immediate\write\@mainaux{%
11943         \string\csname\space Hy@OutlineCheckEnd\string\endcsname
11944       }%
11945     \fi
11946   }%
11947 }
11948 \AtBeginDocument{%
11949   \def\Hy@OutlineCheckEnd{%
11950     \begingroup
11951       \immediate\closeout\@outlinefile
11952       \edef\Hy@OutlineChecksumAfter{%
11953         \@ifundefined{pdf@filemdfivesum}{-}{%
11954           \pdf@filemdfivesum{\jobname.out}%
11955         }%
11956         :%
11957         \@ifundefined{pdf@filesize}{-}{%
11958           \pdf@filesize{\jobname.out}%
11959         }%
11960       }%
11961       \ifx\Hy@OutlineChecksumBefore\Hy@OutlineChecksumAfter
11962       \else
11963         \Hy@WarningNoLine{%
11964           Rerun to get outlines right\MessageBreak
11965           or use package ‘bookmark’%
11966         }%
11967       \fi
11968     \endgroup
11969   }%
11970 }
```

#### 48.1.2 Driver stuff

The VTEX section was written originally by VTEX, but then amended by Denis Girou ([denis.girou@idris.fr](mailto:denis.girou@idris.fr)), then by by Taco Hoekwater ([taco.hoekwater@wkap.nl](mailto: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.

11971 `\<vtex>`

```
11972 \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.

```
11973 \begingroup
11974   \catcode'\'=12 %
11975   \ifnum\Hy@TeXversion<650 %
11976     \catcode'\=12 %
11977     \gdef\hv@pdf@char#1#2#3{%
11978       \char
11979       \ifcase'#1#2#3 %
11980         "00\or"01\or"02\or"03\or"04\or"05\or"06\or"07%
11981         \or"08\or"09\or"0A\or"0B\or"0C\or"0D\or"0E\or"0F%
11982         \or"10\or"11\or"12\or"13\or"14\or"15\or"16\or"17%
11983         \or"18\or"19\or"1A\or"1B\or"1C\or"1D\or"1E\or"1F%
11984         \or"20\or"21\or"22\or"23\or"24\or"25\or"26\or"27%
11985         \or"28\or"29\or"2A\or"2B\or"2C\or"2D\or"2E\or"2F%
11986         \or"30\or"31\or"32\or"33\or"34\or"35\or"36\or"37%
11987         \or"38\or"39\or"3A\or"3B\or"3C\or"3D\or"3E\or"3F%
11988         \or"40\or"41\or"42\or"43\or"44\or"45\or"46\or"47%
11989         \or"48\or"49\or"4A\or"4B\or"4C\or"4D\or"4E\or"4F%
11990         \or"50\or"51\or"52\or"53\or"54\or"55\or"56\or"57%
11991         \or"58\or"59\or"5A\or"5B\or"5C\or"5D\or"5E\or"5F%
11992         \or"60\or"61\or"62\or"63\or"64\or"65\or"66\or"67%
11993         \or"68\or"69\or"6A\or"6B\or"6C\or"6D\or"6E\or"6F%
11994         \or"70\or"71\or"72\or"73\or"74\or"75\or"76\or"77%
11995         \or"78\or"79\or"7A\or"7B\or"7C\or"7D\or"7E\or"7F%
11996         \or"80\or"81\or"82\or"83\or"84\or"85\or"86\or"87%
11997         \or"88\or"89\or"8A\or"8B\or"8C\or"8D\or"8E\or"8F%
11998         \or"90\or"91\or"92\or"93\or"94\or"95\or"96\or"97%
11999         \or"98\or"99\or"9A\or"9B\or"9C\or"9D\or"9E\or"9F%
12000         \or"A0\or"A1\or"A2\or"A3\or"A4\or"A5\or"A6\or"A7%
12001         \or"A8\or"A9\or"AA\or"AB\or"AC\or"AD\or"AE\or"AF%
12002         \or"B0\or"B1\or"B2\or"B3\or"B4\or"B5\or"B6\or"B7%
12003         \or"B8\or"B9\or"BA\or"BB\or"BC\or"BD\or"BE\or"BF%
12004         \or"C0\or"C1\or"C2\or"C3\or"C4\or"C5\or"C6\or"C7%
12005         \or"C8\or"C9\or"CA\or"CB\or"CC\or"CD\or"CE\or"CF%
12006         \or"D0\or"D1\or"D2\or"D3\or"D4\or"D5\or"D6\or"D7%
12007         \or"D8\or"D9\or"DA\or"DB\or"DC\or"DD\or"DE\or"DF%
12008         \or"E0\or"E1\or"E2\or"E3\or"E4\or"E5\or"E6\or"E7%
12009         \or"E8\or"E9\or"EA\or"EB\or"EC\or"ED\or"EE\or"EF%
12010         \or"F0\or"F1\or"F2\or"F3\or"F4\or"F5\or"F6\or"F7%
12011         \or"F8\or"F9\or"FA\or"FB\or"FC\or"FD\or"FE\or"FF%
12012       \fi
12013     }%
12014   \else
12015     \gdef\hv@pdf@char{\char'}%
12016   \fi
12017 \endgroup
```

\@@BOOKMARK

```
12018 \def\@@BOOKMARK[#1][#2]#3#4#5{%
12019   \expandafter\edef\csname @count@#3\endcsname{\the\@serial@counter}%
12020   \edef\@mycount{\the\@serial@counter}%
12021   \Hy@StepCount\@serial@counter
12022   \edef\@parcount{%
```

```

12023 \expandafter\ifx\csname @count@#5\endcsname\relax
12024 0%
12025 \else
12026 \csname @count@#5\endcsname
12027 \fi
12028 }%
12029 \immediate\special{%
12030 !outline \HyperDestNameFilter{#3};p=\@parcount,i=\@mycount,%
12031 s=\ifx#2-c\else o\fi,t=#4%
12032 }%
12033 }%

```

#### \ReadBookmarks

```

12034 \def\ReadBookmarks{%
12035 \begingroup
12036 \def\0{\hv@pdf@char 0}%
12037 \def\1{\hv@pdf@char 1}%
12038 \def\2{\hv@pdf@char 2}%
12039 \def\3{\hv@pdf@char 3}%
12040 \def\({}%
12041 \def\)}%
12042 \def\do##1{%
12043 \ifnum\the\catcode'##1=\active
12044 \@makeother##1%
12045 \fi
12046 }%
12047 \dospecials
12048 \InputIfFileExists{\jobname.out}{-}{-}%
12049 \endgroup
12050 \ifx\WriteBookmarks\relax
12051 \else
12052 \if@filesw
12053 \newwrite\@outlinefile
12054 \Hy@OutlineRerunCheck
12055 \immediate\openout\@outlinefile=\jobname.out\relax
12056 \ifHy@typexml
12057 \immediate\write\@outlinefile{<relaxxml>\relax}%
12058 \fi
12059 \fi
12060 \fi
12061 }

12062 </vtex>

12063 <!*vtex>
12064 \def\ReadBookmarks{%
12065 \begingroup
12066 \escapechar='\\%
12067 \let\escapechar@gobble %
12068 \def\@BBOOKMARK[##1][##2]##3##4##5{\calc@bm@number{##5}}%
12069 \InputIfFileExists{\jobname.out}{-}{-}%
12070 \ifx\WriteBookmarks\relax
12071 \global\let\WriteBookmarks\relax
12072 \fi
12073 \def\@BBOOKMARK[##1][##2]##3##4##5{%
12074 \def\Hy@temp{##4}%
12075 <*pdfTex>
12076 \Hy@pstringdef\Hy@pstringName{\HyperDestNameFilter{##3}}%

```

```

12077 \Hy@OutlineName{}\Hy@pstringName{%
12078 ##2\check@bm@number{##3}%
12079 }{%
12080 \expandafter\strip@prefix\meaning\Hy@temp
12081 }%
12082 </pdfTex>
12083 <*pdfmark>
12084 \pdfmark{%
12085 pdfmark=/OUT,%
12086 Count={##2\check@bm@number{##3}},%
12087 Dest={##3},%
12088 Title=\expandafter\strip@prefix\meaning\Hy@temp
12089 }%
12090 </pdfmark>
12091 <*dvipdfm>
12092 \Hy@pstringdef\Hy@pstringName{\HyperDestNameFilter{##3}}%
12093 \@pdfm@mark{%
12094 outline \ifHy@DvipdfmxOutlineOpen
12095 [%
12096 \ifnum##21>\z@
12097 \else
12098 -%
12099 \fi
12100 ] %
12101 \fi
12102 ##1<<%
12103 /Title(\expandafter\strip@prefix\meaning\Hy@temp)%
12104 /A<<%
12105 /S/GoTo%
12106 /D(\Hy@pstringName)%
12107 >>%
12108 >>%
12109 }%
12110 </dvipdfm>
12111 }%
12112 {%
12113 \def\WriteBookmarks{0}%
12114 \InputIfFileExists{\jobname.out}{\relax}%
12115 }%
12116 {%\escapechar\m@ne\InputIfFileExists{\jobname.out}{\relax}%
12117 \ifx\WriteBookmarks\relax
12118 \else
12119 \if@files
12120 \newwrite\@outlinefile
12121 \Hy@OutlineRerunCheck
12122 \immediate\openout\@outlinefile=\jobname.out\relax
12123 \ifHy@typexml
12124 \immediate\write\@outlinefile{<relaxxml>\relax}%
12125 \fi
12126 \fi
12127 \fi
12128 \endgroup
12129 }
12130 <*pdfTex>
12131 \def\Hy@OutlineName#1#2#3#4{%
12132 \pdfoutline goto name{#2}count#3{#4}%
12133 }

```

```

12134 </pdfTeX>
12135 \def\check@bm@number#1{%
12136   \expandafter\ifx\csname B_#1\endcsname\relax
12137     0%
12138   \else
12139     \csname B_#1\endcsname
12140   \fi
12141 }
12142 \def\calc@bm@number#1{%
12143   \@tempcnta=\check@bm@number{#1}\relax
12144   \advance\@tempcnta by 1 %
12145   \expandafter\xdef\csname B_#1\endcsname{\the\@tempcnta}%
12146 }
12147 </!vTeX>

12148 \ifHy@implicit
12149 \else
12150   \expandafter\endinput
12151 \fi

12152 </outlines>
12153 <*outlines | hypertex>

12154 \newlength\Hy@SectionHShift
12155 \def\Hy@SectionAnchor{%
12156   \ifx\protect\@typeset@protect
12157     \Hy@@SectionAnchor
12158   \fi
12159 }
12160 \DeclareRobustCommand*{\Hy@@SectionAnchor}{%
12161   \leavevmode
12162   \hbox to 0pt{%
12163     \kern-\Hy@SectionHShift
12164     \Hy@raisedlink{%
12165       \hyper@anchorstart{\@currentHref}\hyper@anchorend
12166     }%
12167     \hss
12168   }%
12169 }
12170 \let\H@old@ssect\@ssect
12171 \def\@ssect#1#2#3#4#5{%
12172   \Hy@GlobalStepCount\Hy@linkcounter
12173   \xdef\@currentHref{section*.\the\Hy@linkcounter}%
12174   \setlength{\Hy@SectionHShift}{#1}%
12175   \H@old@ssect{#1}{#2}{#3}{#4}{\Hy@SectionAnchor#5}%
12176 }
12177 \let\H@old@schapter\@schapter
12178 \def\@schapter#1{%
12179   \begingroup
12180     \let\@mkboth\@gobbletwo
12181     \Hy@GlobalStepCount\Hy@linkcounter
12182     \xdef\@currentHref{\Hy@chapapp*.\the\Hy@linkcounter}%
12183     \Hy@raisedlink{%
12184       \hyper@anchorstart{\@currentHref}\hyper@anchorend
12185     }%
12186   \endgroup
12187   \H@old@schapter{#1}%
12188 }

```

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:

```

12189 \@ifundefined{@chapter}{}{%
12190   \let\Hy@org@chapter\@chapter
12191   \def\@chapter{%
12192     \def\Hy@next{%
12193       \Hy@GlobalStepCount\Hy@linkcounter
12194       \xdef\@currentHref{\Hy@chapapp*.\the\Hy@linkcounter}%
12195       \Hy@raisedlink{%
12196         \hyper@anchorstart{\@currentHref}\hyper@anchorend
12197       }%
12198     }%
12199     \ifnum\c@secnumdepth>\m@ne
12200       \@ifundefined{if@mainmatter}%
12201       \iftrue{csname if@mainmatter\endcsname}%
12202       \let\Hy@next\relax
12203     \fi
12204   \fi
12205   \Hy@next
12206   \Hy@org@chapter
12207 }%
12208 }

12209 \let\H@old@part\@part
12210 \begingroup\expandafter\expandafter\expandafter\endgroup
12211 \expandafter\ifx\csname chapter\endcsname\relax
12212   \let\Hy@secnum@part\z@
12213 \else
12214   \let\Hy@secnum@part\m@ne
12215 \fi
12216 \def\@part{%
12217   \ifnum\Hy@secnum@part>\c@secnumdepth
12218     \phantomsection
12219   \fi
12220   \H@old@part
12221 }

12222 \let\H@old@spart\@spart
12223 \def\@spart#1{%
12224   \Hy@GlobalStepCount\Hy@linkcounter
12225   \xdef\@currentHref{part*.\the\Hy@linkcounter}%
12226   \Hy@raisedlink{%
12227     \hyper@anchorstart{\@currentHref}\hyper@anchorend
12228   }%
12229   \H@old@spart{#1}%
12230 }

12231 \let\H@old@sect\@sect
12232 \def\@sect#1#2#3#4#5#6[#7]#8{%
12233   \ifnum #2>\c@secnumdepth
12234     \expandafter\@firstoftwo
12235   \else
12236     \expandafter\@secondoftwo
12237   \fi
12238   {%
12239     \Hy@GlobalStepCount\Hy@linkcounter
12240     \xdef\@currentHref{section*.\the\Hy@linkcounter}%
12241     \setlength{\Hy@SectionHShift}{#3}%

```

```

12242 \H@old@ssect{#1}{#2}{#3}{#4}{#5}{#6}[{#7}]{\Hy@SectionAnchor#8}%
12243 }{%
12244 \H@old@ssect{#1}{#2}{#3}{#4}{#5}{#6}[{#7}]{#8}%
12245 }%
12246 }
12247 </outlines | hypertex>
12248 <*outlines>

12249 \expandafter\def\csname Parent-4\endcsname{}
12250 \expandafter\def\csname Parent-3\endcsname{}
12251 \expandafter\def\csname Parent-2\endcsname{}
12252 \expandafter\def\csname Parent-1\endcsname{}
12253 \expandafter\def\csname Parent0\endcsname{}
12254 \expandafter\def\csname Parent1\endcsname{}
12255 \expandafter\def\csname Parent2\endcsname{}
12256 \expandafter\def\csname Parent3\endcsname{}
12257 \expandafter\def\csname Parent4\endcsname{}

12258 </outlines>

```

## 49 Compatibility with koma-script classes

```

12259 <*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.

```

12260 \def\Hy@tempa{%
12261 \def\@addchap{##1}##2{%
12262 \typeout{##2}%
12263 \if@twoside
12264 \mkboth{##1}{}%
12265 \else
12266 \mkboth{}{##1}%
12267 \fi
12268 \addtocontents{lof}{\protect\addvspace{10\p@}}%
12269 \addtocontents{lot}{\protect\addvspace{10\p@}}%
12270 \Hy@GlobalStepCount\Hy@linkcounter
12271 \xdef\@currentHref{\Hy@chapapp*.\the\Hy@linkcounter}%
12272 \Hy@raisedlink{%
12273 \hyper@anchorstart{\@currentHref}\hyper@anchorend
12274 }%
12275 \if@twocolumn
12276 \@topnewpage[\@makeschapterhead{##2}]%
12277 \else
12278 \@makeschapterhead{##2}%
12279 \@afterheading
12280 \fi
12281 \addcontentsline{toc}{chapter}{##1}%
12282 }%
12283 }
12284 \@ifclassloaded{scrbook}{%
12285 \@ifclasslater{scrbook}{2001/01/01}{%
12286 \let\Hy@tempa\@empty
12287 }{}%
12288 }{%
12289 \@ifclassloaded{scrreprt}{%
12290 \@ifclasslater{scrreprt}{2001/01/01}{%

```

```

12291      \let\Hy@tempa\@empty
12292    }{}%
12293  }{}%
12294      \let\Hy@tempa\@empty
12295    }%
12296  }%
12297  \Hy@tempa
12298  </outlines | hypertex>

```

## 50 Encoding definition files for encodings of PDF strings

This was contributed by Heiko Oberdiek oberdiek@ruf.uni-freiburg.de

### 50.1 PD1 encoding

```

12299 <*pd1enc>
12300 \DeclareFontEncoding{PD1}{}{}

Accents
12301 \DeclareTextAccent{\`}{PD1}{\textasciigrave}
12302 \DeclareTextAccent{\'}{PD1}{\textacute}
12303 \DeclareTextAccent{\^}{PD1}{\textasciicircum}
12304 \DeclareTextAccent{\~}{PD1}{\texttilde}
12305 \DeclareTextAccent{\"}{PD1}{\textasciidieresis}
12306 \DeclareTextAccent{\r}{PD1}{\textring}
12307 \DeclareTextAccent{\v}{PD1}{\textasciicaron}
12308 \DeclareTextAccent{\.}{PD1}{\textdotaccent}
12309 \DeclareTextAccent{\c}{PD1}{\textcedilla}
12310 \DeclareTextAccent{\=}{PD1}{\textasciimacron}
12311 \DeclareTextAccent{\b}{PD1}{\textmacronbelow}
12312 \DeclareTextAccent{\d}{PD1}{\textdotbelow}
12313 \DeclareTextCompositeCommand{\`}{PD1}{\@empty}{\textasciigrave}
12314 \DeclareTextCompositeCommand{\'}{PD1}{\@empty}{\textacute}
12315 \DeclareTextCompositeCommand{\^}{PD1}{\@empty}{\textasciicircum}
12316 \DeclareTextCompositeCommand{\~}{PD1}{\@empty}{\texttilde}
12317 \DeclareTextCompositeCommand{\"}{PD1}{\@empty}{\textasciidieresis}
12318 \DeclareTextCompositeCommand{\r}{PD1}{\@empty}{\textring}
12319 \DeclareTextCompositeCommand{\v}{PD1}{\@empty}{\textasciicaron}
12320 \DeclareTextCompositeCommand{\.}{PD1}{\@empty}{\textdotaccent}
12321 \DeclareTextCompositeCommand{\c}{PD1}{\@empty}{\textcedilla}
12322 \DeclareTextCompositeCommand{\=}{PD1}{\@empty}{\textasciimacron}
12323 \DeclareTextCompositeCommand{\b}{PD1}{\@empty}{\textmacronbelow}
12324 \DeclareTextCompositeCommand{\d}{PD1}{\@empty}{\textdotbelow}
12325 \DeclareTextCompositeCommand{\`}{PD1}{\ }{\textasciigrave}
12326 \DeclareTextCompositeCommand{\'}{PD1}{\ }{\textacute}
12327 \DeclareTextCompositeCommand{\^}{PD1}{\ }{\textasciicircum}
12328 \DeclareTextCompositeCommand{\~}{PD1}{\ }{\texttilde}
12329 \DeclareTextCompositeCommand{\"}{PD1}{\ }{\textasciidieresis}
12330 \DeclareTextCompositeCommand{\r}{PD1}{\ }{\textring}
12331 \DeclareTextCompositeCommand{\v}{PD1}{\ }{\textasciicaron}
12332 \DeclareTextCompositeCommand{\.}{PD1}{\ }{\textdotaccent}
12333 \DeclareTextCompositeCommand{\c}{PD1}{\ }{\textcedilla}
12334 \DeclareTextCompositeCommand{\=}{PD1}{\ }{\textasciimacron}
12335 \DeclareTextCompositeCommand{\b}{PD1}{\ }{\textmacronbelow}
12336 \DeclareTextCompositeCommand{\d}{PD1}{\ }{\textdotbelow}
12337 \DeclareTextCommand{\k}{PD1}[1]{\TextSymbolUnavailable{\k{#1}}#1}
12338 \DeclareTextCommand{\t}{PD1}[1]{\TextSymbolUnavailable{\t{#1}}#1}

```

12339 \DeclareTextCommand{\newtie}{PD1}[1]{\TextSymbolUnavailable{\newtie{#1}}#1}

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

12340 % U+0009 (CHARACTER TABULATION)

12341 \DeclareTextCommand{\textHT}{PD1}{\011}% U+0009

12342 % U+000A (LINE FEED)

12343 \DeclareTextCommand{\textLF}{PD1}{\012}% U+000A

12344 % U+000D (CARRIAGE RETURN)

12345 \DeclareTextCommand{\textCR}{PD1}{\015}% U+000D

Accent glyph names

12346 % U+02D8 BREVE; breve

12347 \DeclareTextCommand{\textasciibreve}{PD1}{\030}% U+02D8

12348 % U+02C7 CARON; caron

12349 \DeclareTextCommand{\textasciicaron}{PD1}{\031}% U+02C7

12350 % U+02C6 MODIFIER LETTER CIRCUMFLEX ACCENT; circumflex

12351 \DeclareTextCommand{\textcircumflex}{PD1}{\032}% U+02C6

12352 % U+02D9 DOT ABOVE; dotaccent

12353 \DeclareTextCommand{\textdotaccent}{PD1}{\033}% U+02D9

12354 % U+02DD DOUBLE ACUTE ACCENT; hungarumlaut

12355 \DeclareTextCommand{\texthungarumlaut}{PD1}{\034}% U+02DD

12356 % U+02DB OGONEK; ogonek

12357 \DeclareTextCommand{\textogonek}{PD1}{\035}% U+02DB

12358 % U+02DA RING ABOVE; ring

12359 \DeclareTextCommand{\textring}{PD1}{\036}% U+02DA

12360 % U+02DC SMALL TILDE; ilde, \*tilde

12361 \DeclareTextCommand{\texttilde}{PD1}{\037}% U+02DC

\040: U+0020 SPACE; \*space, spacehackarabic

\041: U+0021 EXCLAMATION MARK; exclam

12362 % U+0022 QUOTATION MARK; quotedbl

12363 \DeclareTextCommand{\textquotedbl}{PD1}{\string"}% \042 U+0022

12364 % U+0023 NUMBER SIGN; numbersign

12365 \DeclareTextCommand{\textnumbersign}{PD1}{\043}% U+0023

12366 % U+0024 DOLLAR SIGN; dollar

12367 \DeclareTextCommand{\textdollar}{PD1}{\044}% U+0024

12368 % U+0025 PERCENT SIGN; percent

12369 \DeclareTextCommand{\textpercent}{PD1}{\045}% U+0025

12370 % U+0026 AMPERSAND; ampersand

12371 \DeclareTextCommand{\textampersand}{PD1}{\046}% U+0026

\047: U+0027 APOSTROPHE; quotesingle

12372 % U+0028 LEFT PARENTHESIS; parenleft

12373 \DeclareTextCommand{\textparenleft}{PD1}{\string\(% \050 U+0028

12374 % U+0029 RIGHT PARENTHESIS; parenright

12375 \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

12376 % U+002E FULL STOP; period

12377 \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  
 12378 % U+003C LESS-THAN SIGN; less  
 12379 \DeclareTextCommand{\textless}{PD1}{<}% \074 U+003C  
 \075: U+003D EQUALS SIGN; equal  
 12380 % U+003E GREATER-THAN SIGN; greater  
 12381 \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  
 12382 % U+005C REVERSE SOLIDUS; backslash  
 12383 \DeclareTextCommand{\textbackslash}{PD1}{\134}% U+005C  
 \135: U+005D RIGHT SQUARE BRACKET; bracketright  
 12384 % U+005E CIRCUMFLEX ACCENT; asciicircum  
 12385 \DeclareTextCommand{\textasciicircum}{PD1}{\136}% U+005E  
 12386 % U+005F LOW LINE; underscore  
 12387 \DeclareTextCommand{\textunderscore}{PD1}{\137}% U+005F  
 12388 \DeclareTextCommand{\textmacronbelow}{PD1}{\137}% U+005F  
 12389 % U+0060 GRAVE ACCENT; grave  
 12390 \DeclareTextCommand{\textasciigrave}{PD1}{\140}% U+0060  
 \141: U+0061 LATIN SMALL LETTER A; a  
 ...  
 \150: U+0068 LATIN SMALL LETTER H; h  
 12391 % U+0069 LATIN SMALL LETTER I; i  
 12392 \DeclareTextCompositeCommand{\.}{PD1}{i}{i}% \151 U+0069  
 \152: U+006A LATIN SMALL LETTER J; j  
 ...  
 \172: U+007A LATIN SMALL LETTER Z; z  
 12393 % U+007B LEFT CURLY BRACKET; braceleft  
 12394 \DeclareTextCommand{\textbraceleft}{PD1}{\173}% U+007B  
 12395 % U+007C VERTICAL LINE; \*bar, verticalbar  
 12396 \DeclareTextCommand{\textbar}{PD1}{|}% U+007C  
 12397 % U+007D RIGHT CURLY BRACKET; braceright  
 12398 \DeclareTextCommand{\textbraceright}{PD1}{\175}% U+007D  
 12399 % U+007E TILDE; asciitilde  
 12400 \DeclareTextCommand{\textasciitilde}{PD1}{\176}% U+007E  
 Slot \177 (0x7F) is undefined in PDFDocEncoding.  
 12401 % U+2022 BULLET; bullet  
 12402 \DeclareTextCommand{\textbullet}{PD1}{\200}% U+2022  
 12403 % U+2020 DAGGER; dagger  
 12404 \DeclareTextCommand{\textdagger}{PD1}{\201}% U+2020  
 12405 % U+2021 DOUBLE DAGGER; daggerdbl  
 12406 \DeclareTextCommand{\textdaggerdbl}{PD1}{\202}% U+2021  
 12407 % U+2026 HORIZONTAL ELLIPSIS; ellipsis  
 12408 \DeclareTextCommand{\textellipsis}{PD1}{\203}% U+2026  
 12409 % U+2014 EM DASH; emdash  
 12410 \DeclareTextCommand{\textemdash}{PD1}{\204}% U+2014  
 12411 % U+2013 EN DASH; endash  
 12412 \DeclareTextCommand{\textendash}{PD1}{\205}% U+2013  
 12413 % U+0192 LATIN SMALL LETTER F WITH HOOK; florin  
 12414 \DeclareTextCommand{\textflorin}{PD1}{\206}% U+0192

12415 % U+2044 FRACTION SLASH; fraction  
12416 \DeclareTextCommand{\textfractionsolidus}{PD1}{\207}% U+2044  
12417 % U+2039 SINGLE LEFT-POINTING ANGLE QUOTATION MARK; guilsinglleft  
12418 \DeclareTextCommand{\guilsinglleft}{PD1}{\210}% U+2039  
12419 % U+203A SINGLE RIGHT-POINTING ANGLE QUOTATION MARK; guilsinglright  
12420 \DeclareTextCommand{\guilsinglright}{PD1}{\211}% U+203A  
12421 % U+2212 MINUS SIGN; minus  
12422 \DeclareTextCommand{\textminus}{PD1}{\212}% U+2212  
12423 % U+2030 PER MILLE SIGN; perthousand  
12424 \DeclareTextCommand{\textperthousand}{PD1}{\213}% U+2030  
12425 % U+201E DOUBLE LOW-9 QUOTATION MARK; quotedblbase  
12426 \DeclareTextCommand{\quotedblbase}{PD1}{\214}% U+201E  
12427 % U+201C LEFT DOUBLE QUOTATION MARK; quotedblleft  
12428 \DeclareTextCommand{\textquotedblleft}{PD1}{\215}% U+201C  
12429 % U+201D RIGHT DOUBLE QUOTATION MARK; quotedblright  
12430 \DeclareTextCommand{\textquotedblright}{PD1}{\216}% U+201D  
12431 % U+2018 LEFT SINGLE QUOTATION MARK; quoteleft  
12432 \DeclareTextCommand{\textquoteleft}{PD1}{\217}% U+2018  
12433 % U+2019 RIGHT SINGLE QUOTATION MARK; quoteright  
12434 \DeclareTextCommand{\textquoteright}{PD1}{\220}% U+2019  
12435 % U+201A SINGLE LOW-9 QUOTATION MARK; quotesinglbase  
12436 \DeclareTextCommand{\quotesinglbase}{PD1}{\221}% U+201A  
12437 % U+2122 TRADE MARK SIGN; trademark  
12438 \DeclareTextCommand{\texttrademark}{PD1}{\222}% U+2122  
12439 % U+FB01 LATIN SMALL LIGATURE FI; fi  
12440 \DeclareTextCommand{\textfi}{PD1}{\223}% U+FB01  
12441 % U+FB02 LATIN SMALL LIGATURE FL; fl  
12442 \DeclareTextCommand{\textfl}{PD1}{\224}% U+FB02  
12443 % U+0141 LATIN CAPITAL LETTER L WITH STROKE; Lslash  
12444 \DeclareTextCommand{\L}{PD1}{\225}% U+0141  
12445 % U+0152 LATIN CAPITAL LIGATURE OE; OE  
12446 \DeclareTextCommand{\OE}{PD1}{\226}% U+0152  
12447 % U+0160 LATIN CAPITAL LETTER S WITH CARON; Scaron  
12448 \DeclareTextCompositeCommand{\v}{PD1}{S}{\227}% U+0160  
12449 % U+0178 LATIN CAPITAL LETTER Y WITH DIAERESIS; Ydieresis  
12450 \DeclareTextCompositeCommand{\Y}{PD1}{Y}{\230}% U+0178  
12451 \DeclareTextCommand{\IJ}{PD1}{\230}  
12452 % U+017D LATIN CAPITAL LETTER Z WITH CARON; Zcaron  
12453 \DeclareTextCompositeCommand{\v}{PD1}{Z}{\231}% U+017D  
12454 % U+0131 LATIN SMALL LETTER DOTLESS I; dotlessi  
12455 \DeclareTextCommand{\i}{PD1}{\232}% U+0131  
12456 % U+0142 LATIN SMALL LETTER L WITH STROKE; lslash  
12457 \DeclareTextCommand{\l}{PD1}{\233}% U+0142  
12458 % U+0153 LATIN SMALL LIGATURE OE; oe  
12459 \DeclareTextCommand{\oe}{PD1}{\234}% U+0153  
12460 % U+0161 LATIN SMALL LETTER S WITH CARON; scaron  
12461 \DeclareTextCompositeCommand{\v}{PD1}{s}{\235}% U+0161  
12462 % U+017E LATIN SMALL LETTER Z WITH CARON; zcaron  
12463 \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.  
12464 % U+20AC EURO SIGN; \*Euro, euro  
12465 \DeclareTextCommand{\texteuro}{PD1}{\240}% U+20AC  
12466 % U+00A1 INVERTED EXCLAMATION MARK; exclamdown  
12467 \DeclareTextCommand{\textexclamdown}{PD1}{\241}% U+00A1  
12468 % U+00A2 CENT SIGN; cent  
12469 \DeclareTextCommand{\textcent}{PD1}{\242}% U+00A2

12470 % U+00A3 POUND SIGN; sterling  
 12471 \DeclareTextCommand{\textsterling}{PD1}{\243}% U+00A3  
 12472 % U+00A4 CURRENCY SIGN; currency  
 12473 \DeclareTextCommand{\textcurrency}{PD1}{\244}% U+00A4  
 12474 % U+00A5 YEN SIGN; yen  
 12475 \DeclareTextCommand{\textyen}{PD1}{\245}% U+00A5  
 12476 % U+00A6 BROKEN BAR; brokenbar  
 12477 \DeclareTextCommand{\textbrokenbar}{PD1}{\246}% U+00A6  
 12478 % U+00A7 SECTION SIGN; section  
 12479 \DeclareTextCommand{\textsection}{PD1}{\247}% U+00A7  
 12480 % U+00A8 DIAERESIS; dieresis  
 12481 \DeclareTextCommand{\textasciidieresis}{PD1}{\250}% U+00A8  
 12482 % U+00A9 COPYRIGHT SIGN; copyright  
 12483 \DeclareTextCommand{\textcopyright}{PD1}{\251}% U+00A9  
 12484 % U+00AA FEMININE ORDINAL INDICATOR; ordfeminine  
 12485 \DeclareTextCommand{\textordfeminine}{PD1}{\252}% U+00AA  
 12486 % U+00AB LEFT-POINTING DOUBLE ANGLE QUOTATION MARK; guillemotleft  
 12487 \DeclareTextCommand{\guillemotleft}{PD1}{\253}% U+00AB  
 12488 % U+00AC NOT SIGN; logicalnot  
 12489 \DeclareTextCommand{\textlogicalnot}{PD1}{\254}% U+00AC  
 12490 \DeclareTextCommand{\textlnot}{PD1}{\254}% logical not

No glyph \255 in PDFDocEncoding.

12491 % U+00AE REGISTERED SIGN; registered  
 12492 \DeclareTextCommand{\textregistered}{PD1}{\256}% U+00AE  
 12493 % U+00AF MACRON; \*macron, overscore  
 12494 \DeclareTextCommand{\textasciimacron}{PD1}{\257}% U+00AF  
 12495 % U+00B0 DEGREE SIGN; degree  
 12496 \DeclareTextCommand{\textdegree}{PD1}{\260}% U+00B0  
 12497 % U+00B1 PLUS-MINUS SIGN; plusminus  
 12498 \DeclareTextCommand{\textplusminus}{PD1}{\261}% U+00B1  
 12499 % U+00B2 SUPERSCRIFT TWO; twosuperior  
 12500 \DeclareTextCommand{\texttwosuperior}{PD1}{\262}% U+00B2  
 12501 % U+00B3 SUPERSCRIFT THREE; threesuperior  
 12502 \DeclareTextCommand{\textthreesuperior}{PD1}{\263}% U+00B3  
 12503 % U+00B4 ACUTE ACCENT; acute  
 12504 \DeclareTextCommand{\textacute}{PD1}{\264}% U+00B4  
 12505 % U+00B5 MICRO SIGN; mu, mu1  
 12506 \DeclareTextCommand{\textmu}{PD1}{\265}% U+00B5  
 12507 % U+00B6 PILCROW SIGN; paragraph  
 12508 \DeclareTextCommand{\textparagraph}{PD1}{\266}% U+00B6  
 12509 % U+00B7 MIDDLE DOT; middot, \*periodcentered  
 12510 \DeclareTextCommand{\textperiodcentered}{PD1}{\267}% U+00B7  
 12511 % U+00B8 CEDILLA; cedilla  
 12512 \DeclareTextCommand{\textcedilla}{PD1}{\270}% U+00B8  
 12513 % U+00B9 SUPERSCRIFT ONE; onesuperior  
 12514 \DeclareTextCommand{\textonesuperior}{PD1}{\271}% U+00B9  
 12515 % U+00BA MASCULINE ORDINAL INDICATOR; ordmasculine  
 12516 \DeclareTextCommand{\textordmasculine}{PD1}{\272}% U+00BA  
 12517 % U+00BB RIGHT-POINTING DOUBLE ANGLE QUOTATION MARK; guillemotright  
 12518 \DeclareTextCommand{\guillemotright}{PD1}{\273}% U+00BB  
 12519 % U+00BC VULGAR FRACTION ONE QUARTER; onequarter  
 12520 \DeclareTextCommand{\textonequarter}{PD1}{\274}% U+00BC  
 12521 % U+00BD VULGAR FRACTION ONE HALF; onehalf  
 12522 \DeclareTextCommand{\textonehalf}{PD1}{\275}% U+00BD  
 12523 % U+00BE VULGAR FRACTION THREE QUARTERS; threequarters  
 12524 \DeclareTextCommand{\textthreequarters}{PD1}{\276}% U+00BE  
 12525 % U+00BF INVERTED QUESTION MARK; questiondown

12526 \DeclareTextCommand{\textquestiondown}{PD1}{\277}% U+00BF  
12527 % U+00C0 LATIN CAPITAL LETTER A WITH GRAVE; Agrave  
12528 \DeclareTextCompositeCommand{\`}{PD1}{A}{\300}% U+00C0  
12529 % U+00C1 LATIN CAPITAL LETTER A WITH ACUTE; Aacute  
12530 \DeclareTextCompositeCommand{\'}{PD1}{A}{\301}% U+00C1  
12531 % U+00C2 LATIN CAPITAL LETTER A WITH CIRCUMFLEX; Acircumflex  
12532 \DeclareTextCompositeCommand{\^}{PD1}{A}{\302}% U+00C2  
12533 % U+00C3 LATIN CAPITAL LETTER A WITH TILDE; Atilde  
12534 \DeclareTextCompositeCommand{\~}{PD1}{A}{\303}% U+00C3  
12535 % U+00C4 LATIN CAPITAL LETTER A WITH DIAERESIS; Adieresis  
12536 \DeclareTextCompositeCommand{\"}{PD1}{A}{\304}% U+00C4  
12537 % U+00C5 LATIN CAPITAL LETTER A WITH RING ABOVE; Aring  
12538 \DeclareTextCompositeCommand{\r}{PD1}{A}{\305}% U+00C5  
12539 % U+00C6 LATIN CAPITAL LETTER AE; AE  
12540 \DeclareTextCommand{\AE}{PD1}{\306}% U+00C6  
12541 % U+00C7 LATIN CAPITAL LETTER C WITH CEDILLA; Ccedilla  
12542 \DeclareTextCompositeCommand{\c}{PD1}{C}{\307}% U+00C7  
12543 % U+00C8 LATIN CAPITAL LETTER E WITH GRAVE; Egrave  
12544 \DeclareTextCompositeCommand{\`}{PD1}{E}{\310}% U+00C8  
12545 % U+00C9 LATIN CAPITAL LETTER E WITH ACUTE; Eacute  
12546 \DeclareTextCompositeCommand{\'}{PD1}{E}{\311}% U+00C9  
12547 % U+00CA LATIN CAPITAL LETTER E WITH CIRCUMFLEX; Ecircumflex  
12548 \DeclareTextCompositeCommand{\^}{PD1}{E}{\312}% U+00CA  
12549 % U+00CB LATIN CAPITAL LETTER E WITH DIAERESIS; Edieresis  
12550 \DeclareTextCompositeCommand{\"}{PD1}{E}{\313}% U+00CB  
12551 % U+00CC LATIN CAPITAL LETTER I WITH GRAVE; Igrave  
12552 \DeclareTextCompositeCommand{\`}{PD1}{I}{\314}% U+00CC  
12553 % U+00CD LATIN CAPITAL LETTER I WITH ACUTE; Iacute  
12554 \DeclareTextCompositeCommand{\'}{PD1}{I}{\315}% U+00CD  
12555 % U+00CE LATIN CAPITAL LETTER I WITH CIRCUMFLEX; Icircumflex  
12556 \DeclareTextCompositeCommand{\^}{PD1}{I}{\316}% U+00CE  
12557 % U+00CF LATIN CAPITAL LETTER I WITH DIAERESIS; Idieresis  
12558 \DeclareTextCompositeCommand{\"}{PD1}{I}{\317}% U+00CF  
12559 % U+00D0 LATIN CAPITAL LETTER ETH; Eth  
12560 \DeclareTextCommand{\DH}{PD1}{\320}% U+00D0  
12561 \DeclareTextCommand{\DJ}{PD1}{\320}% U+00D0  
12562 % U+00D1 LATIN CAPITAL LETTER N WITH TILDE; Ntilde  
12563 \DeclareTextCompositeCommand{\~}{PD1}{N}{\321}% U+00D1  
12564 % U+00D2 LATIN CAPITAL LETTER O WITH GRAVE; Ograve  
12565 \DeclareTextCompositeCommand{\`}{PD1}{O}{\322}% U+00D2  
12566 % U+00D3 LATIN CAPITAL LETTER O WITH ACUTE; Oacute  
12567 \DeclareTextCompositeCommand{\'}{PD1}{O}{\323}% U+00D3  
12568 % U+00D4 LATIN CAPITAL LETTER O WITH CIRCUMFLEX; Ocircumflex  
12569 \DeclareTextCompositeCommand{\^}{PD1}{O}{\324}% U+00D4  
12570 % U+00D5 LATIN CAPITAL LETTER O WITH TILDE; Otilde  
12571 \DeclareTextCompositeCommand{\~}{PD1}{O}{\325}% U+00D5  
12572 % U+00D6 LATIN CAPITAL LETTER O WITH DIAERESIS; Odieresis  
12573 \DeclareTextCompositeCommand{\"}{PD1}{O}{\326}% U+00D6  
12574 % U+00D7 MULTIPLICATION SIGN; multiply  
12575 \DeclareTextCommand{\textmultiply}{PD1}{\327}% U+00D7  
12576 % U+00D8 LATIN CAPITAL LETTER O WITH STROKE; Oslash  
12577 \DeclareTextCommand{\O}{PD1}{\330}% U+00D8  
12578 % U+00D9 LATIN CAPITAL LETTER U WITH GRAVE; Ugrave  
12579 \DeclareTextCompositeCommand{\`}{PD1}{U}{\331}% U+00D9  
12580 % U+00DA LATIN CAPITAL LETTER U WITH ACUTE; Uacute  
12581 \DeclareTextCompositeCommand{\'}{PD1}{U}{\332}% U+00DA  
12582 % U+00DB LATIN CAPITAL LETTER U WITH CIRCUMFLEX; Ucircumflex

12583 \DeclareTextCompositeCommand{\~}{PD1}{U}{\333}% U+00DB  
12584 % U+00DC LATIN CAPITAL LETTER U WITH DIAERESIS; Udieresis  
12585 \DeclareTextCompositeCommand{\"}{PD1}{U}{\334}% U+00DC  
12586 % U+00DD LATIN CAPITAL LETTER Y WITH ACUTE; Yacute  
12587 \DeclareTextCompositeCommand{\'}{PD1}{Y}{\335}% U+00DD  
12588 % U+00DE LATIN CAPITAL LETTER THORN; Thorn  
12589 \DeclareTextCommand{\TH}{PD1}{\336}% U+00DE  
12590 % U+00DF LATIN SMALL LETTER SHARP S; germandbls  
12591 \DeclareTextCommand{\ss}{PD1}{\337}% U+00DF  
12592 % U+00E0 LATIN SMALL LETTER A WITH GRAVE; agrave  
12593 \DeclareTextCompositeCommand{\`}{PD1}{a}{\340}% U+00E0  
12594 % U+00E1 LATIN SMALL LETTER A WITH ACUTE; aacute  
12595 \DeclareTextCompositeCommand{\'}{PD1}{a}{\341}% U+00E1  
12596 % U+00E2 LATIN SMALL LETTER A WITH CIRCUMFLEX; acircumflex  
12597 \DeclareTextCompositeCommand{\^}{PD1}{a}{\342}% U+00E2  
12598 % U+00E3 LATIN SMALL LETTER A WITH TILDE; atilde  
12599 \DeclareTextCompositeCommand{\~}{PD1}{a}{\343}% U+00E3  
12600 % U+00E4 LATIN SMALL LETTER A WITH DIAERESIS; adieresis  
12601 \DeclareTextCompositeCommand{\"}{PD1}{a}{\344}% U+00E4  
12602 % U+00E5 LATIN SMALL LETTER A WITH RING ABOVE; aring  
12603 \DeclareTextCompositeCommand{\r}{PD1}{a}{\345}% U+00E5  
12604 % U+00E6 LATIN SMALL LETTER AE; ae  
12605 \DeclareTextCommand{\ae}{PD1}{\346}% U+00E6  
12606 % U+00E7 LATIN SMALL LETTER C WITH CEDILLA; ccedilla  
12607 \DeclareTextCompositeCommand{\c}{PD1}{c}{\347}% U+00E7  
12608 % U+00E8 LATIN SMALL LETTER E WITH GRAVE; egrave  
12609 \DeclareTextCompositeCommand{\`}{PD1}{e}{\350}% U+00E8  
12610 % U+00E9 LATIN SMALL LETTER E WITH ACUTE; eacute  
12611 \DeclareTextCompositeCommand{\'}{PD1}{e}{\351}% U+00E9  
12612 % U+00EA LATIN SMALL LETTER E WITH CIRCUMFLEX; ecircumflex  
12613 \DeclareTextCompositeCommand{\^}{PD1}{e}{\352}% U+00EA  
12614 % U+00EB LATIN SMALL LETTER E WITH DIAERESIS; edieresis  
12615 \DeclareTextCompositeCommand{\"}{PD1}{e}{\353}% U+00EB  
12616 % U+00EC LATIN SMALL LETTER I WITH GRAVE; igrave  
12617 \DeclareTextCompositeCommand{\`}{PD1}{i}{\354}% U+00EC  
12618 \DeclareTextCompositeCommand{\'}{PD1}{i}{\354}% U+00EC  
12619 % U+00ED LATIN SMALL LETTER I WITH ACUTE; iacute  
12620 \DeclareTextCompositeCommand{\'}{PD1}{i}{\355}% U+00ED  
12621 \DeclareTextCompositeCommand{\'}{PD1}{i}{\355}% U+00ED  
12622 % U+00EE LATIN SMALL LETTER I WITH CIRCUMFLEX; icircumflex  
12623 \DeclareTextCompositeCommand{\^}{PD1}{i}{\356}% U+00EE  
12624 \DeclareTextCompositeCommand{\^}{PD1}{i}{\356}% U+00EE  
12625 % U+00EF LATIN SMALL LETTER I WITH DIAERESIS; idieresis  
12626 \DeclareTextCompositeCommand{\"}{PD1}{i}{\357}% U+00EF  
12627 \DeclareTextCompositeCommand{\"}{PD1}{i}{\357}% U+00EF  
12628 % U+00F0 LATIN SMALL LETTER ETH; eth  
12629 \DeclareTextCommand{\dh}{PD1}{\360}% U+00F0  
12630 % U+00F1 LATIN SMALL LETTER N WITH TILDE; ntilde  
12631 \DeclareTextCompositeCommand{\~}{PD1}{n}{\361}% U+00F1  
12632 % U+00F2 LATIN SMALL LETTER O WITH GRAVE; ograve  
12633 \DeclareTextCompositeCommand{\`}{PD1}{o}{\362}% U+00F2  
12634 % U+00F3 LATIN SMALL LETTER O WITH ACUTE; oacute  
12635 \DeclareTextCompositeCommand{\'}{PD1}{o}{\363}% U+00F3  
12636 % U+00F4 LATIN SMALL LETTER O WITH CIRCUMFLEX; ocircumflex  
12637 \DeclareTextCompositeCommand{\^}{PD1}{o}{\364}% U+00F4  
12638 % U+00F5 LATIN SMALL LETTER O WITH TILDE; otilde  
12639 \DeclareTextCompositeCommand{\~}{PD1}{o}{\365}% U+00F5

```

12640 % U+00F6 LATIN SMALL LETTER O WITH DIAERESIS; odieresis
12641 \DeclareTextCompositeCommand{"}{PD1}{o}{\366}% U+00F6
12642 % U+00F7 DIVISION SIGN; divide
12643 \DeclareTextCommand{\textdivide}{PD1}{\367}% U+00F7
12644 % U+00F8 LATIN SMALL LETTER O WITH STROKE; oslash
12645 \DeclareTextCommand{\o}{PD1}{\370}% U+00F8
12646 % U+00F9 LATIN SMALL LETTER U WITH GRAVE; ugrave
12647 \DeclareTextCompositeCommand{'}{PD1}{u}{\371}% U+00F9
12648 % U+00FA LATIN SMALL LETTER U WITH ACUTE; uacute
12649 \DeclareTextCompositeCommand{'}{PD1}{u}{\372}% U+00FA
12650 % U+00FB LATIN SMALL LETTER U WITH CIRCUMFLEX; ucircumflex
12651 \DeclareTextCompositeCommand{'}{PD1}{u}{\373}% U+00FB
12652 % U+00FC LATIN SMALL LETTER U WITH DIAERESIS; udieresis
12653 \DeclareTextCompositeCommand{"}{PD1}{u}{\374}% U+00FC
12654 % U+00FD LATIN SMALL LETTER Y WITH ACUTE; yacute
12655 \DeclareTextCompositeCommand{'}{PD1}{y}{\375}% U+00FD
12656 % U+00FE LATIN SMALL LETTER THORN; thorn
12657 \DeclareTextCommand{\th}{PD1}{\376}% U+00FE
12658 % U+00FF LATIN SMALL LETTER Y WITH DIAERESIS; ydieresis
12659 \DeclareTextCompositeCommand{"}{PD1}{y}{\377}% U+00FF
12660 \DeclareTextCommand{\ij}{PD1}{\377}% U+00FF

```

Glyphs that consist of several characters.

```

12661 \DeclareTextCommand{\SS}{PD1}{SS}
12662 \DeclareTextCommand{\textcelsius}{PD1}{\textdegree C}

```

Aliases (german.sty)

```

12663 \DeclareTextCommand{\textglqq}{PD1}{\quotedblbase}
12664 \DeclareTextCommand{\textgrqq}{PD1}{\textquotedblleft}
12665 \DeclareTextCommand{\textglq}{PD1}{\quotesinglbase}
12666 \DeclareTextCommand{\textgrq}{PD1}{\textquoteleft}
12667 \DeclareTextCommand{\textflqq}{PD1}{\guillemotleft}
12668 \DeclareTextCommand{\textfrqq}{PD1}{\guillemotright}
12669 \DeclareTextCommand{\textflq}{PD1}{\guilsinglleft}
12670 \DeclareTextCommand{\textfrq}{PD1}{\guilsinglright}

```

Aliases (math names)

```

12671 \DeclareTextCommand{\textneg}{PD1}{\textlogicalnot}
12672 \DeclareTextCommand{\texttimes}{PD1}{\textmultiply}
12673 \DeclareTextCommand{\textdiv}{PD1}{\textdivide}
12674 \DeclareTextCommand{\textpm}{PD1}{\textplusminus}
12675 \DeclareTextCommand{\textcdot}{PD1}{\textperiodcentered}
12676 \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;

```

12677 \DeclareTextCompositeCommand{\k}{PD1}{a}{a}% aogonek
12678 \DeclareTextCompositeCommand{'}{PD1}{c}{c}% cacute
12679 \DeclareTextCompositeCommand{\k}{PD1}{e}{e}% eogonek
12680 \DeclareTextCompositeCommand{'}{PD1}{n}{n}% nacute
12681 \DeclareTextCompositeCommand{'}{PD1}{s}{s}% sacute
12682 \DeclareTextCompositeCommand{'}{PD1}{z}{z}% zacute
12683 \DeclareTextCompositeCommand{.}{PD1}{z}{z}% zdot
12684 \DeclareTextCompositeCommand{\k}{PD1}{A}{A}% Aogonek
12685 \DeclareTextCompositeCommand{'}{PD1}{C}{C}% Cacute
12686 \DeclareTextCompositeCommand{\k}{PD1}{E}{E}% Eogonek
12687 \DeclareTextCompositeCommand{'}{PD1}{N}{N}% Nacute
12688 \DeclareTextCompositeCommand{'}{PD1}{S}{S}% Sacute
12689 \DeclareTextCompositeCommand{'}{PD1}{Z}{Z}% Zacute
12690 \DeclareTextCompositeCommand{.}{PD1}{Z}{Z}% Zdot

```

12691  $\langle$ /pdlenc)

## 50.2 PU encoding

12692  $\langle$ \*puenc)

12693 \DeclareFontEncoding{PU}{-}{-}

### 50.2.1 NFSS2 accents

12694 % U+0300 COMBINING GRAVE ACCENT; gravecmb, \*gravecmb  
12695 \DeclareTextCommand{\`}{PU}[1]{#1\83\000}% U+0300  
12696 % U+0301 COMBINING ACUTE ACCENT; acutecmb, \*acutecmb  
12697 \DeclareTextCommand{\'}{PU}[1]{#1\83\001}% U+0301  
12698 % U+0302 COMBINING CIRCUMFLEX ACCENT; circumflexcmb  
12699 \DeclareTextCommand{\^}{PU}[1]{#1\83\002}% U+0302  
12700 % U+0303 COMBINING TILDE; tildecmb, \*tildecmb  
12701 \DeclareTextCommand{\~}{PU}[1]{#1\83\003}% U+0303  
12702 % U+0304 COMBINING MACRON; macroncmb  
12703 \DeclareTextCommand{\=}{PU}[1]{#1\83\004}% U+0304  
12704 % U+0306 COMBINING BREVE; brevecmb  
12705 \DeclareTextCommand{\u}{PU}[1]{#1\83\006}% U+0306  
12706 \DeclareTextCommand{\U}{PU}[1]{#1\83\006}% U+0306  
12707 % U+0307 COMBINING DOT ABOVE; dotaccentcmb  
12708 \DeclareTextCommand{\.}{PU}[1]{#1\83\007}% U+0307  
12709 % U+0308 COMBINING DIAERESIS; dieresiscmb  
12710 \DeclareTextCommand{\"}{PU}[1]{#1\83\010}% U+0308  
12711 % U+030A COMBINING RING ABOVE; ringcmb  
12712 \DeclareTextCommand{\r}{PU}[1]{#1\83\012}% U+030A  
12713 % U+030B COMBINING DOUBLE ACUTE ACCENT; hungarumlautcmb  
12714 \DeclareTextCommand{\H}{PU}[1]{#1\83\013}% U+030B  
12715 % U+030C COMBINING CARON; caroncmb  
12716 \DeclareTextCommand{\v}{PU}[1]{#1\83\014}% U+030C  
12717 % U+030F COMBINING DOUBLE GRAVE ACCENT; dblgravecmb  
12718 \DeclareTextCommand{\G}{PU}[1]{#1\83\017}% U+030F  
12719 \DeclareTextCommand{\C}{PU}[1]{#1\83\017}% U+030F  
12720 % U+0311 COMBINING INVERTED BREVE; breveinvertedcmb  
12721 \DeclareTextCommand{\newtie}{PU}[1]{#1\83\021}% U+0311  
12722 % U+0323 COMBINING DOT BELOW; dotbelowcmb, \*dotbelowcmb  
12723 \DeclareTextCommand{\d}{PU}[1]{#1\83\043}% U+0323  
12724 % U+0331 COMBINING MACRON BELOW; macronbelowcmb  
12725 \DeclareTextCommand{\b}{PU}[1]{#1\83\061}% U+0331  
12726 % U+0327 COMBINING CEDILLA; cedillacmb  
12727 \DeclareTextCommand{\c}{PU}[1]{#1\83\047}% U+0327  
12728 % U+0328 COMBINING OGONEK; ogonekcmb  
12729 \DeclareTextCommand{\k}{PU}[1]{#1\83\050}% U+0328  
12730 % U+0361 COMBINING DOUBLE INVERTED BREVE; breveinverteddoublecmb  
12731 \DeclareTextCommand{\t}{PU}[1]{#1\83\141}% U+0361  
12732 % U+20DD COMBINING ENCLOSING CIRCLE  
12733 \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.

12734 \DeclareTextCompositeCommand{\`}{PU}{\@empty}{\textasciigrave}  
12735 \DeclareTextCompositeCommand{\'}{PU}{\@empty}{\textacute}  
12736 \DeclareTextCompositeCommand{\^}{PU}{\@empty}{\textasciicircum}  
12737 \DeclareTextCompositeCommand{\~}{PU}{\@empty}{\texttilde}  
12738 \DeclareTextCompositeCommand{\"}{PU}{\@empty}{\textasciidieresis}  
12739 \DeclareTextCompositeCommand{\r}{PU}{\@empty}{\textring}  
12740 \DeclareTextCompositeCommand{\v}{PU}{\@empty}{\textasciicaron}  
12741 \DeclareTextCompositeCommand{\.}{PU}{\@empty}{\textdotaccent}

```

12742 \DeclareTextCompositeCommand{\c}{PU}{\@empty}{\textcedilla}
12743 \DeclareTextCompositeCommand{\u}{PU}{\@empty}{\textasciibreve}
12744 \DeclareTextCompositeCommand{\G}{PU}{\@empty}{\textdoublegrave}
12745 \DeclareTextCompositeCommand{\=}{PU}{\@empty}{\textasciimacron}
12746 \DeclareTextCompositeCommand{\H}{PU}{\@empty}{\texthungarumlaut}
12747 \DeclareTextCompositeCommand{\k}{PU}{\@empty}{\textogonek}
12748 \DeclareTextCompositeCommand{\b}{PU}{\@empty}{\textmacronbelow}
12749 \DeclareTextCompositeCommand{\d}{PU}{\@empty}{\textdotbelow}
12750 \DeclareTextCompositeCommand{\t}{PU}{\@empty}{\texttie}
12751 \DeclareTextCompositeCommand{\newtie}{PU}{\@empty}{\textnewtie}
12752 \DeclareTextCompositeCommand{\textcircled}{PU}{\@empty}{\textbigcircle}

12753 \DeclareTextCompositeCommand{\`}{PU}{\ }{\textasciigrave}
12754 \DeclareTextCompositeCommand{\'}{PU}{\ }{\textacute}
12755 \DeclareTextCompositeCommand{\~}{PU}{\ }{\textasciicircum}
12756 \DeclareTextCompositeCommand{\~}{PU}{\ }{\texttilde}
12757 \DeclareTextCompositeCommand{\"}{PU}{\ }{\textasciidieresis}
12758 \DeclareTextCompositeCommand{\r}{PU}{\ }{\textring}
12759 \DeclareTextCompositeCommand{\v}{PU}{\ }{\textasciicaron}
12760 \DeclareTextCompositeCommand{\.}{PU}{\ }{\textdotaccent}
12761 \DeclareTextCompositeCommand{\c}{PU}{\ }{\textcedilla}
12762 \DeclareTextCompositeCommand{\u}{PU}{\ }{\textasciibreve}
12763 \DeclareTextCompositeCommand{\G}{PU}{\ }{\textdoublegrave}
12764 \DeclareTextCompositeCommand{\=}{PU}{\ }{\textasciimacron}
12765 \DeclareTextCompositeCommand{\H}{PU}{\ }{\texthungarumlaut}
12766 \DeclareTextCompositeCommand{\k}{PU}{\ }{\textogonek}
12767 \DeclareTextCompositeCommand{\b}{PU}{\ }{\textmacronbelow}
12768 \DeclareTextCompositeCommand{\d}{PU}{\ }{\textdotbelow}
12769 \DeclareTextCompositeCommand{\t}{PU}{\ }{\texttie}
12770 \DeclareTextCompositeCommand{\newtie}{PU}{\ }{\textnewtie}
12771 \DeclareTextCompositeCommand{\textcircled}{PU}{\ }{\textbigcircle}

```

Accents for capitals (see encoding TS1)

```

12772 \DeclareTextCommand{\capitalcedilla}{PU}[1]{\c{#1}}
12773 \DeclareTextCommand{\capitalogonek}{PU}[1]{\k{#1}}
12774 \DeclareTextCommand{\capitalgrave}{PU}[1]{\`{#1}}
12775 \DeclareTextCommand{\capitalacute}{PU}[1]{\'{#1}}
12776 \DeclareTextCommand{\capitalcircumflex}{PU}[1]{\^{#1}}
12777 \DeclareTextCommand{\capitaltilde}{PU}[1]{\~{#1}}
12778 \DeclareTextCommand{\capitaldieresis}{PU}[1]{\"{#1}}
12779 \DeclareTextCommand{\capitalhungarumlaut}{PU}[1]{\H{#1}}
12780 \DeclareTextCommand{\capitalring}{PU}[1]{\r{#1}}
12781 \DeclareTextCommand{\capitalcaron}{PU}[1]{\v{#1}}
12782 \DeclareTextCommand{\capitalbreve}{PU}[1]{\u{#1}}
12783 \DeclareTextCommand{\capitalmacron}{PU}[1]{\={#1}}
12784 \DeclareTextCommand{\capitaldotaccent}{PU}[1]{\.{#1}}
12785 \DeclareTextCommand{\capitaltie}{PU}[1]{\t{#1}}
12786 \DeclareTextCommand{\capitalnewtie}{PU}[1]{\newtie{#1}}

```

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

Special white space escape characters.

```

12787 % U+0009 (CHARACTER TABULATION)
12788 \DeclareTextCommand{\textHT}{PU}{\80\011}% U+0009
12789 % U+000A (LINE FEED)
12790 \DeclareTextCommand{\textLF}{PU}{\80\012}% U+000A
12791 % U+000D (CARRIAGE RETURN)
12792 \DeclareTextCommand{\textCR}{PU}{\80\015}% U+000D

```

\80\040: U+0020 SPACE; space, spacehackarabic  
 \80\041: U+0021 EXCLAMATION MARK; exclam  
 12793 % U+0022 QUOTATION MARK; quotedbl  
 12794 \DeclareTextCommand{\textquotedbl}{PU}{\string"}% \80\042 U+0022  
 12795 % U+0023 NUMBER SIGN; numbersign  
 12796 \DeclareTextCommand{\textnumbersign}{PU}{\80\043}% U+0023  
 12797 % U+0024 DOLLAR SIGN; dollar  
 12798 \DeclareTextCommand{\textdollar}{PU}{\80\044}% U+0024  
 12799 % U+0025 PERCENT SIGN; percent  
 12800 \DeclareTextCommand{\textpercent}{PU}{\80\045}% U+0025  
 12801 % U+0026 AMPERSAND; ampersand  
 12802 \DeclareTextCommand{\textampersand}{PU}{\80\046}% U+0026  
 12803 % U+0027 APOSTROPHE; quotesingle  
 12804 \DeclareTextCommand{\textquotesingle}{PU}{\80\047}% U+0027  
 12805 % U+0028 LEFT PARENTHESIS; parenleft  
 12806 \DeclareTextCommand{\textparenleft}{PU}{\80\050}% U+0028  
 12807 % U+0029 RIGHT PARENTHESIS; parenright  
 12808 \DeclareTextCommand{\textparenright}{PU}{\80\051}% U+0029  
 12809 % U+002A ASTERISK; asterisk  
 12810 \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  
 12811 % U+003C LESS-THAN SIGN; less  
 12812 \DeclareTextCommand{\textless}{PU}{<}% \80\074 U+003C  
 \80\075: U+003D EQUALS SIGN; equal  
 12813 % U+003E GREATER-THAN SIGN; greater  
 12814 \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  
 12815 % U+005C REVERSE SOLIDUS; backslash  
 12816 \DeclareTextCommand{\textbackslash}{PU}{\80\134}% U+005C  
 \80\135: U+005D RIGHT SQUARE BRACKET; bracketright  
 12817 % U+005E CIRCUMFLEX ACCENT; asciicircum  
 12818 \DeclareTextCommand{\textasciicircum}{PU}{\80\136}% U+005E  
 12819 % U+005F LOW LINE; underscore  
 12820 \DeclareTextCommand{\textunderscore}{PU}{\80\137}% U+005F  
 12821 % U+0060 GRAVE ACCENT; grave  
 12822 \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

```

12823 % U+0069 LATIN SMALL LETTER I; i
12824 \DeclareTextCompositeCommand{\.}{PU}{\i}{i} % \80\151 U+0069
12825 \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
12826 % U+007B LEFT CURLY BRACKET; braceleft
12827 \DeclareTextCommand{\textbraceleft}{PU}{\80\173}% U+007B
12828 % U+007C VERTICAL LINE; *bar, verticalbar
12829 \DeclareTextCommand{\textbar}{PU}{|}% \80\174 U+007C
12830 % U+007D RIGHT CURLY BRACKET; braceright
12831 \DeclareTextCommand{\textbraceright}{PU}{\80\175}% U+007D
12832 % U+007E TILDE; asciitilde
12833 \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
12834 % U+00A1 INVERTED EXCLAMATION MARK; exclamdown
12835 \DeclareTextCommand{\textexclamdown}{PU}{\80\241}% U+00A1
12836 % U+00A2 CENT SIGN; cent
12837 \DeclareTextCommand{\textcent}{PU}{\80\242}% U+00A2
12838 % U+00A3 POUND SIGN; sterling
12839 \DeclareTextCommand{\textsterling}{PU}{\80\243}% U+00A3
12840 % U+00A4 CURRENCY SIGN; currency
12841 \DeclareTextCommand{\textcurrency}{PU}{\80\244}% U+00A4
12842 % U+00A5 YEN SIGN; yen
12843 \DeclareTextCommand{\textyen}{PU}{\80\245}% U+00A5
12844 % U+00A6 BROKEN BAR; brokenbar
12845 \DeclareTextCommand{\textbrokenbar}{PU}{\80\246}% U+00A6
12846 % U+00A7 SECTION SIGN; section
12847 \DeclareTextCommand{\textsection}{PU}{\80\247}% U+00A7
12848 % U+00A8 DIAERESIS; dieresis
12849 \DeclareTextCommand{\textasciidieresis}{PU}{\80\250}% U+00A8
12850 % U+00A9 COPYRIGHT SIGN; copyright
12851 \DeclareTextCommand{\textcopyright}{PU}{\80\251}% U+00A9
12852 % U+00AA FEMININE ORDINAL INDICATOR; ordfeminine
12853 \DeclareTextCommand{\textordfeminine}{PU}{\80\252}% U+00AA
12854 % U+00AB LEFT-POINTING DOUBLE ANGLE QUOTATION MARK; guillemotleft
12855 \DeclareTextCommand{\guillemotleft}{PU}{\80\253}% U+00AB
12856 % U+00AC NOT SIGN; logicalnot
12857 \DeclareTextCommand{\textlogicalnot}{PU}{\80\254}% U+00AC
12858 \DeclareTextCommand{\textlnot}{PU}{\80\254}% U+00AC
\80\255: U+00AD SOFT HYPHEN; sfthyphen, softhyphen
12859 % U+00AE REGISTERED SIGN; registered
12860 \DeclareTextCommand{\textregistered}{PU}{\80\256}% U+00AE
12861 % U+00AF MACRON; *macron, overscore
12862 \DeclareTextCommand{\textasciimacron}{PU}{\80\257}% U+00AF
12863 % U+00B0 DEGREE SIGN; degree
12864 \DeclareTextCommand{\textdegree}{PU}{\80\260}% U+00B0
12865 % U+00B1 PLUS-MINUS SIGN; plusminus
12866 \DeclareTextCommand{\textplusminus}{PU}{\80\261}% U+00B1
12867 % U+00B2 SUPERScript TWO; twosuperior
12868 \DeclareTextCommand{\texttwosuperior}{PU}{\80\262}% U+00B2
12869 % U+00B3 SUPERScript THREE; threesuperior
12870 \DeclareTextCommand{\textthreesuperior}{PU}{\80\263}% U+00B3

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12871 % U+00B4 ACUTE ACCENT; acute  
 12872 \DeclareTextCommand{\textacute}{PU}{\80\264}% U+00B4  
 12873 \DeclareTextCommand{\textasciiacute}{PU}{\80\264}% U+00B4  
 12874 % U+00B5 MICRO SIGN; mu, mu1  
 12875 \DeclareTextCommand{\textmu}{PU}{\80\265}% U+00B5  
 12876 % U+00B6 PILCROW SIGN; paragraph  
 12877 \DeclareTextCommand{\textparagraph}{PU}{\80\266}% U+00B6  
 12878 % U+00B7 MIDDLE DOT; middot, \*periodcentered  
 12879 \DeclareTextCommand{\textperiodcentered}{PU}{\80\267}% U+00B7  
 12880 % U+00B8 CEDILLA; cedilla  
 12881 \DeclareTextCommand{\textcedilla}{PU}{\80\270}% U+00B8  
 12882 % U+00B9 SUPERSCRIPT ONE; onesuperior  
 12883 \DeclareTextCommand{\textonesuperior}{PU}{\80\271}% U+00B9  
 12884 % U+00BA MASCULINE ORDINAL INDICATOR; ordmasculine  
 12885 \DeclareTextCommand{\textordmasculine}{PU}{\80\272}% U+00BA  
 12886 % U+00BB RIGHT-POINTING DOUBLE ANGLE QUOTATION MARK; guillemotright  
 12887 \DeclareTextCommand{\guillemotright}{PU}{\80\273}% U+00BB  
 12888 % U+00BC VULGAR FRACTION ONE QUARTER; onequarter  
 12889 \DeclareTextCommand{\textonequarter}{PU}{\80\274}% U+00BC  
 12890 % U+00BD VULGAR FRACTION ONE HALF; onehalf  
 12891 \DeclareTextCommand{\textonehalf}{PU}{\80\275}% U+00BD  
 12892 % U+00BE VULGAR FRACTION THREE QUARTERS; threequarters  
 12893 \DeclareTextCommand{\textthreequarters}{PU}{\80\276}% U+00BE  
 12894 % U+00BF INVERTED QUESTION MARK; questiondown  
 12895 \DeclareTextCommand{\textquestiondown}{PU}{\80\277}% U+00BF  
 12896 % U+00C0 LATIN CAPITAL LETTER A WITH GRAVE; Agrave  
 12897 \DeclareTextCompositeCommand{\`}{PU}{A}{\80\300}% U+00C0  
 12898 % U+00C1 LATIN CAPITAL LETTER A WITH ACUTE; Aacute  
 12899 \DeclareTextCompositeCommand{\'}{PU}{A}{\80\301}% U+00C1  
 12900 % U+00C2 LATIN CAPITAL LETTER A WITH CIRCUMFLEX; Acircumflex  
 12901 \DeclareTextCompositeCommand{\^}{PU}{A}{\80\302}% U+00C2  
 12902 % U+00C3 LATIN CAPITAL LETTER A WITH TILDE; Atilde  
 12903 \DeclareTextCompositeCommand{\~}{PU}{A}{\80\303}% U+00C3  
 12904 % U+00C4 LATIN CAPITAL LETTER A WITH DIAERESIS; Adieresis  
 12905 \DeclareTextCompositeCommand{\"}{PU}{A}{\80\304}% U+00C4  
 12906 % U+00C5 LATIN CAPITAL LETTER A WITH RING ABOVE; Aring  
 12907 \DeclareTextCompositeCommand{\r}{PU}{A}{\80\305}% U+00C5  
 12908 % U+00C6 LATIN CAPITAL LETTER AE; AE  
 12909 \DeclareTextCommand{\AE}{PU}{\80\306}% U+00C6  
 12910 % U+00C7 LATIN CAPITAL LETTER C WITH CEDILLA; Ccedilla  
 12911 \DeclareTextCompositeCommand{\c}{PU}{C}{\80\307}% U+00C7  
 12912 % U+00C8 LATIN CAPITAL LETTER E WITH GRAVE; Egrave  
 12913 \DeclareTextCompositeCommand{\`}{PU}{E}{\80\310}% U+00C8  
 12914 % U+00C9 LATIN CAPITAL LETTER E WITH ACUTE; Eacute  
 12915 \DeclareTextCompositeCommand{\'}{PU}{E}{\80\311}% U+00C9  
 12916 % U+00CA LATIN CAPITAL LETTER E WITH CIRCUMFLEX; Ecircumflex  
 12917 \DeclareTextCompositeCommand{\^}{PU}{E}{\80\312}% U+00CA  
 12918 % U+00CB LATIN CAPITAL LETTER E WITH DIAERESIS; Edieresis  
 12919 \DeclareTextCompositeCommand{\"}{PU}{E}{\80\313}% U+00CB  
 12920 % U+00CC LATIN CAPITAL LETTER I WITH GRAVE; Igrave  
 12921 \DeclareTextCompositeCommand{\`}{PU}{I}{\80\314}% U+00CC  
 12922 % U+00CD LATIN CAPITAL LETTER I WITH ACUTE; Iacute  
 12923 \DeclareTextCompositeCommand{\'}{PU}{I}{\80\315}% U+00CD  
 12924 % U+00CE LATIN CAPITAL LETTER I WITH CIRCUMFLEX; Icircumflex  
 12925 \DeclareTextCompositeCommand{\^}{PU}{I}{\80\316}% U+00CE  
 12926 % U+00CF LATIN CAPITAL LETTER I WITH DIAERESIS; Idieresis  
 12927 \DeclareTextCompositeCommand{\"}{PU}{I}{\80\317}% U+00CF

12928 % U+00D0 LATIN CAPITAL LETTER ETH; Eth  
12929 \DeclareTextCommand{\DH}{PU}{\80\320}% U+00D0  
12930 % U+00D1 LATIN CAPITAL LETTER N WITH TILDE; Ntilde  
12931 \DeclareTextCompositeCommand{\~}{PU}{N}{\80\321}% U+00D1  
12932 % U+00D2 LATIN CAPITAL LETTER O WITH GRAVE; Ograve  
12933 \DeclareTextCompositeCommand{\`}{PU}{O}{\80\322}% U+00D2  
12934 % U+00D3 LATIN CAPITAL LETTER O WITH ACUTE; Oacute  
12935 \DeclareTextCompositeCommand{\'}{PU}{O}{\80\323}% U+00D3  
12936 % U+00D4 LATIN CAPITAL LETTER O WITH CIRCUMFLEX; Ocircumflex  
12937 \DeclareTextCompositeCommand{\^}{PU}{O}{\80\324}% U+00D4  
12938 % U+00D5 LATIN CAPITAL LETTER O WITH TILDE; Otilde  
12939 \DeclareTextCompositeCommand{\~}{PU}{O}{\80\325}% U+00D5  
12940 % U+00D6 LATIN CAPITAL LETTER O WITH DIAERESIS; Odieresis  
12941 \DeclareTextCompositeCommand{\"}{PU}{O}{\80\326}% U+00D6  
12942 % U+00D7 MULTIPLICATION SIGN; multiply  
12943 \DeclareTextCommand{\textmultiply}{PU}{\80\327}% U+00D7  
12944 % U+00D8 LATIN CAPITAL LETTER O WITH STROKE; Oslash  
12945 \DeclareTextCommand{\O}{PU}{\80\330}% U+00D8  
12946 % U+00D9 LATIN CAPITAL LETTER U WITH GRAVE; Ugrave  
12947 \DeclareTextCompositeCommand{\`}{PU}{U}{\80\331}% U+00D9  
12948 % U+00DA LATIN CAPITAL LETTER U WITH ACUTE; Uacute  
12949 \DeclareTextCompositeCommand{\'}{PU}{U}{\80\332}% U+00DA  
12950 % U+00DB LATIN CAPITAL LETTER U WITH CIRCUMFLEX; Ucircumflex  
12951 \DeclareTextCompositeCommand{\^}{PU}{U}{\80\333}% U+00DB  
12952 % U+00DC LATIN CAPITAL LETTER U WITH DIAERESIS; Udieresis  
12953 \DeclareTextCompositeCommand{\"}{PU}{U}{\80\334}% U+00DC  
12954 % U+00DD LATIN CAPITAL LETTER Y WITH ACUTE; Yacute  
12955 \DeclareTextCompositeCommand{\'}{PU}{Y}{\80\335}% U+00DD  
12956 % U+00DE LATIN CAPITAL LETTER THORN; Thorn  
12957 \DeclareTextCommand{\TH}{PU}{\80\336}% U+00DE  
12958 % U+00DF LATIN SMALL LETTER SHARP S; germandbls  
12959 \DeclareTextCommand{\ss}{PU}{\80\337}% U+00DF  
12960 % U+00E0 LATIN SMALL LETTER A WITH GRAVE; agrave  
12961 \DeclareTextCompositeCommand{\`}{PU}{a}{\80\340}% U+00E0  
12962 % U+00E1 LATIN SMALL LETTER A WITH ACUTE; aacute  
12963 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\341}% U+00E1  
12964 % U+00E2 LATIN SMALL LETTER A WITH CIRCUMFLEX; acircumflex  
12965 \DeclareTextCompositeCommand{\^}{PU}{a}{\80\342}% U+00E2  
12966 % U+00E3 LATIN SMALL LETTER A WITH TILDE; atilde  
12967 \DeclareTextCompositeCommand{\~}{PU}{a}{\80\343}% U+00E3  
12968 % U+00E4 LATIN SMALL LETTER A WITH DIAERESIS; adieresis  
12969 \DeclareTextCompositeCommand{\"}{PU}{a}{\80\344}% U+00E4  
12970 % U+00E5 LATIN SMALL LETTER A WITH RING ABOVE; aring  
12971 \DeclareTextCompositeCommand{\r}{PU}{a}{\80\345}% U+00E5  
12972 % U+00E6 LATIN SMALL LETTER AE; ae  
12973 \DeclareTextCommand{\ae}{PU}{\80\346}% U+00E6  
12974 % U+00E7 LATIN SMALL LETTER C WITH CEDILLA; ccedilla  
12975 \DeclareTextCompositeCommand{\c}{PU}{c}{\80\347}% U+00E7  
12976 % U+00E8 LATIN SMALL LETTER E WITH GRAVE; egrave  
12977 \DeclareTextCompositeCommand{\`}{PU}{e}{\80\350}% U+00E8  
12978 % U+00E9 LATIN SMALL LETTER E WITH ACUTE; eacute  
12979 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\351}% U+00E9  
12980 % U+00EA LATIN SMALL LETTER E WITH CIRCUMFLEX; ecircumflex  
12981 \DeclareTextCompositeCommand{\^}{PU}{e}{\80\352}% U+00EA  
12982 % U+00EB LATIN SMALL LETTER E WITH DIAERESIS; edieresis  
12983 \DeclareTextCompositeCommand{\"}{PU}{e}{\80\353}% U+00EB  
12984 % U+00EC LATIN SMALL LETTER I WITH GRAVE; igrave

12985 \DeclareTextCompositeCommand{\`}{PU}{i}{\80\354}% U+00EC  
 12986 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\354}% U+00EC  
 12987 % U+00ED LATIN SMALL LETTER I WITH ACUTE; iacute  
 12988 \DeclareTextCompositeCommand{\`}{PU}{i}{\80\355}% U+00ED  
 12989 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\355}% U+00ED  
 12990 % U+00EE LATIN SMALL LETTER I WITH CIRCUMFLEX; icircumflex  
 12991 \DeclareTextCompositeCommand{\`}{PU}{i}{\80\356}% U+00EE  
 12992 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\356}% U+00EE  
 12993 % U+00EF LATIN SMALL LETTER I WITH DIAERESIS; idieresis  
 12994 \DeclareTextCompositeCommand{\"}{PU}{i}{\80\357}% U+00EF  
 12995 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\357}% U+00EF  
 12996 % U+00F0 LATIN SMALL LETTER ETH; eth  
 12997 \DeclareTextCommand{\dh}{PU}{\80\360}% U+00F0  
 12998 % U+00F1 LATIN SMALL LETTER N WITH TILDE; ntilde  
 12999 \DeclareTextCompositeCommand{\`}{PU}{n}{\80\361}% U+00F1  
 13000 % U+00F2 LATIN SMALL LETTER O WITH GRAVE; ograve  
 13001 \DeclareTextCompositeCommand{\`}{PU}{o}{\80\362}% U+00F2  
 13002 % U+00F3 LATIN SMALL LETTER O WITH ACUTE; oacute  
 13003 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\363}% U+00F3  
 13004 % U+00F4 LATIN SMALL LETTER O WITH CIRCUMFLEX; ocircumflex  
 13005 \DeclareTextCompositeCommand{\`}{PU}{o}{\80\364}% U+00F4  
 13006 % U+00F5 LATIN SMALL LETTER O WITH TILDE; otilde  
 13007 \DeclareTextCompositeCommand{\`}{PU}{o}{\80\365}% U+00F5  
 13008 % U+00F6 LATIN SMALL LETTER O WITH DIAERESIS; odieresis  
 13009 \DeclareTextCompositeCommand{\"}{PU}{o}{\80\366}% U+00F6  
 13010 % U+00F7 DIVISION SIGN; divide  
 13011 \DeclareTextCommand{\textdivide}{PU}{\80\367}% U+00F7  
 13012 % U+00F8 LATIN SMALL LETTER O WITH STROKE; oslash  
 13013 \DeclareTextCommand{\o}{PU}{\80\370}% U+00F8  
 13014 % U+00F9 LATIN SMALL LETTER U WITH GRAVE; ugrave  
 13015 \DeclareTextCompositeCommand{\`}{PU}{u}{\80\371}% U+00F9  
 13016 % U+00FA LATIN SMALL LETTER U WITH ACUTE; uacute  
 13017 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\372}% U+00FA  
 13018 % U+00FB LATIN SMALL LETTER U WITH CIRCUMFLEX; ucircumflex  
 13019 \DeclareTextCompositeCommand{\`}{PU}{u}{\80\373}% U+00FB  
 13020 % U+00FC LATIN SMALL LETTER U WITH DIAERESIS; udieresis  
 13021 \DeclareTextCompositeCommand{\"}{PU}{u}{\80\374}% U+00FC  
 13022 % U+00FD LATIN SMALL LETTER Y WITH ACUTE; yacute  
 13023 \DeclareTextCompositeCommand{\'}{PU}{y}{\80\375}% U+00FD  
 13024 % U+00FE LATIN SMALL LETTER THORN; thorn  
 13025 \DeclareTextCommand{\th}{PU}{\80\376}% U+00FE  
 13026 % U+00FF LATIN SMALL LETTER Y WITH DIAERESIS; ydieresis  
 13027 \DeclareTextCompositeCommand{\"}{PU}{y}{\80\377}% U+00FF

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

13028 % U+0100 LATIN CAPITAL LETTER A WITH MACRON; Amacron  
 13029 \DeclareTextCompositeCommand{\=}{PU}{A}{\81\000}% U+0100  
 13030 % U+0101 LATIN SMALL LETTER A WITH MACRON; amacron  
 13031 \DeclareTextCompositeCommand{\=}{PU}{a}{\81\001}% U+0101  
 13032 % U+0102 LATIN CAPITAL LETTER A WITH BREVE; Abreve  
 13033 \DeclareTextCompositeCommand{\u}{PU}{A}{\81\002}% U+0102  
 13034 % U+0103 LATIN SMALL LETTER A WITH BREVE; abreve  
 13035 \DeclareTextCompositeCommand{\u}{PU}{a}{\81\003}% U+0103  
 13036 % U+0104 LATIN CAPITAL LETTER A WITH OGONEK; Aogonek  
 13037 \DeclareTextCompositeCommand{\k}{PU}{A}{\81\004}% U+0104  
 13038 % U+0105 LATIN SMALL LETTER A WITH OGONEK; aogonek

13039 \DeclareTextCompositeCommand{\k}{PU}{a}{\81\005}% U+0105  
13040 % U+0106 LATIN CAPITAL LETTER C WITH ACUTE; Cacute  
13041 \DeclareTextCompositeCommand{\'}{PU}{C}{\81\006}% U+0106  
13042 % U+0107 LATIN SMALL LETTER C WITH ACUTE; cacute  
13043 \DeclareTextCompositeCommand{\`}{PU}{c}{\81\007}% U+0107  
13044 % U+0108 LATIN CAPITAL LETTER C WITH CIRCUMFLEX; Ccircumflex  
13045 \DeclareTextCompositeCommand{\^}{PU}{C}{\81\010}% U+0108  
13046 % U+0109 LATIN SMALL LETTER C WITH CIRCUMFLEX; ccircumflex  
13047 \DeclareTextCompositeCommand{\`}{PU}{c}{\81\011}% U+0109  
13048 % U+010A LATIN CAPITAL LETTER C WITH DOT ABOVE; Cdot, Cdotaccent  
13049 \DeclareTextCompositeCommand{\.}{PU}{C}{\81\012}% U+010A  
13050 % U+010B LATIN SMALL LETTER C WITH DOT ABOVE; cdot, cdotaccent  
13051 \DeclareTextCompositeCommand{\.}{PU}{c}{\81\013}% U+010B  
13052 % U+010C LATIN CAPITAL LETTER C WITH CARON; Ccaron  
13053 \DeclareTextCompositeCommand{\v}{PU}{C}{\81\014}% U+010C  
13054 % U+010D LATIN SMALL LETTER C WITH CARON; ccaron  
13055 \DeclareTextCompositeCommand{\v}{PU}{c}{\81\015}% U+010D  
13056 % U+010E LATIN CAPITAL LETTER D WITH CARON; Dcaron  
13057 \DeclareTextCompositeCommand{\v}{PU}{D}{\81\016}% U+010E  
13058 % U+010F LATIN SMALL LETTER D WITH CARON; dcaron  
13059 \DeclareTextCompositeCommand{\v}{PU}{d}{\81\017}% U+010F  
13060 % U+0110 LATIN CAPITAL LETTER D WITH STROKE; Dcroat, Dslash  
13061 \DeclareTextCommand{\DJ}{PU}{\81\020}% U+0110  
13062 % U+0111 LATIN SMALL LETTER D WITH STROKE; dcroat, dmacron  
13063 \DeclareTextCommand{\dj}{PU}{\81\021}% U+0111  
13064 % U+0112 LATIN CAPITAL LETTER E WITH MACRON; Emacron  
13065 \DeclareTextCompositeCommand{\=}{PU}{E}{\81\022}% U+0112  
13066 % U+0113 LATIN SMALL LETTER E WITH MACRON; emacron  
13067 \DeclareTextCompositeCommand{\=}{PU}{e}{\81\023}% U+0113  
13068 % U+0114 LATIN CAPITAL LETTER E WITH BREVE; Ebreve  
13069 \DeclareTextCompositeCommand{\u}{PU}{E}{\81\024}% U+0114  
13070 % U+0115 LATIN SMALL LETTER E WITH BREVE; ebreve  
13071 \DeclareTextCompositeCommand{\u}{PU}{e}{\81\025}% U+0115  
13072 % U+0116 LATIN CAPITAL LETTER E WITH DOT ABOVE; Edot, Edotaccent  
13073 \DeclareTextCompositeCommand{\.}{PU}{E}{\81\026}% U+0116  
13074 % U+0117 LATIN SMALL LETTER E WITH DOT ABOVE; edot, edotaccent  
13075 \DeclareTextCompositeCommand{\.}{PU}{e}{\81\027}% U+0117  
13076 % U+0118 LATIN CAPITAL LETTER E WITH OGONEK; Eogonek  
13077 \DeclareTextCompositeCommand{\k}{PU}{E}{\81\030}% U+0118  
13078 % U+0119 LATIN SMALL LETTER E WITH OGONEK; eogonek  
13079 \DeclareTextCompositeCommand{\k}{PU}{e}{\81\031}% U+0119  
13080 % U+011A LATIN CAPITAL LETTER E WITH CARON; Ecaron  
13081 \DeclareTextCompositeCommand{\v}{PU}{E}{\81\032}% U+011A  
13082 % U+011B LATIN SMALL LETTER E WITH CARON; ecaron  
13083 \DeclareTextCompositeCommand{\v}{PU}{e}{\81\033}% U+011B  
13084 % U+011C LATIN CAPITAL LETTER G WITH CIRCUMFLEX; Gcircumflex  
13085 \DeclareTextCompositeCommand{\^}{PU}{G}{\81\034}% U+011C  
13086 % U+011D LATIN SMALL LETTER G WITH CIRCUMFLEX; gcircumflex  
13087 \DeclareTextCompositeCommand{\^}{PU}{g}{\81\035}% U+011D  
13088 % U+011E LATIN CAPITAL LETTER G WITH BREVE; Gbreve  
13089 \DeclareTextCompositeCommand{\u}{PU}{G}{\81\036}% U+011E  
13090 % U+011F LATIN SMALL LETTER G WITH BREVE; gbreve  
13091 \DeclareTextCompositeCommand{\u}{PU}{g}{\81\037}% U+011F  
13092 % U+0120 LATIN CAPITAL LETTER G WITH DOT ABOVE; Gdot, Gdotaccent  
13093 \DeclareTextCompositeCommand{\.}{PU}{G}{\81\040}% U+0120  
13094 % U+0121 LATIN SMALL LETTER G WITH DOT ABOVE; gdot, gdotaccent  
13095 \DeclareTextCompositeCommand{\.}{PU}{g}{\81\041}% U+0121

13096 % U+0122 LATIN CAPITAL LETTER G WITH CEDILLA; Gcedilla, Gcommaaccent  
13097 \DeclareTextCompositeCommand{\c}{PU}{G}{\81\042}% U+0122  
13098 % U+0123 LATIN SMALL LETTER G WITH CEDILLA; gcedilla, gcommaaccent  
13099 \DeclareTextCompositeCommand{\c}{PU}{g}{\81\043}% U+0123  
13100 % U+0124 LATIN CAPITAL LETTER H WITH CIRCUMFLEX; Hcircumflex  
13101 \DeclareTextCompositeCommand{\^}{PU}{H}{\81\044}% U+0124  
13102 % U+0125 LATIN SMALL LETTER H WITH CIRCUMFLEX; hcircumflex  
13103 \DeclareTextCompositeCommand{\^}{PU}{h}{\81\045}% U+0125  
13104 % U+0126 LATIN CAPITAL LETTER H WITH STROKE; Hbar  
13105 \DeclareTextCommand{\textHslash}{PU}{\81\046}% U+0126  
13106 % U+0127 LATIN SMALL LETTER H WITH STROKE; hbar  
13107 \DeclareTextCommand{\textHslash}{PU}{\81\047}% U+0127  
13108 % U+0128 LATIN CAPITAL LETTER I WITH TILDE; Itilde  
13109 \DeclareTextCompositeCommand{\~}{PU}{I}{\81\050}% U+0128  
13110 % U+0129 LATIN SMALL LETTER I WITH TILDE; itilde  
13111 \DeclareTextCompositeCommand{\~}{PU}{i}{\81\051}% U+0129  
13112 \DeclareTextCompositeCommand{\~}{PU}{i}{\81\051}% U+0129  
13113 % U+012A LATIN CAPITAL LETTER I WITH MACRON; Imacron  
13114 \DeclareTextCompositeCommand{\=}{PU}{I}{\81\052}% U+012A  
13115 % U+012B LATIN SMALL LETTER I WITH MACRON; imacron  
13116 \DeclareTextCompositeCommand{\=}{PU}{i}{\81\053}% U+012B  
13117 \DeclareTextCompositeCommand{\=}{PU}{i}{\81\053}% U+012B  
13118 % U+012C LATIN CAPITAL LETTER I WITH BREVE; Ibrevé  
13119 \DeclareTextCompositeCommand{\u}{PU}{I}{\81\054}% U+012C  
13120 % U+012D LATIN SMALL LETTER I WITH BREVE; ibrevé  
13121 \DeclareTextCompositeCommand{\u}{PU}{i}{\81\055}% U+012D  
13122 \DeclareTextCompositeCommand{\u}{PU}{i}{\81\055}% U+012D  
13123 % U+012E LATIN CAPITAL LETTER I WITH OGONEK; Iogonek  
13124 \DeclareTextCompositeCommand{\k}{PU}{I}{\81\056}% U+012E  
13125 % U+012F LATIN SMALL LETTER I WITH OGONEK; iogonek  
13126 \DeclareTextCompositeCommand{\k}{PU}{i}{\81\057}% U+012F  
13127 \DeclareTextCompositeCommand{\k}{PU}{i}{\81\057}% U+012F  
13128 % U+0130 LATIN CAPITAL LETTER I WITH DOT ABOVE; Idot, Idotaccent  
13129 \DeclareTextCompositeCommand{\.}{PU}{I}{\81\060}% U+0130  
13130 % U+0131 LATIN SMALL LETTER DOTLESS I; dotlessi  
13131 \DeclareTextCommand{\i}{PU}{\81\061}% U+0131  
13132 % U+0132 LATIN CAPITAL LIGATURE IJ; IJ  
13133 \DeclareTextCommand{\IJ}{PU}{\81\062}% U+0132  
13134 % U+0133 LATIN SMALL LIGATURE IJ; ij  
13135 \DeclareTextCommand{\ij}{PU}{\81\063}% U+0133  
13136 % U+0134 LATIN CAPITAL LETTER J WITH CIRCUMFLEX; Jcircumflex  
13137 \DeclareTextCompositeCommand{\^}{PU}{J}{\81\064}% U+0134  
13138 % U+0135 LATIN SMALL LETTER J WITH CIRCUMFLEX; jcircumflex  
13139 \DeclareTextCompositeCommand{\^}{PU}{j}{\81\065}% U+0135  
13140 \DeclareTextCompositeCommand{\^}{PU}{j}{\81\065}% U+0135  
13141 % U+0136 LATIN CAPITAL LETTER K WITH CEDILLA; Kcedilla, Kcommaaccent  
13142 \DeclareTextCompositeCommand{\c}{PU}{K}{\81\066}% U+0136  
13143 % U+0137 LATIN SMALL LETTER K WITH CEDILLA; kcedilla, kcommaaccent  
13144 \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`.

13145 % U+0138 LATIN SMALL LETTER KRA; kgreenlandic  
13146 \DeclareTextCommand{\textkra}{PU}{\81\070}% U+0138  
13147 % U+0139 LATIN CAPITAL LETTER L WITH ACUTE; Lacute  
13148 \DeclareTextCompositeCommand{\'}{PU}{L}{\81\071}% U+0139  
13149 % U+013A LATIN SMALL LETTER L WITH ACUTE; lacute

13150 \DeclareTextCompositeCommand{\'}{PU}{l}{\81\072}% U+013A  
13151 % U+013B LATIN CAPITAL LETTER L WITH CEDILLA; Lcedilla, Lcommaaccent  
13152 \DeclareTextCompositeCommand{\c}{PU}{L}{\81\073}% U+013B  
13153 % U+013C LATIN SMALL LETTER L WITH CEDILLA; lcedilla, lcommaaccent  
13154 \DeclareTextCompositeCommand{\c}{PU}{l}{\81\074}% U+013C  
13155 % U+013D LATIN CAPITAL LETTER L WITH CARON; Lcaron  
13156 \DeclareTextCompositeCommand{\v}{PU}{L}{\81\075}% U+013D  
13157 % U+013E LATIN SMALL LETTER L WITH CARON; lcaron  
13158 \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.

13159 % U+013F LATIN CAPITAL LETTER L WITH MIDDLE DOT; Ldot, Ldotaccent  
13160 \DeclareTextCompositeCommand{\.}{PU}{L}{\81\077}% U+013F  
13161 % U+0140 LATIN SMALL LETTER L WITH MIDDLE DOT; ldot, ldotaccent  
13162 \DeclareTextCompositeCommand{\.}{PU}{l}{\81\100}% U+0140  
13163 % U+0141 LATIN CAPITAL LETTER L WITH STROKE; Lslash  
13164 \DeclareTextCommand{\L}{PU}{\81\101}% U+0141  
13165 % U+0142 LATIN SMALL LETTER L WITH STROKE; lslash  
13166 \DeclareTextCommand{\l}{PU}{\81\102}% U+0142  
13167 % U+0143 LATIN CAPITAL LETTER N WITH ACUTE; Nacute  
13168 \DeclareTextCompositeCommand{\'}{PU}{N}{\81\103}% U+0143  
13169 % U+0144 LATIN SMALL LETTER N WITH ACUTE; nacute  
13170 \DeclareTextCompositeCommand{\'}{PU}{n}{\81\104}% U+0144  
13171 % U+0145 LATIN CAPITAL LETTER N WITH CEDILLA; Ncedilla, Ncommaaccent  
13172 \DeclareTextCompositeCommand{\c}{PU}{N}{\81\105}% U+0145  
13173 % U+0146 LATIN SMALL LETTER N WITH CEDILLA; ncedilla, ncommaaccent  
13174 \DeclareTextCompositeCommand{\c}{PU}{n}{\81\106}% U+0146  
13175 % U+0147 LATIN CAPITAL LETTER N WITH CARON; Ncaron  
13176 \DeclareTextCompositeCommand{\v}{PU}{N}{\81\107}% U+0147  
13177 % U+0148 LATIN SMALL LETTER N WITH CARON; ncaron  
13178 \DeclareTextCompositeCommand{\v}{PU}{n}{\81\110}% U+0148  
13179 % U+0149 LATIN SMALL LETTER N PRECEDED BY APOSTROPHE; napostrophe, quoterightn  
13180 \DeclareTextCommand{\textnapostrophe}{PU}{\81\111}% U+0149  
13181 % U+014A LATIN CAPITAL LETTER ENG; Eng  
13182 \DeclareTextCommand{\NG}{PU}{\81\112}% U+014A  
13183 % U+014B LATIN SMALL LETTER ENG; eng  
13184 \DeclareTextCommand{\ng}{PU}{\81\113}% U+014B  
13185 % U+014C LATIN CAPITAL LETTER O WITH MACRON; Omacron  
13186 \DeclareTextCompositeCommand{\=}{PU}{O}{\81\114}% U+014C  
13187 % U+014D LATIN SMALL LETTER O WITH MACRON; omacron  
13188 \DeclareTextCompositeCommand{\=}{PU}{o}{\81\115}% U+014D  
13189 % U+014E LATIN CAPITAL LETTER O WITH BREVE; Obreve  
13190 \DeclareTextCompositeCommand{\u}{PU}{O}{\81\116}% U+014E  
13191 % U+014F LATIN SMALL LETTER O WITH BREVE; obreve  
13192 \DeclareTextCompositeCommand{\u}{PU}{o}{\81\117}% U+014F  
13193 % U+0150 LATIN CAPITAL LETTER O WITH DOUBLE ACUTE; Odblacute, Ohungarumlaut  
13194 \DeclareTextCompositeCommand{\H}{PU}{O}{\81\120}% U+0150  
13195 % U+0151 LATIN SMALL LETTER O WITH DOUBLE ACUTE; odblacute, ohungarumlaut  
13196 \DeclareTextCompositeCommand{\H}{PU}{o}{\81\121}% U+0151  
13197 % U+0152 LATIN CAPITAL LIGATURE OE; OE  
13198 \DeclareTextCommand{\OE}{PU}{\81\122}% U+0152  
13199 % U+0153 LATIN SMALL LIGATURE OE; oe  
13200 \DeclareTextCommand{\oe}{PU}{\81\123}% U+0153  
13201 % U+0154 LATIN CAPITAL LETTER R WITH ACUTE; Racute  
13202 \DeclareTextCompositeCommand{\'}{PU}{R}{\81\124}% U+0154  
13203 % U+0155 LATIN SMALL LETTER R WITH ACUTE; racute  
13204 \DeclareTextCompositeCommand{\'}{PU}{r}{\81\125}% U+0155

13205 % U+0156 LATIN CAPITAL LETTER R WITH CEDILLA; Rcedilla, Rcommaaccent  
13206 \DeclareTextCompositeCommand{\c}{PU}{R}{\81\126}% U+0156  
13207 % U+0157 LATIN SMALL LETTER R WITH CEDILLA; rcedilla, rcommaaccent  
13208 \DeclareTextCompositeCommand{\c}{PU}{r}{\81\127}% U+0157  
13209 % U+0158 LATIN CAPITAL LETTER R WITH CARON; Rcaron  
13210 \DeclareTextCompositeCommand{\v}{PU}{R}{\81\130}% U+0158  
13211 % U+0159 LATIN SMALL LETTER R WITH CARON; rcaron  
13212 \DeclareTextCompositeCommand{\v}{PU}{r}{\81\131}% U+0159  
13213 % U+015A LATIN CAPITAL LETTER S WITH ACUTE; Sacute  
13214 \DeclareTextCompositeCommand{\'}{PU}{S}{\81\132}% U+015A  
13215 % U+015B LATIN SMALL LETTER S WITH ACUTE; sacute  
13216 \DeclareTextCompositeCommand{\'}{PU}{s}{\81\133}% U+015B  
13217 % U+015C LATIN CAPITAL LETTER S WITH CIRCUMFLEX; Scircumflex  
13218 \DeclareTextCompositeCommand{\^}{PU}{S}{\81\134}% U+015C  
13219 % U+015D LATIN SMALL LETTER S WITH CIRCUMFLEX; scircumflex  
13220 \DeclareTextCompositeCommand{\^}{PU}{s}{\81\135}% U+015D  
13221 % U+015E LATIN CAPITAL LETTER S WITH CEDILLA; Scedilla  
13222 \DeclareTextCompositeCommand{\c}{PU}{S}{\81\136}% U+015E  
13223 % U+015F LATIN SMALL LETTER S WITH CEDILLA; scedilla  
13224 \DeclareTextCompositeCommand{\c}{PU}{s}{\81\137}% U+015F  
13225 % U+0160 LATIN CAPITAL LETTER S WITH CARON; Scaron  
13226 \DeclareTextCompositeCommand{\v}{PU}{S}{\81\140}% U+0160  
13227 % U+0161 LATIN SMALL LETTER S WITH CARON; scaron  
13228 \DeclareTextCompositeCommand{\v}{PU}{s}{\81\141}% U+0161  
13229 % U+0162 LATIN CAPITAL LETTER T WITH CEDILLA; Tcedilla, Tcommaaccent  
13230 \DeclareTextCompositeCommand{\c}{PU}{T}{\81\142}% U+0162  
13231 % U+0163 LATIN SMALL LETTER T WITH CEDILLA; tcedilla, tcommaaccent  
13232 \DeclareTextCompositeCommand{\c}{PU}{t}{\81\143}% U+0163  
13233 % U+0164 LATIN CAPITAL LETTER T WITH CARON; Tcaron  
13234 \DeclareTextCompositeCommand{\v}{PU}{T}{\81\144}% U+0164  
13235 % U+0165 LATIN SMALL LETTER T WITH CARON; tcaron  
13236 \DeclareTextCompositeCommand{\v}{PU}{t}{\81\145}% U+0165  
13237 % U+0166 LATIN CAPITAL LETTER T WITH STROKE; Tbar  
13238 \DeclareTextCommand{\textTslash}{PU}{\81\146}% U+0166  
13239 % U+0167 LATIN SMALL LETTER T WITH STROKE; tbar  
13240 \DeclareTextCommand{\texttslash}{PU}{\81\147}% U+0167  
13241 % U+0168 LATIN CAPITAL LETTER U WITH TILDE; Utilde  
13242 \DeclareTextCompositeCommand{\~}{PU}{U}{\81\150}% U+0168  
13243 % U+0169 LATIN SMALL LETTER U WITH TILDE; utilde  
13244 \DeclareTextCompositeCommand{\~}{PU}{u}{\81\151}% U+0169  
13245 % U+016A LATIN CAPITAL LETTER U WITH MACRON; Umacron  
13246 \DeclareTextCompositeCommand{\=}{PU}{U}{\81\152}% U+016A  
13247 % U+016B LATIN SMALL LETTER U WITH MACRON; umacron  
13248 \DeclareTextCompositeCommand{\=}{PU}{u}{\81\153}% U+016B  
13249 % U+016C LATIN CAPITAL LETTER U WITH BREVE; Ubreve  
13250 \DeclareTextCompositeCommand{\u}{PU}{U}{\81\154}% U+016C  
13251 % U+016D LATIN SMALL LETTER U WITH BREVE; ubreve  
13252 \DeclareTextCompositeCommand{\u}{PU}{u}{\81\155}% U+016D  
13253 % U+016E LATIN CAPITAL LETTER U WITH RING ABOVE; Uring  
13254 \DeclareTextCompositeCommand{\r}{PU}{U}{\81\156}% U+016E  
13255 % U+016F LATIN SMALL LETTER U WITH RING ABOVE; uring  
13256 \DeclareTextCompositeCommand{\r}{PU}{u}{\81\157}% U+016F  
13257 % U+0170 LATIN CAPITAL LETTER U WITH DOUBLE ACUTE; Udblacute, Uhungarumlaut  
13258 \DeclareTextCompositeCommand{\H}{PU}{U}{\81\160}% U+0170  
13259 % U+0171 LATIN SMALL LETTER U WITH DOUBLE ACUTE; udblacute, uhungarumlaut  
13260 \DeclareTextCompositeCommand{\H}{PU}{u}{\81\161}% U+0171  
13261 % U+0172 LATIN CAPITAL LETTER U WITH OGONEK; Uogonek

13262 \DeclareTextCompositeCommand{\k}{PU}{U}{\81\162}% U+0172  
 13263 % U+0173 LATIN SMALL LETTER U WITH OGONEK; uogonek  
 13264 \DeclareTextCompositeCommand{\k}{PU}{u}{\81\163}% U+0173  
 13265 % U+0174 LATIN CAPITAL LETTER W WITH CIRCUMFLEX; Wcircumflex  
 13266 \DeclareTextCompositeCommand{\^}{PU}{W}{\81\164}% U+0174  
 13267 % U+0175 LATIN SMALL LETTER W WITH CIRCUMFLEX; wcircumflex  
 13268 \DeclareTextCompositeCommand{\^}{PU}{w}{\81\165}% U+0175  
 13269 % U+0176 LATIN CAPITAL LETTER Y WITH CIRCUMFLEX; Ycircumflex  
 13270 \DeclareTextCompositeCommand{\^}{PU}{Y}{\81\166}% U+0176  
 13271 % U+0177 LATIN SMALL LETTER Y WITH CIRCUMFLEX; ycircumflex  
 13272 \DeclareTextCompositeCommand{\^}{PU}{y}{\81\167}% U+0177  
 13273 % U+0178 LATIN CAPITAL LETTER Y WITH DIAERESIS; Ydieresis  
 13274 \DeclareTextCompositeCommand{"}{PU}{Y}{\81\170}% U+0178  
 13275 % U+0179 LATIN CAPITAL LETTER Z WITH ACUTE; Zacute  
 13276 \DeclareTextCompositeCommand{'}{PU}{Z}{\81\171}% U+0179  
 13277 % U+017A LATIN SMALL LETTER Z WITH ACUTE; zacute  
 13278 \DeclareTextCompositeCommand{'}{PU}{z}{\81\172}% U+017A  
 13279 % U+017B LATIN CAPITAL LETTER Z WITH DOT ABOVE; Zdot, Zdotaccent  
 13280 \DeclareTextCompositeCommand{\.}{PU}{Z}{\81\173}% U+017B  
 13281 % U+017C LATIN SMALL LETTER Z WITH DOT ABOVE; zdot, zdotaccent  
 13282 \DeclareTextCompositeCommand{\.}{PU}{z}{\81\174}% U+017C  
 13283 % U+017D LATIN CAPITAL LETTER Z WITH CARON; Zcaron  
 13284 \DeclareTextCompositeCommand{\v}{PU}{Z}{\81\175}% U+017D  
 13285 % U+017E LATIN SMALL LETTER Z WITH CARON; zcaron  
 13286 \DeclareTextCompositeCommand{\v}{PU}{z}{\81\176}% U+017E  
 13287 % U+017F LATIN SMALL LETTER LONG S; longs, slong  
 13288 \DeclareTextCommand{\textlongS}{PU}{\81\177}% U+017F

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

13289 % U+0192 LATIN SMALL LETTER F WITH HOOK; florin  
 13290 \DeclareTextCommand{\textflorin}{PU}{\81\222}% U+0192  
 13291 % U+01CD LATIN CAPITAL LETTER A WITH CARON; Acaron  
 13292 \DeclareTextCompositeCommand{\v}{PU}{A}{\81\315}% U+01CD  
 13293 % U+01CE LATIN SMALL LETTER A WITH CARON; acaron  
 13294 \DeclareTextCompositeCommand{\v}{PU}{a}{\81\316}% U+01CE  
 13295 % U+01CF LATIN CAPITAL LETTER I WITH CARON; Icaron  
 13296 \DeclareTextCompositeCommand{\v}{PU}{I}{\81\317}% U+01CF  
 13297 % U+01D0 LATIN SMALL LETTER I WITH CARON; icaron  
 13298 \DeclareTextCompositeCommand{\v}{PU}{i}{\81\320}% U+01D0  
 13299 \DeclareTextCompositeCommand{\v}{PU}{i}{\81\320}% U+01D0  
 13300 % U+01D1 LATIN CAPITAL LETTER O WITH CARON; Ocaron  
 13301 \DeclareTextCompositeCommand{\v}{PU}{O}{\81\321}% U+01D1  
 13302 % U+01D2 LATIN SMALL LETTER O WITH CARON; ocaron  
 13303 \DeclareTextCompositeCommand{\v}{PU}{o}{\81\322}% U+01D2  
 13304 % U+01D3 LATIN CAPITAL LETTER U WITH CARON; Ucaron  
 13305 \DeclareTextCompositeCommand{\v}{PU}{U}{\81\323}% U+01D3  
 13306 % U+01D4 LATIN SMALL LETTER U WITH CARON; ucaron  
 13307 \DeclareTextCompositeCommand{\v}{PU}{u}{\81\324}% U+01D4  
 13308 % U+01E4 LATIN CAPITAL LETTER G WITH STROKE; Gstroke  
 13309 \DeclareTextCommand{\textGslash}{PU}{\81\344}% U+01E4  
 13310 % U+01E5 LATIN SMALL LETTER G WITH STROKE; gstroke  
 13311 \DeclareTextCommand{\textgslash}{PU}{\81\345}% U+01E5  
 13312 % U+01E6 LATIN CAPITAL LETTER G WITH CARON; Gcaron  
 13313 \DeclareTextCompositeCommand{\v}{PU}{G}{\81\346}% U+01E6  
 13314 % U+01E7 LATIN SMALL LETTER G WITH CARON; gcaron  
 13315 \DeclareTextCompositeCommand{\v}{PU}{g}{\81\347}% U+01E7  
 13316 % U+01E8 LATIN CAPITAL LETTER K WITH CARON; Kcaron

13317 \DeclareTextCompositeCommand{\v}{PU}{K}{\81\350}% U+01E8  
13318 % U+01E9 LATIN SMALL LETTER K WITH CARON; kcaron  
13319 \DeclareTextCompositeCommand{\v}{PU}{k}{\81\351}% U+01E9  
13320 % U+01EA LATIN CAPITAL LETTER O WITH OGONEK; Oogonek  
13321 \DeclareTextCompositeCommand{\k}{PU}{O}{\81\352}% U+01EA  
13322 % U+01EB LATIN SMALL LETTER O WITH OGONEK; oogonek  
13323 \DeclareTextCompositeCommand{\k}{PU}{o}{\81\353}% U+01EB  
13324 % U+01F0 LATIN SMALL LETTER J WITH CARON; jcaron  
13325 \DeclareTextCompositeCommand{\v}{PU}{j}{\81\360}% U+01F0  
13326 \DeclareTextCompositeCommand{\v}{PU}{j}{\81\360}% U+01F0  
13327 % U+01F4 LATIN CAPITAL LETTER G WITH ACUTE; Gacute  
13328 \DeclareTextCompositeCommand{\'}{PU}{G}{\81\364}% U+01F4  
13329 % U+01F5 LATIN SMALL LETTER G WITH ACUTE; gacute  
13330 \DeclareTextCompositeCommand{\'}{PU}{g}{\81\365}% U+01F5  
13331 % U+01F8 LATIN CAPITAL LETTER N WITH GRAVE  
13332 \DeclareTextCompositeCommand{\'}{PU}{N}{\81\370}% U+01F8  
13333 % U+01F9 LATIN SMALL LETTER N WITH GRAVE  
13334 \DeclareTextCompositeCommand{\'}{PU}{n}{\81\371}% U+01F9  
13335 % U+01FC LATIN CAPITAL LETTER AE WITH ACUTE; AEacute  
13336 \DeclareTextCompositeCommand{\'}{PU}{AE}{\81\374}% U+01FC  
13337 % U+01FD LATIN SMALL LETTER AE WITH ACUTE; aeacute  
13338 \DeclareTextCompositeCommand{\'}{PU}{ae}{\81\375}% U+01FD  
13339 % U+01FE LATIN CAPITAL LETTER O WITH STROKE AND ACUTE; \*Oslashacute, Ostrokeacut  
13340 \DeclareTextCompositeCommand{\'}{PU}{O}{\81\376}% U+01FE  
13341 % U+01FF LATIN SMALL LETTER O WITH STROKE AND ACUTE; \*oslashacute, ostrokeacute  
13342 \DeclareTextCompositeCommand{\'}{PU}{o}{\81\377}% U+01FF  
13343 % U+0200 LATIN CAPITAL LETTER A WITH DOUBLE GRAVE; Adblgrave  
13344 \DeclareTextCompositeCommand{\G}{PU}{A}{\82\000}% U+0200  
13345 % U+0201 LATIN SMALL LETTER A WITH DOUBLE GRAVE; adblgrave  
13346 \DeclareTextCompositeCommand{\G}{PU}{a}{\82\001}% U+0201  
13347 % U+0204 LATIN CAPITAL LETTER E WITH DOUBLE GRAVE; Edblgrave  
13348 \DeclareTextCompositeCommand{\G}{PU}{E}{\82\004}% U+0204  
13349 % U+0205 LATIN SMALL LETTER E WITH DOUBLE GRAVE; edblgrave  
13350 \DeclareTextCompositeCommand{\G}{PU}{e}{\82\005}% U+0205  
13351 % U+0208 LATIN CAPITAL LETTER I WITH DOUBLE GRAVE; Idblgrave  
13352 \DeclareTextCompositeCommand{\G}{PU}{I}{\82\010}% U+0208  
13353 % U+0209 LATIN SMALL LETTER I WITH DOUBLE GRAVE; idblgrave  
13354 \DeclareTextCompositeCommand{\G}{PU}{i}{\82\011}% U+0209  
13355 \DeclareTextCompositeCommand{\G}{PU}{i}{\82\011}% U+0209  
13356 % U+020C LATIN CAPITAL LETTER O WITH DOUBLE GRAVE; Odblgrave  
13357 \DeclareTextCompositeCommand{\G}{PU}{O}{\82\014}% U+020C  
13358 % U+020D LATIN SMALL LETTER O WITH DOUBLE GRAVE; odblgrave  
13359 \DeclareTextCompositeCommand{\G}{PU}{o}{\82\015}% U+020D  
13360 % U+0210 LATIN CAPITAL LETTER R WITH DOUBLE GRAVE; Rdblgrave  
13361 \DeclareTextCompositeCommand{\G}{PU}{R}{\82\020}% U+0210  
13362 % U+0211 LATIN SMALL LETTER R WITH DOUBLE GRAVE; rdblgrave  
13363 \DeclareTextCompositeCommand{\G}{PU}{r}{\82\021}% U+0211  
13364 % U+0214 LATIN CAPITAL LETTER U WITH DOUBLE GRAVE; Udblgrave  
13365 \DeclareTextCompositeCommand{\G}{PU}{U}{\82\024}% U+0214  
13366 % U+0215 LATIN SMALL LETTER U WITH DOUBLE GRAVE; udblgrave  
13367 \DeclareTextCompositeCommand{\G}{PU}{u}{\82\025}% U+0215  
13368 % U+021E LATIN CAPITAL LETTER H WITH CARON  
13369 \DeclareTextCompositeCommand{\v}{PU}{H}{\82\036}% U+021E  
13370 % U+021F LATIN SMALL LETTER H WITH CARON  
13371 \DeclareTextCompositeCommand{\v}{PU}{h}{\82\037}% U+021F  
13372 % U+0226 LATIN CAPITAL LETTER A WITH DOT ABOVE  
13373 \DeclareTextCompositeCommand{\.}{PU}{A}{\82\046}% U+0226

13374 % U+0227 LATIN SMALL LETTER A WITH DOT ABOVE  
13375 \DeclareTextCompositeCommand{\.}{PU}{a}{\82\047}% U+0227  
13376 % U+0228 LATIN CAPITAL LETTER E WITH CEDILLA  
13377 \DeclareTextCompositeCommand{\c}{PU}{E}{\82\050}% U+0228  
13378 % U+0229 LATIN SMALL LETTER E WITH CEDILLA  
13379 \DeclareTextCompositeCommand{\c}{PU}{e}{\82\051}% U+0229  
13380 % U+022E LATIN CAPITAL LETTER O WITH DOT ABOVE  
13381 \DeclareTextCompositeCommand{\.}{PU}{O}{\82\056}% U+022E  
13382 % U+022F LATIN SMALL LETTER O WITH DOT ABOVE  
13383 \DeclareTextCompositeCommand{\.}{PU}{o}{\82\057}% U+022F  
13384 % U+0232 LATIN CAPITAL LETTER Y WITH MACRON  
13385 \DeclareTextCompositeCommand{\=}{PU}{Y}{\82\062}% U+0232  
13386 % U+0233 LATIN SMALL LETTER Y WITH MACRON  
13387 \DeclareTextCompositeCommand{\=}{PU}{y}{\82\063}% U+0233  
13388 % U+0237 LATIN SMALL LETTER DOTLESS J  
13389 \DeclareTextCommand{\j}{PU}{\82\067}% U+0237

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

13390 % U+02C7 CARON; caron  
13391 \DeclareTextCommand{\textasciicaron}{PU}{\82\307}% U+02C7  
13392 % U+02D8 BREVE; breve  
13393 \DeclareTextCommand{\textasciibreve}{PU}{\82\330}% U+02D8  
13394 % U+02D9 DOT ABOVE; dotaccent  
13395 \DeclareTextCommand{\textdotaccent}{PU}{\82\331}% U+02D9  
13396 % U+02DA RING ABOVE; ring  
13397 \DeclareTextCommand{\textring}{PU}{\82\332}% U+02DA  
13398 % U+02DB OGONEK; ogonek  
13399 \DeclareTextCommand{\textogonek}{PU}{\82\333}% U+02DB  
13400 % U+02DC SMALL TILDE; ilde, \*tilde  
13401 \DeclareTextCommand{\texttilde}{PU}{\82\334}% U+02DC  
13402 % U+02DD DOUBLE ACUTE ACCENT; hungarumlaut  
13403 \DeclareTextCommand{\texthungarumlaut}{PU}{\82\335}% U+02DD  
13404 \DeclareTextCommand{\textacutedbl}{PU}{\texthungarumlaut}% U+02DD  
13405 % U+02F5 MODIFIER LETTER MIDDLE DOUBLE GRAVE ACCENT  
13406 \DeclareTextCommand{\textgravedbl}{PU}{\82\365}% U+02F5  
13407 % U+02F7 MODIFIER LETTER LOW TILDE  
13408 \DeclareTextCommand{\texttildelow}{PU}{\82\367}% U+02F7

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

13409 % U+030F COMBINING DOUBLE GRAVE ACCENT; dblgravecmb  
13410 \DeclareTextCommand{\textdoublegrave}{PU}{\83\017}% U+030F  
13411 % U+0311 COMBINING INVERTED BREVE; breveinvertedcmb  
13412 \DeclareTextCommand{\textnewtie}{PU}{\83\021}% U+0311  
13413 % U+0323 COMBINING DOT BELOW; dotbelowcmb, \*dotbelowcmb  
13414 \DeclareTextCommand{\textdotbelow}{PU}{\83\043}% U+0323  
13415 % U+0331 COMBINING MACRON BELOW; macronbelowcmb  
13416 \DeclareTextCommand{\textmacronbelow}{PU}{\83\061}% U+0331  
13417 % U+0361 COMBINING DOUBLE INVERTED BREVE; breveinverteddoublecmb  
13418 \DeclareTextCommand{\texttie}{PU}{\83\141}% U+0361

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

13419 % U+0374 GREEK NUMERAL SIGN; numeralsigngreek  
13420 \DeclareTextCommand{\textnumeralsigngreek}{PU}{\83\164}% U+0374  
13421 % U+0375 GREEK LOWER NUMERAL SIGN; numeralsignlowergreek  
13422 \DeclareTextCommand{\textnumeralsignlowergreek}{PU}{\83\165}% U+0375  
13423 % U+0386 GREEK CAPITAL LETTER ALPHA WITH TONOS; Alphanos  
13424 \DeclareTextCompositeCommand{\'}{PU}{\textAlpha}{\83\206}% U+0386

13425 % U+0388 GREEK CAPITAL LETTER EPSILON WITH TONOS; Epsilontonos  
13426 \DeclareTextCompositeCommand{\'}{PU}{\textEpsilon}{\83\210}% U+0388  
13427 % U+0389 GREEK CAPITAL LETTER ETA WITH TONOS; Etatonos  
13428 \DeclareTextCompositeCommand{\'}{PU}{\textEta}{\83\211}% U+0389  
13429 % U+038A GREEK CAPITAL LETTER IOTA WITH TONOS; Iotatonos  
13430 \DeclareTextCompositeCommand{\'}{PU}{\textIota}{\83\212}% U+038A  
13431 % U+038C GREEK CAPITAL LETTER OMICRON WITH TONOS; Omicrontonos  
13432 \DeclareTextCompositeCommand{\'}{PU}{\textOmicron}{\83\214}% U+038C  
13433 % U+038E GREEK CAPITAL LETTER UPSILON WITH TONOS; Upsilonontonos  
13434 \DeclareTextCompositeCommand{\'}{PU}{\textUpsilon}{\83\216}% U+038E  
13435 % U+038F GREEK CAPITAL LETTER OMEGA WITH TONOS; Omegatonos  
13436 \DeclareTextCompositeCommand{\'}{PU}{\textOmega}{\83\217}% U+038F  
13437 % U+0390 GREEK SMALL LETTER IOTA WITH DIALYTIKA AND TONOS; iotadieresis  
13438 \DeclareTextCompositeCommand{\'}{PU}{\textIotadieresis}{\83\220}% U+0390  
13439 % U+0391 GREEK CAPITAL LETTER ALPHA; Alpha  
13440 \DeclareTextCommand{\textAlpha}{PU}{\83\221}% U+0391  
13441 % U+0392 GREEK CAPITAL LETTER BETA; Beta  
13442 \DeclareTextCommand{\textBeta}{PU}{\83\222}% U+0392  
13443 % U+0393 GREEK CAPITAL LETTER GAMMA; Gamma  
13444 \DeclareTextCommand{\textGamma}{PU}{\83\223}% U+0393  
13445 % U+0394 GREEK CAPITAL LETTER DELTA; Deltagreek, \*Delta  
13446 \DeclareTextCommand{\textDelta}{PU}{\83\224}% U+0394  
13447 % U+0395 GREEK CAPITAL LETTER EPSILON; Epsilon  
13448 \DeclareTextCommand{\textEpsilon}{PU}{\83\225}% U+0395  
13449 % U+0396 GREEK CAPITAL LETTER ZETA; Zeta  
13450 \DeclareTextCommand{\textZeta}{PU}{\83\226}% U+0396  
13451 % U+0397 GREEK CAPITAL LETTER ETA; Eta  
13452 \DeclareTextCommand{\textEta}{PU}{\83\227}% U+0397  
13453 % U+0398 GREEK CAPITAL LETTER THETA; Theta  
13454 \DeclareTextCommand{\textTheta}{PU}{\83\230}% U+0398  
13455 % U+0399 GREEK CAPITAL LETTER IOTA; Iota  
13456 \DeclareTextCommand{\textIota}{PU}{\83\231}% U+0399  
13457 % U+039A GREEK CAPITAL LETTER KAPPA; Kappa  
13458 \DeclareTextCommand{\textKappa}{PU}{\83\232}% U+039A  
13459 % U+039B GREEK CAPITAL LETTER LAMDA; Lambda  
13460 \DeclareTextCommand{\textLambda}{PU}{\83\233}% U+039B  
13461 % U+039C GREEK CAPITAL LETTER MU; Mu  
13462 \DeclareTextCommand{\textMu}{PU}{\83\234}% U+039C  
13463 % U+039D GREEK CAPITAL LETTER NU; Nu  
13464 \DeclareTextCommand{\textNu}{PU}{\83\235}% U+039D  
13465 % U+039E GREEK CAPITAL LETTER XI; Xi  
13466 \DeclareTextCommand{\textXi}{PU}{\83\236}% U+039E  
13467 % U+039F GREEK CAPITAL LETTER OMICRON; Omicron  
13468 \DeclareTextCommand{\textOmicron}{PU}{\83\237}% U+039F  
13469 % U+03A0 GREEK CAPITAL LETTER PI; Pi  
13470 \DeclareTextCommand{\textPi}{PU}{\83\240}% U+03A0  
13471 % U+03A1 GREEK CAPITAL LETTER RHO; Rho  
13472 \DeclareTextCommand{\textRho}{PU}{\83\241}% U+03A1  
13473 % U+03A3 GREEK CAPITAL LETTER SIGMA; Sigma  
13474 \DeclareTextCommand{\textSigma}{PU}{\83\243}% U+03A3  
13475 % U+03A4 GREEK CAPITAL LETTER TAU; Tau  
13476 \DeclareTextCommand{\textTau}{PU}{\83\244}% U+03A4  
13477 % U+03A5 GREEK CAPITAL LETTER UPSILON; Upsilon  
13478 \DeclareTextCommand{\textUpsilon}{PU}{\83\245}% U+03A5  
13479 % U+03A6 GREEK CAPITAL LETTER PHI; Phi  
13480 \DeclareTextCommand{\textPhi}{PU}{\83\246}% U+03A6  
13481 % U+03A7 GREEK CAPITAL LETTER CHI; Chi

13482 \DeclareTextCommand{\textChi}{PU}{\83\247}% U+03A7  
13483 % U+03A8 GREEK CAPITAL LETTER PSI; Psi  
13484 \DeclareTextCommand{\textPsi}{PU}{\83\250}% U+03A8  
13485 % U+03A9 GREEK CAPITAL LETTER OMEGA; Omegagreek, \*Omega  
13486 \DeclareTextCommand{\textOmega}{PU}{\83\251}% U+03A9  
13487 % U+03AA GREEK CAPITAL LETTER IOTA WITH DIALYTIKA; Iotadieresis  
13488 \DeclareTextCommand{\textIotadieresis}{PU}{\83\252}% U+03AA  
13489 \DeclareTextCompositeCommand{"}{PU}{\textIota}{\83\252}% U+03AA  
13490 % U+03AB GREEK CAPITAL LETTER UPSILON WITH DIALYTIKA; Upsilondieresis  
13491 \DeclareTextCompositeCommand{"}{PU}{\textUpsilon}{\83\253}% U+03AB  
13492 % U+03AC GREEK SMALL LETTER ALPHA WITH TONOS; alphanos  
13493 \DeclareTextCompositeCommand{'}{PU}{\textalpha}{\83\254}% U+03AC  
13494 % U+03AD GREEK SMALL LETTER EPSILON WITH TONOS; epsilon  
13495 \DeclareTextCompositeCommand{'}{PU}{\textepsilon}{\83\255}% U+03AD  
13496 % U+03AE GREEK SMALL LETTER ETA WITH TONOS; etanos  
13497 \DeclareTextCompositeCommand{'}{PU}{\texteta}{\83\256}% U+03AE  
13498 % U+03AF GREEK SMALL LETTER IOTA WITH TONOS; iotanos  
13499 \DeclareTextCompositeCommand{'}{PU}{\textiota}{\83\257}% U+03AF  
13500 % U+03B0 GREEK SMALL LETTER UPSILON WITH DIALYTIKA AND TONOS; upsilondieresis  
13501 \DeclareTextCompositeCommand{"}{PU}{\textupsilon}{\83\260}% U+03B0  
13502 % U+03B1 GREEK SMALL LETTER ALPHA; alpha  
13503 \DeclareTextCommand{\textalpha}{PU}{\83\261}% U+03B1  
13504 % U+03B2 GREEK SMALL LETTER BETA; beta  
13505 \DeclareTextCommand{\textbeta}{PU}{\83\262}% U+03B2  
13506 % U+03B3 GREEK SMALL LETTER GAMMA; gamma  
13507 \DeclareTextCommand{\textgamma}{PU}{\83\263}% U+03B3  
13508 % U+03B4 GREEK SMALL LETTER DELTA; delta  
13509 \DeclareTextCommand{\textdelta}{PU}{\83\264}% U+03B4  
13510 % U+03B5 GREEK SMALL LETTER EPSILON; epsilon  
13511 \DeclareTextCommand{\textepsilon}{PU}{\83\265}% U+03B5  
13512 % U+03B6 GREEK SMALL LETTER ZETA; zeta  
13513 \DeclareTextCommand{\textzeta}{PU}{\83\266}% U+03B6  
13514 % U+03B7 GREEK SMALL LETTER ETA; eta  
13515 \DeclareTextCommand{\texteta}{PU}{\83\267}% U+03B7  
13516 % U+03B8 GREEK SMALL LETTER THETA; theta  
13517 \DeclareTextCommand{\texttheta}{PU}{\83\270}% U+03B8  
13518 % U+03B9 GREEK SMALL LETTER IOTA; iota  
13519 \DeclareTextCommand{\textiota}{PU}{\83\271}% U+03B9  
13520 % U+03BA GREEK SMALL LETTER KAPPA; kappa  
13521 \DeclareTextCommand{\textkappa}{PU}{\83\272}% U+03BA  
13522 % U+03BB GREEK SMALL LETTER LAMDA; lambda  
13523 \DeclareTextCommand{\textlambda}{PU}{\83\273}% U+03BB  
13524 % U+03BC GREEK SMALL LETTER MU; mugreek, \*mu  
13525 \DeclareTextCommand{\textmugreek}{PU}{\83\274}% U+03BC  
13526 % U+03BD GREEK SMALL LETTER NU; nu  
13527 \DeclareTextCommand{\textnu}{PU}{\83\275}% U+03BD  
13528 % U+03BE GREEK SMALL LETTER XI; xi  
13529 \DeclareTextCommand{\textxi}{PU}{\83\276}% U+03BE  
13530 % U+03BF GREEK SMALL LETTER OMICRON; omicron  
13531 \DeclareTextCommand{\textomicron}{PU}{\83\277}% U+03BF  
13532 % U+03C0 GREEK SMALL LETTER PI; pi  
13533 \DeclareTextCommand{\textpi}{PU}{\83\300}% U+03C0  
13534 % U+03C1 GREEK SMALL LETTER RHO; rho  
13535 \DeclareTextCommand{\textrho}{PU}{\83\301}% U+03C1  
13536 % U+03C2 GREEK SMALL LETTER FINAL SIGMA; \*sigma1, sigmafinal  
13537 \DeclareTextCommand{\textvarsigma}{PU}{\83\302}% U+03C2  
13538 % U+03C3 GREEK SMALL LETTER SIGMA; sigma

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13539 \DeclareTextCommand{\textsigma}{PU}{\83\303}% U+03C3
13540 % U+03C4 GREEK SMALL LETTER TAU; tau
13541 \DeclareTextCommand{\texttau}{PU}{\83\304}% U+03C4
13542 % U+03C5 GREEK SMALL LETTER UPSILON; upsilon
13543 \DeclareTextCommand{\textupsilon}{PU}{\83\305}% U+03C5
13544 % U+03C6 GREEK SMALL LETTER PHI; phi
13545 \DeclareTextCommand{\textphi}{PU}{\83\306}% U+03C6
13546 % U+03C7 GREEK SMALL LETTER CHI; chi
13547 \DeclareTextCommand{\textchi}{PU}{\83\307}% U+03C7
13548 % U+03C8 GREEK SMALL LETTER PSI; psi
13549 \DeclareTextCommand{\textpsi}{PU}{\83\310}% U+03C8
13550 % U+03C9 GREEK SMALL LETTER OMEGA; omega
13551 \DeclareTextCommand{\textomega}{PU}{\83\311}% U+03C9
13552 % U+03CA GREEK SMALL LETTER IOTA WITH DIALYTIKA; iodadieresis
13553 \DeclareTextCompositeCommand{"}{PU}{\textiota}{\83\312}% U+03CA
13554 % U+03CB GREEK SMALL LETTER UPSILON WITH DIALYTIKA; upsilondieresis
13555 \DeclareTextCompositeCommand{"}{PU}{\textupsilon}{\83\313}% U+03CB
13556 % U+03CC GREEK SMALL LETTER OMICRON WITH TONOS; omicrontonos
13557 \DeclareTextCompositeCommand{'}{PU}{\textomicron}{\83\314}% U+03CC
13558 % U+03CD GREEK SMALL LETTER UPSILON WITH TONOS; upsilontonos
13559 \DeclareTextCommand{\textupsilonacute}{PU}{\83\315}% U+03CD
13560 \DeclareTextCompositeCommand{'}{PU}{\textupsilon}{\83\315}% U+03CD
13561 % U+03CE GREEK SMALL LETTER OMEGA WITH TONOS; omegatonos
13562 \DeclareTextCompositeCommand{'}{PU}{\textomega}{\83\316}% U+03CE
13563 % U+03DA GREEK LETTER STIGMA; Stigmagreek
13564 \DeclareTextCommand{\textStigmagreek}{PU}{\83\332}% U+03DA
13565 % U+03DB GREEK SMALL LETTER STIGMA
13566 \DeclareTextCommand{\textstigmagreek}{PU}{\83\333}% U+03DB
13567 % U+03DC GREEK LETTER DIGAMMA; Digammagreek
13568 \DeclareTextCommand{\textDigammagreek}{PU}{\83\334}% U+03DC
13569 % U+03DD GREEK SMALL LETTER DIGAMMA
13570 \DeclareTextCommand{\textdigammagreek}{PU}{\83\335}% U+03DD
13571 % U+03DE GREEK LETTER KOPPA; Koppagreek
13572 \DeclareTextCommand{\textKoppagreek}{PU}{\83\336}% U+03DE
13573 % U+03DF GREEK SMALL LETTER KOPPA
13574 \DeclareTextCommand{\textkoppagreek}{PU}{\83\337}% U+03DF
13575 % U+03E0 GREEK LETTER SAMPI; Sampigreek
13576 \DeclareTextCommand{\textSampigreek}{PU}{\83\340}% U+03E0
13577 % U+03E1 GREEK SMALL LETTER SAMPI
13578 \DeclareTextCommand{\textsampigreek}{PU}{\83\341}% U+03E1

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## 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.

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13579 % U+0400 CYRILLIC CAPITAL LETTER IE WITH GRAVE
13580 \DeclareTextCompositeCommand{'}{PU}{\CYRE}{\84\000}% U+0400
13581 % U+0401 CYRILLIC CAPITAL LETTER IO; Iocyrillic, *afii10023
13582 \DeclareTextCommand{\CYRYO}{PU}{\84\001}% U+0401
13583 \DeclareTextCompositeCommand{"}{PU}{\CYRE}{\84\001}% ???
13584 % U+0402 CYRILLIC CAPITAL LETTER DJE; Djecyrillic, *afii10051
13585 \DeclareTextCommand{\CYRDJE}{PU}{\84\002}% U+0402
13586 % U+0403 CYRILLIC CAPITAL LETTER GJE; Gjecyrillic, *afii10052
13587 \DeclareTextCompositeCommand{'}{PU}{\CYRG}{\84\003}% U+0403
13588 % U+0404 CYRILLIC CAPITAL LETTER UKRAINIAN IE; Ecyrillic, *afii10053
13589 \DeclareTextCommand{\CYRIE}{PU}{\84\004}% U+0404
13590 % U+0405 CYRILLIC CAPITAL LETTER DZE; Dzecyrillic, *afii10054
13591 \DeclareTextCommand{\CYRDZE}{PU}{\84\005}% U+0405

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13592 % U+0406 CYRILLIC CAPITAL LETTER BYELORUSSIAN-UKRAINIAN I; Icyrillic, \*afii10055  
 13593 \DeclareTextCommand{\CYRII}{PU}{\84\006}% U+0406  
 13594 % U+0407 CYRILLIC CAPITAL LETTER YI; Yicyrillic, \*afii10056  
 13595 \DeclareTextCommand{\CYRYI}{PU}{\84\007}% U+0407  
 13596 \DeclareTextCompositeCommand{\"}{PU}{\CYRII}{\84\007}% U+0407  
 13597 % U+0408 CYRILLIC CAPITAL LETTER JE; Jecyrillic, \*afii10057  
 13598 \DeclareTextCommand{\CYRJE}{PU}{\84\010}% U+0408  
 13599 % U+0409 CYRILLIC CAPITAL LETTER LJE; Ljecyrillic, \*afii10058  
 13600 \DeclareTextCommand{\CYRLJE}{PU}{\84\011}% U+0409  
 13601 % U+040A CYRILLIC CAPITAL LETTER NJE; Njecyrillic, \*afii10059  
 13602 \DeclareTextCommand{\CYRNJE}{PU}{\84\012}% U+040A  
 13603 % U+040B CYRILLIC CAPITAL LETTER TSHE; Tshecyrillic, \*afii10060  
 13604 \DeclareTextCommand{\CYRTSHE}{PU}{\84\013}% U+040B  
 13605 % U+040C CYRILLIC CAPITAL LETTER KJE; Kjecyrillic, \*afii10061  
 13606 \DeclareTextCompositeCommand{\'}{PU}{\CYRK}{\84\014}% U+040C  
 13607 % U+040D CYRILLIC CAPITAL LETTER I WITH GRAVE  
 13608 \DeclareTextCompositeCommand{\`}{PU}{\CYRI}{\84\015}% U+040D  
 13609 % U+040E CYRILLIC CAPITAL LETTER SHORT U; Ushortcyrillic, \*afii10062  
 13610 \DeclareTextCommand{\CYRUSHRT}{PU}{\84\016}% U+040E  
 13611 \DeclareTextCompositeCommand{\U}{PU}{\CYRU}{\84\016}% U+040E  
 13612 % U+040F CYRILLIC CAPITAL LETTER DZHE; Dzhecyrillic, \*afii10145  
 13613 \DeclareTextCommand{\CYRDZHE}{PU}{\84\017}% U+040F  
 13614 % U+0410 CYRILLIC CAPITAL LETTER A; Acyrillic, \*afii10017  
 13615 \DeclareTextCommand{\CYRA}{PU}{\84\020}% U+0410  
 13616 % U+0411 CYRILLIC CAPITAL LETTER BE; Becyrillic, \*afii10018  
 13617 \DeclareTextCommand{\CYRE}{PU}{\84\021}% U+0411  
 13618 % U+0412 CYRILLIC CAPITAL LETTER VE; Vecyrillic, \*afii10019  
 13619 \DeclareTextCommand{\CYRV}{PU}{\84\022}% U+0412  
 13620 % U+0413 CYRILLIC CAPITAL LETTER GHE; Gecyrillic, \*afii10020  
 13621 \DeclareTextCommand{\CYRG}{PU}{\84\023}% U+0413  
 13622 % U+0414 CYRILLIC CAPITAL LETTER DE; Decyrillic, \*afii10021  
 13623 \DeclareTextCommand{\CYRD}{PU}{\84\024}% U+0414  
 13624 % U+0415 CYRILLIC CAPITAL LETTER IE; Iecyrillic, \*afii10022  
 13625 \DeclareTextCommand{\CYRE}{PU}{\84\025}% U+0415  
 13626 % U+0416 CYRILLIC CAPITAL LETTER ZHE; Zhecyrillic, \*afii10024  
 13627 \DeclareTextCommand{\CYRZH}{PU}{\84\026}% U+0416  
 13628 % U+0417 CYRILLIC CAPITAL LETTER ZE; Zecyrillic, \*afii10025  
 13629 \DeclareTextCommand{\CYRZ}{PU}{\84\027}% U+0417  
 13630 % U+0418 CYRILLIC CAPITAL LETTER I; Iicyrillic, \*afii10026  
 13631 \DeclareTextCommand{\CYRI}{PU}{\84\030}% U+0418  
 13632 % U+0419 CYRILLIC CAPITAL LETTER SHORT I; Iishortcyrillic, \*afii10027  
 13633 \DeclareTextCommand{\CYRISHRT}{PU}{\84\031}% U+0419  
 13634 \DeclareTextCompositeCommand{\U}{PU}{\CYRI}{\84\031}% U+0419  
 13635 % U+041A CYRILLIC CAPITAL LETTER KA; Kacyrillic, \*afii10028  
 13636 \DeclareTextCommand{\CYRK}{PU}{\84\032}% U+041A  
 13637 % U+041B CYRILLIC CAPITAL LETTER EL; Elcyrillic, \*afii10029  
 13638 \DeclareTextCommand{\CYRL}{PU}{\84\033}% U+041B  
 13639 % U+041C CYRILLIC CAPITAL LETTER EM; Emcyrillic, \*afii10030  
 13640 \DeclareTextCommand{\CYRM}{PU}{\84\034}% U+041C  
 13641 % U+041D CYRILLIC CAPITAL LETTER EN; Encyrillic, \*afii10031  
 13642 \DeclareTextCommand{\CYRN}{PU}{\84\035}% U+041D  
 13643 % U+041E CYRILLIC CAPITAL LETTER O; Ocyrillic, \*afii10032  
 13644 \DeclareTextCommand{\CYRO}{PU}{\84\036}% U+041E  
 13645 % U+041F CYRILLIC CAPITAL LETTER PE; Pecyrillic, \*afii10033  
 13646 \DeclareTextCommand{\CYRP}{PU}{\84\037}% U+041F  
 13647 % U+0420 CYRILLIC CAPITAL LETTER ER; Ercyrillic, \*afii10034  
 13648 \DeclareTextCommand{\CYRR}{PU}{\84\040}% U+0420

13649 % U+0421 CYRILLIC CAPITAL LETTER ES; Escyrillic, \*afii10035  
13650 \DeclareTextCommand{\CYRS}{PU}{\84\041}% U+0421  
13651 % U+0422 CYRILLIC CAPITAL LETTER TE; Tecyrillic, \*afii10036  
13652 \DeclareTextCommand{\CYRT}{PU}{\84\042}% U+0422  
13653 % U+0423 CYRILLIC CAPITAL LETTER U; Ucyrillic, \*afii10037  
13654 \DeclareTextCommand{\CYRU}{PU}{\84\043}% U+0423  
13655 % U+0424 CYRILLIC CAPITAL LETTER EF; Efcyrillic, \*afii10038  
13656 \DeclareTextCommand{\CYRF}{PU}{\84\044}% U+0424  
13657 % U+0425 CYRILLIC CAPITAL LETTER HA; Khacyrillic, \*afii10039  
13658 \DeclareTextCommand{\CYRH}{PU}{\84\045}% U+0425  
13659 % U+0426 CYRILLIC CAPITAL LETTER TSE; Tsecyrillic, \*afii10040  
13660 \DeclareTextCommand{\CYRC}{PU}{\84\046}% U+0426  
13661 % U+0427 CYRILLIC CAPITAL LETTER CHE; Checyrillic, \*afii10041  
13662 \DeclareTextCommand{\CYRCH}{PU}{\84\047}% U+0427  
13663 % U+0428 CYRILLIC CAPITAL LETTER SHA; Shacyrillic, \*afii10042  
13664 \DeclareTextCommand{\CYRSH}{PU}{\84\050}% U+0428  
13665 % U+0429 CYRILLIC CAPITAL LETTER SHCHA; Shchacyrillic, \*afii10043  
13666 \DeclareTextCommand{\CYRSHCH}{PU}{\84\051}% U+0429  
13667 % U+042A CYRILLIC CAPITAL LETTER HARD SIGN; Hardsigncyrillic, \*afii10044  
13668 \DeclareTextCommand{\CYRHRDSN}{PU}{\84\052}% U+042A  
13669 % U+042B CYRILLIC CAPITAL LETTER YERU; Yericyrillic, \*afii10045  
13670 \DeclareTextCommand{\CYRERY}{PU}{\84\053}% U+042B  
13671 % U+042C CYRILLIC CAPITAL LETTER SOFT SIGN; Softsigncyrillic, \*afii10046  
13672 \DeclareTextCommand{\CYRSFTSN}{PU}{\84\054}% U+042C  
13673 % U+042D CYRILLIC CAPITAL LETTER E; Ereversedcyrillic, \*afii10047  
13674 \DeclareTextCommand{\CYREREV}{PU}{\84\055}% U+042D  
13675 % U+042E CYRILLIC CAPITAL LETTER YU; IUcyrillic, \*afii10048  
13676 \DeclareTextCommand{\CYRYU}{PU}{\84\056}% U+042E  
13677 % U+042F CYRILLIC CAPITAL LETTER YA; IAcyrillic, \*afii10049  
13678 \DeclareTextCommand{\CYRYA}{PU}{\84\057}% U+042F  
13679 % U+0430 CYRILLIC SMALL LETTER A; acyrillic, \*afii10065  
13680 \DeclareTextCommand{\cyra}{PU}{\84\060}% U+0430  
13681 % U+0431 CYRILLIC SMALL LETTER BE; \*afii10066, becyrillic  
13682 \DeclareTextCommand{\cyrb}{PU}{\84\061}% U+0431  
13683 % U+0432 CYRILLIC SMALL LETTER VE; \*afii10067, vecyrillic  
13684 \DeclareTextCommand{\cyrv}{PU}{\84\062}% U+0432  
13685 % U+0433 CYRILLIC SMALL LETTER GHE; \*afii10068, gecyrillic  
13686 \DeclareTextCommand{\cyrg}{PU}{\84\063}% U+0433  
13687 % U+0434 CYRILLIC SMALL LETTER DE; \*afii10069, decyrillic  
13688 \DeclareTextCommand{\cyrd}{PU}{\84\064}% U+0434  
13689 % U+0435 CYRILLIC SMALL LETTER IE; \*afii10070, iecyrillic  
13690 \DeclareTextCommand{\cyre}{PU}{\84\065}% U+0435  
13691 % U+0436 CYRILLIC SMALL LETTER ZHE; \*afii10072, zhecyrillic  
13692 \DeclareTextCommand{\cyrzh}{PU}{\84\066}% U+0436  
13693 % U+0437 CYRILLIC SMALL LETTER ZE; \*afii10073, zecyrillic  
13694 \DeclareTextCommand{\cyrz}{PU}{\84\067}% U+0437  
13695 % U+0438 CYRILLIC SMALL LETTER I; \*afii10074, icyrillic  
13696 \DeclareTextCommand{\cyri}{PU}{\84\070}% U+0438  
13697 % U+0439 CYRILLIC SMALL LETTER SHORT I; \*afii10075, iishortcyrillic  
13698 \DeclareTextCommand{\cyrishrt}{PU}{\84\071}% U+0439  
13699 \DeclareTextCompositeCommand{\U}{PU}{\cyri}{\84\071}% U+0439  
13700 % U+043A CYRILLIC SMALL LETTER KA; \*afii10076, kacyrillic  
13701 \DeclareTextCommand{\cyrk}{PU}{\84\072}% U+043A  
13702 % U+043B CYRILLIC SMALL LETTER EL; \*afii10077, elcyrillic  
13703 \DeclareTextCommand{\cyr1}{PU}{\84\073}% U+043B  
13704 % U+043C CYRILLIC SMALL LETTER EM; \*afii10078, emcyrillic  
13705 \DeclareTextCommand{\cyr1m}{PU}{\84\074}% U+043C

13706 % U+043D CYRILLIC SMALL LETTER EN; \*afii10079, encyrillic  
13707 \DeclareTextCommand{\cyrn}{PU}{\84\075}% U+043D  
13708 % U+043E CYRILLIC SMALL LETTER O; \*afii10080, ocyrillic  
13709 \DeclareTextCommand{\cyro}{PU}{\84\076}% U+043E  
13710 % U+043F CYRILLIC SMALL LETTER PE; \*afii10081, pecyrillic  
13711 \DeclareTextCommand{\cyrp}{PU}{\84\077}% U+043F  
13712 % U+0440 CYRILLIC SMALL LETTER ER; \*afii10082, ercyrillic  
13713 \DeclareTextCommand{\cyrr}{PU}{\84\100}% U+0440  
13714 % U+0441 CYRILLIC SMALL LETTER ES; \*afii10083, escyrillic  
13715 \DeclareTextCommand{\cyrs}{PU}{\84\101}% U+0441  
13716 % U+0442 CYRILLIC SMALL LETTER TE; \*afii10084, tecyrillic  
13717 \DeclareTextCommand{\cyrte}{PU}{\84\102}% U+0442  
13718 % U+0443 CYRILLIC SMALL LETTER U; \*afii10085, ucyrillic  
13719 \DeclareTextCommand{\cyru}{PU}{\84\103}% U+0443  
13720 % U+0444 CYRILLIC SMALL LETTER EF; \*afii10086, efcyrillic  
13721 \DeclareTextCommand{\cyrf}{PU}{\84\104}% U+0444  
13722 % U+0445 CYRILLIC SMALL LETTER HA; \*afii10087, khacyrillic  
13723 \DeclareTextCommand{\cyrh}{PU}{\84\105}% U+0445  
13724 % U+0446 CYRILLIC SMALL LETTER TSE; \*afii10088, tsecyrillic  
13725 \DeclareTextCommand{\cyrc}{PU}{\84\106}% U+0446  
13726 % U+0447 CYRILLIC SMALL LETTER CHE; \*afii10089, checyrillic  
13727 \DeclareTextCommand{\cyrch}{PU}{\84\107}% U+0447  
13728 % U+0448 CYRILLIC SMALL LETTER SHA; \*afii10090, shacyrillic  
13729 \DeclareTextCommand{\cyrsh}{PU}{\84\110}% U+0448  
13730 % U+0449 CYRILLIC SMALL LETTER SHCHA; \*afii10091, shchacyrillic  
13731 \DeclareTextCommand{\cyrshch}{PU}{\84\111}% U+0449  
13732 % U+044A CYRILLIC SMALL LETTER HARD SIGN; \*afii10092, hardsigncyrillic  
13733 \DeclareTextCommand{\cyrhrdsn}{PU}{\84\112}% U+044A  
13734 % U+044B CYRILLIC SMALL LETTER YERU; \*afii10093, yericyrillic  
13735 \DeclareTextCommand{\cyry}{PU}{\84\113}% U+044B  
13736 % U+044C CYRILLIC SMALL LETTER SOFT SIGN; \*afii10094, softsigncyrillic  
13737 \DeclareTextCommand{\cyrsftsn}{PU}{\84\114}% U+044C  
13738 % U+044D CYRILLIC SMALL LETTER E; \*afii10095, ereversedcyrillic  
13739 \DeclareTextCommand{\cyrrerev}{PU}{\84\115}% U+044D  
13740 % U+044E CYRILLIC SMALL LETTER YU; \*afii10096, iucyrillic  
13741 \DeclareTextCommand{\cyryu}{PU}{\84\116}% U+044E  
13742 % U+044F CYRILLIC SMALL LETTER YA; \*afii10097, iacyrillic  
13743 \DeclareTextCommand{\cyrya}{PU}{\84\117}% U+044F  
13744 % U+0450 CYRILLIC SMALL LETTER IE WITH GRAVE  
13745 \DeclareTextCompositeCommand{\'}{PU}{\cyre}{\84\120}% U+0450  
13746 % U+0451 CYRILLIC SMALL LETTER IO; \*afii10071, iocyrillic  
13747 \DeclareTextCommand{\cyryo}{PU}{\84\121}% U+0451  
13748 \DeclareTextCompositeCommand{\"}{PU}{\cyre}{\84\121}% U+0451  
13749 % U+0452 CYRILLIC SMALL LETTER DJE; \*afii10099, djecyrillic  
13750 \DeclareTextCommand{\cyrdje}{PU}{\84\122}% U+0452  
13751 % U+0453 CYRILLIC SMALL LETTER GJE; \*afii10100, gjecyrillic  
13752 \DeclareTextCompositeCommand{\'}{PU}{\cyrg}{\84\123}% U+0453  
13753 % U+0454 CYRILLIC SMALL LETTER UKRAINIAN IE; \*afii10101, ecyrillic  
13754 \DeclareTextCommand{\cyrie}{PU}{\84\124}% U+0454  
13755 % U+0455 CYRILLIC SMALL LETTER DZE; \*afii10102, dzecyrillic  
13756 \DeclareTextCommand{\cyrdze}{PU}{\84\125}% U+0455  
13757 % U+0456 CYRILLIC SMALL LETTER BYELORUSSIAN-UKRAINIAN I; \*afii10103, icyrillic  
13758 \DeclareTextCommand{\cyrii}{PU}{\84\126}% U+0456  
13759 % U+0457 CYRILLIC SMALL LETTER YI; \*afii10104, yicyrillic  
13760 \DeclareTextCommand{\cyryi}{PU}{\84\127}% U+0457  
13761 \DeclareTextCompositeCommand{\"}{PU}{\cyrii}{\84\127}% U+0457  
13762 % U+0458 CYRILLIC SMALL LETTER JE; \*afii10105, jecyrillic

13763 \DeclareTextCommand{\cyrje}{PU}{\84\130}% U+0458  
13764 % U+0459 CYRILLIC SMALL LETTER LJE; \*afii10106, ljecyrillic  
13765 \DeclareTextCommand{\cyrkje}{PU}{\84\131}% U+0459  
13766 % U+045A CYRILLIC SMALL LETTER NJE; \*afii10107, njecyrillic  
13767 \DeclareTextCommand{\cyrnje}{PU}{\84\132}% U+045A  
13768 % U+045B CYRILLIC SMALL LETTER TSHE; \*afii10108, tshecyrillic  
13769 \DeclareTextCommand{\cyrtshe}{PU}{\84\133}% U+045B  
13770 % U+045C CYRILLIC SMALL LETTER KJE; \*afii10109, kjecyrillic  
13771 \DeclareTextCompositeCommand{\'}{PU}{\cyrk}{\84\134}% U+045C  
13772 % U+045D CYRILLIC SMALL LETTER I WITH GRAVE  
13773 \DeclareTextCompositeCommand{\'}{PU}{\cyri}{\84\135}% U+045D  
13774 % U+045E CYRILLIC SMALL LETTER SHORT U; \*afii10110, ushortcyrillic  
13775 \DeclareTextCommand{\cyrushrt}{PU}{\84\136}% U+045E  
13776 \DeclareTextCompositeCommand{\U}{PU}{\curu}{\84\136}% U+045E  
13777 % U+045F CYRILLIC SMALL LETTER DZHE; \*afii10193, dzhecyrillic  
13778 \DeclareTextCommand{\cyrdzhe}{PU}{\84\137}% U+045F  
13779 % U+0460 CYRILLIC CAPITAL LETTER OMEGA; Omegacyrillic  
13780 \DeclareTextCommand{\CYROMEGA}{PU}{\84\140}% U+0460  
13781 % U+0461 CYRILLIC SMALL LETTER OMEGA; omegacyrillic  
13782 \DeclareTextCommand{\cyromega}{PU}{\84\141}% U+0461  
13783 % U+0462 CYRILLIC CAPITAL LETTER YAT; Yatcyrillic, \*afii10146  
13784 \DeclareTextCommand{\CYRYAT}{PU}{\84\142}% U+0462  
13785 % U+0463 CYRILLIC SMALL LETTER YAT; \*afii10194, yatcyrillic  
13786 \DeclareTextCommand{\cyrjat}{PU}{\84\143}% U+0463  
13787 % U+0464 CYRILLIC CAPITAL LETTER IOTIFIED E; Eiotifiedcyrillic  
13788 \DeclareTextCommand{\CYRIOTE}{PU}{\84\144}% U+0464  
13789 % U+0465 CYRILLIC SMALL LETTER IOTIFIED E; eiotifiedcyrillic  
13790 \DeclareTextCommand{\cyriote}{PU}{\84\145}% U+0465  
13791 % U+0466 CYRILLIC CAPITAL LETTER LITTLE YUS; Yuslittlecyrillic  
13792 \DeclareTextCommand{\CYRLYUS}{PU}{\84\146}% U+0466  
13793 % U+0467 CYRILLIC SMALL LETTER LITTLE YUS; yuslittlecyrillic  
13794 \DeclareTextCommand{\cyrlyus}{PU}{\84\147}% U+0467  
13795 % U+0468 CYRILLIC CAPITAL LETTER IOTIFIED LITTLE YUS; Yuslittleiotifiedcyrillic  
13796 \DeclareTextCommand{\CYRIOTLYUS}{PU}{\84\150}% U+0468  
13797 % U+0469 CYRILLIC SMALL LETTER IOTIFIED LITTLE YUS; yuslittleiotifiedcyrillic  
13798 \DeclareTextCommand{\cyriotlyus}{PU}{\84\151}% U+0469  
13799 % U+046A CYRILLIC CAPITAL LETTER BIG YUS; Yusbigcyrillic  
13800 \DeclareTextCommand{\CYRBYUS}{PU}{\84\152}% U+046A  
13801 % U+046B CYRILLIC SMALL LETTER BIG YUS; yusbigcyrillic  
13802 \DeclareTextCommand{\cyrbyus}{PU}{\84\153}% U+046B  
13803 % U+046C CYRILLIC CAPITAL LETTER IOTIFIED BIG YUS; Yusbigiotifiedcyrillic  
13804 \DeclareTextCommand{\CYRIOTBYUS}{PU}{\84\154}% U+046C  
13805 % U+046D CYRILLIC SMALL LETTER IOTIFIED BIG YUS; yusbigiotifiedcyrillic  
13806 \DeclareTextCommand{\cyriotbyus}{PU}{\84\155}% U+046D  
13807 % U+046E CYRILLIC CAPITAL LETTER KSI; Ksicyrillic  
13808 \DeclareTextCommand{\CYRKSI}{PU}{\84\156}% U+046E  
13809 % U+046F CYRILLIC SMALL LETTER KSI; ksicyrillic  
13810 \DeclareTextCommand{\cyrksi}{PU}{\84\157}% U+046F  
13811 % U+0470 CYRILLIC CAPITAL LETTER PSI; Psicyrillic  
13812 \DeclareTextCommand{\CYRPSI}{PU}{\84\160}% U+0470  
13813 % U+0471 CYRILLIC SMALL LETTER PSI; psicyrillic  
13814 \DeclareTextCommand{\cyrpsi}{PU}{\84\161}% U+0471  
13815 % U+0472 CYRILLIC CAPITAL LETTER FITA; Fitacyrillic, \*afii10147  
13816 \DeclareTextCommand{\CYRFITA}{PU}{\84\162}% U+0472  
13817 % U+0473 CYRILLIC SMALL LETTER FITA; \*afii10195, fitacyrillic  
13818 \DeclareTextCommand{\cyrfita}{PU}{\84\163}% U+0473  
13819 % U+0474 CYRILLIC CAPITAL LETTER IZHITSA; Izhitsacyrillic, \*afii10148

13820 \DeclareTextCommand{\CYRIZH}{PU}{\84\164}% U+0474  
13821 % U+0475 CYRILLIC SMALL LETTER IZHITSA; \*afii10196, izhitsacyrillic  
13822 \DeclareTextCommand{\cyrizh}{PU}{\84\165}% U+0475  
13823 % U+0476 CYRILLIC CAPITAL LETTER IZHITSA WITH DOUBLE GRAVE ACCENT; Izhitsadblgravecyrillic  
13824 \DeclareTextCompositeCommand{\C}{PU}{\CYRIZH}{\84\166}% U+0476  
13825 % U+0477 CYRILLIC SMALL LETTER IZHITSA WITH DOUBLE GRAVE ACCENT; izhitsadblgravecyrillic  
13826 \DeclareTextCompositeCommand{\C}{PU}{\cyrizh}{\84\167}% U+0477  
13827 % U+0478 CYRILLIC CAPITAL LETTER UK; Ukcyrillic  
13828 \DeclareTextCommand{\CYRUK}{PU}{\84\170}% U+0478  
13829 % U+0479 CYRILLIC SMALL LETTER UK; ukcyrillic  
13830 \DeclareTextCommand{\cyruk}{PU}{\84\171}% U+0479  
13831 % U+047A CYRILLIC CAPITAL LETTER ROUND OMEGA; Omegaroundcyrillic  
13832 \DeclareTextCommand{\CYROMEGARND}{PU}{\84\172}% U+047A  
13833 % U+047B CYRILLIC SMALL LETTER ROUND OMEGA; omegaroundcyrillic  
13834 \DeclareTextCommand{\cyromegarnd}{PU}{\84\173}% U+047B  
13835 % U+047C CYRILLIC CAPITAL LETTER OMEGA WITH TITLO; Omegatitlocyrillic  
13836 \DeclareTextCommand{\CYROMEGATITLO}{PU}{\84\174}% U+047C  
13837 % U+047D CYRILLIC SMALL LETTER OMEGA WITH TITLO; omegatitlocyrillic  
13838 \DeclareTextCommand{\cyromegatitlo}{PU}{\84\175}% U+047D  
13839 % U+047E CYRILLIC CAPITAL LETTER OT; Otcyrillic  
13840 \DeclareTextCommand{\CYROT}{PU}{\84\176}% U+047E  
13841 % U+047F CYRILLIC SMALL LETTER OT; otcyrillic  
13842 \DeclareTextCommand{\cyrot}{PU}{\84\177}% U+047F  
13843 % U+0480 CYRILLIC CAPITAL LETTER KOPPA; Koppacyrillic  
13844 \DeclareTextCommand{\CYRKOPPA}{PU}{\84\200}% U+0480  
13845 % U+0481 CYRILLIC SMALL LETTER KOPPA; koppacyrillic  
13846 \DeclareTextCommand{\cyrkoppa}{PU}{\84\201}% U+0481  
13847 % U+0482 CYRILLIC THOUSANDS SIGN; thousandcyrillic  
13848 \DeclareTextCommand{\cyrthousands}{PU}{\84\202}% U+0482  
  
\84\203: U+0483 COMBINING CYRILLIC TITLO; titlocyrlliccmb  
\84\204: U+0484 COMBINING CYRILLIC PALATALIZATION; palatalizationcyrilliccmb  
\84\205: U+0485 COMBINING CYRILLIC DASIA PNEUMATA; dasiapneumatacyrilliccmb  
\84\206: U+0486 COMBINING CYRILLIC PSILI PNEUMATA; psilipneumatacyrilliccmb  
\84\207: U+0487 COMBINING CYRILLIC POKRYTIE  
\84\210: U+0488 COMBINING CYRILLIC HUNDRED THOUSANDS SIGN  
\84\211: U+0489 COMBINING CYRILLIC MILLIONS SIGN  
  
13849 % U+048A CYRILLIC CAPITAL LETTER SHORT I WITH TAIL  
13850 \DeclareTextCommand{\CYRISHRTDSC}{PU}{\84\212}% U+048A  
13851 % U+048B CYRILLIC SMALL LETTER SHORT I WITH TAIL  
13852 \DeclareTextCommand{\cyrishrtdsc}{PU}{\84\213}% U+048B  
13853 % U+048C CYRILLIC CAPITAL LETTER SEMISOFT SIGN  
13854 \DeclareTextCommand{\CYRSEMISFTSN}{PU}{\84\214}% U+048C  
13855 % U+048D CYRILLIC SMALL LETTER SEMISOFT SIGN  
13856 \DeclareTextCommand{\cyrsemisftsn}{PU}{\84\215}% U+048D  
13857 % U+048E CYRILLIC CAPITAL LETTER ER WITH TICK  
13858 \DeclareTextCommand{\CYRRTICK}{PU}{\84\216}% U+048E  
13859 % U+048F CYRILLIC SMALL LETTER ER WITH TICK  
13860 \DeclareTextCommand{\cyrrtick}{PU}{\84\217}% U+048F  
13861 % U+0490 CYRILLIC CAPITAL LETTER GHE WITH UPTURN; Gheupturncyrillic, \*afii10050  
13862 \DeclareTextCommand{\CYRGUP}{PU}{\84\220}% U+0490  
13863 % U+0491 CYRILLIC SMALL LETTER GHE WITH UPTURN; \*afii10098, gheupturncyrillic  
13864 \DeclareTextCommand{\cyrgup}{PU}{\84\221}% U+0491  
13865 % U+0492 CYRILLIC CAPITAL LETTER GHE WITH STROKE; Ghestrokecyrillic

13866 \DeclareTextCommand{\CYRGHCRS}{PU}{\84\222}% U+0492  
13867 % U+0493 CYRILLIC SMALL LETTER GHE WITH STROKE; ghestrokecyrillic  
13868 \DeclareTextCommand{\cyrghcrs}{PU}{\84\223}% U+0493  
13869 % U+0494 CYRILLIC CAPITAL LETTER GHE WITH MIDDLE HOOK; Ghemiddlehookcyrillic  
13870 \DeclareTextCommand{\CYRGHK}{PU}{\84\224}% U+0494  
13871 % U+0495 CYRILLIC SMALL LETTER GHE WITH MIDDLE HOOK; ghemiddlehookcyrillic  
13872 \DeclareTextCommand{\cyrghk}{PU}{\84\225}% U+0495  
13873 % U+0496 CYRILLIC CAPITAL LETTER ZHE WITH DESCENDER; Zhedescendercyrillic  
13874 \DeclareTextCommand{\CYRZHDSC}{PU}{\84\226}% U+0496  
13875 % U+0497 CYRILLIC SMALL LETTER ZHE WITH DESCENDER; zhedescendercyrillic  
13876 \DeclareTextCommand{\cyrzhdsc}{PU}{\84\227}% U+0497  
13877 % U+0498 CYRILLIC CAPITAL LETTER ZE WITH DESCENDER; Zedescendercyrillic  
13878 \DeclareTextCommand{\CYRZDSC}{PU}{\84\230}% U+0498  
13879 \DeclareTextCompositeCommand{\c}{PU}{\CYRZ}{\84\230}% U+0498  
13880 % U+0499 CYRILLIC SMALL LETTER ZE WITH DESCENDER; zedescendercyrillic  
13881 \DeclareTextCommand{\cyrzdsc}{PU}{\84\231}% U+0499  
13882 \DeclareTextCompositeCommand{\c}{PU}{\cyrz}{\84\231}% U+0499  
13883 % U+049A CYRILLIC CAPITAL LETTER KA WITH DESCENDER; Kadescendercyrillic  
13884 \DeclareTextCommand{\CYRKDSC}{PU}{\84\232}% U+049A  
13885 % U+049B CYRILLIC SMALL LETTER KA WITH DESCENDER; kadesendercyrillic  
13886 \DeclareTextCommand{\cyrkds}{PU}{\84\233}% U+049B  
13887 % U+049C CYRILLIC CAPITAL LETTER KA WITH VERTICAL STROKE; Kavertikalstrokecyrillic  
13888 \DeclareTextCommand{\CYRKVCRS}{PU}{\84\234}% U+049C  
13889 % U+049D CYRILLIC SMALL LETTER KA WITH VERTICAL STROKE; kavertikalstrokecyrillic  
13890 \DeclareTextCommand{\cyrkvcrs}{PU}{\84\235}% U+049D  
13891 % U+049E CYRILLIC CAPITAL LETTER KA WITH STROKE; Kastrokecyrillic  
13892 \DeclareTextCommand{\CYRKHCRS}{PU}{\84\236}% U+049E  
13893 % U+049F CYRILLIC SMALL LETTER KA WITH STROKE; kastrokecyrillic  
13894 \DeclareTextCommand{\cyrkhrs}{PU}{\84\237}% U+049F  
13895 % U+04A0 CYRILLIC CAPITAL LETTER BASHKIR KA; Kabashkircyrillic  
13896 \DeclareTextCommand{\CYRKBEAK}{PU}{\84\240}% U+04A0  
13897 % U+04A1 CYRILLIC SMALL LETTER BASHKIR KA; kabashkircyrillic  
13898 \DeclareTextCommand{\cyrkbeak}{PU}{\84\241}% U+04A1  
13899 % U+04A2 CYRILLIC CAPITAL LETTER EN WITH DESCENDER; Endescendercyrillic  
13900 \DeclareTextCommand{\CYRNDSC}{PU}{\84\242}% U+04A2  
13901 % U+04A3 CYRILLIC SMALL LETTER EN WITH DESCENDER; endescendercyrillic  
13902 \DeclareTextCommand{\cyrndsc}{PU}{\84\243}% U+04A3  
13903 % U+04A4 CYRILLIC CAPITAL LIGATURE EN GHE; Enghecyrillic  
13904 \DeclareTextCommand{\CYRNG}{PU}{\84\244}% U+04A4  
13905 % U+04A5 CYRILLIC SMALL LIGATURE EN GHE; enghecyrillic  
13906 \DeclareTextCommand{\cyrng}{PU}{\84\245}% U+04A5  
13907 % U+04A6 CYRILLIC CAPITAL LETTER PE WITH MIDDLE HOOK; Pemiddlehookcyrillic  
13908 \DeclareTextCommand{\CYRPHK}{PU}{\84\246}% U+04A6  
13909 % U+04A7 CYRILLIC SMALL LETTER PE WITH MIDDLE HOOK; pemiddlehookcyrillic  
13910 \DeclareTextCommand{\cyrphk}{PU}{\84\247}% U+04A7  
13911 % U+04A8 CYRILLIC CAPITAL LETTER ABKHASIAN HA; Haabkhasiancyrillic  
13912 \DeclareTextCommand{\CYRABHHA}{PU}{\84\250}% U+04A8  
13913 % U+04A9 CYRILLIC SMALL LETTER ABKHASIAN HA; haabkhasiancyrillic  
13914 \DeclareTextCommand{\cyrabhha}{PU}{\84\251}% U+04A9  
13915 % U+04AA CYRILLIC CAPITAL LETTER ES WITH DESCENDER; Esdescendercyrillic  
13916 \DeclareTextCommand{\CYRSDSC}{PU}{\84\252}% U+04AA  
13917 \DeclareTextCompositeCommand{\CYRSDSC}{PU}{\CYRS}{\84\252}% U+04AA  
13918 % U+04AB CYRILLIC SMALL LETTER ES WITH DESCENDER; esdescendercyrillic  
13919 \DeclareTextCommand{\cyrsdsc}{PU}{\84\253}% U+04AB  
13920 \DeclareTextCompositeCommand{\k}{PU}{\cyrs}{\84\253}% U+04AB  
13921 % U+04AC CYRILLIC CAPITAL LETTER TE WITH DESCENDER; Tedescendercyrillic  
13922 \DeclareTextCommand{\CYRTDSC}{PU}{\84\254}% U+04AC

13923 % U+04AD CYRILLIC SMALL LETTER TE WITH DESCENDER; tedescendercyrillic  
13924 \DeclareTextCommand{\cyrtddsc}{PU}{\84\255}% U+04AD  
13925 % U+04AE CYRILLIC CAPITAL LETTER STRAIGHT U; Ustraightcyrillic  
13926 \DeclareTextCommand{\CYRY}{PU}{\84\256}% U+04AE  
13927 % U+04AF CYRILLIC SMALL LETTER STRAIGHT U; ustraightcyrillic  
13928 \DeclareTextCommand{\cyry}{PU}{\84\257}% U+04AF  
13929 % U+04B0 CYRILLIC CAPITAL LETTER STRAIGHT U WITH STROKE; Ustraightstrokecyrillic  
13930 \DeclareTextCommand{\CYRYHCRS}{PU}{\84\260}% U+04B0  
13931 % U+04B1 CYRILLIC SMALL LETTER STRAIGHT U WITH STROKE; ustraightstrokecyrillic  
13932 \DeclareTextCommand{\cyryhcrs}{PU}{\84\261}% U+04B1  
13933 % U+04B2 CYRILLIC CAPITAL LETTER HA WITH DESCENDER; Hadesendercyrillic  
13934 \DeclareTextCommand{\CYRHDSC}{PU}{\84\262}% U+04B2  
13935 % U+04B3 CYRILLIC SMALL LETTER HA WITH DESCENDER; hadescendercyrillic  
13936 \DeclareTextCommand{\cyrhdsc}{PU}{\84\263}% U+04B3  
13937 % U+04B4 CYRILLIC CAPITAL LIGATURE TE TSE; Tetsecyrillic  
13938 \DeclareTextCommand{\CYRTETSE}{PU}{\84\264}% U+04B4  
13939 % U+04B5 CYRILLIC SMALL LIGATURE TE TSE; tetsecyrillic  
13940 \DeclareTextCommand{\cyrtetse}{PU}{\84\265}% U+04B5  
13941 % U+04B6 CYRILLIC CAPITAL LETTER CHE WITH DESCENDER; Chedescendercyrillic  
13942 \DeclareTextCommand{\CYRCHRDSC}{PU}{\84\266}% U+04B6  
13943 % U+04B7 CYRILLIC SMALL LETTER CHE WITH DESCENDER; chedescendercyrillic  
13944 \DeclareTextCommand{\cyrchrdsc}{PU}{\84\267}% U+04B7  
13945 % U+04B8 CYRILLIC CAPITAL LETTER CHE WITH VERTICAL STROKE; Cheverticalstrokecyrillic  
13946 \DeclareTextCommand{\CYRCHVCRS}{PU}{\84\270}% U+04B8  
13947 % U+04B9 CYRILLIC SMALL LETTER CHE WITH VERTICAL STROKE; cheverticalstrokecyrillic  
13948 \DeclareTextCommand{\cyrchvcrs}{PU}{\84\271}% U+04B9  
13949 % U+04BA CYRILLIC CAPITAL LETTER SHHA; Shhacyrillic  
13950 \DeclareTextCommand{\CYRSHHA}{PU}{\84\272}% U+04BA  
13951 % U+04BB CYRILLIC SMALL LETTER SHHA; shhacyrillic  
13952 \DeclareTextCommand{\cyrshha}{PU}{\84\273}% U+04BB  
13953 % U+04BC CYRILLIC CAPITAL LETTER ABKHASIAN CHE; Cheabkhasiancyrillic  
13954 \DeclareTextCommand{\CYRABHCH}{PU}{\84\274}% U+04BC  
13955 % U+04BD CYRILLIC SMALL LETTER ABKHASIAN CHE; cheabkhasiancyrillic  
13956 \DeclareTextCommand{\cyrabhch}{PU}{\84\275}% U+04BD  
13957 % U+04BE CYRILLIC CAPITAL LETTER ABKHASIAN CHE WITH DESCENDER; Chedescenderabkhasiancyrillic  
13958 \DeclareTextCommand{\CYRABHCHDSC}{PU}{\84\276}% U+04BE  
13959 \DeclareTextCompositeCommand{\k}{PU}{\CYRABHCH}{\84\276}% U+04BE  
13960 % U+04BF CYRILLIC SMALL LETTER ABKHASIAN CHE WITH DESCENDER; chedescenderabkhasiancyrillic  
13961 \DeclareTextCommand{\cyrabhchdsc}{PU}{\84\277}% U+04BF  
13962 \DeclareTextCompositeCommand{\k}{PU}{\cyrabhch}{\84\277}% U+04BF  
13963 % U+04C0 CYRILLIC LETTER PALOCHKA; palochkacyrillic  
13964 \DeclareTextCommand{\CYRpalochka}{PU}{\84\300}% U+04C0  
13965 % U+04C1 CYRILLIC CAPITAL LETTER ZHE WITH BREVE; Zhebrevecyrillic  
13966 \DeclareTextCompositeCommand{\U}{PU}{\CYRZH}{\84\301}% U+04C1  
13967 % U+04C2 CYRILLIC SMALL LETTER ZHE WITH BREVE; zhebrevecyrillic  
13968 \DeclareTextCompositeCommand{\U}{PU}{\cyrzh}{\84\302}% U+04C2  
13969 % U+04C3 CYRILLIC CAPITAL LETTER KA WITH HOOK; Kahookcyrillic  
13970 \DeclareTextCommand{\CYRKHK}{PU}{\84\303}% U+04C3  
13971 % U+04C4 CYRILLIC SMALL LETTER KA WITH HOOK; kahookcyrillic  
13972 \DeclareTextCommand{\cyrkhk}{PU}{\84\304}% U+04C4  
13973 % U+04C5 CYRILLIC CAPITAL LETTER EL WITH TAIL  
13974 \DeclareTextCommand{\CYRLDSC}{PU}{\84\305}% U+04C5  
13975 % U+04C6 CYRILLIC SMALL LETTER EL WITH TAIL  
13976 \DeclareTextCommand{\cyrlddsc}{PU}{\84\306}% U+04C6  
13977 % U+04C7 CYRILLIC CAPITAL LETTER EN WITH HOOK; Enhookcyrillic  
13978 \DeclareTextCommand{\CYRNHK}{PU}{\84\307}% U+04C7  
13979 % U+04C8 CYRILLIC SMALL LETTER EN WITH HOOK; enhookcyrillic

13980 \DeclareTextCommand{\cyrnhk}{PU}{\84\310}% U+04C8  
 13981 % U+04CB CYRILLIC CAPITAL LETTER KHAKASSIAN CHE; Chekhakassiancyrillic  
 13982 \DeclareTextCommand{\CYRCHLDSC}{PU}{\84\313}% U+04CB  
 13983 % U+04CC CYRILLIC SMALL LETTER KHAKASSIAN CHE; chekhakassiancyrillic  
 13984 \DeclareTextCommand{\cyrchldsc}{PU}{\84\314}% U+04CC  
 13985 % U+04CD CYRILLIC CAPITAL LETTER EM WITH TAIL  
 13986 \DeclareTextCommand{\CYRMDSC}{PU}{\84\315}% U+04CD  
 13987 % U+04CE CYRILLIC SMALL LETTER EM WITH TAIL  
 13988 \DeclareTextCommand{\cyrmdsc}{PU}{\84\316}% U+04CE  
 \84\317: U+04CF CYRILLIC SMALL LETTER PALOCHKA  
 13989 % U+04D0 CYRILLIC CAPITAL LETTER A WITH BREVE; Abrevecyrillic  
 13990 \DeclareTextCompositeCommand{\U}{PU}{\CYRA}{\84\320}% U+04D0  
 13991 % U+04D1 CYRILLIC SMALL LETTER A WITH BREVE; abrevecyrillic  
 13992 \DeclareTextCompositeCommand{\U}{PU}{\cyra}{\84\321}% U+04D1  
 13993 % U+04D2 CYRILLIC CAPITAL LETTER A WITH DIAERESIS; Adieresiscyrillic  
 13994 \DeclareTextCompositeCommand{\U}{PU}{\CYRA}{\84\322}% U+04D2  
 13995 % U+04D3 CYRILLIC SMALL LETTER A WITH DIAERESIS; adieresiscyrillic  
 13996 \DeclareTextCompositeCommand{\U}{PU}{\cyra}{\84\323}% U+04D3  
 13997 % U+04D4 CYRILLIC CAPITAL LIGATURE A IE; Aiecyrillic  
 13998 \DeclareTextCommand{\CYRAE}{PU}{\84\324}% U+04D4  
 13999 % U+04D5 CYRILLIC SMALL LIGATURE A IE; aiecyrillic  
 14000 \DeclareTextCommand{\cyrae}{PU}{\84\325}% U+04D5  
 14001 % U+04D6 CYRILLIC CAPITAL LETTER IE WITH BREVE; Iebrevcyrillic  
 14002 \DeclareTextCompositeCommand{\U}{PU}{\CYRE}{\84\326}% U+04D6  
 14003 % U+04D7 CYRILLIC SMALL LETTER IE WITH BREVE; iebrevcyrillic  
 14004 \DeclareTextCompositeCommand{\U}{PU}{\cyre}{\84\327}% U+04D7  
 14005 % U+04D8 CYRILLIC CAPITAL LETTER SCHWA; Schwacyrillic  
 14006 \DeclareTextCommand{\CYRSCHWA}{PU}{\84\330}% U+04D8  
 14007 % U+04D9 CYRILLIC SMALL LETTER SCHWA; \*afii10846, schwacyrillic  
 14008 \DeclareTextCommand{\cyrschwa}{PU}{\84\331}% U+04D9  
 14009 % U+04DA CYRILLIC CAPITAL LETTER SCHWA WITH DIAERESIS; Schwadiescyrillic  
 14010 \DeclareTextCompositeCommand{\U}{PU}{\CYRSCHWA}{\84\332}% U+04DA  
 14011 % U+04DB CYRILLIC SMALL LETTER SCHWA WITH DIAERESIS; schwadiescyrillic  
 14012 \DeclareTextCompositeCommand{\U}{PU}{\cyrschwa}{\84\333}% U+04DB  
 14013 % U+04DC CYRILLIC CAPITAL LETTER ZHE WITH DIAERESIS; Zhedieresiscyrillic  
 14014 \DeclareTextCompositeCommand{\U}{PU}{\CYRZH}{\84\334}% U+04DC  
 14015 % U+04DD CYRILLIC SMALL LETTER ZHE WITH DIAERESIS; zhedieresiscyrillic  
 14016 \DeclareTextCompositeCommand{\U}{PU}{\cyrz}{\84\335}% U+04DD  
 14017 % U+04DE CYRILLIC CAPITAL LETTER ZE WITH DIAERESIS; Zedieresiscyrillic  
 14018 \DeclareTextCompositeCommand{\U}{PU}{\CYRZ}{\84\336}% U+04DE  
 14019 % U+04DF CYRILLIC SMALL LETTER ZE WITH DIAERESIS; zedieresiscyrillic  
 14020 \DeclareTextCompositeCommand{\U}{PU}{\cyrz}{\84\337}% U+04DF  
 14021 % U+04E0 CYRILLIC CAPITAL LETTER ABKHASIAN DZE; Dzeabkhasiancyrillic  
 14022 \DeclareTextCommand{\CYRABHDZE}{PU}{\84\340}% U+04E0  
 14023 % U+04E1 CYRILLIC SMALL LETTER ABKHASIAN DZE; dzeabkhasiancyrillic  
 14024 \DeclareTextCommand{\cyrabhdze}{PU}{\84\341}% U+04E1  
 14025 % U+04E2 CYRILLIC CAPITAL LETTER I WITH MACRON; Imacroncyrillic  
 14026 \DeclareTextCompositeCommand{\U}{PU}{\CYRI}{\84\342}% U+04E2  
 14027 % U+04E3 CYRILLIC SMALL LETTER I WITH MACRON; imacroncyrillic  
 14028 \DeclareTextCompositeCommand{\U}{PU}{\cyri}{\84\343}% U+04E3  
 14029 % U+04E4 CYRILLIC CAPITAL LETTER I WITH DIAERESIS; Idieresiscyrillic  
 14030 \DeclareTextCompositeCommand{\U}{PU}{\CYRI}{\84\344}% U+04E4  
 14031 % U+04E5 CYRILLIC SMALL LETTER I WITH DIAERESIS; idieresiscyrillic  
 14032 \DeclareTextCompositeCommand{\U}{PU}{\cyri}{\84\345}% U+04E5  
 14033 % U+04E6 CYRILLIC CAPITAL LETTER O WITH DIAERESIS; Odieresiscyrillic  
 14034 \DeclareTextCompositeCommand{\U}{PU}{\CYRO}{\84\346}% U+04E6  
 14035 % U+04E7 CYRILLIC SMALL LETTER O WITH DIAERESIS; odieresiscyrillic

14036 \DeclareTextCompositeCommand{"}{PU}{\cyro}{\84\347}% U+04E7  
 14037 % U+04E8 CYRILLIC CAPITAL LETTER BARRED O; Obarredcyrillic  
 14038 \DeclareTextCommand{\CYROTLD}{PU}{\84\350}% U+04E8  
 14039 % U+04E9 CYRILLIC SMALL LETTER BARRED O; obarredcyrillic  
 14040 \DeclareTextCommand{\cyrotld}{PU}{\84\351}% U+04E9  
 14041 % U+04EA CYRILLIC CAPITAL LETTER BARRED O WITH DIAERESIS; Obarreddieresiscyrillic  
 14042 \DeclareTextCompositeCommand{"}{PU}{\CYROTLD}{\84\352}% U+04EA  
 14043 % U+04EB CYRILLIC SMALL LETTER BARRED O WITH DIAERESIS; obarreddieresiscyrillic  
 14044 \DeclareTextCompositeCommand{"}{PU}{\cyrotld}{\84\353}% U+04EB  
 14045 % U+04EC CYRILLIC CAPITAL LETTER E WITH DIAERESIS  
 14046 \DeclareTextCompositeCommand{"}{PU}{\CYREREV}{\84\354}% U+04EC  
 14047 % U+04ED CYRILLIC SMALL LETTER E WITH DIAERESIS  
 14048 \DeclareTextCompositeCommand{"}{PU}{\cyreref}{\84\355}% U+04ED  
 14049 % U+04EE CYRILLIC CAPITAL LETTER U WITH MACRON; Umacroncyrillic  
 14050 \DeclareTextCompositeCommand{=}{PU}{\CYRU}{\84\356}% U+04EE  
 14051 % U+04EF CYRILLIC SMALL LETTER U WITH MACRON; umacroncyrillic  
 14052 \DeclareTextCompositeCommand{=}{PU}{\cyru}{\84\357}% U+04EF  
 14053 % U+04F0 CYRILLIC CAPITAL LETTER U WITH DIAERESIS; Udieresiscyrillic  
 14054 \DeclareTextCompositeCommand{"}{PU}{\CYRU}{\84\360}% U+04F0  
 14055 % U+04F1 CYRILLIC SMALL LETTER U WITH DIAERESIS; udieresiscyrillic  
 14056 \DeclareTextCompositeCommand{"}{PU}{\cyru}{\84\361}% U+04F1  
 14057 % U+04F2 CYRILLIC CAPITAL LETTER U WITH DOUBLE ACUTE; Uhungarumlautcyrillic  
 14058 \DeclareTextCompositeCommand{\H}{PU}{\CYRU}{\84\362}% U+04F2  
 14059 % U+04F3 CYRILLIC SMALL LETTER U WITH DOUBLE ACUTE; uhungarumlautcyrillic  
 14060 \DeclareTextCompositeCommand{\H}{PU}{\cyru}{\84\363}% U+04F3  
 14061 % U+04F4 CYRILLIC CAPITAL LETTER CHE WITH DIAERESIS; Chedieresiscyrillic  
 14062 \DeclareTextCompositeCommand{"}{PU}{\CYRCH}{\84\364}% U+04F4  
 14063 % U+04F5 CYRILLIC SMALL LETTER CHE WITH DIAERESIS; chedieresiscyrillic  
 14064 \DeclareTextCompositeCommand{"}{PU}{\cyrch}{\84\365}% U+04F5  
 14065 % U+04F6 CYRILLIC CAPITAL LETTER GHE WITH DESCENDER  
 14066 \DeclareTextCommand{\CYRGDSC}{PU}{\84\366}% U+04F6  
 14067 % U+04F7 CYRILLIC SMALL LETTER GHE WITH DESCENDER  
 14068 \DeclareTextCommand{\cyrgdsc}{PU}{\84\367}% U+04F7  
 14069 % U+04F8 CYRILLIC CAPITAL LETTER YERU WITH DIAERESIS; Yerudieresiscyrillic  
 14070 \DeclareTextCompositeCommand{"}{PU}{\CYRERY}{\84\370}% U+04F8  
 14071 % U+04F9 CYRILLIC SMALL LETTER YERU WITH DIAERESIS; yerudieresiscyrillic  
 14072 \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  
 14073 % U+04FC CYRILLIC CAPITAL LETTER HA WITH HOOK  
 14074 \DeclareTextCommand{\CYRHHK}{PU}{\84\374}% U+04FC  
 14075 % U+04FD CYRILLIC SMALL LETTER HA WITH HOOK  
 14076 \DeclareTextCommand{\cyrhkh}{PU}{\84\375}% U+04FD  
 \84\376: U+04FE CYRILLIC CAPITAL LETTER HA WITH STROKE  
 \84\377: U+04FF CYRILLIC SMALL LETTER HA WITH STROKE

#### 50.2.10 Thai: U+0E00 to U+0E7F

14077 % U+0E3F THAI CURRENCY SYMBOL BAHT; bahtthai  
 14078 \DeclareTextCommand{\textbaht}{PU}{\9016\077}% U+0E3F

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

14079 % U+1E02 LATIN CAPITAL LETTER B WITH DOT ABOVE; Bdotaccent  
 14080 \DeclareTextCompositeCommand{.}{PU}{B}{\9036\002}% U+1E02  
 14081 % U+1E03 LATIN SMALL LETTER B WITH DOT ABOVE; bdotaccent  
 14082 \DeclareTextCompositeCommand{.}{PU}{b}{\9036\003}% U+1E03

14083 % U+1E06 LATIN CAPITAL LETTER B WITH LINE BELOW; Blinebelow  
14084 \DeclareTextCompositeCommand{\b}{PU}{B}{\9036\006}% U+1E06  
14085 % U+1E07 LATIN SMALL LETTER B WITH LINE BELOW; blinebelow  
14086 \DeclareTextCompositeCommand{\b}{PU}{b}{\9036\007}% U+1E07  
14087 % U+1E0A LATIN CAPITAL LETTER D WITH DOT ABOVE; Ddotaccent  
14088 \DeclareTextCompositeCommand{\.}{PU}{D}{\9036\012}% U+1E0A  
14089 % U+1E0B LATIN SMALL LETTER D WITH DOT ABOVE; ddotaccent  
14090 \DeclareTextCompositeCommand{\.}{PU}{d}{\9036\013}% U+1E0B  
14091 % U+1E0E LATIN CAPITAL LETTER D WITH LINE BELOW; Dlinebelow  
14092 \DeclareTextCompositeCommand{\b}{PU}{D}{\9036\016}% U+1E0E  
14093 % U+1E0F LATIN SMALL LETTER D WITH LINE BELOW; dlinebelow  
14094 \DeclareTextCompositeCommand{\b}{PU}{d}{\9036\017}% U+1E0F  
14095 % U+1E10 LATIN CAPITAL LETTER D WITH CEDILLA; Dcedilla  
14096 \DeclareTextCompositeCommand{\c}{PU}{D}{\9036\020}% U+1E10  
14097 % U+1E11 LATIN SMALL LETTER D WITH CEDILLA; dcedilla  
14098 \DeclareTextCompositeCommand{\c}{PU}{d}{\9036\021}% U+1E11  
14099 % U+1E1E LATIN CAPITAL LETTER F WITH DOT ABOVE; Fdotaccent  
14100 \DeclareTextCompositeCommand{\.}{PU}{F}{\9036\036}% U+1E1E  
14101 % U+1E1F LATIN SMALL LETTER F WITH DOT ABOVE; fdotaccent  
14102 \DeclareTextCompositeCommand{\.}{PU}{f}{\9036\037}% U+1E1F  
14103 % U+1E20 LATIN CAPITAL LETTER G WITH MACRON; Gmacron  
14104 \DeclareTextCompositeCommand{=} {PU}{G}{\9036\040}% U+1E20  
14105 % U+1E21 LATIN SMALL LETTER G WITH MACRON; gmacron  
14106 \DeclareTextCompositeCommand{=} {PU}{g}{\9036\041}% U+1E21  
14107 % U+1E22 LATIN CAPITAL LETTER H WITH DOT ABOVE; Hdotaccent  
14108 \DeclareTextCompositeCommand{\.}{PU}{H}{\9036\042}% U+1E22  
14109 % U+1E23 LATIN SMALL LETTER H WITH DOT ABOVE; hdotaccent  
14110 \DeclareTextCompositeCommand{\.}{PU}{h}{\9036\043}% U+1E23  
14111 % U+1E26 LATIN CAPITAL LETTER H WITH DIAERESIS; Hdieresis  
14112 \DeclareTextCompositeCommand{"}{PU}{H}{\9036\046}% U+1E26  
14113 % U+1E27 LATIN SMALL LETTER H WITH DIAERESIS; hdieresis  
14114 \DeclareTextCompositeCommand{"}{PU}{h}{\9036\047}% U+1E27  
14115 % U+1E28 LATIN CAPITAL LETTER H WITH CEDILLA; Hcedilla  
14116 \DeclareTextCompositeCommand{\c}{PU}{H}{\9036\050}% U+1E28  
14117 % U+1E29 LATIN SMALL LETTER H WITH CEDILLA; hcedilla  
14118 \DeclareTextCompositeCommand{\c}{PU}{h}{\9036\051}% U+1E29  
14119 % U+1E30 LATIN CAPITAL LETTER K WITH ACUTE; Kacute  
14120 \DeclareTextCompositeCommand{\'} {PU}{K}{\9036\060}% U+1E30  
14121 % U+1E31 LATIN SMALL LETTER K WITH ACUTE; kacute  
14122 \DeclareTextCompositeCommand{\'} {PU}{k}{\9036\061}% U+1E31  
14123 % U+1E34 LATIN CAPITAL LETTER K WITH LINE BELOW; Klinebelow  
14124 \DeclareTextCompositeCommand{\b}{PU}{K}{\9036\064}% U+1E34  
14125 % U+1E35 LATIN SMALL LETTER K WITH LINE BELOW; klinebelow  
14126 \DeclareTextCompositeCommand{\b}{PU}{k}{\9036\065}% U+1E35  
14127 % U+1E3A LATIN CAPITAL LETTER L WITH LINE BELOW; Llinebelow  
14128 \DeclareTextCompositeCommand{\b}{PU}{L}{\9036\072}% U+1E3A  
14129 % U+1E3B LATIN SMALL LETTER L WITH LINE BELOW; llinebelow  
14130 \DeclareTextCompositeCommand{\b}{PU}{l}{\9036\073}% U+1E3B  
14131 % U+1E3E LATIN CAPITAL LETTER M WITH ACUTE; Macute  
14132 \DeclareTextCompositeCommand{\'} {PU}{M}{\9036\076}% U+1E3E  
14133 % U+1E3F LATIN SMALL LETTER M WITH ACUTE; macute  
14134 \DeclareTextCompositeCommand{\'} {PU}{m}{\9036\077}% U+1E3F  
14135 % U+1E40 LATIN CAPITAL LETTER M WITH DOT ABOVE; Mdotaccent  
14136 \DeclareTextCompositeCommand{\.}{PU}{M}{\9036\100}% U+1E40  
14137 % U+1E41 LATIN SMALL LETTER M WITH DOT ABOVE; mdotaccent  
14138 \DeclareTextCompositeCommand{\.}{PU}{m}{\9036\101}% U+1E41  
14139 % U+1E44 LATIN CAPITAL LETTER N WITH DOT ABOVE; Ndotaccent

14140 \DeclareTextCompositeCommand{\.}{PU}{N}{\9036\104}% U+1E44  
14141 % U+1E45 LATIN SMALL LETTER N WITH DOT ABOVE; ndotaccent  
14142 \DeclareTextCompositeCommand{\.}{PU}{n}{\9036\105}% U+1E45  
14143 % U+1E48 LATIN CAPITAL LETTER N WITH LINE BELOW; Nlinebelow  
14144 \DeclareTextCompositeCommand{\b}{PU}{N}{\9036\110}% U+1E48  
14145 % U+1E49 LATIN SMALL LETTER N WITH LINE BELOW; nlinebelow  
14146 \DeclareTextCompositeCommand{\b}{PU}{n}{\9036\111}% U+1E49  
14147 % U+1E54 LATIN CAPITAL LETTER P WITH ACUTE; Pacute  
14148 \DeclareTextCompositeCommand{\'}{PU}{P}{\9036\124}% U+1E54  
14149 % U+1E55 LATIN SMALL LETTER P WITH ACUTE; pacute  
14150 \DeclareTextCompositeCommand{\'}{PU}{p}{\9036\125}% U+1E55  
14151 % U+1E56 LATIN CAPITAL LETTER P WITH DOT ABOVE; Pdotaccent  
14152 \DeclareTextCompositeCommand{\.}{PU}{P}{\9036\126}% U+1E56  
14153 % U+1E57 LATIN SMALL LETTER P WITH DOT ABOVE; pdotaccent  
14154 \DeclareTextCompositeCommand{\.}{PU}{p}{\9036\127}% U+1E57  
14155 % U+1E58 LATIN CAPITAL LETTER R WITH DOT ABOVE; Rdotaccent  
14156 \DeclareTextCompositeCommand{\.}{PU}{R}{\9036\130}% U+1E58  
14157 % U+1E59 LATIN SMALL LETTER R WITH DOT ABOVE; rdotaccent  
14158 \DeclareTextCompositeCommand{\.}{PU}{r}{\9036\131}% U+1E59  
14159 % U+1E5E LATIN CAPITAL LETTER R WITH LINE BELOW; Rlinebelow  
14160 \DeclareTextCompositeCommand{\b}{PU}{R}{\9036\136}% U+1E5E  
14161 % U+1E5F LATIN SMALL LETTER R WITH LINE BELOW; rlinebelow  
14162 \DeclareTextCompositeCommand{\b}{PU}{r}{\9036\137}% U+1E5F  
14163 % U+1E60 LATIN CAPITAL LETTER S WITH DOT ABOVE; Sdotaccent  
14164 \DeclareTextCompositeCommand{\.}{PU}{S}{\9036\140}% U+1E60  
14165 % U+1E61 LATIN SMALL LETTER S WITH DOT ABOVE; sdotaccent  
14166 \DeclareTextCompositeCommand{\.}{PU}{s}{\9036\141}% U+1E61  
14167 % U+1E6E LATIN CAPITAL LETTER T WITH LINE BELOW; Tlinebelow  
14168 \DeclareTextCompositeCommand{\b}{PU}{T}{\9036\156}% U+1E6E  
14169 % U+1E6F LATIN SMALL LETTER T WITH LINE BELOW; tlinebelow  
14170 \DeclareTextCompositeCommand{\b}{PU}{t}{\9036\157}% U+1E6F  
14171 % U+1E7C LATIN CAPITAL LETTER V WITH TILDE; Vtilde  
14172 \DeclareTextCompositeCommand{\~}{PU}{V}{\9036\174}% U+1E7C  
14173 % U+1E7D LATIN SMALL LETTER V WITH TILDE; vtilde  
14174 \DeclareTextCompositeCommand{\~}{PU}{v}{\9036\175}% U+1E7D  
14175 % U+1E80 LATIN CAPITAL LETTER W WITH GRAVE; Wgrave  
14176 \DeclareTextCompositeCommand{\`}{PU}{W}{\9036\200}% U+1E80  
14177 % U+1E81 LATIN SMALL LETTER W WITH GRAVE; wgrave  
14178 \DeclareTextCompositeCommand{\`}{PU}{w}{\9036\201}% U+1E81  
14179 % U+1E82 LATIN CAPITAL LETTER W WITH ACUTE; Wacute  
14180 \DeclareTextCompositeCommand{\'}{PU}{W}{\9036\202}% U+1E82  
14181 % U+1E83 LATIN SMALL LETTER W WITH ACUTE; wacute  
14182 \DeclareTextCompositeCommand{\'}{PU}{w}{\9036\203}% U+1E83  
14183 % U+1E84 LATIN CAPITAL LETTER W WITH DIAERESIS; Wdieresis  
14184 \DeclareTextCompositeCommand{\"}{PU}{W}{\9036\204}% U+1E84  
14185 % U+1E85 LATIN SMALL LETTER W WITH DIAERESIS; wdieresis  
14186 \DeclareTextCompositeCommand{\"}{PU}{w}{\9036\205}% U+1E85  
14187 % U+1E86 LATIN CAPITAL LETTER W WITH DOT ABOVE; Wdotaccent  
14188 \DeclareTextCompositeCommand{\.}{PU}{W}{\9036\206}% U+1E86  
14189 % U+1E87 LATIN SMALL LETTER W WITH DOT ABOVE; wdotaccent  
14190 \DeclareTextCompositeCommand{\.}{PU}{w}{\9036\207}% U+1E87  
14191 % U+1E8A LATIN CAPITAL LETTER X WITH DOT ABOVE; Xdotaccent  
14192 \DeclareTextCompositeCommand{\.}{PU}{X}{\9036\212}% U+1E8A  
14193 % U+1E8B LATIN SMALL LETTER X WITH DOT ABOVE; xdotaccent  
14194 \DeclareTextCompositeCommand{\.}{PU}{x}{\9036\213}% U+1E8B  
14195 % U+1E8C LATIN CAPITAL LETTER X WITH DIAERESIS; Xdieresis  
14196 \DeclareTextCompositeCommand{\"}{PU}{X}{\9036\214}% U+1E8C

14197 % U+1E8D LATIN SMALL LETTER X WITH DIAERESIS; xdieresis  
 14198 \DeclareTextCompositeCommand{"}{PU}{x}{\9036\215}% U+1E8D  
 14199 % U+1E8E LATIN CAPITAL LETTER Y WITH DOT ABOVE; Ydotaccent  
 14200 \DeclareTextCompositeCommand{.}{PU}{Y}{\9036\216}% U+1E8E  
 14201 % U+1E8F LATIN SMALL LETTER Y WITH DOT ABOVE; ydotaccent  
 14202 \DeclareTextCompositeCommand{.}{PU}{y}{\9036\217}% U+1E8F  
 14203 % U+1E90 LATIN CAPITAL LETTER Z WITH CIRCUMFLEX; Zcircumflex  
 14204 \DeclareTextCompositeCommand{^}{PU}{Z}{\9036\220}% U+1E90  
 14205 % U+1E91 LATIN SMALL LETTER Z WITH CIRCUMFLEX; zcircumflex  
 14206 \DeclareTextCompositeCommand{^}{PU}{z}{\9036\221}% U+1E91  
 14207 % U+1E94 LATIN CAPITAL LETTER Z WITH LINE BELOW; Zlinebelow  
 14208 \DeclareTextCompositeCommand{\b}{PU}{Z}{\9036\224}% U+1E94  
 14209 % U+1E95 LATIN SMALL LETTER Z WITH LINE BELOW; zlinebelow  
 14210 \DeclareTextCompositeCommand{\b}{PU}{z}{\9036\225}% U+1E95  
 14211 % U+1E96 LATIN SMALL LETTER H WITH LINE BELOW; hlinebelow  
 14212 \DeclareTextCompositeCommand{\b}{PU}{h}{\9036\226}% U+1E96  
 14213 % U+1E97 LATIN SMALL LETTER T WITH DIAERESIS; tdieresis  
 14214 \DeclareTextCompositeCommand{"}{PU}{t}{\9036\227}% U+1E97  
 14215 % U+1E98 LATIN SMALL LETTER W WITH RING ABOVE; wring  
 14216 \DeclareTextCompositeCommand{\r}{PU}{w}{\9036\230}% U+1E98  
 14217 % U+1E99 LATIN SMALL LETTER Y WITH RING ABOVE; yring  
 14218 \DeclareTextCompositeCommand{\r}{PU}{y}{\9036\231}% U+1E99  
 14219 % U+1E9B LATIN SMALL LETTER LONG S WITH DOT ABOVE; slongdotaccent  
 14220 \DeclareTextCompositeCommand{.}{PU}{\textlongs}{\9036\233}% U+1E9B  
 14221 % U+1EBC LATIN CAPITAL LETTER E WITH TILDE; Etilde  
 14222 \DeclareTextCompositeCommand{~}{PU}{E}{\9036\274}% U+1EBC  
 14223 % U+1EBD LATIN SMALL LETTER E WITH TILDE; etilde  
 14224 \DeclareTextCompositeCommand{~}{PU}{e}{\9036\275}% U+1EBD  
 14225 % U+1EF2 LATIN CAPITAL LETTER Y WITH GRAVE; Ygrave  
 14226 \DeclareTextCompositeCommand{`}{PU}{Y}{\9036\362}% U+1EF2  
 14227 % U+1EF3 LATIN SMALL LETTER Y WITH GRAVE; ygrave  
 14228 \DeclareTextCompositeCommand{`}{PU}{y}{\9036\363}% U+1EF3  
 14229 % U+1EF8 LATIN CAPITAL LETTER Y WITH TILDE; Ytilde  
 14230 \DeclareTextCompositeCommand{~}{PU}{Y}{\9036\370}% U+1EF8  
 14231 % U+1EF9 LATIN SMALL LETTER Y WITH TILDE; ytilde  
 14232 \DeclareTextCompositeCommand{~}{PU}{y}{\9036\371}% U+1EF9

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

14233 % U+200C ZERO WIDTH NON-JOINER; \*afii61664, zerowidthnonjoiner  
 14234 \DeclareTextCommand{\textcompwordmark}{PU}{\9040\014}% U+200C  
 14235 % U+2013 EN DASH; endash  
 14236 \DeclareTextCommand{\textendash}{PU}{\9040\023}% U+2013  
 14237 % U+2014 EM DASH; emdash  
 14238 \DeclareTextCommand{\textemdash}{PU}{\9040\024}% U+2014  
 14239 % U+2016 DOUBLE VERTICAL LINE; dblverticalbar  
 14240 \DeclareTextCommand{\textbardbl}{PU}{\9040\026}% U+2016  
 14241 % U+2018 LEFT SINGLE QUOTATION MARK; quoteleft  
 14242 \DeclareTextCommand{\textquoteleft}{PU}{\9040\030}% U+2018  
 14243 % U+2019 RIGHT SINGLE QUOTATION MARK; quoteright  
 14244 \DeclareTextCommand{\textquoteright}{PU}{\9040\031}% U+2019  
 14245 % U+201A SINGLE LOW-9 QUOTATION MARK; quotesinglbase  
 14246 \DeclareTextCommand{\quotesinglbase}{PU}{\9040\032}% U+201A  
 14247 % U+201C LEFT DOUBLE QUOTATION MARK; quotedblleft  
 14248 \DeclareTextCommand{\textquotedblleft}{PU}{\9040\034}% U+201C  
 14249 % U+201D RIGHT DOUBLE QUOTATION MARK; quotedblright  
 14250 \DeclareTextCommand{\textquotedblright}{PU}{\9040\035}% U+201D  
 14251 % U+201E DOUBLE LOW-9 QUOTATION MARK; quotedblbase

14252 \DeclareTextCommand{\quotedblbase}{PU}{\9040\036}% U+201E  
 14253 % U+2020 DAGGER; dagger  
 14254 \DeclareTextCommand{\textdagger}{PU}{\9040\040}% U+2020  
 14255 % U+2021 DOUBLE DAGGER; daggerdbl  
 14256 \DeclareTextCommand{\textdaggerdbl}{PU}{\9040\041}% U+2021  
 14257 % U+2022 BULLET; bullet  
 14258 \DeclareTextCommand{\textbullet}{PU}{\9040\042}% U+2022  
 14259 % U+2026 HORIZONTAL ELLIPSIS; ellipsis  
 14260 \DeclareTextCommand{\textellipsis}{PU}{\9040\046}% U+2026  
 14261 % U+2030 PER MILLE SIGN; perthousand  
 14262 \DeclareTextCommand{\textperthousand}{PU}{\9040\060}% U+2030  
 14263 % U+2031 PER TEN THOUSAND SIGN  
 14264 \DeclareTextCommand{\textpertenthousand}{PU}{\9040\061}% U+2031  
 14265 % U+2039 SINGLE LEFT-POINTING ANGLE QUOTATION MARK; guilsinglleft  
 14266 \DeclareTextCommand{\guilsinglleft}{PU}{\9040\071}% U+2039  
 14267 % U+203A SINGLE RIGHT-POINTING ANGLE QUOTATION MARK; guilsinglright  
 14268 \DeclareTextCommand{\guilsinglright}{PU}{\9040\072}% U+203A  
 14269 % U+203B REFERENCE MARK; referencemark  
 14270 \DeclareTextCommand{\textreferencemark}{PU}{\9040\073}% U+203B  
 14271 % U+203D INTERROBANG  
 14272 \DeclareTextCommand{\textinterrobang}{PU}{\9040\075}% U+203D  
 14273 % U+2044 FRACTION SLASH; fraction  
 14274 \DeclareTextCommand{\textfractionsolidus}{PU}{\9040\104}% U+2044  
 14275 % U+2045 LEFT SQUARE BRACKET WITH QUILL  
 14276 \DeclareTextCommand{\textlquill}{PU}{\9040\105}% U+2045  
 14277 % U+2046 RIGHT SQUARE BRACKET WITH QUILL  
 14278 \DeclareTextCommand{\textrquill}{PU}{\9040\106}% U+2046  
 14279 % U+2052 COMMERCIAL MINUS SIGN  
 14280 \DeclareTextCommand{\textdiscount}{PU}{\9040\122}% U+2052

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

14281 % U+2070 SUPERSCRIPT ZERO; zerosuperior  
 14282 \DeclareTextCommand{\textzerosuperior}{PU}{\9040\160}% U+2070  
 14283 % U+2074 SUPERSCRIPT FOUR; foursuperior  
 14284 \DeclareTextCommand{\textfoursuperior}{PU}{\9040\164}% U+2074  
 14285 % U+2075 SUPERSCRIPT FIVE; fivesuperior  
 14286 \DeclareTextCommand{\textfivesuperior}{PU}{\9040\165}% U+2075  
 14287 % U+2076 SUPERSCRIPT SIX; sixsuperior  
 14288 \DeclareTextCommand{\textsixsuperior}{PU}{\9040\166}% U+2076  
 14289 % U+2077 SUPERSCRIPT SEVEN; sevensuperior  
 14290 \DeclareTextCommand{\textsevensuperior}{PU}{\9040\167}% U+2077  
 14291 % U+2078 SUPERSCRIPT EIGHT; eightsuperior  
 14292 \DeclareTextCommand{\texteightsuperior}{PU}{\9040\170}% U+2078  
 14293 % U+2079 SUPERSCRIPT NINE; ninesuperior  
 14294 \DeclareTextCommand{\textninesuperior}{PU}{\9040\171}% U+2079  
 14295 % U+207A SUPERSCRIPT PLUS SIGN; plussuperior  
 14296 \DeclareTextCommand{\textplussuperior}{PU}{\9040\172}% U+207A  
 14297 % U+207B SUPERSCRIPT MINUS  
 14298 \DeclareTextCommand{\textminussuperior}{PU}{\9040\173}  
 14299 % U+207C SUPERSCRIPT EQUALS SIGN; equalsuperior  
 14300 \DeclareTextCommand{\textequalsuperior}{PU}{\9040\174}  
 14301 % U+207D SUPERSCRIPT LEFT PARENTHESIS; parenleftsuperior  
 14302 \DeclareTextCommand{\textparenleftsuperior}{PU}{\9040\175}  
 14303 % U+207E SUPERSCRIPT RIGHT PARENTHESIS; parenrightsuperior  
 14304 \DeclareTextCommand{\textparenrightsuperior}{PU}{\9040\176}  
 14305 % U+207F SUPERSCRIPT LATIN SMALL LETTER N; nsuperior  
 14306 \DeclareTextCommand{\textnsuperior}{PU}{\9040\177}

14307 % U+2080 SUBSCRIPT ZERO; zeroinferior  
 14308 \DeclareTextCommand{\textzeroinferior}{PU}{\9040\200}% U+2080  
 14309 % U+2081 SUBSCRIPT ONE; oneinferior  
 14310 \DeclareTextCommand{\textoneinferior}{PU}{\9040\201}% U+2081  
 14311 % U+2082 SUBSCRIPT TWO; twoinferior  
 14312 \DeclareTextCommand{\texttwoinferior}{PU}{\9040\202}% U+2082  
 14313 % U+2083 SUBSCRIPT THREE; threeinferior  
 14314 \DeclareTextCommand{\textthreeinferior}{PU}{\9040\203}% U+2083  
 14315 % U+2084 SUBSCRIPT FOUR; fourinferior  
 14316 \DeclareTextCommand{\textfourinferior}{PU}{\9040\204}% U+2084  
 14317 % U+2085 SUBSCRIPT FIVE; fiveinferior  
 14318 \DeclareTextCommand{\textfiveinferior}{PU}{\9040\205}% U+2085  
 14319 % U+2086 SUBSCRIPT SIX; sixinferior  
 14320 \DeclareTextCommand{\textsixinferior}{PU}{\9040\206}% U+2086  
 14321 % U+2087 SUBSCRIPT SEVEN; seveninferior  
 14322 \DeclareTextCommand{\textseveninferior}{PU}{\9040\207}% U+2087  
 14323 % U+2088 SUBSCRIPT EIGHT; eightinferior  
 14324 \DeclareTextCommand{\texteightinferior}{PU}{\9040\210}% U+2088  
 14325 % U+2089 SUBSCRIPT NINE; nineinferior  
 14326 \DeclareTextCommand{\textnineinferior}{PU}{\9040\211}% U+2089  
 14327 % U+208D SUBSCRIPT LEFT PARENTHESIS; parenleftinferior  
 14328 \DeclareTextCommand{\textparenleftinferior}{PU}{\9040\215}% U+208D  
 14329 % U+208E SUBSCRIPT RIGHT PARENTHESIS; parenrightinferior  
 14330 \DeclareTextCommand{\textparenrightinferior}{PU}{\9040\216}% U+208E

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

14331 % U+20A1 COLON SIGN; \*colonmonetary, colonsign  
 14332 \DeclareTextCommand{\textcolonmonetary}{PU}{\9040\241}% U+20A1  
 14333 % U+20A4 LIRA SIGN; afii08941, \*lira  
 14334 \DeclareTextCommand{\textlira}{PU}{\9040\244}% U+20A4  
 14335 % U+20A6 NAIRA SIGN  
 14336 \DeclareTextCommand{\textnaira}{PU}{\9040\246}% U+20A6  
 14337 % U+20A7 PESETA SIGN; peseta  
 14338 \DeclareTextCommand{\textpeseta}{PU}{\9040\247}% U+20A7  
 14339 % U+20A9 WON SIGN; won  
 14340 \DeclareTextCommand{\textwon}{PU}{\9040\251}% U+20A9  
 14341 % U+20AB DONG SIGN; dong  
 14342 \DeclareTextCommand{\textdong}{PU}{\9040\253}% U+20AB  
 14343 % U+20AC EURO SIGN; \*Euro, euro  
 14344 \DeclareTextCommand{\texteuro}{PU}{\9040\254}% U+20AC  
 14345 % U+20B1 PESO SIGN  
 14346 \DeclareTextCommand{\textpeso}{PU}{\9040\261}% U+20B1  
 14347 % U+20B2 GUARANI SIGN  
 14348 \DeclareTextCommand{\textguarani}{PU}{\9040\262}% U+20B2

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

14349 % U+2103 DEGREE CELSIUS; centigrade  
 14350 \DeclareTextCommand{\textcelsius}{PU}{\9041\003}% U+2103  
 14351 % U+2116 NUMERO SIGN; \*afii61352, numero  
 14352 \DeclareTextCommand{\textnumero}{PU}{\9041\026}% U+2116  
 14353 % U+2117 SOUND RECORDING COPYRIGHT  
 14354 \DeclareTextCommand{\textcircledP}{PU}{\9041\027}% U+2117  
 14355 % U+211E PRESCRIPTION TAKE; prescription  
 14356 \DeclareTextCommand{\textrecipe}{PU}{\9041\036}% U+211E  
 14357 % U+2120 SERVICE MARK  
 14358 \DeclareTextCommand{\textservicemark}{PU}{\9041\040}% U+2120  
 14359 % U+2122 TRADE MARK SIGN; trademark

14360 \DeclareTextCommand{\texttrademark}{PU}{\9041\042}% U+2122  
 14361 % U+2126 OHM SIGN; Ohm, Omega  
 14362 \DeclareTextCommand{\textohm}{PU}{\9041\046}% U+2126  
 14363 % U+2127 INVERTED OHM SIGN  
 14364 \DeclareTextCommand{\textmho}{PU}{\9041\047}% U+2127  
 14365 % U+212B ANGSTROM SIGN; angstrom  
 14366 \DeclareTextCommand{\textangstrom}{PU}{\9041\053}% U+212B  
 14367 % U+212E ESTIMATED SYMBOL; estimated  
 14368 \DeclareTextCommand{\textestimated}{PU}{\9041\056}% U+212E  
 14369 % U+2135 ALEF SYMBOL; aleph  
 14370 \DeclareTextCommand{\textaleph}{PU}{\9041\065}% U+2135

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

14371 % U+2190 LEFTWARDS ARROW; arrowleft  
 14372 \DeclareTextCommand{\textleftarrow}{PU}{\9041\220}% U+2190  
 14373 % U+2191 UPWARDS ARROW; arrowup  
 14374 \DeclareTextCommand{\textuparrow}{PU}{\9041\221}% U+2191  
 14375 % U+2192 RIGHTWARDS ARROW; arrowright  
 14376 \DeclareTextCommand{\textrightarrow}{PU}{\9041\222}% U+2192  
 14377 % U+2193 DOWNWARDS ARROW; arrowdown  
 14378 \DeclareTextCommand{\textdownarrow}{PU}{\9041\223}% U+2193

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

14379 % U+2212 MINUS SIGN; minus  
 14380 \DeclareTextCommand{\textminus}{PU}{\9042\022}% U+2212  
 14381 % U+221A SQUARE ROOT; radical  
 14382 \DeclareTextCommand{\textsurd}{PU}{\9042\032}% U+221A

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

14383 % U+2329 LEFT-POINTING ANGLE BRACKET; angleleft  
 14384 \DeclareTextCommand{\textlangle}{PU}{\9043\051}% U+2329  
 14385 % U+232A RIGHT-POINTING ANGLE BRACKET; angleright  
 14386 \DeclareTextCommand{\textrangle}{PU}{\9043\052}% U+232A

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

14387 % U+2422 BLANK SYMBOL  
 14388 \DeclareTextCommand{\textblank}{PU}{\9044\042}% U+2422  
 14389 % U+2423 OPEN BOX; blank  
 14390 \DeclareTextCommand{\textvisiblespace}{PU}{\9044\043}% U+2423

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

14391 % U+2460 CIRCLED DIGIT ONE; onecircle  
 14392 \DeclareTextCompositeCommand{\textcircled}{PU}{1}{\9044\140}% U+2460  
 14393 % U+2461 CIRCLED DIGIT TWO; twocircle  
 14394 \DeclareTextCompositeCommand{\textcircled}{PU}{2}{\9044\141}% U+2461  
 14395 % U+2462 CIRCLED DIGIT THREE; threecircle  
 14396 \DeclareTextCompositeCommand{\textcircled}{PU}{3}{\9044\142}% U+2462  
 14397 % U+2463 CIRCLED DIGIT FOUR; fourcircle  
 14398 \DeclareTextCompositeCommand{\textcircled}{PU}{4}{\9044\143}% U+2463  
 14399 % U+2464 CIRCLED DIGIT FIVE; fivecircle  
 14400 \DeclareTextCompositeCommand{\textcircled}{PU}{5}{\9044\144}% U+2464  
 14401 % U+2465 CIRCLED DIGIT SIX; sixcircle  
 14402 \DeclareTextCompositeCommand{\textcircled}{PU}{6}{\9044\145}% U+2465  
 14403 % U+2466 CIRCLED DIGIT SEVEN; sevendigit  
 14404 \DeclareTextCompositeCommand{\textcircled}{PU}{7}{\9044\146}% U+2466  
 14405 % U+2467 CIRCLED DIGIT EIGHT; eightcircle  
 14406 \DeclareTextCompositeCommand{\textcircled}{PU}{8}{\9044\147}% U+2467

14407 % U+2468 CIRCLED DIGIT NINE; ninecircle  
 14408 \DeclareTextCompositeCommand{\textcircled}{PU}{9}{\9044\150}% U+2468  
 14409 % U+2469 CIRCLED NUMBER TEN; tencircle  
 14410 \DeclareTextCompositeCommand{\textcircled}{PU}{10}{\9044\151}% U+2469  
 14411 % U+246A CIRCLED NUMBER ELEVEN; elevencircle  
 14412 \DeclareTextCompositeCommand{\textcircled}{PU}{11}{\9044\152}% U+246A  
 14413 % U+246B CIRCLED NUMBER TWELVE; twelvecircle  
 14414 \DeclareTextCompositeCommand{\textcircled}{PU}{12}{\9044\153}% U+246B  
 14415 % U+246C CIRCLED NUMBER THIRTEEN; thirteencircle  
 14416 \DeclareTextCompositeCommand{\textcircled}{PU}{13}{\9044\154}% U+246C  
 14417 % U+246D CIRCLED NUMBER FOURTEEN; fourteencircle  
 14418 \DeclareTextCompositeCommand{\textcircled}{PU}{14}{\9044\155}% U+246D  
 14419 % U+246E CIRCLED NUMBER FIFTEEN; fifteencircle  
 14420 \DeclareTextCompositeCommand{\textcircled}{PU}{15}{\9044\156}% U+246E  
 14421 % U+246F CIRCLED NUMBER SIXTEEN; sixteencircle  
 14422 \DeclareTextCompositeCommand{\textcircled}{PU}{16}{\9044\157}% U+246F  
 14423 % U+2470 CIRCLED NUMBER SEVENTEEN; seventeencircle  
 14424 \DeclareTextCompositeCommand{\textcircled}{PU}{17}{\9044\160}% U+2470  
 14425 % U+2471 CIRCLED NUMBER EIGHTEEN; eighteencircle  
 14426 \DeclareTextCompositeCommand{\textcircled}{PU}{18}{\9044\161}% U+2471  
 14427 % U+2472 CIRCLED NUMBER NINETEEN; nineteencircle  
 14428 \DeclareTextCompositeCommand{\textcircled}{PU}{19}{\9044\162}% U+2472  
 14429 % U+2473 CIRCLED NUMBER TWENTY; twentycircle  
 14430 \DeclareTextCompositeCommand{\textcircled}{PU}{20}{\9044\163}% U+2473  
 14431 % U+24B6 CIRCLED LATIN CAPITAL LETTER A; Acircle  
 14432 \DeclareTextCompositeCommand{\textcircled}{PU}{A}{\9044\266}% U+24B6  
 14433 % U+24B7 CIRCLED LATIN CAPITAL LETTER B; Bcircle  
 14434 \DeclareTextCompositeCommand{\textcircled}{PU}{B}{\9044\267}% U+24B7  
 14435 % U+24B8 CIRCLED LATIN CAPITAL LETTER C; Ccircle  
 14436 \DeclareTextCompositeCommand{\textcircled}{PU}{C}{\9044\270}% U+24B8  
 14437 % U+24B9 CIRCLED LATIN CAPITAL LETTER D; Dcircle  
 14438 \DeclareTextCompositeCommand{\textcircled}{PU}{D}{\9044\271}% U+24B9  
 14439 % U+24BA CIRCLED LATIN CAPITAL LETTER E; Ecircle  
 14440 \DeclareTextCompositeCommand{\textcircled}{PU}{E}{\9044\272}% U+24BA  
 14441 % U+24BB CIRCLED LATIN CAPITAL LETTER F; Fcircle  
 14442 \DeclareTextCompositeCommand{\textcircled}{PU}{F}{\9044\273}% U+24BB  
 14443 % U+24BC CIRCLED LATIN CAPITAL LETTER G; Gcircle  
 14444 \DeclareTextCompositeCommand{\textcircled}{PU}{G}{\9044\274}% U+24BC  
 14445 % U+24BD CIRCLED LATIN CAPITAL LETTER H; Hcircle  
 14446 \DeclareTextCompositeCommand{\textcircled}{PU}{H}{\9044\275}% U+24BD  
 14447 % U+24BE CIRCLED LATIN CAPITAL LETTER I; Icircle  
 14448 \DeclareTextCompositeCommand{\textcircled}{PU}{I}{\9044\276}% U+24BE  
 14449 % U+24BF CIRCLED LATIN CAPITAL LETTER J; Jcircle  
 14450 \DeclareTextCompositeCommand{\textcircled}{PU}{J}{\9044\277}% U+24BF  
 14451 % U+24C0 CIRCLED LATIN CAPITAL LETTER K; Kcircle  
 14452 \DeclareTextCompositeCommand{\textcircled}{PU}{K}{\9044\300}% U+24C0  
 14453 % U+24C1 CIRCLED LATIN CAPITAL LETTER L; Lcircle  
 14454 \DeclareTextCompositeCommand{\textcircled}{PU}{L}{\9044\301}% U+24C1  
 14455 % U+24C2 CIRCLED LATIN CAPITAL LETTER M; Mcircle  
 14456 \DeclareTextCompositeCommand{\textcircled}{PU}{M}{\9044\302}% U+24C2  
 14457 % U+24C3 CIRCLED LATIN CAPITAL LETTER N; Ncircle  
 14458 \DeclareTextCompositeCommand{\textcircled}{PU}{N}{\9044\303}% U+24C3  
 14459 % U+24C4 CIRCLED LATIN CAPITAL LETTER O; Ocircle  
 14460 \DeclareTextCompositeCommand{\textcircled}{PU}{O}{\9044\304}% U+24C4  
 14461 % U+24C5 CIRCLED LATIN CAPITAL LETTER P; Pcircle  
 14462 \DeclareTextCompositeCommand{\textcircled}{PU}{P}{\9044\305}% U+24C5  
 14463 % U+24C6 CIRCLED LATIN CAPITAL LETTER Q; Qcircle

14464 \DeclareTextCompositeCommand{\textcircled}{PU}{Q}{\9044\306}% U+24C6  
14465 % U+24C7 CIRCLED LATIN CAPITAL LETTER R; Rcircle  
14466 \DeclareTextCompositeCommand{\textcircled}{PU}{R}{\9044\307}% U+24C7  
14467 % U+24C8 CIRCLED LATIN CAPITAL LETTER S; Scircle  
14468 \DeclareTextCompositeCommand{\textcircled}{PU}{S}{\9044\310}% U+24C8  
14469 % U+24C9 CIRCLED LATIN CAPITAL LETTER T; Tcircle  
14470 \DeclareTextCompositeCommand{\textcircled}{PU}{T}{\9044\311}% U+24C9  
14471 % U+24CA CIRCLED LATIN CAPITAL LETTER U; Ucircle  
14472 \DeclareTextCompositeCommand{\textcircled}{PU}{U}{\9044\312}% U+24CA  
14473 % U+24CB CIRCLED LATIN CAPITAL LETTER V; Vcircle  
14474 \DeclareTextCompositeCommand{\textcircled}{PU}{V}{\9044\313}% U+24CB  
14475 % U+24CC CIRCLED LATIN CAPITAL LETTER W; Wcircle  
14476 \DeclareTextCompositeCommand{\textcircled}{PU}{W}{\9044\314}% U+24CC  
14477 % U+24CD CIRCLED LATIN CAPITAL LETTER X; Xcircle  
14478 \DeclareTextCompositeCommand{\textcircled}{PU}{X}{\9044\315}% U+24CD  
14479 % U+24CE CIRCLED LATIN CAPITAL LETTER Y; Ycircle  
14480 \DeclareTextCompositeCommand{\textcircled}{PU}{Y}{\9044\316}% U+24CE  
14481 % U+24CF CIRCLED LATIN CAPITAL LETTER Z; Zcircle  
14482 \DeclareTextCompositeCommand{\textcircled}{PU}{Z}{\9044\317}% U+24CF  
14483 % U+24D0 CIRCLED LATIN SMALL LETTER A; acircle  
14484 \DeclareTextCompositeCommand{\textcircled}{PU}{a}{\9044\320}% U+24D0  
14485 % U+24D1 CIRCLED LATIN SMALL LETTER B; bcircle  
14486 \DeclareTextCompositeCommand{\textcircled}{PU}{b}{\9044\321}% U+24D1  
14487 % U+24D2 CIRCLED LATIN SMALL LETTER C; ccircle  
14488 \DeclareTextCompositeCommand{\textcircled}{PU}{c}{\9044\322}% U+24D2  
14489 % U+24D3 CIRCLED LATIN SMALL LETTER D; dcircle  
14490 \DeclareTextCompositeCommand{\textcircled}{PU}{d}{\9044\323}% U+24D3  
14491 % U+24D4 CIRCLED LATIN SMALL LETTER E; ecircle  
14492 \DeclareTextCompositeCommand{\textcircled}{PU}{e}{\9044\324}% U+24D4  
14493 % U+24D5 CIRCLED LATIN SMALL LETTER F; fcircle  
14494 \DeclareTextCompositeCommand{\textcircled}{PU}{f}{\9044\325}% U+24D5  
14495 % U+24D6 CIRCLED LATIN SMALL LETTER G; gcircle  
14496 \DeclareTextCompositeCommand{\textcircled}{PU}{g}{\9044\326}% U+24D6  
14497 % U+24D7 CIRCLED LATIN SMALL LETTER H; hcircle  
14498 \DeclareTextCompositeCommand{\textcircled}{PU}{h}{\9044\327}% U+24D7  
14499 % U+24D8 CIRCLED LATIN SMALL LETTER I; icircle  
14500 \DeclareTextCompositeCommand{\textcircled}{PU}{i}{\9044\330}% U+24D8  
14501 % U+24D9 CIRCLED LATIN SMALL LETTER J; jcircle  
14502 \DeclareTextCompositeCommand{\textcircled}{PU}{j}{\9044\331}% U+24D9  
14503 % U+24DA CIRCLED LATIN SMALL LETTER K; kcircle  
14504 \DeclareTextCompositeCommand{\textcircled}{PU}{k}{\9044\332}% U+24DA  
14505 % U+24DB CIRCLED LATIN SMALL LETTER L; lcircle  
14506 \DeclareTextCompositeCommand{\textcircled}{PU}{l}{\9044\333}% U+24DB  
14507 % U+24DC CIRCLED LATIN SMALL LETTER M; mcircle  
14508 \DeclareTextCompositeCommand{\textcircled}{PU}{m}{\9044\334}% U+24DC  
14509 % U+24DD CIRCLED LATIN SMALL LETTER N; ncircle  
14510 \DeclareTextCompositeCommand{\textcircled}{PU}{n}{\9044\335}% U+24DD  
14511 % U+24DE CIRCLED LATIN SMALL LETTER O; ocircle  
14512 \DeclareTextCompositeCommand{\textcircled}{PU}{o}{\9044\336}% U+24DE  
14513 % U+24DF CIRCLED LATIN SMALL LETTER P; pcircle  
14514 \DeclareTextCompositeCommand{\textcircled}{PU}{p}{\9044\337}% U+24DF  
14515 % U+24E0 CIRCLED LATIN SMALL LETTER Q; qcircle  
14516 \DeclareTextCompositeCommand{\textcircled}{PU}{q}{\9044\340}% U+24E0  
14517 % U+24E1 CIRCLED LATIN SMALL LETTER R; rcircle  
14518 \DeclareTextCompositeCommand{\textcircled}{PU}{r}{\9044\341}% U+24E1  
14519 % U+24E2 CIRCLED LATIN SMALL LETTER S; scircle  
14520 \DeclareTextCompositeCommand{\textcircled}{PU}{s}{\9044\342}% U+24E2

14521 % U+24E3 CIRCLED LATIN SMALL LETTER T; tcircle  
 14522 \DeclareTextCompositeCommand{\textcircled}{PU}{t}{\9044\343}% U+24E3  
 14523 % U+24E4 CIRCLED LATIN SMALL LETTER U; ucircle  
 14524 \DeclareTextCompositeCommand{\textcircled}{PU}{u}{\9044\344}% U+24E4  
 14525 % U+24E5 CIRCLED LATIN SMALL LETTER V; vcircle  
 14526 \DeclareTextCompositeCommand{\textcircled}{PU}{v}{\9044\345}% U+24E5  
 14527 % U+24E6 CIRCLED LATIN SMALL LETTER W; wcircle  
 14528 \DeclareTextCompositeCommand{\textcircled}{PU}{w}{\9044\346}% U+24E6  
 14529 % U+24E7 CIRCLED LATIN SMALL LETTER X; xcircle  
 14530 \DeclareTextCompositeCommand{\textcircled}{PU}{x}{\9044\347}% U+24E7  
 14531 % U+24E8 CIRCLED LATIN SMALL LETTER Y; ycircle  
 14532 \DeclareTextCompositeCommand{\textcircled}{PU}{y}{\9044\350}% U+24E8  
 14533 % U+24E9 CIRCLED LATIN SMALL LETTER Z; zcircle  
 14534 \DeclareTextCompositeCommand{\textcircled}{PU}{z}{\9044\351}% U+24E9  
 14535 % U+24EA CIRCLED DIGIT ZERO  
 14536 \DeclareTextCompositeCommand{\textcircled}{PU}{0}{\9044\352}% U+24EA

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

14537 % U+25E6 WHITE BULLET; \*openbullet, whitebullet  
 14538 \DeclareTextCommand{\textopenbullet}{PU}{\9045\346}% U+25E6  
 14539 % U+25EF LARGE CIRCLE; largecircle  
 14540 \DeclareTextCommand{\textbigcircle}{PU}{\9045\357}% U+25EF

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

14541 % U+266A EIGHTH NOTE; musicalnote  
 14542 \DeclareTextCommand{\textmusicalnote}{PU}{\9046\152}% U+266A  
 14543 % U+26AD MARRIAGE SYMBOL  
 14544 \DeclareTextCommand{\textmarried}{PU}{\9046\255}% U+26AD  
 14545 % U+26AE DIVORCE SYMBOL  
 14546 \DeclareTextCommand{\textdivorced}{PU}{\9046\256}% U+26AE

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

14547 % U+27E6 MATHEMATICAL LEFT WHITE SQUARE BRACKET  
 14548 \DeclareTextCommand{\textlbrackdbl}{PU}{\9047\346}% U+27E6  
 14549 % U+27E7 MATHEMATICAL RIGHT WHITE SQUARE BRACKET  
 14550 \DeclareTextCommand{\textrbrackdbl}{PU}{\9047\347}% U+27E7

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

14551 % U+FB01 LATIN SMALL LIGATURE FI; fi  
 14552 \DeclareTextCommand{\textfi}{PU}{\9373\001}% U+FB01  
 14553 % U+FB02 LATIN SMALL LIGATURE FL; fl  
 14554 \DeclareTextCommand{\textfl}{PU}{\9373\002}% U+FB02

### 50.2.25 Miscellaneous

14555 \DeclareTextCommand{\SS}{PU}{SS}

### 50.2.26 Aliases

Aliases (german.sty)

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

Aliases (math names)

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

### 50.3 PU encoding, additions for VnTeX

This file is provided by Han The Thanh.

```
14570 \*puvnenc)

14571 \DeclareTextCommand{\abreve}{PU}{\81\003}
14572 \DeclareTextCommand{\acircumflex}{PU}{\80\342}
14573 \DeclareTextCommand{\dj}{PU}{\81\021}
14574 \DeclareTextCommand{\ecircumflex}{PU}{\80\352}
14575 \DeclareTextCommand{\ocircumflex}{PU}{\80\364}
14576 \DeclareTextCommand{\ohorn}{PU}{\81\241}
14577 \DeclareTextCommand{\uhorn}{PU}{\81\260}
14578 \DeclareTextCommand{\ABREVE}{PU}{\81\002}
14579 \DeclareTextCommand{\ACIRCUMFLEX}{PU}{\80\302}
14580 \DeclareTextCommand{\DJ}{PU}{\81\020}
14581 \DeclareTextCommand{\ECIRCUMFLEX}{PU}{\80\312}
14582 \DeclareTextCommand{\OCIRCUMFLEX}{PU}{\80\324}
14583 \DeclareTextCommand{\OHORN}{PU}{\81\240}
14584 \DeclareTextCommand{\UHORN}{PU}{\81\257}

14585 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\341}
14586 \DeclareTextCompositeCommand{\d}{PU}{a}{\9036\241}
14587 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\340}
14588 \DeclareTextCompositeCommand{\h}{PU}{a}{\9036\243}
14589 \DeclareTextCompositeCommand{\~}{PU}{a}{\80\343}
14590 \DeclareTextCompositeCommand{\'}{PU}{\abreve}{\9036\257}
14591 \DeclareTextCompositeCommand{\d}{PU}{\abreve}{\9036\267}
14592 \DeclareTextCompositeCommand{\'}{PU}{\abreve}{\9036\261}
14593 \DeclareTextCompositeCommand{\h}{PU}{\abreve}{\9036\263}
14594 \DeclareTextCompositeCommand{\~}{PU}{\abreve}{\9036\265}
14595 \DeclareTextCompositeCommand{\'}{PU}{\acircumflex}{\9036\245}
14596 \DeclareTextCompositeCommand{\d}{PU}{\acircumflex}{\9036\255}
14597 \DeclareTextCompositeCommand{\'}{PU}{\acircumflex}{\9036\247}
14598 \DeclareTextCompositeCommand{\h}{PU}{\acircumflex}{\9036\251}
14599 \DeclareTextCompositeCommand{\~}{PU}{\acircumflex}{\9036\253}
14600 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\351}
14601 \DeclareTextCompositeCommand{\d}{PU}{e}{\9036\271}
14602 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\350}
14603 \DeclareTextCompositeCommand{\h}{PU}{e}{\9036\273}
14604 \DeclareTextCompositeCommand{\~}{PU}{e}{\9036\275}
14605 \DeclareTextCompositeCommand{\'}{PU}{\ecircumflex}{\9036\277}
14606 \DeclareTextCompositeCommand{\d}{PU}{\ecircumflex}{\9036\307}
14607 \DeclareTextCompositeCommand{\'}{PU}{\ecircumflex}{\9036\301}
14608 \DeclareTextCompositeCommand{\h}{PU}{\ecircumflex}{\9036\303}
14609 \DeclareTextCompositeCommand{\~}{PU}{\ecircumflex}{\9036\305}
14610 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\355}
14611 \DeclareTextCompositeCommand{\d}{PU}{i}{\9036\313}
14612 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\354}
14613 \DeclareTextCompositeCommand{\h}{PU}{i}{\9036\311}
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14614 \DeclareTextCompositeCommand{\~}{PU}{i}{\81\051}  
14615 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\363}  
14616 \DeclareTextCompositeCommand{\d}{PU}{o}{\9036\315}  
14617 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\362}  
14618 \DeclareTextCompositeCommand{\h}{PU}{o}{\9036\317}  
14619 \DeclareTextCompositeCommand{\~}{PU}{o}{\80\365}  
14620 \DeclareTextCompositeCommand{\'}{PU}{\ocircumflex}{\9036\321}  
14621 \DeclareTextCompositeCommand{\d}{PU}{\ocircumflex}{\9036\331}  
14622 \DeclareTextCompositeCommand{\'}{PU}{\ocircumflex}{\9036\323}  
14623 \DeclareTextCompositeCommand{\h}{PU}{\ocircumflex}{\9036\325}  
14624 \DeclareTextCompositeCommand{\~}{PU}{\ocircumflex}{\9036\327}  
14625 \DeclareTextCompositeCommand{\'}{PU}{\ohorn}{\9036\333}  
14626 \DeclareTextCompositeCommand{\d}{PU}{\ohorn}{\9036\343}  
14627 \DeclareTextCompositeCommand{\'}{PU}{\ohorn}{\9036\335}  
14628 \DeclareTextCompositeCommand{\h}{PU}{\ohorn}{\9036\337}  
14629 \DeclareTextCompositeCommand{\~}{PU}{\ohorn}{\9036\341}  
14630 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\372}  
14631 \DeclareTextCompositeCommand{\d}{PU}{u}{\9036\345}  
14632 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\371}  
14633 \DeclareTextCompositeCommand{\h}{PU}{u}{\9036\347}  
14634 \DeclareTextCompositeCommand{\~}{PU}{u}{\81\151}  
14635 \DeclareTextCompositeCommand{\'}{PU}{\uhorn}{\9036\351}  
14636 \DeclareTextCompositeCommand{\d}{PU}{\uhorn}{\9036\361}  
14637 \DeclareTextCompositeCommand{\'}{PU}{\uhorn}{\9036\353}  
14638 \DeclareTextCompositeCommand{\h}{PU}{\uhorn}{\9036\355}  
14639 \DeclareTextCompositeCommand{\~}{PU}{\uhorn}{\9036\357}  
14640 \DeclareTextCompositeCommand{\'}{PU}{y}{\80\375}  
14641 \DeclareTextCompositeCommand{\d}{PU}{y}{\9036\365}  
14642 \DeclareTextCompositeCommand{\'}{PU}{y}{\9036\363}  
14643 \DeclareTextCompositeCommand{\h}{PU}{y}{\9036\367}  
14644 \DeclareTextCompositeCommand{\~}{PU}{y}{\9036\371}  
14645 \DeclareTextCompositeCommand{\'}{PU}{A}{\80\301}  
14646 \DeclareTextCompositeCommand{\d}{PU}{A}{\9036\240}  
14647 \DeclareTextCompositeCommand{\'}{PU}{A}{\80\300}  
14648 \DeclareTextCompositeCommand{\h}{PU}{A}{\9036\242}  
14649 \DeclareTextCompositeCommand{\~}{PU}{A}{\80\303}  
14650 \DeclareTextCompositeCommand{\'}{PU}{\ABREVE}{\9036\256}  
14651 \DeclareTextCompositeCommand{\d}{PU}{\ABREVE}{\9036\266}  
14652 \DeclareTextCompositeCommand{\'}{PU}{\ABREVE}{\9036\260}  
14653 \DeclareTextCompositeCommand{\h}{PU}{\ABREVE}{\9036\262}  
14654 \DeclareTextCompositeCommand{\~}{PU}{\ABREVE}{\9036\264}  
14655 \DeclareTextCompositeCommand{\'}{PU}{\ACIRCUMFLEX}{\9036\244}  
14656 \DeclareTextCompositeCommand{\d}{PU}{\ACIRCUMFLEX}{\9036\254}  
14657 \DeclareTextCompositeCommand{\'}{PU}{\ACIRCUMFLEX}{\9036\246}  
14658 \DeclareTextCompositeCommand{\h}{PU}{\ACIRCUMFLEX}{\9036\250}  
14659 \DeclareTextCompositeCommand{\~}{PU}{\ACIRCUMFLEX}{\9036\252}  
14660 \DeclareTextCompositeCommand{\'}{PU}{E}{\80\311}  
14661 \DeclareTextCompositeCommand{\d}{PU}{E}{\9036\270}  
14662 \DeclareTextCompositeCommand{\'}{PU}{E}{\80\310}  
14663 \DeclareTextCompositeCommand{\h}{PU}{E}{\9036\272}  
14664 \DeclareTextCompositeCommand{\~}{PU}{E}{\9036\274}  
14665 \DeclareTextCompositeCommand{\'}{PU}{\ECIRCUMFLEX}{\9036\276}  
14666 \DeclareTextCompositeCommand{\d}{PU}{\ECIRCUMFLEX}{\9036\306}  
14667 \DeclareTextCompositeCommand{\'}{PU}{\ECIRCUMFLEX}{\9036\300}  
14668 \DeclareTextCompositeCommand{\h}{PU}{\ECIRCUMFLEX}{\9036\302}  
14669 \DeclareTextCompositeCommand{\~}{PU}{\ECIRCUMFLEX}{\9036\304}  
14670 \DeclareTextCompositeCommand{\'}{PU}{I}{\80\315}

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14671 \DeclareTextCompositeCommand{\d}{PU}{I}{\9036\312}
14672 \DeclareTextCompositeCommand{\'}{PU}{I}{\80\314}
14673 \DeclareTextCompositeCommand{\h}{PU}{I}{\9036\310}
14674 \DeclareTextCompositeCommand{\~}{PU}{I}{\81\050}
14675 \DeclareTextCompositeCommand{\'}{PU}{O}{\80\323}
14676 \DeclareTextCompositeCommand{\d}{PU}{O}{\9036\314}
14677 \DeclareTextCompositeCommand{\'}{PU}{O}{\80\322}
14678 \DeclareTextCompositeCommand{\h}{PU}{O}{\9036\316}
14679 \DeclareTextCompositeCommand{\~}{PU}{O}{\80\325}
14680 \DeclareTextCompositeCommand{\'}{PU}{\OCIRCUMFLEX}{\9036\320}
14681 \DeclareTextCompositeCommand{\d}{PU}{\OCIRCUMFLEX}{\9036\330}
14682 \DeclareTextCompositeCommand{\'}{PU}{\OCIRCUMFLEX}{\9036\322}
14683 \DeclareTextCompositeCommand{\h}{PU}{\OCIRCUMFLEX}{\9036\324}
14684 \DeclareTextCompositeCommand{\~}{PU}{\OCIRCUMFLEX}{\9036\326}
14685 \DeclareTextCompositeCommand{\'}{PU}{\OHORN}{\9036\332}
14686 \DeclareTextCompositeCommand{\d}{PU}{\OHORN}{\9036\342}
14687 \DeclareTextCompositeCommand{\'}{PU}{\OHORN}{\9036\334}
14688 \DeclareTextCompositeCommand{\h}{PU}{\OHORN}{\9036\336}
14689 \DeclareTextCompositeCommand{\~}{PU}{\OHORN}{\9036\340}
14690 \DeclareTextCompositeCommand{\'}{PU}{U}{\80\332}
14691 \DeclareTextCompositeCommand{\d}{PU}{U}{\9036\344}
14692 \DeclareTextCompositeCommand{\'}{PU}{U}{\80\331}
14693 \DeclareTextCompositeCommand{\h}{PU}{U}{\9036\346}
14694 \DeclareTextCompositeCommand{\~}{PU}{U}{\81\150}
14695 \DeclareTextCompositeCommand{\'}{PU}{\UHORN}{\9036\350}
14696 \DeclareTextCompositeCommand{\d}{PU}{\UHORN}{\9036\360}
14697 \DeclareTextCompositeCommand{\'}{PU}{\UHORN}{\9036\352}
14698 \DeclareTextCompositeCommand{\h}{PU}{\UHORN}{\9036\354}
14699 \DeclareTextCompositeCommand{\~}{PU}{\UHORN}{\9036\356}
14700 \DeclareTextCompositeCommand{\'}{PU}{Y}{\80\335}
14701 \DeclareTextCompositeCommand{\d}{PU}{Y}{\9036\364}
14702 \DeclareTextCompositeCommand{\'}{PU}{Y}{\9036\362}
14703 \DeclareTextCompositeCommand{\h}{PU}{Y}{\9036\366}
14704 \DeclareTextCompositeCommand{\~}{PU}{Y}{\9036\370}
14705 </puvnenc>

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## 50.4 PU encoding, additions for Arabi

This file is provided and maintained by Youssef Jabri.

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14706 <*puarenc>
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14707 \DeclareTextCommand{\hamza}{PU}{\86\041}% 0621;afii57409;ARABIC LETTER HAMZA
14708 \DeclareTextCommand{\alefmadda}{PU}{\86\042}% 0622;afii57410;ARABIC LETTER ALEF WITH MADDA A
14709 \DeclareTextCommand{\alefhamza}{PU}{\86\043}% 0623;afii57411;ARABIC LETTER ALEF WITH HAMZA A
14710 \DeclareTextCommand{\wawhamza}{PU}{\86\044}% 0624;afii57412;ARABIC LETTER WAW WITH HAMZA AE
14711 \DeclareTextCommand{\aleflowerhamza}{PU}{\86\045}% 0625;afii57413;ARABIC LETTER ALEF WITH HA
14712 \DeclareTextCommand{\yahamza}{PU}{\86\046}% 0626;afii57414;ARABIC LETTER YEH WITH HAMZA ABOVE
14713 \DeclareTextCommand{\alef}{PU}{\86\047}% 0627;afii57415;ARABIC LETTER ALEF
14714 \DeclareTextCommand{\baa}{PU}{\86\050}% 0628;afii57416;ARABIC LETTER BEH
14715 \DeclareTextCommand{\T}{PU}{\86\051}% 0629;afii57417;ARABIC LETTER TEH MARBUTA
14716 \DeclareTextCommand{\taa}{PU}{\86\052}% 062A;afii57418;ARABIC LETTER TEH
14717 \DeclareTextCommand{\thaa}{PU}{\86\053}% 062B;afii57419;ARABIC LETTER THEH
14718 \DeclareTextCommand{\jeem}{PU}{\86\054}% 062C;afii57420;ARABIC LETTER JEEM
14719 \DeclareTextCommand{\Haa}{PU}{\86\055}% 062D;afii57421;ARABIC LETTER HAH
14720 \DeclareTextCommand{\kha}{PU}{\86\056}% 062E;afii57422;ARABIC LETTER KHAH
14721 \DeclareTextCommand{\dal}{PU}{\86\057}% 062F;afii57423;ARABIC LETTER DAL
14722 \DeclareTextCommand{\dhal}{PU}{\86\060}% 0630;afii57424;ARABIC LETTER THAL

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14723 \DeclareTextCommand{\ra}{PU}{\86\061}% 0631;afii57425;ARABIC LETTER REH
14724 \DeclareTextCommand{\zay}{PU}{\86\062}% 0632;afii57426;ARABIC LETTER ZAIN
14725 \DeclareTextCommand{\seen}{PU}{\86\063}% 0633;afii57427;ARABIC LETTER SEEN
14726 \DeclareTextCommand{\sheen}{PU}{\86\064}% 0634;afii57428;ARABIC LETTER SHEEN
14727 \DeclareTextCommand{\sad}{PU}{\86\065}% 0635;afii57429;ARABIC LETTER SAD
14728 \DeclareTextCommand{\dad}{PU}{\86\066}% 0636;afii57430;ARABIC LETTER DAD
14729 \DeclareTextCommand{\Ta}{PU}{\86\067}% 0637;afii57431;ARABIC LETTER TAH
14730 \DeclareTextCommand{\za}{PU}{\86\070}% 0638;afii57432;ARABIC LETTER ZAH
14731 \DeclareTextCommand{\ayn}{PU}{\86\071}% 0639;afii57433;ARABIC LETTER AIN
14732 \DeclareTextCommand{\ghayn}{PU}{\86\072}% 063A;afii57434;ARABIC LETTER GHAIN
14733 \DeclareTextCommand{\tatweel}{PU}{\86\100}% 0640;afii57440;ARABIC TATWEEL
14734 \DeclareTextCommand{\fa}{PU}{\86\101}% 0641;afii57441;ARABIC LETTER FEH
14735 \DeclareTextCommand{\qaf}{PU}{\86\102}% 0642;afii57442;ARABIC LETTER QAF
14736 \DeclareTextCommand{\kaf}{PU}{\86\103}% 0643;afii57443;ARABIC LETTER KAF
14737 \DeclareTextCommand{\lam}{PU}{\86\104}% 0644;afii57444;ARABIC LETTER LAM
14738 \DeclareTextCommand{\meem}{PU}{\86\105}% 0645;afii57445;ARABIC LETTER MEEM
14739 \DeclareTextCommand{\nun}{PU}{\86\106}% 0646;afii57446;ARABIC LETTER NOON
14740 \DeclareTextCommand{\ha}{PU}{\86\107}% 0647;afii57470;ARABIC LETTER HEH
14741 \DeclareTextCommand{\waw}{PU}{\86\110}% 0648;afii57448;ARABIC LETTER WAW
14742 \DeclareTextCommand{\alefmaqsura}{PU}{\86\111}% 0649;afii57449;ARABIC LETTER ALEF MAKSURA
14743 \DeclareTextCommand{\ya}{PU}{\86\112}% 064A;afii57450;ARABIC LETTER YEH

14744 \DeclareTextCommand{\nasb}{PU}{\86\113}% 064B;afii57451;ARABIC FATHATAN
14745 \DeclareTextCommand{\raff}{PU}{\86\114}% 064C;afii57452;ARABIC DAMMATAN
14746 \DeclareTextCommand{\jarr}{PU}{\86\115}% 064D;afii57453;ARABIC KASRATAN
14747 \DeclareTextCommand{\fatha}{PU}{\86\116}% 064E;afii57454;ARABIC FATHA
14748 \DeclareTextCommand{\damma}{PU}{\86\117}% 064F;afii57455;ARABIC DAMMA
14749 \DeclareTextCommand{\kasra}{PU}{\86\120}% 0650;afii57456;ARABIC KASRA
14750 \DeclareTextCommand{\shadda}{PU}{\86\121}% 0651;afii57457;ARABIC SHADDA
14751 \DeclareTextCommand{\sukun}{PU}{\86\122}% 0652;afii57458;ARABIC SUKUN

Farsi

14752 \DeclareTextCommand{\peh}{PU}{\86\176}% 067E;afii57506;ARABIC LETTER PEH
14753 \DeclareTextCommand{\tcheh}{PU}{\86\206}% 0686;afii57507;ARABIC LETTER TCHEH
14754 \DeclareTextCommand{\jeh}{PU}{\86\230}% 0698;afii57508;ARABIC LETTER JEH
14755 \DeclareTextCommand{\farsikaf}{PU}{\86\251}% 06A9???;afii????;FARSI LETTER KAF
14756 \DeclareTextCommand{\gaf}{PU}{\86\257}% 06AF;afii57509;ARABIC LETTER GAF
14757 \DeclareTextCommand{\farsiya}{PU}{\86\314}% 06CC;afii????;FARSI LETTER YEH

14758 \DeclareTextCommand{\ZWNJ}{PU}{\9040\014}% 200C;ZWNJ%
14759 \DeclareTextCommand{\noboundary}{PU}{\86\325}% 200D;ZWJ

14760 </puarenc>

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## 51 End of file hycheck.tex

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14761 <*check>
14762 \typeout{}
14763 \begin{document}
14764 \end{document}
14765 </check>

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