

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

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

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

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

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

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

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

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

`\HyC@checkPackage`

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

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

```

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

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

```

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

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

```

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

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

```

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

`\HyC@noValue`

```

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

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



```

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

```

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

```

90 \newtoks\HyC@Toks

```

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

```

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

```

`\HyC@nc@opt` This macro scans the first optional argument of a 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 \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 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).

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

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

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

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

```

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

\hypercalcbp

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

```

```

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

```

## 6 Dealing with PDF strings

The PDF string stuff done by Heiko Oberdiek.

Email: oberdiek@uni-freiburg.de.

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

### 6.1 Description of PDF strings

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

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

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

### 6.2 Definition of `\pdfstringdef`

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

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

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

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

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

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



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

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

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

```
382 \begingroup
```

### 6.2.1 Preprocessing

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

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

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

```
383 \escapechar'\%
```

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

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

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

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

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

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

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

```
388 \ifHy@unicode
```

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

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

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

```
392 \HyPsd@UTFviii
```

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

```
394 \else
```

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

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

```
397 \fi
```

```
398 \enc@update
```

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

```
399 \@inmathwarn\pdfstringdef
```

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

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

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

```
401 \let\add@accent\HyPsd@add@accent
```

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

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

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

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

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

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

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

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

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

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

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

```

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

### Patch for cjk bookmarks.

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

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

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

```
500 \Hy@pdfstringtrue
501 \pdfstringdefPreHook
```

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

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

### Package xspace.

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

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

```
514 \let\discretionary\@gobbletwo
\@ifstar is defined in  $\LaTeX$  as follows:
```

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

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

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

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

Support for package ‘xargs’:

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

## 6.2.2 Expansion

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

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

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

`\edef` This version uses this standard form for expansion. It is stronger than  $\LaTeX$ ’s `\protected@edef`. So the font encoding mechanism works and the glyph commands are converted to the correct tokens for PDF strings which 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).

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

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

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

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

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

### 6.2.3 Postprocessing

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

```
537 \ifx#1\@empty
538 \else
```

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

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

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

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

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

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

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

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

```

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

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

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

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

```

551 \expandafter\HyPsd@Subst\expandafter{\HyPsd@GLYPHERR}{\relax}#1%
552 \let\HyPsd@String\@empty
553 \expandafter\HyPsd@GlyphProcess#1\relax\@empty
554 \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.

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

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

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

```

556 \ifHy@unicode
557   \expandafter\HyPsd@StringSubst\csname 80\040\endcsname
558   \HyPsd@SPACEOPTI#1%
559 \edef\Hy@temp@A{\HyPsd@SPACEOPTI\HyPsd@SPACEOPTI\80\273}%
```



```

560      \expandafter\HyPsd@Subst\expandafter{\Hy@temp@A}%
561      {\HyPsd@SPACEOPTI\80\273}\#1%
562    \else
563      \HyPsd@StringSubst{\040}\HyPsd@SPACEOPTI\#1%
564      \expandafter\HyPsd@Subst\expandafter{%
565        \expandafter\HyPsd@SPACEOPTI\expandafter\HyPsd@SPACEOPTI
566        \string\273}\HyPsd@SPACEOPTI\273}\#1%
567    \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.

```

568    \ifHy@unicode
569      \HyPsd@StringSubst{\}){\80\051}\#1%
570      \HyPsd@Subst){\80\051}\#1%
571      \let\HyPsd@empty\relax
572      \expandafter\HyPsd@StringSubst\csname 80\051\endcsname
573      {\HyPsd@empty\80\051}\#1%
574    \else
575      \HyPsd@StringSubst{\}){\051}\#1%
576      \HyPsd@Subst){\051}\#1%
577      \let\HyPsd@empty\relax
578      \HyPsd@StringSubst{\051}{\HyPsd@empty\string\)}\#1%
579    \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`.

```

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

```

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

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

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

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

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

```
595 \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.

```
596 \ifHy@unicode
597 \HyPsd@StringSubst\(\textparenleft#1%
598 \HyPsd@Subst(\textparenleft#1%
599 \else
600 \HyPsd@StringSubst\({\050}#1%
601 \HyPsd@Subst({\050}#1%
602 \HyPsd@StringSubst{\050}{\string\()}#1%
603 \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.

```
604 \ifHy@unicode
605 \edef\HyPsd@SPACEOPTI{\80\040}%
606 \else
607 \let\HyPsd@SPACEOPTI\HyPsd@spaceopti
608 \fi
609 \xdef#1{#1\@empty}%
610 \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.

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

**Try conversion back to PDFDocEncoding.**

```
615 \ifx\HyPsd@pdfencoding\HyPsd@pdfencoding@auto
616 \@ifundefined{StringEncodingConvertTest}{%
617 }{%
618 \EdefUnescapeString\HyPsd@temp#1%
```

```

619         \ifxetex
620         \StringEncodingConvertTest\HyPsd@temp\HyPsd@temp
621             {utf16be}-{ascii}}{%
622             \EdefEscapeString\HyPsd@temp\HyPsd@temp
623             \global\let#1\HyPsd@temp
624             \Hy@unicodedefalse
625         }{%
626         \else
627         \fi
628     }%
629 \fi
630 \fi

```

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

```

631     \pdfstringdefPostHook#1%
632 \endgroup
633 }

```

`\Hy@pdfstringdef`

```

634 \def\Hy@pdfstringdef#1#2{%
635     \pdfstringdef\Hy@gtemp{#2}%
636     \let#1\Hy@gtemp
637 }

```

## 6.3 Encodings

### 6.3.1 Workaround for package linguex

```

638 \@ifpackageloaded{linguex}{%
639     \let\HyLinguex@OrgB\b
640     \let\HyLinguex@OrgC\c
641     \let\HyLinguex@OrgD\d
642     \def\HyLinguex@Restore{%
643         \let\b\HyLinguex@OrgB
644         \let\c\HyLinguex@OrgC
645         \let\d\HyLinguex@OrgD
646     }%
647     \AtEndOfPackage{%
648         \pdfstringdefDisableCommands{%
649             \@ifundefined{oldb}{\let\b\oldb}%
650             \@ifundefined{oldc}{\let\c\oldc}%
651             \@ifundefined{oldd}{\let\d\oldd}%
652         }%
653     }%
654 }{%
655     \let\HyLinguex@Restore\relax
656 }%

```

### 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.

```
657 \ifundefined{T@PD1}{%
658   \input{pd1enc.def}%
659   \HyLinguex@Restore
660 }{}
661 \DeclareFontFamily{PD1}{pdf}{}
662 \DeclareFontShape{PD1}{pdf}{m}{n}{ <-> cmr10 }{}
663 \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.

```
664 \def\HyPsd@InitUnicode{%
665   \ifundefined{T@PU}{%
666     \input{puenc.def}%
667     \HyLinguex@Restore
668   }{}%
669   \DeclareFontFamily{PU}{pdf}{}%
670   \DeclareFontShape{PU}{pdf}{m}{n}{ <-> cmr10 }{}%
671   \DeclareFontSubstitution{PU}{pdf}{m}{n}%
672   \let\HyPsd@InitUnicode\relax
673 }
```

## 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.

```
674 \def\texorpdfstring{%
675   \ifHy@pdfstring
676     \expandafter\@secondoftwo
677   \else
678     \expandafter\@firstoftwo
679   \fi
680 }
```

### 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`.

```
681 \ifundefined{pdfstringdefPreHook}{%
682   \let\pdfstringdefPreHook\empty
683 }{}
684 \ifundefined{pdfstringdefPostHook}{%
685   \let\pdfstringdefPostHook\@gobble
686 }{}
```

`\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  $\text{\LaTeX}$  commands like `\@gobble` or `\@firstofone`.

```
687 \def\pdfstringdefDisableCommands{%
688   \begingroup
689     \makeatletter
690     \HyPsd@DisableCommands
691 }
```

`\HyPsd@DisableCommands`

```
692 \long\def\HyPsd@DisableCommands#1{%
693   \toks0=\expandafter{\pdfstringdefPreHook}%
694   \toks1={#1}%
695   \xdef\pdfstringdefPreHook{\the\toks0 \the\toks1}%
696   \endgroup
697 }
```

`\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`.

```
698 \def\pdfstringdefWarn#1{%
699   \expandafter\noexpand\csname\<>-string#1\endcsname
700 }
```

## 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.

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

```

706     \romannumeral'~^@%
707 }%
708 }%
709 \x

```

## 6.5.2 Babel languages

```

710 \newif\ifHy@next

    Nothing to do for english.
711 \@ifundefined{danish@sh@"@sel}{-}{%
712   \def\HyPsd@babel@danish{%
713     \declare@shorthand{danish}{"}{-}%
714     \declare@shorthand{danish}{"}{-}%
715   }%
716 }
717 \@ifundefined{dutch@sh@"@sel}{-}{%
718   \def\HyPsd@babel@dutch{%
719     \declare@shorthand{dutch}{"}{-}%
720     \declare@shorthand{dutch}{"}{-}%
721   }%
722 }
723 \@ifundefined{finnish@sh@"@sel}{-}{%
724   \def\HyPsd@babel@finnish{%
725     \declare@shorthand{finnish}{"}{-}%
726   }%
727 }
728 \@ifundefined{french@sh@:@sel}{-}{%
729   \def\HyPsd@babel@frenchb{%
730     \def\guill@spacing{ }%
731   }%
732 }
733 \@ifundefined{german@sh@"@sel}{-}{%
734   \def\HyPsd@babel@german{%
735     \declare@shorthand{german}{f}{f}%
736     \declare@shorthand{german}{"}{-}%
737     \declare@shorthand{german}{"}{-}%
738   }%
739 }
740 \@ifundefined{macedonian@sh@"@sel}{-}{%
741   \def\HyPsd@babel@macedonian{%
742     \declare@shorthand{macedonian}{"}{-}%
743     \declare@shorthand{macedonian}{"}{-}%
744   }%
745 }{}
746 \@ifundefined{ngerman@sh@"@sel}{-}{%
747   \def\HyPsd@babel@ngerman{%
748     \declare@shorthand{ngerman}{"}{-}%
749     \declare@shorthand{ngerman}{"}{-}%
750   }%
751 }
752 \@ifundefined{portuges@sh@"@sel}{-}{%
753   \def\HyPsd@babel@portuges{%
754     \declare@shorthand{portuges}{"}{-}%
755   }%
756 }
757 \@ifundefined{russian@sh@"@sel}{-}{%
758   \def\HyPsd@babel@russian{%

```

```

759 \declare@shorthand{russian}{"}{}%
760 \declare@shorthand{russian}{"}{}-%
761 }%
762 }
763 \@ifundefined{slovene@sh@"@sel}{}{%
764 \def\HyPsd@babel@slovene{%
765 \declare@shorthand{slovene}{"}{}%
766 }%
767 }

```

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

```

768 \@ifundefined{spanish@sh@>@sel}{}{%
769 \def\HyPsd@babel@spanish{%
770 \declare@shorthand{spanish}{<<}{\guillemotleft}%
771 \declare@shorthand{spanish}{>>}{\guillemotright}%
772 \declare@shorthand{spanish}{=}{}-%
773 \declare@shorthand{spanish}{"}{}-%
774 \declare@shorthand{spanish}{!}{\textexclamdown}%
775 \declare@shorthand{spanish}{?}{\textquestiondown}%
776 }%
777 }
778 \@ifundefined{swedish@sh@"@sel}{}{%
779 \def\HyPsd@babel@swedish{%
780 \declare@shorthand{swedish}{"}{}%
781 \declare@shorthand{swedish}{"}{}-%
782 }%
783 }
784 \@ifundefined{ukrainian@sh@"@sel}{}{%
785 \def\HyPsd@babel@ukrainian{%
786 \declare@shorthand{ukrainian}{"}{}%
787 \declare@shorthand{ukrainian}{"}{}-%
788 }%
789 }
790 \@ifundefined{usorbian@sh@"@sel}{}{%
791 \def\HyPsd@babel@usorbian{%
792 \declare@shorthand{usorbian}{f}{f}%
793 \declare@shorthand{usorbian}{"}{}%
794 }%
795 }
796 \@ifundefined{greek@sh@\string~@sel}{}{%
797 \let\HyPsd@GreekPatch\empty
798 }{}%
799 \def\HyPsd@GreekPatch{%
800 \let\greeknumeral\HyPsd@greeknumeral
801 \let\Greeknnumeral\HyPsd@Greeknnumeral
802 }%
803 }
804 \def\HyPsd@greeknumeral#1{%
805 \HyPsd@GreekNum\@firstoftwo{#1}%
806 }
807 \def\HyPsd@Greeknnumeral#1{%
808 \HyPsd@GreekNum\@secondoftwo{#1}%
809 }
810 \def\HyPsd@GreekNum#1#2{%
811 \ifHy@unicode
812 \ifnum#2<\@ne
813 \@arabic{#2}%
814 \else

```

```

815     \ifnum#2<1000000 %
816     \HyPsd@@GreekNum#1{#2}%
817     \else
818     \@arabic{#2}%
819     \fi
820 \fi
821 \else
822     \@arabic{#2}%
823 \fi
824 }
825 \def\HyPsd@@GreekNum#1#2{%
826     \ifnum#2<\@m
827     \ifnum#2<10 %
828     \expandafter\HyPsd@GreekNumI
829     \expandafter\@gobble\expandafter#1\number#2%
830     \else
831     \ifnum#2<100 %
832     \expandafter\HyPsd@GreekNumII
833     \expandafter\@gobble\expandafter#1\number#2%
834     \else
835     \expandafter\HyPsd@GreekNumIII
836     \expandafter\@gobble\expandafter#1\number#2%
837     \fi
838     \fi
839     \ifnum#2>\z@
840     \textnumeralsigngreek
841     \fi
842 \else
843     \ifnum#2<\@M
844     \expandafter\HyPsd@GreekNumIV\expandafter#1\number#2%
845     \else
846     \ifnum#2<100000 %
847     \expandafter\HyPsd@GreekNumV\expandafter#1\number#2%
848     \else
849     \expandafter\HyPsd@GreekNumVI\expandafter#1\number#2%
850     \fi
851     \fi
852 \fi
853 }
854 \def\HyPsd@GreekNumI#1#2#3{%
855     #1{%
856     \ifnum#3>\z@
857     \textnumeralsignlowergreek
858     \fi
859     }%
860     \expandafter#2%
861     \ifcase#3 %
862     {}{}%
863     \or\textalpha\textAlpha
864     \or\textbeta\textBeta
865     \or\textgamma\textGamma
866     \or\textdelta\textDelta
867     \or\textepsilon\textEpsilon
868     \or\textstigmagreek\textStigmagreek
869     \or\textzeta\textZeta
870     \or\texteta\textEta
871     \or\texttheta\textTheta

```



```

872 \else
873   {}{}%
874 \fi
875 }
876 \def\HyPsd@GreekNumII#1#2#3#4{%
877   #1{%
878     \ifnum#3>\z@
879       \textnumeralsignlowergreek
880       \fi
881   }%
882   \expandafter#2%
883   \ifcase#3 %
884     {}{}%
885     \or\textiota\textIota
886     \or\textkappa\textKappa
887     \or\textlambda\textLambda
888     \or\textmu\textMu
889     \or\textnu\textNu
890     \or\textxi\textXi
891     \or\textomicron\textOmicron
892     \or\textpi\textPi
893     \or\textkoppagreek\textKoppagreek
894   \else
895     {}{}%
896   \fi
897   \HyPsd@GreekNumI#1#2#4%
898 }
899 \def\HyPsd@GreekNumIII#1#2#3#4#5{%
900   #1{%
901     \ifnum#3>\z@
902       \textnumeralsignlowergreek
903       \fi
904   }%
905   \expandafter#2%
906   \ifcase#3 %
907     {}{}%
908     \or\textrho\textRho
909     \or\textsigma\textSigma
910     \or\texttau\textTau
911     \or\textupsilon\textUpsilon
912     \or\textphi\textPhi
913     \or\textchi\textChi
914     \or\textpsi\textPsi
915     \or\textomega\textOmega
916     \or\textsampigreek\textSampigreek
917   \else
918     {}{}%
919   \fi
920   \HyPsd@GreekNumII#1#2#4#5%
921 }
922 \def\HyPsd@GreekNumIV#1#2#3#4#5{%
923   \HyPsd@GreekNumI\@firstofone#1#2%
924   \HyPsd@@GreekNum#1{#3#4#5}%
925 }
926 \def\HyPsd@GreekNumV#1#2#3#4#5#6{%
927   \HyPsd@GreekNumII\@firstofone#1#2#3%
928   \HyPsd@@GreekNum#1{#4#5#6}%

```

```

929 }
930 \def\HyPsd@GreekNumVI#1#2#3#4#5#6#7{%
931   \HyPsd@GreekNumIII\@firstofone#1#2#3#4%
932   \HyPsd@GreekNum#1{#5#6#7}%
933 }

```

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

```

934 \begingroup
935   \catcode"7F=\active
936   \toks@{%
937     \let\CJK@ignorespaces\empty
938     \def\CJK@char#1{\@gobbletwo}%
939     \let\CJK@charx\@gobblefour
940     \let\CJK@punctchar\@gobblefour
941     \def\CJK@punctcharx#1{\@gobblefour}%
942     \catcode"7F=\active
943     \def^^7f#1^^7f#2^^7f{%
944       \string #1\HyPsd@DecimalToOctal{#2}%
945     }%
946     % ... ?
947     \ifHy@unicode
948       \def\Hy@cjkpu{\80}%
949     \else
950       \let\Hy@cjkpu\empty
951     \fi
952     \HyPsd@CJKActiveChars
953   }%
954   \count@=127 %
955   \@whilenum\count@<255 \do{%
956     \advance\count@ by 1 %
957     \lccode'\~= \count@
958     \lowercase{%
959       \toks@\expandafter{\the\toks@ ~}%
960     }%
961   }%
962   \toks@\expandafter{\the\toks@ !}%
963   \xdef\HyPsd@CJKhook{\the\toks@}%
964 \endgroup

```

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

```

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

```

```

971 \HyPsd@CJKActiveChars
972 }

```

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

```

973 \def\HyPsd@DecimalToOctal#1{%
974   \ifcase #1 %
975     \000\or \001\or \002\or \003\or \004\or \005\or \006\or \007%
976     \or \010\or \011\or \012\or \013\or \014\or \015\or \016\or \017%
977     \or \020\or \021\or \022\or \023\or \024\or \025\or \026\or \027%
978     \or \030\or \031\or \032\or \033\or \034\or \035\or \036\or \037%
979     \or \040\or \041\or \042\or \043\or \044\or \045\or \046\or \047%
980     \or \050\or \051\or \052\or \053\or \054\or \055\or \056\or \057%
981     \or 0\or 1\or 2\or 3\or 4\or 5\or 6\or 7%
982     \or 8\or 9\or \072\or \073\or \074\or \075\or \076\or \077%
983     \or @\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 \133\or \134\or \135\or \136\or \137%
987     \or \140\or a\or b\or c\or d\or e\or f\or g%
988     \or h\or i\or j\or k\or l\or m\or n\or o%
989     \or p\or q\or r\or s\or t\or u\or v\or w%
990     \or x\or y\or z\or \173\or \174\or \175\or \176\or \177%
991     \or \200\or \201\or \202\or \203\or \204\or \205\or \206\or \207%
992     \or \210\or \211\or \212\or \213\or \214\or \215\or \216\or \217%
993     \or \220\or \221\or \222\or \223\or \224\or \225\or \226\or \227%
994     \or \230\or \231\or \232\or \233\or \234\or \235\or \236\or \237%
995     \or \240\or \241\or \242\or \243\or \244\or \245\or \246\or \247%
996     \or \250\or \251\or \252\or \253\or \254\or \255\or \256\or \257%
997     \or \260\or \261\or \262\or \263\or \264\or \265\or \266\or \267%
998     \or \270\or \271\or \272\or \273\or \274\or \275\or \276\or \277%
999     \or \300\or \301\or \302\or \303\or \304\or \305\or \306\or \307%
1000    \or \310\or \311\or \312\or \313\or \314\or \315\or \316\or \317%
1001    \or \320\or \321\or \322\or \323\or \324\or \325\or \326\or \327%
1002    \or \330\or \331\or \332\or \333\or \334\or \335\or \336\or \337%
1003    \or \340\or \341\or \342\or \343\or \344\or \345\or \346\or \347%
1004    \or \350\or \351\or \352\or \353\or \354\or \355\or \356\or \357%
1005    \or \360\or \361\or \362\or \363\or \364\or \365\or \366\or \367%
1006    \or \370\or \371\or \372\or \373\or \374\or \375\or \376\or \377%
1007  \fi
1008 }

```

#### 6.5.4 `\@inmathwarn-Patch`

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

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

```

\def\@current@cmd#1{%
  \ifx\protect\@typeset@protect
    \@inmathwarn#1%
  \else
    \noexpand#1\expandafter\@gobble
  \fi}

```

```

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

1009 \def\HyPsd@inmathwarn#1#2{%
1010   \ifx#2\expandafter
1011     \expandafter\ifx\csname\cf@encoding\string#1\endcsname\relax
1012       \HyPsd@GLYPHERR
1013     \expandafter\@gobble\string#1%
1014     >%
1015     \expandafter\expandafter\expandafter\HyPsd@EndWithElse
1016   \else
1017     \expandafter\expandafter\expandafter\HyPsd@GobbleFiFi
1018   \fi
1019 \else
1020   \expandafter#2%
1021 \fi
1022 }
1023 \def\HyPsd@GobbleFiFi#1\fi#2\fi{}
1024 \def\HyPsd@EndWithElse#1\else{\else}

\HyPsd@add@accent

1025 \def\HyPsd@add@accent#1#2{%
1026   \HyPsd@GLYPHERR\expandafter\@gobble\string#1+\string#2>%
1027   #2%
1028 }%

```

### 6.5.5 Unexpandable spaces

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

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

These properties are used in \HyPsd@CheckCatcodes.

```
1029 \def\HyPsd@LetUnexpandableSpace#1{%
1030   \expandafter\futurelet\expandafter#1\expandafter\@gobble\space\relax
1031 }
```

\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.

```
1032 \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.

```
1033 \edef\HyPsd@XSPACE{\string#\string X}
1034 \edef\HyPsd@ITALCORR{\string#\string I}
1035 \edef\HyPsd@GLYPHERR{\string#\string G}
```

### 6.5.7 \hspace fix

\HyPsd@hspace

```
1036 \def\HyPsd@hspace#1{\HyPsd@@hspace#1*\END}
```

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

```
1037 \def\HyPsd@@hspace#1*#2\END{%
1038   \ifx\#2\%
1039     \HyPsd@hspacetest{#1}%
1040   \else
1041     \expandafter\HyPsd@hspacetest
1042   \fi
1043 }
```

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

```
1044 \def\HyPsd@hspacetest#1{\ifdim#1>z@\space\fi}
```

### 6.5.8 Fix for AMS classes

```
1045 \@ifundefined{tocsection}{%
1046   \let\HyPsd@AMSclassfix\relax
1047 }{%
1048   \def\HyPsd@AMSclassfix{%
1049     \let\tocpart\HyPsd@tocsection
1050     \let\tocchapter\HyPsd@tocsection
1051     \let\tocappendix\HyPsd@tocsection
1052     \let\tocsection\HyPsd@tocsection
1053     \let\tocsubsection\HyPsd@tocsection
1054     \let\tocsubsubsection\HyPsd@tocsection
1055     \let\tocparagraph\HyPsd@tocsection
1056   }%
1057   \def\HyPsd@tocsection#1#2#3{%
1058     \if @#2@ \else \if @#1@ \else #1 \fi #2. \fi
1059     #3%
```

```
1060 }%
1061 }
```

### 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.

```
1062 \def\HyPsd@ref#1{\HyPsd@@ref#1*\END}%
```

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

```
1063 \def\HyPsd@@ref#1*#2\END{%
1064   \ifx\#2\%
1065     \HyPsd@@@ref{#1}%
1066   \else
1067     \expandafter\HyPsd@@@ref
1068   \fi
1069 }%
```

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

```
1070 \def\HyPsd@@@ref#1{%
1071   \expandafter\ifx\csname r@#1\endcsname\relax
1072     ??%
1073   \else
1074     \expandafter\expandafter\expandafter
1075     \@car\csname r@#1\endcsname\@nil
1076   \fi
1077 }
```

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

```
1078 \def\HyPsd@pageref#1{\HyPsd@@pageref#1*\END}
```

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

```
1079 \def\HyPsd@@pageref#1*#2\END{%
1080   \ifx\#2\%
1081     \HyPsd@@@pageref{#1}%
1082   \else
1083     \expandafter\HyPsd@@@pageref
1084   \fi
1085 }
```

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

```
1086 \def\HyPsd@@@pageref#1{%
1087   \expandafter\ifx\csname r@#1\endcsname\relax
1088     ??%
1089   \else
1090     \expandafter\expandafter\expandafter\expandafter
1091     \expandafter\expandafter\expandafter\@car
1092     \expandafter\expandafter\expandafter\@gobble
1093     \csname r@#1\endcsname{}\@nil
1094   \fi
1095 }
```

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

```
1096 \def\HyPsd@nameref#1{\HyPsd@@nameref#1*\END}
```

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

```
1097 \def\HyPsd@@nameref#1*#2\END{%
1098   \ifx\#2\%
1099     \HyPsd@@nameref{#1}%
1100   \else
1101     \expandafter\HyPsd@@nameref
1102   \fi
1103 }
```

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

```
1104 \def\HyPsd@@@nameref#1{%
1105   \expandafter\ifx\csname r@#1\endcsname\relax
1106     ??%
1107   \else
1108     \expandafter\expandafter\expandafter\expandafter
1109     \expandafter\expandafter\expandafter\@car
1110     \expandafter\expandafter\expandafter\@gobbletwo
1111     \csname r@#1\endcsname{}{}{}{}@nil
1112   \fi
1113 }
```

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

```
1114 \def\HyPsd@autoref#1{\HyPsd@@autoref#1*END}
```

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

```
1115 \def\HyPsd@@autoref#1*#2\END{%
1116   \ifx\#2\%
1117     \HyPsd@@autoref{#1}%
1118   \else
1119     \expandafter\HyPsd@@autoref
1120   \fi
1121 }
```

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

```
1122 \def\HyPsd@@@autoref#1{%
1123   \expandafter\ifx\csname r@#1\endcsname\relax
1124     ??%
1125   \else
1126     \expandafter\expandafter\expandafter\HyPsd@autorefname
1127     \csname r@#1\endcsname{}{}{}{}@nil
1128     \expandafter\expandafter\expandafter
1129     \@car\csname r@#1\endcsname@nil
1130   \fi
1131 }
```

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

```
1132 \def\HyPsd@autorefname#1#2#3#4#5\@nil{%
1133   \ifx\#4\%
1134   \else
1135     \HyPsd@@autorefname#4.\@nil
1136   \fi
1137 }
```

`\HyPsd@@autorefname`

```

1138 \def\HyPsd@autorefname#1.#2\@nil{%
1139   \@ifundefined{#1autorefname}{%
1140     \@ifundefined{#1name}{%
1141       }{%
1142         \csname#1name\endcsname\space
1143       }%
1144     }{%
1145       \csname#1autorefname\endcsname\space
1146     }%
1147 }

```

### 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 cause TeX to stop with an error message. With a deep trick it is possible to define commands in such a context: `\csname` does the job, it defines the command to be `\relax`, if it has no meaning.

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

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

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

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

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

```

\HyPsd@DefCommand
\HyPsd@LetCommand
1148 \begingroup
1149   \def\x#1#2{%
1150     \endgroup
1151     \let#1\def
1152     \def\HyPsd@DefCommand##1##2##{%
1153       #1%
1154       \expandafter\noexpand
1155         \csname\expandafter@gobble\string##1\@empty\endcsname
1156       \@gobble
1157     }%
1158     \let#2\let
1159     \def\HyPsd@LetCommand##1{%
1160       \expandafter\ifx\csname##1\expandafter\endcsname
1161         \csname iftrue\endcsname

```



```

1162     \pdfstringdefWarn\let
1163     \expandafter\@gobble
1164   \else
1165     \expandafter\ifx\csname##1\expandafter\endcsname
1166         \csname iffalse\endcsname
1167     \pdfstringdefWarn\let
1168     \expandafter\expandafter\expandafter\@gobble
1169   \else
1170     #2%
1171     \expandafter\noexpand
1172     \csname##1\expandafter\expandafter\expandafter\endcsname
1173   \fi
1174 \fi
1175 }%
1176 }%
1177 \expandafter\x\csname <def>-command\expandafter\endcsname
1178     \csname <let>-command\endcsname
1179 \def\HyPsd@LetCommand#1{%
1180   \expandafter\expandafter\expandafter\HyPsd@@LetCommand
1181   \expandafter\expandafter\expandafter{%
1182     \expandafter\@gobble\string#1\@empty
1183   }%
1184 }

```

#### 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).

```

1185 \def\HyPsd@ifnextchar#1{%
1186   \pdfstringdefWarn#1%
1187   \expandafter\@gobbletwo\@gobble
1188 }

```

#### 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`.

```

1189 \def\HyPsd@protected@testopt#1{%
1190   \pdfstringdefWarn#1%
1191   \@gobbletwo
1192 }

```

## 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:

```
1193 \def\HyPsd@Warning#1{%
1194   \begingroup
1195     \def\space{ }%
1196     \Hy@Warning{#1}%
1197   \endgroup
1198 }
```

### 6.6.2 Protecting spaces

```
1199 \RequirePackage{etexcmds}[2007/09/09]
1200 \ifetex@unexpanded
1201   \expandafter\@secondoftwo
1202 \else
1203   \expandafter\@firstoftwo
1204 \fi
1205 {%
```

`\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`.

```
1206   \def\HyPsd@ProtectSpaces#1{%
1207     \iftrue
1208       \expandafter\HyPsd@@ProtectSpacesFi
1209       \expandafter|\expandafter\@empty#1| \HyPsd@End#1%
1210     \fi
1211   }%
```

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

```
1212   \def\HyPsd@@ProtectSpacesFi#1 #2\HyPsd@End#3\fi{%
1213     \fi
1214     \ifx\scrollmode#2\scrollmode
1215       \HyPsd@RemoveMask#1\HyPsd@End#3%
1216     \else
1217       \gdef#3{#1\HyPsd@UnexpandableSpace#2}%
1218       \expandafter\HyPsd@@ProtectSpacesFi#3\HyPsd@End#3%
1219     \fi
1220   }%
```

### 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.

```
1221   \def\HyPsd@RemoveMask|#1|\HyPsd@End#2{%
1222     \toks@\expandafter{#1}%
1223     \xdef#2{\the\toks@}%
1224   }%

1225 }{%
1226   \let\HyPsd@fi\fi
1227   \def\HyPsd@ProtectSpaces#1{%
```

```

1228 \xdef#1{%
1229 \iftrue
1230 \expandafter\HyPsd@@ProtectSpacesFi
1231 \expandafter\expandafter\@empty#1| %
1232 \HyPsd@fi
1233 }%
1234 \expandafter\HyPsd@RemoveMask#1\HyPsd@End#1%
1235 }%
1236 \def\HyPsd@@ProtectSpacesFi#1 #2\HyPsd@fi{%
1237 \fi
1238 \etex@unexpanded{#1}%
1239 \ifx\scrollmode#2\scrollmode
1240 \else
1241 \HyPsd@@ProtectSpacesFi\HyPsd@UnexpandableSpace#2%
1242 \HyPsd@fi
1243 }%
1244 \def\HyPsd@RemoveMask|#1|\HyPsd@End#2{%
1245 \xdef#2{\etex@unexpanded\expandafter{#1}}%
1246 }%
1247 }

```

### 6.6.3 Remove grouping braces

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

```

1248 \def\HyPsd@RemoveBraces#1{%
1249 \ifx\scrollmode#1\scrollmode
1250 \else
1251 \HyPsd@@RemoveBracesFi#1\HyPsd@End{#1}%
1252 \fi
1253 }

```

`\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`.

```

1254 \def\HyPsd@@RemoveBracesFi#1#2\HyPsd@End#3\fi{%
1255 \fi
1256 \def\Hy@temp@A{#1#2}%
1257 \def\Hy@temp@B{#3}%
1258 \ifx\Hy@temp@A\Hy@temp@B
1259 \expandafter\def\expandafter\HyPsd@String\expandafter{%
1260 \HyPsd@String#1%
1261 }%
1262 \ifx\scrollmode#2\scrollmode
1263 \else
1264 \Hy@ReturnAfterFiFiEnd{%
1265 \HyPsd@RemoveBraces{#2}%
1266 }%
1267 \fi
1268 \else
1269 \def\Hy@temp@A{#1}%

```

```

1270 \HyPsd@AppendItalcorr\HyPsd@String
1271 \ifx\Hy@temp@A\@empty
1272 \Hy@ReturnAfterElseFiFiEnd{%
1273 \HyPsd@RemoveBraces{#2}%
1274 }%
1275 \else
1276 \HyPsd@ProtectSpaces\Hy@temp@A
1277 \HyPsd@AppendItalcorr\Hy@temp@A
1278 \Hy@ReturnAfterFiFiEnd{%
1279 \expandafter\HyPsd@RemoveBraces\expandafter
1280 {\Hy@temp@A#2}%
1281 }%
1282 \fi
1283 \fi
1284 \Hy@ReturnEnd
1285 }

```

\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.

```

1286 \def\HyPsd@AppendItalcorr#1{%
1287 \expandafter\HyPsd@@AppendItalcorr\expandafter{/}\#1%
1288 }
1289 \def\HyPsd@@AppendItalcorr#1#2{%
1290 \expandafter\def\expandafter#2\expandafter{#2#1}%
1291 }

```

## 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).

```

1292 \def\HyPsd@CheckCatcodes#1#2\HyPsd@End{%
1293 \global\let\HyPsd@Rest\relax
1294 \ifcat\relax\noexpand#1\relax
1295 \ifx#1\protect
1296 \else
1297 \ifx#1\penalty
1298 \setbox\z@=\hbox{%
1299 \afterassignment\HyPsd@AfterCountRemove
1300 \count@=#2\HyPsd@End
1301 }%
1302 \else
1303 \ifx#1\kern
1304 \setbox\z@=\hbox{%
1305 \afterassignment\HyPsd@AfterDimenRemove
1306 \dimen@=#2\HyPsd@End
1307 }%
1308 \else

```

```

1309         \ifx#1\hskip
1310             \setbox\z@=\hbox{%
1311                 \afterassignment\HyPsd@AfterSkipRemove
1312                 \skip@=#2\HyPsd@end
1313             }%
1314         \else
1315             \HyPsd@CatcodeWarning{#1}%
1316         \fi
1317     \fi
1318 \fi
1319 \fi
1320 \else
1321     \ifcat#1A% letter
1322         \expandafter\def\expandafter\HyPsd@String\expandafter{%
1323             \HyPsd@String#1%
1324         }%
1325     \else
1326         \ifcat#1 % SPACE
1327             \expandafter\def\expandafter\HyPsd@String\expandafter{%
1328                 \HyPsd@String\HyPsd@SPACEOPTI
1329             }%
1330         \else
1331             \ifcat$#1%
1332                 \HyPsd@CatcodeWarning{math shift}%
1333             \else
1334                 \ifcat&#1%
1335                     \HyPsd@CatcodeWarning{alignment tab}%
1336                 \else
1337                     \ifcat^#1%
1338                         \HyPsd@CatcodeWarning{superscript}%
1339                     \else
1340                         \ifcat_#1%
1341                             \HyPsd@CatcodeWarning{subscript}%
1342                         \else
1343                             \expandafter\def\expandafter\HyPsd@String\expandafter{%
1344                                 \HyPsd@String#1%
1345                             }%
1346                         \fi
1347                     \fi
1348                 \fi
1349             \fi
1350         \fi
1351     \fi
1352 \fi
1353 \ifx\HyPsd@Rest\relax
1354     \ifx\scrollmode#2\scrollmode
1355     \else
1356         \Hy@ReturnAfterFiFiEnd{%
1357             \HyPsd@CheckCatcodes#2\HyPsd@end
1358         }%
1359     \fi
1360 \else
1361     \ifx\HyPsd@Rest\@empty
1362     \else
1363         \Hy@ReturnAfterFiFiEnd{%
1364             \expandafter\HyPsd@CheckCatcodes\HyPsd@Rest\HyPsd@end
1365         }%

```

```

1366     \fi
1367   \fi
1368   \Hy@ReturnEnd
1369 }

```

### Remove counts, dimens, skips.

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

```

1370 \def\HyPsd@AfterCountRemove#1\HyPsd@End{%
1371   \gdef\HyPsd@Rest{#1}%
1372 }

```

`\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.

```

1373 \def\HyPsd@AfterDimenRemove#1\HyPsd@End{%
1374   \ifdim\ifx\HyPsd@String\@empty\z@\else\dimen@>1ex %
1375     \HyPsd@ReplaceSpaceWarning{\string\kern\space\the\dimen@}%
1376     \gdef\HyPsd@Rest{\HyPsd@UnexpandableSpace #1}%
1377   \else
1378     \ifdim\dimen@=\z@
1379     \else
1380       \HyPsd@RemoveSpaceWarning{\string\kern\space\the\dimen@}%
1381     \fi
1382     \gdef\HyPsd@Rest{#1}%
1383   \fi
1384 }

```

`\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).

```

1385 \def\HyPsd@AfterSkipRemove#1\HyPsd@End{%
1386   \ifdim\ifx\HyPsd@String\@empty\z@\else\skip@>1ex %
1387     \HyPsd@ReplaceSpaceWarning{\string\hskip\space\the\skip@}%
1388     \gdef\HyPsd@Rest{\HyPsd@UnexpandableSpace #1}%
1389   \else
1390     \ifdim\skip@=\z@
1391     \else
1392       \HyPsd@RemoveSpaceWarning{\string\kern\space\the\skip@}%
1393     \fi
1394     \gdef\HyPsd@Rest{#1}%
1395   \fi
1396 }

```

### Catcode warnings.

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

```

1397 \def\HyPsd@CatcodeWarning#1{%
1398   \HyPsd@Warning{%
1399     Token not allowed in a PDF string (%
1400     \ifHy@unicode
1401       Unicode%
1402     \else
1403       PDFDocEncoding%
1404     \fi
1405   ):%

```

```

1406 \MessageBreak removing '\HyPsd@RemoveCmdPrefix#1'%
1407 }%
1408 }
1409 \beginngroup
1410 \catcode'\|=0 %
1411 \catcode'\|=12 %
1412 \gdef\HyPsd@RemoveCmdPrefix#1{%
1413   \expandafter\HyPsd@@RemoveCmdPrefix
1414   \string#1\@empty\<>-|@empty|@empty
1415 }%
1416 \gdef\HyPsd@@RemoveCmdPrefix#1\<>-#2|@empty#3|@empty{#1#2}%
1417 \endgroup

```

\HyPsd@RemoveSpaceWarning

```

1418 \def\HyPsd@RemoveSpaceWarning#1{%
1419   \HyPsd@Warning{%
1420     Token not allowed in a PDF string (%)
1421     \ifHy@unicode
1422       Unicode%
1423     \else
1424       PDFDocEncoding%
1425     \fi
1426   }:%
1427   \MessageBreak #1\MessageBreak
1428   removed%
1429 }%
1430 }

```

\HyPsd@ReplaceSpaceWarning

```

1431 \def\HyPsd@ReplaceSpaceWarning#1{%
1432   \HyPsd@Warning{%
1433     Token not allowed in a PDF string (%)
1434     \ifHy@unicode
1435       Unicode%
1436     \else
1437       PDFDocEncoding%
1438     \fi
1439   }:%
1440   \MessageBreak #1\MessageBreak
1441   replaced by space%
1442 }%
1443 }

```

### 6.6.5 Check for wrong glyphs

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

```

1444 \def\HyPsd@GlyphProcess#1\relax#2\@empty{%
1445   \expandafter\def\expandafter\HyPsd@String\expandafter{%
1446     \HyPsd@String#1%
1447   }%
1448   \ifx\#2\%
1449   \else
1450     \Hy@ReturnAfterFi{%
1451       \HyPsd@GlyphProcessWarning#2\@empty
1452     }%
1453   \fi

```

```

1454 }
1455 \def\HyPsd@GlyphProcessWarning#1>#2\@empty{%
1456   \HyPsd@@GlyphProcessWarning#1++>%
1457   \HyPsd@GlyphProcess#2\@empty
1458 }
1459 \def\HyPsd@@GlyphProcessWarning#1+#2+#3>{%
1460   \ifx\#2\%
1461     \HyPsd@Warning{%
1462       Glyph not defined in %
1463       P\ifHy@unicode U\else D1\fi\space encoding,\MessageBreak
1464       removing '@backslashchar#1'%
1465     }%
1466   \else
1467     \HyPsd@Warning{%
1468       Composite letter '@backslashchar#1+#2'\MessageBreak
1469       not defined in P\ifHy@unicode U\else D1\fi\space encoding,%
1470       \MessageBreak
1471       removing '@backslashchar#1'%
1472     }%
1473   \fi
1474 }

```

### 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 a protected space `\040`.

```

1475 \def\HyPsd@spaceopti#1{ % first space
1476   \ifx\HyPsd@spaceopti#1%
1477     \040%
1478   \else
1479     #1%
1480   \fi
1481 }%

```

### 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.

```

1482 \def\HyPsd@Subst#1#2#3{%
1483   \def\HyPsd@@ReplaceFi##1#1##2\END\fi{%
1484     \fi
1485     ##1%
1486     \ifx\scrollmode##2\scrollmode
1487     \else
1488       #2%
1489       \HyPsd@@ReplaceFi##2\END
1490     \fi
1491   }%
1492 \xdef#3{%
1493   \iftrue
1494     \expandafter\HyPsd@@ReplaceFi#3#1\END
1495   \fi

```



```

1496 }%
1497 }

```

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

```

1498 \def\HyPsd@StringSubst#1{%
1499   \expandafter\HyPsd@Subst\expandafter{\string#1}%
1500 }

```

### 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.

```

1501 \def\HyPsd@doxspace#1{%
1502   \ifx#1\relax\else
1503     \ifx#1.\else
1504       \ifx#1:\else
1505         \ifx#1,\else
1506         \ifx#1;\else
1507         \ifx#1!\else
1508         \ifx#1?\else
1509         \ifx#1/\else
1510         \ifx#1-\else
1511         \ifx#1'\else
1512           \HyPsd@SPACEOPTI
1513         \fi
1514         \fi
1515         \fi
1516         \fi
1517         \fi
1518         \fi
1519         \fi
1520         \fi
1521         \fi
1522       \fi
1523     #1%
1524 }%

```

### 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.

```

1525 \begingroup
1526   \catcode'\|=0 %
1527   \catcode'\|=12 %

```

`\HyPsd@ConvertToUnicode`

```

1528 |gdef|HyPsd@ConvertToUnicode#1{%
1529   |xdef#1{%
1530     |expandafter|HyPsd@DoConvert#1|@empty|@empty|@empty
1531   }%
1532   |ifx#1|@empty
1533   |else
1534     |xdef#1{%

```

```

1535         \376\377%
1536         #1%
1537     }%
1538 |fi
1539 }%

```

\HyPsd@DoConvert

```

1540 |gdef|HyPsd@DoConvert#1{%
1541     |ifx#1|@empty
1542     |else
1543         |Hy@ReturnAfterFi{%
1544             |ifx#1\%%
1545             \%%
1546             |expandafter|HyPsd@DoEscape
1547         |else
1548             |HyPsd@Char{#1}%
1549             |expandafter|HyPsd@DoConvert
1550         |fi
1551     }%
1552 |fi
1553 }%

```

\HyPsd@DoEscape

```

1554 |gdef|HyPsd@DoEscape#1{%
1555     |ifx#19%
1556     |expandafter|HyPsd@GetTwoBytes
1557     |else
1558         |Hy@ReturnAfterFi{%
1559             |ifx#18%
1560             00%
1561             |expandafter|HyPsd@GetTwoBytes
1562         |else
1563             #1%
1564             |expandafter|HyPsd@GetOneByte
1565         |fi
1566     }%
1567 |fi
1568 }%

```

\HyPsd@GetTwoBytes

```

1569 |gdef|HyPsd@GetTwoBytes#1\#2#3#4{%
1570     #1\#2#3#4%
1571     |HyPsd@DoConvert
1572 }%

```

\HyPsd@GetOneByte

```

1573 |gdef|HyPsd@GetOneByte#1#2{%
1574     #1#2%
1575     |HyPsd@DoConvert
1576 }%
1577 |endgroup

```

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

```

1578 \def\HyPsd@GetNextTwoTokens#1#2#3\END#4{%
1579     \xdef#4{#4#1#2}%
1580     \HyPsd@@ConvertToUnicode#3\END#4%
1581 }

```

\HyPsd@Char

```
1582 \RequirePackage{intcalc}[2007/09/27]
1583 \begingroup
1584 \catcode0=9 %
1585 \catcode'\^=7 %
1586 \catcode'\^^=12 %
1587 \def\x{^^^0000}%
1588 \expandafter\endgroup
1589 \ifx\x\@empty
1590 \def\HyPsd@Char#1{%
1591 \ifnum'#1<128 %
1592 \@backslashchar 000#1%
1593 \else
1594 \ifnum'#1<65536 %
1595 \expandafter\HyPsd@CharTwoByte\number'#1!%
1596 \else
1597 \expandafter\expandafter\expandafter\HyPsd@CharSurrogate
1598 \intcalcSub{'#1}{65536}!%
1599 \fi
1600 \fi
1601 }%
1602 \def\HyPsd@CharTwoByte#1!{%
1603 \expandafter\expandafter\expandafter\HyPsd@CharOctByte
1604 \IntCalcDiv#1!256!!%
1605 \expandafter\expandafter\expandafter\HyPsd@CharOctByte
1606 \IntCalcMod#1!256!!%
1607 }%
1608 \def\HyPsd@CharOctByte#1!{%
1609 \@backslashchar
1610 \IntCalcDiv#1!64!%
1611 \intcalcDiv{\IntCalcMod#1!64!}{8}%
1612 \IntCalcMod#1!8!%
1613 }%
1614 \def\HyPsd@CharSurrogate#1!{%
1615 \@backslashchar 33%
1616 \IntCalcDiv#1!262144!%
1617 \expandafter\expandafter\expandafter\HyPsd@CharOctByte
1618 \intcalcDiv{\IntCalcMod#1!262144!}{1024}!%
1619 \@backslashchar 33%
1620 \expandafter\expandafter\expandafter\IntCalcAdd
1621 \intcalcDiv{\IntCalcMod#1!1024!}{256}!4!%
1622 \expandafter\expandafter\expandafter\HyPsd@CharOctByte
1623 \IntCalcMod#1!256!!%
1624 }%
1625 \else
1626 \def\HyPsd@Char#1{%
1627 \@backslashchar 000#1%
1628 }%
1629 \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

1630 \begingroup\expandafter\expandafter\expandafter\endgroup
1631 \expandafter\ifx\csname numexpr\endcsname\relax
1632   \let\HyPsd@UTFviii\relax
1633 \else
1634   \begingroup
1635     \lccode'\~='^f4\relax
1636   \lowercase{\endgroup
1637     \def\HyPsd@UTFviii{%
1638       \let\UTFviii@two@octets\HyPsd@UTFviii@two
1639       \let\UTFviii@three@octets\HyPsd@UTFviii@three
1640       \let\UTFviii@four@octets\HyPsd@UTFviii@four
1641       \ifx~\HyPsd@UTFviii@ccxliv@undef
1642         \let~\HyPsd@UTFviii@ccxliv@def
1643       \fi
1644       \let\unichar\HyPsd@unichar
1645     }%
1646   }%
1647   \def\HyPsd@UTFviii@ccxliv@undef{\@inpenc@undefined@{utf8}}%
1648   \edef\HyPsd@UTFviii@ccxliv@def{%
1649     \noexpand\UTFviii@four@octets\string ^f4%
1650   }%

```

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.

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

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

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

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

$$(5)$$

```

1651 \def\HyPsd@UTFviii@two#1#2{%
1652   \expandafter\HyPsd@UTFviii@two
1653   \number\dimexpr.25\dimexpr'#1sp\expandafter\relax\expandafter|%
1654   \number'#1\expandafter|%
1655   \number\dimexpr.125\dimexpr'#2sp\expandafter\relax\expandafter|%
1656   \number'#2 \@nil
1657 }%
1658 \def\HyPsd@UTFviii@two#1|#2|#3|#4\@nil{%
1659   \expandafter\8%
1660   \number\dimexpr #1-48\expandafter\relax
1661   \csname\number\dimexpr #2-4*#1\relax\expandafter\endcsname
1662   \number\dimexpr #3-8*%
1663   \number\dimexpr.125\dimexpr#3sp\relax\relax\expandafter\relax
1664   \number\dimexpr #4-8*#3\relax
1665 }%

```

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

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

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

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

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

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

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

$$(12)$$

```

1666 \def\HyPsd@UTFviii@three#1#2#3{%
1667   \expandafter\HyPsd@UTFviii@three
1668   \number\dimexpr.25\dimexpr'#1sp\expandafter\relax\expandafter|
1669   \number'#1\expandafter|
1670   \number\ifnum\dimexpr'#2-128\relax <32 0\else 1\fi\expandafter|
1671   \number\dimexpr.25\dimexpr'#2sp\expandafter\relax\expandafter|
1672   \number'#2\expandafter|
1673   \number\dimexpr.125\dimexpr'#3sp\expandafter\relax\expandafter|
1674   \number'#3 \@nil
1675 }%
1676 \def\HyPsd@UTFviii@three#1|#2|#3|#4|#5|#6|#7\@nil{%
1677   \expandafter\9%
1678   \number\dimexpr #1-56\expandafter\relax
1679   \number\dimexpr 2*(#2-4*#1)+#3\expandafter\relax
1680   \number\dimexpr #4 - 32 -\ifcase#3 0\else 8\fi\expandafter\relax
1681   \csname\number\dimexpr #5-4*#4\relax\expandafter\endcsname
1682   \number\dimexpr #6-16\expandafter\relax
1683   \number\dimexpr #7-8*#6\relax
1684 }%

```

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

```

```

1685 \def\HyPsd@UTFviii@four#1#2{%
1686   \expandafter\HyPsd@UTFviii@four\number
1687   \numexpr-1+('#1-240)*4+\dimexpr.0625\dimexpr'#2sp-128sp%
1688   \expandafter|\number
1689   \numexpr'#2-16*\dimexpr.0625\dimexpr'#2sp|
1690 }%
1691 \def\HyPsd@UTFviii@four#1|#2|#3{%
1692   \933\number\dimexpr.25\dimexpr#1sp\relax\relax
1693   \csname\number\dimexpr#1-4*\dimexpr.25\dimexpr#1sp\endcsname
1694   \ifodd#2 %
1695     \number\dimexpr(#2-1)/2\relax
1696   \else
1697     \number\dimexpr#2/2\relax
1698   \fi
1699   \number\dimexpr\ifodd#2 4+\fi
1700   \dimexpr.0625\dimexpr'#3sp-128sp\relax\relax\relax
1701   \933%
1702   \expandafter\HyPsd@UTFviii@four\number
1703   \numexpr'#3-16*\dimexpr.0625\dimexpr'#3sp|
1704 }%
1705 \def\HyPsd@UTFviii@four#1#2{%
1706   \number\dimexpr4+\dimexpr.25\dimexpr#1sp\relax\relax\relax

```

```

1707 \csname\number\numexpr#1-4*\dimexpr.25\dimexpr#1sp\endcsname
1708 \number\dimexpr.125\dimexpr'#2sp-128sp\relax\relax
1709 \number\numexpr'#2-8*\dimexpr.125\dimexpr'#2sp\relax\relax\relax
1710 }%

```

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

```

1711 \def\HyPsd@unichar#1{%
1712 \ifHy@unicode
1713 \ifnum#1>"10FFFF %
1714 \HyPsd@UnicodeReplacementCharacter % illegal
1715 \else
1716 \ifnum#1>"FFFF %

```

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

```

1717 \expandafter\HyPsd@unichar\expandafter{%
1718 \number\numexpr 55296+%
1719 \dimexpr.0009765625\dimexpr\number#1sp-\p@
1720 \relax\relax\relax
1721 }%

```

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

```

1722 \expandafter\HyPsd@unichar\expandafter{%
1723 \number\numexpr#1-9216%
1724 -1024*\dimexpr.0009765625\dimexpr\number#1sp-\p@
1725 \relax\relax\relax
1726 }%
1727 \else
1728 \ifnum#1>"7FF %
1729 \9%
1730 \expandafter\HyPsd@unichar@first@byte\expandafter{%
1731 \number
1732 \dimexpr.00390625\dimexpr\number#1sp\relax\relax
1733 }%
1734 \else
1735 \8%
1736 \number\dimexpr.00390625\dimexpr\number#1sp\relax\relax
1737 \fi
1738 \expandafter\HyPsd@unichar@second@byte\expandafter{%
1739 \number
1740 \numexpr#1-256*\number
1741 \dimexpr.00390625\dimexpr\number#1sp\relax\relax\relax
1742 }%
1743 \fi
1744 \fi
1745 \else
1746 .% unsupported (Unicode -> PDF Doc Encoding)
1747 \fi
1748 }%
1749 \def\HyPsd@UnicodeReplacementCharacter{\9377\375}%
1750 \def\HyPsd@unichar@first@byte#1{%
1751 \number\dimexpr.015625\dimexpr#1sp\relax\relax
1752 \expandafter\HyPsd@unichar@octtwo\expandafter{%
1753 \number
1754 \numexpr#1-64*\number\dimexpr.015625\dimexpr#1sp%
1755 \relax\relax\relax
1756 }%
1757 }%

```

```

1758 \def\HyPsd@unichar@second@byte#1{%
1759   \csname\number\dimexpr.015625\dimexpr#1sp\relax\relax\endcsname
1760   \expandafter\HyPsd@unichar@octtwo\expandafter{%
1761     \number
1762     \numexpr#1-64*\number\dimexpr.015625\dimexpr#1sp%
1763     \relax\relax\relax
1764   }%
1765 }%
1766 \def\HyPsd@unichar@octtwo#1{%
1767   \number\dimexpr.125\dimexpr#1sp\relax\relax
1768   \number\numexpr#1-8*\number\dimexpr.125\dimexpr#1sp%
1769   \relax\relax\relax
1770 }%
1771 \fi

```

## 7 Support of other packages

### 7.1 Class memoir

```

1772 \@ifclassloaded{memoir}{%
1773   \AtEndOfPackage{\RequirePackage{memhfixc}}%
1774 }{}

```

### 7.2 Package subfigure

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

```

1775 \@ifpackageloaded{subfigure}{%
1776   \@ifundefined{sub@label}{%
1777     \Hy@hypertexnamesfalse
1778   }{%
1779     \renewcommand*{\sub@label}[1]{%
1780       \@bsphack
1781       \subfig@oldlabel{#1}%
1782       \if@filesw
1783         \begingroup
1784           \edef\currentlabstr{%
1785             \expandafter\strip@prefix\meaning\@currentlabelname
1786           }%
1787           \protected@write\@auxout{}{%
1788             \string\newlabel{sub@#1}{%
1789               {\@nameuse{\@thesub\@capttype}}%
1790               {\thepage}%
1791             }%
1792             \expandafter\strip@period\@currentlabstr
1793             \relax.\relax\@@%
1794           }%
1795           {\@currentHref}%
1796           {}%
1797         }%
1798       }%
1799     \endgroup
1800   }%
1801   \@esphack
1802 }%
1803 \@ifpackagelater{subfigure}{2002/03/26}{%
1804   \providecommand*\toclevel@subfigure{1}%
1805   \providecommand*\toclevel@subtable{1}%

```

```

1806 }%
1807 }%
1808 }{}

```

### 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:

```

1809 \@ifundefined{XR@addURL}{%
1810 }{%

```

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.

```

1811 \def\xR@addURL#1{\XR@dURL#1{}{}{}{}\\}%
1812 \def\xR@dURL#1#2#3#4#5\\{%
1813   {#1}{#2}%
1814   \if!#4!%
1815   \else
1816     {#3}{#4}{\XR@URL}%
1817   \fi
1818 }%
1819 }

```

```

1820 \def\Hy@true{true}
1821 \def\Hy@false{false}

```

Providing dummy definitions.

```

1822 \let\literalps@out\@gobble
1823 \newcommand\pdfbookmark[3][]{ }
1824 \def\Acrobatmenu#1#2{\leavevmode#2}
1825 \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

```

1826 \let\HyperRaiseLinkHook\@empty
1827 \def\HyperRaiseLinkDefault{\baselineskip}

```

\HyperRaiseLinkHook allows the user to reassign \HyperRaiseLinkLength.

```

1828 \def\Hy@raisedlink#1{%
1829   \ifvmode
1830     #1%
1831   \else
1832     \penalty\@M
1833     \smash{%
1834       \begingroup

```



```

1835         \let\HyperRaiseLinkLength\@tempdima
1836         \setlength\HyperRaiseLinkLength\HyperRaiseLinkDefault
1837         \HyperRaiseLinkHook
1838     \expandafter\endgroup
1839     \expandafter\raise\the\HyperRaiseLinkLength\hbox{#1}%
1840 }%
1841 \fi
1842 }

```

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

```

\Hy@RestoreLastskip
1843 \def\Hy@SaveLastskip{%
1844     \let\Hy@RestoreLastskip\relax
1845     \ifvmode
1846         \ifdim\lastskip=\z@
1847             \let\Hy@RestoreLastskip\nobreak
1848         \else
1849             \begingroup
1850             \skip@=-\lastskip
1851             \edef\x{%
1852                 \endgroup
1853                 \def\noexpand\Hy@RestoreLastskip{%
1854                     \noexpand\ifvmode
1855                     \noexpand\nobreak
1856                     \vskip\the\skip@
1857                     \vskip\the\lastskip\relax
1858                 \noexpand\fi
1859             }%
1860         }%
1861     \x
1862     \fi
1863 \else
1864     \ifhmode
1865         \ifdim\lastskip=\z@
1866             \let\Hy@RestoreLastskip\nobreak
1867         \else
1868             \begingroup
1869             \skip@=-\lastskip
1870             \edef\x{%
1871                 \endgroup
1872                 \def\noexpand\Hy@RestoreLastskip{%
1873                     \noexpand\ifhmode
1874                     \noexpand\nobreak
1875                     \hskip\the\skip@
1876                     \hskip\the\lastskip\relax
1877                 \noexpand\fi
1878             }%
1879         }%
1880     \x
1881     \fi
1882 \fi
1883 \fi
1884 }%

```

## 9 Options

### 9.1 Help macros

\Hy@boolkey

```
1885 \def\Hy@boolkey{\@dblarg\Hy@@boolkey}
1886 \def\Hy@@boolkey[#1]#2#3{%
1887   \edef\Hy@tempa{#3}%
1888   \lowercase\expandafter{%
1889     \expandafter\def\expandafter\Hy@tempa\expandafter{\Hy@tempa}%
1890   }%
1891   \ifx\Hy@tempa\@empty
1892     \let\Hy@tempa\Hy@true
1893   \fi
1894   \ifx\Hy@tempa\Hy@true
1895   \else
1896     \ifx\Hy@tempa\Hy@false
1897     \else
1898       \let\Hy@tempa\relax
1899     \fi
1900   \fi
1901   \ifx\Hy@tempa\relax
1902     \Hy@WarnOptionValue{#3}{#1}{‘true’ or ‘false’}%
1903   \else
1904     \Hy@Info{Option ‘#1’ set ‘\Hy@tempa’}%
1905     \csname Hy@#2\Hy@tempa\endcsname
1906   \fi
1907 }
```

\Hy@WarnOptionValue

```
1908 \def\Hy@WarnOptionValue#1#2#3{%
1909   \Hy@Warning{%
1910     Unexpected value ‘#1’\MessageBreak
1911     of option ‘#2’ instead of\MessageBreak
1912     #3%
1913   }%
1914 }
```

\Hy@DisableOption

```
1915 \def\Hy@DisableOption#1{%
1916   \@ifundefined{KV@Hyp@#1@default}{%
1917     \define@key{Hyp}{#1}%
1918   }{%
1919     \define@key{Hyp}{#1}[]%
1920   }%
1921   {\Hy@WarnOptionDisabled{#1}}%
1922 }
```

\Hy@WarnOptionDisabled

```
1923 \def\Hy@WarnOptionDisabled#1{%
1924   \Hy@Warning{%
1925     Option ‘#1’ has already been used,\MessageBreak
1926     setting the option has no effect%
1927   }%
1928 }
```

`\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.

```

1929 \def\Hy@CheckOptionValue#1#2#3{%
1930   \begingroup
1931     \edef\x{#1}%
1932     \@onelevel@sanitize\x
1933     \let\y=y%
1934     \def\do##1##2{%
1935       \def\z{##1}%
1936       \@onelevel@sanitize\z
1937       \ifx\x\z
1938         \let\y=n%
1939         \let\do\@gobbletwo
1940       \fi
1941     }%
1942     #3%
1943     \ifx\y y%
1944       \def\do##1##2{%
1945         * '##1'%
1946         \ifx\\##2\\else\space(##2)\fi
1947         \MessageBreak
1948       }%
1949       \Hy@Warning{%
1950         Values of option '#2':\MessageBreak
1951         #3%
1952         * An empty value disables the option.\MessageBreak
1953         Unknown value '\x'%
1954       }%
1955     \fi
1956   \endgroup
1957 }

```

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

```

1958 \def\Hy@DefNameKey#1{%
1959   \expandafter\Hy@@DefNameKey\csname @#1\endcsname{#1}%
1960 }

```

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

```

1961 \def\Hy@@DefNameKey#1#2#3{%
1962   \define@key{Hyp}{#2}{%
1963     \edef#1{##1}%
1964     \ifx#1\@empty
1965       \else
1966         \Hy@CheckOptionValue{##1}{#2}{#3}%
1967       \fi
1968   }%
1969   \let#1\@empty
1970 }

```

`\Hy@UseNameKey`

```

1971 \def\Hy@UseNameKey#1#2{%
1972   \ifx#2\@empty

```

```

1973 \else
1974     /#1/#2%
1975 \fi
1976 }

```

## 9.2 Defining the options

```

1977 \define@key{Hyp}{implicit}[true]{%
1978   \Hy@boolkey{implicit}{#1}%
1979 }
1980 \define@key{Hyp}{draft}[true]{%
1981   \Hy@boolkey{draft}{#1}%
1982 }
1983 \define@key{Hyp}{final}[true]{%
1984   \Hy@boolkey{final}{#1}%
1985 }
1986 \let\KV@Hyp@nolinks\KV@Hyp@draft
1987 \define@key{Hyp}{setpagesize}[true]{%
1988   \Hy@boolkey{setpagesize}{#1}%
1989 }
1990 \define@key{Hyp}{debug}[true]{%
1991   \Hy@boolkey[debug]{verbose}{#1}%
1992 }
1993 \define@key{Hyp}{linktocpage}[true]{%
1994   \Hy@boolkey{linktocpage}{#1}%
1995   \ifHy@linktocpage
1996     \let\Hy@linktoc\Hy@linktoc@page
1997   \else
1998     \let\Hy@linktoc\Hy@linktoc@section
1999   \fi
2000 }
2001 \chardef\Hy@linktoc@none=0 %
2002 \chardef\Hy@linktoc@section=1 %
2003 \chardef\Hy@linktoc@page=2 %
2004 \chardef\Hy@linktoc@all=3 %
2005 \ifHy@linktocpage
2006   \let\Hy@linktoc\Hy@linktoc@page
2007 \else
2008   \let\Hy@linktoc\Hy@linktoc@section
2009 \fi
2010 \define@key{Hyp}{linktoc}{%
2011   \@ifundefined{Hy@linktoc@#1}{%
2012     \Hy@Warning{%
2013       Unexpected value ‘#1’ of\MessageBreak
2014       option ‘linktoc’ instead of ‘none’,\MessageBreak
2015       ‘section’, ‘page’ or ‘all’%
2016     }%
2017   }{%
2018     \expandafter\let\expandafter\Hy@linktoc
2019     \csname Hy@linktoc@#1\endcsname
2020   }%
2021 }
2022 \define@key{Hyp}{extension}{\def\XR@ext{#1}}
2023 \let\XR@ext\relax
2024 \define@key{Hyp}{verbose}[true]{%
2025   \Hy@boolkey{verbose}{#1}%
2026 }

```

```

2027 \define@key{Hyp}{typexml}[true]{%
2028   \Hy@boolkey{typexml}{#1}%
2029 }

```

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.

```

2030 \define@key{Hyp}{raiselinks}[true]{%
2031   \Hy@boolkey{raiselinks}{#1}%
2032 }

```

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

```

2033 \def\Hy@setbreaklinks#1{%
2034   \csname breaklinks#1\endcsname
2035 }

2036 \def\Hy@breaklinks@unsupported{%
2037   \ifx\Hy@setbreaklinks@gobble
2038     \ifHy@breaklinks
2039       \Hy@WarningNoLine{%
2040         You have enabled option 'breaklinks'.\MessageBreak
2041         But driver '\Hy@driver.def' does not support this.\MessageBreak
2042         Expect trouble with the link areas of broken links%
2043       }%
2044     \fi
2045   \fi
2046 }

2047 \define@key{Hyp}{breaklinks}[true]{%
2048   \Hy@boolkey{breaklinks}{#1}%
2049   \let\Hy@setbreaklinks@gobble
2050 }

```

Determines whether an automatic anchor is put on each page

```

2051 \define@key{Hyp}{pageanchor}[true]{%
2052   \Hy@boolkey{pageanchor}{#1}%
2053 }

```

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.

```

2054 \define@key{Hyp}{plainpages}[true]{%
2055   \Hy@boolkey{plainpages}{#1}%
2056 }

```

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

```

2057 \define@key{Hyp}{naturalnames}[true]{%
2058   \Hy@boolkey{naturalnames}{#1}%
2059 }

```

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

```

2060 \define@key{Hyp}{hypertextnames}[true]{%
2061   \Hy@boolkey{hypertextnames}{#1}%
2062 }

```

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

```

2063 \define@key{Hyp}{nesting}[true]{%
2064   \Hy@boolkey{nesting}{#1}%
2065 }

2066 \define@key{Hyp}{unicode}[true]{%

```

```

2067 \Hy@boolkey{unicode}{#1}%
2068 \ifHy@unicode
2069   \def\HyPsd@pdfencoding{unicode}%
2070 \else
2071   \def\HyPsd@pdfencoding{pdfdoc}%
2072 \fi
2073 \HyPsd@LoadUnicode
2074 }
2075 \def\HyPsd@LoadUnicode{%
2076   \@ifundefined{T@PU}{%
2077     \input{puenc.def}%
2078     \HyLinguex@Restore
2079   }{}%
2080   \DeclareFontFamily{PU}{pdf}{}%
2081   \DeclareFontShape{PU}{pdf}{m}{n}{ <-> cmr10 }{}%
2082   \DeclareFontSubstitution{PU}{pdf}{m}{n}%
2083   \global\let\HyPsd@LoadUnicode\relax
2084 }
2085 \AtBeginDocument{%
2086   \ifx\HyPsd@LoadUnicode\relax
2087   \else
2088     \def\HyPsd@LoadUnicode{%
2089       \PackageError{hyperref}{%
2090         Unicode support for bookmarks is not available.\MessageBreak
2091         Activate unicode support by using one of the options\MessageBreak
2092         'unicode', 'pdfencoding=unicode', 'pdfencoding=auto'\MessageBreak
2093         in the preamble%
2094       }{@ehc
2095         \global\let\HyPsd@LoadUnicode\relax
2096         \global\Hy@unicodedefalse
2097         \global\let\Hy@unicodetrue\Hy@unicodedefalse
2098       }%
2099     \fi
2100 }
2101 \define@key{Hyp}{pdfencoding}{%
2102   \edef\HyPsd@temp{#1}%
2103   \ifx\HyPsd@temp\HyPsd@pdfencoding@pdfdoc
2104     \let\HyPsd@pdfencoding\HyPsd@temp
2105     \Hy@unicodedefalse
2106   \else
2107     \ifcase\ifx\HyPsd@temp\HyPsd@pdfencoding@unicode
2108       \z@
2109     \else
2110       \ifx\HyPsd@temp\HyPsd@pdfencoding@auto
2111         \z@
2112       \else
2113         \@ne
2114       \fi
2115     \fi
2116     \let\HyPsd@pdfencoding\HyPsd@temp
2117     \hypersetup{unicode}%
2118     \ifHy@unicode
2119       \def\HyPsd@pdfencoding{#1}%
2120       \ifx\HyPsd@pdfencoding\HyPsd@pdfencoding@auto
2121         \HyPsd@LoadStringEncoding
2122       \fi
2123     \else

```

```

2124      \Hy@Warning{Cannot switch to unicode bookmarks}%
2125      \let\HyPsd@pdfencoding\HyPsd@pdfencoding@pdfdoc
2126      \fi
2127    \else
2128      \onelevel@sanitize\HyPsd@temp
2129      \Hy@Warning{%
2130        Values of option 'pdfencoding':\MessageBreak
2131        'pdfdoc', 'unicode', 'auto'.\MessageBreak
2132        Ignoring unknown value '\HyPsd@temp'%
2133      }%
2134      \fi
2135    \fi
2136  }
2137  \def\HyPsd@pdfencoding@auto{auto}
2138  \def\HyPsd@pdfencoding@pdfdoc{pdfdoc}
2139  \def\HyPsd@pdfencoding@unicode{unicode}
2140  \let\HyPsd@pdfencoding\Hy@pdfencoding@pdfdoc
2141  \def\HyPsd@LoadStringEnc{%
2142    \RequirePackage{stringenc}[2007/06/14]%
2143    \let\HyPsd@LoadStringEnc\relax
2144  }
2145  \AtBeginDocument{%
2146    \ifpackageloaded{stringenc}{%
2147      \let\HyPsd@LoadStringEnc\relax
2148    }{%
2149      \def\HyPsd@LoadStringEnc{%
2150        \Hy@WarningNoLine{%
2151          Missing package 'stringenc'. Use 'pdfencoding=auto'\MessageBreak
2152          in the preamble or load the package there%
2153        }%
2154      }%
2155    }%
2156  }

2157  \newif\ifHy@setpdfversion
2158  \define@key{Hyp}{pdfversion}{%
2159    \ifundefined{Hy@pdfversion@#1}{%
2160      \PackageWarning{hyperref}{%
2161        Unsupported PDF version '#1'.\MessageBreak
2162        Valid values: 1.2 until 1.9%
2163      }%
2164    }{%
2165      \Hy@setpdfversiontrue
2166      \edef\Hy@pdfversion{\@nameuse{Hy@pdfversion@#1}}%
2167    }%
2168  }
2169  \@namedef{Hy@pdfversion@1.2}{2}%
2170  \@namedef{Hy@pdfversion@1.3}{3}%
2171  \@namedef{Hy@pdfversion@1.4}{4}%
2172  \@namedef{Hy@pdfversion@1.5}{5}%
2173  \@namedef{Hy@pdfversion@1.6}{6}%
2174  \@namedef{Hy@pdfversion@1.7}{7}%
2175  \@namedef{Hy@pdfversion@1.8}{8}%
2176  \@namedef{Hy@pdfversion@1.9}{9}%
2177  \def\Hy@pdfversion{2}

```

## 10 Options for different drivers

```

2178 \define@key{Hyp}{hyperref}[true]{}
2179 \define@key{Hyp}{tex4ht}[true]{%
2180   \Hy@texhttrue
2181   \setkeys{Hyp}{colorlinks=true}%
2182   \def\BeforeTeXIVht{\usepackage{color}}%
2183   \def\Hy@driver{htex4ht}%
2184   \def\MaybeStopEarly{%
2185     \typeout{Hyperref stopped early}%
2186     \AfterBeginDocument{%
2187       \PDF@FinishDoc
2188       \gdef\PDF@FinishDoc{}}%
2189   }%
2190   \endinput
2191 }%
2192 }
2193 \define@key{Hyp}{pdftex}[true]{%
2194   \def\Hy@driver{hpdftex}%
2195 }
2196 \define@key{Hyp}{nativepdf}[true]{%
2197   \def\Hy@driver{hdvips}%
2198 }
2199 \define@key{Hyp}{dvipdfm}[true]{%
2200   \def\Hy@driver{hdvipdfm}%
2201 }
2202 \define@key{Hyp}{dvipdfmx}[true]{%
2203   \def\Hy@driver{hdvipdfm}%
2204 }
2205 \define@key{Hyp}{dvipdfmx-outline-open}[true]{%
2206   \expandafter\ifx\csname if#1\expandafter\endcsname
2207     \csname iftrue\endcsname
2208     \chardef\SpecialDvipdfmxOutlineOpen@ne
2209   \else
2210     \chardef\SpecialDvipdfmxOutlineOpen@z@
2211   \fi
2212 }
2213 \define@key{Hyp}{xetex}[true]{%
2214   \def\Hy@driver{hxetex}%
2215 }
2216 \define@key{Hyp}{pdfmark}[true]{%
2217   \def\Hy@driver{hdvips}%
2218 }
2219 \define@key{Hyp}{dvips}[true]{%
2220   \def\Hy@driver{hdvips}%
2221 }
2222 \define@key{Hyp}{hypertex}[true]{%
2223   \def\Hy@driver{hypertex}%
2224 }
2225 \let\Hy@MaybeStopNow\relax
2226 \define@key{Hyp}{vtex}[true]{%
2227   \begingroup\expandafter\expandafter\expandafter\endgroup
2228   \expandafter\ifx\csname OpMode\endcsname\relax
2229     \@latex@error{Non-VTeX processor}{}%
2230     \global\let\Hy@MaybeStopNow\endinput
2231   \endinput
2232   \else
2233     \ifnum 0\ifnum\OpMode<1 1\fi \ifnum\OpMode>3 1\fi =0 %
2234     \def\Hy@driver{hvtex}%

```



```

2235 \else
2236 \ifnum\OpMode=10\relax
2237 \def\Hy@driver{hvtexhtm}%
2238 \def\MaybeStopEarly{%
2239 \typeout{Hyperref stopped early}%
2240 \AfterBeginDocument{%
2241 \PDF@FinishDoc
2242 \gdef\PDF@FinishDoc{}%
2243 }%
2244 \endinput
2245 }%
2246 \else
2247 \@latex@error{Mode (\the\OpMode) has no hyperref driver}{}%
2248 \global\let\Hy@MaybeStopNow\endinput
2249 \endinput
2250 \fi
2251 \fi
2252 \fi
2253 }
2254 \define@key{Hyp}{vtexpdfmark}[true]{%
2255 \begingroup\expandafter\expandafter\expandafter\endgroup
2256 \expandafter\ifx\csname OpMode\endcsname\relax
2257 \@latex@error{Non-VTeX processor}{}%
2258 \let\Hy@MaybeStopNow\endinput
2259 \endinput
2260 \else
2261 \ifnum 0\ifnum\OpMode<1 1\fi \ifnum\OpMode>3 1\fi =0 %
2262 \def\Hy@driver{hvtexmrk}%
2263 \else
2264 \@latex@error{Mode (\the\OpMode) has no hyperref driver}{}%
2265 \let\Hy@MaybeStopNow\endinput
2266 \endinput
2267 \fi
2268 \fi
2269 }
2270 \define@key{Hyp}{dviwindo}[true]{%
2271 \def\Hy@driver{hdviwind}%
2272 \setkeys{Hyp}{colorlinks}%
2273 \PassOptionsToPackage{dviwindo}{color}%
2274 }
2275 \define@key{Hyp}{dvipsone}[true]{%
2276 \def\Hy@driver{hdvipson}%
2277 }
2278 \define@key{Hyp}{textures}[true]{%
2279 \def\Hy@driver{htexture}%
2280 }
2281 \define@key{Hyp}{latex2html}[true]{%
2282 \AtBeginDocument{\@@latextohtmlX}%
2283 }

```

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

```

2284 \define@key{Hyp}{ps2pdf}[true]{%
2285 \def\Hy@driver{hdvips}%
2286 \providecommand*\@pdfborder{0 0 1}%
2287 }

```

## 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.

```
2288 \define@key{Hyp}{hyperfigures}[true]{%
2289   \Hy@boolkey[hyperfigures]{figures}{#1}%
2290 }
```

The automatic footnote linking can be disabled by option hyperfootnotes.

```
2291 \define@key{Hyp}{hyperfootnotes}[true]{%
2292   \Hy@boolkey{hyperfootnotes}{#1}%
2293 }
```

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

```
2294 \def\back@none{none}
2295 \def\back@section{section}
2296 \def\back@page{page}
2297 \def\back@slide{slide}
2298 \define@key{Hyp}{backref}[section]{%
2299   \lowercase{\def\Hy@tempa{#1}}%
2300   \ifx\Hy@tempa\@empty
2301     \let\Hy@tempa\back@section
2302   \fi
2303   \ifx\Hy@tempa\Hy@false
2304     \let\Hy@tempa\back@none
2305   \fi
2306   \ifx\Hy@tempa\back@slide
2307     \let\Hy@tempa\back@section
2308   \fi
2309   \ifx\Hy@tempa\back@page
2310     \PassOptionsToPackage{hyperpageref}{backref}%
2311     \Hy@backreftrue
2312   \else
2313     \ifx\Hy@tempa\back@section
2314       \PassOptionsToPackage{hyperref}{backref}%
2315       \Hy@backreftrue
2316     \else
2317       \ifx\Hy@tempa\back@none
2318         \Hy@backreffalse
2319       \else
2320         \Hy@WarnOptionValue{#1}{backref}{%
2321           'section', 'slide', 'page', 'none', \MessageBreak
2322           or 'false'}%
2323       \fi
2324     \fi
2325   \fi
2326 }
2327 \define@key{Hyp}{pagebackref}[true]{%
2328   \edef\Hy@tempa{#1}%
2329   \lowercase\expandafter{%
2330     \expandafter\def\expandafter\Hy@tempa\expandafter{\Hy@tempa}%
2331   }%
2332   \ifx\Hy@tempa\@empty
2333     \let\Hy@tempa\Hy@true
2334   \fi
2335   \ifx\Hy@tempa\Hy@true
2336     \PassOptionsToPackage{hyperpageref}{backref}%
2337     \Hy@backreftrue
```

```

2338 \else
2339     \ifx\Hy@tempa\Hy@false
2340     \Hy@backreffalse
2341 \else
2342     \Hy@WarnOptionValue{#1}{pagebackref}{‘true’ or ‘false’}%
2343 \fi
2344 \fi
2345 }

```

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

```

2346 \define@key{Hyp}{hyperindex}[true]{%
2347     \Hy@boolkey{hyperindex}{#1}%
2348 }

```

Configuration of encap char.

```

2349 \define@key{Hyp}{encap}[\l]{%
2350     \def\HyInd@EncapChar{#1}%
2351 }

```

## 12 Language options

The `\autoref` feature depends on the language.

```

2352 \def\HyLang@afrikaans{%
2353     \def\equationautorefname{Vergelyking}%
2354     \def\footnoteautorefname{Voetnota}%
2355     \def\itemautorefname{Item}%
2356     \def\figureautorefname{Figuur}%
2357     \def\tableautorefname{Tabel}%
2358     \def\partautorefname{Deel}%
2359     \def\appendixautorefname{Bylae}%
2360     \def\chapterautorefname{Hoofstuk}%
2361     \def\sectionautorefname{Afdeling}%
2362     \def\subsectionautorefname{Subafdeling}%
2363     \def\subsubsectionautorefname{Subsubafdeling}%
2364     \def\paragraphautorefname{Paragraaf}%
2365     \def\subparagraphautorefname{Subparagraaf}%
2366     \def\FancyVerbLineautorefname{Lyn}%
2367     \def\theoremautorefname{Teorema}%
2368     \def\pageautorefname{Bladsy}%
2369 }
2370 \def\HyLang@english{%
2371     \def\equationautorefname{Equation}%
2372     \def\footnoteautorefname{footnote}%
2373     \def\itemautorefname{item}%
2374     \def\figureautorefname{Figure}%
2375     \def\tableautorefname{Table}%
2376     \def\partautorefname{Part}%
2377     \def\appendixautorefname{Appendix}%
2378     \def\chapterautorefname{chapter}%
2379     \def\sectionautorefname{section}%
2380     \def\subsectionautorefname{subsection}%
2381     \def\subsubsectionautorefname{subsubsection}%
2382     \def\paragraphautorefname{paragraph}%
2383     \def\subparagraphautorefname{subparagraph}%
2384     \def\FancyVerbLineautorefname{line}%
2385     \def\theoremautorefname{Theorem}%

```

```

2386 \def\pageautorefname{page}%
2387 }
2388 \def\HyLang@french{%
2389 \def\equationautorefname{\`Equation}%
2390 \def\footnoteautorefname{note}%
2391 \def\itemautorefname{item}%
2392 \def\figureautorefname{Figure}%
2393 \def\tableautorefname{Tableau}%
2394 \def\partautorefname{Partie}%
2395 \def\appendixautorefname{Appendice}%
2396 \def\chapterautorefname{chapitre}%
2397 \def\sectionautorefname{section}%
2398 \def\subsectionautorefname{sous-section}%
2399 \def\subsubsectionautorefname{sous-sous-section}%
2400 \def\paragraphautorefname{paragraphe}%
2401 \def\subparagraphautorefname{sous-paragraphe}%
2402 \def\FancyVerbLineautorefname{ligne}%
2403 \def\theoremautorefname{Th\'eor\'eme}%
2404 \def\pageautorefname{page}%
2405 }
2406 \def\HyLang@german{%
2407 \def\equationautorefname{Gleichung}%
2408 \def\footnoteautorefname{Fu\ss note}%
2409 \def\itemautorefname{Punkt}%
2410 \def\figureautorefname{Abbildung}%
2411 \def\tableautorefname{Tabelle}%
2412 \def\partautorefname{Teil}%
2413 \def\appendixautorefname{Anhang}%
2414 \def\chapterautorefname{Kapitel}%
2415 \def\sectionautorefname{Abschnitt}%
2416 \def\subsectionautorefname{Unterabschnitt}%
2417 \def\subsubsectionautorefname{Unterunterabschnitt}%
2418 \def\paragraphautorefname{Absatz}%
2419 \def\subparagraphautorefname{Unterabsatz}%
2420 \def\FancyVerbLineautorefname{Zeile}%
2421 \def\theoremautorefname{Theorem}%
2422 \def\pageautorefname{Seite}%
2423 }
2424 \def\HyLang@italian{%
2425 \def\equationautorefname{Equazione}%
2426 \def\footnoteautorefname{nota}%
2427 \def\itemautorefname{punto}%
2428 \def\figureautorefname{Figura}%
2429 \def\tableautorefname{Tabella}%
2430 \def\partautorefname{Parte}%
2431 \def\appendixautorefname{Appendice}%
2432 \def\chapterautorefname{Capitolo}%
2433 \def\sectionautorefname{sezione}%
2434 \def\subsectionautorefname{sottosezione}%
2435 \def\subsubsectionautorefname{sottosottosezione}%
2436 \def\paragraphautorefname{paragrafo}%
2437 \def\subparagraphautorefname{sottoparagrafo}%
2438 \def\FancyVerbLineautorefname{linea}%
2439 \def\theoremautorefname{Teorema}%
2440 \def\pageautorefname{Pag.\@}%
2441 }
2442 \def\HyLang@magyar{%

```

```

2443 \def\equationautorefname{Egyenlet}%
2444 \def\footnoteautorefname{l\'abjegyzet}%
2445 \def\itemautorefname{Elem}%
2446 \def\figureautorefname{\'Abra}%
2447 \def\tableautorefname{T\'abl\'azat}%
2448 \def\partautorefname{R\'esz}%
2449 \def\appendixautorefname{F\'uggel\'ek}%
2450 \def\chapterautorefname{fejezet}%
2451 \def\sectionautorefname{szakasz}%
2452 \def\subsectionautorefname{alszakasz}%
2453 \def\subsubsectionautorefname{alalszakasz}%
2454 \def\paragraphautorefname{bekezd\'es}%
2455 \def\subparagraphautorefname{albekezd\'es}%
2456 \def\FancyVerbLineautorefname{sor}%
2457 \def\theoremautorefname{T\'etel}%
2458 \def\pageautorefname{oldal}%
2459 }
2460 \def\HyLang@portuges{%
2461 \def\equationautorefname{Equa\c c\~ao}%
2462 \def\footnoteautorefname{Nota de rodap\'e}%
2463 \def\itemautorefname{Item}%
2464 \def\figureautorefname{Figura}%
2465 \def\tableautorefname{Tabela}%
2466 \def\partautorefname{Parte}%
2467 \def\appendixautorefname{Ap\'endice}%
2468 \def\chapterautorefname{Cap\'itulo}%
2469 \def\sectionautorefname{Se\c c\~ao}%
2470 \def\subsectionautorefname{Subse\c c\~ao}%
2471 \def\subsubsectionautorefname{Subsubse\c c\~ao}%
2472 \def\paragraphautorefname{par\'agrafo}%
2473 \def\subparagraphautorefname{subpar\'agrafo}%
2474 \def\FancyVerbLineautorefname{linha}%
2475 \def\theoremautorefname{Teorema}%
2476 \def\pageautorefname{P\'agina}%
2477 }

```

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`.

```

2478 \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`?

```

2479 \def\equationautorefname{\cyr\cyrv\cyrery\cyrri}%

```

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

```

2480 % \def\equationautorefname{%
2481 % \cyr\cyrv\cyrery\cyrri\cyrz\cyrh\cyrz\cyrn\cyrri\cyrre
2482 % }%

```

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

```
2483 \def\footnoteautorefname{%
2484 \cyr\cyrp\cyro\cyrd\cyrs\cyrt\cyrr.\ \cyrp\cyrr\cyri\cyrm.%
2485 }%
```

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}”

```
2486 % \def\footnoteautorefname{%
2487 % \cyr\cyrp\cyro\cyrd\cyrs\cyrt\cyrr\cyro\cyrch\cyrn\cyro\cyre\ %
2488 % \cyrp\cyrr\cyri\cyrm\cyre\cyrch\cyra\cyrn\cyri\cyre
2489 % }%
```

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

```
2490 % \def\Nomfootnoteautorefname{\cyr\cyrs\cyrn\cyro\cyrs\cyrk\cyra}%
2491 % \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.

```
2492 \def\itemautorefname{\cyr\cyrp.}%
2493 % \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.

```
2494 \def\figureautorefname{\cyr\cyrr\cyri\cyrs.}%
2495 \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.

```
2496 \def\partautorefname{\cyr\cyrch.}%
2497 \def\chapterautorefname{\cyr\cyrg\cyrl.}%
2498 \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.

```
2499 \def\appendixautorefname{\cyr\cyrp\cyrr\cyri\cyrl.}%
2500 % \def\appendixautorefname{%
2501 % \cyr\cyrp\cyrr\cyri\cyrl\cyro\cyrrzh\cyre\cyrn\cyri\cyre
2502 % }%
```

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.

```
2503 \def\subsectionautorefname{\cyr\cyrr\cyra\cyrz\cyrd.}%
2504 \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.

```
2505 \def\paragraphautorefname{\cyr\cyrp.}%
2506 \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.

```
2507 % \def\paragraphautorefname{\cyr\cyrp\cyru\cyrn\cyrk\cyrt}%
2508 % \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.

```
2509 \def\FancyVerbLineautorefname{\cyr\cyrs\cyrt\cyrr.}%
```

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

```
2510 % \def\NomFancyVerbLineautorefname{\cyr\cyrs\cyrt\cyrr\cyro\cyrk\cyra}%
```

```
2511 % \def\AccFancyVerbLineautorefname{\cyr\cyrs\cyrt\cyrr\cyro\cyrk\cyru}%
```

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

```
2512 % \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 ...

```
2513 \def\theoremautorefname{\cyr\cyrt\cyre\cyro\cyrr.}%
```

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

```
2514 % \def\Nomtheoremautorefname{\cyr\cyrt\cyre\cyro\cyrr\cyre\cyrm\cyra}%
```

```
2515 % \def\Acctheoremautorefname{\cyr\cyrt\cyre\cyro\cyrr\cyre\cyrm\cyru}%
```

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

```
2516 \def\pageautorefname{\cyr\cyrs.}%
```

```
2517 }
```

```
2518 \def\HyLang@spanish{%
```

```
2519 \def\equationautorefname{Ecuaci\'on}%
```

```
2520 \def\footnoteautorefname{Nota a pie de p\'agina}%
```

```
2521 \def\itemautorefname{Elemento}%
```

```
2522 \def\figureautorefname{Figura}%
```

```
2523 \def\tableautorefname{Tabla}%
```

```
2524 \def\partautorefname{Parte}%
```

```
2525 \def\appendixautorefname{Ap\'endice}%
```

```
2526 \def\chapterautorefname{Cap\'itulo}%
```

```
2527 \def\sectionautorefname{Secci\'on}%
```

```
2528 \def\subsectionautorefname{Subsecci\'on}%
```

```
2529 \def\subsubsectionautorefname{Subsubsecci\'on}%
```

```
2530 \def\paragraphautorefname{P\'arrafo}%
```

```
2531 \def\subparagraphautorefname{Subp\'arrafo}%
```

```
2532 \def\FancyVerbLineautorefname{L\'inea}%
```

```
2533 \def\theoremautorefname{Teorema}%
```

```
2534 \def\pageautorefname{P\'agina}%
```

```
2535 }
```

```
2536 \def\HyLang@vietnamese{%
```

```
2537 \def\equationautorefname{Ph\uhorn{}\ohorn{}ng tr\`inh}%
```

```
2538 \def\footnoteautorefname{Ch\`u th\`ich}%
```

```
2539 \def\itemautorefname{m\`d\`u\`c}%
```

```
2540 \def\figureautorefname{H\`inh}%
```

```
2541 \def\tableautorefname{B\`h\`a\`ng}%
```

```
2542 \def\partautorefname{Ph\`acircumflex{}n}%
```

```
2543 \def\appendixautorefname{Ph\`d\`u\`l\`d\`u\`c}%
```

```
2544 \def\chapterautorefname{ch\uhorn{}\ohorn{}ng}%
```

```
2545 \def\sectionautorefname{m\`d\`u\`c}%
```

```
2546 \def\subsectionautorefname{m\`d\`u\`c}%
```

```
2547 \def\subsubsectionautorefname{m\`d\`u\`c}%
```

```
2548 \def\paragraphautorefname{\dj{}o\`d\`a\`n}%
```

```

2549 \def\subparagraphautorefname{\dj{}o{d{a}n}%
2550 \def\FancyVerbLineautorefname{d\'ong}%
2551 \def\theoremautorefname{\DJ{}{d{i}nh 1\'y}%
2552 \def\pageautorefname{Trang}%
2553 }

```

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

```

2554 \def\HyLang@addto#1#2{%
2555   #2%
2556   \@temptokena{#2}%
2557   \ifx#1\relax
2558     \let#1\@empty
2559   \fi
2560   \ifx#1\undefined
2561     \edef#1{\the\@temptokena}%
2562   \else
2563     \toks@\expandafter{#1}%
2564     \edef#1{\the\toks@\the\@temptokena}%
2565   \fi
2566   \@temptokena{}\toks@\@temptokena
2567 }

2568 \def\HyLang@DeclareLang#1#2#3{%
2569   \begingroup
2570     \edef\x##1##2{%
2571       \noexpand\ifx##2\relax
2572         \errmessage{No definitions for language #2' found!}%
2573       \noexpand\fi
2574     \endgroup
2575     \noexpand\define@key{Hyp}{#1}[]{%
2576       \noexpand\HyLang@addto{\noexpand##1}{\noexpand##2}%
2577       #3%
2578     }%
2579   }%
2580   \expandafter\x\csname extras#1\expandafter\endcsname
2581     \csname HyLang@#2\endcsname
2582 }

2583 \HyLang@DeclareLang{english}{english}{}
2584 \HyLang@DeclareLang{UKenglish}{english}{}
2585 \HyLang@DeclareLang{british}{english}{}
2586 \HyLang@DeclareLang{USenglish}{english}{}
2587 \HyLang@DeclareLang{american}{english}{}
2588 \HyLang@DeclareLang{german}{german}{}
2589 \HyLang@DeclareLang{austrian}{german}{}
2590 \HyLang@DeclareLang{ngerman}{german}{}
2591 \HyLang@DeclareLang{naustrian}{german}{}
2592 \HyLang@DeclareLang{russian}{russian}{\noexpand\hypersetup{unicode}}
2593 \HyLang@DeclareLang{brazil}{portuges}{}
2594 \HyLang@DeclareLang{brazilian}{portuges}{}
2595 \HyLang@DeclareLang{portuguese}{portuges}{}
2596 \HyLang@DeclareLang{spanish}{spanish}{}
2597 \HyLang@DeclareLang{afrikaans}{afrikaans}{}
2598 \HyLang@DeclareLang{french}{french}{}
2599 \HyLang@DeclareLang{frenchb}{french}{}
2600 \HyLang@DeclareLang{francais}{french}{}
2601 \HyLang@DeclareLang{acadian}{french}{}
2602 \HyLang@DeclareLang{canadien}{french}{}

```



```

2603 \HyLang@DeclareLang{italian}{italian}{}
2604 \HyLang@DeclareLang{magyar}{magyar}{}
2605 \HyLang@DeclareLang{hungarian}{magyar}{}

```

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

```

2606 \define@key{Hyp}{vietnamese}[]{}%
2607   \HyLang@addto\extrasvietnamese\HyLang@vietnamese
2608   \AtEndOfPackage{%
2609     \ifundefined{T@PU}{}{}%
2610     \input{puvnenc.def}%
2611   }%
2612 }%
2613 }
2614 \define@key{Hyp}{vietnam}[]{}%
2615   \HyLang@addto\extravietnam\HyLang@vietnamese
2616   \AtEndOfPackage{%
2617     \ifundefined{T@PU}{}{}%
2618     \input{puvnenc.def}%
2619   }%
2620 }%
2621 }

```

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

```

2622 \define@key{Hyp}{arabic}[]{}%
2623   \AtEndOfPackage{%
2624     \ifundefined{T@PU}{}{}%
2625     \input{puarenc.def}%
2626   }%
2627 }%
2628 }

```

## 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.

```

2629 \define@key{Hyp}{colorlinks}[true]{}%
2630   \Hy@boolkey{colorlinks}{#1}%
2631 }
2632 \define@key{Hyp}{ocgcolorlinks}[true]{}%
2633   \Hy@boolkey{ocgcolorlinks}{#1}%
2634 }
2635 \AtBeginDocument{%
2636   \begingroup
2637     \ifundefined{OBJ@OCG@view}{}%
2638     \ifHy@ocgcolorlinks
2639       \Hy@Warning{%
2640         Driver does not support ‘ocgcolorlinks’,\MessageBreak
2641         using ‘colorlinks’ instead%
2642       }%
2643     \fi
2644   }{}%
2645 \endgroup
2646 }
2647 \define@key{Hyp}{frenchlinks}[true]{}%
2648   \Hy@boolkey{frenchlinks}{#1}%
2649 }

```

## 14 Bookmarking

```

2650 \begingroup\expandafter\expandafter\expandafter\endgroup
2651 \expandafter\ifx\csname chapter\endcsname\relax
2652   \def\toclevel@part{0}%
2653 \else
2654   \def\toclevel@part{-1}%
2655 \fi
2656 \def\toclevel@chapter{0}
2657 \def\toclevel@section{1}
2658 \def\toclevel@subsection{2}
2659 \def\toclevel@subsubsection{3}
2660 \def\toclevel@paragraph{4}
2661 \def\toclevel@subparagraph{5}
2662 \def\toclevel@figure{0}
2663 \def\toclevel@table{0}
2664 \@ifpackageloaded{listings}{%
2665   \providecommand*\theHlstlisting{\thelstlisting}%
2666   \providecommand*\toclevel@lstlisting{0}%
2667 }{}
2668 \@ifpackageloaded{listing}{%
2669   \providecommand*\theHlisting{\thelisting}%
2670   \providecommand*\toclevel@listing{0}%
2671 }{}

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

2675 \define@key{Hyp}{bookmarksopen}[true]{%
2676   \Hy@boolkey{bookmarksopen}{#1}%
2677 }

```

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.

```

2678 \let\Hy@bookmarksdepth\c@tocdepth
2679 \define@key{Hyp}{bookmarksdepth}[]{%
2680   \begingroup
2681     \edef\x{#1}%
2682     \ifx\x\empty
2683       \global\let\Hy@bookmarksdepth\c@tocdepth
2684     \else
2685       \@ifundefined{toclevel@\x}{%
2686         \@onelevel@sanitize\x
2687         \edef\y{\expandafter\@car\x\@nil}%
2688         \ifcase 0\expandafter\ifx\y-1\fi
2689           \expandafter\ifnum\expandafter'\y>47 %
2690             \expandafter\ifnum\expandafter'\y<58 1\fi\fi\relax
2691           \Hy@Warning{Unknown document division name (\x)}%
2692         \else
2693           \setbox\z@=\hbox{%

```

```

2694         \count@=\x
2695         \xdef\Hy@bookmarksdepth{\the\count@}%
2696     }%
2697     \fi
2698 }{%
2699     \setbox\z@=\hbox{%
2700         \count@=\csname toclevel@\x\endcsname
2701         \xdef\Hy@bookmarksdepth{\the\count@}%
2702     }%
2703 }%
2704 \fi
2705 \endgroup
2706 }

```

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

```

2707 \define@key{Hyp}{bookmarksopenlevel}{%
2708   \def\@bookmarksopenlevel{#1}%
2709 }
2710 \def\@bookmarksopenlevel{\maxdimen}
2711 % ‘bookmarkstype’ to specify which ‘toc’ file to mimic
2712 \define@key{Hyp}{bookmarkstype}{%
2713   \def\Hy@bookmarkstype{#1}%
2714 }
2715 \def\Hy@bookmarkstype{toc}

```

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

```

2716 \define@key{Hyp}{bookmarksnumbered}[true]{%
2717   \Hy@boolkey{bookmarksnumbered}{#1}%
2718 }

```

Option CJKbookmarks enables the patch for CJK bookmarks.

```

2719 \define@key{Hyp}{CJKbookmarks}[true]{%
2720   \Hy@boolkey{CJKbookmarks}{#1}%
2721 }

2722 \def\Hy@temp#1{%
2723   \expandafter\Hy@@temp\csname @#1color\endcsname{#1}%
2724 }
2725 \def\Hy@@temp#1#2#3{%
2726   \define@key{Hyp}{#2color}{%
2727     \HyColor@HyperrefColor{##1}{#1}%
2728   }%
2729   \def#1{#3}%
2730 }

2731 \Hy@temp{link}{red}
2732 \Hy@temp{anchor}{black}
2733 \Hy@temp{cite}{green}
2734 \Hy@temp{file}{cyan}
2735 \Hy@temp{url}{magenta}
2736 \Hy@temp{menu}{red}
2737 \Hy@temp{run}{\@filecolor}
2738 \define@key{Hyp}{pagecolor}{%
2739   \Hy@WarningPageColor
2740 }
2741 \def\Hy@WarningPageColor{%
2742   \Hy@WarningNoLine{Option ‘pagecolor’ is not available anymore}%
2743   \global\let\Hy@WarningPageColor\relax
2744 }

```

```

2745 \def\hyperbaseurl#1{\def\@baseurl{#1}}
2746 \define@key{Hyp}{baseurl}{\hyperbaseurl{#1}}
2747 \let\@baseurl\@empty
2748 \def\hyperlinkfileprefix#1{\def\Hy@linkfileprefix{#1}}
2749 \define@key{Hyp}{linkfileprefix}{\hyperlinkfileprefix{#1}}
2750 \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.

```

2751 \let\@pdfpagetransition\relax
2752 \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.

```

2753 \let\@pdfpageduration\relax
2754 \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.

```

2755 \newif\ifHy@useHidKey
2756 \Hy@useHidKeyfalse
2757 \define@key{Hyp}{pdfpagehidden}[true]{%
2758   \Hy@boolkey{pdfpagehidden}{#1}%
2759   \ifHy@pdfpagehidden
2760     \global\Hy@useHidKeytrue
2761   \fi
2762 }

```

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).

```

2763 \def\Hy@ColorList{cite,file,link,menu,run,url}
2764 \@for\Hy@temp:=\Hy@ColorList\do{%
2765   \edef\Hy@temp{%
2766     \noexpand\define@key{Hyp}{\Hy@temp bordercolor}{%
2767       \noexpand\HyColor@HyperrefBorderColor
2768       {##1}%
2769       \expandafter\noexpand\csname @\Hy@temp bordercolor\endcsname
2770       {hyperref}%
2771       {\Hy@temp bordercolor}%
2772     }%
2773   }%
2774   \Hy@temp
2775 }
2776 \define@key{Hyp}{pagebordercolor}{%
2777   \Hy@WarningPageBorderColor

```

```

2778 }
2779 \def\Hy@WarningPageBorderColor{%
2780   \Hy@WarningNoLine{Option 'pagebordercolor' is not available anymore}%
2781   \global\let\Hy@WarningPageBorderColor\relax
2782 }

2783 \define@key{Hyp}{pdfhighlight}{\def\@pdfhighlight{#1}}
2784 \Hy@DefNameKey{pdfhighlight}{%
2785   \do{/I}{Invert}%
2786   \do{/N}{None}%
2787   \do{/O}{Outline}%
2788   \do{/P}{Push}%
2789 }
2790 \define@key{Hyp}{pdfborder}{\def\@pdfborder{#1}}
2791 \define@key{Hyp}{pdfborderstyle}{\def\@pdfborderstyle{#1}}
2792 \def\Hy@setpdfborder{%
2793   \ifx\@pdfborder\@empty
2794   \else
2795     /Border[\@pdfborder]%
2796   \fi
2797   \ifx\@pdfborderstyle\@empty
2798   \else
2799     /BS<<\@pdfborderstyle>>%
2800   \fi
2801 }
2802 \Hy@DefNameKey{pdfpagemode}{%
2803   \do{UseNone}{}%
2804   \do{UseOutlines}{}%
2805   \do{UseThumbs}{}%
2806   \do{FullScreen}{}%
2807   \do{UseOC}{PDF 1.5}%
2808   \do{UseAttachments}{PDF 1.6}%
2809 }
2810 \Hy@DefNameKey{pdfnonfullscreenpagemode}{%
2811   \do{UseNone}{}%
2812   \do{UseOutlines}{}%
2813   \do{UseThumbs}{}%
2814   \do{FullScreen}{}%
2815   \do{UseOC}{PDF 1.5}%
2816   \do{UseAttachments}{PDF 1.6}%
2817 }
2818 \Hy@DefNameKey{pdfdirection}{%
2819   \do{L2R}{Left to right}%
2820   \do{R2L}{Right to left}%
2821 }
2822 \Hy@DefNameKey{pdfviewarea}{%
2823   \do{MediaBox}{}%
2824   \do{CropBox}{}%
2825   \do{BleedBox}{}%
2826   \do{TrimBox}{}%
2827   \do{ArtBox}{}%
2828 }
2829 \Hy@DefNameKey{pdfviewclip}{%
2830   \do{MediaBox}{}%
2831   \do{CropBox}{}%
2832   \do{BleedBox}{}%
2833   \do{TrimBox}{}%
2834   \do{ArtBox}{}%

```

```

2835 }
2836 \Hy@DefNameKey{pdfprintarea}{%
2837   \do{MediaBox}{}%
2838   \do{CropBox}{}%
2839   \do{BleedBox}{}%
2840   \do{TrimBox}{}%
2841   \do{ArtBox}{}%
2842 }
2843 \Hy@DefNameKey{pdfprintclip}{%
2844   \do{MediaBox}{}%
2845   \do{CropBox}{}%
2846   \do{BleedBox}{}%
2847   \do{TrimBox}{}%
2848   \do{ArtBox}{}%
2849 }
2850 \Hy@DefNameKey{pdfprintscaling}{%
2851   \do{AppDefault}{}%
2852   \do{None}{}%
2853 }
2854 \Hy@DefNameKey{pdfduplex}{%
2855   \do{Simplex}{}%
2856   \do{DuplexFlipShortEdge}{}%
2857   \do{DuplexFlipLongEdge}{}%
2858 }
2859 \Hy@DefNameKey{pdfpicktraybypdfsize}{%
2860   \do{true}{}%
2861   \do{false}{}%
2862 }
2863 \define@key{Hyp}{pdfprintpagerange}{%
2864   \def\@pdfprintpagerange{#1}%
2865 }
2866 \Hy@DefNameKey{pdfnumcopies}{%
2867   \do{2}{two copies}%
2868   \do{3}{three copies}%
2869   \do{4}{four copies}%
2870   \do{5}{five copies}%
2871 }
2872 \define@key{Hyp}{pdfusetitle}[true]{%
2873   \Hy@boolkey[pdfusetitle]{usetitle}{#1}%
2874 }
2875 \def\HyXeTeX@CheckUnicode{%
2876   \ifxetex
2877     \ifHy@unicode
2878     \else
2879       \Hy@WarningNoLine{%
2880         XeTeX driver only supports unicode.\MessageBreak
2881         Enabling option 'unicode'%
2882       }%
2883       \setkeys{Hyp}{unicode}%
2884     \fi
2885   \else
2886     \let\HyXeTeX@CheckUnicode\relax
2887   \fi
2888 }
2889 \define@key{Hyp}{pdftitle}{%
2890   \HyXeTeX@CheckUnicode
2891   \pdfstringdef\@pdftitle{#1}%

```

```

2892 }
2893 \define@key{Hyp}{pdfauthor}{%
2894   \HyXeTeX@CheckUnicode
2895   \pdfstringdef\pdfauthor{#1}%
2896 }
2897 \define@key{Hyp}{pdfproducer}{%
2898   \HyXeTeX@CheckUnicode
2899   \pdfstringdef\pdfproducer{#1}%
2900 }
2901 \define@key{Hyp}{pdfcreator}{%
2902   \HyXeTeX@CheckUnicode
2903   \pdfstringdef\pdfcreator{#1}%
2904 }
2905 \define@key{Hyp}{pdfcreationdate}{%
2906   \beginngroup
2907     \Hy@unicodedefalse
2908     \pdfstringdef\pdfcreationdate{#1}%
2909   \endgroup
2910 }
2911 \define@key{Hyp}{pdfmoddate}{%
2912   \beginngroup
2913     \Hy@unicodedefalse
2914     \pdfstringdef\pdfmoddate{#1}%
2915   \endgroup
2916 }
2917 \define@key{Hyp}{pdfsubject}{%
2918   \HyXeTeX@CheckUnicode
2919   \pdfstringdef\pdfsubject{#1}%
2920 }
2921 \define@key{Hyp}{pdfkeywords}{%
2922   \HyXeTeX@CheckUnicode
2923   \pdfstringdef\pdfkeywords{#1}%
2924 }
2925 \define@key{Hyp}{pdfview}{\calculate@pdfview#1 \\\}
2926 \define@key{Hyp}{pdflinkmargin}{\setpdflinkmargin{#1}}
2927 \let\setpdflinkmargin@gobble
2928 \def\calculate@pdfview#1 #2\{%
2929   \def\@pdfview{#1}%
2930   \ifx\#2\%
2931     \def\@pdfviewparams{ -32768}%
2932   \else
2933     \def\@pdfviewparams{ #2}%
2934   \fi
2935 }
2936 \beginngroup\expandafter\expandafter\expandafter\endgroup
2937 \expandafter\ifx\csname numexpr\endcsname\relax
2938   \def\Hy@number#1{%
2939     \expandafter\@firstofone\expandafter{\number#1}%
2940   }%
2941 \else
2942   \def\Hy@number#1{%
2943     \the\numexpr#1\relax
2944   }%
2945 \fi
2946 \define@key{Hyp}{pdfstartpage}{%
2947   \ifx\#1\%
2948     \def\@pdfstartpage{}%

```

```

2949 \else
2950 \edef\@pdfstartpage{\Hy@number{#1}}%
2951 \fi
2952 }%
2953 \define@key{Hyp}{pdfstartview}{%
2954 \ifx\#1\%
2955 \def\@pdfstartview{%
2956 \else
2957 \hypercalcbpdef\@pdfstartview{ /#1 }%
2958 \fi
2959 }
2960 \define@key{Hyp}{pdfpagescrop}{\edef\@pdfpagescrop{#1}}
2961 \define@key{Hyp}{pdftoolbar}[true]{%
2962 \Hy@boolkey[pdftoolbar]{toolbar}{#1}%
2963 }
2964 \define@key{Hyp}{pdfmenubar}[true]{%
2965 \Hy@boolkey[pdfmenubar]{menubar}{#1}%
2966 }
2967 \define@key{Hyp}{pdfwindowui}[true]{%
2968 \Hy@boolkey[pdfwindowui]{windowui}{#1}%
2969 }
2970 \define@key{Hyp}{pdffitwindow}[true]{%
2971 \Hy@boolkey[pdffitwindow]{fitwindow}{#1}%
2972 }
2973 \define@key{Hyp}{pdfcenterwindow}[true]{%
2974 \Hy@boolkey[pdfcenterwindow]{centerwindow}{#1}%
2975 }
2976 \define@key{Hyp}{pdfdisplaydoctitle}[true]{%
2977 \Hy@boolkey[pdfdisplaydoctitle]{displaydoctitle}{#1}%
2978 }
2979 \define@key{Hyp}{pdfa}[true]{%
2980 \Hy@boolkey[pdfa]{#1}%
2981 }
2982 \define@key{Hyp}{pdfnewwindow}[true]{%
2983 \def\Hy@temp{#1}%
2984 \ifx\Hy@temp\@empty
2985 \Hy@newwindowsetfalse
2986 \else
2987 \Hy@newwindowsettrue
2988 \Hy@boolkey[pdfnewwindow]{newwindow}{#1}%
2989 \fi
2990 }
2991 \def\Hy@SetNewWindow{%
2992 \ifHy@newwindowset
2993 /NewWindow %
2994 \ifHy@newwindow true\else false\fi
2995 \fi
2996 }
2997 \Hy@DefNameKey[pdfpagelayout]{%
2998 \do{SinglePage}{}%
2999 \do{OneColumn}{}%
3000 \do{TwoColumnLeft}{}%
3001 \do{TwoColumnRight}{}%
3002 \do{TwoPageLeft}{PDF 1.5}%
3003 \do{TwoPageRight}{PDF 1.5}%
3004 }
3005 \define@key{Hyp}{pdflang}{%

```



```

3006 \def\@pdflang{#1}%
3007 }
3008 \define@key{Hyp}{pdfpagelabels}[true]{%
3009 \Hy@boolkey[pdfpagelabels]{pagelabels}{#1}%
3010 }
3011 \define@key{Hyp}{pdfescapeform}[true]{%
3012 \Hy@boolkey[pdfescapeform]{escapeform}{#1}%
3013 }

```

Default values:

```

3014 \def\@linkbordercolor{1 0 0}
3015 \def\@urlbordercolor{0 1 1}
3016 \def\@menubordercolor{1 0 0}
3017 \def\@filebordercolor{0 .5 .5}
3018 \def\@runbordercolor{0 .7 .7}
3019 \def\@citebordercolor{0 1 0}
3020 \def\@pdfhighlight{/I}
3021 \def\@pdftitle{}
3022 \def\@pdfauthor{}
3023 \let\@pdfproducer\relax
3024 \def\@pdfcreator{LaTeX with hyperref package}
3025 \def\@pdfcreationdate{}
3026 \def\@pdfmoddate{}
3027 \def\@pdfsubject{}
3028 \def\@pdfkeywords{}
3029 \def\@pdfpagescrop{}
3030 \def\@pdfstartview{/Fit }
3031 \def\@pdfstartpage{1}
3032 \def\@pdfprintpagerange{}
3033 \def\@pdflang{}
3034 \let\PDF@SetupDoc\@empty
3035 \let\PDF@FinishDoc\@empty
3036 \let\phantomsection\@empty
3037 \let\special@paper\@empty
3038 \def\HyperDestNameFilter#1{#1}
3039 \AtBeginDocument{%
3040 \begingroup
3041 \edef\x{\@ifundefined{stockheight}\paperheight\stockheight}%
3042 \dimen@=\x\relax
3043 \ifdim\dimen@>\z@
3044 \else
3045 \dimen@=11in\relax
3046 \Hy@WarningNoLine{%
3047 Height of page (\expandafter\string\x) %
3048 is invalid (\the\x),\MessageBreak
3049 using 11in%
3050 }%
3051 \fi
3052 \dimen@=0.99626401\dimen@
3053 \xdef\Hy@pageheight{\strip@pt\dimen@}%
3054 \endgroup
3055 }
3056 \def\HyInd@EncapChar{\\}
3057 \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.

```

3058 \let\hyper@normalise\ExecuteOptions
3059 \let\ExecuteOptions\hypersetup
3060 \Hy@RestoreCatcodes
3061 \InputIfFileExists{hyperref.cfg}{-}{-}
3062 \Hy@SetCatcodes
3063 \let\ExecuteOptions\hyper@normalise
3064 \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`.

```

3065 \RequirePackage{kvoptions}[2009/04/10]

```

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

```

3066 \@ifpackageloaded{tex4ht}{%
3067   \ifpackagewith{hyperref}{tex4ht}{-}{-}%
3068   \PassOptionsToPackage{tex4ht}{hyperref}%
3069 }%
3070 }{}

3071 \let\ReadBookmarks\relax
3072 \ProcessKeyvalOptions{Hyp}

```

After processing options.

```

3073 \AtBeginDocument{%
3074   \ifHy@draft
3075     \let\hyper@@anchor@gobble
3076     \gdef\hyper@link#1#2#3{#3}%
3077     \let\hyper@anchorstart@gobble
3078     \let\hyper@anchorend@empty
3079     \let\hyper@linkstart@gobbletwo
3080     \let\hyper@linkend@empty
3081     \def\hyper@linkurl#1#2{#1}%
3082     \def\hyper@linkfile#1#2#3{#1}%
3083     \def\hyper@link@[#1]#2#3{#1}%
3084     \def\Acrobatmenu#1#2{\leavevmode#2}%
3085     \let\PDF@SetupDoc@empty
3086     \let\PDF@FinishDoc@empty
3087     \let\@fifthoffive\@secondoftwo
3088     \let\@secondoffive\@secondoftwo
3089     \let\ReadBookmarks\relax
3090     \let\WriteBookmarks\relax
3091     \Hy@WarningNoLine{ draft mode on}%
3092   \fi
3093   \Hy@DisableOption{draft}%
3094   \Hy@DisableOption{nolinks}%
3095   \Hy@DisableOption{final}%
3096 }

```

## 15.1 PDF/A

```

3097 \Hy@DisableOption{pdfa}

3098 \ifHy@pdfa
3099   \setkeys{Hyp}{pdfversion=1.4}%
3100   \def\Hy@Acrobatmenu#1#2{%
3101     \leavevmode
3102     \begingroup

```

```

3103 \edef\x{#1}%
3104 \@onelevel@sanitize\x
3105 \ifx\x\Hy@NextPage
3106 \let\y=Y%
3107 \else
3108 \ifx\x\Hy@PrevPage
3109 \let\y=Y%
3110 \else
3111 \ifx\x\Hy@FirstPage
3112 \let\y=Y%
3113 \else
3114 \ifx\x\Hy@LastPage
3115 \let\y=Y%
3116 \else
3117 \let\y=N%
3118 \fi
3119 \fi
3120 \fi
3121 \fi
3122 \expandafter\endgroup
3123 \ifx\y Y%
3124 \else
3125 \PackageError{hyperref}{%
3126 PDF/A: Named action ‘#1’ is not permitted%
3127 }\@ehc
3128 {#2}%
3129 \expandafter\@gobble
3130 \fi
3131 }%
3132 \def\Hy@temp#1{%
3133 \expandafter\def\csname Hy@#1\endcsname{#1}%
3134 \expandafter\@onelevel@sanitize\csname Hy@#1\endcsname
3135 }%
3136 \Hy@temp{NextPage}%
3137 \Hy@temp{PrevPage}%
3138 \Hy@temp{FirstPage}%
3139 \Hy@temp{LastPage}%
3140 \else
3141 \def\Hy@Acrobatmenu#1#2{\leavevmode}%
3142 \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.

```

3143 \Hy@nextfalse
3144 \@ifundefined{spanish@sh@"@sel}{\Hy@nexttrue}
3145 \@ifundefined{galician@sh@"@sel}{\Hy@nexttrue}
3146 \@ifundefined{estonian@sh@"@sel}{\Hy@nexttrue}
3147 \ifHy@next
3148 \let\texttilde\~%
3149 \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.

```

3150 \@ifpackageloaded{babel}{%
3151   \@ifpackagelater{babel}{2008/03/16}{%
3152     \def\Hy@PatchLanguageShorthands#1{%
3153       \begingroup
3154         \edef\x{#1}%
3155         \@onelevel@sanitize\x
3156         \def\y{system}%
3157         \@onelevel@sanitize\y
3158       \expandafter\endgroup
3159       \ifx\x\y
3160       \else
3161         \HyOrg@languageshorthands{#1}%
3162       \fi
3163     }%
3164   \@AtBeginDocument{%
3165     \begingroup
3166       \toks0=\expandafter{\pdfstringdefPreHook}%
3167       \xdef\pdfstringdefPreHook{%
3168         \let\noexpand\HyOrg@languageshorthands
3169           \noexpand\languageshorthands
3170         \let\noexpand\languageshorthands
3171           \noexpand\Hy@PatchLanguageShorthands
3172         \the\toks0 %
3173         \let\noexpand\languageshorthands
3174           \noexpand\HyOrg@languageshorthands
3175       }%
3176     \endgroup
3177   }%
3178 }{}%
3179 }{}

3180 \ifHy@figures
3181   \Hy@Info{Hyper figures ON}%
3182 \else
3183   \Hy@Info{Hyper figures OFF}%
3184 \fi
3185 \ifHy@nesting
3186   \Hy@Info{Link nesting ON}%
3187 \else
3188   \Hy@Info{Link nesting OFF}%
3189 \fi
3190 \ifHy@hyperindex
3191   \Hy@Info{Hyper index ON}%
3192 \else
3193   \Hy@Info{Hyper index OFF}%
3194 \fi
3195 \ifHy@plainpages
3196   \Hy@Info{Plain pages ON}%
3197 \else
3198   \Hy@Info{Plain pages OFF}%
3199 \fi
3200 \ifHy@backref
3201   \Hy@Info{Backreferencing ON}%
3202 \else
3203   \Hy@Info{Backreferencing OFF}%
3204 \fi
3205 \ifHy@typexml
3206   \AtEndOfPackage{%

```

```

3207 \RequirePackage{color}%
3208 \RequirePackage{nameref}%
3209 }%
3210 \fi
3211 \Hy@DisableOption{typexml}
3212 \ifHy@implicit
3213 \typeout{Implicit mode ON; LaTeX internals redefined}%
3214 \else
3215 \typeout{Implicit mode OFF; no redefinition of LaTeX internals}%
3216 \def\MaybeStopEarly{%
3217 \typeout{Hyperref stopped early}%
3218 \AfterBeginDocument{%
3219 \PDF@FinishDoc
3220 \gdef\PDF@FinishDoc{}}%
3221 }%
3222 \endinput
3223 }%
3224 \AtBeginDocument{%
3225 \let\autoref\ref
3226 \let\autopageref\pageref
3227 \ifx\@pdfpagemode\@empty
3228 \gdef\@pdfpagemode{UseNone}%
3229 \fi
3230 \global\Hy@backreffalse
3231 }%
3232 \AtEndOfPackage{%
3233 \global\let\ReadBookmarks\relax
3234 \global\let\WriteBookmarks\relax
3235 }%
3236 \fi
3237 \Hy@DisableOption{implicit}

```

### 15.3.1 Driver loading

```

3238 \AtEndOfPackage{%
3239 \@ifpackageloaded{tex4ht}{%
3240 \def\Hy@driver{htex4ht}%
3241 \Hy@texhttrue
3242 }{}%

```

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.

```

3243 \ifx\Hy@driver\@empty
3244 \else
3245 \def\Hy@temp{hpdftex}%
3246 \ifpdf
3247 \ifx\Hy@driver\Hy@temp
3248 \else
3249 \Hy@WarningNoLine{%
3250 Wrong driver ‘\Hy@driver.def’;\MessageBreak
3251 pdfTeX is running in PDF mode.\MessageBreak
3252 Forcing driver ‘\Hy@temp.def’%
3253 }%
3254 \let\Hy@driver\Hy@temp
3255 \fi
3256 \else
3257 \ifx\Hy@driver\Hy@temp
3258 \Hy@WarningNoLine{%

```

```

3259         Wrong driver '\Hy@driver.def';\MessageBreak
3260         pdfTeX is not running in PDF mode.\MessageBreak
3261         Using default driver%
3262     }%
3263     \let\Hy@driver\@empty
3264 \fi
3265 \fi
3266 \fi
3267 \ifx\Hy@driver\@empty
3268 \else
3269     \def\Hy@temp{hxdetex}%
3270     \ifxdetex
3271         \ifx\Hy@driver\Hy@temp
3272         \else
3273             \Hy@WarningNoLine{%
3274                 Wrong driver '\Hy@driver.def';\MessageBreak
3275                 XeTeX is running.\MessageBreak
3276                 Forcing driver '\Hy@temp.def' for XeTeX%
3277             }%
3278             \let\Hy@driver\Hy@temp
3279 \fi
3280 \fi
3281 \fi
3282 \ifx\Hy@driver\@empty
3283 \else
3284     \def\Hy@temp{hvtexhtm}%
3285     \ifvtexhtml
3286         \ifx\Hy@driver\Hy@temp
3287         \else
3288             \Hy@WarningNoLine{%
3289                 Wrong driver '\Hy@driver.def';\MessageBreak
3290                 VTeX is running in HTML mode.\MessageBreak
3291                 Forcing driver '\Hy@temp.def'%
3292             }%
3293             \let\Hy@driver\Hy@temp
3294 \fi
3295 \else
3296     \ifx\Hy@driver\Hy@temp
3297         \Hy@WarningNoLine{%
3298             Wrong driver '\Hy@driver.def';\MessageBreak
3299             VTeX is not running in HTML mode.\MessageBreak
3300             Using default driver%
3301         }%
3302         \let\Hy@driver\@empty
3303 \fi
3304 \fi
3305 \fi

```

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

```

3306 \ifx\Hy@driver\@empty
3307     \providecommand*\Hy@defaultdriver{hypertex}%
3308     \ifpdf
3309         \def\Hy@driver{hpdfetex}%
3310     \else
3311         \ifxdetex
3312             \def\Hy@driver{hxdetex}%
3313         \else
3314             \ifvtexhtml

```

```

3315         \def\Hy@driver{hvtexhtm}%
3316         \def\MaybeStopEarly{%
3317             \typeout{Hyperref stopped early}%
3318             \AfterBeginDocument{%
3319                 \PDF@FinishDoc
3320                 \gdef\PDF@FinishDoc{}%
3321             }%
3322         \endinput
3323     }%
3324 \else
3325     \ifvtexpdf
3326         \def\Hy@driver{hvtex}%
3327     \else
3328         \ifvtexps
3329             \def\Hy@driver{hvtex}%
3330         \else
3331             \let\Hy@driver\Hy@defaultdriver
3332         \fi
3333     \fi
3334 \fi
3335 \fi
3336 \fi
3337 \ifx\Hy@driver\Hy@defaultdriver
3338     \def\Hy@temp{hdvwind}%
3339     \ifx\Hy@temp\Hy@driver
3340         \setkeys{Hyp}{colorlinks}%
3341         \PassOptionsToPackage{dviwindo}{color}%
3342     \fi
3343 \fi
3344 \typeout{*hyperref using default driver \Hy@driver*}%
3345 \else
3346     \typeout{*hyperref using driver \Hy@driver*}%
3347 \fi
3348 \input{\Hy@driver.def}%
3349 \let\@unprocessedoptions\relax
3350 \Hy@RestoreCatcodes
3351 }

```

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.

```

3352 \newif\ifHy@DvipdfmxOutlineOpen
3353 \ifxetex
3354     \ifdim\number\XeTeXversion\XeTeXrevision in<0.9995in %
3355     \else
3356         \Hy@DvipdfmxOutlineOpen>true
3357     \fi
3358 \fi
3359 \begingroup\expandafter\expandafter\expandafter\endgroup
3360 \expandafter\ifx\csname SpecialDvipdfmxOutlineOpen\endcsname\relax
3361 \else
3362     \ifnum\SpecialDvipdfmxOutlineOpen>\z@
3363         \Hy@DvipdfmxOutlineOpen>true
3364     \fi
3365 \fi
3366 \Hy@DisableOption{tex4ht}
3367 \Hy@DisableOption{pdftex}
3368 \Hy@DisableOption{nativepdf}

```

```

3369 \Hy@DisableOption{dvipdfm}
3370 \Hy@DisableOption{dvipdfmx}
3371 \Hy@DisableOption{dvipdfmx-outline-open}
3372 \Hy@DisableOption{pdfmark}
3373 \Hy@DisableOption{dvips}
3374 \Hy@DisableOption{hypertex}
3375 \Hy@DisableOption{vtex}
3376 \Hy@DisableOption{vtexpdfmark}
3377 \Hy@DisableOption{dviwindo}
3378 \Hy@DisableOption{dvipsone}
3379 \Hy@DisableOption{textures}
3380 \Hy@DisableOption{latex2html}
3381 \Hy@DisableOption{ps2pdf}
3382 \Hy@DisableOption{xetex}
3383 \AtEndOfPackage{%
3384   \Hy@DisableOption{pdfversion}%
3385 }

```

### 15.3.2 Bookmarks

```

3386 \def\WriteBookmarks{0}
3387 \def\@bookmarkopenstatus#1{%
3388   \ifHy@bookmarksopen

```

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

```

3389     \ifnum#1<\expandafter\@firstofone\expandafter
3390       {\number\@bookmarkopenlevel} % explicit space
3391     \else
3392       -%
3393     \fi
3394   \else
3395     -%
3396   \fi
3397 }
3398 \ifHy@bookmarks
3399   \Hy@Info{Bookmarks ON}%
3400   \ifx\@pdfpagemode\@empty
3401     \def\@pdfpagemode{UseOutlines}%
3402   \fi
3403 \else
3404   \def\@bookmarkopenstatus#1{%
3405     \Hy@Info{Bookmarks OFF}%
3406     \AtEndOfPackage{%
3407       \global\let\ReadBookmarks\relax
3408       \global\let\WriteBookmarks\relax
3409     }%
3410     \ifx\@pdfpagemode\@empty
3411       \def\@pdfpagemode{UseNone}%
3412     \fi
3413   \fi
3414 \Hy@DisableOption{bookmarks}

```

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

```

3415 \def\Hy@CatcodeWrapper#1{%
3416   \def\Hy@endWrap{%
3417     \def\TMP@EnsureCode##1##2{%
3418       \edef\Hy@endWrap{%
3419         \Hy@endWrap
3420         \catcode##1 \the\catcode##1\relax

```



```

3421 }%
3422 \catcode##1 ##2\relax
3423 }%
3424 \TMP@EnsureCode{10}{12}% ^^J
3425 \TMP@EnsureCode{33}{12}% !
3426 \TMP@EnsureCode{34}{12}% "
3427 \TMP@EnsureCode{36}{3}% $ (math)
3428 \TMP@EnsureCode{38}{4}% & (alignment)
3429 \TMP@EnsureCode{39}{12}% '
3430 \TMP@EnsureCode{40}{12}% (
3431 \TMP@EnsureCode{41}{12}% )
3432 \TMP@EnsureCode{42}{12}% *
3433 \TMP@EnsureCode{43}{12}% +
3434 \TMP@EnsureCode{44}{12}% ,
3435 \TMP@EnsureCode{45}{12}% -
3436 \TMP@EnsureCode{46}{12}% .
3437 \TMP@EnsureCode{47}{12}% /
3438 \TMP@EnsureCode{58}{12}% :
3439 \TMP@EnsureCode{59}{12}% ;
3440 \TMP@EnsureCode{60}{12}% <
3441 \TMP@EnsureCode{61}{12}% =
3442 \TMP@EnsureCode{62}{12}% >
3443 \TMP@EnsureCode{63}{12}% ?
3444 \TMP@EnsureCode{91}{12}% [
3445 \TMP@EnsureCode{93}{12}% ]
3446 \TMP@EnsureCode{94}{7}% ^ (superscript)
3447 \TMP@EnsureCode{95}{8}% _ (subscript)
3448 \TMP@EnsureCode{96}{12}% '
3449 \TMP@EnsureCode{124}{12}% |
3450 \TMP@EnsureCode{126}{13}% ~ (active)
3451 #1\relax
3452 \Hy@endWrap
3453 }

```

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

```

3454 \AtBeginDocument{%
3455   \ifHy@ocgcolorlinks
3456     \setkeys{Hyp}{colorlinks}%
3457     \ifHy@pdfa
3458       \Hy@Warning{%
3459         PDF/A: Optional Content Groups are prohibited,\MessageBreak
3460         using 'colorlinks' instead of 'ocgcolorlinks'%
3461       }%
3462       \Hy@ocgcolorlinksfalse
3463     \fi
3464   \fi
3465   \ifHy@ocgcolorlinks
3466   \else
3467     \Hy@DisableOption{ocgcolorlinks}%
3468   \fi
3469   \ifHy@colorlinks
3470     \def\@pdfborder{0 0 0}%
3471     \let\@pdfborderstyle\@empty
3472     \ifHy@typexml
3473     \else
3474       \Hy@CatcodeWrapper{%
3475         \RequirePackage{color}%

```

```

3476     }%
3477     \fi
3478     \def\Hy@colorlink#1{%
3479         \begingroup
3480         \HyColor@UseColor#1%
3481     }%
3482     \def\Hy@endcolorlink{\endgroup}%
3483     \Hy@Info{Link coloring ON}%
3484 \else
3485     \ifHy@frenchlinks
3486         \def\Hy@colorlink#1{\begingroup\fontshape{sc}\selectfont}%
3487         \def\Hy@endcolorlink{\endgroup}%
3488         \Hy@Info{French linking ON}%
3489     \else
for grouping consistency:
3490         \def\Hy@colorlink#1{\begingroup}%
3491         \def\Hy@endcolorlink{\endgroup}%
3492         \Hy@Info{Link coloring OFF}%
3493     \fi
3494 \fi
3495 \Hy@DisableOption{colorlinks}%
3496 \Hy@DisableOption{frenchlinks}%
3497 \ifHy@texht
3498     \long\def\@firstoffive#1#2#3#4#5{#1}%
3499     \long\def\@secondoffive#1#2#3#4#5{#2}%
3500     \long\def\@thirdoffive#1#2#3#4#5{#3}%
3501     \long\def\@fourthoffive#1#2#3#4#5{#4}%
3502     \long\def\@fifthoffive#1#2#3#4#5{#5}%
3503     \providecommand*\@safe@activestruer{}%
3504     \providecommand*\@safe@activesfalse{}%
3505     \def\T@ref#1{%
3506         \Hy@safe@activestruer
3507         \expandafter\@setref\csname r@#1\endcsname\@firstoffive{#1}%
3508         \Hy@safe@activesfalse
3509     }%
3510     \def\T@pageref#1{%
3511         \Hy@safe@activestruer
3512         \expandafter\@setref\csname r@#1\endcsname\@secondoffive{#1}%
3513         \Hy@safe@activesfalse
3514     }%
3515 \else
3516     \ifHy@typexml
3517     \else
3518         \Hy@CatcodeWrapper{%
3519             \RequirePackage{nameref}%
3520         }%
3521     \fi
3522 \fi
3523 \DeclareRobustCommand\ref{\@ifstar\@refstar\T@ref}%
3524 \DeclareRobustCommand\pageref{%
3525     \@ifstar\@pagerefstar\T@pageref
3526 }%
3527 }
3528 \AfterBeginDocument{%
3529     \ifHy@texht
3530     \else
3531         \Hy@CatcodeWrapper{%

```

```

3532      \ReadBookmarks
3533    }%
3534  \fi
3535 }

3536 \ifHy@backref
3537   \RequirePackage{backref}%
3538 \else
3539   \let\Hy@backout\@gobble
3540 \fi
3541 \Hy@DisableOption{backref}
3542 \Hy@DisableOption{pagebackref}

3543 \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.

```

3544 \begingroup
3545   \endlinechar=-1 %
3546   \catcode'\^^A=14 %
3547   \catcode'\^^M\active
3548   \catcode'\%\active
3549   \catcode'\#\active
3550   \catcode'\_\active
3551   \catcode'\$\active
3552   \catcode'\&\active
3553   \gdef\hyper@normalise{^^A
3554     \begingroup
3555     \catcode'\^^M\active
3556     \def^^M{ }^^A
3557     \catcode'\%\active
3558     \let%\@percentchar
3559     \let\%\@percentchar
3560     \catcode'\#\active
3561     \def#{\hyper@hash}^^A
3562     \def\#{\hyper@hash}^^A
3563     \@makeother\&^^A
3564     \edef&{\string&}^^A
3565     \edef&{\string&}^^A
3566     \edef\textunderscore{\string_}^^A
3567     \let_\textunderscore
3568     \catcode'\_\active
3569     \let_\textunderscore
3570     \let~\hyper@tilde
3571     \let~\hyper@tilde
3572     \let\textasciitilde\hyper@tilde
3573     \let\\\@backslashchar
3574     \edef$\string$}^^A
3575     \Hy@safe@activetrue
3576     \hyper@n@rmalise
3577   }^^A
3578   \catcode'\#=6 ^^A

```

```

3579 \gdef\Hy@ActiveCarriageReturn{^^M}^^A
3580 \gdef\hyper@n@rmalise#1#2{^^A
3581   \def\Hy@tempa{#2}^^A
3582   \ifx\Hy@tempa\Hy@ActiveCarriageReturn
3583     \Hy@ReturnAfterElseFi{^^A
3584       \hyper@@normalise{#1}^^A
3585     }^^A
3586   \else
3587     \Hy@ReturnAfterFi{^^A
3588       \hyper@@normalise{#1}{#2}^^A
3589     }^^A
3590   \fi
3591 }^^A
3592 \gdef\hyper@@normalise#1#2{^^A
3593   \edef\Hy@tempa{^^A
3594     \endgroup
3595     \noexpand#1{\Hy@RemovePercentCr#2%\^^M\@nil}^^A
3596   }^^A
3597   \Hy@tempa
3598 }^^A
3599 \gdef\Hy@RemovePercentCr#1%\^^M#2\@nil{^^A
3600   #1^^A
3601   \ifx\limits#2\limits
3602   \else
3603     \Hy@ReturnAfterFi{^^A
3604       \Hy@RemovePercentCr #2\@nil
3605     }^^A
3606   \fi
3607 }^^A
3608 \endgroup
3609 \providecommand*\hyper@chars{%
3610   \let\#\hyper@hash
3611   \let%\@percentchar
3612   \Hy@safe@activestru
3613 }
3614 \def\hyperlink#1#2{%
3615   \hyper@@link{#1}{#2}%
3616 }
3617 \DeclareRobustCommand*\href{%
3618   \@ifnextchar\bgroup\Hy@href{\hyper@normalise\href@}%
3619 }
3620 \def\Hy@href#1{%
3621   \hyper@normalise\href@
3622 }
3623 \begingroup
3624   \catcode'\$=6 %
3625   \catcode'\#=12 %
3626   \gdef\href@#1{\expandafter\href@split$1##\}%
3627   \gdef\href@split$1#$2#$3\{%
3628     \hyper@@link{$1}{$2}%
3629   }%
3630 \endgroup

```

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

```

3631 \RequirePackage{url}
3632 \let\HyOrg@url\url
3633 \def\Hurl{\begingroup \Url}

```

```

3634 \DeclareRobustCommand*\nolinkurl{\hyper@normalise\nolinkurl@}
3635 \def\nolinkurl@#1{\Hurl{#1}}
3636 \DeclareRobustCommand*\url{\hyper@normalise\url@}
3637 \def\url@#1{\hyper@linkurl{\Hurl{#1}}{#1}}

3638 \DeclareRobustCommand*\hyperimage{\hyper@normalise\hyper@image}
3639 \providecommand\hyper@image[2]{#2}

3640 \def\hypertarget#1#2{%
3641   \ifHy@nesting
3642     \hyper@@anchor{#1}{#2}%
3643   \else
3644     \hyper@@anchor{#1}{\relax}#2%
3645   \fi
3646 }

```

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

```

3647 \DeclareRobustCommand*\hyperref{\%
3648   \@ifnextchar[{\Hy@babelnormalise\label@hyperref}\@hyperref
3649 }
3650 \def\Hy@babelnormalise#1[#2]{%
3651   \begingroup
3652     \Hy@safe@activetrue
3653     \edef\Hy@tempa{%
3654       \endgroup
3655       \noexpand#1[#2]}%
3656   }%
3657   \Hy@tempa
3658 }
3659 \def\@hyperref{\hyper@normalise\@hyperref}
3660 \def\@hyperref#1#2#3{%
3661   \edef\ref@one{\ifx\\#2\\\else#2.\fi#3}%
3662   \expandafter\tryhyper@link\ref@one\{#1}%
3663 }
3664 \def\tryhyper@link#1\{#2{%
3665   \hyper@@link{#2}{#1}%
3666 }

3667 \def\hyperdef{\@ifnextchar[{\label@hyperdef}\@hyperdef}}
3668 \def\@hyperdef#1#2#3{%, category, name, text
3669   \ifx\\#1\\%
3670     \def\Hy@AnchorName{#2}%
3671   \else
3672     \def\Hy@AnchorName{#1.#2}%
3673   \fi
3674   \ifHy@nesting
3675     \expandafter\hyper@@anchor\expandafter{\Hy@AnchorName}{#3}%
3676   \else
3677     \expandafter\hyper@@anchor\expandafter{\Hy@AnchorName}{\relax}#3%
3678   \fi
3679 }

```

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

```

3680 \def\label@hyperref[#1]{%
3681   \expandafter\label@@hyperref\csname r@#1\endcsname{#1}%
3682 }%
3683 \def\label@@hyperref#1#2#3{%
3684   \ifx#1\relax
3685     \protect\G@refundefinedtrue
3686     \@latex@warning{%
3687       Hyper reference ‘#2’ on page \thepage \space undefined%
3688     }%
3689     \hyper@@link{}{??}{#3}%
3690   \else
3691     \hyper@@link{\expandafter\@fifthoffive#1}%
3692     {\expandafter\@fourthoffive#1\@empty\@empty}{#3}%
3693   \fi
3694 }
3695 \def\label@hyperdef[#1]#2#3#4{% label name, category, name,
3696                               % anchor text
3697   \@bsphack
3698   \ifx\#2\%
3699     \def\Hy@AnchorName{#3}%
3700   \else
3701     \def\Hy@AnchorName{#2.#3}%
3702   \fi
3703   \if@filesw
3704     \protected@write\@auxout{}{%
3705       \string\newlabel{#1}{\Hy@AnchorName}{#3}%
3706     }%
3707   \fi
3708   \@esphack
3709   \ifHy@nesting
3710     \expandafter\hyper@@anchor\expandafter{\Hy@AnchorName}{#4}%
3711   \else
3712     \expandafter\hyper@@anchor\expandafter{\Hy@AnchorName}{\relax}{#4}%
3713   \fi
3714 }

```

## 17 Underlying basic hypertext macros

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

```

3715 \def\hyper@@link{\let\Hy@reserved@a\relax
3716   \@ifnextchar[{\hyper@link@}{\hyper@link@[link]}%
3717 }
3718 \def\hyper@link@[#1]#2#3#4{%
3719   \begingroup
3720     \protected@edef\Hy@tempa{#2}%
3721     \Hy@safe@activestrue
3722     \edef\x{#3}%
3723     \ifx\Hy@tempa\@empty
3724       \toks0{\hyper@link{#1}}%
3725     \else
3726       \toks0{\expandafter\hyper@readexternallink#2\{#1}}%
3727     \fi
3728     \toks2{%

```

```

3729      \Hy@safe@activesfalse
3730      #4%
3731    }%
3732    \edef\Hy@tempa{\the\toks2}%
3733    \edef\x{\endgroup
3734      \ifx\Hy@tempa\@empty
3735        \noexpand\Hy@Warning{Suppressing empty link}%
3736      \else
3737        \the\toks0 {\x}{\the\toks2}%%
3738      \fi
3739    }%
3740    \x
3741  }

```

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.

```

3742 \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.

```

3743   \expandafter\@hyper@readexternallink{#2}{#3}{#4}#1::\{#1}%
3744 }

```

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

```

3745 \def\@pdftempwordfile{file}%
3746 \def\@pdftempwordrun{run}%
3747 \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 :

```

3748   \ifx\#6\%
3749     \expandafter\@hyper@linkfile file:#7\{#3}{#2}%
3750   \else
3751     \ifx\#4\%
3752       \expandafter\@hyper@linkfile file:#7\{#3}{#2}%
3753     \else

```

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

```

3754     \def\@pdftempa{#4}%
3755     \ifx\@pdftempa\@pdftempwordfile
3756       \expandafter\@hyper@linkfile#7\{#3}{#2}%
3757     \else

```

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

```

3758      \ifx\@pdftempa\@pdftempwordrun
3759      \ifHy@pdfa
3760      \PackageError{hyperref}{%
3761        PDF/A: Launch action is prohibited%
3762      }\@ehc
3763      \begingroup
3764      \leavevmode
3765      #2%
3766      \endgroup
3767      \else
3768      \expandafter\@hyper@launch#7\{#3}{#2}%
3769      \fi
3770      \else

```

otherwise its a URL

```

3771      \hyper@linkurl{#3}{#7\ifx\#2\\\else\hyper@hash#2\fi}%
3772      \fi
3773      \fi
3774      \fi
3775      \fi
3776 }

```

By default, turn run: into file:

```

3777 \def\@hyper@launch run:#1\#2#3{% filename, anchor text, linkname
3778   \hyper@linkurl{#2}{%
3779     \Hy@linkfileprefix
3780     #1%
3781     \ifx\#3\\%
3782     \else
3783       \hyper@hash
3784       #3%
3785     \fi
3786   }%
3787 }

```

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

```

3788 \def\@hyper@linkfile file:#1\#2#3{%
3789   %file url,link string, name
3790   \filename@parse{#1}%
3791   \ifx\filename@ext\relax
3792     \edef\filename@ext{\XR@ext}%
3793   \fi
3794   \def\use@file{\filename@area\filename@base.\filename@ext}%
3795   \ifx\filename@ext\XR@ext
3796     \hyper@linkfile{#2}{\use@file}{#3}%
3797   \else
3798     \ifx\@baseurl\@empty
3799       \hyper@linkurl{#2}{%
3800         \Hy@linkfileprefix\use@file\ifx\#3\\\else\hyper@hash#3\fi
3801       }%
3802     \else
3803       \hyper@linkurl{#2}{\use@file\ifx\#3\\\else\hyper@hash#3\fi}%
3804     \fi
3805   \fi
3806 }

```



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.

```

3807 \long\def\hyper@@anchor#1#2{\@hyper@@anchor#1\relax#2\relax}
3808 \long\def\@hyper@@anchor#1\relax#2#3\relax{%
3809   \ifx\#1\%
3810     #2\Hy@WarningNoLine{empty link? #1: #2#3}%
3811   \else
3812     \def\anchor@spot{#2#3}%
3813     \let\put@me@back\@empty
3814     \ifx\relax#2\relax
3815       \else
3816         \ifHy@nesting
3817         \else
3818           \ifcat a\noexpand#2\relax
3819           \else
3820             \ifcat O\noexpand#2 \relax
3821             \else
3822               \typeout{Anchor start is not alphanumeric %
3823               on input line\the\inputlineno%
3824               }%
3825               \let\anchor@spot\@empty
3826               \def\put@me@back{#2#3}%
3827             \fi
3828           \fi
3829         \fi
3830       \fi
3831       \ifHy@activeanchor
3832         \anchor@spot
3833       \else
3834         \hyper@anchor{#1}%
3835       \fi
3836       \expandafter\put@me@back
3837     \fi
3838     \let\anchor@spot\@empty
3839 }

```

## 18 Compatibility with the *AT<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.

```

3840 \let\htmladding\hyperimage
3841 \def\htmladdnormallink#1#2{\href{#2}{#1}}
3842 \def\htmladdnormallinkfoot#1#2{\href{#2}{#1}\footnote{#2}}
3843 \def\htmlref#1#2{% anchor text, label
3844   \label@hyperref[{#2}]{#1}%
3845 }

```

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

```

3846 \def\@@latextohtmlX{%
3847   \let\hhyperref\hyperref
3848   \def\hyperref##1##2##3##4{% anchor text for HTML
3849                               % text to print before label in print
3850                               % label
3851                               % post-label text in print
3852     ##2\ref{##4}##3%
3853   }%
3854 }
```

## 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.

```

3855 \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
3856 \def\HyField@NewFlag#1#2{%
3857   \lowercase{\HyField@NewOption{#2}}%
3858   \lowercase{\HyField@NewBitsetFlag{#2}}{#2}{#1}%
3859 }
```

```

\HyField@NewFlagOnly
3860 \def\HyField@NewFlagOnly#1#2{%
3861   \lowercase{\HyField@NewBitsetFlag{#2}}{#2}{#1}%
3862 }
```

```

\HyField@NewOption #1: option name
3863 \def\HyField@NewOption#1{%
3864   \expandafter\newif\csname ifFld@#1\endcsname
3865   \define@key{Field}{#1}[true]{%
3866     \lowercase{\Field@boolkey{##1}}{#1}%
3867   }%
3868 }
```

```

\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

```
3869 \def\HyField@NewBitsetFlag#1#2#3#4{%
3870   \begingroup
3871     \count@=#4\relax
3872     \advance\count@\m@ne
3873     \def\x##1{%
3874       \endgroup
3875       \expandafter\def\csname HyField@#3@#1\endcsname{##1}%
3876       \expandafter\ifx\csname HyField@#3@##1\endcsname\relax
3877         \expandafter\edef\csname HyField@#3@##1\endcsname{%
3878           (\number#4) #2%
3879         }%
3880       \else
3881         \expandafter\edef\csname HyField@#3@##1\endcsname{%
3882           \csname HyField@#3@##1\endcsname
3883           /#2%
3884         }%
3885       \fi
3886     }%
3887   \expandafter\x\expandafter{\the\count@}%
3888 }
```

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

```
3889 \def\HyField@UseFlag#1#2{%
3890   \lowercase{\HyField@@UseFlag{#2}}{#1}%
3891 }
```

\HyField@@UseFlag

```
3892 \def\HyField@@UseFlag#1#2{%
3893   \bitsetSetValue{HyField@#2}{%
3894     \csname HyField@#2@#1\endcsname
3895   }{%
3896     \csname ifFld@#1\endcsname 1\else 0\fi
3897   }%
3898 }
```

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

```
3899 \def\HyField@SetFlag#1#2{%
3900   \lowercase{\HyField@@SetFlag{#2}}{#1}%
3901 }
```

\HyField@@SetFlag

```
3902 \def\HyField@@SetFlag#1#2{%
3903   \bitsetSetValue{HyField@#2}{%
3904     \csname HyField@#2@#1\endcsname
3905   }{1}%
3906 }
```

\HyField@PrintFlags

```
3907 \def\HyField@PrintFlags#1#2{%
3908   \ifHy@verbose
3909     \begingroup
3910       \let\Hy@temp\@empty
3911       \let\MessageBreak\relax
3912       \expandafter\@for\expandafter\x\expandafter:\expandafter=%
```

```

3913 \bitsetGetSetBitList{HyField@#1}\do{%
3914 \edef\Hy@temp{%
3915 \Hy@temp
3916 \csname HyField@#1@\x\endcsname\MessageBreak
3917 }%
3918 }%
3919 \edef\x{\endgroup
3920 \noexpand\Hy@Info{%
3921 Field flags: %
3922 \expandafter\ifx\@car#1\@nil S\else/\fi
3923 #1 %
3924 \bitsetGetDec{HyField@#1} %
3925 (0x\bitsetGetHex{HyField@#1}{32})\MessageBreak
3926 \Hy@temp
3927 for #2%
3928 }%
3929 }\x
3930 \fi
3931 }

```

### 19.1.1 Declarations of field flags

“Table 8.70 Field flags common to all field types”

```

3932 \HyField@NewFlag{Ff}{ReadOnly}{1}
3933 \HyField@NewFlag{Ff}{Required}{2}
3934 \HyField@NewFlag{Ff}{NoExport}{3}

```

“Table 8.75 Field flags specific to button fields”

```

3935 \HyField@NewFlag{Ff}{NoToggleToOff}{15}
3936 \HyField@NewFlag{Ff}{Radio}{16}
3937 \HyField@NewFlag{Ff}{Pushbutton}{17}
3938 \HyField@NewFlag{Ff}{RadiosInUnison}{26}

```

“Table 8.77 Field flags specific to text fields”

```

3939 \HyField@NewFlag{Ff}{Multiline}{13}
3940 \HyField@NewFlag{Ff}{Password}{14}
3941 \HyField@NewFlag{Ff}{FileSelect}{21}% PDF 1.4
3942 \HyField@NewFlag{Ff}{DoNotSpellCheck}{23}% PDF 1.4
3943 \HyField@NewFlag{Ff}{DoNotScroll}{24}% PDF 1.4
3944 \HyField@NewFlag{Ff}{Comb}{25}% PDF 1.4
3945 \HyField@NewFlag{Ff}{RichText}{26}% PDF 1.5

```

“Table 8.79 field flags specific to choice fields”

```

3946 \HyField@NewFlag{Ff}{Combo}{18}
3947 \HyField@NewFlag{Ff}{Edit}{19}
3948 \HyField@NewFlag{Ff}{Sort}{20}
3949 \HyField@NewFlag{Ff}{MultiSelect}{22}% PDF 1.4
3950 % \HyField@NewFlag{Ff}{DoNotSpellCheck}{23}% PDF 1.4
3951 \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.

```

3952 \newif\ifFld@popdown
3953 \define@key{Field}{popdown}[true]{%
3954 \lowercase{\Field@boolkey{#1}}{popdown}%
3955 }

```

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.

```

3956 \HyField@NewFlag{F}{Invisible}{1}
3957 \HyField@NewFlag{F}{Hidden}{2}% PDF 1.2
3958 \HyField@NewFlag{F}{Print}{3}% PDF 1.2
3959 \HyField@NewFlag{F}{NoZoom}{4}% PDF 1.2
3960 \HyField@NewFlag{F}{NoRotate}{5}% PDF 1.3
3961 \HyField@NewFlag{F}{NoView}{6}% PDF 1.3
3962 \HyField@NewFlag{F}{Locked}{8}% PDF 1.4
3963 \HyField@NewFlag{F}{ToggleNoView}{9}% PDF 1.5
3964 \HyField@NewFlag{F}{LockedContents}{10}% PDF 1.7

3965 \ifHy@pdfa
3966   \def\HyField@PDFAFIWarning#1#2{%
3967     \Hy@Warning{%
3968       PDF/A: Annotation flag ‘#1’ must\MessageBreak
3969       be set to ‘#2’%
3970     }%
3971   }%
3972   \Fld@invisiblefalse
3973   \def\Fld@invisibletrue{%
3974     \HyField@PDFAFIWarning{invisible}{false}%
3975   }%
3976   \Fld@hiddenfalse
3977   \def\Fld@hiddentrue{%
3978     \HyField@PDFAFIWarning{hidden}{false}%
3979   }%
3980   \Fld@printtrue
3981   \def\Fld@printfalse{%
3982     \HyField@PDFAFIWarning{print}{true}%
3983   }%
3984   \Fld@nozoomtrue
3985   \def\Fld@nozoomfalse{%
3986     \HyField@PDFAFIWarning{nozoom}{true}%
3987   }%
3988   \Fld@norotatetrue
3989   \def\Fld@norotatefalse{%
3990     \HyField@PDFAFIWarning{norotate}{true}%
3991   }%
3992   \Fld@noviewfalse
3993   \def\Fld@noviewtrue{%
3994     \HyField@PDFAFIWarning{noview}{false}%
3995   }%
3996 \fi

```

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

```

3997 \HyField@NewFlag{Submit}{IncludeNoValueFields}{2}
3998 \HyField@NewFlagOnly{Submit}{ExportFormat}{3}
3999 \HyField@NewFlag{Submit}{GetMethod}{4}
4000 \HyField@NewFlag{Submit}{SubmitCoordinates}{5}
4001 \HyField@NewFlagOnly{Submit}{XFDF}{6}
4002 \HyField@NewFlag{Submit}{IncludeAppendSaves}{7}
4003 \HyField@NewFlag{Submit}{IncludeAnnotations}{8}
4004 \HyField@NewFlagOnly{Submit}{SubmitPDF}{9}
4005 \HyField@NewFlag{Submit}{CanonicalFormat}{10}

```

```

4006 \HyField@NewFlag{Submit}{ExclNonUserAnnots}{11}
4007 \HyField@NewFlag{Submit}{ExclFKey}{12}
4008 \HyField@NewFlag{Submit}{EmbedForm}{14}

4009 \define@key{Field}{export}{%
4010   \lowercase{\def\Hy@temp{#1}}%
4011   \@ifundefined{Fld@export@\Hy@temp}{%
4012     \@onelevel@sanitize\Hy@temp
4013     \PackageError{hyperref}{%
4014       Unknown export format '\Hy@temp'.\MessageBreak
4015       Known formats are 'FDF', 'HTML', 'XFDF', and 'PDF'%
4016     }\@ehc
4017   }{%
4018     \let\Fld@export\Hy@temp
4019   }%
4020 }
4021 \def\Fld@export{fdf}
4022 \@namedef{Fld@export@fdf}{0}%
4023 \@namedef{Fld@export@html}{1}%
4024 \@namedef{Fld@export@xfdf}{2}%
4025 \@namedef{Fld@export@pdf}{3}%

```

### 19.1.2 Set submit flags

\HyField@FlagsSubmit

```

4026 \def\HyField@FlagsSubmit{%
4027   \bitsetReset{HyField@Submit}%
4028   \ifcase\@nameuse{Fld@export@\Fld@export} %
4029     % FDF
4030     \HyField@UseFlag{Submit}{IncludeNoValueFields}%
4031     \HyField@UseFlag{Submit}{SubmitCoordinates}%
4032     \HyField@UseFlag{Submit}{IncludeAppendSaves}%
4033     \HyField@UseFlag{Submit}{IncludeAnnotations}%
4034     \HyField@UseFlag{Submit}{CanonicalFormat}%
4035     \HyField@UseFlag{Submit}{ExclNonUserAnnots}%
4036     \HyField@UseFlag{Submit}{ExclFKey}%
4037     \HyField@UseFlag{Submit}{EmbedForm}%
4038   \or % HTML
4039     \HyField@SetFlag{Submit}{ExportFormat}%
4040     \HyField@UseFlag{Submit}{IncludeNoValueFields}%
4041     \HyField@UseFlag{Submit}{GetMethod}%
4042     \HyField@UseFlag{Submit}{SubmitCoordinates}%
4043     \HyField@UseFlag{Submit}{CanonicalFormat}%
4044   \or % XFDF
4045     \HyField@SetFlag{Submit}{XFDF}%
4046     \HyField@UseFlag{Submit}{IncludeNoValueFields}%
4047     \HyField@UseFlag{Submit}{SubmitCoordinates}%
4048     \HyField@UseFlag{Submit}{CanonicalFormat}%
4049   \or % PDF
4050     \HyField@SetFlag{Submit}{SubmitPDF}%
4051     \HyField@UseFlag{Submit}{GetMethod}%
4052   \fi
4053   \HyField@PrintFlags{Submit}{submit button field}%
4054   \bitsetIsEmpty{HyField@Submit}{%
4055     \def\Fld@submitflags{%
4056     }{%
4057       \edef\Fld@submitflags{/Flags \bitsetGetDec{HyField@Submit}}%
4058     }%

```

4059 }

### 19.1.3 Set annot flags in fields

\HyField@FlagsAnnot

```
4060 \def\HyField@FlagsAnnot#1{%
4061   \bitsetReset{HyField@F}%
4062   \HyField@UseFlag{F}{Invisible}%
4063   \HyField@UseFlag{F}{Hidden}%
4064   \HyField@UseFlag{F}{Print}%
4065   \HyField@UseFlag{F}{NoZoom}%
4066   \HyField@UseFlag{F}{NoRotate}%
4067   \HyField@UseFlag{F}{NoView}%
4068   \HyField@UseFlag{F}{Locked}%
4069   \HyField@UseFlag{F}{ToggleNoView}%
4070   \HyField@UseFlag{F}{LockedContents}%
4071   \HyField@PrintFlags{F}{#1}%
4072   \bitsetIsEmpty{HyField@F}{%
4073     \def\Fld@annotflags{%
4074     }{%
4075       \edef\Fld@annotflags{/F \bitsetGetDec{HyField@F}}%
4076     }%
4077 }
```

### 19.1.4 Pushbutton field

\HyField@FlagsPushButton

```
4078 \def\HyField@FlagsPushButton{%
4079   \HyField@FlagsAnnot{push button field}%
4080   \bitsetReset{HyField@Ff}%
4081   \HyField@UseFlag{Ff}{ReadOnly}%
4082   \HyField@UseFlag{Ff}{Required}%
4083   \HyField@UseFlag{Ff}{NoExport}%
4084   \HyField@SetFlag{Ff}{Pushbutton}%
4085   \HyField@PrintFlags{Ff}{push button field}%
4086   \bitsetIsEmpty{HyField@Ff}{%
4087     \def\Fld@flags{%
4088     }{%
4089       \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
4090     }%
4091 }
```

### 19.1.5 Check box field

\HyField@FlagsCheckBox

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

```

```

4103 }%
4104 }

```

### 19.1.6 Radio button field

\HyField@FlagsRadioButton

```

4105 \def\HyField@FlagsRadioButton{%
4106   \HyField@FlagsAnnot{radio button field}%
4107   \bitsetReset{HyField@Ff}%
4108   \HyField@UseFlag{Ff}{ReadOnly}%
4109   \HyField@UseFlag{Ff}{Required}%
4110   \HyField@UseFlag{Ff}{NoExport}%
4111   \HyField@UseFlag{Ff}{NoToggleToOff}%
4112   \HyField@SetFlag{Ff}{Radio}%
4113   \HyField@UseFlag{Ff}{RadiosInUnison}%
4114   \HyField@PrintFlags{Ff}{radio button field}%
4115   \bitsetIsEmpty{HyField@Ff}{%
4116     \def\Fld@flags{%
4117     }{%
4118       \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
4119     }%
4120 }

```

### 19.1.7 Text fields

\HyField@FlagsText

```

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

```



```

4151 }%
4152 }

```

### 19.1.8 Choice fields

\HyField@FlagsChoice

```

4153 \def\HyField@FlagsChoice{%
4154   \HyField@FlagsAnnot{choice field}%
4155   \bitsetReset{HyField@Ff}%
4156   \HyField@UseFlag{Ff}{ReadOnly}%
4157   \HyField@UseFlag{Ff}{Required}%
4158   \HyField@UseFlag{Ff}{NoExport}%
4159   \HyField@UseFlag{Ff}{Combo}%
4160   \ifFld@combo
4161     \HyField@UseFlag{Ff}{Edit}%
4162   \fi
4163   \HyField@UseFlag{Ff}{Sort}%
4164   \HyField@UseFlag{Ff}{MultiSelect}%
4165   \ifFld@combo
4166     \ifFld@edit
4167       \HyField@UseFlag{Ff}{DoNotSpellCheck}%
4168     \fi
4169   \fi
4170   \HyField@UseFlag{Ff}{CommitOnSelChange}%
4171   \HyField@PrintFlags{Ff}{choice field}%
4172   \bitsetIsEmpty{HyField@Ff}{%
4173     \def\Fld@flags{%
4174     }{%
4175     \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
4176     }%
4177 }

```

### 19.2 Choice field

4178 \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.

```

4179 \def\HyField@PDFChoices#1{%
4180   \begingroup
4181     \gdef\Fld@choices{%
4182       \def\HyTmp@optlist{%
4183         \let\HyTmp@optitem\relax
4184         \count@=0 %
4185         \kv@parse{#1}{%
4186           \Hy@pdfstringdef\kv@key\kv@key
4187           \ifx\kv@value\relax
4188             \ifnum\Hy@pdfversion<3 % implementation note 122, PDF spec 1.7
4189               \xdef\Fld@choices{\Fld@choices[(\kv@key)(\kv@key)]}%
4190             \else
4191               \xdef\Fld@choices{\Fld@choices(\kv@key)}%
4192             \fi
4193           \else
4194             \Hy@pdfstringdef\kv@value\kv@value
4195             \xdef\Fld@choices{\Fld@choices[(\kv@value)(\kv@key)]}%
4196           \fi

```

```

4197 \edef\HyTmp@optlist{%
4198 \HyTmp@optlist
4199 \HyTmp@optitem{\the\count@}{\kv@key}0%
4200 }%
4201 \advance\count@ by 1 %
4202 \@gobbletwo
4203 }%
4204 \xdef\Fld@choices{/Opt[\Fld@choices]}%
4205 \ifFld@multiselect
4206 \HyField@@PDFChoices{DV}\Fld@default
4207 \HyField@@PDFChoices{V}\Fld@value
4208 \else
4209 \ifx\Fld@default\relax
4210 \else
4211 \pdfstringdef\Hy@gtemp\Fld@default
4212 \xdef\Fld@choices{\Fld@choices/DV(\Hy@gtemp)}%
4213 \fi
4214 \ifx\Fld@value\relax
4215 \else
4216 \pdfstringdef\Hy@gtemp\Fld@value
4217 \xdef\Fld@choices{\Fld@choices/V(\Hy@gtemp)}%
4218 \fi
4219 \fi
4220 \endgroup
4221 }

```

\HyField@@PDFChoices

```

4222 \def\HyField@@PDFChoices#1#2{%
4223 \ifx#2\relax
4224 \else
4225 \count@=0 %
4226 \def\HyTmp@optitem##1##2##3{%
4227 \def\HyTmp@key{##2}%
4228 \ifx\HyTmp@key\Hy@gtemp
4229 \expandafter\def\expandafter\HyTmp@optlist\expandafter{%
4230 \HyTmp@optlist
4231 \HyTmp@optitem{##1}-{##2}1%
4232 }%
4233 \let\HyTmp@found=Y%
4234 \else
4235 \expandafter\def\expandafter\HyTmp@optlist\expandafter{%
4236 \HyTmp@optlist
4237 \HyTmp@optitem{##1}-{##2}##3%
4238 }%
4239 \fi
4240 }%
4241 \expandafter\comma@parse\expandafter{#2}{%
4242 \pdfstringdef\Hy@gtemp\comma@entry
4243 \let\HyTmp@found=N %
4244 \expandafter\let\expandafter\HyTmp@optlist\expandafter\@empty
4245 \HyTmp@optlist
4246 \ifx\HyTmp@found Y%
4247 \advance\count@ by 1 %
4248 \else
4249 \@onelevel@sanitize\comma@entry
4250 \PackageWarning{hyperref}{%
4251 \string\ChoiceBox: Ignoring value '\comma@entry',%

```

```

4252         \MessageBreak
4253         it cannot be found in the choices%
4254     }%
4255     \fi
4256     \@gobble
4257 }%
4258 \def\HyTmp@optitem##1##2##3{%
4259     \ifnum##3=1 %
4260         (##2)%
4261     \fi
4262 }%
4263 \ifcase\count@
4264 \or
4265     \xdef\Fld@choices{\Fld@choices/#1\HyTmp@optlist}%
4266 \else
4267     \xdef\Fld@choices{\Fld@choices/#1[\HyTmp@optlist]}%
4268     \ifx#1V%
4269         \def\HyTmp@optitem##1##2##3{%
4270             \ifnum##3=1 %
4271                 \@firstofone{ ##1}%
4272             \fi
4273         }%
4274         \edef\HyTmp@optlist{\HyTmp@optlist}%
4275         \xdef\Fld@choices{%
4276             \Fld@choices
4277             /I[\expandafter\@firstofone\HyTmp@optlist]}%
4278     }%
4279     \fi
4280 \fi
4281 \fi
4282 }

```

### 19.3 Forms

\HyField@SetKeys

```

4283 \def\HyField@SetKeys{%
4284     \setkeys{Field}%
4285 }

4286 \newif\ifFld@checked
4287 \newif\ifFld@disabled
4288 \Fld@checkedfalse
4289 \Fld@disabledfalse
4290 \newcount\Fld@menulength
4291 \newdimen\Fld@Width
4292 \newdimen\Fld@charsize
4293 \Fld@charsize=10\p@
4294 \def\Fld@maxlen{0}
4295 \def\Fld@align{0}
4296 \def\Fld@color{0 0 0 rg}
4297 \def\Fld@bcolor{1 1 1}
4298 \def\Fld@bordercolor{1 0 0}
4299 \def\Fld@bordersep{1\p@}
4300 \def\Fld@borderwidth{1}
4301 \def\Fld@borderstyle{S}
4302 \def\Fld@cbsymbol{4}
4303 \def\Fld@radiosymbol{H}

```

```

4304 \def\Fld@rotation{0}
4305 \def\Form{\@ifnextchar[{\@Form}{\@Form[]}}
4306 \def\endForm{\@endForm}
4307 \newif\ifForm@html
4308 \Form@htmlfalse
4309 \def\Form@boolkey#1#2{%
4310   \csname Form@#2\ifx\relax#1\relax true\else#1\fi\endcsname
4311 }
4312 \define@key{Form}{action}{%
4313   \hyper@normalise\Hy@DefFormAction{#1}%
4314 }
4315 \def\Hy@DefFormAction{\def\Form@action}
4316 \def\enc@html{html}
4317 \define@key{Form}{encoding}{%
4318   \def\Hy@tempa{#1}%
4319   \ifx\Hy@tempa\enc@html
4320     \Form@htmltrue
4321     \def\Fld@export{html}%
4322   \else
4323     \typeout{hyperref: form 'encoding' key set to #1 %
4324     -- unknown type%
4325   }%
4326   \Form@htmlfalse
4327 \fi
4328 }
4329 \define@key{Form}{method}{%
4330   \lowercase{\def\Hy@temp{#1}}%
4331   \@ifundefined{Form@method@\Hy@temp}{%
4332     \@onelevel@sanitize\Hy@temp
4333     \PackageError{hyperref}{%
4334       Unknown method '\Hy@temp'.\MessageBreak
4335       Known values are 'post' and 'get'%
4336     }\@ehc
4337   }{%
4338     \let\Form@method\Hy@temp
4339     \ifcase\@nameuse{Form@method@\Hy@temp} %
4340       \Fld@getmethodfalse
4341     \else
4342       \Fld@getmethodtrue
4343     \fi
4344   }%
4345 }
4346 \def\Form@method{}
4347 \@namedef{Form@method@post}{0}
4348 \@namedef{Form@method@get}{1}
4349 \def\Field@boolkey#1#2{%
4350   \csname Fld@#2\ifx\relax#1\relax true\else#1\fi\endcsname
4351 }
4352 \newtoks\Field@toks
4353 \Field@toks={ }%
4354 \def\Field@addtoks#1#2{%
4355   \edef\@processme{\Field@toks{\the\Field@toks\space #1="#2"}}%
4356   \@processme
4357 }
4358 \def\Fld@checkequals#1=#2=#3\\{%
4359   \def\@currDisplay{#1}%
4360   \ifx\#2\%

```

```

4361     \def\@currValue{#1}%
4362     \else
4363         \def\@currValue{#2}%
4364     \fi
4365 }
4366 \define@key{Field}{loc}{%
4367     \def\Fld@loc{#1}%
4368 }
4369 \define@key{Field}{checked}[true]{%
4370     \lowercase{\Field@boolkey{#1}}{checked}%
4371 }
4372 \define@key{Field}{disabled}[true]{%
4373     \lowercase{\Field@boolkey{#1}}{disabled}%
4374 }
4375 \define@key{Field}{accesskey}{%
4376     \Field@addtoks{accesskey}{#1}%
4377 }
4378 \define@key{Field}{tabkey}{%
4379     \Field@addtoks{tabkey}{#1}%
4380 }
4381 \define@key{Field}{name}{%
4382     \def\Fld@name{#1}%
4383 }
4384 \define@key{Field}{width}{%
4385     \def\Fld@width{#1}%
4386     \Field@Width#1\setbox0=\hbox{m}%
4387 }
4388 \define@key{Field}{maxlen}{%
4389     \def\Fld@maxlen{#1}%
4390 }
4391 \define@key{Field}{menulength}{%
4392     \Field@menulength=#1\relax
4393 }
4394 \define@key{Field}{height}{%
4395     \def\Fld@height{#1}%
4396 }
4397 \define@key{Field}{charsize}{%
4398     \Field@charsize#1%
4399 }
4400 \define@key{Field}{borderwidth}{%
4401     \def\Fld@borderwidth{#1}%
4402 }
4403 \define@key{Field}{borderstyle}{%
4404     \def\Fld@borderstyle{#1}%
4405 }
4406 \define@key{Field}{bordersep}{%
4407     \def\Fld@bordersep{#1}%
4408 }
4409 \define@key{Field}{default}{%
4410     \def\Fld@default{#1}%
4411 }
4412 \define@key{Field}{align}{%
4413     \def\Fld@align{#1}%
4414 }
4415 \define@key{Field}{value}{%
4416     \def\Fld@value{#1}%
4417 }

```

```

4418 \define@key{Field}{checkboxsymbol}{%
4419   \Fld@DingDef\Fld@cbsymbol{#1}%
4420 }
4421 \define@key{Field}{radiosymbol}{%
4422   \Fld@DingDef\Fld@radiosymbol{#1}%
4423 }
4424 \def\Fld@DingDef#1#2{%
4425   \def\Fld@temp{%
4426     \Fld@@DingDef#2\ding{}\@nil
4427     \let#1\Fld@temp
4428 }
4429 \def\Fld@@DingDef#1\ding#2#3\@nil{%
4430   \expandafter\def\expandafter\Fld@temp\expandafter{%
4431     \Fld@temp
4432     #1%
4433   }%
4434   \ifx\#3\%
4435     \expandafter\@gobble
4436   \else
4437     \begingroup
4438     \lccode'0=#2\relax
4439     \lowercase\endgroup
4440     \expandafter\def\expandafter\Fld@temp\expandafter{%
4441       \Fld@temp
4442       0%
4443     }%
4444     }%
4445     \expandafter\@firstofone
4446   \fi
4447   {%
4448     \Fld@@DingDef#3\@nil
4449   }%
4450 }

4451 \define@key{Field}{rotation}{%
4452   \def\Fld@rotation{#1}%
4453 }

4454 \define@key{Field}{backgroundcolor}{%
4455   \HyColor@FieldBColor{#1}\Fld@bcolor{hyperref}{backgroundcolor}%
4456 }
4457 \define@key{Field}{bordercolor}{%
4458   \HyColor@FieldBColor{#1}\Fld@bordercolor{hyperref}{bordercolor}%
4459 }
4460 \define@key{Field}{color}{%
4461   \HyColor@FieldColor{#1}\Fld@color{hyperref}{color}%
4462 }

4463 \def\Fld@onclick@code{}
4464 \def\Fld@format@code{}
4465 \def\Fld@validate@code{}
4466 \def\Fld@calculate@code{}
4467 \def\Fld@keystroke@code{}
4468 \def\Fld@onfocus@code{}
4469 \def\Fld@onblur@code{}
4470 \def\Fld@onmousedown@code{}
4471 \def\Fld@onmouseup@code{}
4472 \def\Fld@onenter@code{}
4473 \def\Fld@onexit@code{}

```

```

4474 \def\Hy@temp#1{%
4475   \expandafter\Hy@@temp\csname Fld@#1@code\endcsname{#1}%
4476 }
4477 \def\Hy@@temp#1#2{%
4478   \ifHy@pdfa
4479     \define@key{Field}{#2}{%
4480       \PackageError{hyperref}{%
4481         PDF/A: Additional action ‘#2’ is prohibited%
4482       }\@ehc
4483     }%
4484   \else
4485     \define@key{Field}{#2}{%
4486       \def#1{##1}%
4487     }%
4488   \fi
4489 }
4490 \Hy@temp{keystroke}
4491 \Hy@temp{format}
4492 \Hy@temp{validate}
4493 \Hy@temp{calculate}
4494 \Hy@temp{onfocus}
4495 \Hy@temp{onblur}
4496 \Hy@temp{onenter}
4497 \Hy@temp{onexit}
4498 \def\Hy@temp#1{%
4499   \define@key{Field}{#1}{%
4500     \Field@addtoks{#1}{##1}%
4501   }%
4502 }
4503 \Hy@temp{onselect}
4504 \Hy@temp{onchange}
4505 \Hy@temp{ondblclick}
4506 \Hy@temp{onmousedown}
4507 \Hy@temp{onmouseup}
4508 \Hy@temp{onmouseover}
4509 \Hy@temp{onmousemove}
4510 \Hy@temp{onmouseout}
4511 \Hy@temp{onkeypress}
4512 \Hy@temp{onkeydown}
4513 \Hy@temp{onkeyup}
4514 \ifHy@pdfa
4515   \define@key{Field}{onclick}{%
4516     \PackageError{hyperref}{%
4517       PDF/A: Action ‘onclick’ is prohibited%
4518     }\@ehc
4519   }%
4520 \else
4521   \define@key{Field}{onclick}{%
4522     \def\Fld@onclick@code{#1}%
4523     \Field@addtoks{onclick}{#1}%
4524   }%
4525 \fi
4526 \DeclareRobustCommand\TextField{%
4527   \@ifnextchar[{\@TextField}{\@TextField[]}%
4528 }
4529 \DeclareRobustCommand\ChoiceMenu{%
4530   \@ifnextchar[{\@ChoiceMenu}{\@ChoiceMenu[]}%

```

```

4531 }
4532 \DeclareRobustCommand\CheckBox{%
4533   \@ifnextchar[{\@CheckBox}{\@CheckBox[]}%
4534 }
4535 \DeclareRobustCommand\PushButton{%
4536   \@ifnextchar[{\@PushButton}{\@PushButton[]}%
4537 }
4538 \DeclareRobustCommand\Gauge{%
4539   \@ifnextchar[{\@Gauge}{\@Gauge[]}%
4540 }
4541 \DeclareRobustCommand\Submit{%
4542   \@ifnextchar[{\@Submit}{\@Submit[]}%
4543 }
4544 \DeclareRobustCommand\Reset{%
4545   \@ifnextchar[{\@Reset}{\@Reset[]}%
4546 }
4547 \def\LayoutTextField#1#2{% label, field
4548   #1 #2%
4549 }
4550 \def\LayoutChoiceField#1#2{% label, field
4551   #1 #2%
4552 }
4553 \def\LayoutCheckField#1#2{% label, field
4554   #1 #2%
4555 }
4556 \def\LayoutPushButtonField#1{% button
4557   #1%
4558 }
4559 \def\MakeRadioField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
4560 \def\MakeCheckField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
4561 \def\MakeTextField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
4562 \def\MakeChoiceField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
4563 \def\MakeButtonField#1{%
4564   \sbox0{%
4565     \hskip\Fld@borderwidth bp#1\hskip\Fld@borderwidth bp%
4566   }%
4567   \@tempdima\ht0 %
4568   \advance\@tempdima by \Fld@borderwidth bp %
4569   \advance\@tempdima by \Fld@borderwidth bp %
4570   \ht0\@tempdima
4571   \@tempdima\dp0 %
4572   \advance\@tempdima by \Fld@borderwidth bp %
4573   \advance\@tempdima by \Fld@borderwidth bp %
4574   \dp0\@tempdima
4575   \box0\relax
4576 }
4577 \def\DefaultHeightofSubmit{14pt}
4578 \def\DefaultWidthofSubmit{2cm}
4579 \def\DefaultHeightofReset{14pt}
4580 \def\DefaultWidthofReset{2cm}
4581 \def\DefaultHeightofCheckBox{\baselineskip}
4582 \def\DefaultWidthofCheckBox{\baselineskip}
4583 \def\DefaultHeightofChoiceMenu{\baselineskip}
4584 \def\DefaultWidthofChoiceMenu{\baselineskip}
4585 \def\DefaultHeightofText{\baselineskip}
4586 \def\DefaultHeightofTextMultiline{4\baselineskip}
4587 \def\DefaultWidthofText{3cm}

```



```

4588 \def\DefaultOptionsofSubmit{print,name=Submit,noexport}
4589 \def\DefaultOptionsofReset{print,name=Reset,noexport}
4590 \def\DefaultOptionsofPushButton{print}
4591 \def\DefaultOptionsofCheckBox{print}
4592 \def\DefaultOptionsofText{print}

```

Default options for the types of \ChoiceMenu.

```

4593 \def\DefaultOptionsofListBox{print}
4594 \def\DefaultOptionsofComboBox{print,edit,sort}
4595 \def\DefaultOptionsofPopdownBox{print}
4596 \def\DefaultOptionsofRadio{print,notoggletooff}

```

## 20 Setup

```

4597 \ifHy@figures
4598   \Hy@Info{Hyper figures ON}%
4599 \else
4600   \Hy@Info{Hyper figures OFF}%
4601 \fi
4602 \ifHy@nesting
4603   \Hy@Info{Link nesting ON}%
4604 \else
4605   \Hy@Info{Link nesting OFF}%
4606 \fi
4607 \ifHy@hyperindex
4608   \Hy@Info{Hyper index ON}%
4609 \else
4610   \Hy@Info{Hyper index OFF}%
4611 \fi
4612 \ifHy@backref
4613   \Hy@Info{backreferencing ON}%
4614 \else
4615   \Hy@Info{backreferencing OFF}%
4616 \fi
4617 \ifHy@colorlinks
4618   \Hy@Info{Link coloring ON}%
4619 \else
4620   \Hy@Info{Link coloring OFF}%
4621 \fi
4622 \ifHy@ocgcolorlinks
4623   \Hy@Info{Link coloring with OCG ON}%
4624 \else
4625   \Hy@Info{Link coloring with OCG OFF}%
4626 \fi
4627 \ifHy@pdfa
4628   \Hy@Info{PDF/A mode ON}%
4629 \else
4630   \Hy@Info{PDF/A mode OFF}%
4631 \fi

```

## 21 Low-level utility macros

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

```

4632 \edef\hyper@hash{\string#}
4633 \edef\hyper@tilde{\string~}
4634 \edef\hyper@quote{\string"}

```

```

4635 \let\@currentHref\@empty
4636 \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.

```

4637 \AfterBeginDocument{%
4638   \Hy@pdfstringtrue
4639   \PDF@SetupDoc
4640   \let\PDF@SetupDoc\@empty
4641   \Hy@DisableOption{pdfpagescrop}%
4642   \Hy@DisableOption{pdfpagemode}%
4643   \Hy@DisableOption{pdfnonfullscreenpagemode}%
4644   \Hy@DisableOption{pdfdirection}%
4645   \Hy@DisableOption{pdfviewarea}%
4646   \Hy@DisableOption{pdfviewclip}%
4647   \Hy@DisableOption{pdfprintarea}%
4648   \Hy@DisableOption{pdfprintclip}%
4649   \Hy@DisableOption{pdfprintscaling}%
4650   \Hy@DisableOption{pdfduplex}%
4651   \Hy@DisableOption{pdfpicktraybypdfsize}%
4652   \Hy@DisableOption{pdfprintpagerange}%
4653   \Hy@DisableOption{pdfnumcopies}%
4654   \Hy@DisableOption{pdfstartview}%
4655   \Hy@DisableOption{pdfstartpage}%
4656   \Hy@DisableOption{pdftoolbar}%
4657   \Hy@DisableOption{pdfmenubar}%
4658   \Hy@DisableOption{pdfwindowui}%
4659   \Hy@DisableOption{pdffitwindow}%
4660   \Hy@DisableOption{pdfcenterwindow}%
4661   \Hy@DisableOption{pdfdisplaydoctitle}%
4662   \Hy@DisableOption{pdfpagelayout}%
4663   \Hy@DisableOption{pdflang}%
4664   \Hy@DisableOption{baseurl}%
4665   \ifHy@texht\else\hyper@anchorstart{Doc-Start}\hyper@anchorend\fi
4666   \Hy@pdfstringfalse
4667 }

```

Ignore star from referencing macros:

```

4668 \let\NoHy@OrgRef\ref
4669 \def\ref{%
4670   \@ifstar\NoHy@OrgRef\NoHy@OrgRef
4671 }
4672 \let\NoHy@OrgPageRef\pageref
4673 \def\pageref{%
4674   \@ifstar\NoHy@OrgPageRef\NoHy@OrgPageRef
4675 }

```

## 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.

```

4676 \def\NoHyper{%
4677   \def\hyper@link@{##1}##2##3##4{##4}%
4678   \def\hyper@anchor##1{}%
4679   \global\let\hyper@livelink\hyper@link

```

```

4680 \gdef\hyper@link##1##2##3{##3}%
4681 \def\hyper@anchorstart##1{%
4682 \let\hyper@anchorend\@empty
4683 \def\hyper@linkstart##1##2{%
4684 \let\hyper@linkend\@empty
4685 \def\hyper@linkurl##1##2{##1}%
4686 \def\hyper@linkfile##1##2##3{##1}%
4687 \def\hyper@link@{##1}##2##3{%
4688 \let\Hy@backout\@gobble
4689 }
4690 \def\stop@hyper{%
4691 \def\hyper@link@{##1}##2##3##4{##4}%
4692 \let\Hy@backout\@gobble
4693 \def\hyper@@anchor##1{%
4694 \def\hyper@link##1##2##3{##3}%
4695 \def\hyper@anchorstart##1{%
4696 \let\hyper@anchorend\@empty
4697 \def\hyper@linkstart##1##2{%
4698 \let\hyper@linkend\@empty
4699 \def\hyper@linkurl##1##2{##1}%
4700 \def\hyper@linkfile##1##2##3{##1}%
4701 \def\hyper@link@{##1}##2##3{%
4702 }
4703 \def\endNoHyper{%
4704 \global\let\hyper@link\hyper@livelink
4705 }
4706 \</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:

```

4707 \<*nohyperref>
4708 \let\hyper@@anchor\@gobble
4709 \def\hyper@link#1#2#3{#3}%
4710 \let\hyper@anchorstart\@gobble
4711 \let\hyper@anchorend\@empty
4712 \let\hyper@linkstart\@gobbletwo
4713 \let\hyper@linkend\@empty
4714 \def\hyper@linkurl#1#2{#1}%
4715 \def\hyper@linkfile#1#2#3{#1}%
4716 \def\hyper@link@{#1}#2#3{%
4717 \let\PDF@SetupDoc\@empty
4718 \let\PDF@FinishDoc\@empty
4719 \def\nohyperpage#1{#1}

```

Some top-level commands:

```

4720 \def\Acrobatmenu#1#2{\leavevmode#2}
4721 \let\pdfstringdefDisableCommands\@gobbletwo
4722 \let\texorpdfstring\@firstoftwo
4723 \let\pdfbookmark\@undefined
4724 \newcommand\pdfbookmark[3][]{ }

```

```

4725 \let\phantomsection\@empty
4726 \let\hypersetup\@gobble
4727 \let\hyperbaseurl\@gobble
4728 \let\href\@gobble
4729 \let\hyperdef\@gobbletwo
4730 \let\hyperlink\@gobble
4731 \let\hypertarget\@gobble
4732 \def\hyperref{%
4733   \@ifnextchar[\@gobbleopt{\expandafter\@gobbletwo\@gobble}%
4734 }
4735 \long\def\@gobbleopt[#1]{%
4736 \let\hyperpage\@empty

```

Ignore star from referencing macros:

```

4737 \let\NoHy@OrgRef\ref
4738 \def\ref{%
4739   \@ifstar\NoHy@OrgRef\NoHy@OrgRef
4740 }
4741 \let\NoHy@OrgPageRef\pageref
4742 \def\pageref{%
4743   \@ifstar\NoHy@OrgPageRef\NoHy@OrgPageRef
4744 }
4745 </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}`

```

4746 <*package>
4747 \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.

```

4748   \if@filesw
4749     \ifHy@typexml
4750       \immediate\closeout\@mainaux
4751       \immediate\openout\@mainaux\jobname.aux\relax
4752       \immediate\write\@auxout{<relaxxml>\relax}%
4753     \fi
4754     \immediate\write\@auxout{%
4755       \string\ifx\string\hyper@anchor\string\@undefined^^J%
4756       \global\let\string\oldcontentsline\string\contentsline^^J%
4757       \gdef\string\contentsline%
4758         \string#1\string#2\string#3\string#4{%
4759         \string\oldcontentsline%
4760         {\string#1}{\string#2}{\string#3}}^^J%
4761       \global\let\string\oldnewlabel\string\newlabel^^J%
4762       \gdef\string\newlabel\string#1\string#2{%
4763         \string\newlabelxx{\string#1}\string#2^^J%
4764       \gdef\string\newlabelxx%
4765         \string#1\string#2\string#3\string#4\string#5\string#6{%
4766         \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.

```
4767      \string\AtEndDocument{%
4768      \let\string\contentsline\string\oldcontentsline^^J%
4769      \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.

```
4770      \string\else^^J%
4771      \global\let\string\hyper@last\relax^^J%
4772      \string\fi^^J%
4773  }%
4774 \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.

```
4775 \ifx\hyper@last\@undefined
4776 \def\@starttoc#1{%
4777 \begingroup
4778 \makeatletter
4779 \IfFileExists{\jobname.#1}{%
4780 \Hy@WarningNoLine{%
4781 old #1 file detected, not used; run LaTeX again%
4782 }%
4783 }-}%
4784 \if@filesw
4785 \expandafter\newwrite\csname tf@#1\endcsname
4786 \immediate\openout\csname tf@#1\endcsname \jobname.#1\relax
4787 \fi
4788 \@nobreakfalse
4789 \endgroup
4790 }%
4791 \def\newlabel#1#2{\@newl@bel r{#1}{#2}{-}{-}{-}}%
4792 \fi
4793 }
```

## 25 Title strings

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

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

```

4807 \def\Hy@scanoptauthor[#1]{%
4808   \gdef\Hy@author{#1}%
4809   \HyOrg@author[{#1}]%
4810 }%
4811 \def\Hy@scanauthor#1{%
4812   \gdef\Hy@author{#1}%
4813   \HyOrg@author{#1}%
4814 }%

```

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

```

4815 \begingroup
4816   \def\process@me#1\@nil#2{%
4817     \expandafter\let\expandafter\x\csname @#2\endcsname
4818     \edef\y{\expandafter\strip@prefix\meaning\x}%
4819     \def\c##1##2\@nil{%
4820       \ifx\\##1\\%
4821         \else
4822           \expandafter\gdef\csname Hy@#2\expandafter\endcsname
4823             \expandafter{\x}%
4824         \fi
4825       }%
4826       \expandafter\c\y\relax#1\@nil
4827     }%
4828     \expandafter\process@me\string\@latex@\@nil{title}%
4829     \expandafter\process@me\string\@latex@\@nil{author}%
4830   \endgroup
4831 \fi
4832 \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.

```

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

```

```

4851 \def\Hy@newline@author#1{, #1}
4852 \def\Hy@UseMaketitleInfos{%
4853   \Hy@UseMaketitleString{title}%
4854   \Hy@UseMaketitleString{author}%
4855 }

```

## 26 Page numbers

This stuff is done by Heiko Oberdiek.

## 27 Every page

```

4856 \RequirePackage{atbegshi}[2007/09/09]
4857 \def\Hy@EveryPageHook{}
4858 \def\Hy@EveryPageBoxHook{}
4859 \def\Hy@FirstPageHook{}
4860 \AtBeginShipout{%
4861   \Hy@EveryPageHook
4862   \ifx\Hy@EveryPageBoxHook\@empty
4863   \else
4864     \setbox\AtBeginShipoutBox=\vbox{%
4865       \offinterlineskip
4866       \Hy@EveryPageBoxHook
4867       \box\AtBeginShipoutBox
4868     }%
4869   \fi
4870 }
4871 \AtBeginShipoutFirst{%
4872   \Hy@FirstPageHook
4873 }
4874 \g@addto@macro\Hy@FirstPageHook{%
4875   \PDF@FinishDoc
4876   \gdef\PDF@FinishDoc{}}%
4877 }

```

### 27.1 PDF /PageLabels

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

```

4878 \ifHy@pagelabels
4879   \begingroup\expandafter\expandafter\expandafter\endgroup
4880   \expandafter\ifx\csname thepage\endcsname\relax
4881     \Hy@pagelabelsfalse
4882     \Hy@WarningNoLine{%
4883       Option 'pdfpagelabels' is turned off\MessageBreak
4884       because \string\thepage\space is undefined%
4885     }%
4886     \csname fi\endcsname
4887     \csname iffalse\expandafter\endcsname
4888   \fi

```

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

```

4889 \def\thispdfpagelabel#1{%
4890   \gdef\HyPL@thisLabel{#1}%
4891 }%
4892 \global\let\HyPL@thisLabel\relax

```

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

```
4893 \def\HyPL@Labels{}
```

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

```
4894 \newcount\Hy@abspage
```

```
4895 \Hy@abspage=0 %
```

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

```
4896 \def\HyPL@LastType{init}%
```

```
4897 \def\HyPL@LastNumber{0}%
```

```
4898 \def\HyPL@LastPrefix{}
```

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

```
4899 \def\HyPL@arabic{D}%
```

```
4900 \def\HyPL@Roman{R}%
```

```
4901 \def\HyPL@roman{r}%
```

```
4902 \def\HyPL@Alph{A}%
```

```
4903 \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.

```
4904 \def\HyPL@EveryPage{%
4905   \begingroup
4906     \ifx\HyPL@thisLabel\relax
4907       \let\HyPL@page\thepage
4908     \else
4909       \let\HyPL@page\HyPL@thisLabel
4910       \global\let\HyPL@thisLabel\relax
4911     \fi
4912     \let\HyPL@Type\relax
4913     \ifnum\the\c@page>0 %
4914       \expandafter\HyPL@CheckThePage\HyPL@page\@nil
4915     \fi
4916     \let\Hy@temp Y%
4917     \ifx\HyPL@Type\HyPL@LastType
4918     \else
4919       \let\Hy@temp N%
4920     \fi
4921     \ifx\HyPL@Type\relax
4922       \pdfstringdef\HyPL@Prefix{\HyPL@page}%
4923     \else
4924       \pdfstringdef\HyPL@Prefix\HyPL@Prefix
4925     \fi
4926     \ifx\HyPL@Prefix\HyPL@LastPrefix
4927     \else
4928       \let\Hy@temp N%
4929     \fi
4930     \if Y\Hy@temp
4931       \advance\c@page by -1 %
4932       \ifnum\HyPL@LastNumber=\the\c@page\relax
4933       \else
4934         \let\Hy@temp N%
4935       \fi
4936       \Hy@StepCount\c@page
4937     \fi
4938     \if N\Hy@temp
4939       \ifx\HyPL@Type\relax
```



```

4940      \HyPL@StorePageLabel{/P(\HyPL@Prefix)}%
4941    \else
4942      \HyPL@StorePageLabel{%
4943        \ifx\HyPL@Prefix\@empty
4944        \else
4945          /P(\HyPL@Prefix)%
4946        \fi
4947        /S/\csname HyPL\HyPL@Type\endcsname
4948        \ifnum\the\c@page=1 %
4949        \else
4950          \space/St \the\c@page
4951        \fi
4952      }%
4953    \fi
4954  \fi
4955  \xdef\HyPL@LastNumber{\the\c@page}%
4956  \global\let\HyPL@LastType\HyPL@Type
4957  \global\let\HyPL@LastPrefix\HyPL@Prefix
4958  \endgroup
4959  \Hy@GlobalStepCount\Hy@abspage
4960 }%

```

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

```

4961 \def\HyPL@CheckThePage#1\@nil{%
4962   \HyPL@@CheckThePage{#1}\csname\endcsname\c@page\@nil
4963 }%

```

`\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`.

```

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

```

```

4990     \Hy@next
4991     \fi
4992 }%

```

**\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`.

```

4993 \def\HyPL@Format#1#2{%
4994     \ifx\HyPL@found\@undefined
4995         \expandafter\ifx\csname c@#2\endcsname\c@page
4996             \expandafter\noexpand\csname HyPL@found\endcsname{#1}%
4997         \else
4998             \expandafter\noexpand\csname#1\endcsname{#2}%
4999         \fi
5000     \else
5001         \expandafter\noexpand\csname#1\endcsname{#2}%
5002     \fi
5003 }%

```

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

```

5004 \def\HyPL@@@CheckThePage#1\HyPL@found#2#3\@nil{%
5005     \def\Hy@tempa{#3}%
5006     \def\Hy@tempb{\HyPL@found\relax}%
5007     \ifx\Hy@tempa\Hy@tempb
5008         \def\HyPL@Type{#2}%
5009         \def\HyPL@Prefix{#1}%
5010     \fi
5011 }%

```

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

```

5012 \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`.

```

5013 \def\HyPL@Useless{0<</S/D>>}%
5014 \@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.

```

5015 \def\HyPL@SetPageLabels{%
5016     \@onelevel@sanitize\HyPL@Labels
5017     \ifx\HyPL@Labels\@empty
5018     \else
5019         \ifx\HyPL@Labels\HyPL@Useless
5020         \else
5021             \Hy@PutCatalog{/PageLabels<</Nums[\HyPL@Labels]>>}%
5022         \fi
5023     \fi
5024 }%

```

```

5025 \g@addto@macro\Hy@EveryPageHook{\HyPL@EveryPage}%
5026 \fi

```

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

```

5027 \Hy@DisableOption{pdfpagelabels}
5028 </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`

```
5029 <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.

```
5030 <*vTeX>
5031 \providecommand*{\XR@ext}{pdf}
5032 \edef\Hy@VTeXversion{%
5033   \ifx\VTeXversion\@undefined
5034     \z@
5035   \else
5036     \ifx\VTeXversion\relax
5037       \z@
5038     \else
5039       \VTeXversion
5040     \fi
5041   \fi
5042 }
5043 \begingroup
5044   \ifnum\Hy@VTeXversion<660 %
5045     \gdef\Hy@PutCatalog#1{%
5046       \Hy@WarningNoLine{%
5047         VTeX 6.59g or above required for pdfpagelabels%
5048       }%
5049     }%
5050   \else
5051     \gdef\Hy@PutCatalog#1{%
5052       \Hy@vt@PutCatalog#1/PageLabels<<>>\@nil
5053     }%
5054     \gdef\Hy@vt@PutCatalog#1/PageLabels<<#2>>#3\@nil{%
5055       \ifx\#2\%
5056         \else
5057           \immediate\special{!pdfpagelabels #2}%
5058         \fi
5059       }%
5060     \fi
5061 \endgroup
5062 </vTeX>

5063 <*pdfTeX | vTeX>
```

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

```
5064 \ifHy@pagelabels
5065   \def\HyPL@StorePageLabel#1{%
5066     \toks@ \expandafter{\HyPL@Labels}%
5067     \xdef\HyPL@Labels{%
5068       \the\toks@
5069       \the\Hy@abspage<<#1>>%
5070     }%
5071   }%
```

Package `atveryend` is used to get behind the final `\clearpage` and to avoid a `\clearpage` in `\AtEndDocument`. Then the PDF catalog entry for `\PageLabels` is set.

```
5072 \RequirePackage{atveryend}[2009/12/07]%
5073 \AtVeryEndDocument{%
5074     \HyPL@SetPageLabels
5075 }%
5076 \fi
5077 </pdfTeX | vTeX>
```

### 27.1.2 xetex

```
5078 <*xetex>
5079 \HyPsd@LoadUnicode
5080 \Hy@unicodetrue
5081 \ifx\HyPsd@pdfencoding\HyPsd@pdfencoding@auto
5082 \else
5083     \let\HyPsd@pdfencoding\HyPsd@pdfencoding@unicode
5084 \fi
5085 \define@key{Hyp}{unicode}[true]{%
5086     \Hy@boolkey{unicode}{#1}%
5087     \ifHy@unicode
5088     \else
5089         \Hy@Warning{%
5090             XeTeX driver only supports ‘unicode=true’.\MessageBreak
5091             Ignoring option setting ‘unicode=false’%
5092         }%
5093         \Hy@unicodetrue
5094     \fi
5095 }
5096 \define@key{Hyp}{pdfencoding}{%
5097     \edef\HyPsd@temp{#1}%
5098     \ifx\HyPsd@temp\HyPsd@pdfencoding@unicode
5099         \let\HyPsd@pdfencoding\HyPsd@temp
5100     \else
5101         \ifx\HyPsd@temp\HyPsd@pdfencoding@auto
5102             \let\HyPsd@pdfencoding\HyPsd@temp
5103         \else
5104             \Hy@Warning{%
5105                 XeTeX driver only supports ‘pdfencoding=unicode|auto.’%
5106                 \MessageBreak
5107                 Ignoring option setting ‘pdfencoding=\HyPsd@temp’%
5108             }%
5109         \fi
5110     \fi
5111 }
5112 \let\HyXeTeX@CheckUnicode\relax
5113 </xetex>
```

### 27.1.3 pdfmarkbase, dvipdfm, xetex

```
5114 <*pdfmarkbase>
5115 \begingroup
5116 \toks@{\expandafter{\Hy@FirstPageHook}}%
5117 \xdef\Hy@FirstPageHook{%
5118     \noexpand\headerps@out{%
5119         systemdict /pdfmark known%
```

```

5120      {%
5121      userdict /?pdfmark systemdict /exec get put%
5122      }{%
5123      userdict /?pdfmark systemdict /pop get put %
5124      userdict /pdfmark systemdict /cleartomark get put%
5125      }%
5126      ifelse%
5127      }%
5128      \the\toks@
5129      }%
5130 \endgroup
5131 \</pdfmarkbase>

```

\Hy@PutCatalog

```

5132 <dvipdfm | xetex>\def\Hy@PutCatalog#1{\@pdfmark{docview << #1 >>}}
5133 <*pdfmarkbase>
5134 \def\Hy@PutCatalog#1{%
5135   \pdfmark{pdfmark=/PUT,Raw={\string{Catalog\string} << #1 >>}}%
5136 }
5137 \</pdfmarkbase>

5138 <*pdfmarkbase | dvipdfm | xetex>
5139 \ifHy@pagelabels

```

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

```

5140 \def\HyPL@StorePageLabel#1{%
5141   \if@filesw
5142     \begingroup
5143     \edef\Hy@tempa{\the\Hy@abspage<<#1>>}%
5144     \immediate\write\@mainaux{%
5145       \string\HyPL@Entry{\Hy@tempa}%
5146     }%
5147   \endgroup
5148   \fi
5149 }%

```

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.

```

5150 \AfterBeginDocument{%
5151   \if@filesw
5152     \immediate\write\@mainaux{%
5153       \string\providecommand\string*\string\HyPL@Entry[1]{}%
5154     }%
5155   \fi
5156   \ifx\HyPL@Labels\@empty
5157     \Hy@WarningNoLine{Rerun to get /PageLabels entry}%
5158   \else
5159     \HyPL@SetPageLabels
5160   \fi
5161   \let\HyPL@Entry\@gobble
5162 }%

```

\HyPL@Entry

```

5163 \def\HyPL@Entry#1{%
5164   \expandafter\gdef\expandafter\HyPL@Labels\expandafter{%
5165     \HyPL@Labels
5166     #1%

```

```

5167 }%
5168 }%

5169 \fi
5170 </pdfmarkbase | dvipdfm | xetex>

5171 <*package>

5172 \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

```

5173 \def\Hy@CounterExists#1{%
5174   \begingroup\expandafter\expandafter\expandafter\endgroup
5175   \expandafter\ifx\csname c@#1\endcsname\relax
5176     \expandafter\@gobble
5177   \else
5178     \begingroup\expandafter\expandafter\expandafter\endgroup
5179     \expandafter\ifx\csname the#1\endcsname\relax
5180       \expandafter\expandafter\expandafter\@gobble
5181     \else
5182       \expandafter\expandafter\expandafter\@firstofone
5183     \fi
5184   \fi
5185 }
5186 \Hy@CounterExists{section}{%
5187   \newcommand\theHequation{\theHsection.\arabic{equation}}%
5188 }
5189 \Hy@CounterExists{part}{%
5190   \newcommand\theHpart{\arabic{part}}%
5191 }
5192 \@ifundefined{thechapter}{%
5193   \newcommand\theHsection    {\arabic{section}}%
5194   \newcommand\theHfigure     {\arabic{figure}}%
5195   \newcommand\theHtable      {\arabic{table}}%
5196 }{%
5197   \newcommand\theHchapter    {\arabic{chapter}}%
5198   \newcommand\theHfigure     {\theHchapter.\arabic{figure}}%
5199   \newcommand\theHtable      {\theHchapter.\arabic{table}}%
5200   \newcommand\theHsection    {\theHchapter.\arabic{section}}%

```

```

5201 }
5202 \newcommand\theHsubsection {\theHsection.\arabic{subsection}}
5203 \newcommand\theHsubsubsection{\theHsubsection.\arabic{subsubsection}}
5204 \newcommand\theHparagraph {\theHsubsubsection.\arabic{paragraph}}
5205 \newcommand\theHsubparagraph {\theHparagraph.\arabic{subparagraph}}
5206 \newcommand\theHtheorem {\theHsection.\arabic{theorem}}
5207 \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.

```

5208 \let\H@item\item
5209 \newcounter{Item}
5210 \def\theHItem{\arabic{Item}}
5211 \def\item{%
5212   \@hyper@itemfalse
5213   \if@nmbrrlist\@hyper@itemtrue\fi
5214   \H@item
5215 }

5216 \newcommand\theHenumi {\theHItem}
5217 \newcommand\theHenumii {\theHItem}
5218 \newcommand\theHenumiii {\theHItem}
5219 \newcommand\theHenumiv {\theHItem}
5220 \newcommand\theHHfootnote {\arabic{Hfootnote}}
5221 \newcommand\theHmpfootnote{\arabic{mpfootnote}}
5222 \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.

```

5223 \let\H@refstepcounter\refstepcounter
5224 \edef\name@of@eq{equation}%
5225 \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.

```

5226 \newif\if@hyper@item
5227 \newif\if@skiphyperref
5228 \@hyper@itemfalse
5229 \@skiphyperreffalse
5230 \def\refstepcounter#1{%
5231   \ifHy@pdfstring
5232   \else
5233     \H@refstepcounter{#1}%
5234     \edef\This@name{#1}%
5235     \ifx\This@name\name@of@slide
5236     \else
5237       \if@skiphyperref
5238       \else
5239         \if@hyper@item
5240           \stepcounter{Item}%
5241           \hyper@refstepcounter{Item}%
5242         \@hyper@itemfalse
5243       \else
5244         \hyper@refstepcounter{#1}%
5245       \fi
5246     \fi

```

```

5247 \fi
5248 \fi
5249 }

```

AMSTeX 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.

```

5250 \ifpackageloaded{amsmath}{\newif\ifmeasuring@measuring@false}

```

`\hyper@refstepcounter`

```

5251 \def\hyper@refstepcounter#1{%
5252   \edef\This@name{#1}%
5253   \ifx\This@name\name@of@eq
5254     \@ifundefined{theHequation}{%
5255       \make@stripped@name{\theequation}%
5256       \let\theHequation\newname
5257     }{}%
5258   \fi
5259   \@ifundefined{theH#1}{%
5260     \expandafter\def\csname theH#1\endcsname{\arabic{#1}}%
5261   }{}%
5262   \hyper@makecurrent{#1}%
5263   \ifmeasuring@
5264   \else
5265     \Hy@raisedlink{%
5266       \hyper@anchorstart{\@currentHref}\hyper@anchorend
5267     }%
5268   \fi
5269 }

```

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`.

```

5270 \begingroup\expandafter\expandafter\expandafter\endgroup
5271 \expandafter\ifx\csname chapter\endcsname\relax
5272   \def\Hy@chapterstring{section}%
5273 \else
5274   \def\Hy@chapterstring{chapter}%
5275 \fi
5276 \def\Hy@appendixstring{appendix}
5277 \def\Hy@chapapp{\Hy@chapterstring}
5278 \let\HyOrg@appendix\appendix
5279 \def\appendix{%
5280   \@ifundefined{chapter}%
5281     {\gdef\theHsection{\Alph{section}}}%
5282     {\gdef\theHchapter{\Alph{chapter}}}%
5283   \xdef\Hy@chapapp{\Hy@appendixstring}%
5284   \HyOrg@appendix
5285 }

```

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

```

5286 \def\hyper@makecurrent#1{%
5287   \begingroup

```



```

5288 \edef\Hy@param{#1}%
5289 \ifx\Hy@param\Hy@chapterstring
5290 \let\Hy@param\Hy@chapapp
5291 \fi
5292 \ifHy@hypertextnames
5293 \let\@number\@firstofone
5294 \@ifundefined{latin@Alph}{-}{%
5295 \ifx\@Alph\greek@Alph
5296 \def\@Alph{Alph\@arabic}%
5297 \fi
5298 }%
5299 \ifx\@Alph\@Alph@bul
5300 \def\@Alph{Alph\@arabic}%
5301 \fi
5302 \ifx\@alph\@alph@bul
5303 \def\@alph{alph\@arabic}%
5304 \fi
5305 \ifHy@naturalnames
5306 \let\textlatin\@firstofone
5307 \xdef\@currentHlabel{\csname the#1\endcsname}%
5308 \else
5309 \xdef\@currentHlabel{%
5310 \csname
5311 the%
5312 \expandafter\ifx\csname theH#1\endcsname\relax\else H\fi
5313 #1%
5314 \endcsname
5315 }%
5316 \fi
5317 \xdef\@currentHref{%
5318 \Hy@param.\expandafter\strip@prefix\meaning\@currentHlabel
5319 }%
5320 \else
5321 \Hy@GlobalStepCount\Hy@linkcounter
5322 \xdef\@currentHref{\Hy@param.\the\Hy@linkcounter}%
5323 \fi
5324 \endgroup
5325 }

5326 \@ifpackageloaded{fancyvrb}{%
5327 \@ifpackagelater{fancyvrb}{1998/05/20}{-}{%
5328 \def\FV@StepLineNo{%
5329 \FV@SetLineNo
5330 \def\FV@StepLineNo{H@refstepcounter{FancyVerbLine}}%
5331 \FV@StepLineNo
5332 }%
5333 }%
5334 }{}

```

## 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`

```

5335 \AtBeginDocument{%
5336   \@ifclassloaded{revtex4}{%
5337     \namedef{ver@lastpage.sty}{1994/06/25}%
5338   }{}%
5339   \@ifpackageloaded{lastpage}{%
5340     \ifHy@pageanchor
5341     \else
5342       \Hy@WarningNoLine{%
5343         The \string\pageref{LastPage} link doesn't work\MessageBreak
5344         with disabled option 'pageanchor'%
5345       }%
5346     \fi
5347     \def\lastpage@putlabel{%
5348       \addtocounter{page}{-1}%
5349       \if@filesw
5350         \begingroup
5351           \let\@number\@firstofone
5352           \ifHy@pageanchor
5353             \ifHy@hypertextnames
5354               \ifHy@plainpages
5355                 \def\Hy@temp{\arabic{page}}%
5356               \else
5357                 \Hy@unicodedefalse
5358                 \pdfstringdef\Hy@temp{\thepage}%
5359               \fi
5360             \else
5361               \def\Hy@temp{\the\Hy@pagecounter}%
5362             \fi
5363           \fi
5364           \immediate\write\@auxout{%
5365             \string\newlabel
5366             {LastPage}{\the\thepage}{\thepage}{\thepage}%
5367             \ifHy@pageanchor page.\Hy@temp\fi}{}}%
5368         }%
5369       \endgroup
5370     \fi
5371     \addtocounter{page}{1}%
5372   }%
5373   \@ifclassloaded{revtex4}{%
5374     \begingroup
5375       \toks@\expandafter{\lastpage@putlabel}%
5376       \edef\x{\endgroup
5377         \def\noexpand\lastpage@putlabel{%
5378           \noexpand\stepcounter{page}%
5379           \the\toks@
5380           \noexpand\addtocounter{page}\noexpand\m@ne
5381         }%
5382       }%
5383     \x
5384   }{}%
5385 }{}%
5386 }
5387 </package>
5388 <*check>

```

```

5389 \checkpackage{lastpage}[1994/06/25]
5390 \checkcommand\def\lastpage@putlabel{%
5391   \addtocounter{page}{-1}%
5392   \immediate\write\@auxout{%
5393     \string\newlabel{LastPage}{\the\thepage}%
5394   }%
5395   \addtocounter{page}{1}%
5396 }
5397 \</check>
5398 \<*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.

```

5399 \def\hypergetref#1{\getrefbykeydefault{#1}{\{??\}}
5400 \def\hypergetpageref#1{\getrefbykeydefault{#1}{page}{0}}

```

## 31 Package titlesec and titletoc support

This code is contributed by Javier Bezos (Email: [jbezos@arrakis.es](mailto:jbezos@arrakis.es)).

Package titlesec support:

```

5401 \@ifpackageloaded{titlesec}{%
5402   \def\ttl@Hy@steplink#1{%
5403     \Hy@GlobalStepCount\Hy@linkcounter
5404     \xdef\@currentHref{#1*.\the\Hy@linkcounter}%
5405     \def\ttl@Hy@saveanchor{%
5406       \Hy@raisedlink{%
5407         \hyper@anchorstart{\@currentHref}\hyper@anchorend
5408       }%
5409     }%
5410   }%
5411   \def\ttl@Hy@refstepcounter#1{%
5412     \let\ttl@b\Hy@raisedlink
5413     \def\Hy@raisedlink##1{%
5414       \def\ttl@Hy@saveanchor{\Hy@raisedlink{##1}}%
5415     }%
5416     \refstepcounter{#1}%
5417     \let\Hy@raisedlink\ttl@b
5418   }%
5419 }{}

```

Package titletoc support:

```

5420 \@ifpackageloaded{titletoc}{%
5421   \def\ttl@gobblecontents#1#2#3#4{\ignorespaces}%
5422 }{}

```

## 32 Package varioref support

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

```

5423 \def\Hy@varioref@undefined{\{??\}\{??\}\{??\}\{??\}\{??\}}

```

```

5424 \ifpackageloaded{varioref}{%
5425   \def\vref#1#2{%
5426     \ifundefined{r#2}{%
5427       \expandafter\let\csname r#2\endcsname\Hy@varioref@undefined
5428     }{}%
5429     \edef#1{\getpagerefnumber{#2}}%
5430   }%
5431 }{}

```

### 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

```

5432 \ifpackageloaded{longtable}{%
5433   \begingroup
5434     \def\y{\LT@array}%
5435     \@ifundefined{scr@LT@array}{}{\def\y{\scr@LT@array}}%
5436     \long\def\x\refstepcounter#1#2\@sharp#3#4\@nil{%
5437       \expandafter\endgroup
5438       \expandafter\def\y[#1]##2{%
5439         \H@refstepcounter{#1}%
5440         \hyper@makecurrent{table}%
5441         \let\Hy@LT@currentHlabel\@currentHlabel
5442         \let\Hy@LT@currentHref\@currentHref
5443         #2\@sharp####4%
5444       }%
5445     }%
5446     \expandafter\expandafter\expandafter\x\y[{#1}]{#2}\@nil

```

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

```

5447   \begingroup
5448     \def\x#1\ifvoid\LT@firsthead\copy#2\@nil{%
5449     \endgroup
5450     \def\LT@start{%
5451       #1%
5452       \let\@currentHlabel\Hy@LT@currentHlabel
5453       \let\@currentHref\Hy@LT@currentHref
5454       \Hy@raisedlink{%
5455         \hyper@anchorstart{\@currentHref}\hyper@anchorend
5456       }%
5457       \ifvoid\LT@firsthead\copy
5458       #2%
5459     }%
5460   }%
5461   \expandafter\x\LT@start\@nil
5462 }{}

```

### 34 Equations

We want to make the whole equation a target anchor. Overload `equation`, temporarily reverting to original `\refstepcounter`. If, however, it is in AMS math, we do not do anything, as the tag mechanism is used there (see section 41). The exception is that we

move the equation incrementation inside the math environment to avoid specials outside and a wrong vertical spacing of equation environments.

```

5463 \let\new@refstepcounter\refstepcounter
5464 \let\H@equation\equation
5465 \let\H@endequation\endequation

5466 \@ifpackageloaded{amsmath}{%
5467   \long\def\Hy@temp{%
5468     \incr@eqnum
5469     \mathdisplay@push
5470     \st@rredfalse \global\@eqnswtrue
5471     \mathdisplay{equation}%
5472   }%
5473   \ifx\Hy@temp\equation
5474     \expandafter\ifx\csname if@fleqn\expandafter\endcsname
5475       \csname iftrue\endcsname
5476     \else
5477       \long\def\equation{%
5478         \mathdisplay@push
5479         \st@rredfalse \global\@eqnswtrue
5480         \mathdisplay{equation}%
5481         \incr@eqnum
5482       }%
5483     \fi
5484   \fi
5485 }{%
5486 \def\equation{%
5487   \let\refstepcounter\H@refstepcounter
5488   \H@equation
5489   \@ifundefined{theHequation}{%
5490     \make@stripped@name{\theequation}%
5491     \let\theHequation\newname
5492   }{%
5493     \hyper@makecurrent{equation}%
5494     \Hy@raisedlink{\hyper@anchorstart{\@currentHref}}%
5495     \let\refstepcounter\new@refstepcounter
5496   }%
5497 \def\endequation{\Hy@raisedlink{\hyper@anchorend}\H@endequation}%
5498 }

```

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.

```

5499 \newif\if@eqnstar
5500 \@eqnstarfalse
5501 \let\H@eqnarray\eqnarray
5502 \let\H@endeqnarray\endeqnarray
5503 \def\eqnarray{%
5504   \let\Hy@reserved@a\relax
5505   \def\@currentHref{}%
5506   \H@eqnarray
5507   \if@eqnstar
5508   \else
5509     \ifx\\\@currentHref\\%
5510     \else
5511       \@ifundefined{theHequation}{%

```

```

5512         \make@stripped@name{\theequation}%
5513         \let\theHequation\newname
5514     }{}%
5515     \hyper@makecurrent{equation}%
5516     \hyper@anchorstart{\@currentHref}{\hyper@anchorend
5517 \fi
5518 \fi
5519 }
5520 \def\endeqnarray{%
5521 \H@endeqnarray
5522 }

```

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.

```

5523 \@namedef{eqnarray*}{%
5524 \def\@eqnocr{\nonumber\@seqnocr}\@eqnstartrue\eqnarray
5525 }
5526 \@namedef{endeqnarray*}{%
5527 \nonumber\endeqnarray\@eqnstarfalse
5528 }

```

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

```

5529 \@ifundefined{subeqnarray}{\{}{%
5530 \let\H@subeqnarray\subeqnarray
5531 \let\H@endsubeqnarray\endsubeqnarray
5532 \def\subeqnarray{%
5533 \let\Hy@reserved@a\relax
5534 \H@subeqnarray
5535 \@ifundefined{theHequation}{%
5536 \make@stripped@name{\theequation}%
5537 \let\theHequation\newname
5538 }{}%
5539 \hyper@makecurrent{equation}%
5540 \hyper@anchorstart{\@currentHref}{\hyper@anchorend
5541 }%
5542 \def\endsubeqnarray{%
5543 \H@endsubeqnarray
5544 }%
5545 \newcommand\theHsubequation{\theHequation\alph{subequation}}%
5546 }

```

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

```

5547 \def\make@stripped@name#1{%
5548 \begingroup
5549 \escapechar\m@ne
5550 \global\let\newname\@empty
5551 \protected@edef\Hy@tempa{#1}%
5552 \edef\@tempb{%
5553 \noexpand\@tfor\noexpand\Hy@tempa:=%
5554 \expandafter\strip@prefix\meaning\Hy@tempa
5555 }%
5556 \@tempb\do{%
5557 \if\Hy@tempa\else
5558 \if}\Hy@tempa\else
5559 \xdef\newname{\newname\Hy@tempa}%
5560 \fi
5561 \fi
5562 }%

```

```

5563 \endgroup
5564 }

```

Support for amsmath's subequations:

```

5565 \begingroup\expandafter\expandafter\expandafter\endgroup
5566 \expandafter\ifx\csname subequations\endcsname\relax
5567 \else
5568 \let\HyOrg@subequations\subequations
5569 \def\subequations{%
5570 \stepcounter{equation}%
5571 \protected@edef\theHparentequation{%
5572 \ifundefined{theHequation}\theequation\theHequation
5573 }%
5574 \addtocounter{equation}{-1}%
5575 \HyOrg@subequations
5576 \def\theHequation{\theHparentequation\alph{equation}}%
5577 \ignorespaces
5578 }%
5579 \fi

```

Support for package amsthm (Daniel Müllner):

```

5580 \@ifpackageloaded{amsthm}{%
5581 \def\@thm#1#2#3{%
5582 \ifhmode
5583 \unskip\unskip\par
5584 \fi
5585 \normalfont
5586 \trivlist
5587 \let\thmheadnl\relax
5588 \let\thm@swap\@gobble
5589 \thm@notefont{\fontseries\mddefault\upshape}%
5590 \thm@headpunct{.}% add period after heading
5591 \thm@headsep 5\p@ plus\p@ minus\p@\relax
5592 \thm@space@setup
5593 #1% style overrides
5594 \@topsep \thm@preskip % used by thm head
5595 \@topsepadd \thm@postskip % used by \@endparenv
5596 \def\dth@counter{#2}%
5597 \ifx\@empty\dth@counter
5598 \def\@tempa{%
5599 \oparg{\@begintheorem{#3}{}}[]%
5600 }%
5601 \else
5602 \H@refstepcounter{#2}%
5603 \hyper@makecurrent{#2}%
5604 \def\@tempa{%
5605 \oparg{\@begintheorem{#3}{\csname the#2\endcsname}}[]%
5606 }%
5607 \fi
5608 \@tempa
5609 }%
5610 \dth@everypar={%
5611 \minipagefalse
5612 \global\@newlistfalse
5613 \noparitemfalse
5614 \if@inlabel
5615 \global\@inlabelfalse
5616 \begingroup

```

```

5617         \setbox\z@\lastbox
5618         \ifvoid\z@
5619             \kern-\itemindent
5620         \fi
5621     \endgroup
5622     \ifx\@empty\dth@counter
5623     \else
5624         \Hy@raisedlink{%
5625             \hyper@anchorstart{\@currentHref}\hyper@anchorend
5626         }%
5627     \fi
5628     \unhbox\@labels
5629 \fi
5630 \if@nobreak
5631     \@nobreakfalse \clubpenalty\@M
5632 \else
5633     \clubpenalty\@clubpenalty \everypar{}%
5634 \fi
5635 }%
5636 }{}

```

## 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.

```

5637 \ifpackageloaded{tabularx}{\Hy@hyperfootnotesfalse}{}
5638 \ifHy@hyperfootnotes
5639     \newcounter{Hfootnote}%
5640     \let\H@@footnotetext\@footnotetext
5641     \let\H@@footnotemark\@footnotemark
5642     \def\@xfootnotenext[#1]{%
5643         \begingroup
5644             \csname c@\@mpfn\endcsname #1\relax
5645             \unrestored@protected@xdef\@thefnmark{\thempfn}%
5646         \endgroup
5647         \ifx\@footnotetext\@mpfootnotetext
5648             \expandafter\H@@mpfootnotetext
5649         \else
5650             \expandafter\H@@footnotetext
5651         \fi
5652     }%
5653     \def\@xfootnotemark[#1]{%
5654         \begingroup
5655             \c@footnote #1\relax
5656             \unrestored@protected@xdef\@thefnmark{\thefootnote}%
5657         \endgroup
5658         \H@@footnotemark
5659     }%
5660     \let\H@@mpfootnotetext\@mpfootnotetext
5661     \long\def\@mpfootnotetext#1{%
5662         \H@@mpfootnotetext{%
5663             \ifHy@nesting
5664                 \expandafter\hyper@@anchor\expandafter{\Hy@footnote@currentHref}{#1}%

```



```

5665     \else
5666         \Hy@raisedlink{%
5667             \expandafter\hyper@@anchor\expandafter{\Hy@footnote@currentHref}{\relax}%
5668             }#1%
5669     \fi
5670 }%
5671 }%
5672 \long\def\@footnotetext#1{%
5673     \H@@footnotetext{%
5674         \ifHy@nesting
5675             \expandafter\hyper@@anchor\expandafter{\Hy@footnote@currentHref}{#1}%
5676         \else
5677             \Hy@raisedlink{%
5678                 \expandafter\hyper@@anchor\expandafter{\Hy@footnote@currentHref}{\relax}%
5679             }%
5680             \let\@currentHlabel\Hy@footnote@currentHlabel
5681             \let\@currentHref\Hy@footnote@currentHref
5682             \let\@currentlabelname\@empty
5683             #1%
5684         \fi
5685     }%
5686 }%

```

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.

```

5687 \def\@footnotemark{%
5688     \leavevmode
5689     \ifhmode\edef\@x@sf{\the\spacefactor}\nobreak\fi
5690     \stepcounter{Hfootnote}%
5691     \global\let\Hy@saved@currentHlabel\@currentHlabel
5692     \global\let\Hy@saved@currentHref\@currentHref
5693     \hyper@makecurrent{Hfootnote}%
5694     \global\let\Hy@footnote@currentHlabel\@currentHlabel
5695     \global\let\Hy@footnote@currentHref\@currentHref
5696     \global\let\@currentHlabel\Hy@saved@currentHlabel
5697     \global\let\@currentHref\Hy@saved@currentHref
5698     \hyper@linkstart{link}{\Hy@footnote@currentHref}%
5699     \@makefnmark
5700     \hyper@linkend
5701     \ifhmode\spacefactor\@x@sf\fi
5702     \relax
5703 }%

```

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

```

5704 \@ifpackageloaded{longtable}{%
5705     \CheckCommand*{\LT@p@ftntext}[1]{%
5706         \edef\@tempa{%
5707             \the\LT@p@ftn
5708             \noexpand\footnotetext[\the\c@footnote]%
5709         }%
5710         \global\LT@p@ftn\expandafter{\@tempa{#1}}%
5711     }%
5712     \long\def\LT@p@ftntext#1{%

```

```

5713 \edef\@tempa{%
5714 \the\LT@p@ftn
5715 \begingroup
5716 \noexpand\c@footnote=\the\c@footnote\relax
5717 \noexpand\protected@xdef
5718 \noexpand\@thefnmark{\noexpand\thempfn}%
5719 \noexpand\protected@xdef\noexpand\@thefnmark{%
5720 \noexpand\thempfn
5721 }%
5722 \expandafter\expandafter\expandafter\noexpand
5723 \expandafter\expandafter\expandafter\Hy@LT@footnotetext
5724 \expandafter\expandafter\expandafter{%
5725 \expandafter\Hy@footnote@currentHref\expandafter
5726 }\expandafter{\Hy@footnote@currentHlabel}%
5727 }%
5728 \global\LT@p@ftn\expandafter{%
5729 \@tempa{#1}%
5730 \endgroup
5731 }%
5732 }%
5733 \long\def\Hy@LT@footnotetext#1#2#3{%
5734 \H@@footnotetext{%
5735 \ifHy@nesting
5736 \hyper@@anchor{#1}{#3}%
5737 \else
5738 \Hy@raisedlink{%
5739 \hyper@@anchor{#1}{\relax}%
5740 }%
5741 \def\@currentHlabel{#2}%
5742 \def\@currentHref{#1}%
5743 \let\@currentlabelname\@empty
5744 #3%
5745 \fi
5746 }%
5747 }%
5748 }-}%

```

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

```

5749 \@ifpackageloaded{fancyvrb}{%
5750 \def\V@@footnotetext{%
5751 \insert\footins\bgroup
5752 \csname reset@font\endcsname
5753 \footnotesize
5754 \interlinepenalty\interfootnotelinepenalty
5755 \splittopskip\footnotesep
5756 \splitmaxdepth\dp\strutbox
5757 \floatingpenalty \@MM
5758 \hsize\columnwidth
5759 \@parboxrestore
5760 \edef\@currentlabel{\csname p@footnote\endcsname\@thefnmark}%
5761 \@makefnstext{}%
5762 \rule{\z@}{\footnotesep}%
5763 \bgroup
5764 \aftergroup\V@@@footnotetext
5765 \Hy@raisedlink{%
5766 \expandafter\hyper@@anchor\expandafter{\Hy@footnote@currentHref}{\relax}%
5767 }%
5768 \let\@currentHlabel\Hy@footnote@currentHlabel

```

```

5769     \let\@currentHref\Hy@footnote@currentHref
5770     \let\@currentlabelname\@empty
5771     \ignorespaces
5772   }%
5773 }{}%

```

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.

```

5774 \let\HyOrg@maketitle\maketitle
5775 \def\maketitle{%
5776   \let\Hy@saved@footnotemark\@footnotemark
5777   \let\Hy@saved@footnotetext\@footnotetext
5778   \let\@footnotemark\H@@footnotemark
5779   \let\@footnotetext\H@@footnotetext
5780   \@ifnextchar[\Hy@maketitle@optarg{% ]
5781     \HyOrg@maketitle
5782     \Hy@maketitle@end
5783   }%
5784 }%
5785 \def\Hy@maketitle@optarg[#1]{%
5786   \HyOrg@maketitle[{#1}]%
5787   \Hy@maketitle@end
5788 }%
5789 \def\Hy@maketitle@end{%
5790   \ifx\@footnotemark\H@@footnotemark
5791     \let\@footnotemark\Hy@saved@footnotemark
5792   \fi
5793   \ifx\@footnotetext\H@@footnotetext
5794     \let\@footnotetext\Hy@saved@footnotetext
5795   \fi
5796 }%

```

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

```

5797 \def\realfootnote{%
5798   \@ifnextchar[\@xfootnote{%
5799     \stepcounter{\@mpfn}%
5800     \protected@xdef\@thefnmark{\thempfn}%
5801     \H@@footnotemark\H@@footnotetext
5802   }%
5803 }%

5804 \fi
5805 \Hy@DisableOption{hyperfootnotes}

5806 \</package>
5807 \< *check>
5808 \checklatex
5809 \checkcommand\def\@xfootnotenext[#1]{%
5810   \begingroup
5811     \csname c@\@mpfn\endcsname #1\relax
5812     \unrestored@protected@xdef\@thefnmark{\thempfn}%
5813   \endgroup
5814   \@footnotetext
5815 }
5816 \checkcommand\def\@xfootnotemark[#1]{%
5817   \begingroup
5818     \c@footnote #1\relax
5819     \unrestored@protected@xdef\@thefnmark{\thefootnote}%

```

```

5820 \endgroup
5821 \@footnotemark
5822 }
5823 \checkcommand\def\@footnotemark{%
5824 \leavevmode
5825 \ifhmode\edef\x@sf{\the\spacefactor}\nobreak\fi
5826 \@makefnmark
5827 \ifhmode\spacefactor\x@sf\fi
5828 \relax
5829 }
5830 </check>
5831 <*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.

```

5832 \def\caption{%
5833 \ifx\@captive\@undefined
5834 \latexerror{\noexpand\caption outside float}\@ehd
5835 \expandafter\@gobble
5836 \else
5837 \H@refstepcounter\@captive
5838 \let\Hy@tempa\@caption
5839 \@ifundefined{float@caption}{%
5840 }{%
5841 \expandafter\ifx\csname @float@c@\@captive\endcsname
5842 \float@caption
5843 \let\Hy@tempa\Hy@float@caption
5844 \fi
5845 }%
5846 \expandafter\@firstofone
5847 \fi
5848 {\@dblarg{\Hy@tempa\@captive}}%
5849 }
5850 \long\def\@caption#1[#2]#3{%
5851 \expandafter\ifx\csname if@capstart\expandafter\endcsname
5852 \csname iftrue\endcsname
5853 \global\let\@currentHref\hc@currentHref
5854 \else
5855 \hyper@makecurrent{\@captive}%
5856 \fi
5857 \@ifundefined{NR@getttitle}{%
5858 \def\@currentlabelname{#2}%
5859 }{%
5860 \NR@getttitle{#2}%
5861 }%
5862 \par\addcontentsline{\csname ext@#1\endcsname}{#1}{%
5863 \protect\numberline{\csname the#1\endcsname}{\ignorespaces #2}%
5864 }%
5865 \begingroup
5866 \@parboxrestore
5867 \if@minipage
5868 \setminipage
5869 \fi
5870 \normalsize

```

```

5871 \expandafter\ifx\csname if@capstart\expandafter\endcsname
5872 \csname iftrue\endcsname
5873 \global\@capstartfalse
5874 \@makecaption{\csname fnum@#1\endcsname}{\ignorespaces#3}%
5875 \else
5876 \@makecaption{\csname fnum@#1\endcsname}{%
5877 \ignorespaces

```

If we cannot have nesting, the anchor is empty.

```

5878 \ifHy@nesting
5879 \expandafter\hyper@@anchor\expandafter{\@currentHref}{#3}%
5880 \else
5881 \Hy@raisedlink{%
5882 \expandafter\hyper@@anchor\expandafter{\@currentHref}{\relax}%
5883 }%
5884 #3%
5885 \fi
5886 }%
5887 \fi
5888 \par
5889 \endgroup
5890 }

```

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.

```

5891 \let\Hy@float@caption\@caption
5892 \@ifpackageloaded{float}{%
5893 \def\Hy@float@caption{%
5894 \ifx\Hy@float@currentHref\@undefined
5895 \hyper@makecurrent{\@capytype}%
5896 \global\let\Hy@float@currentHref\@currentHref
5897 \else
5898 \let\@currentHref\Hy@float@currentHref
5899 \fi
5900 \float@caption
5901 }%
5902 \let\HyOrg@float@makebox\float@makebox
5903 \renewcommand{\float@makebox}[1]{%
5904 \HyOrg@float@makebox{%
5905 #1\relax
5906 \ifx\Hy@float@currentHref\@undefined
5907 \else
5908 \expandafter\hyper@@anchor\expandafter{\Hy@float@currentHref}{\relax}%
5909 \global\let\Hy@float@currentHref\@undefined
5910 \fi
5911 }%
5912 }%
5913 }{}

5914 \</package>
5915 \<check>
5916 \checklatex[1999/06/01 - 2000/06/01]
5917 \checkcommand\def\caption{%
5918 \ifx\@capytype\@undefined
5919 \@latex@error{\noexpand\caption outside float}\@ehd
5920 \expandafter\@gobble
5921 \else
5922 \refstepcounter\@capytype
5923 \expandafter\@firstofone

```

```

5924 \fi
5925 {\@dblarg{\@caption\@captype}}%
5926 }
5927 \checkcommand\long\def\@caption#1[#2]#3{%
5928 \par
5929 \addcontentsline{\csname ext@#1\endcsname}{#1}%
5930 {\protect\numberline{\csname the#1\endcsname}{\ignorespaces #2}}%
5931 \begingroup
5932 \parboxrestore
5933 \if@minipage
5934 \setminipage
5935 \fi
5936 \normalsize
5937 \makecaption{\csname fnum@#1\endcsname}{\ignorespaces #3}\par
5938 \endgroup
5939 }
5940 </check>
5941 <*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, let's make an attempt to get *natbib* right, because that's a powerful, important package. Patrick Daly (daly@linmpi.mpg.de) has provided hooks for us, so all we need to do is activate them.

```

5942 \def\hyper@natlinkstart#1{%
5943 \Hy@backout{#1}%
5944 \hyper@linkstart{cite}{cite.#1}%
5945 \def\hyper@nat@current{#1}%
5946 }
5947 \def\hyper@natlinkend{%
5948 \hyper@linkend
5949 }
5950 \def\hyper@natlinkbreak#1#2{%
5951 \hyper@linkend#1\hyper@linkstart{cite}{cite.#2}%
5952 }
5953 \def\hyper@natanchorstart#1{%
5954 \Hy@raisedlink{\hyper@anchorstart{cite.#1}}%
5955 }
5956 \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.

```

5957 \ifundefined{NAT@parse}{%
5958 \providecommand*\@extra@binfo{}%
5959 \providecommand*\@extra@b@citeb{}%
5960 \def\bibcite#1#2{%
5961 \@newl@bel{b}{#1\@extra@binfo}{%
5962 \hyper@link[cite]{cite.#1\@extra@b@citeb}{#2}%
5963 }%

```

```

5964 }%
5965 \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.”.

```

5966 \let\Hy@bibcite\bibcite
5967 \begingroup
5968   \@ifundefined{bbl@cite@choice}{-}{%
5969     \g@addto@macro\bbl@cite@choice{%
5970       \let\bibcite\Hy@bibcite
5971     }%
5972   }%
5973 \endgroup

```

\@BIBLABEL is working around a ‘feature’ of RevT<sub>E</sub>X.

```

5974 \providecommand*{\@BIBLABEL}{\@biblabel}%
5975 \def\@lbibitem[#1]#2{%
5976   \@skiphyperreftrue
5977   \H@item[%
5978     \ifx\Hy@raisedlink\@empty
5979       \hyper@anchorstart{cite.#2\@extra@b@citeb}%
5980       \@BIBLABEL{#1}%
5981       \hyper@anchorend
5982     \else
5983       \Hy@raisedlink{%
5984         \hyper@anchorstart{cite.#2\@extra@b@citeb}\hyper@anchorend
5985       }%
5986       \@BIBLABEL{#1}%
5987     \fi
5988   \hfill
5989 ]%
5990   \@skiphyperreffalse
5991   \if@filesw
5992     \begingroup
5993       \let\protect\noexpand
5994       \immediate\write\@auxout{%
5995         \string\bibcite{#2}{#1}%
5996       }%
5997     \endgroup
5998   \fi
5999   \ignorespaces
6000 }%

```

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

```

6001 \def\@bibitem#1{%
6002   \@skiphyperreftrue\H@item\@skiphyperreffalse
6003   \Hy@raisedlink{%
6004     \hyper@anchorstart{cite.#1\@extra@b@citeb}\relax\hyper@anchorend
6005   }%
6006   \if@filesw
6007     \begingroup
6008       \let\protect\noexpand
6009       \immediate\write\@auxout{%
6010         \string\bibcite{#1}{\the\value{\@listctr}}%
6011       }%
6012     \endgroup
6013   \fi
6014   \ignorespaces

```

```

6015 }%
6016 }{}

6017 </package>
6018 <*check>
6019 \checklatex
6020 \checkcommand\def\@lbibitem[#1]#2{%
6021   \item[\@biblabel{#1}\hfill]%
6022   \if@filesw
6023     {%
6024       \let\protect\noexpand
6025       \immediate\write\@auxout{%
6026         \string\bibcite{#2}{#1}%
6027       }%
6028     }%
6029   \fi
6030   \ignorespaces
6031 }
6032 \checkcommand\def\@bibitem#1{%
6033   \item
6034   \if@filesw
6035     \immediate\write\@auxout{%
6036       \string\bibcite{#1}{\the\value{\@listctr}}%
6037     }%
6038   \fi
6039   \ignorespaces
6040 }
6041 </check>
6042 <*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.

```

6043 \@ifclassloaded{revtex}{%
6044   \Hy@Info{*** compatibility with revtex **** }%
6045   \def\revtex@checking#1#2{%
6046     \expandafter\let\expandafter\T@temp\csname b@#1\endcsname
6047     \expandafter\def\csname b@#1\endcsname{#2}%
6048     \@SetMaxRnhefLabel{#1}%
6049     \expandafter\let\csname b@#1\endcsname\T@temp
6050   }%

```

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

```

6051 \ifundefined{CITE}{\def\CITE{\@cite}}{}%
6052 \providecommand*\@extra@b@citeb{}%
6053 \def\CITE[#1]#2{%
6054   \let\@citea\@empty
6055   \leavevmode
6056   \unskip
6057   $~{%
6058     \scriptstyle
6059     \CITE{%
6060       \@for\@citeb:=#2\do{%
6061         \@citea
6062         \def\@citea{,\penalty\@m\ }%
6063         \edef\@citeb{\expandafter\@firstofone\@citeb}%
6064         \if@filesw

```



```

6065         \immediate\write\@auxout{\string\citation{\@citeb}}}%
6066     \fi
6067     \@ifundefined{b@\@citeb\extra@b@citeb}{%
6068         \mbox{\reset@font\bfseries ?}%
6069         \G@refundefinedtrue
6070         \@latex@warning{%
6071             Citation ‘\@citeb’ on page \thepage \space undefined%
6072         }%
6073     }{%
6074         {\csname b@\@citeb\@extra@b@citeb\endcsname}%
6075     }%
6076 }%
6077 }{#1}%
6078 }$%
6079 }%

```

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.

```

6080 \def\@citex[#1]#2{%
6081     \let\@citea\@empty
6082     \@cite{%
6083         \@for\@citeb:=#2\do{%
6084             \@citea
6085             \def\@citea{,\penalty\@m\ }%
6086             \edef\@citeb{\expandafter\@firstofone\@citeb}%
6087             \if@filesw
6088                 \immediate\write\@auxout{\string\citation{\@citeb}}%
6089             \fi
6090             \@ifundefined{b@\@citeb\@extra@b@citeb}{%
6091                 \mbox{\reset@font\bfseries ?}%
6092                 \G@refundefinedtrue
6093                 \@latex@warning{%
6094                     Citation ‘\@citeb’ on page \thepage \space undefined%
6095                 }%
6096             }{%
6097                 \hbox{\csname b@\@citeb\@extra@b@citeb\endcsname}%
6098             }%
6099         }%
6100     }{#1}%
6101 }%
6102 }{}

```

### 37.1 Package harvard

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

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

```

6103 \@ifpackageloaded{harvard}{%
6104     \AtBeginDocument{%
6105         \Hy@Info{*** compatibility with harvard ***}%
6106         \Hy@raiselinksfalse
6107         \def\harvardcite#1#2#3#4{%
6108             \global\@namedef{HAR@fn@#1}{\hyper@link[cite]{\cite.#1}{#2}}%
6109             \global\@namedef{HAR@an@#1}{\hyper@link[cite]{\cite.#1}{#3}}%

```

```

6110 \global\@namedef{HAR@yr@#1}{\hyper@@link[cite]{}{cite.#1}{#4}}%
6111 \global\@namedef{HAR@df@#1}{\csname HAR@fn@#1\endcsname}%
6112 }%
6113 \def\HAR@citetoaux#1{%
6114 \if@filesw\immediate\write\@auxout{\string\citation{#1}}\fi%
6115 \ifHy@backref
6116 \ifx\@empty\@currentlabel
6117 \else
6118 \@bsphack
6119 \if@filesw
6120 \protected@write\@auxout{}{%
6121 \string\writefile{brf}{%
6122 \string\backcite{#1}{%
6123 {thepage}{\@currentlabel}{\@currentHref}%
6124 }%
6125 }%
6126 }%
6127 \fi
6128 \@esphack
6129 \fi
6130 \fi
6131 }%
6132 \def\harvarditem{%
6133 \@ifnextchar[{\@harvarditem}{\@harvarditem[\nulll]}%
6134 }%
6135 \def\@harvarditem[#1]#2#3#4#5\par{%
6136 \item[]%
6137 \hyper@anchorstart{cite.#4}\relax\hyper@anchorend
6138 \if@filesw
6139 \begingroup
6140 \def\protect##1{\string ##1\space}%
6141 \ifthenelse{\equal{#1}{\nulll}}%
6142 {\def\next{{#4}{#2}{#3}}}%
6143 {\def\next{{#4}{#2}{#1}{#3}}}%
6144 \immediate\write\@auxout{\string\harvardcite\codeof\next}%
6145 \endgroup
6146 \fi
6147 \protect\hspace*{-\labelwidth}%
6148 \protect\hspace*{-\labelsep}%
6149 \ignorespaces
6150 #5%
6151 \ifHy@backref
6152 \newblock
6153 \backref{\csname br@#4\endcsname}%
6154 \fi
6155 \par
6156 }%

```

\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:

```

6157 \long\def\HAR@checkcitations#1#2#3#4{%
6158 \def\HAR@tempa{\hyper@@link[cite]{}{cite.#1}{#2}}%
6159 \expandafter\ifx\csname HAR@fn@#1\endcsname\HAR@tempa
6160 \def\HAR@tempa{\hyper@@link[cite]{}{cite.#1}{#3}}%
6161 \expandafter\ifx\csname HAR@an@#1\endcsname\HAR@tempa
6162 \def\HAR@tempa{\hyper@@link[cite]{}{cite.#1}{#4}}%

```

```

6163         \expandafter\ifx\csname HAR@yr@#1\endcsname\HAR@tempa
6164         \else
6165             \@tempwattrue
6166         \fi
6167     \else
6168         \@tempwattrue
6169     \fi
6170 \else
6171     \@tempwattrue
6172 \fi
6173 }%
6174 }%

6175 }{}

```

## 37.2 Package chicago

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

```

6176 \@ifpackageloaded{chicago}{%

```

`\citeN`

```

6177 \def\citeN{%
6178     \def\@citesep{--1000}%
6179     \def\@cite##1##2{##1}%
6180     \def\citeauthoryear##1##2##3{##1 (##3\@cite@opt)}%
6181     \@citedata@opt
6182 }%

```

`\shortciteN`

```

6183 \def\shortciteN{%
6184     \def\@citesep{--1000}%
6185     \def\@cite##1##2{##1}%
6186     \def\citeauthoryear##1##2##3{##2 (##3\@cite@opt)}%
6187     \@citedata@opt
6188 }%

```

`\@citedata@opt`

```

6189 \def\@citedata@opt{%
6190     \let\@cite@opt\@empty
6191     \@ifnextchar [{%
6192         \@tempwattrue
6193         \@citedatax@opt
6194     }{%
6195         \@tempwafalse
6196         \@citedatax[]%
6197     }%
6198 }%

```

`\@citedatax@opt`

```

6199 \def\@citedatax@opt[#1]{%
6200     \def\@cite@opt{, #1}%
6201     \@citedatax[{#1}]%
6202 }%

6203 }{}

```

## 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.

```
6204 \def\Hy@EveryPageAnchor{%
6205   \Hy@DistillerDestFix
6206   \ifHy@pageanchor
6207     \ifHy@hypertextnames
6208     \ifHy@plainpages
6209       \def\Hy@TempPageAnchor{\hyper@@anchor{page.\the\c@page}}%
6210     \else
6211       \begingroup
6212         \let\@number\@firstofone
6213         \Hy@unicodedefalse
6214         \pdfstringdef\@theH@page{\thepage}%
6215       \endgroup
6216       \def\Hy@TempPageAnchor{\hyper@@anchor{page.\@theH@page}}%
6217     \fi
6218   \else
6219     \Hy@GlobalStepCount\Hy@pagecounter
6220     \def\Hy@TempPageAnchor{\hyper@@anchor{page.\the\Hy@pagecounter}}%
6221   \fi
6222   \vbox to 0pt{%
6223     \kern\voffset
6224     \kern\topmargin
6225     \kern-1bp\relax
6226     \hbox to 0pt{%
6227       \kern\hoffset
6228       \kern\ifodd\value{page}%
6229         \oddsidemargin
6230       \else
6231         \evensidemargin
6232       \fi
6233     \kern-1bp\relax
6234     \Hy@TempPageAnchor
6235     \hss
6236   }%
6237   \vss
6238 }%
6239 \fi
6240 }
6241 \g@addto@macro\Hy@EveryPageBoxHook{%
6242   \Hy@EveryPageAnchor
6243 }
```

## 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.

```
6244 \def\addcontentsline#1#2#3{% toc extension, type, tag
```

```

6245 \begingroup
6246   \let\label@gobble
6247   \ifx\@currentHref\@empty
6248     \Hy@Warning{%
6249       No destination for bookmark of \string\addcontentsline,%
6250       \MessageBreak destination is added%
6251     }%
6252   \phantomsection
6253 \fi
6254 \expandafter\ifx\csname toplevel@#2\endcsname\relax
6255   \begingroup
6256     \def\Hy@tempa{#1}%
6257     \ifx\Hy@tempa\Hy@bookmarkstype
6258       \Hy@WarningNoLine{%
6259         bookmark level for unknown #2 defaults to 0%
6260       }%
6261     \else
6262       \Hy@Info{bookmark level for unknown #2 defaults to 0}%
6263     \fi
6264   \endgroup
6265 \expandafter\gdef\csname toplevel@#2\endcsname{0}%
6266 \fi
6267 \edef\Hy@toplevel{\csname toplevel@#2\endcsname}%
6268 \Hy@writebookmark{\csname the#2\endcsname}%
6269   {#3}%
6270   {\@currentHref}%
6271   {\Hy@toplevel}%
6272   {#1}%
6273 \ifHy@verbose
6274   \def\Hy@tempa{#3}%
6275   \@onelevel@sanitize\Hy@tempa
6276   \typeout{pdfTeX: bookmark at \the\inputlineno: %
6277     {\csname the#2\endcsname}%
6278     {\Hy@tempa}%
6279     {\@currentHref}%
6280     {\Hy@toplevel}%
6281     {#1}%
6282   }%
6283 \fi
6284 \addtocontents{#1}{%
6285   \protect\contentsline{#2}{#3}{\thepage}{\@currentHref}%
6286 }%
6287 \endgroup
6288 }
6289 \def\contentsline#1#2#3#4{%
6290   \ifx\#4\%
6291     \csname l@#1\endcsname{#2}{#3}%
6292   \else
6293     \ifcase\Hy@linktoc % none
6294       \csname l@#1\endcsname{#2}{#3}%
6295     \or % section
6296       \csname l@#1\endcsname{%
6297         \hyper@linkstart{link}{#4}{#2}\hyper@linkend
6298       }{#3}%
6299     \or % page
6300       \csname l@#1\endcsname{{#2}}{%
6301         \hyper@linkstart{link}{#4}{#3}\hyper@linkend

```

```

6302     }%
6303     \else % all
6304         \csname l@#1\endcsname{%
6305             \hyper@linkstart{link}{#4}{#2}\hyper@linkend
6306         }{%
6307             \hyper@linkstart{link}{#4}{#3}\hyper@linkend
6308         }%
6309     \fi
6310 \fi
6311 }

6312 \</package>
6313 \<*check>
6314 \checklatex
6315 \checkcommand\def\addcontentsline#1#2#3{%
6316     \addtocontents{#1}{\protect\contentsline{#2}{#3}{\thepage}}}%
6317 }
6318 \checkcommand\def\contentsline#1{\csname l@#1\endcsname}
6319 \</check>
6320 \<*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.

```

6321 \let\H@definecounter\@definecounter
6322 \def\@definecounter#1{%
6323     \H@definecounter{#1}%
6324     \expandafter\def\csname theH#1\endcsname{\arabic{#1}}%
6325 }

```

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.

```

6326 \let\H@newctr\@newctr
6327 \def\@newctr#1[#2]{%
6328     \H@newctr#1[#2]%
6329     \expandafter\def\csname theH#1\endcsname{%
6330         \csname the\@ifundefined{theH#2}{H}{H}#2\endcsname.\arabic{#1}%
6331     }%
6332 }

```

## 41 AMS $\text{\LaTeX}$ compatibility

Oh, no, they don't use anything as simple as `\refstepcounter` in the AMS! We need to intercept some low-level operations of theirs. Damned if we are going to try and work out what they get up to. Just stick a label of 'AMS' on the front, and use the label *they* worked out. If that produces something invalid, I give up. They'll change all the code again anyway, I expect (SR).

Version 6.77p uses a patch by Ross Moore.

```

6333 \@ifpackageloaded{amsmath}{%
6334     \def\Hy@make@anchor{%
6335         \Hy@GlobalStepCount\Hy@linkcounter
6336         \xdef\@currentHref{AMS.\the\Hy@linkcounter}%
6337         \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
6338     }%

```

```

6339 \def\Hy@make@df@tag@@#1{%
6340   \gdef\df@tag{%
6341     \maketag@@@{\Hy@make@anchor#1}%
6342     \def\@currentlabel{#1}%
6343   }%
6344 }%
6345 \def\Hy@make@df@tag@@@#1{%
6346   \gdef\df@tag{%
6347     \tagform@{\Hy@make@anchor#1}%
6348     \toks@{\xp{\p@equation{#1}}}%
6349     \edef\@currentlabel{\the\toks@}%
6350   }%
6351 }%
6352 \let\HyOrg@make@df@tag@@\make@df@tag@@
6353 \let\HyOrg@make@df@tag@@@\make@df@tag@@@
6354 \let\make@df@tag@@\Hy@make@df@tag@@
6355 \let\make@df@tag@@@\Hy@make@df@tag@@@
6356 }{}

```

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

```

6357 \@ifpackagewith{hyperref}{pdftex}{%
6358   \let\H@seteqlabel\@seteqlabel
6359   \def\@seteqlabel#1{%
6360     \H@seteqlabel{#1}%
6361     \xdef\@currentHref{AMS.\the\Hy@linkcounter}%
6362     \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
6363   }%
6364 }{}

```

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.

```

6365 \let\HyOrg@addtoreset\@addtoreset
6366 \def\@addtoreset#1#2{%
6367   \HyOrg@addtoreset{#1}{#2}%
6368   \expandafter\xdef\csname theH#1\endcsname{%
6369     \expandafter\noexpand
6370     \csname the\@ifundefined{theH#2}{H#2}\endcsname
6371     .\noexpand\the\noexpand\value{#1}%
6372   }%
6373 }

```

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

```

6374 \</package>

```

```

6375 <*check>
6376 \checkpackage{amsmath}[1999/12/14 - 2000/06/06]
6377 \checkcommand\newcommand{\numberwithin}[3][\arabic]{%
6378   \ifundefined{c@#2}{\@nocounterr{#2}}{%
6379     \ifundefined{c@#3}{\@nocnterr{#3}}{%
6380       \@addtoreset{#2}{#3}%
6381       \xp\xdef\csname the#2\endcsname{%
6382         \xp\@nx\csname the#3\endcsname .\@nx#1{#2}%
6383       }%
6384     }%
6385   }%
6386 }%
6387 </check>
6388 <*package>
6389 \ifpackageloaded{amsmath}{%
6390   \ifpackagelater{amsmath}{1999/12/14}{%
6391     \renewcommand*{\numberwithin}[3][\arabic]{%
6392       \ifundefined{c@#2}{\@nocounterr{#2}}{%
6393         \ifundefined{c@#3}{\@nocnterr{#3}}{%
6394           \HyOrg@addtoreset{#2}{#3}%
6395           \xp\xdef\csname the#2\endcsname{%
6396             \xp\@nx\csname the#3\endcsname .\@nx#1{#2}%
6397           }%
6398           \xp\xdef\csname theH#2\endcsname{%
6399             \xp\@nx
6400             \csname the\ifundefined{theH#3}{H#3}\endcsname
6401             .\@nx#1{#2}%
6402           }%
6403         }%
6404       }%
6405     }%
6406   }%
6407   \Hy@WarningNoLine{%
6408     \string\numberwithin\space of package ‘amsmath’ %
6409     only fixed\MessageBreak
6410     for version 2000/06/06 v2.12 or newer%
6411   }%
6412 }%
6413 }{}

```

## 42 Included figures

Simply intercept the low level graphics package macro.

```

6414 \ifHy@figures
6415   \let\Hy@Gin@setfile\Gin@setfile
6416   \def\Gin@setfile#1#2#3{%
6417     \hyperimage{#3}{\Hy@Gin@setfile{#1}{#2}{#3}}%
6418   }%
6419 \fi
6420 \Hy@DisableOption{hyperfigures}

```

## 43 hyperindex entries

Internal command names are prefixed with \HyInd@.



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

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

```

6421 \ifHy@hyperindex
6422   \def\HyInd@ParenLeft{()}%
6423   \def\HyInd@ParenRight{)}%
6424   \def\hyperindexformat#1#2{%
6425     \let\HyOrg@hyperpage\hyperpage
6426     \let\hyperpage\@firstofone
6427     #1{\HyOrg@hyperpage{#2}}%
6428     \let\hyperpage\HyOrg@hyperpage
6429   }%
6430   \Hy@nextfalse
6431   \@ifpackageloaded{multind}{\Hy@nexttrue}{}%
6432   \@ifpackageloaded{index}{\Hy@nexttrue}{}%
6433   \@ifpackageloaded{amsmidx}{\Hy@nexttrue}{}%
6434   \begingroup
6435     \lccode'\|=\expandafter'\HyInd@EncapChar\relax
6436     \lccode'\|/'\\relax
6437   \lowercase{\endgroup
6438     \ifHy@next
6439       \let\HyInd@org@wrindex\@wrindex
6440       \def\@wrindex#1#2{\HyInd@wrindex{#1}#2||\}%
6441       \def\HyInd@wrindex#1#2|#3|#4\|{%
6442         \ifx\|#3\|
6443           \HyInd@org@wrindex{#1}{#2|hyperpage}%
6444         \else
6445           \HyInd@@@wrindex{#1}{#2}#3\|
6446         \fi
6447       }%
6448       \def\HyInd@@@wrindex#1#2#3#4\|{%
6449         \def\Hy@temp@A{#3}%
6450         \ifcase0\ifx\Hy@temp@A\HyInd@ParenLeft 1\fi
6451           \ifx\Hy@temp@A\HyInd@ParenRight 1\fi
6452           \relax
6453         \HyInd@org@wrindex{#1}{%
6454           #2|hyperindexformat{/#3#4}%
6455         }%
6456       \else
6457         \ifx\|#4\|
6458           \ifx\Hy@temp@A\HyInd@ParenRight
6459             \HyInd@org@wrindex{#1}{#2|#3}%
6460           \else
6461             \HyInd@org@wrindex{#1}{#2|#3hyperpage}%
6462           \fi
6463         \else
6464           \HyInd@org@wrindex{#1}{%
6465             #2|#3hyperindexformat{/#4}%
6466           }%
6467         \fi
6468       \fi
6469     }%

```

```

6470 \else
6471 \def\@wrindex#1{\@wrindex#1||\}%
6472 \def\@wrindex#1|#2|#3\{\%
6473 \if@filesw
6474 \ifx\|#2\%
6475 \protected@write\@indexfile{}\%
6476 \string\indexentry{#1|hyperpage}{\thepage}%
6477 }%
6478 \else
6479 \HyInd@@@wrindex{#1}#2\%
6480 \fi
6481 \fi
6482 \endgroup
6483 \@esphack
6484 }%
6485 \def\HyInd@@@wrindex#1#2#3\{\%
6486 \def\Hy@temp@A{#2}%
6487 \ifcase0\ifx\Hy@temp@A\HyInd@ParenLeft 1\fi
6488 \ifx\Hy@temp@A\HyInd@ParenRight 1\fi
6489 \relax
6490 \protected@write\@indexfile{}\%
6491 \string\indexentry{%
6492 #1|hyperindexformat{/#2#3}%
6493 }{\thepage}%
6494 }%
6495 \else
6496 \ifx\|#3\%
6497 \ifx\Hy@temp@A\HyInd@ParenRight
6498 \protected@write\@indexfile{}\%
6499 \string\indexentry{#1|#2}{\thepage}%
6500 }%
6501 \else
6502 \protected@write\@indexfile{}\%
6503 \string\indexentry{#1|#2hyperpage}{\thepage}%
6504 }%
6505 \fi
6506 \else
6507 \protected@write\@indexfile{}\%
6508 \string\indexentry{%
6509 #1|#2hyperindexformat{/#3}%
6510 }{\thepage}%
6511 }%
6512 \fi
6513 \fi
6514 }%
6515 \fi
6516 }%
6517 \fi
6518 \Hy@DisableOption{hyperindex}
6519 \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.

```
6520 \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.

```

6521 \def\hyperpage#1{%
6522   \HyInd@hyperpage#1\nohyperpage{}\@nil
6523 }
6524 \def\HyInd@hyperpage#1\nohyperpage#2#3\@nil{%
6525   \HyInd@@hyperpage{#1}%
6526   #2%
6527   \def\Hy@temp{#3}%
6528   \ifx\Hy@temp\@empty
6529     \else
6530       \Hy@ReturnAfterFi{%
6531         \HyInd@hyperpage#3\@nil
6532       }%
6533     \fi
6534 }
6535 \def\HyInd@@hyperpage#1{\@hyperpage#1----\}
6536 \def\@hyperpage#1--#2--#3\{%
6537   \ifx\#2\%
6538     \@commahyperpage{#1}%
6539   \else
6540     \HyInd@pagelink{#1}--\HyInd@pagelink{#2}%
6541   \fi
6542 }
6543 \def\@commahyperpage#1{\@commahyperpage#1, ,\}
6544 \def\@commahyperpage#1, #2,#3\{%
6545   \ifx\#2\%
6546     \HyInd@pagelink{#1}%
6547   \else
6548     \HyInd@pagelink{#1}, \HyInd@pagelink{#2}%
6549   \fi
6550 }

```

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

```

6551 \def\HyInd@pagelink#1{%
6552   \beginingroup
6553   \toks@={}%
6554   \HyInd@removespaces#1 \@nil
6555   \endgroup
6556 }
6557 \def\HyInd@removespaces#1 #2\@nil{%
6558   \toks@=\expandafter{\the\toks@#1}%
6559   \ifx\#2\%
6560     \edef\x{\the\toks@}%
6561     \ifx\x\@empty
6562       \else
6563         \hyperlink{page.\the\toks@}{\the\toks@}%
6564       \fi
6565     \else
6566       \Hy@ReturnAfterFi{%
6567         \HyInd@removespaces#2\@nil
6568       }%
6569     \fi
6570 }

```

## 44 Compatibility with foiltex

```

6571 \@ifclassloaded{foils}{%

```

```

6572 \providecommand*\ext@table{lot}%
6573 \providecommand*\ext@figure{lof}%
6574 }{}

```

## 45 Compatibility with seminar slide package

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

```

6575 \@ifclassloaded{seminar}{%
6576   \Hy@seminarslidestrue\newcommand\theHslide{\arabic{slide}}}%
6577 }{%
6578   \Hy@seminarslidesfalse
6579 }
6580 \@ifpackageloaded{slidesec}{%
6581   \newcommand\theHslidesection {\arabic{slidesection}}}%
6582   \newcommand\theHslidesubsection{%
6583     \theHslidesection.\arabic{slidesubsection}}%
6584   }%
6585   \def\slide@heading[#1]#2{%
6586     \H@refstepcounter{slidesection}%
6587     \@addtoreset{slidesubsection}{slidesection}%
6588     \addtocontents{los}{%
6589       \protect\l@slide{\the\c@slidesection}{\ignorespaces#1}%
6590       {\@SCTR}{slideheading.\theslide\theslide\theslide}}%
6591     }%
6592   \def\Hy@tempa{#2}%
6593   \ifx\Hy@tempa\@empty
6594   \else
6595     {%
6596       \edef\@currentlabel{%
6597         \csname p@slidesection\endcsname\theslide\theslide\theslide}
6598       }%
6599       \makeslideheading{#2}%
6600     }%
6601   \fi
6602   \gdef\theslideheading{#1}%
6603   \gdef\theslidesubheading{}%
6604   \ifHy@bookmarksnumbered
6605     \def\Hy@slidetitle{\theslide\theslide\theslide\space #1}%
6606   \else
6607     \def\Hy@slidetitle{#1}%
6608   \fi
6609   \ifHy@hypertextnames
6610     \ifHy@naturalnames
6611       \hyper@@anchor{slideheading.\theslide\theslide\theslide}{\relax}%
6612       \Hy@writebookmark
6613         {\theslide\theslide\theslide}%
6614         {\Hy@slidetitle}%
6615         {slideheading.\theslide\theslide\theslide}%
6616         {1}%
6617         {toc}%
6618     \else
6619       \hyper@@anchor{slideheading.\theHslide\theslide\theslide}{\relax}%
6620       \Hy@writebookmark
6621         {\theslide\theslide\theslide}%
6622         {\Hy@slidetitle}%
6623         {slideheading.\theHslide\theslide\theslide}%

```

```

6624         {1}%
6625         {toc}%
6626     \fi
6627 \else
6628     \Hy@GlobalStepCount\Hy@linkcounter
6629     \hyper@@anchor{slideheading.\the\Hy@linkcounter}{\relax}%
6630     \Hy@writebookmark
6631         {\theslidesubsection}%
6632         {\Hy@slidetitle}%
6633         {slideheading.\the\Hy@linkcounter}%
6634         {1}%
6635         {toc}%
6636 \fi
6637 }%
6638 \def\slide@subheading[#1]#2{%
6639     \H@refstepcounter{slidesubsection}%
6640     \addtocontents{los}{%
6641         \protect\l@subslide{\the\c@slidesubsection}{\ignorespaces#1}%
6642         {\@SCTR}{slideheading.\theslidesubsection}%
6643     }%
6644     \def\Hy@tempa{#2}%
6645     \ifx\Hy@tempa\@empty
6646     \else
6647         {%
6648             \edef\@currentlabel{%
6649                 \csname p@slidesubsection\endcsname\theslidesubsection
6650             }%
6651             \makeslidesubheading{#2}%
6652         }%
6653     \fi
6654     \gdef\theslidesubheading{#1}%
6655     \ifHy@bookmarksnumbered
6656         \def\Hy@slidetitle{\theslidesubsection\space #1}%
6657     \else
6658         \def\Hy@slidetitle{#1}%
6659     \fi
6660     \ifHy@hypertextnames
6661         \ifHy@naturalnames
6662             \hyper@@anchor{slideheading.\theslidesubsection}{\relax}%
6663             \Hy@writebookmark
6664                 {\theslidesubsection}%
6665                 {\Hy@slidetitle}%
6666                 {slideheading.\theslidesubsection}%
6667                 {2}%
6668                 {toc}%
6669         \else
6670             \hyper@@anchor{slideheading.\theHslidesubsection}{\relax}%
6671             \Hy@writebookmark
6672                 {\theslidesubsection}%
6673                 {\Hy@slidetitle}%
6674                 {slideheading.\theHslidesubsection}%
6675                 {2}%
6676                 {toc}%
6677         \fi
6678     \else
6679         \Hy@GlobalStepCount\Hy@linkcounter
6680         \hyper@@anchor{slideheading.\the\Hy@linkcounter}{\relax}%

```

```

6681     \Hy@writebookmark
6682         {\theslidesubsection}%
6683         {\Hy@slidetitle}%
6684         {slideheading.\the\Hy@linkcounter}%
6685         {1}%
6686         {toc}%
6687     \fi
6688 }%
6689 \providecommand*\listslidenamelist{List of Slides}%
6690 \def\listofslides{%
6691     \section*{%
6692         \listslidenamelist
6693         \@mkboth{%
6694             \expandafter\MakeUppercase\listslidenamelist
6695         }{%
6696             \expandafter\MakeUppercase\listslidenamelist
6697         }%
6698     }%
6699     \def\l@slide##1##2##3##4{%
6700         \slide@undottedcline{%
6701             \slidenumberline{##3}{\hyperlink{##4}{##2}}%
6702         }{%
6703         }%
6704         \let\l@subslide\l@slide
6705         \@startlos
6706     }%
6707     \def\slide@contents{%
6708         \def\l@slide##1##2##3##4{%
6709             \slide@ccline{\slidenumberline{##3}{\hyperlink{##4}{##2}}}{##3}%
6710         }%
6711         \let\l@subslide\@gobblefour
6712         \@startlos
6713     }%
6714     \def\Slide@contents{%
6715         \def\l@slide##1##2##3##4{%
6716             \ifcase\lslide@flag
6717                 \message{##1 ** \the\c@slidesection}%
6718                 \ifnum##1>\c@slidesection
6719                     \def\lslide@flag{1}%
6720                     {%
6721                         \large
6722                         \slide@ccline{%
6723                             \slidenumberline{$\Rightarrow\bullet$}%
6724                             {\hyperlink{##4}{##2}}%
6725                         }{##3}%
6726                     }%
6727                 \else
6728                     {%
6729                         \large
6730                         \slide@ccline{%
6731                             \slidenumberline{$\surd\;\bullet$}%
6732                             {\hyperlink{##4}{##2}}%
6733                         }{##3}%
6734                     }%
6735                 \fi
6736             \or
6737                 \def\lslide@flag{2}%

```

```

6738      {%
6739      \large
6740      \slide@ccline{%
6741      \slidenumberline{$\bullet$}%
6742      {\hyperlink{##4}{##2}}%
6743      }{##3}%
6744      }%
6745      \or
6746      {%
6747      \large
6748      \slide@ccline{%
6749      \slidenumberline{$\bullet$}%
6750      {\hyperlink{##4}{##2}}%
6751      }{##3}%
6752      }%
6753      \fi
6754      }%
6755      \def\l@subslide##1##2##3##4{%
6756      \ifnum\lslide@flag=1 %
6757      \@undottedtocline{2}{3.8em}{3.2em}{\hyperlink{##4}{##2}}{}%
6758      \fi
6759      }%
6760      \def\lslide@flag{0}%
6761      \@startlos
6762      }%
6763      {}

```

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.)

```

6764 \ifHy@texht
6765 \expandafter\endinput
6766 \fi
6767 \let\real@setref\@setref
6768 \def\@setref#1#2#3{% csname, extract group, refname
6769 \ifx#1\relax
6770 \protect\G@refundefinedtrue
6771 \nfss@text{\reset@font\bfseries ??}%
6772 \@latex@warning{%
6773 Reference ‘#3’ on page \thepage \space undefined%
6774 }%
6775 \else
6776 \expandafter\Hy@setref@link#1\@empty\@empty\@nil{#2}%
6777 \fi
6778 }

```

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

```

6779 \def\Hy@setref@link#1#2#3#4#5#6\@nil#7{%
6780 \begingroup
6781 \toks0={\hyper@@link{#5}{#4}}%
6782 \toks1=\expandafter{#7{#1}{#2}{#3}{#4}{#5}}%
6783 \edef\x{\endgroup
6784 \the\toks0 {\the\toks1 }%
6785 }%
6786 \x
6787 }
6788 \def\@pagesetref#1#2#3{% csname, extract macro, ref

```

```

6789 \ifx#1\relax
6790   \protect\G@refundefinedtrue
6791   \nfss@text{\reset@font\bfseries ??}%
6792   \@latex@warning{%
6793     Reference ‘#3’ on page \thepage \space undefined%
6794   }%
6795 \else
6796   \protect\hyper@@link
6797   {\expandafter\@fifthoffive#1}%
6798   {page.\expandafter\@secondoffive#1}%
6799   {\expandafter\@secondoffive#1}%
6800 \fi
6801 }

6802 </package>
6803 <*check>
6804 \checklatex
6805 \checkcommand\def\@setref#1#2#3{%
6806   \ifx#1\relax
6807     \protect\G@refundefinedtrue
6808     \nfss@text{\reset@font\bfseries ??}%
6809     \@latex@warning{%
6810       Reference ‘#3’ on page \thepage\space undefined%
6811     }%
6812   \else
6813     \expandafter#2#1\null
6814   \fi
6815 }
6816 </check>
6817 <*package>

```

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

```

6818 \def\HyRef@StarSetRef#1{%
6819   \begingroup
6820   \Hy@safe@activestrue
6821   \edef\x{#1}%
6822   \@onelevel@sanitize\x
6823   \edef\x{\endgroup
6824     \noexpand\HyRef@@StarSetRef
6825     \expandafter\noexpand\csname r@\x\endcsname{\x}%
6826   }%
6827   \x
6828 }
6829 \def\HyRef@@StarSetRef#1#2#3{%
6830   \ifx#1\@undefined
6831     \let#1\relax
6832   \fi
6833   \real@setref#1#3{#2}%
6834 }
6835 \def\@refstar#1{%
6836   \HyRef@StarSetRef{#1}\@firstoffive
6837 }
6838 \def\@pagerefstar#1{%
6839   \HyRef@StarSetRef{#1}\@secondoffive
6840 }
6841 \AtBeginDocument{%
6842   \@ifpackageloaded{varioref}{%

```



```

6843 \def\@Refstar#1{%
6844   \HyRef@StarSetRef{#1}\HyRef@MakeUppercaseFirstOfFive
6845 }%
6846 \def\HyRef@MakeUppercaseFirstOfFive#1#2#3#4#5{%
6847   \MakeUppercase#1%
6848 }%
6849 \DeclareRobustCommand*\Ref{%
6850   \@ifstar\@Refstar\HyRef@Ref
6851 }%
6852 \def\HyRef@Ref#1{%
6853   \hyperref[#{1}]{\Ref*{#1}}%
6854 }%
6855 \def\Vr@f#1{%
6856   \leavevmode\unskip\vref@space
6857   \hyperref[#{1}]{%
6858     \Ref*{#1}%
6859     \let\vref@space\nobreakspace
6860     \vpageref[\unskip]{#1}%
6861   }%
6862 }%
6863 \def\vr@f#1{%
6864   \leavevmode\unskip\vref@space
6865   \begingroup
6866     \let\T@pageref\@pagerefstar
6867     \hyperref[#{1}]{%
6868       \ref*{#1}%
6869       \vpageref[\unskip]{#1}%
6870     }%
6871   \endgroup
6872 }%
6873 }-%
6874 }
6875 \DeclareRobustCommand*\autopageref{%
6876   \@ifstar{%
6877     \HyRef@autopagerefname\pageref*%
6878   }\HyRef@autopageref
6879 }
6880 \def\HyRef@autopageref#1{%
6881   \hyperref[#{1}]{\HyRef@autopagerefname\pageref*{#1}}%
6882 }
6883 \def\HyRef@autopagerefname{%
6884   \@ifundefined{pageautorefname}{%
6885     \@ifundefined{pagename}{%
6886       \Hy@Warning{No autoref name for 'page'}%
6887     }{%
6888       \pagename\nobreakspace
6889     }%
6890   }-%
6891   \pageautorefname\nobreakspace
6892 }%
6893 }
6894 \DeclareRobustCommand*\autoref{%
6895   \@ifstar{\HyRef@autoref\@gobbletwo}{\HyRef@autoref\hyper@@link}%
6896 }
6897 \def\HyRef@autoref#1#2{%
6898   \begingroup
6899     \Hy@safe@activetrue

```

```

6900 \expandafter\HyRef@autosetref\csname r@#2\endcsname{#2}{#1}%
6901 \endgroup
6902 }
6903 \def\HyRef@autosetref#1#2#3{% link command, csname, refname
6904 \HyRef@ShowKeysRef{#2}%
6905 \ifcase 0\ifx#1\relax 1\fi\ifx#1\Hy@varioref@undefined 1\fi\relax
6906 \edef\HyRef@thisref{%
6907 \expandafter\@fourthoffive#1\@empty\@empty\@empty
6908 }%
6909 \expandafter\HyRef@testreftype\HyRef@thisref.\.%
6910 \Hy@safe@activesfalse
6911 #3{%
6912 \expandafter\@fifthoffive#1\@empty\@empty\@empty
6913 }{%
6914 \expandafter\@fourthoffive#1\@empty\@empty\@empty
6915 }{%
6916 \HyRef@currentHtag
6917 \expandafter\@firstoffive#1\@empty\@empty\@empty
6918 \null
6919 }%
6920 \else
6921 \protect\G@refundefinedtrue
6922 \nfss@text{\reset@font\bfseries ??}%
6923 \@latex@warning{%
6924 Reference ‘#2’ on page \thepage\space undefined%
6925 }%
6926 \fi
6927 }
6928 \def\HyRef@testreftype#1.#2\{%
6929 \@ifundefined{#1autorefname}{%
6930 \@ifundefined{#1name}{%
6931 \HyRef@StripStar#1\*\@nil{#1}%
6932 \@ifundefined{\HyRef@name autorefname}{%
6933 \@ifundefined{\HyRef@name name}{%
6934 \def\HyRef@currentHtag{%
6935 \Hy@Warning{No autoref name for ‘#1’}%
6936 }{%
6937 \edef\HyRef@currentHtag{%
6938 \expandafter\noexpand\csname\HyRef@name name\endcsname
6939 \noexpand~%
6940 }%
6941 }%
6942 }{%
6943 \edef\HyRef@currentHtag{%
6944 \expandafter\noexpand\csname\HyRef@name autorefname\endcsname
6945 \noexpand~%
6946 }%
6947 }%
6948 }{%
6949 \edef\HyRef@currentHtag{%
6950 \expandafter\noexpand\csname#1name\endcsname
6951 \noexpand~%
6952 }%
6953 }%
6954 }{%
6955 \edef\HyRef@currentHtag{%
6956 \expandafter\noexpand\csname#1autorefname\endcsname

```

```

6957     \noexpand~%
6958   }%
6959 }%
6960 }
6961 \def\HyRef@StripStar#1*\#2\@nil#3{%
6962   \def\HyRef@name{#2}%
6963   \ifx\HyRef@name\HyRef@CaseStar
6964     \def\HyRef@name{#1}%
6965   \else
6966     \def\HyRef@name{#3}%
6967   \fi
6968 }
6969 \def\HyRef@CaseStar{*\\}
6970 \def\HyRef@currentHtag{}

```

Support for package showkeys.

\HyRef@ShowKeysRef

```

6971 \let\HyRef@ShowKeysRef\@gobble
6972 \def\HyRef@ShowKeysInit{%
6973   \begingroup\expandafter\expandafter\expandafter\endgroup
6974   \expandafter\ifx\csname SK@@label\endcsname\relax
6975   \else
6976     \ifx\SK@ref\@empty
6977     \else
6978       \def\HyRef@ShowKeysRef{%
6979         \SK@\SK@@ref
6980       }%
6981     \fi
6982   \fi
6983 }
6984 \@ifpackageloaded{showkeys}{%
6985   \HyRef@ShowKeysInit
6986 }{%
6987   \AtBeginDocument{%
6988     \@ifpackageloaded{showkeys}{%
6989       \HyRef@ShowKeysInit
6990     }{%
6991     }%
6992 }

```

Defaults for the names that \autoref uses.

```

6993 \providecommand*\AMSautorefname{\equationautorefname}
6994 \providecommand*\Hfootnoteautorefname{\footnoteautorefname}
6995 \providecommand*\Itemautorefname{\itemautorefname}
6996 \providecommand*\itemautorefname{item}
6997 \providecommand*\equationautorefname{Equation}
6998 \providecommand*\footnoteautorefname{footnote}
6999 \providecommand*\itemautorefname{item}
7000 \providecommand*\figureautorefname{Figure}
7001 \providecommand*\tableautorefname{Table}
7002 \providecommand*\partautorefname{Part}
7003 \providecommand*\appendixautorefname{Appendix}
7004 \providecommand*\chapterautorefname{chapter}
7005 \providecommand*\sectionautorefname{section}
7006 \providecommand*\subsectionautorefname{subsection}
7007 \providecommand*\subsubsectionautorefname{subsubsection}
7008 \providecommand*\paragraphautorefname{paragraph}

```

```

7009 \providecommand*\subparagraphautorefname{subparagraph}
7010 \providecommand*\FancyVerbLineautorefname{line}
7011 \providecommand*\theoremautorefname{Theorem}
7012 \providecommand*\pageautorefname{page}
7013 \end{package}

```

## 46 Configuration files

### 46.1 PS/PDF strings

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

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

```

7014 <*pdfTex | dvipdfm | xetex | vtex | pdfmarkbase | dviwindo>
7015 \RequirePackage{pdfTexcmds}[2009/04/10]
7016 \begingroup\expandafter\expandafter\expandafter\endgroup
7017 \expandafter\ifx\csname pdfTescapestring\endcsname\relax
7018   \begingroup
7019     \catcode'\|=0 %
7020     \makeother\| %
7021     \@firstofone{\endgroup
7022       |def|Hy@pstringdef#1#2{%
7023         |begingroup
7024           |edef~{|string~}%
7025           |xdef|Hy@gtemp{#2}%
7026         |endgroup
7027         |let#1|Hy@gtemp
7028         |@onelevel@sanitize#1%
7029         |edef#1{|expandafter|Hy@ExchangeBackslash#1\|@nil}%
7030         |edef#1{|expandafter|Hy@ExchangeLeftParenthesis#1(|@nil}%
7031         |edef#1{|expandafter|Hy@ExchangeRightParenthesis#1)|@nil}%
7032       }%
7033       |def|Hy@ExchangeBackslash#1\#2|@nil{%
7034         #1%
7035         |ifx|\#2\| %
7036         |else
7037           \| %
7038           |Hy@ReturnAfterFi{%
7039             |Hy@ExchangeBackslash#2|@nil
7040           }%
7041         |fi
7042       }%
7043     }%
7044   \def\Hy@ExchangeLeftParenthesis#1(#2\@nil{%
7045     #1%
7046     \ifx\#2\| %
7047     \else
7048       \@backslashchar(%
7049       \Hy@ReturnAfterFi{%
7050         \Hy@ExchangeLeftParenthesis#2\@nil
7051       }%
7052     \fi

```

```

7053 }%
7054 \def\Hy@ExchangeRightParenthesis#1)#2\@nil{%
7055   #1%
7056   \ifx\#2\%
7057   \else
7058     \@backslashchar)%
7059     \Hy@ReturnAfterFi{%
7060       \Hy@ExchangeRightParenthesis#2\@nil
7061     }%
7062   \fi
7063 }%
7064 \else
7065   \def\Hy@pstringdef#1#2{%
7066     \begingroup
7067     \edef~{\string~}%
7068     \xdef\Hy@gtemp{\pdf@escapestring{#2}}%
7069   \endgroup
7070   \let#1\Hy@gtemp
7071 }%
7072 \fi
7073 </pdfTeX | dvipdfm | xetex | vtex | pdfmarkbase | dviwindo>

```

## 46.2 pdfTeX

```

7074 <*pdfTeX>
7075 \providecommand*{\XR@ext}{pdf}
7076 \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

```

7077 \let\Hy@pdfminorversion\relax
7078 \begingroup\expandafter\expandafter\expandafter\endgroup
7079 \expandafter\ifx\csname pdfminorversion\endcsname\relax
7080   \begingroup\expandafter\expandafter\expandafter\endgroup
7081   \expandafter\ifx\csname pdfoptionpdfminorversion\endcsname\relax
7082   \else
7083     \def\Hy@pdfminorversion{\pdfoptionpdfminorversion}%
7084   \fi
7085 \else
7086   \def\Hy@pdfminorversion{\pdfminorversion}%
7087 \fi
7088 \@ifundefined{Hy@pdfminorversion}{%
7089   \PackageInfo{hyperref}{%
7090     PDF version is not set, because pdfTeX is too old (<1.10a)%
7091   }%
7092 }{%
7093   \ifHy@ocgcolorlinks
7094     \ifnum\Hy@pdfminorversion<5 %
7095       \setkeys{Hyp}{pdfversion=1.5}%
7096     \fi
7097   \fi
7098   \ifHy@setpdfversion

```

```

7099 \ifnum\Hy@pdfminorversion=\Hy@pdfversion\relax
7100 \else
7101 \Hy@pdfminorversion=\Hy@pdfversion\relax
7102 \fi
7103 \PackageInfo{hyperref}{%
7104 \expandafter\string\Hy@pdfminorversion
7105 :=\number\Hy@pdfversion\space
7106 }%
7107 \fi
7108 \edef\Hy@pdfversion{\number\Hy@pdfminorversion}%
7109 }
7110 \Hy@DisableOption{pdfversion}%

7111 \ifHy@ocgcolorlinks
7112 \immediate\pdfobj{%
7113 <<%
7114 /Type/OCG%
7115 /Name(View)%
7116 /Usage<<%
7117 /Print<<%
7118 /PrintState/OFF%
7119 >>%
7120 /View<<%
7121 /ViewState/ON%
7122 >>%
7123 >>%
7124 >>%
7125 }%
7126 \edef\OBJ@OCG@view{\the\pdflastobj\space 0 R}%
7127 \immediate\pdfobj{%
7128 <<%
7129 /Type/OCG%
7130 /Name(Print)%
7131 /Usage<<%
7132 /Print<<%
7133 /PrintState/ON%
7134 >>%
7135 /View<<%
7136 /ViewState/OFF%
7137 >>%
7138 >>%
7139 >>%
7140 }%
7141 \edef\OBJ@OCG@print{\the\pdflastobj\space 0 R}%
7142 \immediate\pdfobj{%
7143 [%
7144 \OBJ@OCG@view\space\OBJ@OCG@print
7145 ]%
7146 }%
7147 \edef\OBJ@OCGs{\the\pdflastobj\space 0 R}%
7148 \pdfcatalog{%
7149 /OCProperties<<%
7150 /OCGs \OBJ@OCGs
7151 /D<<%
7152 /OFF[\OBJ@OCG@print]%
7153 /AS[%
7154 <<%
7155 /Event/View%

```

```

7156         /OCGs \OBJ@OCGs
7157         /Category[/View]%
7158     >>%
7159     <<%
7160         /Event/Print%
7161         /OCGs \OBJ@OCGs
7162         /Category[/Print]%
7163     >>%
7164     <<%
7165         /Event/Export%
7166         /OCGs \OBJ@OCGs
7167         /Category[/Print]%
7168     >>%
7169     ]%
7170 >>%
7171 >>%
7172 }%
7173 \beginngroup
7174     \edef\x{\endgroup
7175         \pdfpageresources{%
7176             /Properties<<%
7177                 /OCView \OBJ@OCG@view
7178                 /OCPrint \OBJ@OCG@print
7179             >>%
7180         }%
7181     }%
7182 \x
7183 \AtBeginDocument{%
7184     \def\Hy@colorlink#1{%
7185         \beginngroup
7186             \ifHy@ocgcolorlinks
7187                 \def\Hy@ocgcolor{#1}%
7188                 \setbox0=\color@hbox
7189             \else
7190                 \HyColor@UseColor#1%
7191             \fi
7192         }%
7193     \def\Hy@endcolorlink{%
7194         \ifHy@ocgcolorlinks
7195             \color@endbox
7196             \mbox{%
7197                 \pdfliteral page{/OC/OCPrint BDC}%
7198                 \rlap{\copy0}%
7199                 \pdfliteral page{EMC/OC/OCView BDC}%
7200                 \beginngroup
7201                     \expandafter\HyColor@UseColor\Hy@ocgcolor
7202                     \box0 %
7203                 \endgroup
7204                 \pdfliteral page{EMC}%
7205             }%
7206         \fi
7207     \endgroup
7208 }%
7209 }%
7210 \else
7211     \Hy@DisableOption{ocgcolorlinks}%
7212 \fi

```

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

```
7213 \def\setpdflinkmargin#1{\pdflinkmargin#1}
7214 \ifx\pdfstartlink\undefined% less than version 14
7215   \let\pdfstartlink\pdfannotlink
7216   \let\pdflinkmargin\@tempdima
7217   \let\pdfxform\pdfform
7218   \let\pdflastxform\pdflastform
7219   \let\pdfrefxform\pdfrefform
7220 \else
7221   \pdflinkmargin1pt %
7222 \fi
```

First set up the default linking

```
7223 \providecommand*\@pdfview{XYZ}
```

First define the anchors:

```
7224 \def\new@pdflink#1{%
7225   \ifHy@verbose
7226     \typeout{pdftex: define anchor at line \the\inputlineno: #1}%
7227   \fi
7228   \Hy@SaveLastskip
7229   \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
7230   \Hy@DestName\Hy@pstringDest\@pdfview
7231   \Hy@RestoreLastskip
7232 }
7233 \let\pdf@endanchor\@empty
```

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

```
7234 \def\Hy@DestName#1#2{%
7235   \pdfdest name{#1}#2\relax
7236 }
```

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.

```
7237 \providecommand*\@pdfborder{0 0 1}
7238 \providecommand*\@pdfborderstyle{}
7239 \def\Hy@undefinedname{UNDEFINED}
7240 \def\find@pdflink#1#2{%
7241   \leavevmode
7242   \protected@edef\Hy@testname{#2}%
7243   \ifx\Hy@testname\@empty
7244     \Hy@Warning{%
7245       Empty destination name,\MessageBreak
7246       using ‘\Hy@undefinedname’%
7247     }%
7248     \let\Hy@testname\Hy@undefinedname
7249   \else
7250     \Hy@pstringdef\Hy@testname{%
7251       \expandafter\HyperDestNameFilter\expandafter{\Hy@testname}%
7252     }%
7253   \fi
7254   \Hy@StartlinkName{%
7255     \ifHy@pdfa /F 4\fi
7256     \Hy@setpdfborder
```



```

7257 \ifx\@pdfhighlight\@empty
7258 \else
7259 /H\@pdfhighlight
7260 \fi
7261 \ifx\CurrentBorderColor\relax
7262 \else
7263 /C[\CurrentBorderColor]%
7264 \fi
7265 }\Hy@testname
7266 \expandafter\Hy@colorlink\csname @#1color\endcsname
7267 }
7268 \def\Hy@StartlinkName#1#2{%
7269 \pdfstartlink attr{#1}goto name{#2}\relax
7270 }
7271 \def\close@pdflink{\Hy@endcolorlink\pdfendlink}
7272 \def\hyper@anchor#1{\new@pdflink{#1}\anchor@spot\pdf@endanchor}
7273 \def\hyper@anchorstart#1{\new@pdflink{#1}\Hy@activeanchortrue}
7274 \def\hyper@anchorend{\pdf@endanchor\Hy@activeanchorfalse}
7275 \def\hyper@linkstart#1#2{%
7276 \ifundefined{@#1bordercolor}{%
7277 \let\CurrentBorderColor\relax
7278 }{%
7279 \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
7280 }%
7281 \find@pdflink{#1}{#2}%
7282 }
7283 \def\hyper@linkend{\close@pdflink}
7284 \def\hyper@link#1#2#3{%
7285 \ifundefined{@#1bordercolor}{%
7286 \let\CurrentBorderColor\relax
7287 }{%
7288 \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
7289 }%
7290 \find@pdflink{#1}{#2}#3%
7291 \close@pdflink
7292 }
7293 \let\CurrentBorderColor\@linkbordercolor
7294 \def\hyper@linkurl#1#2{%
7295 \begingroup
7296 \Hy@pstringdef\Hy@pstringURI{#2}%
7297 \hyper@chars
7298 \leavevmode
7299 \pdfstartlink
7300 attr{%
7301 \Hy@setpdfborder
7302 \ifx\@pdfhighlight\@empty
7303 \else
7304 /H\@pdfhighlight
7305 \fi
7306 \ifx\@urlbordercolor\relax
7307 \else
7308 /C[\@urlbordercolor]%
7309 \fi
7310 }%
7311 user{%
7312 /Subtype/Link%
7313 \ifHy@pdfa /F 4\fi

```

```

7314      /A<<%
7315      /Type/Action%
7316      /S/URI%
7317      /URI(\Hy@pstringURI)%
7318      >>%
7319      }%
7320      \relax
7321      \Hy@colorlink\@urlcolor#1%
7322      \close@pdflink
7323      \endgroup
7324 }
7325 \def\hyper@linkfile#1#2#3{% anchor text, filename, linkname
7326   \begingroup
7327     \Hy@pstringdef\Hy@pstringF{#2}%
7328     \Hy@pstringdef\Hy@pstringD{#3}%
7329     \leavevmode
7330     \pdfstartlink
7331     attr{%
7332       \Hy@setpdfborder
7333       \ifx\@pdfhighlight\@empty
7334       \else
7335         /H\@pdfhighlight
7336       \fi
7337       \ifx\@filebordercolor\relax
7338       \else
7339         /C[\@filebordercolor]%
7340       \fi
7341     }%
7342     user {%
7343       /Subtype/Link%
7344       \ifHy@pdfa /F 4\fi
7345       /A<<%
7346       /F(\Hy@pstringF)%
7347       /S/GoToR%
7348       \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}

7349      \ifx\#3\%
7350      /D[0 \@pdfstartview]%
7351      \else
7352      /D(\Hy@pstringD)%
7353      \fi
7354      >>%
7355      }%
7356      \relax
7357      \Hy@colorlink\@filecolor#1%
7358      \close@pdflink
7359      \endgroup

```

```

7360 }
7361 \def\@hyper@launch run:#1\#2#3{% filename, anchor text linkname
7362   \begingroup
7363     \Hy@pstringdef\Hy@pstringF{#1}%
7364     \Hy@pstringdef\Hy@pstringP{#3}%
7365     \leavevmode
7366     \pdfstartlink
7367     attr{%
7368       \Hy@setpdfborder
7369       \ifx\@pdfhighlight\@empty
7370       \else
7371         /H\@pdfhighlight
7372       \fi
7373       \ifx\@runbordercolor\relax
7374       \else
7375         /C[\@runbordercolor]%
7376       \fi
7377     }%
7378     user {%
7379       /Subtype/Link%
7380       \ifHy@pdfa /F 4\fi
7381       /A<<%
7382         /F(\Hy@pstringF)%
7383         /S/Launch%
7384         \Hy@SetNewWindow
7385         \ifx\#3\%
7386         \else
7387           /Win<</P(\Hy@pstringP)/F(\Hy@pstringF)>>%
7388         \fi
7389       >>%
7390     }%
7391     \relax
7392     \Hy@colorlink\@runcolor#2%
7393     \close@pdflink
7394   \endgroup
7395 }

```

\@pdfproducer

```

7396 \ifx\@pdfproducer\relax
7397   \begingroup\expandafter\expandafter\expandafter\endgroup
7398   \expandafter\ifx\csname luatexversion\endcsname\relax
7399     \def\@pdfproducer{pdfTeX}%
7400     \ifx\eTeXversion\@undefined
7401     \else
7402       \ifx\eTeXversion\relax
7403       \else
7404         \ifnum\eTeXversion>0 %
7405           \def\@pdfproducer{pdfTeX}%
7406         \fi
7407       \fi
7408     \fi
7409     \ifx\pdftexversion\@undefined
7410     \else
7411       \ifnum\pdftexversion<100 %
7412       \edef\@pdfproducer{%
7413         \@pdfproducer
7414         \the\pdftexversion.\pdftexrevision

```

```

7415     }%
7416   \else
7417     \ifnum\pdfTeXversion<130 %
7418       \edef\@pdfproducer{%
7419         \@pdfproducer-%
7420         \expandafter\@car\the\pdfTeXversion\@empty\@nil.%
7421         \expandafter\@cdr\the\pdfTeXversion\@empty\@nil
7422         \pdfTeXrevision
7423       }%
7424     \else
7425       \ifnum\pdfTeXversion<140 %
7426       \else
7427         \def\@pdfproducer{pdfTeX}%
7428       \fi
7429       \edef\@pdfproducer{%
7430         \@pdfproducer-%
7431         \expandafter\@car\the\pdfTeXversion\@empty\@nil.%
7432         \expandafter\@cdr\the\pdfTeXversion\@empty\@nil.%
7433         \pdfTeXrevision
7434       }%
7435     \fi
7436   \fi
7437 \fi
7438 \else
7439   \begingroup
7440     \count@=\luatexversion
7441     \divide\count@ by 100 %
7442     \edef\x{\the\count@}%
7443     \count@=-\x\relax
7444     \multiply\count@ by 100 %
7445     \advance\count@ by \luatexversion
7446     \edef\x{\endgroup
7447       \def\noexpand\@pdfproducer{%
7448         LuaTeX-\x.\the\count@.\luatexrevision
7449       }%
7450     }%
7451   \x
7452 \fi
7453 \fi

```

\PDF@SetupDox

```

7454 \def\PDF@SetupDoc{%
7455   \ifx\@pdfpagescrop\@empty
7456   \else
7457     \edef\process@me{%
7458       \pdfpagesattr={%
7459         /CropBox[\@pdfpagescrop]%
7460         \expandafter\ifx\expandafter\\\the\pdfpagesattr\\%
7461         \else
7462           ^^J\the\pdfpagesattr
7463         \fi
7464       }%
7465     }%
7466     \process@me
7467   \fi
7468   \Hy@pstringdef\Hy@pstringB{\@baseurl}%
7469   \pdfcatalog{%

```

```

7470     /PageMode/\@pdfpagemode
7471     \ifx\@baseurl\@empty
7472     \else
7473         /URI<</Base(\Hy@pstringB)>>%
7474     \fi
7475 }%
7476 \ifx\@pdfstartpage\@empty
7477 \else
7478     \ifx\@pdfstartview\@empty
7479     \else
7480         openaction goto page\@pdfstartpage{\@pdfstartview}%
7481     \fi
7482 \fi
7483 \edef\Hy@temp{%
7484     \ifHy@toolbar\else /HideToolbar true\fi
7485     \ifHy@menubar\else /HideMenubar true\fi
7486     \ifHy>windowui\else /HideWindowUI true\fi
7487     \ifHy@fitwindow /FitWindow true\fi
7488     \ifHy@centerwindow /CenterWindow true\fi
7489     \ifHy@displaydoctitle /DisplayDocTitle true\fi
7490     \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
7491     \Hy@UseNameKey{Direction}\@pdfdirection
7492     \Hy@UseNameKey{ViewArea}\@pdfviewarea
7493     \Hy@UseNameKey{ViewClip}\@pdfviewclip
7494     \Hy@UseNameKey{PrintArea}\@pdfprintarea
7495     \Hy@UseNameKey{PrintClip}\@pdfprintclip
7496     \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
7497     \Hy@UseNameKey{Duplex}\@pdfduplex
7498     \ifx\@pdfpicktraybypdfsize\@empty
7499     \else
7500         /PickTrayByPDFSize \@pdfpicktraybypdfsize
7501     \fi
7502     \ifx\@pdfprintpagerange\@empty
7503     \else
7504         /PrintPageRange[\@pdfprintpagerange]%
7505     \fi
7506     \ifx\@pdfnumcopies\@empty
7507     \else
7508         /NumCopies \@pdfnumcopies
7509     \fi
7510 }%
7511 \pdfcatalog{%
7512     \ifx\Hy@temp\@empty
7513     \else
7514         /ViewerPreferences<<\Hy@temp>>%
7515     \fi
7516     \Hy@UseNameKey{PageLayout}\@pdfpagelayout
7517     \ifx\@pdflang\@empty
7518     \else
7519         /Lang(\@pdflang)%
7520     \fi
7521 }%
7522 }

```

\PDF@FinishDoc

```

7523 \def\PDF@FinishDoc{%
7524     \Hy@UseMaketitleInfos

```

```

7525 \pdfinfo{%
7526   /Author(\@pdfauthor)%
7527   /Title(\@pdftitle)%
7528   /Subject(\@pdfsubject)%
7529   /Creator(\@pdfcreator)%
7530   \ifx\@pdfcreationdate\@empty
7531   \else
7532     /CreationDate(\@pdfcreationdate)%
7533   \fi
7534   \ifx\@pdfmoddate\@empty
7535   \else
7536     /ModDate(\@pdfmoddate)%
7537   \fi
7538   \ifx\@pdfproducer\relax
7539   \else
7540     /Producer(\@pdfproducer)%
7541   \fi
7542   /Keywords(\@pdfkeywords)%
7543 }%
7544 \Hy@DisableOption{pdfauthor}%
7545 \Hy@DisableOption{pdftitle}%
7546 \Hy@DisableOption{pdfsubject}%
7547 \Hy@DisableOption{pdfcreator}%
7548 \Hy@DisableOption{pdfcreationdate}%
7549 \Hy@DisableOption{pdfmoddate}%
7550 \Hy@DisableOption{pdfproducer}%
7551 \Hy@DisableOption{pdfkeywords}%
7552 }

```

`\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`.

```

7553 \def\hyper@pagetransition{%
7554   \ifx\@pdfpagetransition\relax
7555   \else
7556     \expandafter\Hy@RemoveTransPageAttr
7557     \the\pdfpageattr^^J/Trans{>>\END
7558     \ifx\@pdfpagetransition\@empty
7559     \else
7560       \edef\@processme{%
7561         \global\pdfpageattr{%
7562           \the\pdfpageattr
7563           ^^J/Trans << /S /\@pdfpagetransition\space >>%
7564         }%
7565       }%
7566       \@processme
7567     \fi
7568   \fi
7569 }

```

`\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.

```

7570 \gdef\Hy@RemoveTransPageAttr#1^^J/Trans#2#3>>#4\END{%
7571   \ifx\#2\%
7572     \global\pdfpageattr{#1}%

```

```

7573 \else
7574 \Hy@RemoveTransPageAttr#1#4\END
7575 \fi
7576 }

```

**\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.

```

7577 \def\hyper@pageduration{%
7578 \ifx\@pdfpageduration\relax
7579 \else
7580 \expandafter\Hy@RemoveDurPageAttr\the\pdfpageattr^^J/Dur{} \END
7581 \ifx\@pdfpageduration\@empty
7582 \else
7583 \edef\@processme{%
7584 \global\pdfpageattr{%
7585 \the\pdfpageattr
7586 ^^J/Dur \@pdfpageduration\space
7587 }%
7588 }%
7589 \@processme
7590 \fi
7591 \fi
7592 }

```

**\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.

```

7593 \gdef\Hy@RemoveDurPageAttr#1^^J/Dur#2#3 #4\END{%
7594 \ifx\#2\%
7595 \global\pdfpageattr{#1}%
7596 \else
7597 \Hy@RemoveDurPageAttr#1#4\END
7598 \fi
7599 }

```

**\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).

```

7600 \def\hyper@pagehidden{%
7601 \ifHy@useHidKey
7602 \expandafter\Hy@RemoveHidPageAttr\the\pdfpageattr^^J/Hid{} \END
7603 \ifHy@pdfpagehidden
7604 \edef\@processme{%
7605 \global\pdfpageattr{%
7606 \the\pdfpageattr
7607 ^^J/Hid true % SPACE
7608 }%
7609 }%
7610 \@processme
7611 \fi
7612 \fi
7613 }

```

**\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.

```

7614 \gdef\Hy@RemoveHidPageAttr#1^^J/Hid#2#3 #4\END{%
7615   \ifx\#2\%
7616     \global\pdfpageattr{#1}%
7617   \else
7618     \Hy@RemoveHidPageAttr#1#4\END
7619   \fi
7620 }

```

```

7621 \g@addto@macro\Hy@EveryPageHook{%
7622   \hyper@pagetransition
7623   \hyper@pageduration
7624   \hyper@pagehidden
7625 }

```

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

```

7626 </pdfTeX>
7627 <*pdfTeX | xetex>
7628 \AtBeginDocument{%
7629   \ifHy@setpagesize
7630     \expandafter\@firstofone
7631   \else
7632     \expandafter\@gobble
7633   \fi
7634   {%
7635     \@ifclassloaded{seminar}{%
7636 <*pdfTeX>
7637     \setlength{\pdfhorigin}{1truein}%
7638     \setlength{\pdfvorigin}{1truein}%
7639 </pdfTeX>
7640     \ifportrait
7641       \ifdim\paperwidth=\z@
7642       \else
7643         \setlength{\pdfpagewidth}{\strip@pt\paperwidth truept}%
7644       \fi
7645       \ifdim\paperheight=\z@
7646       \else
7647         \setlength{\pdfpageheight}{\strip@pt\paperheight truept}%
7648       \fi
7649     \else
7650       \ifdim\paperheight=\z@
7651       \else
7652         \setlength{\pdfpagewidth}{\strip@pt\paperheight truept}%
7653       \fi
7654       \ifdim\paperwidth=\z@
7655       \else
7656         \setlength{\pdfpageheight}{\strip@pt\paperwidth truept}%
7657       \fi
7658     \fi
7659   }{%
7660     \@ifundefined{stockwidth}{%
7661       \ifdim\paperwidth>\z@
7662         \setlength{\pdfpagewidth}{\paperwidth}%
7663       \fi
7664       \ifdim\paperheight>\z@
7665         \setlength{\pdfpageheight}{\paperheight}%

```



```

7666     \fi
7667   }{%
7668     \ifdim\stockwidth>\z@
7669       \setlength{\pdfpagewidth}{\stockwidth}%
7670     \fi
7671     \ifdim\stockheight>\z@
7672       \setlength{\pdfpageheight}{\stockheight}%
7673     \fi
7674   }%
7675 }%
7676 }%
7677 \Hy@DisableOption{setpagesize}%
7678 }
7679 </pdfTeX | xetex>
7680 <*pdfTeX>
7681 \def\Acrobatmenu#1#2{%
7682   \Hy@Acrobatmenu{#1}{#2}{%
7683     \pdfstartlink
7684     attr{%
7685       \Hy@setpdfborder
7686       \ifx\pdfhighlight\@empty
7687       \else
7688         /H\pdfhighlight
7689       \fi
7690       \ifx\@menubordercolor\relax
7691       \else
7692         /C[\@menubordercolor]%
7693       \fi
7694     }%
7695     user{%
7696       /Subtype/Link%
7697       \ifHy@pdfa /F 4\fi
7698       /A<<%
7699       /S/Named/N/#1%
7700       >>%
7701     }%
7702     \relax
7703     \Hy@colorlink\@menucolor#2%
7704     \close@pdflink
7705   }%
7706 }

```

#### 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`.

```

7707 \def\Hy@FixNotFirstPage{%
7708   \gdef\Hy@FixNotFirstPage{%
7709     \setbox\AtBeginShipoutBox=\hbox{%
7710       \copy\AtBeginShipoutBox
7711     }%
7712   }%

```

```

7713 }
7714 \AtBeginShipout{\Hy@FixNotFirstPage}
7715 \</pdfTeX>

```

### 46.3 hypertex

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

```

href: html:<a href = "href_string">
name: html:<a name = "name_string">
end: html:</a>
image: html:<img src = "href_string">
base_name: html:<base href = "href_string">

```

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

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

```

7716 \*hypertex>
7717 \providecommand*{\XR@ext}{dvi}
7718 \def\PDF@FinishDoc{}
7719 \def\PDF@SetupDoc{%
7720   \ifx\@baseurl\@empty
7721   \else
7722     \special{html:<base href="\@baseurl">}%
7723   \fi
7724 }
7725 \def\hyper@anchor#1{%
7726   \Hy@SaveLastskip
7727   \begingroup
7728     \let\protect=\string
7729     \hyper@chars
7730     \special{html:<a name=%
7731       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
7732   \endgroup
7733   \Hy@activeanchortrue
7734   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink

```

```

7735 \special{html:</a>}%
7736 \Hy@activeanchorfalse
7737 \Hy@RestoreLastskip
7738 }
7739 \def\hyper@anchorstart#1{%
7740 \Hy@SaveLastskip
7741 \begingroup
7742 \hyper@chars
7743 \special{html:<a name=%
7744 \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
7745 \endgroup
7746 \Hy@activeanchortrue
7747 }
7748 \def\hyper@anchorend{%
7749 \special{html:</a>}%
7750 \Hy@activeanchorfalse
7751 \Hy@RestoreLastskip
7752 }
7753 \def\@urltype{url}
7754 \def\hyper@linkstart#1#2{%
7755 \expandafter\Hy@colorlink\csname @#1color\endcsname
7756 \def\Hy@tempa{#1}%
7757 \ifx\Hy@tempa\@urltype
7758 \special{html:<a href=\hyper@quote#2\hyper@quote>}%
7759 \else
7760 \begingroup
7761 \hyper@chars
7762 \special{html:<a href=%
7763 \hyper@quote\#HyperDestNameFilter{#2}\hyper@quote>}%
7764 \endgroup
7765 \fi
7766 }
7767 \def\hyper@linkend{%
7768 \special{html:</a>}%
7769 \Hy@endcolorlink
7770 }
7771 \def\hyper@linkfile#1#2#3{%
7772 \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\else\\#3\fi}%
7773 }
7774 \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.

```

7775 \leavevmode
7776 \ifHy@raiselinks
7777 \setbox\@tempboxa=\color@hbox #1\color@endbox
7778 \@linkdim\dp\@tempboxa
7779 \lower\@linkdim\hbox{%
7780 \hyper@chars
7781 \special{html:<a href=\hyper@quote#2\hyper@quote>}%
7782 }%
7783 \Hy@colorlink\@urlcolor#1%
7784 \@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).

```

7785 \advance\@linkdim by -6.5\p@
7786 \raise\@linkdim\hbox{\special{html:</a>}}%
7787 \Hy@endcolorlink
7788 \else
7789 \begingroup
7790 \hyper@chars
7791 \special{html:<a href=\hyper@quote#2\hyper@quote>}%
7792 \Hy@colorlink\@urlcolor#1%
7793 \special{html:</a>}%
7794 \Hy@endcolorlink
7795 \endgroup
7796 \fi
7797 }

```

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

```

7798 \def\hyper@link#1#2#3{%
7799 \hyper@linkurl{#3}{\# \HyperDestNameFilter{#2}}%
7800 }

7801 \def\hyper@image#1#2{%
7802 \begingroup
7803 \hyper@chars
7804 \special{html:<img src=\hyper@quote#1\hyper@quote>}%
7805 \endgroup
7806 }
7807 </hypertex>
7808 <*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,  $\text{\LaTeX}$  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.

```

7809 \providecommand*\XR@ext{dvi}
7810 \providecommand*\wwwbrowser{c:\string\netscape\string\netscape}
7811 \def\hyper@anchor#1{%
7812 \Hy@SaveLastskip
7813 \begingroup
7814 \let\protect=\string
7815 \special{mark: #1}%
7816 \endgroup
7817 \Hy@activeanchortrue
7818 \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
7819 \Hy@activeanchorfalse
7820 \Hy@RestoreLastskip
7821 }
7822 \def\hyper@anchorstart#1{%
7823 \Hy@SaveLastskip
7824 \special{mark: #1}%
7825 \Hy@activeanchortrue

```

```

7826 }
7827 \def\hyper@anchorend{%
7828   \Hy@activeanchorfalse
7829   \Hy@RestoreLastskip
7830 }
7831 \def\hyper@linkstart#1#2{%
7832   \expandafter\Hy@colorlink\csname @#1color\endcsname
7833   \special{button: %
7834     10000000 %
7835     \number\baselineskip\space
7836     #2%
7837   }%
7838 }
7839 \def\hyper@linkend{%
7840   \Hy@endcolorlink
7841 }
7842 \def\hyper@link#1#2#3{%
7843   \setbox\@tempboxa=\color@hbox #3\color@endbox
7844   \leavevmode
7845   \ifHy@raiselinks
7846     \@linkdim\dp\@tempboxa
7847     \lower\@linkdim\hbox{%
7848       \special{button: %
7849         \number\wd\@tempboxa\space
7850         \number\ht\@tempboxa\space
7851         #2%
7852       }%
7853       \expandafter\Hy@colorlink\csname @#1color\endcsname#3%
7854       \Hy@endcolorlink
7855     }%
7856     \@linkdim\ht\@tempboxa
7857     \advance\@linkdim by -6.5\p@
7858     \raise\@linkdim\hbox{}%
7859   \else
7860     \special{button: %
7861       \number\wd\@tempboxa\space
7862       \number\ht\@tempboxa\space
7863       #2%
7864     }%
7865     \expandafter\Hy@colorlink\csname @#1color\endcsname#3%
7866     \Hy@endcolorlink
7867   \fi
7868 }
7869 \def\hyper@linkurl#1#2{%
7870   \begingroup
7871   \hyper@chars
7872   \leavevmode
7873   \setbox\@tempboxa=\color@hbox #1\color@endbox
7874   \ifHy@raiselinks
7875     \@linkdim\dp\@tempboxa
7876     \lower\@linkdim\hbox{%
7877       \special{button: %
7878         \number\wd\@tempboxa\space
7879         \number\ht\@tempboxa\space
7880         launch: \wwwbrowser\space
7881         #2%
7882       }%

```

```

7883      \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
7884    }%
7885    \@linkdim\ht\@tempboxa
7886    \advance\@linkdim by -6.5\p@
7887    \raise\@linkdim\hbox{}}%
7888  \else
7889    \special{button: %
7890      \number\wd\@tempboxa\space
7891      \number\ht\@tempboxa\space
7892      launch: \wwwbrowser\space
7893      #2%
7894    }%
7895    \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
7896  \fi
7897 \endgroup
7898 }
7899 \def\hyper@linkfile#1#2#3{%
7900 \begingroup
7901   \hyper@chars
7902   \leavevmode
7903   \setbox\@tempboxa=\color@hbox #1\color@endbox
7904   \ifHy@raiselinks
7905     \@linkdim\dp\@tempboxa
7906     \lower\@linkdim\hbox{%
7907       \special{button: %
7908         \number\wd\@tempboxa\space
7909         \number\ht\@tempboxa\space
7910         #3,%
7911         file: #2%
7912       }%
7913       \Hy@colorlink\@filecolor#1\Hy@endcolorlink
7914     }%
7915     \@linkdim\ht\@tempboxa
7916     \advance\@linkdim by -6.5\p@
7917     \raise\@linkdim\hbox{}}%
7918   \else
7919     \special{button: %
7920       \number\wd\@tempboxa\space
7921       \number\ht\@tempboxa\space
7922       #3,%
7923       file: #2%
7924     }%
7925     \Hy@colorlink\@filecolor#1\Hy@endcolorlink
7926   \fi
7927 \endgroup
7928 }
7929 \ifx\@pdfproducer\relax
7930 \def\@pdfproducer{dviwindo + Distiller}%
7931 \fi
7932 \def\PDF@FinishDoc{%
7933   \Hy@UseMaketitleInfos
7934   \special{PDF: Keywords \@pdfkeywords}%
7935   \special{PDF: Title \@pdftitle}%
7936   \special{PDF: Creator \@pdfcreator}%
7937   \ifx\@pdfcreationdate\@empty
7938   \else
7939     \special{PDF: CreationDate \@pdfcreationdate}%

```

```

7940 \fi
7941 \ifx\@pdfmoddate\@empty
7942 \else
7943   \special{PDF: ModDate \@pdfmoddate}%
7944 \fi
7945 \special{PDF: Author \@pdfauthor}%
7946 \ifx\@pdfproducer\relax
7947 \else
7948   \special{PDF: Producer \@pdfproducer}%
7949 \fi
7950 \special{PDF: Subject \@pdfsubject}%
7951 \Hy@DisableOption{pdfauthor}%
7952 \Hy@DisableOption{pdftitle}%
7953 \Hy@DisableOption{pdfsubject}%
7954 \Hy@DisableOption{pdfcreator}%
7955 \Hy@DisableOption{pdfcreationdate}%
7956 \Hy@DisableOption{pdfmoddate}%
7957 \Hy@DisableOption{pdfproducer}%
7958 \Hy@DisableOption{pdfkeywords}%
7959 }
7960 \def\PDF@SetupDoc{%
7961   \ifx\@baseurl\@empty
7962   \else
7963     \special{PDF: Base \@baseurl}%
7964   \fi
7965   \ifx\@pdfpagescrop\@empty\else
7966     \special{PDF: BBox \@pdfpagescrop}%
7967   \fi
7968   \def\Hy@temp{%
7969     \ifx\@pdfstartpage\@empty
7970     \else
7971       \ifx\@pdfstartview\@empty
7972       \else
7973         \edef\Hy@temp{%
7974           ,Page=\@pdfstartpage
7975           ,View=\@pdfstartview
7976         }%
7977       \fi
7978     \fi
7979     \edef\Hy@temp{%
7980       \noexpand\pdfmark{%
7981         pdfmark=/DOCVIEW,%
7982         PageMode=/\@pdfpagemode
7983       }\Hy@temp
7984     }%
7985   }%
7986   \Hy@temp
7987   \ifx\@pdfpagescrop\@empty
7988   \else
7989     \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
7990   \fi
7991   \edef\Hy@temp{%
7992     \ifHy@toolbar\else /HideToolbar true\fi
7993     \ifHy@menubar\else /HideMenubar true\fi
7994     \ifHy>windowui\else /HideWindowUI true\fi
7995     \ifHy@fitwindow /FitWindow true\fi
7996     \ifHy@centerwindow /CenterWindow true\fi

```

```

7997 \ifHy@displaydoctitle /DisplayDocTitle true\fi
7998 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
7999 \Hy@UseNameKey{Direction}\@pdfdirection
8000 \Hy@UseNameKey{ViewArea}\@pdfviewarea
8001 \Hy@UseNameKey{ViewClip}\@pdfviewclip
8002 \Hy@UseNameKey{PrintArea}\@pdfprintarea
8003 \Hy@UseNameKey{PrintClip}\@pdfprintclip
8004 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
8005 \Hy@UseNameKey{Duplex}\@pdfduplex
8006 \ifx\@pdfpicktraybypdfsize\@empty
8007 \else
8008 /PickTrayByPDFSize \@pdfpicktraybypdfsize
8009 \fi
8010 \ifx\@pdfprintpagerange\@empty
8011 \else
8012 /PrintPageRange[\@pdfprintpagerange]%
8013 \fi
8014 \ifx\@pdfnumcopies\@empty
8015 \else
8016 /NumCopies \@pdfnumcopies
8017 \fi
8018 }%
8019 \pdfmark{pdfmark=/PUT,%
8020 Raw={%
8021 \string{Catalog\string}<<%
8022 \ifx\Hy@temp\@empty
8023 \else
8024 /ViewerPreferences<<\Hy@temp>>%
8025 \fi
8026 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
8027 \ifx\@pdflang\@empty
8028 \else
8029 /Lang(\@pdflang)%
8030 \fi
8031 >>%
8032 }%
8033 }%
8034 }
8035 </dviwindo>
8036 <*dvipdfm | xetex>

```

## 46.5 dvipdfm/xetex dvi to PDF converter

Provided by Mark Wicks (mwicks@kettering.edu)

```

8037 \providecommand*\XR@ext}{pdf}
8038 \Hy@setbreaklinks{true}
8039 \newsavebox{\pdfm@box}
8040 \def\@pdfm@mark#1{\special{pdf:#1}}
8041 \def\@pdfm@dest#1{%
8042 \Hy@SaveLastskip
8043 \begingroup
8044 \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
8045 \def\x{XYZ}%
8046 \ifx\x\@pdfview
8047 \def\x{XYZ @xpos @ypos null}%
8048 \else
8049 \def\x{FitH}%

```



```

8050 \ifx\x\@pdfview
8051 \def\x{FitH @ypos}%
8052 \else
8053 \def\x{FitBH}%
8054 \ifx\x\@pdfview
8055 \def\x{FitBH @ypos}%
8056 \else
8057 \def\x{FitV}%
8058 \ifx\x\@pdfview
8059 \def\x{FitV @xpos}%
8060 \else
8061 \def\x{FitBV}%
8062 \ifx\x\@pdfview
8063 \def\x{FitBV @xpos}%
8064 \else
8065 \def\x{Fit}%
8066 \ifx\x\@pdfview
8067 \let\x\@pdfview
8068 \else
8069 \def\x{FitB}%
8070 \ifx\x\@pdfview
8071 \let\x\@pdfview
8072 \else
8073 \def\x{FitR}%
8074 \ifx\x\@pdfview
8075 \Hy@Warning{'pdfview=FitR' is not supported}%
8076 \def\x{XYZ @xpos @ypos null}%
8077 \else
8078 \@onelevel@sanitize\@pdfview
8079 \Hy@Warning{Unknown value '\@pdfview' for pdfview}%
8080 \def\x{XYZ @xpos @ypos null}%
8081 \fi
8082 \fi
8083 \fi
8084 \fi
8085 \fi
8086 \fi
8087 \fi
8088 \fi
8089 \@pdfm@mark{dest (\Hy@pstringDest) [@thispage /\x]}%
8090 \endgroup
8091 \Hy@RestoreLastskip
8092 }
8093 \providecommand*\@pdfview{XYZ}
8094 \providecommand*\@pdfborder{0 0 1}
8095 \providecommand*\@pdfborderstyle{}
8096 \def\hyper@anchor#1{%
8097 \@pdfm@dest{#1}%
8098 }
8099 \def\hyper@anchorstart#1{%
8100 \Hy@activeanchortrue
8101 \@pdfm@dest{#1}%
8102 }
8103 \def\hyper@anchorend{%
8104 \Hy@activeanchorfalse
8105 }
8106 \newcounter{Hy@AnnotLevel}

```

```

8107 \ifHy@ocgcolorlinks
8108 \def\OBJ@OCG@view{\OCG@view}%
8109 \@pdfm@mark{%
8110   obj \OBJ@OCG@view <<%
8111     /Type/OCG%
8112     /Name(View)%
8113     /Usage<<%
8114     /Print<<%
8115     /PrintState/OFF%
8116     >>%
8117     /View<<%
8118     /ViewState/ON%
8119     >>%
8120   >>%
8121   >>%
8122 }%
8123 \@pdfm@mark{close \OBJ@OCG@view}%
8124 \def\OBJ@OCG@print{\OCG@print}%
8125 \@pdfm@mark{%
8126   obj \OBJ@OCG@print <<%
8127     /Type/OCG%
8128     /Name(Print)%
8129     /Usage<<%
8130     /Print<<%
8131     /PrintState/ON%
8132     >>%
8133     /View<<%
8134     /ViewState/OFF%
8135     >>%
8136   >>%
8137   >>%
8138 }%
8139 \@pdfm@mark{close \OBJ@OCG@print}%
8140 \def\OBJ@OCGs{\OCGs}%
8141 \@pdfm@mark{%
8142   obj \OBJ@OCGs [%
8143     \OBJ@OCG@view\space\OBJ@OCG@print
8144   ]%
8145 }%
8146 \@pdfm@mark{close \OBJ@OCGs}%
8147 \@pdfm@mark{%
8148   put @catalog <<%
8149     /OCProperties<<%
8150     /OCGs \OBJ@OCGs
8151     /D<<%
8152     /OFF[\OBJ@OCG@print]%
8153     /AS[%
8154       <<%
8155         /Event/View%
8156         /OCGs \OBJ@OCGs
8157         /Category[/View]%
8158       >>%
8159       <<%
8160         /Event/Print%
8161         /OCGs \OBJ@OCGs
8162         /Category[/Print]%
8163       >>%

```

```

8164         <<%
8165         /Event/Export%
8166         /OCGs \OBJ@OCGs
8167         /Category[/Print]%
8168         >>%
8169     ]%
8170 >>%
8171 >>%
8172 >>%
8173 }%
8174 \AtBeginShipout{%
8175     \setbox\AtBeginShipoutBox=\hbox{%
8176     \copy\AtBeginShipoutBox
8177     \@pdfm@mark{%
8178         put @resources <<%
8179         /Properties<<%
8180         /OCView \OBJ@OCG@view
8181         /OCPrint \OBJ@OCG@print
8182         >>%
8183         >>%
8184     }%
8185 }%
8186 }%
8187 \AtBeginDocument{%
8188     \def\Hy@colorlink#1{%
8189         \begingroup
8190         \ifHy@ocgcolorlinks
8191             \def\Hy@ocgcolor{#1}%
8192             \setbox0=\color@hbox
8193         \else
8194             \HyColor@UseColor#1%
8195         \fi
8196     }%
8197     \def\Hy@endcolorlink{%
8198         \ifHy@ocgcolorlinks
8199             \color@endbox
8200             \mbox{%
8201                 \@pdfm@mark{content /OC/OCPrint BDC}%
8202                 \rlap{\copy0}%
8203                 \@pdfm@mark{content EMC/OC/OCView BDC}%
8204                 \begingroup
8205                     \expandafter\HyColor@UseColor\Hy@ocgcolor
8206                     \box0 %
8207                 \endgroup
8208                 \@pdfm@mark{content EMC}%
8209             }%
8210         \fi
8211     \endgroup
8212 }%
8213 }%
8214 \else
8215     \Hy@DisableOption{ocgcolorlinks}%
8216 \fi
8217 \def\Hy@BeginAnnot#1{%
8218     \stepcounter{Hy@AnnotLevel}%
8219     \ifnum\value{Hy@AnnotLevel}=\@ne
8220         #1%

```

```

8221 \fi
8222 }
8223 \def\Hy@endAnnot{%
8224 \ifnum\value{Hy@AnnotLevel}=\@ne
8225 \Hy@endcolorlink
8226 \@pdfm@mark{eann}%
8227 \fi
8228 \addtocounter{Hy@AnnotLevel}\m@ne
8229 }

8230 \def\Hy@undefinedname{UNDEFINED}
8231 \def\hyper@linkstart#1#2{%
8232 \Hy@BeginAnnot{%
8233 \protected@edef\Hy@testname{#2}%
8234 \ifx\Hy@testname\@empty
8235 \Hy@Warning{%
8236 Empty destination name,\MessageBreak
8237 using '\Hy@undefinedname'%
8238 }%
8239 \let\Hy@testname\Hy@undefinedname
8240 \else
8241 \Hy@pstringdef\Hy@testname{%
8242 \expandafter\HyperDestNameFilter\expandafter{\Hy@testname}%
8243 }%
8244 \fi
8245 \@pdfm@mark{%
8246 bann<<%
8247 /Type/Annot%
8248 /Subtype/Link%
8249 \ifHy@pdfa /F 4\fi
8250 \Hy@setpdfborder
8251 \expandafter\ifx\csname @#1bordercolor\endcsname\relax
8252 \else
8253 /C[\csname @#1bordercolor\endcsname]%
8254 \fi
8255 /A<<%
8256 /S/GoTo%
8257 /D(\Hy@testname)%
8258 >>%
8259 >>%
8260 }%
8261 \expandafter\Hy@colorlink\csname @#1color\endcsname
8262 }%
8263 }
8264 \def\hyper@linkend{\Hy@endAnnot}%
8265 \def\hyper@link#1#2#3{%
8266 \hyper@linkstart{#1}{#2}#3\hyper@linkend
8267 }
8268 \def\hyper@linkfile#1#2#3{%
8269 \leavevmode
8270 \Hy@BeginAnnot{%
8271 \Hy@pstringdef\Hy@pstringF{#2}%
8272 \Hy@pstringdef\Hy@pstringD{#3}%
8273 \@pdfm@mark{%
8274 bann<<%
8275 /Type/Annot%
8276 /Subtype/Link%
8277 \ifHy@pdfa /F 4\fi

```

```

8278      \Hy@setpdfborder
8279      \ifx\@filebordercolor\relax
8280      \else
8281      /C[\@filebordercolor]%
8282      \fi
8283      /A<<%
8284      /S/GoToR%
8285      /F(\Hy@pstringF)%
8286      /D\ifx\#3\[\[0 \@pdfstartview]\else(\Hy@pstringD)\fi
8287      \Hy@SetNewWindow
8288      >>%
8289      >>%
8290      }%
8291      \Hy@colorlink\@filecolor
8292      }%
8293      #1%
8294      \Hy@endAnnot
8295      }
8296      \def\hyper@linkurl#1#2{%
8297      \leavevmode
8298      \Hy@BeginAnnot{%
8299      \Hy@pstringdef\Hy@pstringURI{#2}%
8300      \@pdfm@mark{%
8301      bann<<%
8302      /Type/Annot%
8303      /Subtype/Link%
8304      \ifHy@pdfa /F 4\fi
8305      \Hy@setpdfborder
8306      \ifx\@urlbordercolor\relax
8307      \else
8308      /C[\@urlbordercolor]%
8309      \fi
8310      /A<<%
8311      /S/URI%
8312      /URI(\Hy@pstringURI)%
8313      >>%
8314      >>%
8315      }%
8316      \Hy@colorlink\@urlcolor
8317      }%
8318      #1%
8319      \Hy@endAnnot
8320      }
8321      \def\Acrobatmenu#1#2{%
8322      \Hy@Acrobatmenu{#1}{#2}{%
8323      \Hy@BeginAnnot{%
8324      \@pdfm@mark{%
8325      bann<<%
8326      /Type/Annot%
8327      /Subtype/Link%
8328      \ifHy@pdfa /F 4\fi
8329      /A<<%
8330      /S/Named%
8331      /N/#1%
8332      >>%
8333      \Hy@setpdfborder
8334      \ifx\@menubordercolor\relax

```

```

8335         \relax
8336         /C[\@menubordercolor]%
8337     \fi
8338     >>%
8339 }%
8340 \Hy@colorlink\@menucolor
8341 }%
8342 #2%
8343 \Hy@endAnnot
8344 }%
8345 }
8346 \ifx\@pdfproducer\relax
8347 \def\@pdfproducer{dvipdfm}%

```

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

```

8348 \begingroup\expandafter\expandafter\expandafter\endgroup
8349 \expandafter\ifx\csname XeTeXversion\endcsname\relax
8350 \else
8351 \edef\@pdfproducer{XeTeX \the\XeTeXversion\XeTeXrevision}%
8352 \fi
8353 \fi
8354 \def\PDF@FinishDoc{%
8355 \Hy@UseMaketitleInfos
8356 \@pdfm@mark{%
8357 docinfo<<%
8358 /Title(\@pdftitle)%
8359 /Subject(\@pdfsubject)%
8360 /Creator(\@pdfcreator)%
8361 \ifx\@pdfcreationdate\@empty
8362 \else
8363 /CreationDate(\@pdfcreationdate)%
8364 \fi
8365 \ifx\@pdfmoddate\@empty
8366 \else
8367 /ModDate(\@pdfmoddate)%
8368 \fi
8369 /Author(\@pdfauthor)%
8370 \ifx\@pdfproducer\relax
8371 \else
8372 /Producer(\@pdfproducer)%
8373 \fi
8374 /Keywords(\@pdfkeywords)%
8375 >>%
8376 }%
8377 \Hy@DisableOption{pdfauthor}%
8378 \Hy@DisableOption{pdftitle}%
8379 \Hy@DisableOption{pdfsubject}%
8380 \Hy@DisableOption{pdfcreator}%
8381 \Hy@DisableOption{pdfcreationdate}%
8382 \Hy@DisableOption{pdfmoddate}%
8383 \Hy@DisableOption{pdfproducer}%
8384 \Hy@DisableOption{pdfkeywords}%
8385 }
8386 \def\PDF@SetupDoc{%
8387 \edef\Hy@temp{%
8388 \ifHy@toolbar\else /HideToolbar true\fi
8389 \ifHy@menubar\else /HideMenubar true\fi

```

```

8390 \ifHy@windowui\else /HideWindowUI true\fi
8391 \ifHy@fitwindow /FitWindow true\fi
8392 \ifHy@centerwindow /CenterWindow true\fi
8393 \ifHy@displaydoctitle /DisplayDocTitle true\fi
8394 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
8395 \Hy@UseNameKey{Direction}\@pdfdirection
8396 \Hy@UseNameKey{ViewArea}\@pdfviewarea
8397 \Hy@UseNameKey{ViewClip}\@pdfviewclip
8398 \Hy@UseNameKey{PrintArea}\@pdfprintarea
8399 \Hy@UseNameKey{PrintClip}\@pdfprintclip
8400 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
8401 \Hy@UseNameKey{Duplex}\@pdfduplex
8402 \ifx\@pdfpicktraybypdfsize\@empty
8403 \else
8404 /PickTrayByPDFSize \@pdfpicktraybypdfsize
8405 \fi
8406 \ifx\@pdfprintpagerange\@empty
8407 \else
8408 /PrintPageRange[\@pdfprintpagerange]%
8409 \fi
8410 \ifx\@pdfnumcopies\@empty
8411 \else
8412 /NumCopies \@pdfnumcopies
8413 \fi
8414 }%
8415 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
8416 \@pdfm@mark{%
8417 docview<<%
8418 \ifx\@pdfstartpage\@empty
8419 \else
8420 \ifx\@pdfstartview\@empty
8421 \else
8422 /OpenAction[@page\@pdfstartpage\@pdfstartview]%
8423 \fi
8424 \fi
8425 \ifx\@baseurl\@empty
8426 \else
8427 /URI<</Base(\Hy@pstringB)>>%
8428 \fi
8429 /PageMode/\@pdfpagemode
8430 \ifx\Hy@temp\@empty
8431 \else
8432 /ViewerPreferences<<\Hy@temp>>%
8433 \fi
8434 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
8435 \ifx\@pdflang\@empty
8436 \else
8437 /Lang(\@pdflang)%
8438 \fi
8439 >>%
8440 }%
8441 \ifx\@pdfpagescrop\@empty
8442 \else
8443 \@pdfm@mark{put @pages <</CropBox[\@pdfpagescrop]>>}%
8444 \fi
8445 }
8446 </dvipdfm | xetex>

```

XeTeX uses pdfTeX's method `\pdfpagewidth` and `\pdfpageheight` for setting the paper size.

```

8447 <*dvipdfm>
8448 \AtBeginShipoutFirst{%
8449   \ifHy@setpagesize
8450     \begingroup
8451       \@ifundefined{stockwidth}{%
8452         \ifdim\paperwidth>\z@
8453           \ifdim\paperheight>\z@
8454             \special{papersize=\the\paperwidth,\the\paperheight}%
8455           \fi
8456         \fi
8457       }{%
8458         \ifdim\stockwidth>\z@
8459           \ifdim\stockheight>\z@
8460             \special{papersize=\the\stockwidth,\the\stockheight}%
8461           \fi
8462         \fi
8463       }%
8464     \endgroup
8465   \fi
8466   \Hy@DisableOption{setpagesize}%
8467 }
8468 </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.

```

8469 <*vtexhtml>
8470 \providecommand*{\XR@ext}{htm}
8471 \RequirePackage{vtexhtml}
8472 \newif\if@Localurl
8473 \def\PDF@FinishDoc{}
8474 \def\PDF@SetupDoc{%
8475   \ifx\@baseurl\@empty
8476   \else
8477     \special{!direct <base href="\@baseurl">}%
8478   \fi
8479 }
8480 \def\@urltype{url}
8481 \def\hyper@link#1#2#3{%
8482   \leavevmode
8483   \special{!direct <a href=%
8484     \hyper@quote\hyper@hash\HyperDestNameFilter{#2}\hyper@quote>}%
8485   #3%
8486   \special{!direct </a>}%
8487 }
8488 \def\hyper@linkurl#1#2{%
8489   \begingroup
8490     \hyper@chars
8491     \leavevmode
8492     \MathBSuppress=1\relax
8493     \special{!direct <a href=%
8494       \hyper@quote\HyperDestNameFilter{#2}\hyper@quote>}%
8495     #1%

```



```

8496 \MathBSuppress=0\relax
8497 \special{!direct </a>}%
8498 \endgroup
8499 }
8500 \def\hyper@linkfile#1#2#3{%
8501 \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\\else\##3\fi}%
8502 }
8503 \def\hyper@linkstart#1#2{%
8504 \def\Hy@tempa{#1}\ifx\Hy@tempa\@urltype
8505 \@Localurltrue
8506 \special{!direct <a href=\hyper@quote#2\hyper@quote>}%
8507 \else
8508 \@Localurlfalse
8509 \begingroup
8510 \hyper@chars
8511 \special{!aref \HyperDestNameFilter{#2}}%
8512 \endgroup
8513 \fi
8514 }
8515 \def\hyper@linkend{%
8516 \if@Localurl
8517 \special{!endaref}%
8518 \else
8519 \special{!direct </a>}%
8520 \fi
8521 }
8522 \def\hyper@anchorstart#1{%
8523 \Hy@SaveLastskip
8524 \begingroup
8525 \hyper@chars
8526 \special{!aname #1}%
8527 \special{!direct <a name=%
8528 \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
8529 \endgroup
8530 \Hy@activeanchortrue
8531 }
8532 \def\hyper@anchorend{%
8533 \special{!direct </a>}%
8534 \Hy@activeanchorfalse
8535 \Hy@RestoreLastskip
8536 }
8537 \def\hyper@anchor#1{%
8538 \Hy@SaveLastskip
8539 \begingroup
8540 \let\protect=\string
8541 \hyper@chars
8542 \leavevmode
8543 \special{!aname #1}%
8544 \special{!direct <a name=%
8545 \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
8546 \endgroup
8547 \Hy@activeanchortrue
8548 \bgroup\anchor@spot\egroup
8549 \special{!direct </a>}%
8550 \Hy@activeanchorfalse
8551 \Hy@RestoreLastskip
8552 }

```

```

8553 \def \@Form[#1]{\typeout{Sorry, TeXpider does not yet support FORMs}}
8554 \def \@endForm{}
8555 \def \@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
8556   \typeout{Sorry, TeXpider does not yet support FORM gauges}%
8557 }
8558 \def \@TextField[#1]#2{% parameters, label
8559   \typeout{Sorry, TeXpider does not yet support FORM text fields}%
8560 }
8561 \def \@CheckBox[#1]#2{% parameters, label
8562   \typeout{Sorry, TeXpider does not yet support FORM checkboxes}%
8563 }
8564 \def \@ChoiceMenu[#1]#2#3{% parameters, label, choices
8565   \typeout{Sorry, TeXpider does not yet support FORM choice menus}%
8566 }
8567 \def \@PushButton[#1]#2{% parameters, label
8568   \typeout{Sorry, TeXpider does not yet support FORM pushbuttons}%
8569 }
8570 \def \@Reset[#1]#2{%
8571   \typeout{Sorry, TeXpider does not yet support FORMs}%
8572 }
8573 \def \@Submit[#1]#2{%
8574   \typeout{Sorry, TeXpider does not yet support FORMs}%
8575 }
8576 </vtexhtml>
8577 <*vtex>

```

VTeX version 6.68 supports \mediawidth and \mediaheight. The \ifx construct is better than a \csname, because it avoids the definition and the hash table entry of a previous undefined macro.

```

8578 \ifx \mediaheight \@undefined
8579 \else
8580   \ifx \mediaheight \relax
8581   \else
8582     \ifHy@setpagesize
8583       \providecommand*{\VTeXInitMediaSize}{%
8584         \@ifundefined{stockwidth}{%
8585           \ifdim \paperheight > 0pt %
8586             \setlength \mediaheight \paperheight
8587           \fi
8588           \ifdim \paperheight > 0pt %
8589             \setlength \mediawidth \paperwidth
8590           \fi
8591         }{%
8592           \ifdim \stockheight > 0pt %
8593             \setlength \mediaheight \stockheight
8594           \fi
8595           \ifdim \stockwidth > 0pt %
8596             \setlength \mediawidth \stockwidth
8597           \fi
8598         }%
8599       }%
8600     \AtBeginDocument{\VTeXInitMediaSize}%
8601   \fi
8602   \Hy@DisableOption{setpagesize}%
8603 \fi
8604 \fi

```

Older versions of VTeX require xyz in lower case.

```

8605 \providecommand*\@pdfview{xyz}
8606 \providecommand*\@pdfborder{0 0 1}
8607 \providecommand*\@pdfborderstyle{}
8608 \let\CurrentBorderColor\@linkbordercolor
8609 \def\hyper@anchor#1{%
8610   \Hy@SaveLastskip
8611   \begingroup
8612     \let\protect=\string
8613     \hyper@chars
8614     \special{!aname \HyperDestNameFilter{#1};\@pdfview}%
8615   \endgroup
8616   \Hy@activeanchortrue
8617   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
8618   \Hy@activeanchorfalse
8619   \Hy@RestoreLastskip
8620 }
8621 \def\hyper@anchorstart#1{%
8622   \Hy@SaveLastskip
8623   \begingroup
8624     \hyper@chars
8625     \special{!aname \HyperDestNameFilter{#1};\@pdfview}%
8626   \endgroup
8627   \Hy@activeanchortrue
8628 }
8629 \def\hyper@anchorend{%
8630   \Hy@activeanchorfalse
8631   \Hy@RestoreLastskip
8632 }
8633 \def\@urltype{url}
8634 \def\Hy@undefinedname{UNDEFINED}
8635 \def\hyper@linkstart#1#2{%
8636   \Hy@pstringdef\Hy@pstringURI{#2}%
8637   \expandafter\Hy@colorlink\csname @#1color\endcsname
8638   \@ifundefined{#1bordercolor}{%
8639     \let\CurrentBorderColor\relax
8640   }{%
8641     \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
8642   }%
8643   \def\Hy@tempa{#1}%
8644   \ifx\Hy@tempa\@urltype
8645     \special{!%
8646       aref <u=/Type /Action /S /URI /URI (\Hy@pstringURI)>;%
8647       a=<%
8648         \ifHy@pdfa /F 4\fi
8649         \Hy@setpdfborder
8650         \ifx\CurrentBorderColor\relax
8651           \else
8652             /C [\CurrentBorderColor]%
8653           \fi
8654         >%
8655       }%
8656   \else
8657     \protected@edef\Hy@testname{#2}%
8658     \ifx\Hy@testname\@empty
8659       \Hy@Warning{%
8660         Empty destination name,\MessageBreak
8661         using '\Hy@undefinedname'%

```

```

8662     }%
8663     \let\Hy@testname\Hy@undefinedname
8664 \fi
8665 \special{!%
8666     aref \expandafter\HyperDestNameFilter
8667     \expandafter{\Hy@testname};%
8668     a=<%
8669     \ifHy@pdfa /F 4\fi
8670     \Hy@setpdfborder
8671     \ifx\CurrentBorderColor\relax
8672     \else
8673     /C [\CurrentBorderColor]%
8674     \fi
8675     >%
8676     }%
8677 \fi
8678 }
8679 \def\hyper@linkend{%
8680 \special{!endaref}%
8681 \Hy@endcolorlink
8682 }
8683 \def\hyper@linkfile#1#2#3{%
8684 \leavevmode
8685 \special{!%
8686     aref <%
8687     \ifnum\Hy@VTeXversion>753 \ifHy@newwindow n\fi\fi
8688     f=#2>#3;%
8689     a=<%
8690     \ifHy@pdfa /F 4\fi
8691     \Hy@setpdfborder
8692     \ifx\@filebordercolor\relax
8693     \else
8694     /C [\@filebordercolor]%
8695     \fi
8696     >%
8697     }%
8698     \Hy@colorlink\@filecolor#1\Hy@endcolorlink
8699 \special{!endaref}%
8700 }
8701 \def\hyper@linkurl#1#2{%
8702 \begingroup
8703 \Hy@pstringdef\Hy@pstringURI{#2}%
8704 \hyper@chars
8705 \leavevmode
8706 \special{!%
8707     aref <u=/Type /Action /S /URI /URI (\Hy@pstringURI)>;%
8708     a=<%
8709     \ifHy@pdfa /F 4\fi
8710     \Hy@setpdfborder
8711     \ifx\@urlbordercolor\relax
8712     \else
8713     /C [\@urlbordercolor]%
8714     \fi
8715     >%
8716     }%
8717     \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
8718 \special{!endaref}%

```

```

8719 \endgroup
8720 }
8721 \def\hyper@link#1#2#3{%
8722   \@ifundefined{@#1bordercolor}{%
8723     \let\CurrentBorderColor\relax
8724   }{%
8725     \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
8726   }%
8727   \leavevmode
8728   \protected@edef\Hy@testname{#2}%
8729   \ifx\Hy@testname\@empty
8730     \Hy@Warning{%
8731       Empty destination name,\MessageBreak
8732       using '\Hy@undefinedname'%
8733     }%
8734     \let\Hy@testname\Hy@undefinedname
8735   \fi
8736   \special{!%
8737     aref \expandafter\HyperDestNameFilter
8738     \expandafter{\Hy@testname};%
8739     a=<%
8740     \ifHy@pdfa /F 4\fi
8741     \Hy@setpdfborder
8742     \ifx\CurrentBorderColor\relax
8743       \else
8744         /C [\CurrentBorderColor]%
8745     \fi
8746     >%
8747   }%
8748   \expandafter\Hy@colorlink\csname @#1color\endcsname#3\Hy@endcolorlink
8749   \special{!endaref}%
8750 }
8751 \def\hyper@image#1#2{%
8752   \hyper@linkurl{#2}{#1}%
8753 }
8754 \def\@hyper@launch run:#1\#2#3{%
8755   \Hy@pstringdef\Hy@pstringF{#1}%
8756   \Hy@pstringdef\Hy@pstringP{#3}%
8757   \leavevmode
8758   \special{!aref %
8759     <u=%
8760     /Type/Action%
8761     /S/Launch%
8762     /F(\Hy@pstringF)%
8763     \Hy@SetNewWindow
8764     \ifx\#3\@else /Win<</F(\Hy@pstringF)/P(\Hy@pstringP)>>\fi%
8765     >;%
8766     a=<%
8767     \ifHy@pdfa /F 4\fi
8768     \Hy@setpdfborder
8769     \ifx\@runbordercolor\relax
8770       \else
8771         /C[\@runbordercolor]%
8772     \fi
8773     >%
8774   }%
8775   \Hy@colorlink\@runcolor#2\Hy@endcolorlink

```

```

8776 \special{!endaref}%
8777 }
8778 \def\Acrobatmenu#1#2{%
8779 \Hy@Acrobatmenu{#1}{#2}{%
8780 \special{!%
8781 aref <u=/S /Named /N /#1>;%
8782 a=<%
8783 \ifHy@pdfa /F 4\fi
8784 \Hy@setpdfborder
8785 \ifx\@menubordercolor\relax
8786 \else
8787 /C[\@menubordercolor]%
8788 \fi
8789 >%
8790 }%
8791 \Hy@colorlink\@menucolor#2\Hy@endcolorlink
8792 \special{!endaref}%
8793 }%
8794 }

```

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.

```

8795 \ifnum\Hy@VTeXversion<702 %
8796 \else
8797 \def\hyper@pagetransition{%
8798 \ifx\@pdfpagetransition\relax
8799 \else
8800 \ifx\@pdfpagetransition\@empty

```

Standard incantation.

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

```

8801 \else
8802 \hvtex@parse@trans\@pdfpagetransition
8803 \fi
8804 \fi
8805 }%

```

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:

```

8806 \def\hvtex@trans@effect@Blinds{\def\hvtex@trans@code{B}}%
8807 \def\hvtex@trans@effect@Box{\def\hvtex@trans@code{X}}%
8808 \def\hvtex@trans@effect@Dissolve{\def\hvtex@trans@code{D}}%
8809 \def\hvtex@trans@effect@Glitter{\def\hvtex@trans@code{G}}%
8810 \def\hvtex@trans@effect@Split{\def\hvtex@trans@code{S}}%
8811 \def\hvtex@trans@effect@Wipe{\def\hvtex@trans@code{W}}%
8812 \def\hvtex@trans@effect@R{\def\hvtex@trans@code{R}}%

```

Optional parameters:

```

8813 \def\hvtex@par@dimension{/Dm}%
8814 \def\hvtex@par@direction{/Di}%
8815 \def\hvtex@par@duration{/D}%
8816 \def\hvtex@par@motion{/M}%

```

Tokenizer:

```

8817 \def\hvtex@gettoken{\expandafter\hvtex@gettoken@\hvtex@buffer\@nil}%

```

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

```

8818 \def\hvtex@gettoken@#1 #2\@nil{%
8819   \edef\hvtex@token{#1}%
8820   \edef\hvtex@buffer{#2}%
8821 }%
8822 \def\hvtex@parse@trans#1{%

```

Initializing code:

```

8823 \let\hvtex@trans@code\@empty
8824 \let\hvtex@param@dimension\@empty
8825 \let\hvtex@param@direction\@empty
8826 \let\hvtex@param@duration\@empty
8827 \let\hvtex@param@motion\@empty
8828 \edef\hvtex@buffer{#1\space}%

```

First token is the PDF transition name without escape.

```

8829 \hvtex@gettoken
8830 \ifx\hvtex@token\@empty

```

Leading space(s)?

```

8831 \ifx\hvtex@buffer\@empty

```

The buffer is empty, nothing to do.

```

8832 \else
8833 \hvtex@gettoken
8834 \fi
8835 \fi
8836 \csname hvtex@trans@effect@\hvtex@token\endcsname

```

Now is time to parse optional parameters.

```

8837 \hvtex@trans@params
8838 }%

```

Reentrant macro to parse optional parameters.

```

8839 \def\hvtex@trans@params{%
8840 \ifx\hvtex@buffer\@empty
8841 \else
8842 \hvtex@gettoken
8843 \let\hvtex@trans@par\hvtex@token
8844 \ifx\hvtex@buffer\@empty
8845 \else
8846 \hvtex@gettoken
8847 \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.

```
8848      \let\hvtex@param@duration\hvtex@token
8849      \else \ifx\hvtex@trans@par\hvtex@par@motion
```

/M can be either /I or /O

```
8850      \expandafter\edef\expandafter\hvtex@param@motion
8851      \expandafter{\expandafter\@gobble\hvtex@token}%
8852      \else \ifx\hvtex@trans@par\hvtex@par@dimension
```

/Dm can be either /H or /V

```
8853      \expandafter\edef\expandafter\hvtex@param@dimension
8854      \expandafter{\expandafter\@gobble\hvtex@token}%
8855      \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).

```
8856      \let\hvtex@param@direction\hvtex@token
8857      \fi\fi\fi\fi
8858      \fi
8859      \fi
8860      \ifx\hvtex@buffer\@empty
8861      \let\next\hvtex@produce@trans
8862      \else
8863      \let\next\hvtex@trans@params
8864      \fi
8865      \next
8866  }%
```

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

```
8867  \def\hvtex@produce@trans{%
8868    \let\vtex@trans@special\@empty
8869    \if S\hvtex@trans@code
8870      \edef\vtex@trans@special{\hvtex@trans@code
8871        \hvtex@param@dimension\hvtex@param@motion}%
8872    \else\if B\hvtex@trans@code
8873      \edef\vtex@trans@special{%
8874        \hvtex@trans@code\hvtex@param@dimension
8875      }%
8876    \else\if X\hvtex@trans@code
8877      \edef\vtex@trans@special{%
8878        \hvtex@trans@code\hvtex@param@motion
8879      }%
8880    \else\if W\hvtex@trans@code
8881      \edef\vtex@trans@special{%
8882        \hvtex@trans@code\hvtex@param@direction
8883      }%
8884    \else\if D\hvtex@trans@code
8885      \let\vtex@trans@special\hvtex@trans@code
8886    \else\if R\hvtex@trans@code
8887      \let\vtex@trans@special\hvtex@trans@code
8888    \else\if G\hvtex@trans@code
8889      \edef\vtex@trans@special{%
8890        \hvtex@trans@code\hvtex@param@direction
8891      }%
8892    \fi\fi\fi\fi\fi\fi\fi
8893    \ifx\vtex@trans@special\@empty
8894    \else
8895      \ifx\hvtex@param@duration\@empty
```



```

8896      \else
8897      \setlength{\dimen@}{\hvtex@param@duration\p}%

```

I'm not guilty of possible overflow.

```

8898      \multiply\dimen@\m
8899      \edef\vtex@trans@special{%
8900      \vtex@trans@special,\strip@pt\dimen@
8901      }%
8902      \fi

```

And all the mess is just for this.

```

8903      \special{!trans \vtex@trans@special}%
8904      \fi
8905  }%

8906  \def\hyper@pageduration{%
8907    \ifx\@pdfpageduration\relax
8908    \else
8909    \ifx\@pdfpageduration\@empty
8910    \special{!duration-}%
8911    \else
8912    \special{!duration \@pdfpageduration}%
8913    \fi
8914  \fi
8915  }%

8916  \def\hyper@pagehidden{%
8917    \ifHy@useHidKey
8918    \special{!hidden\ifHy@pdfpagehidden +\else -\fi}%
8919    \fi
8920  }%

8921  \g@addto@macro\Hy@EveryPageBoxHook{%
8922    \hyper@pagetransition
8923    \hyper@pageduration
8924    \hyper@pagehidden
8925  }%
8926  \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

```

8927 \ifx\@pdfproducer\relax
8928 \def\@pdfproducer{VTeX}%
8929 \ifnum\Hy@VTeXversion>\z@
8930 \count@\VTeXversion
8931 \divide\count@ 100 %
8932 \edef\@pdfproducer{\@pdfproducer\space v\the\count@}%
8933 \multiply\count@ -100 %
8934 \advance\count@\VTeXversion
8935 \edef\@pdfproducer{%
8936 \@pdfproducer
8937 .\ifnum\count@<10 0\fi\the\count@

```

```

8938 \ifx\VTeXOS\@undefined\else
8939 \ifnum\VTeXOS>0 %
8940 \ifnum\VTeXOS<6 %
8941 \space(
8942 \ifcase\VTeXOS
8943 \or Windows\or Linux\or OS/2\or MacOS\or MacOS/X%
8944 \fi
8945 )%
8946 \fi
8947 \fi
8948 \fi
8949 ,\space
8950 \ifnum\OpMode=\@ne PDF\else PS\fi
8951 \space backend%
8952 \ifx\gexmode\@undefined\else
8953 \ifnum\gexmode>\z@\space with GeX\fi
8954 \fi
8955 }%
8956 \fi
8957 \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).

```

8958 \def\PDF@SetupDoc{%
8959 \ifx\@pdfpagescrop\@empty
8960 \else
8961 \special{!pdfinfo b=<\@pdfpagescrop>}%
8962 \fi
8963 \ifx\@pdfstartpage\@empty
8964 \else
8965 \ifx\@pdfstartview\@empty
8966 \else
8967 \special{!onopen Page\@pdfstartpage}%
8968 \fi
8969 \fi
8970 \special{!pdfinfo p=</\@pdfpagemode>}%
8971 \ifx\@baseurl\@empty
8972 \else
8973 \special{!pdfinfo u=<<</Base (\@baseurl)>>>}%
8974 \fi
8975 \special{!pdfinfo v=<<<%
8976 \ifHy@toolbar\else /HideToolbar true\fi
8977 \ifHy@menubar\else /HideMenubar true\fi
8978 \ifHy@windowui\else /HideWindowUI true\fi
8979 \ifHy@fitwindow /FitWindow true\fi

```

```

8980 \ifHy@centerwindow /CenterWindow true\fi
8981 \ifHy@displaydoctitle /DisplayDocTitle true\fi
8982 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
8983 \Hy@UseNameKey{Direction}\@pdfdirection
8984 \Hy@UseNameKey{ViewArea}\@pdfviewarea
8985 \Hy@UseNameKey{ViewClip}\@pdfviewclip
8986 \Hy@UseNameKey{PrintArea}\@pdfprintarea
8987 \Hy@UseNameKey{PrintClip}\@pdfprintclip
8988 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
8989 \Hy@UseNameKey{Duplex}\@pdfduplex
8990 \ifx\@pdfpicktraybypdfsize\@empty
8991 \else
8992 /PickTrayByPDFSize \@pdfpicktraybypdfsize
8993 \fi
8994 \ifx\@pdfprintpagerange\@empty
8995 \else
8996 /PrintPageRange[\@pdfprintpagerange]%
8997 \fi
8998 \ifx\@pdfnumcopies\@empty
8999 \else
9000 /NumCopies \@pdfnumcopies
9001 \fi
9002 >>>}%
9003 \ifx\@pdfpagelayout\@empty
9004 \else
9005 \special{!pdfinfo l=</\@pdfpagelayout\space>}%
9006 \fi
9007 }%
9008 \def\PDF@FinishDoc{%
9009 \Hy@UseMaketitleInfos
9010 \special{!pdfinfo a=<\@pdfauthor>}%
9011 \special{!pdfinfo t=<\@pdftitle>}%
9012 \special{!pdfinfo s=<\@pdfsubject>}%
9013 \special{!pdfinfo c=<\@pdfcreator>}%
9014 \ifx\@pdfproducer\relax
9015 \else
9016 \special{!pdfinfo r=<\@pdfproducer>}%
9017 \fi
9018 \special{!pdfinfo k=<\@pdfkeywords>}%
9019 \Hy@DisableOption{pdfauthor}%
9020 \Hy@DisableOption{pdftitle}%
9021 \Hy@DisableOption{pdfsubject}%
9022 \Hy@DisableOption{pdfcreator}%
9023 \Hy@DisableOption{pdfcreationdate}%
9024 \Hy@DisableOption{pdfmoddate}%
9025 \Hy@DisableOption{pdfproducer}%
9026 \Hy@DisableOption{pdfkeywords}%
9027 }
9028 </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.

```

9029 <dviwindo>\def\literalps@out#1{\special{ps:#1}}%
9030 <package>\providecommand*\Hy@DistillerDestFix{}
9031 <*pdfmark | dviwindo>
9032 \def\Hy@DistillerDestFix{%
9033   \begingroup
9034     \let\x\literalps@out

```

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

```

9035   \ifnum \@ifundefined{OpMode}{0}{}%
9036     \@ifundefined{gexmode}{0}{}%
9037     \ifnum\gexmode>0 \OpMode\else 0\fi
9038   }>1 %
9039   \def\x##1{%
9040     \immediate\special{!=##1}%
9041   }%
9042 \fi
9043 \x{%
9044   /product where{%
9045     pop %
9046     product(Distiller)search{%
9047       pop pop pop %
9048       version(.)search{%
9049         exch pop exch pop%
9050         (3011)eq{%
9051           gsave %
9052           newpath 0 0 moveto closepath clip%
9053           /Courier findfont 10 scalefont setfont %
9054           72 72 moveto(.)show %
9055           grestore%
9056         }if%
9057       }{pop}ifelse%
9058     }{pop}ifelse%
9059   }if%
9060 }%
9061 \endgroup
9062 }
9063 </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

```

9064 <*pdfmark>
9065 \Hy@breaklinks@unsupported
9066 \def\hyper@anchor#1{%
9067   \Hy@SaveLastskip
9068   \beginngroup
9069     \pdfmark[\anchor@spot]{%
9070       pdfmark=/DEST,%
9071       linktype=anchor,%
9072       View=/\@pdfview \@pdfviewparams,%
9073       DestAnchor={#1}%
9074     }%
9075   \endgroup
9076   \Hy@RestoreLastskip
9077 }
9078 \@ifundefined{hyper@anchorstart}{\endinput}
9079 \def\hyper@anchorstart#1{%
9080   \Hy@SaveLastskip
9081   \literalps@out{H.S}%
9082   \xdef\hyper@currentanchor{#1}%
9083   \Hy@activeanchortrue
9084 }
9085 \def\hyper@anchorend{%
9086   \literalps@out{\strip@pt@and@otherjunk\baselineskip\space H.A}%
9087   \pdfmark{%
9088     pdfmark=/DEST,%
9089     linktype=anchor,%
9090     View=/\@pdfview \@pdfviewparams,%
9091     DestAnchor=\hyper@currentanchor,%
9092   }%
9093   \Hy@activeanchorfalse
9094   \Hy@RestoreLastskip
9095 }
9096 \def\hyper@linkstart#1#2{%
9097   \ifHy@breaklinks
9098   \else
9099     \leavevmode\hbox\bgroup
9100     \fi
9101     \expandafter\Hy@colorlink\csname @#1color\endcsname
9102     \literalps@out{H.S}%
9103     \xdef\hyper@currentanchor{#2}%
9104     \gdef\hyper@currentlinktype{#1}%
9105 }
9106 \def\hyper@linkend{%
9107   \literalps@out{\strip@pt@and@otherjunk\baselineskip\space H.L}%
9108   \@ifundefined{@\hyper@currentlinktype bordercolor}{%
9109     \let\Hy@tempcolor\relax
9110   }{%
9111     \edef\Hy@tempcolor{%
9112       \csname @\hyper@currentlinktype bordercolor\endcsname
9113     }%
9114   }%
9115   \pdfmark{%
9116     pdfmark=/ANN,%
9117     linktype=link,%
9118     Subtype=/Link,%
9119     PDFAMFlags=4,%
9120     Dest=\hyper@currentanchor,%

```

```

9121     AcroHighlight=\@pdfhighlight,%
9122     Border=\@pdfborder,%
9123     BorderStyle=\@pdfborderstyle,%
9124     Color=\Hy@tempcolor,%
9125     Raw=H.B%
9126 }%
9127 \Hy@endcolorlink
9128 \ifHy@breaklinks
9129 \else
9130 \egroup
9131 \fi
9132 }

```

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.

```

9133 \begingroup
9134 \catcode'P=12 %
9135 \catcode'T=12 %
9136 \lowercase{\endgroup
9137 \gdef\rem@ptetc#1.#2PT#3!{#1\ifnum#2>\z@.#2\fi}%
9138 }
9139 \def\strip@pt@and@otherjunk#1{\expandafter\rem@ptetc\the#1!}

```

\hyper@pagetransition

```

9140 \def\hyper@pagetransition{%
9141 \ifx\@pdfpagetransition\relax
9142 \else
9143 \ifx\@pdfpagetransition\@empty
9144 % 1. Does an old entry have to be deleted?
9145 % 2. If 1=yes, how to delete?
9146 \else
9147 \pdfmark{%
9148 pdfmark=/PUT,%
9149 Raw={%
9150 \string{ThisPage\string}%
9151 <</Trans << /S /\@pdfpagetransition\space >> >>%
9152 }%
9153 }%
9154 \fi
9155 \fi
9156 }

```

\hyper@pageduration

```

9157 \def\hyper@pageduration{%
9158 \ifx\@pdfpageduration\relax
9159 \else
9160 \ifx\@pdfpageduration\@empty
9161 % 1. Does an old entry have to be deleted?
9162 % 2. If 1=yes, how to delete?
9163 \else
9164 \pdfmark{%
9165 pdfmark=/PUT,%
9166 Raw={%
9167 \string{ThisPage\string}%
9168 <</Dur \@pdfpageduration>>%
9169 }%

```

```

9170     }%
9171     \fi
9172 \fi
9173 }

```

\hyper@pagehidden

```

9174 \def\hyper@pagehidden{%
9175   \ifHy@useHidKey
9176     \pdfmark{%
9177       pdfmark=/PUT,%
9178       Raw={%
9179         \string{ThisPage\string}%
9180         <</Hid \ifHy@pdfpagehidden true\else false\fi>>%
9181       }%
9182     }%
9183   \fi
9184 }

9185 \g@addto@macro\Hy@EveryPageBoxHook{%
9186   \hyper@pagetransition
9187   \hyper@pageduration
9188   \hyper@pagehidden
9189 }

9190 \def\hyper@image#1#2{%
9191   \hyper@linkurl{#2}{#1}%
9192 }
9193 \def\Hy@undefinedname{UNDEFINED}
9194 \def\hyper@link#1#2#3{%
9195   \@ifundefined{#1bordercolor}{%
9196     \let\Hy@tempcolor\relax
9197   }{%
9198     \edef\Hy@tempcolor{\csname #1bordercolor\endcsname}%
9199   }%
9200   \begingroup
9201     \protected@edef\Hy@testname{#2}%
9202     \ifx\Hy@testname\@empty
9203       \Hy@Warning{%
9204         Empty destination name,\MessageBreak
9205         using '\Hy@undefinedname'%
9206       }%
9207     \let\Hy@testname\Hy@undefinedname
9208   \fi
9209   \pdfmark[#{#3}]{%
9210     Color=\Hy@tempcolor,%
9211     linktype={#1},%
9212     AcroHighlight=\@pdfhighlight,%
9213     Border=\@pdfborder,%
9214     BorderStyle=\@pdfborderstyle,%
9215     pdfmark=/ANN,%
9216     Subtype=/Link,%
9217     PDFAMFlags=4,%
9218     Dest=\Hy@testname
9219   }%
9220   \endgroup
9221 }
9222 \newtoks\pdf@docset
9223 \def\PDF@FinishDoc{%

```

```

9224 \Hy@UseMaketitleInfos
9225 \let\Hy@temp\@empty
9226 \ifx\@pdfcreationdate\@empty
9227 \else
9228   \def\Hy@temp{CreationDate=\@pdfcreationdate,}%
9229 \fi
9230 \ifx\@pdfmoddate\@empty
9231 \else
9232   \expandafter\def\expandafter\Hy@temp\expandafter{%
9233     \Hy@temp
9234     ModDate=\@pdfmoddate,%
9235   }%
9236 \fi
9237 \ifx\@pdfproducer\relax
9238 \else
9239   \expandafter\def\expandafter\Hy@temp\expandafter{%
9240     \Hy@temp
9241     Producer=\@pdfproducer,%
9242   }%
9243 \fi
9244 \expandafter
9245 \pdfmark\expandafter{%
9246   \Hy@temp
9247   pdfmark=/DOCINFO,%
9248   Title=\@pdftitle,%
9249   Subject=\@pdfsubject,%
9250   Creator=\@pdfcreator,%
9251   Author=\@pdfauthor,%
9252   Keywords=\@pdfkeywords
9253 }%
9254 \Hy@DisableOption{pdfauthor}%
9255 \Hy@DisableOption{pdftitle}%
9256 \Hy@DisableOption{pdfsubject}%
9257 \Hy@DisableOption{pdfcreator}%
9258 \Hy@DisableOption{pdfcreationdate}%
9259 \Hy@DisableOption{pdfmoddate}%
9260 \Hy@DisableOption{pdfproducer}%
9261 \Hy@DisableOption{pdfkeywords}%
9262 }
9263 \def\PDF@SetupDoc{%
9264   \def\Hy@temp{}%
9265   \ifx\@pdfstartpage\@empty
9266   \else
9267     \ifx\@pdfstartview\@empty
9268     \else
9269       \edef\Hy@temp{%
9270         ,Page=\@pdfstartpage
9271         ,View=\@pdfstartview
9272       }%
9273     \fi
9274   \fi
9275   \edef\Hy@temp{%
9276     \noexpand\pdfmark{%
9277       pdfmark=/DOCVIEW,%
9278       PageMode=/\@pdfpagemode
9279     }\Hy@temp
9280   }%

```



```

9281 }%
9282 \Hy@temp
9283 \ifx\@pdfpagescrop\@empty
9284 \else
9285   \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
9286 \fi
9287 \edef\Hy@temp{%
9288   \ifHy@toolbar\else /HideToolbar true\fi
9289   \ifHy@menubar\else /HideMenubar true\fi
9290   \ifHy@windowui\else /HideWindowUI true\fi
9291   \ifHy@fitwindow /FitWindow true\fi
9292   \ifHy@centerwindow /CenterWindow true\fi
9293   \ifHy@displaydoctitle /DisplayDocTitle true\fi
9294   \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
9295   \Hy@UseNameKey{Direction}\@pdfdirection
9296   \Hy@UseNameKey{ViewArea}\@pdfviewarea
9297   \Hy@UseNameKey{ViewClip}\@pdfviewclip
9298   \Hy@UseNameKey{PrintArea}\@pdfprintarea
9299   \Hy@UseNameKey{PrintClip}\@pdfprintclip
9300   \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
9301   \Hy@UseNameKey{Duplex}\@pdfduplex
9302   \ifx\@pdfpicktraybypdfsize\@empty
9303   \else
9304     /PickTrayByPDFSize \@pdfpicktraybypdfsize
9305   \fi
9306   \ifx\@pdfprintpagerange\@empty
9307   \else
9308     /PrintPageRange[\@pdfprintpagerange]%
9309   \fi
9310   \ifx\@pdfnumcopies\@empty
9311   \else
9312     /NumCopies \@pdfnumcopies
9313   \fi
9314 }%
9315 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
9316 \pdfmark{%
9317   pdfmark=/PUT,%
9318   Raw={%
9319     \string{Catalog\string}<<%
9320     \ifx\Hy@temp\@empty
9321     \else
9322       /ViewerPreferences<<\Hy@temp>>%
9323     \fi
9324     \Hy@UseNameKey{PageLayout}\@pdfpagelayout
9325     \ifx\@pdflang\@empty
9326     \else
9327       /Lang(\@pdflang)%
9328     \fi
9329     \ifx\@baseurl\@empty
9330     \else
9331       /URI<</Base(\Hy@pstringB)>>%
9332     \fi
9333   >>%
9334 }%
9335 }%
9336 }
9337 \pdfmark

```

9338  $\langle$ \*pdfmarkbase $\rangle$

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.

```

9339 \newif\ifHy@pdfmarkerror
9340 \def\pdfmark{\@ifnextchar[{\pdfmark@}{\pdfmark@[]}}
9341 \def\pdfmark@[#1]#2{%
9342   \Hy@pdfmarkerrorfalse
9343   \edef\@processme{\noexpand\pdf@toks={\the\pdf@defaulttoks}}%
9344   \@processme
9345   \let\pdf@type\relax
9346   \setkeys{PDF}{#2}%
9347   \ifHy@pdfmarkerror
9348   \else
9349     \ifx\pdf@type\relax
9350       \Hy@WarningNoLine{no pdfmark type specified in #2!!}%
9351       \ifx\#1\%
9352       \else
9353         \pdf@rect{#1}%
9354       \fi
9355     \else
9356       \ifx\#1\%
9357         \literalps@out{%
9358           [\the\pdf@toks\space\pdf@type\space pdfmark%
9359         ]}%
9360       \else
9361         \@ifundefined{@\pdf@linktype color}{%
9362           \Hy@colorlink\@linkcolor
9363         }{%
9364           \expandafter\Hy@colorlink
9365             \csname @\pdf@linktype color\endcsname
9366         }%
9367         \pdf@rect{#1}%
9368         \literalps@out{%
9369           [\the\pdf@toks\space\pdf@type\space pdfmark%
9370         ]}%
9371         \Hy@endcolorlink
9372       \fi
9373     \fi
9374   \fi
9375 }

```

The complicated bit is working out the right enclosing rectangle of some piece of T<sub>E</sub>X 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}

```

```
9376 \newsavebox{\pdf@box}
```

```

9377 \providecommand*{\Hy@setouterhbox}{\sbox}
9378 \providecommand*{\Hy@breaklinksunhbox}{\unhbox}
9379 \def\Hy@DEST{/DEST}
9380 \def\pdf@rect#1{%
9381   \leavevmode
9382   \ifHy@breaklinks
9383     \Hy@setouterhbox\pdf@box{#1}%
9384   \else
9385     \sbox\pdf@box{#1}%
9386   \fi
9387   \dimen@ht\pdf@box
9388   \ifdim\dp\pdf@box=\z@
9389     \literalps@out{H.S}%
9390   \else
9391     \lower\dp\pdf@box\hbox{\literalps@out{H.S}}%
9392   \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...).

```

9393   \ifHy@breaklinks
9394     \expandafter\Hy@breaklinksunhbox
9395   \else
9396     \expandafter\box
9397   \fi
9398   \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

9399 \ifdim\dimen@=\z@
9400   \literalps@out{H.R}%
9401 \else
9402   \raise\dimen@\hbox{\literalps@out{H.R}}%
9403 \fi
9404 \ifx\pdf@type\Hy@DEST
9405 \else
9406   \pdf@addtoksx{H.B}%
9407 \fi
9408 }

```

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.

```

9409 \newtoks\pdf@toks
9410 \newtoks\pdf@defaulttoks
9411 \pdf@defaulttoks={}
9412 \def\pdf@addtoks#1#2{%
9413   \edef\@processme{\pdf@toks{\the\pdf@toks/#2 #1}}%
9414   \@processme
9415 }
9416 \def\pdf@addtoksx#1{%
9417   \edef\@processme{\pdf@toks{\the\pdf@toks\space #1}}%
9418   \@processme
9419 }
9420 \def\PDFdefaults#1{%
9421   \pdf@defaulttoks={#1}%
9422 }

```

This is the list of allowed keys. See the Acrobat manual for an explanation.

```
9423 % what is the type of pdfmark?
9424 \define@key{PDF}{pdfmark}{\def\pdf@type{#1}}
9425 % what is the link type?
9426 \define@key{PDF}{linktype}{\def\pdf@linktype{#1}}
9427 \def\pdf@linktype{link}
9428 % parameter is a stream of PDF
9429 \define@key{PDF}{Raw}{\pdf@addtoks{#1}}
9430 % parameter is a name
9431 \define@key{PDF}{Action}{\pdf@addtoks{#1}{Action}}
9432 % parameter is a array
9433 \define@key{PDF}{Border}{%
9434   \edef\Hy@temp{#1}%
9435   \ifx\Hy@temp\@empty
9436   \else
9437     \pdf@addtoks{[#1]\Hy@BorderArrayPatch}{Border}% hash-ok
9438   \fi
9439 }
9440 \let\Hy@BorderArrayPatch\@empty
9441 % parameter is a dictionary
9442 \define@key{PDF}{BorderStyle}{%
9443   \edef\Hy@temp{#1}%
9444   \ifx\Hy@temp\@empty
9445   \else
9446     \pdf@addtoks{<<#1>>}{BS}%
9447   \fi
9448 }
9449 % parameter is a array
9450 \define@key{PDF}{Color}{%
9451   \ifx\relax#1\relax
9452   \else
9453     \pdf@addtoks{[#1]}{Color}% hash-ok
9454   \fi
9455 }
9456 % parameter is a string
9457 \define@key{PDF}{Contents}{\pdf@addtoks{(#1)}{Contents}}
9458 % parameter is a integer
9459 \define@key{PDF}{Count}{\pdf@addtoks{#1}{Count}}
9460 % parameter is a array
9461 \define@key{PDF}{CropBox}{\pdf@addtoks{[#1]}{CropBox}}% hash-ok
9462 % parameter is a string
9463 \define@key{PDF}{DOSFile}{\pdf@addtoks{(#1)}{DOSFile}}
9464 % parameter is a string or file
9465 \define@key{PDF}{DataSource}{\pdf@addtoks{(#1)}{DataSource}}
9466 % parameter is a destination
9467 \define@key{PDF}{Dest}{%
9468   \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
9469   \ifx\Hy@pstringDest\@empty
9470     \Hy@pdfmarkerrortrue
9471     \Hy@Warning{Destination with empty name ignored}%
9472   \else
9473     \pdf@addtoks{(\Hy@pstringDest) cvn}{Dest}%
9474   \fi
9475 }
9476 \define@key{PDF}{DestAnchor}{%
9477   \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
9478   \ifx\Hy@pstringDest\@empty
```

```

9479 \Hy@pdfmarkerrortrue
9480 \Hy@Warning{Destination with empty name ignored}%
9481 \else
9482 \pdf@addtoks{(\Hy@pstringDest) cvn}{Dest}%
9483 \fi
9484 }
9485 % parameter is a string
9486 \define@key{PDF}{Dir}{\pdf@addtoks{(#1)}{Dir}}
9487 % parameter is a string
9488 \define@key{PDF}{File}{\pdf@addtoks{(#1)}{File}}
9489 % parameter is a int
9490 \define@key{PDF}{Flags}{\pdf@addtoks{#1}{Flags}}
9491 \define@key{PDF}{PDFAFlags}{%
9492 \ifHy@pdfa
9493 \pdf@addtoks{#1}{F}%
9494 \fi
9495 }
9496 % parameter is a name
9497 \define@key{PDF}{AcroHighlight}{%
9498 \begingroup
9499 \edef\x{#1}%
9500 \expandafter\endgroup\ifx\x\@empty
9501 \else
9502 \pdf@addtoks{#1}{H}%
9503 \fi
9504 }
9505 % parameter is a string
9506 \define@key{PDF}{ID}{\pdf@addtoks{[#1]}{ID}}% hash-ok
9507 % parameter is a string
9508 \define@key{PDF}{MacFile}{\pdf@addtoks{(#1)}{MacFile}}
9509 % parameter is a string
9510 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
9511 % parameter is a string
9512 \define@key{PDF}{Op}{\pdf@addtoks{(#1)}{Op}}
9513 % parameter is a Boolean
9514 \define@key{PDF}{Open}{\pdf@addtoks{#1}{Open}}
9515 % parameter is a integer or name
9516 \define@key{PDF}{Page}{\pdf@addtoks{#1}{Page}}
9517 % parameter is a name
9518 \define@key{PDF}{PageMode}{\pdf@addtoks{#1}{PageMode}}
9519 % parameter is a string
9520 \define@key{PDF}{Params}{\pdf@addtoks{(#1)}{Params}}
9521 % parameter is a array
9522 \define@key{PDF}{Rect}{\pdf@addtoks{[#1]}{Rect}}% hash-ok
9523 % parameter is a integer
9524 \define@key{PDF}{SrcPg}{\pdf@addtoks{#1}{SrcPg}}
9525 % parameter is a name
9526 \define@key{PDF}{Subtype}{\pdf@addtoks{#1}{Subtype}}
9527 % parameter is a string
9528 \define@key{PDF}{Title}{\pdf@addtoks{(#1)}{Title}}
9529 % parameter is a string
9530 \define@key{PDF}{Unix}{\pdf@addtoks{(#1)}{Unix}}
9531 % parameter is a string
9532 \define@key{PDF}{UnixFile}{\pdf@addtoks{(#1)}{UnixFile}}
9533 % parameter is an array
9534 \define@key{PDF}{View}{\pdf@addtoks{[#1]}{View}}% hash-ok
9535 % parameter is a string

```

```
9536 \define@key{PDF}{WinFile}{\pdf@addtoks{(#1)}{WinFile}}
```

These are the keys used in the DOCINFO section.

```
9537 \define@key{PDF}{Author}{\pdf@addtoks{(#1)}{Author}}
9538 \define@key{PDF}{Creator}{\pdf@addtoks{(#1)}{Creator}}
9539 \define@key{PDF}{CreationDate}{\pdf@addtoks{(#1)}{CreationDate}}
9540 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
9541 \define@key{PDF}{Producer}{\pdf@addtoks{(#1)}{Producer}}
9542 \define@key{PDF}{Subject}{\pdf@addtoks{(#1)}{Subject}}
9543 \define@key{PDF}{Keywords}{\pdf@addtoks{(#1)}{Keywords}}
9544 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
9545 \define@key{PDF}{Base}{\pdf@addtoks{(#1)}{Base}}
9546 \define@key{PDF}{URI}{\pdf@addtoks{(#1)}{URI}}
9547 \pdfmarkbase
9548 (*pdfmark)
9549 \def\Acrobatmenu#1#2{%
9550   \Hy@Acrobatmenu{#1}{#2}{%
9551     \pdfmark[{#2}]{%
9552       linktype=menu,%
9553       pdfmark=/ANN,%
9554       AcroHighlight=\pdfhighlight,%
9555       Border=\pdfborder,%
9556       BorderStyle=\pdfborderstyle,%
9557       Action={<< /Subtype /Named /N /#1 >>},%
9558       Subtype=/Link,%
9559       PDFAFlags=4%
9560     }%
9561   }%
9562 }
```

And now for some useful examples:

```
9563 \def\PDFNextPage{\ifnextchar[{\PDFNextPage@}{\PDFNextPage@[]}}
9564 \def\PDFNextPage@[#1]#2{%
9565   \pdfmark[{#2}]{%
9566     #1,%
9567     Border=\pdfborder,%
9568     BorderStyle=\pdfborderstyle,%
9569     Color=.2 .1 .5,%
9570     pdfmark=/ANN,%
9571     Subtype=/Link,%
9572     PDFAFlags=4,%
9573     Page=/Next%
9574   }%
9575 }
9576 \def\PDFPreviousPage{%
9577   \ifnextchar[{\PDFPreviousPage@}{\PDFPreviousPage@[]}%
9578 }
9579 \def\PDFPreviousPage@[#1]#2{%
9580   \pdfmark[{#2}]{%
9581     #1,%
9582     Border=\pdfborder,%
9583     BorderStyle=\pdfborderstyle,%
9584     Color=.4 .4 .1,%
9585     pdfmark=/ANN,%
9586     Subtype=/Link,%
9587     PDFAFlags=4,%
9588     Page=/Prev%
9589   }%
9590 }
```

```

9590 }
9591 \def\PDFOpen#1{%
9592   \pdfmark{#1,pdfmark=/DOCVIEW}%
9593 }

```

This will only work if you use Distiller 2.1 or higher.

```

9594 \def\hyper@linkurl#1#2{%
9595   \begingroup
9596     \Hy@pstringdef\Hy@pstringURI{#2}%
9597     \hyper@chars
9598     \leavevmode
9599     \pdfmark[{#1}]{%
9600       pdfmark=/ANN,%
9601       linktype=url,%
9602       AcroHighlight=\@pdfhighlight,%
9603       Border=\@pdfborder,%
9604       BorderStyle=\@pdfborderstyle,%
9605       Color=\@urlbordercolor,%
9606       Action={<< /Subtype /URI /URI (\Hy@pstringURI) >>},%
9607       Subtype=/Link,%
9608       PDFAFlags=4%
9609     }%
9610   \endgroup
9611 }
9612 \def\hyper@linkfile#1#2#3{%
9613   \begingroup
9614     \Hy@pstringdef\Hy@pstringF{#2}%
9615     \Hy@pstringdef\Hy@pstringD{#3}%
9616     \leavevmode
9617     \pdfmark[{#1}]{%
9618       pdfmark=/ANN,%
9619       Subtype=/Link,%
9620       PDFAFlags=4,%
9621       AcroHighlight=\@pdfhighlight,%
9622       Border=\@pdfborder,%
9623       BorderStyle=\@pdfborderstyle,%
9624       linktype=file,%
9625       Color=\@filebordercolor,%
9626       Action={%
9627         <<%
9628           /S/GoToR%
9629           \Hy@SetNewWindow
9630           /F(\Hy@pstringF)%
9631           /D\ifx\#3\[O \@pdfstartview]\else(\Hy@pstringD)cvn\fi
9632         >>%
9633       }%
9634     }%
9635   \endgroup
9636 }
9637 \def\@hyper@launch run:#1\#2#3{%
9638   \begingroup
9639     \Hy@pstringdef\Hy@pstringF{#1}%
9640     \Hy@pstringdef\Hy@pstringP{#3}%
9641     \leavevmode
9642     \pdfmark[{#2}]{%
9643       pdfmark=/ANN,%
9644       Subtype=/Link,%
9645       PDFAFlags=4,%

```

```

9646     AcroHighlight=\@pdfhighlight,%
9647     Border=\@pdfborder,%
9648     BorderStyle=\@pdfborderstyle,%
9649     linktype=run,%
9650     Color=\@runbordercolor,%
9651     Action={%
9652         <<%
9653             /S/Launch%
9654             \Hy@SetNewWindow
9655             /F(\Hy@pstringF)%
9656             \ifx\#3\%
9657             \else
9658                 /Win<</P(\Hy@pstringP)/F(\Hy@pstringF)>>%
9659             \fi
9660         >>%
9661     }%
9662 }%
9663 \endgroup
9664 }
9665 \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.

```

9666 (*dvips)
9667 \providecommand*\XR@ext}{pdf}
9668 \def\Hy@raisedlink{}
9669 \def\literalps@out#1{\special{ps:SDict begin #1 end}}%
9670 \def\headerps@out#1{\special{! #1}}%
9671 \input{pdfmark.def}%
9672 \ifx\@pdfproducer\relax
9673     \def\@pdfproducer{dvips + Distiller}%
9674 \fi
9675 \providecommand*\@pdfborder{0 0 1}
9676 \providecommand*\@pdfborderstyle{}
9677 \providecommand*\@pdfview{XYZ}
9678 \providecommand*\@pdfviewparams{ H.V}
9679 \def\Hy@BorderArrayPatch{BorderArrayPatch}

9680 \g@addto@macro\Hy@FirstPageHook{%
9681     \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.

```
9682    /DvipsToPDF{72.27 mul Resolution div} def%
9683    /PDFToDvips{72.27 div Resolution mul} def%
9684    /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.

```
9685    /BorderArrayPatch{%
9686      [exch{%
9687        dup dup type/integertype eq exch type/realtype eq or%
9688        {BPToDvips}if%
9689      }forall]%
9690    }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.

```
9691    /HyperBorder {1 PDFToDvips} def%
9692    /H.V {pdf@hoff pdf@voff null} def%
9693    /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

```
9694    /H.S {%
9695      currentpoint %
9696      HyperBorder add /pdf@lly exch def %
9697      dup DvipsToPDF 72 add /pdf@hoff exch def %
9698      HyperBorder sub /pdf@llx exch def%
9699    } 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`

```
9700    /H.L {%
9701      2 sub dup%
9702      /HyperBasePt exch def %
9703      PDFToDvips /HyperBaseDvips exch def %
9704      currentpoint %
9705      HyperBaseDvips sub /pdf@ury exch def%
9706      /pdf@urx exch def%
9707    } def%
9708    /H.A {%
9709      H.L %
9710    % |pdf@voff| = the distance from the top of the page to a point
9711    % |\baselineskip| above the current point in PDF coordinates
9712      currentpoint exch pop %
9713      vsize 72 sub exch DvipsToPDF %
9714      HyperBasePt sub % baseline skip
9715      sub /pdf@voff exch def%
9716    } def%
9717    /H.R {%
9718      currentpoint %
9719      HyperBorder sub /pdf@ury exch def %
```

```

9720      HyperBorder add /pdf@urx exch def %
9721 % | /pdf@voff| = the distance from the top of the page to the current point, in
9722 % PDF coordinates
9723      currentpoint exch pop vsize 72 sub %
9724      exch DvipsToPDF sub /pdf@voff exch def%
9725  } def%
9726 }%
9727 }
9728 \AtBeginShipoutFirst{%
9729   \ifHy@setpagesize
9730     \begingroup
9731       \ifundefined{stockwidth}{%
9732         \ifdim\paperwidth>\z@
9733           \ifdim\paperheight>\z@
9734             \special{papersize=\the\paperwidth,\the\paperheight}%
9735           \fi
9736         \fi
9737       }{%
9738         \ifdim\stockwidth>\z@
9739           \ifdim\stockheight>\z@
9740             \special{papersize=\the\stockwidth,\the\stockheight}%
9741           \fi
9742         \fi
9743       }%
9744     \endgroup
9745   \fi
9746   \Hy@DisableOption{setpagesize}%
9747 }
9748 </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.

```

9749 <*vtexpdfmark>
9750 \providecommand*{\XR@ext}{pdf}
9751 \def\Hy@raisedlink{}
9752 \def\literalps@out#1{\special{pS:#1}}%
9753 \def\headerps@out#1{\immediate\special{pS:#1}}%
9754 \input{pdfmark.def}%
9755 \ifx\@pdfproducer\relax
9756   \ifnum\OpMode=\@ne
9757     \def\@pdfproducer{VTeX}%
9758   \else
9759     \def\@pdfproducer{VTeX + Distiller}%
9760   \fi
9761 \fi
9762 \providecommand*\@pdfborder{0 0 1}
9763 \providecommand*\@pdfborderstyle{}
9764 \providecommand*\@pdfview{XYZ}
9765 \providecommand*\@pdfviewparams{ H.V}
9766 \g@addto@macro\Hy@FirstPageHook{%
9767   \headerps@out{%
9768     /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.

```

9769 /HyperBorder {1} def%
9770 /H.V {pdf@hoff pdf@voff null} def%
9771 /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:  $\text{pdf@lly} = Y_c - \text{HyperBorder}$ ,  $\text{pdf@hoff} = X_c + 72$ ,  $\text{pdf@llx} = X_c - \text{HyperBorder}$

```

9772 /H.S {%
9773     currentpoint %
9774     HyperBorder sub%
9775     /pdf@lly exch def %
9776     dup 72 add /pdf@hoff exch def %
9777     HyperBorder sub%
9778     /pdf@llx exch def%
9779 } def%

```

The  $x$  and  $y$  coordinates of the current point, minus the `\baselineskip`:  $\text{pdf@ury} = Y_c + \text{HyperBasePt} + \text{HyperBorder}$ ,  $\text{pdf@urx} = X_c + \text{HyperBorder}$

```

9780 /H.L {%
9781     2 sub%
9782     /HyperBasePt exch def %
9783     currentpoint %
9784     HyperBasePt add HyperBorder add%
9785     /pdf@ury exch def %
9786     HyperBorder add%
9787     /pdf@urx exch def%
9788 } def%
9789 /H.A {%
9790     H.L %
9791     currentpoint exch pop %
9792     vsize 72 sub exch %
9793     HyperBasePt add add%
9794     /pdf@voff exch def%
9795 } def%

```

$\text{pdf@ury} = Y_c + \text{HyperBorder}$ ,  $\text{pdf@urx} = X_c + \text{HyperBorder}$

```

9796 /H.R {%
9797     currentpoint %
9798     HyperBorder add%
9799     /pdf@ury exch def %
9800     HyperBorder add%
9801     /pdf@urx exch def %
9802     currentpoint exch pop vsize 72 sub add%
9803     /pdf@voff exch def%
9804 } def%
9805 }%
9806 }
9807 </vtxpdfmark>

```

## 46.11 Textures

```

9808 <*textures>
9809 \providecommand*{\XR@ext}{pdf}

```

At the suggestion of Jacques Distler (distler@golem.ph.utexas.edu), try to derive a suitable driver for Textures. This was initially a copy of dvips, with some guesses about

Textures behaviour. Ross Moore (ross@maths.mq.edu.au) has added modifications for better compatibility, and to support use of pdfmark.

Start by defining a macro that expands to the end-of-line character. This will be used to format the appearance of PostScript code, to enhance readability, and avoid excessively long lines which might otherwise become broken to bad places.

`\Hy@ps@CR` The macro `\Hy@ps@CR` contains the end-of-line character.

```
9810 \begingroup
9811   \obeylines %
9812   \gdef\Hy@ps@CR{\noexpand
9813     }%
9814 \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`.

```
9815 \def\literalps@out#1{%
9816   \special{postscript 0 0 transform}%
9817   \special{rawpostscript itransform moveto\Hy@ps@CR #1}%
9818 }%
9819 %
```

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.

```
9820 \def\headerps@out#1{%
9821   \special{%
9822     prepostscript TeXdict begin\Hy@ps@CR
9823       #1\Hy@ps@CR
9824     end%
9825   }%
9826 }%
9827 %
```

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.

```
9828 \g@addto@macro\Hy@FirstPageHook{%
9829   \headerps@out{%
9830     /betterpdfmark {%
9831       systemdict begin %
9832         dup /BP eq%
9833         {cleartomark gsave nulldevice []}%
9834         {dup /EP eq%
9835           {cleartomark cleartomark grestore}%
9836           {cleartomark}%
9837         }ifelse%
9838       }ifelse %
9839     end%
9840   }def\Hy@ps@CR
9841   __pdfmark__ not{/pdfmark /betterpdfmark load def}if%
```

```

9842 }% end of \headerps@out
9843 }% end of \AtBeginShipoutFirst
9844 %
9845 \input{pdfmark.def}%
9846 %
9847 \ifx\@pdfproducer\relax
9848 \def\@pdfproducer{Textures + Distiller}%
9849 \fi
9850 \providecommand*\@pdfborder{0 0 1}
9851 \providecommand*\@pdfborderstyle{}
9852 \providecommand*\@pdfview{XYZ}
9853 \providecommand*\@pdfviewparams{ H.V}
9854 %

```

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.

```

9855 \AfterBeginDocument{%
9856 \headerps@out{%

```

Textures lives in normal points, I think. So conversion from one coordinate system to another involves doing nothing.

```

9857 /vsize {\Hy@pageheight} def%
9858 /DvipsToPDF {} def%
9859 /PDFToDvips {} def%
9860 /BPToDvips {} def%
9861 /HyperBorder { 1 PDFToDvips } def\Hy@ps@CR
9862 /H.V {pdf@hoff pdf@voff null} def\Hy@ps@CR
9863 /H.B {/Rect[pdf@llx pdf@lly pdf@urx pdf@ury]} def\Hy@ps@CR
9864 /H.S {%
9865     currentpoint %
9866     HyperBorder add /pdf@lly exch def %
9867     dup DvipsToPDF 72 add /pdf@hoff exch def %
9868     HyperBorder sub /pdf@llx exch def%
9869 } def\Hy@ps@CR
9870 /H.L {%
9871     2 sub %
9872     PDFToDvips /HyperBase exch def %
9873     currentpoint %
9874     HyperBase sub /pdf@ury exch def%
9875     /pdf@urx exch def%
9876 } def\Hy@ps@CR
9877 /H.A {%
9878     H.L %
9879     currentpoint exch pop %
9880     vsize 72 sub exch DvipsToPDF %
9881     HyperBase sub % baseline skip
9882     sub /pdf@voff exch def%
9883 } def\Hy@ps@CR
9884 /H.R {%
9885     currentpoint %
9886     HyperBorder sub /pdf@ury exch def %
9887     HyperBorder add /pdf@urx exch def %
9888     currentpoint exch pop vsize 72 sub %
9889     exch DvipsToPDF sub /pdf@voff exch def%
9890 } def\Hy@ps@CR
9891 }%

```

```

9892 }
9893 \AfterBeginDocument{%
9894   \ifHy@colorlinks
9895     \headerps@out{/PDFBorder{/Border [0 0 0]}def}%
9896   \fi
9897 }

```

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.

```

9898 \expandafter\let\expandafter\keepPDF@SetupDoc
9899 \csname PDF@SetupDoc\endcsname
9900 \def\PDF@SetupDoc{%
9901   \ifx\@baseurl\@empty
9902   \else
9903     \special{html:<base href="\@baseurl">}%
9904   \fi
9905   \keepPDF@SetupDoc
9906 }
9907 \def\hyper@anchor#1{%
9908   \Hy@SaveLastskip
9909   \begingroup
9910     \let\protect=\string
9911     \special{html:<a name=%
9912       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
9913   \endgroup
9914   \Hy@activeanchortrue
9915   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
9916   \special{html:</a>}%
9917   \Hy@activeanchorfalse
9918   \Hy@RestoreLastskip
9919 }
9920 \def\hyper@anchorstart#1{%
9921   \Hy@SaveLastskip
9922   \begingroup
9923     \hyper@chars
9924     \special{html:<a name=%
9925       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
9926   \endgroup
9927   \Hy@activeanchortrue
9928 }
9929 \def\hyper@anchorend{%
9930   \special{html:</a>}%
9931   \Hy@activeanchorfalse
9932   \Hy@RestoreLastskip
9933 }
9934 \def\@urltype{url}
9935 \def\hyper@linkstart#1#2{%
9936   \expandafter\Hy@colorlink\csname @#1color\endcsname
9937   \def\Hy@tempa{#1}%
9938   \ifx\Hy@tempa\@urltype
9939     \special{html:<a href=\hyper@quote#2\hyper@quote>}%
9940   \else
9941     \begingroup
9942       \hyper@chars
9943       \special{html:<a href=%
9944         \hyper@quote\# \HyperDestNameFilter{#2}\hyper@quote>}%
9945     \endgroup

```

```

9946 \fi
9947 }
9948 \def\hyper@linkend{%
9949 \special{html:</a>}}%
9950 \Hy@endcolorlink
9951 }
9952 \def\hyper@linkfile#1#2#3{%
9953 \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\else\##3\fi}%
9954 }
9955 \def\hyper@linkurl#1#2{%
9956 \leavevmode
9957 \ifHy@raiselinks
9958 \setbox\@tempboxa=\color@hbox #1\color@endbox
9959 \@linkdim\dp\@tempboxa
9960 \lower\@linkdim\hbox{%
9961 \hyper@chars
9962 \special{html:<a href=\hyper@quote#2\hyper@quote>}}%
9963 }%
9964 \Hy@colorlink\@urlcolor#1%
9965 \@linkdim\ht\@tempboxa
9966 \advance\@linkdim by -6.5\p@
9967 \raise\@linkdim\hbox{\special{html:</a>}}%
9968 \Hy@endcolorlink
9969 \else
9970 \begingroup
9971 \hyper@chars
9972 \special{html:<a href=\hyper@quote#2\hyper@quote>}}%
9973 \Hy@colorlink\@urlcolor#1%
9974 \special{html:</a>}}%
9975 \Hy@endcolorlink
9976 \endgroup
9977 \fi
9978 }

```

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

```

9979 \def\hyper@link#1#2#3{%
9980 \hyper@linkurl{#3}{\# \HyperDestNameFilter{#2}}}%
9981 }
9982 \def\hyper@image#1#2{%
9983 \begingroup
9984 \hyper@chars
9985 \special{html:<img src=\hyper@quote#1\hyper@quote>}}%
9986 \endgroup
9987 }
9988 </textures>

```

## 46.12 dvipsone

```

9989 % \subsection{dvipsone driver}
9990 % Over-ride the default setup macro in pdfmark driver to use Y\&Y
9991 % |\special| commands.
9992 <*dvipsone>
9993 \providecommand*\XR@ext}{pdf}
9994 \def\Hy@raisedlink{
9995 \providecommand*\@pdfborder{0 0 1}
9996 \providecommand*\@pdfborderstyle{
9997 \def\literalps@out#1{\special{ps:#1}}}%
9998 \def\headerps@out#1{\special{headertext=#1}}}%

```

```

9999 \input{pdfmark.def}%
10000 \ifx\@pdfproducer\relax
10001   \def\@pdfproducer{dvipsone + Distiller}%
10002 \fi
10003 \def\PDF@FinishDoc{%
10004   \Hy@UseMaketitleInfos
10005   \special{PDF: Keywords \@pdfkeywords}%
10006   \special{PDF: Title \@pdftitle}%
10007   \special{PDF: Creator \@pdfcreator}%
10008   \ifx\@pdfcreationdate\@empty
10009   \else
10010     \special{PDF: CreationDate \@pdfcreationdate}%
10011   \fi
10012   \ifx\@pdfmoddate\@empty
10013   \else
10014     \special{PDF: ModDate \@pdfmoddate}%
10015   \fi
10016   \special{PDF: Author \@pdfauthor}%
10017   \ifx\@pdfproducer\relax
10018   \else
10019     \special{PDF: Producer \@pdfproducer}%
10020   \fi
10021   \special{PDF: Subject \@pdfsubject}%
10022   \Hy@DisableOption{pdfauthor}%
10023   \Hy@DisableOption{pdftitle}%
10024   \Hy@DisableOption{pdfsubject}%
10025   \Hy@DisableOption{pdfcreator}%
10026   \Hy@DisableOption{pdfcreationdate}%
10027   \Hy@DisableOption{pdfmoddate}%
10028   \Hy@DisableOption{pdfproducer}%
10029   \Hy@DisableOption{pdfkeywords}%
10030 }
10031 \def\PDF@SetupDoc{%
10032   \def\Hy@temp{}%
10033   \ifx\@pdfstartpage\@empty
10034   \else
10035     \ifx\@pdfstartview\@empty
10036     \else
10037       \edef\Hy@temp{%
10038         ,Page=\@pdfstartpage
10039         ,View=\@pdfstartview
10040       }%
10041     \fi
10042   \fi
10043   \edef\Hy@temp{%
10044     \noexpand\pdfmark{%
10045       pdfmark=/DOCVIEW,%
10046       PageMode=/\@pdfpagemode
10047     }\Hy@temp
10048   }%
10049 }%
10050 \Hy@temp
10051 \ifx\@pdfpagescrop\@empty
10052 \else
10053   \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
10054 \fi
10055 \edef\Hy@temp{%

```



```

10056 \ifHy@toolbar\else /HideToolbar true\fi
10057 \ifHy@menubar\else /HideMenubar true\fi
10058 \ifHy@windowui\else /HideWindowUI true\fi
10059 \ifHy@fitwindow /FitWindow true\fi
10060 \ifHy@centerwindow /CenterWindow true\fi
10061 \ifHy@displaydoctitle /DisplayDocTitle true\fi
10062 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
10063 \Hy@UseNameKey{Direction}\@pdfdirection
10064 \Hy@UseNameKey{ViewArea}\@pdfviewarea
10065 \Hy@UseNameKey{ViewClip}\@pdfviewclip
10066 \Hy@UseNameKey{PrintArea}\@pdfprintarea
10067 \Hy@UseNameKey{PrintClip}\@pdfprintclip
10068 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
10069 \Hy@UseNameKey{Duplex}\@pdfduplex
10070 \ifx\@pdfpicktraybypdfsize\@empty
10071 \else
10072 /PickTrayByPDFSize \@pdfpicktraybypdfsize
10073 \fi
10074 \ifx\@pdfprintpagerange\@empty
10075 \else
10076 /PrintPageRange[\@pdfprintpagerange]%
10077 \fi
10078 \ifx\@pdfnumcopies\@empty
10079 \else
10080 /NumCopies \@pdfnumcopies
10081 \fi
10082 }%
10083 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
10084 \pdfmark{%
10085 pdfmark=/PUT,%
10086 Raw={%
10087 \string{Catalog\string}<<%
10088 \ifx\Hy@temp\@empty
10089 \else
10090 /ViewerPreferences<<\Hy@temp>>%
10091 \fi
10092 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
10093 \ifx\@pdflang\@empty
10094 \else
10095 /Lang(\@pdflang)%
10096 \fi
10097 \ifx\@baseurl\@empty
10098 \else
10099 /URI<</Base(\Hy@pstringB)>>%
10100 \fi
10101 >>%
10102 }%
10103 }%
10104 }
10105 \providecommand*\@pdfview{XYZ}
10106 \providecommand*\@pdfviewparams{ %
10107 gsave revscl currentpoint grestore %
10108 72 add exch pop null exch null%
10109 }
10110 \def\Hy@BorderArrayPatch{BorderArrayPatch}

```

These are called at the start and end of unboxed links; their job is to leave available PS variables called pdf@llx pdf@lly pdf@urx pdf@ury, which are the coordinates of

the bounding rectangle of the link, and pdf@hoff pdf@voff which are the PDF page offsets. These latter are currently not used in the dvipsone setup. The Rect pair are called at the LL and UR corners of a box known to T<sub>E</sub>X.

```
10111 \g@addto@macro\Hy@FirstPageHook{%
10112   \headerps@out{%
```

dvipsone lives in scaled points; does this mean 65536 or 65781?

```
10113   /DvipsToPDF { 65781 div } def%
10114   /PDFToDvips { 65781 mul } def%
10115   /BPToDvips{65781 mul}def%
10116   /HyperBorder { 1 PDFToDvips } def%
10117   /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.

```
10118   /BorderArrayPatch{%
10119     [exch{%
10120       dup dup type/integertype eq exch type/realtype eq or%
10121       {BPToDvips}if%
10122     }forall]%
10123   }def%
10124   /H.S {%
10125     currentpoint %
10126     HyperBorder add /pdf@lly exch def %
10127     dup DvipsToPDF 72 add /pdf@hoff exch def %
10128     HyperBorder sub /pdf@llx exch def%
10129   } def%
10130   /H.L {%
10131     2 sub %
10132     PDFToDvips /HyperBase exch def %
10133     currentpoint %
10134     HyperBase sub /pdf@ury exch def%
10135     /pdf@urx exch def%
10136   } def%
10137   /H.A {%
10138     H.L %
10139     currentpoint exch pop %
10140     HyperBase sub % baseline skip
10141     DvipsToPDF /pdf@voff exch def%
10142   } def%
10143   /H.R {%
10144     currentpoint %
10145     HyperBorder sub /pdf@ury exch def %
10146     HyperBorder add /pdf@urx exch def %
10147     currentpoint exch pop DvipsToPDF /pdf@voff exch def%
10148   } def%
10149   }%
10150 }
10151 </dvipsone>
```

## 46.13 TeX4ht

```
10152 <*tex4ht>
10153 \providecommand*{\XR@ext}{html}
10154 \def\Hy@raisedlink{}
10155 \@ifpackageloaded{tex4ht}{%
10156   \typeout{hyperref tex4ht: tex4ht already loaded}%
10157 }{%
```

```

10158 \RequirePackage[htex4ht]{tex4ht}%
10159 }
10160 \hyperlinkfileprefix{}
10161 \def\PDF@FinishDoc{}
10162 \def\PDF@SetupDoc{%
10163   \ifx\@baseurl\@empty
10164   \else
10165     \special{t4ht=<base href="\@baseurl">}%
10166   \fi
10167 }
10168 \def\hyper@anchor#1{%
10169   \Hy@SaveLastskip
10170   \begingroup
10171     \let\protect=\string
10172     \special{t4ht=<a name=%
10173       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
10174   \endgroup
10175   \Hy@activeanchortrue
10176   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
10177   \special{t4ht=</a>}%
10178   \Hy@activeanchorfalse
10179   \Hy@RestoreLastskip
10180 }
10181 \def\hyper@anchorstart#1{%
10182   \Hy@SaveLastskip
10183   \begingroup
10184     \hyper@chars\special{t4ht=<a name=%
10185       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
10186   \endgroup
10187   \Hy@activeanchortrue
10188 }
10189 \def\hyper@anchorend{%
10190   \special{t4ht=</a>}%
10191   \Hy@activeanchorfalse
10192   \Hy@RestoreLastskip
10193 }
10194 \def\@urltype{url}
10195 \def\hyper@linkstart#1#2{%
10196   \expandafter\Hy@colorlink\csname @#1color\endcsname
10197   \def\Hy@tempa{#1}%
10198   \ifx\Hy@tempa\@urltype
10199     \special{t4ht=<a href=\hyper@quote#2\hyper@quote>}%
10200   \else
10201     \begingroup
10202       \hyper@chars
10203       \special{t4ht=<a href=%
10204         \hyper@quote\# \HyperDestNameFilter{#2}\hyper@quote>}%
10205     \endgroup
10206   \fi
10207 }
10208 \def\hyper@linkend{%
10209   \special{t4ht=</a>}%
10210   \Hy@endcolorlink
10211 }
10212 \def\hyper@linkfile#1#2#3{%
10213   \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\else\##3\fi}%
10214 }

```

```

10215 \def\hyper@linkurl#1#2{%
10216   \leavevmode
10217   \ifHy@raiselinks
10218     \setbox\@tempboxa=\color@hbox #1\color@endbox
10219     \@linkdim\dp\@tempboxa
10220     \lower\@linkdim\hbox{%
10221       \begingroup
10222         \hyper@chars\special{t4ht=<a href=\hyper@quote#2\hyper@quote>}}%
10223     \endgroup
10224   }%
10225   \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
10226   \@linkdim\ht\@tempboxa
10227   \advance\@linkdim by -6.5\p@
10228   \raise\@linkdim\hbox{\special{t4ht=</a>}}%
10229 \else
10230   \begingroup
10231     \hyper@chars
10232     \special{t4ht=<a href=\hyper@quote#2\hyper@quote>}}%
10233     \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
10234     \special{t4ht=</a>}}%
10235   \endgroup
10236 \fi
10237 }

```

Poor implementation of \hyper@link without considering #1.

```

10238 \def\hyper@link#1#2#3{%
10239   \hyper@linkurl{#3}{\#\HyperDestNameFilter{#2}}%
10240 }
10241 \def\hyper@image#1#2{%
10242   \begingroup
10243     \hyper@chars
10244     \special{t4ht=<img src=\hyper@quote#1\hyper@quote>}}%
10245   \endgroup
10246 }
10247 \let\autoref\ref
10248 \ifx \rEfLiNK \UnDef
10249   \def\rEfLiNK #1#2{#2}%
10250 \fi
10251 \def\backref#1{}
10252 </tex4ht>
10253 <*tex4htcfg>
10254 \IfFileExists{\jobname.cfg}{\endinput}{}
10255 \Preamble{html}
10256   \begin{document}%
10257 \EndPreamble
10258 \def\TeX{TeX}
10259 \def\OMEGA{\Omega}
10260 \def\LaTeX{LaTeX}
10261 \def\LaTeXe{\LaTeX2e}
10262 \def\eTeX{e-TeX}
10263 \def\MF{Metafont}
10264 \def\MP{MetaPost}
10265 </tex4htcfg>

```

## 47 Driver-specific form support

### 47.1 pdfmarks

```

10266 <*pdfmark>
10267 \long\def\@Form[#1]{%
10268 \g@addto@macro\Hy@FirstPageHook{%
10269 \headerps@out{%
10270 [%
10271 /_objdef{pdfDocEncoding}%
10272 /type/dict%
10273 /OBJ pdfmark%
10274 [%
10275 {pdfDocEncoding}%
10276 <<%
10277 /Type/Encoding%
10278 /Differences[%
10279 24/breve/caron/circumflex/dotaccent/hungarumlaut/ogonek/ring%
10280 /tilde %
10281 39/quotesingle %
10282 96/grave %
10283 128/bullet/dagger/daggerdbl/ellipsis/emdash/endash/florin%
10284 /fraction/guilsinglleft/guilsinglright/minus/perthousand%
10285 /quotedblbase/quotedblleft/quotedblright/quoteleft%
10286 /quoteright/quotesinglbase/trademark/fi/fl/Lslash/OE/Scaron%
10287 /Ydieresis/Zcaron/dotlessi/lslash/oe/scaron/zcaron %
10288 164/currency %
10289 166/brokenbar %
10290 168/dieresis/copyright/ordfeminine %
10291 172/logicalnot/.notdef/registered/macron/degree/plusminus%
10292 /twosuperior/threesuperior/acute/mu %
10293 183/periodcentered/cedilla/onesuperior/ordmasculine %
10294 188/onequarter/onehalf/threequarters %
10295 192/Agrave/Aacute/Acircumflex/Atilde/Adieresis/Aring/AE%
10296 /Ccedilla/Egrave/Eacute/Ecircumflex/Edieresis/Igrave%
10297 /Iacute/Icircumflex/Idieresis/Eth/Ntilde/Ograve/Oacute%
10298 /Ocircumflex/Otilde/Odieresis/multiply/Oslash/Ugrave%
10299 /Uacute/Ucircumflex/Udieresis/Yacute/Thorn/germandbls%
10300 /agrave/aacute/acircumflex/atilde/adieresis/aring/ae%
10301 /ccedilla/egrave/eacute/ecircumflex/edieresis/igrave%
10302 /iacute/icircumflex/idieresis/eth/ntilde/ograde/oacute%
10303 /ocircumflex/otilde/odieresis/divide/oslash/ugrave/uacute%
10304 /ucircumflex/udieresis/yacute/thorn/ydieresis%
10305 ]%
10306 >>%
10307 /PUT pdfmark%
10308 [%
10309 /_objdef{ZaDb}%
10310 /type/dict%
10311 /OBJ pdfmark%
10312 [%
10313 {ZaDb}%
10314 <<%
10315 /Type/Font%
10316 /Subtype/Type1%
10317 /Name/ZaDb%
10318 /BaseFont/ZapfDingbats%
10319 >>%
10320 /PUT pdfmark%
10321 [%
10322 /_objdef{Helv}%

```

```

10323 /type/dict%
10324 /OBJ pdfmark%
10325 [%
10326   {Helv}%
10327   <<%
10328     /Type/Font%
10329     /Subtype/Type1%
10330     /Name/Helv%
10331     /BaseFont/Helvetica%
10332     /Encoding{pdfDocEncoding}%
10333   >>%
10334 /PUT pdfmark%
10335 [%
10336   /_objdef{aform}%
10337   /type/dict%
10338 /OBJ pdfmark%
10339 [%
10340   /_objdef{afields}%
10341   /type/array%
10342 /OBJ pdfmark%
10343 {%
10344   [%
10345     /BBox[0 0 100 100]%
10346     /_objdef{Check}%
10347   /BP pdfmark %
10348   1 0 0 setrgbcolor%
10349   /ZapfDingbats 80 selectfont %
10350   20 20 moveto%
10351   (4)show%
10352   [/EP pdfmark%
10353   [%
10354     /BBox[0 0 100 100]%
10355     /_objdef{Cross}%
10356   /BP pdfmark %
10357   1 0 0 setrgbcolor%
10358   /ZapfDingbats 80 selectfont %
10359   20 20 moveto%
10360   (8)show%
10361   [/EP pdfmark%
10362   [%
10363     /BBox[0 0 250 100]%
10364     /_objdef{Submit}%
10365   /BP pdfmark %
10366   0.6 setgray %
10367   0 0 250 100 rectfill %
10368   1 setgray %
10369   2 2 moveto %
10370   2 98 lineto %
10371   248 98 lineto %
10372   246 96 lineto %
10373   4 96 lineto %
10374   4 4 lineto %
10375   fill %
10376   0.34 setgray %
10377   248 98 moveto %
10378   248 2 lineto %
10379   2 2 lineto %

```

```

10380 4 4 lineto %
10381 246 4 lineto %
10382 246 96 lineto %
10383 fill%
10384 /Helvetica 76 selectfont %
10385 0 setgray %
10386 8 22.5 moveto%
10387 (Submit)show%
10388 [/EP pdfmark%
10389 [%
10390 /BBox[0 0 250 100]%
10391 /_objdef{SubmitP}%
10392 /BP pdfmark %
10393 0.6 setgray %
10394 0 0 250 100 rectfill %
10395 0.34 setgray %
10396 2 2 moveto %
10397 2 98 lineto %
10398 248 98 lineto %
10399 246 96 lineto %
10400 4 96 lineto %
10401 4 4 lineto %
10402 fill %
10403 1 setgray %
10404 248 98 moveto %
10405 248 2 lineto %
10406 2 2 lineto %
10407 4 4 lineto %
10408 246 4 lineto %
10409 246 96 lineto %
10410 fill%
10411 /Helvetica 76 selectfont %
10412 0 setgray %
10413 10 20.5 moveto%
10414 (Submit)show%
10415 [/EP pdfmark%
10416 } ?pdfmark%
10417 [%
10418 {aform}%
10419 <<%
10420 /Fields{afields}%
10421 /DR<<%
10422 /Font<<%
10423 /ZaDb{ZaDb}%
10424 /Helv{Helv}%
10425 >>%
10426 >>%
10427 /DA(/Helv 10 Tf 0 g)%
10428 /CO{corder}%
10429 \ifHy@pdfa
10430 \else
10431 /NeedAppearances true%
10432 \fi
10433 >>%
10434 /PUT pdfmark%
10435 [%
10436 {Catalog}%

```

```

10437 <<%
10438   /AcroForm{aform}%
10439 >>%
10440 /PUT pdfmark%
10441 [%
10442   /_objdef{corder}%
10443   /type/array%
10444 /OBJ pdfmark% dps
10445 }}%
10446   \setkeys{Form}{#1}%
10447 }
10448 \def\@endForm{}
10449 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
10450   \typeout{Sorry, pdfmark drivers do not support FORM gauges}%
10451 }
10452 \def\@TextField[#1]#2{% parameters, label
10453   \def\Fld@name{#2}%
10454   \def\Fld@default{}%
10455   \let\Fld@value\@empty
10456   \def\Fld@width{\DefaultWidthofText}%
10457   \def\Fld@height{%
10458     \ifFld@multiline
10459       \DefaultHeightofTextMultiline
10460     \else
10461       \DefaultHeightofText
10462     \fi
10463   }%
10464   \begingroup
10465     \Field@toks={ }%
10466     \expandafter\HyField@SetKeys\expandafter{%
10467       \DefaultOptionsofText,#1%
10468     }%
10469     \HyField@FlagsText
10470     \ifFld@hidden\def\Fld@width{1sp}\fi
10471     \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
10472     \LayoutTextField{#2}{%
10473       \Hy@escapeform\PDFForm@Text
10474       \pdfmark[\MakeTextField{\Fld@width}{\Fld@height}]{%
10475         pdfmark=/ANN,Raw={\PDFForm@Text}%
10476       }%
10477     }%
10478   \endgroup
10479 }
10480 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
10481   \def\Fld@name{#2}%
10482   \let\Fld@default\relax
10483   \let\Fld@value\relax
10484   \def\Fld@width{\DefaultWidthofChoiceMenu}%
10485   \def\Fld@height{\DefaultHeightofChoiceMenu}%
10486   \begingroup
10487     \Fld@menulength=0 %
10488     \@tempdima\z@
10489     \for\@curropt:=#3\do{%
10490       \expandafter\Fld@checkequals\@curropt==\%
10491       \Hy@StepCount\Fld@menulength
10492       \settowidth{\@tempdimb}{\@currDisplay}%
10493       \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi

```



```

10494 }%
10495 \advance\@tempdima by 15\p@
10496 \Field@toks={ }%
10497 \begingroup
10498 \HyField@SetKeys{#1}%
10499 \edef\x{\endgroup
10500 \noexpand\expandafter
10501 \noexpand\HyField@SetKeys
10502 \noexpand\expandafter{%
10503 \expandafter\noexpand\csname DefaultOptionsof%
10504 \ifFld@radio
10505 Radio%
10506 \else
10507 \ifFld@combo
10508 \ifFld@popdown
10509 PopdownBox%
10510 \else
10511 ComboBox%
10512 \fi
10513 \else
10514 ListBox%
10515 \fi
10516 \fi
10517 \endcsname
10518 }%
10519 }\x
10520 \HyField@SetKeys{#1}%
10521 \ifFld@hidden\def\Fld@width{1sp}\fi
10522 \ifx\Fld@value\relax
10523 \let\Fld@value\Fld@default
10524 \fi
10525 \LayoutChoiceField{#2}{%
10526 \ifFld@radio
10527 \HyField@FlagsRadioButton
10528 \@@Radio{#3}%
10529 \else
10530 \begingroup
10531 \HyField@FlagsChoice
10532 \ifdim\Fld@width<\@tempdima
10533 \ifdim\@tempdima<1cm\@tempdima1cm\fi
10534 \edef\Fld@width{\the\@tempdima}%
10535 \fi
10536 \ifFld@combo
10537 \else
10538 \@tempdima=\the\Fld@menulength\Fld@charsize
10539 \advance\@tempdima by \Fld@borderwidth bp %
10540 \advance\@tempdima by \Fld@borderwidth bp %
10541 \edef\Fld@height{\the\@tempdima}%
10542 \fi
10543 \@@ListBox{#3}%
10544 \endgroup
10545 \fi
10546 }%
10547 \endgroup
10548 }
10549 \def\@@Radio#1{%
10550 \Fld@listcount=0 %

```

```

10551 \@for\@curropt:=#1\do{%
10552   \expandafter\Fld@checkequals\@curropt==\%
10553   \Hy@StepCount\Fld@listcount
10554   \@currDisplay\space
10555   \Hy@escapeform\PDFForm@Radio
10556   \pdfmark[\MakeRadioField{\Fld@width}{\Fld@height}]{%
10557     pdfmark=/ANN,%
10558     Raw={\PDFForm@Radio /AP <</N <</\@currValue\space {Check}>> >>}%
10559   } % deliberate space between radio buttons
10560 }%
10561 }
10562 \newcount\Fld@listcount
10563 \def\@@ListBox#1{%
10564   \HyField@PDFChoices{#1}%
10565   \Hy@escapeform\PDFForm@List
10566   \pdfmark[\MakeChoiceField{\Fld@width}{\Fld@height}]{%
10567     pdfmark=/ANN,Raw={\PDFForm@List}%
10568   }%
10569 }
10570 \def\@PushButton[#1]#2{% parameters, label
10571   \def\Fld@name{#2}%
10572   \begingroup
10573     \Field@toks={ }%
10574     \expandafter\HyField@SetKeys\expandafter{%
10575       \DefaultOptionsofPushButton,#1%
10576     }%
10577     \ifHy@pdfa
10578       \PackageError{hyperref}{%
10579         PDF/A: Push button with JavaScript is prohibited%
10580       }\@ehc
10581       \LayoutPushButtonField{%
10582         \leavevmode
10583         \MakeButtonField{#2}%
10584       }%
10585     \else
10586       \HyField@FlagsPushButton
10587       \ifFld@hidden\def\Fld@width{1sp}\fi
10588       \LayoutPushButtonField{%
10589         \leavevmode
10590         \Hy@escapeform\PDFForm@Push
10591         \pdfmark[\MakeButtonField{#2}]{%
10592           pdfmark=/ANN,Raw={\PDFForm@Push}%
10593         }%
10594       }%
10595     \fi
10596   \endgroup
10597 }
10598 \def\@Submit[#1]#2{%
10599   \Field@toks={ }%
10600   \def\Fld@width{\DefaultWidthofSubmit}%
10601   \def\Fld@height{\DefaultHeightofSubmit}%
10602   \begingroup
10603     \expandafter\HyField@SetKeys\expandafter{%
10604       \DefaultOptionsofSubmit,#1%
10605     }%
10606     \HyField@FlagsPushButton
10607     \HyField@FlagsSubmit

```

```

10608 \ifFld@hidden\def\Fld@width{1sp}\fi
10609 \Hy@escapeform\PDFForm@Submit
10610 \pdfmark[\MakeButtonField{#2}]{%
10611 pdfmark=/ANN,%
10612 Raw={\PDFForm@Submit /AP << /N {Submit} /D {SubmitP} >>}%
10613 }%
10614 \endgroup
10615 }
10616 \def\@Reset[#1]#2{%
10617 \Field@toks={ }%
10618 \def\Fld@width{\DefaultWidthofReset}%
10619 \def\Fld@height{\DefaultHeightofReset}%
10620 \begingroup
10621 \expandafter\HyField@SetKeys\expandafter{%
10622 \DefaultOptionsofReset,#1%
10623 }%
10624 \leavevmode
10625 \ifHy@pdfa
10626 \PackageError{hyperref}{%
10627 PDF/A: Reset action is prohibited%
10628 }\@ehc
10629 \MakeButtonField{#2}%
10630 \else
10631 \HyField@FlagsPushButton
10632 \ifFld@hidden\def\Fld@width{1sp}\fi
10633 \Hy@escapeform\PDFForm@Reset
10634 \pdfmark[\MakeButtonField{#2}]{%
10635 pdfmark=/ANN,Raw={\PDFForm@Reset}%
10636 }%
10637 \fi
10638 \endgroup
10639 }%
10640 \def\@CheckBox[#1]#2{% parameters, label
10641 \def\Fld@name{#2}%
10642 \def\Fld@default{0}%
10643 \begingroup
10644 \def\Fld@width{\DefaultWidthofCheckBox}%
10645 \def\Fld@height{\DefaultHeightofCheckBox}%
10646 \Field@toks={ }%
10647 \expandafter\HyField@SetKeys\expandafter{%
10648 \DefaultOptionsofCheckBox,#1%
10649 }%
10650 \HyField@FlagsCheckBox
10651 \ifFld@hidden\def\Fld@width{1sp}\fi
10652 \LayoutCheckField{#2}{%
10653 \Hy@escapeform\PDFForm@Check
10654 \pdfmark[\MakeCheckField{\Fld@width}{\Fld@height}]{%
10655 pdfmark=/ANN,Raw={\PDFForm@Check}%
10656 }%
10657 }%
10658 \endgroup
10659 }
10660 \pdfmark>

```

## 47.2 HyperTeX

```

10661 <*hypertext>
10662 \def\@Form[#1]{\typeout{Sorry, HyperTeX does not support FORMs}}

```

```

10663 \def\@endForm{}
10664 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
10665   \typeout{Sorry, HyperTeX does not support FORM gauges}%
10666 }
10667 \def\@TextField[#1]#2{% parameters, label
10668   \typeout{Sorry, HyperTeX does not support FORM text fields}%
10669 }
10670 \def\@CheckBox[#1]#2{% parameters, label
10671   \typeout{Sorry, HyperTeX does not support FORM checkboxes}%
10672 }
10673 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
10674   \typeout{Sorry, HyperTeX does not support FORM choice menus}%
10675 }
10676 \def\@PushButton[#1]#2{% parameters, label
10677   \typeout{Sorry, HyperTeX does not support FORM pushbuttons}%
10678 }
10679 \def\@Reset[#1]#2{\typeout{Sorry, HyperTeX does not support FORMs}}
10680 \def\@Submit[#1]#2{\typeout{Sorry, HyperTeX does not support FORMs}}
10681 \</hypertex>

```

### 47.3 TeX4ht

```

10682 \<tex4ht>
10683 \def\@Form[#1]{%
10684   \setkeys{Form}{#1}%
10685   \HCode{<form action="\Form@action" method="\Form@method">}%
10686 }
10687 \def\@endForm{\HCode{</form>}}
10688 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
10689   \typeout{Sorry, TeX4ht does not support gauges}%
10690 }
10691 \def\@TextField[#1]#2{% parameters, label
10692   \let\Hy@reserved@a\@empty
10693   \def\Fld@name{#2}%
10694   \def\Fld@default{}%
10695   \bgroup
10696     \Field@toks={ }%
10697     \setkeys{Field}{#1}%
10698     \HCode{<label for="\Fld@name">#2</label>}%
10699     \ifFld@password
10700       \@@PasswordField
10701     \else
10702       \@@TextField
10703     \fi
10704   \egroup
10705 }
10706 \def\@@PasswordField{%
10707   \HCode{%
10708     <input type="password" %
10709       id="\Fld@name" %
10710       name="\Fld@name" %
10711       \ifFld@hidden type="hidden" \fi
10712       value="\Fld@default" %
10713       \the\Field@toks
10714     >%
10715   }%
10716 }
10717 \def\@@TextField{%

```

```

10718 \ifFld@multiline
10719   \HCode{<textarea %
10720     \ifFld@readonly readonly \fi
10721     id="\Fld@name" %
10722     name="\Fld@name" %
10723     \ifFld@hidden type="hidden" \fi
10724     \the\Field@toks>%
10725   }%
10726   \Fld@default
10727   \HCode{</textarea>}%
10728 \else
10729   \HCode{<input type="textbox" %
10730     \ifFld@readonly readonly \fi
10731     id="\Fld@name" %
10732     name="\Fld@name" %
10733     \ifFld@hidden type="hidden" \fi
10734     value="\Fld@default" %
10735     \the\Field@toks>%
10736   }%
10737 \fi
10738 }
10739 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
10740   \def\Fld@name{#2}%
10741   \def\Fld@default{}%
10742   \let\Hy@reserved@a\relax
10743   \begingroup
10744     \expandafter\Fld@findlength#3\\%
10745     \Field@toks={ }%
10746     \setkeys{Field}{#1}%
10747     #2%
10748     \ifFld@radio
10749       \expandafter\@@Radio#3\\%
10750     \else
10751       \expandafter\@@Menu#3\\%
10752     \fi
10753   \endgroup
10754 }
10755 \def\Fld@findlength#1\\{%
10756   \Fld@menulength=0 %
10757   \@for\@curropt:=#1\do{\Hy@StepCount\Fld@menulength}%
10758 }
10759 \def\@@Menu#1\\{%
10760   \HCode{<select size="\the\Fld@menulength" %
10761     name="\Fld@name" %
10762     \the\Field@toks>%
10763   }%
10764   \@for\@curropt:=#1\do{%
10765     \expandafter\Fld@checkequals\@curropt==\\%
10766     \HCode{<option %
10767       \ifx\@curropt\Fld@default selected \fi
10768       value="\@currValue">\@currDisplay</option>%
10769     }%
10770   }%
10771   \HCode{</select>}%
10772 }
10773 \def\@@Radio#1\\{%
10774   \@for\@curropt:=#1\do{%

```

```

10775 \expandafter\Fld@checkequals\@curropt==\\%
10776 \HCode{<input type="radio" %
10777 \ifx\@curropt\Fld@default checked \fi
10778 name="\Fld@name" %
10779 value="\@currValue" %
10780 \the\Fld@toks>%
10781 }%
10782 \@currDisplay
10783 }%
10784 }
10785 \def\@PushButton[#1]#2{% parameters, label
10786 \def\Fld@name{#2}%
10787 \bgroup
10788 \Field@toks={ }%
10789 \setkeys{Field}{#1}%
10790 \HCode{<input type="button" %
10791 name="\Fld@name" %
10792 value="#2" %
10793 \the\Fld@toks>%
10794 }%
10795 \HCode{</button>}%
10796 \egroup
10797 }
10798 \def\@Submit[#1]#2{%
10799 \HCode{<button type="submit">#2</button>}%
10800 }
10801 \def\@Reset[#1]#2{%
10802 \HCode{<button type="reset">#2</button>}%
10803 }
10804 \def\@CheckBox[#1]#2{% parameters, label
10805 \let\Hy@reserved@a\@empty
10806 \def\Fld@name{#2}%
10807 \def\Fld@default{0}%
10808 \bgroup
10809 \Field@toks={ }%
10810 \setkeys{Field}{#1}%
10811 \HCode{<input type="checkbox" %
10812 \ifFld@checked checked \fi
10813 \ifFld@disabled disabled \fi
10814 \ifFld@readonly readonly \fi
10815 name="\Fld@name" %
10816 \ifFld@hidden type="hidden" \fi
10817 value="\Fld@default" %
10818 \the\Fld@toks>%
10819 #2%
10820 }%
10821 \egroup
10822 }
10823 </tex4ht>

```

## 47.4 pdfTeX

```

10824 <*pdfTeX>
10825 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
10826 \typeout{Sorry, pdfTeX does not support FORM gauges}%
10827 }
10828 \def\MakeFieldObject#1#2{\sbox0{#1}%
10829 \immediate\pdfxform0 %

```

```

10830 \expandafter\edef\csname #2Object\endcsname{%
10831     \the\pdflastxform\space 0 R%
10832 }%
10833 % \hbox to Opt{\hskip-\maxdimen{\pdfrefxform \the\pdflastxform}}}%
10834 }%
10835 \def\HyField@afields{}
10836 \begingroup\expandafter\expandafter\expandafter\endgroup
10837 \expandafter\ifx\csname pdfastlink\endcsname\relax
10838     \let\HyField@AddToFields\relax
10839     \PackageInfo{hyperref}{%
10840         You need pdfTeX 1.40.0 for setting the /Fields entry.\MessageBreak
10841         Adobe Reader/Acrobat accepts an empty /Field array,\MessageBreak
10842         but other PDF viewers might complain%
10843     }%
10844 \else
10845     \def\HyField@AddToFields{%
10846         \xdef\HyField@afields{%
10847             \ifx\HyField@afields\@empty
10848                 \else
10849                     \HyField@afields
10850                 \space
10851             \fi
10852             \the\pdfastlink\space 0 R%
10853         }%
10854     }%
10855 \fi
10856 \def\@Form[#1]{%
10857     \@ifundefined{textcolor}{\let\textcolor\@gobble}{}}%
10858     \setkeys{Form}{#1}%
10859     \Hy@FormObjects
10860     \ifnum\pdfTeXversion>13 %
10861         \pdfrefobj\OBJ@pdfdocencoding
10862         \pdfrefobj\OBJ@ZaDb
10863         \pdfrefobj\OBJ@Helv
10864     \fi
10865     \AtEndDocument{%
10866         \immediate\pdfobj{%
10867             <<%
10868                 /Fields[\HyField@afields]%
10869                 /DR<<%
10870                 /Font<<%
10871                     /ZaDb \OBJ@ZaDb\space 0 R%
10872                     /Helv \OBJ@Helv\space 0 R%
10873                 >>%
10874             >>%
10875             /DA(/Helv 10 Tf 0 g)%
10876             \ifHy@pdfa
10877                 \else
10878                 /NeedAppearances true%
10879             \fi
10880             >>%
10881         }%
10882         \edef\OBJ@acroform{\the\pdfastobj}%
10883         \pdfcatalog{/AcroForm \OBJ@acroform\space 0 R}%
10884     }%
10885     \MakeFieldObject%

```

Same as \ding{123} of package pifont.

```

10886 \beginpgroup
10887 \fontfamily{pzd}%
10888 \fontencoding{U}%
10889 \fontseries{m}%
10890 \fontshape{n}%
10891 \selectfont
10892 \char123 %
10893 \endpgroup
10894 }{Ding}%
10895 \MakeFieldObject{%
10896 \fbox{\textcolor{yellow}{\textsf{Submit}}}%
10897 }{Submit}%
10898 \MakeFieldObject{%
10899 \fbox{\textcolor{yellow}{\textsf{SubmitP}}}%
10900 }{SubmitP}%
10901 }
10902 \def\@endForm{}
10903 \def\@TextField[#1]#2{% parameters, label
10904 \def\Fld@name{#2}%
10905 \def\Fld@default{}%
10906 \let\Fld@value\@empty
10907 \def\Fld@width{\DefaultWidthofText}%
10908 \def\Fld@height{%
10909 \ifFld@multiline
10910 \DefaultHeightofTextMultiline
10911 \else
10912 \DefaultHeightofText
10913 \fi
10914 }%
10915 \beginpgroup
10916 \Field@toks={ }%
10917 \expandafter\HyField@SetKeys\expandafter{%
10918 \DefaultOptionsofText,#1%
10919 }%
10920 \PDFForm@Name
10921 \HyField@FlagsText
10922 \ifFld@hidden\def\Fld@width{1sp}\fi
10923 \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
10924 \LayoutTextField{#2}{%
10925 \Hy@escapeform\PDFForm@Text
10926 \pdfstartlink user {\PDFForm@Text}\relax
10927 \MakeTextField{\Fld@width}{\Fld@height}\pdfendlink
10928 \HyField@AddToFields
10929 }%
10930 \endpgroup
10931 }
10932 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
10933 \def\Fld@name{#2}%
10934 \let\Fld@default\relax
10935 \let\Fld@value\relax
10936 \def\Fld@width{\DefaultWidthofChoiceMenu}%
10937 \def\Fld@height{\DefaultHeightofChoiceMenu}%
10938 \beginpgroup
10939 \Fld@menulength=0 %
10940 \@tempdima\z@
10941 \@for\@curropt:=#3\do{%
10942 \expandafter\Fld@checkequals\@curropt==\%

```



```

10943 \Hy@StepCount\Fld@menulength
10944 \settowidth{\@tempdimb}{\@currDisplay}%
10945 \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
10946 }%
10947 \advance\@tempdima by 15\p@
10948 \Field@toks={ }%
10949 \begingroup
10950 \HyField@SetKeys{#1}%
10951 \edef\x{\endgroup
10952 \noexpand\expandafter
10953 \noexpand\HyField@SetKeys
10954 \noexpand\expandafter{%
10955 \expandafter\noexpand\csname DefaultOptionsof%
10956 \ifFld@radio
10957 Radio%
10958 \else
10959 \ifFld@combo
10960 \ifFld@popdown
10961 PopdownBox%
10962 \else
10963 ComboBox%
10964 \fi
10965 \else
10966 ListBox%
10967 \fi
10968 \fi
10969 \endcsname
10970 }%
10971 }\x
10972 \HyField@SetKeys{#1}%
10973 \PDFForm@Name
10974 \ifFld@hidden\def\Fld@width{1sp}\fi
10975 \ifx\Fld@value\relax
10976 \let\Fld@value\Fld@default
10977 \fi
10978 \LayoutChoiceField{#2}{%
10979 \ifFld@radio
10980 \HyField@FlagsRadioButton
10981 \@@Radio{#3}%
10982 \else
10983 \begingroup
10984 \HyField@FlagsChoice
10985 \ifdim\Fld@width<\@tempdima
10986 \ifdim\@tempdima<1cm\@tempdima1cm\fi
10987 \edef\Fld@width{\the\@tempdima}%
10988 \fi
10989 \ifFld@combo
10990 \else
10991 \@tempdima=\the\Fld@menulength\Fld@charsize
10992 \advance\@tempdima by \Fld@borderwidth bp %
10993 \advance\@tempdima by \Fld@borderwidth bp %
10994 \edef\Fld@height{\the\@tempdima}%
10995 \fi
10996 \@@ListBox{#3}%
10997 \endgroup
10998 \fi
10999 }%

```

```

11000 \endgroup
11001 }
11002 \def\@@Radio#1{%
11003   \Fld@listcount=0 %
11004   \@for\@curropt:=#1\do{%
11005     \expandafter\Fld@checkequals\@curropt==\%
11006     \Hy@StepCount\Fld@listcount
11007     \@currDisplay\space
11008     \leavevmode
11009     \Hy@escapeform\PDFForm@Radio
11010     \pdfstartlink user {%
11011       \PDFForm@Radio
11012       /AP<<%
11013       /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.

```

11014     /\@currValue\space \DingObject
11015     >>%
11016     >>%
11017   }%
11018   \relax
11019   \MakeRadioField{\Fld@width}{\Fld@height}\pdfendlink
11020   \ifnum\Fld@listcount=1 %
11021     \HyField@AddToFields
11022   \fi
11023   \space % deliberate space between radio buttons
11024 }%
11025 }
11026 \newcount\Fld@listcount
11027 \def\@@Listbox#1{%
11028   \HyField@PDFChoices{#1}%
11029   \leavevmode
11030   \Hy@escapeform\PDFForm@List
11031   \pdfstartlink user {\PDFForm@List}\relax
11032   \MakeChoiceField{\Fld@width}{\Fld@height}%
11033   \pdfendlink
11034   \HyField@AddToFields
11035 }
11036 \def\@PushButton[#1]#2{% parameters, label
11037   \def\Fld@name{#2}%
11038   \begingroup
11039     \Field@toks={ }%
11040     \expandafter\HyField@SetKeys\expandafter{%
11041       \DefaultOptionsofPushButton,#1%
11042     }%
11043     \PDFForm@Name
11044     \ifHy@pdfa
11045       \PackageError{hyperref}{%
11046         PDF/A: Push button with JavaScript is prohibited%
11047       }\@ehc
11048       \LayoutPushButtonField{%
11049         \leavevmode
11050         \MakeButtonField{#2}%
11051       }%
11052     \else
11053       \HyField@FlagsPushButton

```

```

11054 \ifFld@hidden\def\Fld@width{1sp}\fi
11055 \LayoutPushButtonField{%
11056 \leavevmode
11057 \Hy@escapeform\PDFForm@Push
11058 \pdfstartlink user {\PDFForm@Push}\relax
11059 \MakeButtonField{#2}%
11060 \pdfendlink
11061 \HyField@AddToFields
11062 }%
11063 \fi
11064 \endgroup
11065 }
11066 \def\@Submit[#1]#2{%
11067 \Field@toks={ }%
11068 \def\Fld@width{\DefaultWidthofSubmit}%
11069 \def\Fld@height{\DefaultHeightofSubmit}%
11070 \begingroup
11071 \expandafter\HyField@SetKeys\expandafter{%
11072 \DefaultOptionsofSubmit,#1%
11073 }%
11074 \HyField@FlagsPushButton
11075 \HyField@FlagsSubmit
11076 \ifFld@hidden\def\Fld@width{1sp}\fi
11077 \leavevmode
11078 \Hy@escapeform\PDFForm@Submit
11079 \pdfstartlink user {%
11080 \PDFForm@Submit
11081 /AP<</N \SubmitObject/D \SubmitPObject>>%
11082 }%
11083 \relax
11084 \MakeButtonField{#2}%
11085 \pdfendlink
11086 \HyField@AddToFields
11087 \endgroup
11088 }
11089 \def\@Reset[#1]#2{%
11090 \Field@toks={ }%
11091 \def\Fld@width{\DefaultWidthofReset}%
11092 \def\Fld@height{\DefaultHeightofReset}%
11093 \begingroup
11094 \expandafter\HyField@SetKeys\expandafter{%
11095 \DefaultOptionsofReset,#1%
11096 }%
11097 \leavevmode
11098 \ifHy@pdfa
11099 \PackageError{hyperref}{%
11100 PDF/A: Reset action is prohibited%
11101 }{\@ehc
11102 \MakeButtonField{#2}%
11103 \else
11104 \HyField@FlagsPushButton
11105 \ifFld@hidden\def\Fld@width{1sp}\fi
11106 \Hy@escapeform\PDFForm@Reset
11107 \pdfstartlink user {\PDFForm@Reset}\relax
11108 \MakeButtonField{#2}%
11109 \pdfendlink
11110 \HyField@AddToFields

```

```

11111 \fi
11112 \endgroup
11113 }
11114 \def\@CheckBox[#1]#2{% parameters, label
11115 \def\Fld@name{#2}%
11116 \def\Fld@default{0}%
11117 \begingroup
11118 \def\Fld@width{\DefaultWidthofCheckBox}%
11119 \def\Fld@height{\DefaultHeightofCheckBox}%
11120 \Field@toks={ }%
11121 \expandafter\HyField@SetKeys\expandafter{%
11122 \DefaultOptionsofCheckBox,#1%
11123 }%
11124 \PDFForm@Name
11125 \HyField@FlagsCheckBox
11126 \ifFld@hidden\def\Fld@width{1sp}\fi
11127 \LayoutCheckField{#2}{%
11128 \Hy@escapeform\PDFForm@Check
11129 \pdfstartlink user {\PDFForm@Check}\relax
11130 \MakeCheckField{\Fld@width}{\Fld@height}%
11131 \pdfendlink
11132 \HyField@AddToFields
11133 }%
11134 \endgroup
11135 }
11136 \def\Hy@FormObjects{%
11137 \pdfobj {%
11138 <<%
11139 /Type/Encoding%
11140 /Differences[%
11141 24/breve/caron/circumflex/dotaccent/hungarumlaut/ogonek%
11142 /ring/tilde %
11143 39/quotesingle %
11144 96/grave %
11145 128/bullet/dagger/daggerdbl/ellipsis/emdash/endash/florin%
11146 /fraction/guilsinglleft/guilsinglright/minus/perthousand%
11147 /quotedblbase/quotedblleft/quotedblright/quoteleft%
11148 /quoteright/quotesinglbase/trademark/fi/fl/Lslash/OE%
11149 /Scaron/Ydieresis/Zcaron/dotlessi/lslash/oe/scaron/zcaron %
11150 164/currency %
11151 166/brokenbar %
11152 168/dieresis/copyright/ordfeminine %
11153 172/logicalnot/.notdef/registered/macron/degree/plusminus%
11154 /twosuperior/threesuperior/acute/mu %
11155 183/periodcentered/cedilla/onesuperior/ordmasculine %
11156 188/onequarter/onehalf/threequarters %
11157 192/Agrave/Aacute/Acircumflex/Atilde/Adieresis/Aring/AE%
11158 /Ccedilla/Egrave/Eacute/Ecircumflex/Edieresis/Igrave%
11159 /Iacute/Icircumflex/Idieresis/Eth/Ntilde/Ograve/Oacute%
11160 /Ocircumflex/Otilde/Odieresis/multiply/Oslash/Ugrave%
11161 /Uacute/Ucircumflex/Udieresis/Yacute/Thorn/germandbls%
11162 /agrave/aacute/acircumflex/atilde/adieresis/aring/ae%
11163 /ccedilla/egrave/eacute/ecircumflex/edieresis/igrave%
11164 /iacute/icircumflex/idieresis/eth/ntilde/ograde/oacute%
11165 /ocircumflex/otilde/odieresis/divide/oslash/ugrave%
11166 /uacute/ucircumflex/udieresis/yacute/thorn/ydieresis%
11167 ]%

```

```

11168   >>%
11169 }%
11170 \xdef\OBJ@pdfdocencoding{\the\pdflastobj}%
11171 \pdfobj{%
11172   <<%
11173     /Type/Font%
11174     /Subtype/Type1%
11175     /Name/ZaDb%
11176     /BaseFont/ZapfDingbats%
11177   >>%
11178 }%
11179 \xdef\OBJ@ZaDb{\the\pdflastobj}%
11180 \pdfobj{%
11181   <<%
11182     /Type/Font%
11183     /Subtype/Type1%
11184     /Name/Helv%
11185     /BaseFont/Helvetica%
11186     /Encoding \OBJ@pdfdocencoding\space 0 R%
11187   >>%
11188 }%
11189 \xdef\OBJ@Helv{\the\pdflastobj}%
11190 \global\let\Hy@FormObjects\relax
11191 }
11192 </pdfTeX>

```

## 47.5 dvipdfm, xetex

D. P. Story adapted the pdf<sub>T</sub>E<sub>X</sub> forms part for dvipdfm, of which version 0.12.7b or higher is required because of a bug.

```

11193 <*dvipdfm | xetex>

```

\@Gauge

```

11194 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
11195 \typeout{Sorry, dvipdfm/XeTeX does not support FORM gauges}%
11196 }

```

\@Form

```

11197 \def\@Form[#1]{%
11198   \@ifundefined{textcolor}{\let\textcolor\@gobble}{}%
11199   \setkeys{Form}{#1}%
11200   \Hy@FormObjects
11201   \@pdfm@mark{obj @afields []}%
11202   \@pdfm@mark{obj @corder []}%
11203   \@pdfm@mark{%
11204     obj @aform <<%
11205       /Fields @afields%
11206       /DR<<%
11207       /Font<<%
11208         /ZaDb @OBJZaDb%
11209         /Helv @OBJHelv%
11210       >>%
11211     >>%
11212     /DA(/Helv 10 Tf 0 g)%
11213     /CO @corder%
11214     \ifHy@pdfa
11215     \else

```

```

11216         /NeedAppearances true%
11217         \fi
11218     >>%
11219 }%
11220 \@pdfm@mark{put @catalog <</AcroForm @aform>>}%
11221 }

\@endForm

11222 \def\@endForm{}

\dvipdfm@setdim \dvipdfm@setdim sets dimensions for ann using \pdfm@box.
11223 \def\dvipdfm@setdim{%
11224     height \the\ht\pdfm@box\space
11225     width \the\wd\pdfm@box\space
11226     depth \the\dp\pdfm@box\space
11227 }

\HyField@AnnotCount
11228 \newcount\HyField@AnnotCount
11229 \HyField@AnnotCount=\z@

\HyField@AdvanceAnnotCount
11230 \def\HyField@AdvanceAnnotCount{%
11231     \global\advance\HyField@AnnotCount\@ne
11232 }

\HyField@TheAnnotCount
11233 \def\HyField@TheAnnotCount{%
11234     \the\HyField@AnnotCount
11235 }

\@TextField
11236 \def\@TextField[#1]#2{% parameters, label
11237     \def\Fld@name{#2}%
11238     \def\Fld@default{}%
11239     \let\Fld@value\@empty
11240     \def\Fld@width{\DefaultWidthofText}%
11241     \def\Fld@height{%
11242         \ifFld@multiline
11243             \DefaultHeightofTextMultiline
11244         \else
11245             \DefaultHeightofText
11246         \fi
11247     }%
11248     \begingroup
11249         \Field@toks={ }%
11250         \expandafter\HyField@SetKeys\expandafter{%
11251             \DefaultOptionsofText,#1%
11252         }%
11253         \PDFForm@Name
11254         \HyField@FlagsText
11255         \ifFld@hidden\def\Fld@width{1sp}\fi
11256         \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
11257         \setbox\pdfm@box=\hbox{%
11258             \MakeTextField{\Fld@width}{\Fld@height}%
11259         }%

```

```

11260 \HyField@AdvanceAnnotCount
11261 \LayoutTextField{#2}{%
11262 \Hy@escapeform\PDFForm@Text
11263 \@pdfm@mark{%
11264 ann @text\HyField@TheAnnotCount\space
11265 \dvipdfm@setdim << \PDFForm@Text >>%
11266 }%
11267 }%
11268 \unhbox\pdfm@box
11269 \@pdfm@mark{put @afields @text\HyField@TheAnnotCount}%
11270 % record in @afields array
11271 \endgroup
11272 }

```

\@ChoiceMenu

```

11273 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
11274 \def\Fld@name{#2}%
11275 \let\Fld@default\relax
11276 \let\Fld@value\relax
11277 \def\Fld@width{\DefaultWidthofChoiceMenu}%
11278 \def\Fld@height{\DefaultHeightofChoiceMenu}%
11279 \begingroup
11280 \Fld@menulength=0 %
11281 \@tempdima\z@
11282 \@for\@curropt:=#3\do{%
11283 \expandafter\Fld@checkequals\@curropt==\%
11284 \Hy@StepCount\Fld@menulength
11285 \settowidth{\@tempdimb}{\@currDisplay}%
11286 \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
11287 }%
11288 \advance\@tempdima by 15\p@
11289 \Field@toks={ }%
11290 \begingroup
11291 \HyField@SetKeys{#1}%
11292 \edef\x{\endgroup
11293 \noexpand\expandafter
11294 \noexpand\HyField@SetKeys
11295 \noexpand\expandafter{%
11296 \expandafter\noexpand\csname DefaultOptionsof%
11297 \ifFld@radio
11298 Radio%
11299 \else
11300 \ifFld@combo
11301 \ifFld@popdown
11302 PopdownBox%
11303 \else
11304 ComboBox%
11305 \fi
11306 \else
11307 ListBox%
11308 \fi
11309 \fi
11310 \endcsname
11311 }%
11312 }\x
11313 \HyField@SetKeys{#1}%
11314 \PDFForm@Name

```

```

11315 \ifFld@hidden\def\Fld@width{1sp}\fi
11316 \ifx\Fld@value\relax
11317 \let\Fld@value\Fld@default
11318 \fi
11319 \LayoutChoiceField{#2}{%
11320 \ifFld@radio
11321 \HyField@FlagsRadioButton
11322 \@@Radio{#3}%
11323 \else
11324 \begingroup
11325 \HyField@FlagsChoice
11326 \ifdim\Fld@width<\@tempdima
11327 \ifdim\@tempdima<1cm\@tempdima1cm\fi
11328 \edef\Fld@width{\the\@tempdima}%
11329 \fi
11330 \ifFld@combo
11331 \else
11332 \@tempdima=\the\Fld@menulength\Fld@charsize
11333 \advance\@tempdima by \Fld@borderwidth bp %
11334 \advance\@tempdima by \Fld@borderwidth bp %
11335 \edef\Fld@height{\the\@tempdima}%
11336 \fi
11337 \@@ListBox{#3}%
11338 \endgroup
11339 \fi
11340 }%
11341 \endgroup
11342 }

```

\@@Radio

```

11343 \def\@@Radio#1{%
11344 \Fld@listcount=0 %
11345 \setbox\pdfm@box=\hbox{\MakeRadioField{\Fld@width}{\Fld@height}}%
11346 \@for\@curropt:=#1\do{%
11347 \expandafter\Fld@checkequals\@curropt==\%
11348 \Hy@StepCount\Fld@listcount
11349 \@currDisplay\space
11350 \leavevmode
11351 \Hy@escapeform\PDFForm@Radio
11352 \ifnum\Fld@listcount=1 %
11353 \HyField@AdvanceAnnotCount
11354 \fi
11355 \@pdfm@mark{%
11356 ann \ifnum\Fld@listcount=1 @radio\HyField@TheAnnotCount\space\fi
11357 \dvi pdfm@setdim
11358 <<%
11359 \PDFForm@Radio
11360 /AP<</N<</\@currValue /null>>>>%
11361 >>%
11362 }%
11363 \unhcopy\pdfm@box\space% deliberate space between radio buttons
11364 \ifnum\Fld@listcount=1 %
11365 \@pdfm@mark{put @afields @radio\HyField@TheAnnotCount}%
11366 \fi
11367 }%
11368 }

```



```

\Fld@listcount
11369 \newcount\Fld@listcount

@@Listbox
11370 \def\@@Listbox#1{%
11371   \HyField@PDFChoices{#1}%
11372   \setbox\pdfm@box=\hbox{\MakeChoiceField{\Fld@width}{\Fld@height}}%
11373   \leavevmode
11374   \Hy@escapeform\PDFForm@List
11375   \HyField@AdvanceAnnotCount
11376   \@pdfm@mark{%
11377     ann @list\HyField@TheAnnotCount\space
11378     \dvipdfm@setdim
11379     <<\PDFForm@List>>%
11380   }%
11381   \unhbox\pdfm@box
11382   \@pdfm@mark{put @afields @list\HyField@TheAnnotCount}%
11383 }

@PushButton
11384 \def\@PushButton[#1]#2{% parameters, label
11385   \def\Fld@name{#2}%
11386   \begingroup
11387     \Field@toks={ }%
11388     \expandafter\HyField@SetKeys\expandafter{%
11389       \DefaultOptionsofPushButton,#1%
11390     }%
11391     \PDFForm@Name
11392     \ifHy@pdfa
11393       \PackageError{hyperref}{%
11394         PDF/A: Push button with JavaScript is prohibited%
11395       }\@ehc
11396       \LayoutPushButtonField{%
11397         \leavevmode
11398         \MakeButtonField{#2}%
11399       }%
11400     \else
11401       \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
11402       \HyField@FlagsPushButton
11403       \ifFld@hidden\def\Fld@width{1sp}\fi
11404       \HyField@AdvanceAnnotCount
11405       \LayoutPushButtonField{%
11406         \leavevmode
11407         \Hy@escapeform\PDFForm@Push
11408         \@pdfm@mark{%
11409           ann @push\HyField@TheAnnotCount\space
11410           \dvipdfm@setdim
11411           <<\PDFForm@Push>>%
11412         }%
11413       }%
11414       \unhbox\pdfm@box
11415       \@pdfm@mark{put @afields @push\HyField@TheAnnotCount}%
11416     \fi
11417   \endgroup
11418 }

@Submit

```

```

11419 \def \@Submit[#1]#2{%
11420   \Field@toks={ }%
11421   \def \Fld@width{\DefaultWidthofSubmit}%
11422   \def \Fld@height{\DefaultHeightofSubmit}%
11423   \begingroup
11424     \expandafter\HyField@SetKeys\expandafter{%
11425       \DefaultOptionsofSubmit,#1%
11426     }%
11427     \HyField@FlagsPushButton
11428     \HyField@FlagsSubmit
11429     \ifFld@hidden\def \Fld@width{1sp}\fi
11430     \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
11431     \leavevmode
11432     \Hy@escapeform\PDFForm@Submit
11433     \HyField@AdvanceAnnotCount
11434     \@pdfm@mark{%
11435       ann @submit\HyField@TheAnnotCount\space
11436       \dvi pdfm@setdim
11437       <<\PDFForm@Submit>>%
11438     }%
11439     \unhbox\pdfm@box%
11440     \@pdfm@mark{put @afields @submit\HyField@TheAnnotCount}%
11441   \endgroup
11442 }

\@Reset

11443 \def \@Reset[#1]#2{%
11444   \Field@toks={ }%
11445   \def \Fld@width{\DefaultWidthofReset}%
11446   \def \Fld@height{\DefaultHeightofReset}%
11447   \begingroup
11448     \expandafter\HyField@SetKeys\expandafter{%
11449       \DefaultOptionsofReset,#1%
11450     }%
11451     \leavevmode
11452     \ifHy@pdfa
11453       \PackageError{hyperref}{%
11454         PDF/A: Reset action is prohibited%
11455       }{@ehc}
11456       \MakeButtonField{#2}%
11457     \else
11458       \HyField@FlagsPushButton
11459       \ifFld@hidden\def \Fld@width{1sp}\fi
11460       \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
11461       \Hy@escapeform\PDFForm@Reset
11462       \HyField@AdvanceAnnotCount
11463       \@pdfm@mark{%
11464         ann @reset\HyField@TheAnnotCount\space
11465         \dvi pdfm@setdim
11466         <<\PDFForm@Reset>>%
11467       }%
11468       \unhbox\pdfm@box
11469       \@pdfm@mark{put @afields @reset\HyField@TheAnnotCount}%
11470     \fi
11471   \endgroup
11472 }

```

\@CheckBox

```
11473 \def \@CheckBox[#1]#2{% parameters, label
11474   \def \Fld@name{#2}%
11475   \def \Fld@default{0}%
11476   \begingroup
11477     \def \Fld@width{\DefaultWidthofCheckBox}%
11478     \def \Fld@height{\DefaultHeightofCheckBox}%
11479     \Fld@toks={ }%
11480     \expandafter \HyField@SetKeys \expandafter {%
11481       \DefaultOptionsofCheckBox,#1%
11482     }%
11483     \PDFForm@Name
11484     \HyField@FlagsCheckBox
11485     \ifFld@hidden \def \Fld@width{1sp} \fi
11486     \setbox \pdfm@box = \hbox {\MakeCheckField{\Fld@width}{\Fld@height}}%
11487     \HyField@AdvanceAnnotCount
11488     \LayoutCheckField{#2}{%
11489       \Hy@escapeform \PDFForm@Check
11490       \@pdfm@mark{%
11491         ann @check \HyField@TheAnnotCount \space
11492         \dvipdfm@setdim
11493         << \PDFForm@Check >>%
11494       }%
11495       \unhbox \pdfm@box
11496       \@pdfm@mark {put @afields @check \HyField@TheAnnotCount}%
11497     }%
11498   \endgroup
11499 }

11500 \def \Hy@FormObjects{%
11501   \@pdfm@mark {obj @OBJpdfdocencoding%
11502     <<%
11503       /Type/Encoding%
11504       /Differences%
11505         24/breve/caron/circumflex/dotaccent/hungarumlaut/ogonek/ring/tilde %
11506         39/quotesingle %
11507         96/grave %
11508         128/bullet/dagger/daggerdbl/ellipsis/emdash/endash/florin%
11509         /fraction/guilsinglleft/guilsinglright/minus/perthousand%
11510         /quotedblbase/quotedblleft/quotedblright/quoteleft/quoteright%
11511         /quotesinglbase/trademark/fi/fl/Lslash/OE/Scaron/Ydieresis%
11512         /Zcaron/dotlessi/lslash/oe/scaron/zcaron %
11513         164/currency %
11514         166/brokenbar %
11515         168/dieresis/copyright/ordfeminine %
11516         172/logicalnot/.notdef/registered/macron/degree/plusminus%
11517         /twosuperior/threesuperior/acute/mu %
11518         183/periodcentered/cedilla/onesuperior/ordmasculine %
11519         188/onequarter/onehalf/threequarters %
11520         192/Agrave/Aacute/Acircumflex/Atilde/Adieresis/Aring/AE%
11521         /Ccedilla/Egrave/Eacute/Ecircumflex/Edieresis/Igrave/Iacute%
11522         /Icircumflex/Idieresis/Eth/Ntilde/Ograve/Oacute/Ocircumflex%
11523         /Otilde/Odieresis/multiply/Oslash/Ugrave/Uacute/Ucircumflex%
11524         /Udieresis/Yacute/Thorn/germandbls/agrave/aacute/acircumflex%
11525         /atilde/adieresis/aring/ae/ccedilla/egrave/eacute%
11526         /ecircumflex/edieresis/igrave/iacute/icircumflex/idieresis%
11527         /eth/ntilde/ograve/oacute/ocircumflex/otilde/odieresis%
```

```

11528         /divide/oslash/ugrave/uacute/ucircumflex/udieresis/yacute%
11529         /thorn/ydieresis%
11530     ]%
11531 >>%
11532 }%
11533 \@pdfm@mark{obj @OBJZaDb%
11534 <<%
11535     /Type/Font%
11536     /Subtype/Type1%
11537     /Name/ZaDb%
11538     /BaseFont/ZapfDingbats%
11539 >>%
11540 }%
11541 \@pdfm@mark{obj @OBJHelv%
11542 <<%
11543     /Type/Font%
11544     /Subtype/Type1%
11545     /Name/Helv%
11546     /BaseFont/Helvetica%
11547     /Encoding @OBJpdfdocencoding%
11548 >>%
11549 }%
11550 \global\let\Hy@FormObjects\relax
11551 }
11552 </dvipdfm | xetex>

```

## 47.6 Common forms part

```
11553 < *pdfmform >
```

\Hy@escapestring

```

11554 \begingroup\expandafter\expandafter\expandafter\endgroup
11555 \expandafter\ifx\csname pdfescapestring\endcsname\relax
11556   \let\Hy@escapestring\@firstofone
11557   \def\Hy@escapeform#1{%
11558     \ifHy@escapeform
11559       \def\Hy@escapestring##1{%
11560         \noexpand\Hy@escapestring{\noexpand##1}%
11561       }%
11562     \edef\Hy@temp{#1}%
11563     \expandafter\Hy@@escapeform\Hy@temp\Hy@escapestring{}\@nil
11564     \def\Hy@escapestring##1{%
11565       \@ifundefined{Hy@esc@\string##1}{%
11566         ##1%
11567         \ThisShouldNotHappen
11568       }{%
11569         \csname Hy@esc@\string##1\endcsname
11570       }%
11571     }%
11572   \else
11573     \let\Hy@escapestring\@firstofone
11574   \fi
11575 }%
11576 \def\Hy@@escapeform#1\Hy@escapestring#2#3\@nil{%
11577   \ifx\#3\%
11578     \else
11579     \expandafter\Hy@pstringdef\csname Hy@esc@\string#2\endcsname{#2}%

```

```

11580     \Hy@ReturnAfterFi{%
11581     \Hy@@escapeform#3\@nil
11582     }%
11583     \fi
11584 }%
11585 \else
11586 \def\Hy@escapeform#1{%
11587     \ifHy@escapeform
11588     \let\Hy@escapestring\pdfescapestring
11589     \else
11590     \let\Hy@escapestring\@firstofone
11591     \fi
11592 }%
11593 \Hy@escapeform{}%
11594 \fi

```

\PDFForm@Name

```

11595 \def\PDFForm@Name{%
11596     \begingroup
11597     \ifnum\Hy@pdfversion<5 % implementation note 117, PDF spec 1.7
11598     \ifHy@unicode
11599     \Hy@unicodedefalse
11600     \fi
11601     \fi
11602     \pdfstringdef\Hy@gtemp\Fld@name
11603     \endgroup
11604     \let\Fld@name\Hy@gtemp
11605 }

```

\PDFForm@Check

```

11606 \def\PDFForm@Check{%
11607     /Subtype/Widget%
11608     \Fld@annotflags
11609     /T(\Fld@name)%
11610     /FT/Btn%
11611     \Fld@flags
11612     /Q \Fld@align
11613     /BS<</W \Fld@borderwidth /S/\Fld@borderstyle>>%
11614     /MK<<%
11615     \ifnum\Fld@rotation=\z@
11616     \else
11617     /R \Fld@rotation
11618     \fi
11619     \ifx\Fld@bordercolor\relax
11620     \else
11621     /BC[\Fld@bordercolor]%
11622     \fi
11623     \ifx\Fld@bcolor\relax
11624     \else
11625     /BG[\Fld@bcolor]%
11626     \fi
11627     /CA(\Hy@escapestring{\Fld@cbsymbol})%
11628     >>%
11629     /DA(/ZaDb \strip@pt\Fld@charsize\space Tf%
11630     \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
11631     /H/P%
11632     \ifFld@checked /V/Yes\else /V/Off\fi

```

11633 }

\PDFForm@Push

```
11634 \ifHy@pdfa
11635 \else
11636   \def\PDFForm@Push{%
11637     /Subtype/Widget%
11638     \Fld@annotflags
11639     /T(\Fld@name)%
11640     /FT/Btn%
11641     \Fld@flags
11642     /H/P%
11643     /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
11644     \ifcase0\ifnum\Fld@rotation=\z@   \else 1\fi
11645       \ifx\Fld@bordercolor\relax\else 1\fi
11646       \space
11647     \else
11648       /MK<<%
11649       \ifnum\Fld@rotation=\z@
11650       \else
11651       /R \Fld@rotation
11652       \fi
11653       \ifx\Fld@bordercolor\relax
11654       \else
11655       /BC[\Fld@bordercolor]%
11656       \fi
11657       >>%
11658     \fi
11659     /A<</S/JavaScript/JS(\Hy@escapestring{\Fld@onclick@code})>>%
11660   }%
11661 \fi
```

\Fld@additionalactions

```
11662 \def\Fld@@additionalactions{%
K input (keystroke) format
11663   \ifx\Fld@keystroke@code\@empty
11664   \else
11665     /K<</S/JavaScript/JS(\Hy@escapestring{\Fld@keystroke@code})>>%
11666   \fi
F display format
11667   \ifx\Fld@format@code\@empty
11668   \else
11669     /F<</S/JavaScript/JS(\Hy@escapestring{\Fld@format@code})>>%
11670   \fi
V validation
11671   \ifx\Fld@validate@code\@empty
11672   \else
11673     /V<</S/JavaScript/JS(\Hy@escapestring{\Fld@validate@code})>>%
11674   \fi
C calculation
11675   \ifx\Fld@calculate@code\@empty
11676   \else
11677     /C<</S/JavaScript/JS(\Hy@escapestring{\Fld@calculate@code})>>%
11678   \fi
```

Fo receiving the input focus

```
11679 \ifx\Fld@onfocus@code\@empty
11680 \else
11681 /Fo<</S/JavaScript/JS(\Hy@escapestring{\Fld@onfocus@code})>>%
11682 \fi
```

Bl loosing the input focus (blurred)

```
11683 \ifx\Fld@onblur@code\@empty
11684 \else
11685 /Bl<</S/JavaScript/JS(\Hy@escapestring{\Fld@onblur@code})>>%
11686 \fi
```

D pressing the mouse button (down)

```
11687 \ifx\Fld@onmousedown@code\@empty
11688 \else
11689 /D<</S/JavaScript/JS(\Hy@escapestring{\Fld@onmousedown@code})>>%
11690 \fi
```

U releasing the mouse button (up)

```
11691 \ifx\Fld@onmouseup@code\@empty
11692 \else
11693 /U<</S/JavaScript/JS(\Hy@escapestring{\Fld@onmouseup@code})>>%
11694 \fi
```

E cursor enters the annotation's active area.

```
11695 \ifx\Fld@onenter@code\@empty
11696 \else
11697 /E<</S/JavaScript/JS(\Hy@escapestring{\Fld@onenter@code})>>%
11698 \fi
```

X cursor exits the annotation's active area.

```
11699 \ifx\Fld@onexit@code\@empty
11700 \else
11701 /X<</S/JavaScript/JS(\Hy@escapestring{\Fld@onexit@code})>>%
11702 \fi
11703 }
```

```
11704 \def\Fld@additionalactions{%
11705 \if-\Fld@@additionalactions-%
11706 \else
11707 \ifHy@pdfa
11708 \else
11709 /AA<<\Fld@@additionalactions>>%
11710 \fi
11711 \fi
11712 }
```

\PDFForm@List

```
11713 \def\PDFForm@List{%
11714 /Subtype/Widget%
11715 \Fld@annotflags
11716 /T(\Fld@name)%
11717 /FT/Ch%
11718 \Fld@flags
11719 /Q \Fld@align
11720 /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
11721 \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
11722 \ifx\Fld@bordercolor\relax\else 1\fi
11723 \ifx\Fld@bcolor\relax \else 1\fi
11724 \space
```

```

11725 \else
11726   /MK<<%
11727   \ifnum\Fld@rotation=\z@
11728   \else
11729     /R \Fld@rotation
11730   \fi
11731   \ifx\Fld@bordercolor\relax
11732   \else
11733     /BC[\Fld@bordercolor]%
11734   \fi
11735   \ifx\Fld@bcolor\relax
11736   \else
11737     /BG[\Fld@bcolor]%
11738   \fi
11739   >>%
11740 \fi
11741 /DA(/Helv \strip@pt\Fld@charsize\space Tf%
11742   \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
11743 \Fld@choices
11744 \Fld@additionalactions
11745 }

```

\PDFForm@Radio

```

11746 \def\PDFForm@Radio{%
11747   /Subtype/Widget%
11748   \Fld@annotflags
11749   /T(\Fld@name)%
11750   /FT/Btn%
11751   \Fld@flags
11752   /H/P%
11753   /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
11754   /MK<<%
11755   \ifnum\Fld@rotation=\z@
11756   \else
11757     /R \Fld@rotation
11758   \fi
11759   \ifx\Fld@bordercolor\relax
11760   \else
11761     /BC[\Fld@bordercolor]%
11762   \fi
11763   \ifx\Fld@bcolor\relax
11764   \else
11765     /BG[\Fld@bcolor]%
11766   \fi
11767   /CA(\Fld@radiosymbol)%
11768   >>%
11769   /DA(/ZaDb \strip@pt\Fld@charsize\space Tf%
11770     \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
11771   \ifx\@currValue\Fld@default
11772     /V/\Fld@default
11773   \else
11774     /V/Off%
11775   \fi
11776   \Fld@additionalactions
11777 }

```

\PDFForm@Text



```

11778 \def\PDFForm@Text{%
11779   /Subtype/Widget%
11780   \Fld@annotflags
11781   /T(\Fld@name)%
11782   /FT/Tx%
11783   \Fld@flags
11784   /Q \Fld@align
11785   /BS<</W \Fld@borderwidth\space /S /\Fld@borderstyle>>%
11786   \ifcase0\ifnum\Fld@rotation=\z@   \else 1\fi
11787       \ifx\Fld@bordercolor\relax\else 1\fi
11788       \ifx\Fld@bcolor\relax   \else 1\fi
11789       \space
11790   \else
11791       /MK<<%
11792       \ifnum\Fld@rotation=\z@
11793       \else
11794       /R \Fld@rotation
11795       \fi
11796       \ifx\Fld@bordercolor\relax
11797       \else
11798       /BC[\Fld@bordercolor]%
11799       \fi
11800       \ifx\Fld@bcolor\relax
11801       \else
11802       /BG[\Fld@bcolor]%
11803       \fi
11804       >>%
11805   \fi
11806   /DA(/Helv \strip@pt\Fld@charsize\space Tf%
11807       \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
11808   /DV(\Hy@escapestring{\Fld@default})%
11809   /V(\Hy@escapestring{\Fld@value})%
11810   \Fld@additionalactions
11811   \ifnum\Fld@maxlen>\z@/MaxLen \Fld@maxlen \fi
11812 }

```

\PDFForm@Submit

```

11813 \def\PDFForm@Submit{%
11814   /Subtype/Widget%
11815   \Fld@annotflags
11816   /T(\Fld@name)%
11817   /FT/Btn%
11818   \Fld@flags
11819   /H/P%
11820   /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
11821   \ifcase0\ifnum\Fld@rotation=\z@   \else 1\fi
11822       \ifx\Fld@bordercolor\relax\else 1\fi
11823       \space
11824   \else
11825       /MK<<%
11826       \ifnum\Fld@rotation=\z@
11827       \else
11828       /R \Fld@rotation
11829       \fi
11830       \ifx\Fld@bordercolor\relax
11831       \else
11832       /BC[\Fld@bordercolor]%

```

```

11833     \fi
11834     >>%
11835 \fi
11836 /A<<%
11837     /S/SubmitForm%
11838     /F<<%
11839     /FS/URL%
11840     /F(\Hy@escapestring{\Form@action})%
11841     >>%
11842     \Fld@submitflags
11843     >>%
11844 }

```

\PDFForm@Reset

```

11845 \ifHy@pdfa
11846 \else
11847   \def\PDFForm@Reset{%
11848     /Subtype/Widget%
11849     \Fld@annotflags
11850     /T(\Fld@name)%
11851     /FT/Btn%
11852     \Fld@flags
11853     /H/P%
11854     /DA(/Helv \strip@pt\Fld@charsize\space Tf 0 0 1 rg)%
11855     \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
11856         \ifx\Fld@bordercolor\relax\else 1\fi
11857         \space
11858     \else
11859       /MK<<%
11860         \ifnum\Fld@rotation=\z@
11861         \else
11862           /R \Fld@rotation
11863         \fi
11864         \ifx\Fld@bordercolor\relax
11865         \else
11866           /BC[\Fld@bordercolor]%
11867         \fi
11868       /CA (Clear)
11869       /AC (Done)
11870       >>%
11871     \fi
11872     /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
11873     /A<</S/ResetForm>>%
11874   }%
11875 \fi

11876 </pdfform>
11877 <*package>

```

## 48 Bookmarks in the PDF file

This was originally developed by Yannis Haralambous (it was the separate `repere.sty`); it needed the `repere` or `makebook.pl` post-processor to work properly. Now redundant, as it is done entirely in  $\text{\LaTeX}$  macros.

To write out the current section title, and its rationalized number, we have to intercept the `\@sect` command, which is rather dangerous. But how else to see the infor-

mation we need? We do the *same* for `\@sssect`, giving anchors to unnumbered sections. This allows things like bibliographies to get bookmarks when used with a manual `\addcontentsline`

```

11878 \def\phantomsection{%
11879   \Hy@GlobalStepCount\Hy@linkcounter
11880   \xdef\@currentHref{section*.\the\Hy@linkcounter}%
11881   \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
11882 }
11883 \</package>

```

## 48.1 Bookmarks

```
11884 \<*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.

```

11885 \def\Hy@writebookmark#1#2#3#4#5{%
11886   % section number, text, label, level, file
11887   \ifx\WriteBookmarks\relax%
11888   \else
11889     \ifnum#4>\Hy@bookmarksdepth\relax
11890     \else
11891       \@writetorep{#1}{#2}{#3}{#4}{#5}%
11892     \fi
11893   \fi
11894 }
11895 \def\Hy@currentbookmarklevel{0}
11896 \def\Hy@numberline#1{#1 }
11897 \def\@writetorep#1#2#3#4#5{%
11898   \begingroup
11899     \edef\Hy@tempa{#5}%
11900     \ifx\Hy@tempa\Hy@bookmarkstype
11901       \edef\Hy@level{#4}%
11902       \ifx\Hy@levelcheck Y%
11903         \@tempcnta\Hy@level\relax
11904         \advance\@tempcnta by -1 %
11905         \ifnum\Hy@currentbookmarklevel<\@tempcnta
11906           \advance\@tempcnta by -\Hy@currentbookmarklevel\relax
11907           \advance\@tempcnta by 1 %
11908           \Hy@Warning{%
11909             Difference (\the\@tempcnta) between bookmark levels is %
11910             greater \MessageBreak than one, level fixed%
11911           }%
11912           \@tempcnta\Hy@currentbookmarklevel

```

```

11913         \advance\@tempcnta by 1 %
11914         \edef\Hy@level{\the\@tempcnta}%
11915     \fi
11916 \else
11917     \global\let\Hy@levelcheck Y%
11918 \fi
11919 \global\let\Hy@currentbookmarklevel\Hy@level
11920 \@tempcnta\Hy@level\relax
11921 \expandafter\xdef\csname Parent\Hy@level\endcsname{#3}%
11922 \advance\@tempcnta by -1 %
11923 \edef\Hy@tempa{#3}%
11924 \edef\Hy@tempb{\csname Parent\the\@tempcnta\endcsname}%
11925 \ifx\Hy@tempa\Hy@tempb
11926     \Hy@Warning{%
11927         The anchor of a bookmark and its parent's must not%
11928         \MessageBreak be the same. Added a new anchor%
11929     }%
11930     \phantomsection
11931 \fi
11932 \ifHy@bookmarksnumbered
11933     \let\numberline\Hy@numberline
11934     \let\partnumberline\Hy@numberline
11935     \let\chapternumberline\Hy@numberline
11936 \else
11937     \let\numberline\@gobble
11938     \let\partnumberline\@gobble
11939     \let\chapternumberline\@gobble
11940 \fi
11941 \pdfstringdef\Hy@tempa{#2}%
11942 \if@filesw
11943     \stepcounter{bookmark@seq@number}%
11944     \protected@write\@outlinefile{}{%
11945         \protect\BOOKMARK
11946         [\Hy@level] [\@bookmarkopenstatus{\Hy@level}] {#3}%
11947         {\Hy@tempa}{\Hy@tempb}%
11948         \@percentchar\space\thebookmark@seq@number
11949     }%
11950 \fi
11951 \fi
11952 \endgroup
11953 }
11954 \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 ] .

```

11955 \newcommand{\currentpdfbookmark}{%
11956     \pdfbookmark[\Hy@currentbookmarklevel]%
11957 }
11958 \newcommand{\subpdfbookmark}{%
11959     \@tempcnta\Hy@currentbookmarklevel
11960     \Hy@StepCount\@tempcnta
11961     \expandafter\pdfbookmark\expandafter[\the\@tempcnta]%
11962 }
11963 \newcommand{\belowpdfbookmark}[2]{%
11964     \@tempcnta\Hy@currentbookmarklevel
11965     \Hy@StepCount\@tempcnta
11966     \expandafter\pdfbookmark\expandafter[\the\@tempcnta]{#1}{#2}%
11967     \advance\@tempcnta by -1 %

```

```

11968 \xdef\Hy@currentbookmarklevel{\the\@tempcnta}%
11969 }

```

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.

```

11970 \renewcommand\pdfbookmark[3][0]{%
11971   \Hy@writebookmark{#2}{#3.#1}{#1}{toc}%
11972   \hyper@anchorstart{#3.#1}\hyper@anchorend
11973 }
11974 \def\BOOKMARK{\ifnextchar[{\@BOOKMARK}{\@@BOOKMARK[1][-]}}
11975 \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` macros.

#### 48.1.1 Rerun warning

`\Hy@OutlineRerunCheck`

```

11976 \RequirePackage{rerunfilecheck}[2009/12/10]
11977 \def\Hy@OutlineRerunCheck{%
11978   \RerunFileCheck{\jobname.out}{%
11979     \immediate\closeout\@outlinefile
11980   }{%
11981     Rerun to get outlines right\MessageBreak
11982     or use package 'bookmark'%
11983   }%
11984 }

```

#### 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 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.

```

11985 <*vtx>
11986 \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.

```

11987 \begingroup
11988   \catcode'\'=12 %
11989   \ifnum\Hy@VTeXversion<650 %
11990     \catcode\'=12 %
11991     \gdef\hv@pdf@char#1#2#3{%
11992       \char
11993       \ifcase'#1#2#3 %
11994         "00\or"01\or"02\or"03\or"04\or"05\or"06\or"07%
11995         \or"08\or"09\or"0A\or"0B\or"0C\or"0D\or"0E\or"0F%
11996         \or"10\or"11\or"12\or"13\or"14\or"15\or"16\or"17%
11997         \or"18\or"19\or"1A\or"1B\or"1C\or"1D\or"1E\or"1F%
11998         \or"20\or"21\or"22\or"23\or"24\or"25\or"26\or"27%
11999         \or"28\or"29\or"2A\or"2B\or"2C\or"2D\or"2E\or"2F%
12000         \or"30\or"31\or"32\or"33\or"34\or"35\or"36\or"37%
12001         \or"38\or"39\or"3A\or"3B\or"3C\or"3D\or"3E\or"3F%
12002         \or"40\or"41\or"42\or"43\or"44\or"45\or"46\or"47%
12003         \or"48\or"49\or"4A\or"4B\or"4C\or"4D\or"4E\or"4F%

```

```

12004 \or"50\or"51\or"52\or"53\or"54\or"55\or"56\or"57%
12005 \or"58\or"59\or"5A\or"5B\or"5C\or"5D\or"5E\or"5F%
12006 \or"60\or"61\or"62\or"63\or"64\or"65\or"66\or"67%
12007 \or"68\or"69\or"6A\or"6B\or"6C\or"6D\or"6E\or"6F%
12008 \or"70\or"71\or"72\or"73\or"74\or"75\or"76\or"77%
12009 \or"78\or"79\or"7A\or"7B\or"7C\or"7D\or"7E\or"7F%
12010 \or"80\or"81\or"82\or"83\or"84\or"85\or"86\or"87%
12011 \or"88\or"89\or"8A\or"8B\or"8C\or"8D\or"8E\or"8F%
12012 \or"90\or"91\or"92\or"93\or"94\or"95\or"96\or"97%
12013 \or"98\or"99\or"9A\or"9B\or"9C\or"9D\or"9E\or"9F%
12014 \or"A0\or"A1\or"A2\or"A3\or"A4\or"A5\or"A6\or"A7%
12015 \or"A8\or"A9\or"AA\or"AB\or"AC\or"AD\or"AE\or"AF%
12016 \or"B0\or"B1\or"B2\or"B3\or"B4\or"B5\or"B6\or"B7%
12017 \or"B8\or"B9\or"BA\or"BB\or"BC\or"BD\or"BE\or"BF%
12018 \or"C0\or"C1\or"C2\or"C3\or"C4\or"C5\or"C6\or"C7%
12019 \or"C8\or"C9\or"CA\or"CB\or"CC\or"CD\or"CE\or"CF%
12020 \or"D0\or"D1\or"D2\or"D3\or"D4\or"D5\or"D6\or"D7%
12021 \or"D8\or"D9\or"DA\or"DB\or"DC\or"DD\or"DE\or"DF%
12022 \or"E0\or"E1\or"E2\or"E3\or"E4\or"E5\or"E6\or"E7%
12023 \or"E8\or"E9\or"EA\or"EB\or"EC\or"ED\or"EE\or"EF%
12024 \or"F0\or"F1\or"F2\or"F3\or"F4\or"F5\or"F6\or"F7%
12025 \or"F8\or"F9\or"FA\or"FB\or"FC\or"FD\or"FE\or"FF%
12026 \fi
12027 }%
12028 \else
12029 \gdef\hv@pdf@char{\char'}%
12030 \fi
12031 \endgroup

```

\@@BOOKMARK

```

12032 \def\@@BOOKMARK[#1][#2]#3#4#5{%
12033 \expandafter\edef\csname @count@#3\endcsname{\the\@serial@counter}%
12034 \edef\@mycount{\the\@serial@counter}%
12035 \Hy@StepCount\@serial@counter
12036 \edef\@parcount{%
12037 \expandafter\ifx\csname @count@#5\endcsname\relax
12038 0%
12039 \else
12040 \csname @count@#5\endcsname
12041 \fi
12042 }%
12043 \immediate\special{%
12044 !outline \HyperDestNameFilter{#3};p=\@parcount,i=\@mycount,%
12045 s=\ifx#2-c\else o\fi,t=#4%
12046 }%
12047 }%

```

\ReadBookmarks

```

12048 \def\ReadBookmarks{%
12049 \begingroup
12050 \def\0{\hv@pdf@char 0}%
12051 \def\1{\hv@pdf@char 1}%
12052 \def\2{\hv@pdf@char 2}%
12053 \def\3{\hv@pdf@char 3}%
12054 \def\{({}%
12055 \def\)}{)%
12056 \def\do##1{%

```

```

12057     \ifnum\the\catcode'##1=\active
12058         \@makeother##1%
12059     \fi
12060 }%
12061 \dospecials
12062 \InputIfFileExists{\jobname.out}{-}{-}%
12063 \endgroup
12064 \ifx\WriteBookmarks\relax
12065 \else
12066     \if@files
12067         \newwrite\@outlinefile
12068         \Hy@OutlineRerunCheck
12069         \immediate\openout\@outlinefile=\jobname.out\relax
12070         \ifHy@typexml
12071             \immediate\write\@outlinefile{<relaxxml>\relax}%
12072         \fi
12073     \fi
12074 \fi
12075 }

12076 </vtex>
12077 <!*vtex>
12078 \def\ReadBookmarks{%
12079     \begingroup
12080     \escapechar='\'%
12081     \let\escapechar\@gobble %
12082     \def\@@BOOKMARK[##1][##2]###4###5{\calc@bm@number{##5}}%
12083     \InputIfFileExists{\jobname.out}{-}{-}%
12084     \ifx\WriteBookmarks\relax
12085         \global\let\WriteBookmarks\relax
12086     \fi
12087     \def\@@BOOKMARK[##1][##2]###4###5{%
12088         \def\Hy@temp{##4}%
12089     <*pdftex>
12090         \Hy@pstringdef\Hy@pstringName{\HyperDestNameFilter{##3}}%
12091         \Hy@OutlineName{\Hy@pstringName%
12092             ##2\check@bm@number{##3}}%
12093         }{%
12094             \expandafter\strip@prefix\meaning\Hy@temp
12095         }%
12096 </pdftex>
12097 <*pdfmark>
12098         \pdfmark{%
12099             pdfmark=/OUT,%
12100             Count={##2\check@bm@number{##3}},%
12101             Dest={##3},%
12102             Title=\expandafter\strip@prefix\meaning\Hy@temp
12103         }%
12104 </pdfmark>
12105 <*dvipdfm|xetex>
12106         \Hy@pstringdef\Hy@pstringName{\HyperDestNameFilter{##3}}%
12107         \@pdfm@mark{%
12108             outline \ifHy@DvipdfmxOutlineOpen
12109                 [%
12110                 \ifnum##21>\z@
12111                 \else
12112                     -%
12113                 \fi

```

```

12114         ] %
12115         \fi
12116         ##1<<%
12117         /Title(\expandafter\strip@prefix\meaning\Hy@temp)%
12118         /A<<%
12119         /S/GoTo%
12120         /D(\Hy@pstringName)%
12121         >>%
12122         >>%
12123     }%
12124 </dvipdfm | xetex>
12125 }%
12126 {%
12127     \def\WriteBookmarks{0}%
12128     \InputIfFileExists{\jobname.out}{\relax}%
12129 }%
12130 {%\escapechar\m@ne\InputIfFileExists{\jobname.out}{\relax}%
12131 \ifx\WriteBookmarks\relax
12132 \else
12133     \if@filesw
12134         \newwrite\@outlinefile
12135         \Hy@OutlineRerunCheck
12136         \immediate\openout\@outlinefile=\jobname.out\relax
12137         \ifHy@typexml
12138             \immediate\write\@outlinefile{<relaxxml>\relax}%
12139         \fi
12140     \fi
12141 \fi
12142 \endgroup
12143 }
12144 <*pdfTeX>
12145 \def\Hy@OutlineName#1#2#3#4{%
12146     \pdfoutline goto name{#2}count#3{#4}%
12147 }
12148 </pdfTeX>
12149 \def\check@bm@number#1{%
12150     \expandafter\ifx\csname B_#1\endcsname\relax
12151     0%
12152 \else
12153     \csname B_#1\endcsname
12154 \fi
12155 }
12156 \def\calc@bm@number#1{%
12157     \@tempcnta=\check@bm@number{#1}\relax
12158     \advance\@tempcnta by 1 %
12159     \expandafter\xdef\csname B_#1\endcsname{\the\@tempcnta}%
12160 }
12161 </!vtex>
12162 \ifHy@implicit
12163 \else
12164     \expandafter\endinput
12165 \fi
12166 </outlines>
12167 <*outlines | hypertex>
12168 \newlength\Hy@SectionHShift
12169 \def\Hy@SectionAnchor{%

```



```

12170 \ifx\protect\@typeset@protect
12171   \Hy@@SectionAnchor
12172 \fi
12173 }
12174 \DeclareRobustCommand*\Hy@@SectionAnchor}{%
12175   \leavevmode
12176   \hbox to 0pt{%
12177     \kern-\Hy@SectionHShift
12178     \Hy@raisedlink{%
12179       \hyper@anchorstart{\@currentHref}\hyper@anchorend
12180     }%
12181     \hss
12182   }%
12183 }
12184 \let\H@old@ssect\@ssect
12185 \def\@ssect#1#2#3#4#5{%
12186   \Hy@GlobalStepCount\Hy@linkcounter
12187   \xdef\@currentHref{section*.\the\Hy@linkcounter}%
12188   \setlength{\Hy@SectionHShift}{#1}%
12189   \H@old@ssect{#1}{#2}{#3}{#4}{\Hy@SectionAnchor#5}%
12190 }
12191 \let\H@old@schapter\@schapter
12192 \def\@schapter#1{%
12193   \begingroup
12194     \let\@mkboth\@gobbletwo
12195     \Hy@GlobalStepCount\Hy@linkcounter
12196     \xdef\@currentHref{\Hy@chapapp*.\the\Hy@linkcounter}%
12197     \Hy@raisedlink{%
12198       \hyper@anchorstart{\@currentHref}\hyper@anchorend
12199     }%
12200   \endgroup
12201   \H@old@schapter{#1}%
12202 }

```

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:

```

12203 \@ifundefined{@chapter}{}{%
12204   \let\Hy@org@chapter\@chapter
12205   \def\@chapter{%
12206     \def\Hy@next{%
12207       \Hy@GlobalStepCount\Hy@linkcounter
12208       \xdef\@currentHref{\Hy@chapapp*.\the\Hy@linkcounter}%
12209       \Hy@raisedlink{%
12210         \hyper@anchorstart{\@currentHref}\hyper@anchorend
12211       }%
12212     }%
12213     \ifnum\c@secnumdepth>\m@ne
12214       \@ifundefined{if@mainmatter}%
12215       \iftrue{\csname if@mainmatter\endcsname}%
12216       \let\Hy@next\relax
12217     \fi
12218   \fi
12219   \Hy@next
12220   \Hy@org@chapter
12221 }%
12222 }

```

```

12223 \let\H@old@part\@part
12224 \begingroup\expandafter\expandafter\expandafter\endgroup
12225 \expandafter\ifx\csname chapter\endcsname\relax
12226   \let\Hy@secnum@part\z@
12227 \else
12228   \let\Hy@secnum@part\m@ne
12229 \fi
12230 \def\@part{%
12231   \ifnum\Hy@secnum@part>\c@secnumdepth
12232     \phantomsection
12233   \fi
12234   \H@old@part
12235 }

12236 \let\H@old@spart\@spart
12237 \def\@spart#1{%
12238   \Hy@GlobalStepCount\Hy@linkcounter
12239   \xdef\@currentHref{part*.\the\Hy@linkcounter}%
12240   \Hy@raisedlink{%
12241     \hyper@anchorstart{\@currentHref}\hyper@anchorend
12242   }%
12243   \H@old@spart{#1}%
12244 }

12245 \let\H@old@sect\@sect
12246 \def\@sect#1#2#3#4#5#6[#7]#8{%
12247   \ifnum #2>\c@secnumdepth
12248     \expandafter\@firstoftwo
12249   \else
12250     \expandafter\@secondoftwo
12251   \fi
12252   {%
12253     \Hy@GlobalStepCount\Hy@linkcounter
12254     \xdef\@currentHref{section*.\the\Hy@linkcounter}%
12255     \setlength{\Hy@SectionHShift}{#3}%
12256     \H@old@sect{#1}{#2}{#3}{#4}{#5}{#6}[#7]{\Hy@SectionAnchor#8}%
12257   }{%
12258     \H@old@sect{#1}{#2}{#3}{#4}{#5}{#6}[#7]{#8}%
12259   }%
12260 }

12261 </outlines | hypertex>
12262 <*outlines>

12263 \expandafter\def\csname Parent-4\endcsname{}
12264 \expandafter\def\csname Parent-3\endcsname{}
12265 \expandafter\def\csname Parent-2\endcsname{}
12266 \expandafter\def\csname Parent-1\endcsname{}
12267 \expandafter\def\csname Parent0\endcsname{}
12268 \expandafter\def\csname Parent1\endcsname{}
12269 \expandafter\def\csname Parent2\endcsname{}
12270 \expandafter\def\csname Parent3\endcsname{}
12271 \expandafter\def\csname Parent4\endcsname{}

12272 </outlines>

```

## 49 Compatibility with koma-script classes

```

12273 <*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 komascript versions since 2001/01/01, because Markus Kohm supports hyperref in komascript.

```

12274 \def\Hy@tempa{%
12275   \def\@addchap{##1}##2{%
12276     \typeout{##2}%
12277     \if@twoside
12278       \@mkboth{##1}{}%
12279     \else
12280       \@mkboth{}{##1}%
12281     \fi
12282     \addtocontents{lof}{\protect\addvspace{10\p@}}%
12283     \addtocontents{lot}{\protect\addvspace{10\p@}}%
12284     \Hy@GlobalStepCount\Hy@linkcounter
12285     \xdef\@currentHref{\Hy@chapapp*.\the\Hy@linkcounter}%
12286     \Hy@raisedlink{%
12287       \hyper@anchorstart{\@currentHref}\hyper@anchorend
12288     }%
12289     \if@twocolumn
12290       \@topnewpage[\@makeschapterhead{##2}]%
12291     \else
12292       \@makeschapterhead{##2}%
12293       \@afterheading
12294     \fi
12295     \addcontentsline{toc}{chapter}{##1}%
12296   }%
12297 }
12298 \@ifclassloaded{scrbook}{%
12299   \@ifclasslater{scrbook}{2001/01/01}{%
12300     \let\Hy@tempa\@empty
12301   }{}%
12302 }{%
12303   \@ifclassloaded{scrreprt}{%
12304     \@ifclasslater{scrreprt}{2001/01/01}{%
12305       \let\Hy@tempa\@empty
12306     }{}%
12307   }{}%
12308   \let\Hy@tempa\@empty
12309 }%
12310 }%
12311 \Hy@tempa
12312 </outlines | hypertext>

```

## 50 Encoding definition files for encodings of PDF strings

This was contributed by Heiko Oberdiek oberdiek@ruf.uni-freiburg.de

### 50.1 PD1 encoding

```

12313 <*pd1enc>
12314 \DeclareFontEncoding{PD1}{}{}

Accents
12315 \DeclareTextAccent{\' }{PD1}{\textasciigrave}
12316 \DeclareTextAccent{\'}{PD1}{\textacute}
12317 \DeclareTextAccent{\~}{PD1}{\textasciicircum}
12318 \DeclareTextAccent{\~}{PD1}{\texttilde}

```

```

12319 \DeclareTextAccent{"}{PD1}{\textasciidieresis}
12320 \DeclareTextAccent{\r}{PD1}{\textring}
12321 \DeclareTextAccent{\v}{PD1}{\textasciicaron}
12322 \DeclareTextAccent{\.}{PD1}{\textdotaccent}
12323 \DeclareTextAccent{\c}{PD1}{\textcedilla}
12324 \DeclareTextAccent{\=}{PD1}{\textasciimacron}
12325 \DeclareTextAccent{\b}{PD1}{\textmacronbelow}
12326 \DeclareTextAccent{\d}{PD1}{\textdotbelow}
12327 \DeclareTextCompositeCommand{\' }{PD1}{\@empty}{\textasciigrave}
12328 \DeclareTextCompositeCommand{\' }{PD1}{\@empty}{\textacute}
12329 \DeclareTextCompositeCommand{\` }{PD1}{\@empty}{\textasciicircum}
12330 \DeclareTextCompositeCommand{\` }{PD1}{\@empty}{\texttilde}
12331 \DeclareTextCompositeCommand{"}{PD1}{\@empty}{\textasciidieresis}
12332 \DeclareTextCompositeCommand{\r}{PD1}{\@empty}{\textring}
12333 \DeclareTextCompositeCommand{\v}{PD1}{\@empty}{\textasciicaron}
12334 \DeclareTextCompositeCommand{\.}{PD1}{\@empty}{\textdotaccent}
12335 \DeclareTextCompositeCommand{\c}{PD1}{\@empty}{\textcedilla}
12336 \DeclareTextCompositeCommand{\=}{PD1}{\@empty}{\textasciimacron}
12337 \DeclareTextCompositeCommand{\b}{PD1}{\@empty}{\textmacronbelow}
12338 \DeclareTextCompositeCommand{\d}{PD1}{\@empty}{\textdotbelow}
12339 \DeclareTextCompositeCommand{\' }{PD1}{\ }{\textasciigrave}
12340 \DeclareTextCompositeCommand{\' }{PD1}{\ }{\textacute}
12341 \DeclareTextCompositeCommand{\` }{PD1}{\ }{\textasciicircum}
12342 \DeclareTextCompositeCommand{\` }{PD1}{\ }{\texttilde}
12343 \DeclareTextCompositeCommand{"}{PD1}{\ }{\textasciidieresis}
12344 \DeclareTextCompositeCommand{\r}{PD1}{\ }{\textring}
12345 \DeclareTextCompositeCommand{\v}{PD1}{\ }{\textasciicaron}
12346 \DeclareTextCompositeCommand{\.}{PD1}{\ }{\textdotaccent}
12347 \DeclareTextCompositeCommand{\c}{PD1}{\ }{\textcedilla}
12348 \DeclareTextCompositeCommand{\=}{PD1}{\ }{\textasciimacron}
12349 \DeclareTextCompositeCommand{\b}{PD1}{\ }{\textmacronbelow}
12350 \DeclareTextCompositeCommand{\d}{PD1}{\ }{\textdotbelow}
12351 \DeclareTextCommand{\k}{PD1}[1]{\TextSymbolUnavailable{\k{#1}}#1}
12352 \DeclareTextCommand{\t}{PD1}[1]{\TextSymbolUnavailable{\t{#1}}#1}
12353 \DeclareTextCommand{\newtie}{PD1}[1]{\TextSymbolUnavailable{\newtie{#1}}#1}

```

Special white space escape characters not for use in bookmarks but for other PDF strings.

```

12354 % U+0009 (CHARACTER TABULATION)
12355 \DeclareTextCommand{\textHT}{PD1}{\011}% U+0009
12356 % U+000A (LINE FEED)
12357 \DeclareTextCommand{\textLF}{PD1}{\012}% U+000A
12358 % U+000D (CARRIAGE RETURN)
12359 \DeclareTextCommand{\textCR}{PD1}{\015}% U+000D

```

Accent glyph names

```

12360 % U+02D8 BREVE; breve
12361 \DeclareTextCommand{\textasciibreve}{PD1}{\030}% U+02D8
12362 % U+02C7 CARON; caron
12363 \DeclareTextCommand{\textasciicaron}{PD1}{\031}% U+02C7
12364 % U+02C6 MODIFIER LETTER CIRCUMFLEX ACCENT; circumflex
12365 \DeclareTextCommand{\textcircumflex}{PD1}{\032}% U+02C6
12366 % U+02D9 DOT ABOVE; dotaccent
12367 \DeclareTextCommand{\textdotaccent}{PD1}{\033}% U+02D9
12368 % U+02DD DOUBLE ACUTE ACCENT; hungarumlaut
12369 \DeclareTextCommand{\texthungarumlaut}{PD1}{\034}% U+02DD
12370 % U+02DB OGONEK; ogonek
12371 \DeclareTextCommand{\textogonek}{PD1}{\035}% U+02DB
12372 % U+02DA RING ABOVE; ring
12373 \DeclareTextCommand{\textring}{PD1}{\036}% U+02DA

```

12374 % U+02DC SMALL TILDE; ilde, \*tilde  
 12375 \DeclareTextCommand{\texttilde}{PD1}{\037}% U+02DC  
 \040: U+0020 SPACE; \*space, spacehackarabic  
 \041: U+0021 EXCLAMATION MARK; exclam  
 12376 % U+0022 QUOTATION MARK; quotedbl  
 12377 \DeclareTextCommand{\textquotedbl}{PD1}{\string"}% \042 U+0022  
 12378 % U+0023 NUMBER SIGN; numbersign  
 12379 \DeclareTextCommand{\textnumbersign}{PD1}{\043}% U+0023  
 12380 % U+0024 DOLLAR SIGN; dollar  
 12381 \DeclareTextCommand{\textdollar}{PD1}{\044}% U+0024  
 12382 % U+0025 PERCENT SIGN; percent  
 12383 \DeclareTextCommand{\textpercent}{PD1}{\045}% U+0025  
 12384 % U+0026 AMPERSAND; ampersand  
 12385 \DeclareTextCommand{\textampersand}{PD1}{\046}% U+0026  
 \047: U+0027 APOSTROPHE; quotesingle  
  
 12386 % U+0028 LEFT PARENTHESIS; parenleft  
 12387 \DeclareTextCommand{\textparenleft}{PD1}{\string\(% \050 U+0028  
 12388 % U+0029 RIGHT PARENTHESIS; parenright  
 12389 \DeclareTextCommand{\textparenright}{PD1}{\string\)%}% \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  
 12390 % U+002E FULL STOP; period  
 12391 \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  
 12392 % U+003C LESS-THAN SIGN; less  
 12393 \DeclareTextCommand{\textless}{PD1}{<}% \074 U+003C  
 \075: U+003D EQUALS SIGN; equal  
 12394 % U+003E GREATER-THAN SIGN; greater  
 12395 \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  
 12396 % U+005C REVERSE SOLIDUS; backslash  
 12397 \DeclareTextCommand{\textbackslash}{PD1}{\134}% U+005C  
 \135: U+005D RIGHT SQUARE BRACKET; bracketright  
 12398 % U+005E CIRCUMFLEX ACCENT; asciicircum  
 12399 \DeclareTextCommand{\textasciicircum}{PD1}{\136}% U+005E  
 12400 % U+005F LOW LINE; underscore  
 12401 \DeclareTextCommand{\textunderscore}{PD1}{\137}% U+005F  
 12402 \DeclareTextCommand{\textmacronbelow}{PD1}{\137}% U+005F  
 12403 % U+0060 GRAVE ACCENT; grave  
 12404 \DeclareTextCommand{\textasciigrave}{PD1}{\140}% U+0060

\141: U+0061 LATIN SMALL LETTER A; a  
 ...  
 \150: U+0068 LATIN SMALL LETTER H; h  
 12405 % U+0069 LATIN SMALL LETTER I; i  
 12406 \DeclareTextCompositeCommand{\.}{PD1}{i}{i}% \151 U+0069  
 \152: U+006A LATIN SMALL LETTER J; j  
 ...  
 \172: U+007A LATIN SMALL LETTER Z; z  
 12407 % U+007B LEFT CURLY BRACKET; braceleft  
 12408 \DeclareTextCommand{\textbraceleft}{PD1}{\173}% U+007B  
 12409 % U+007C VERTICAL LINE; \*bar, verticalbar  
 12410 \DeclareTextCommand{\textbar}{PD1}{|}% U+007C  
 12411 % U+007D RIGHT CURLY BRACKET; braceright  
 12412 \DeclareTextCommand{\textbraceright}{PD1}{\175}% U+007D  
 12413 % U+007E TILDE; asciitilde  
 12414 \DeclareTextCommand{\textasciitilde}{PD1}{\176}% U+007E  
 Slot \177 (0x7F) is undefined in PDFDocEncoding.  
 12415 % U+2022 BULLET; bullet  
 12416 \DeclareTextCommand{\textbullet}{PD1}{\200}% U+2022  
 12417 % U+2020 DAGGER; dagger  
 12418 \DeclareTextCommand{\textdagger}{PD1}{\201}% U+2020  
 12419 % U+2021 DOUBLE DAGGER; daggerdbl  
 12420 \DeclareTextCommand{\textdaggerdbl}{PD1}{\202}% U+2021  
 12421 % U+2026 HORIZONTAL ELLIPSIS; ellipsis  
 12422 \DeclareTextCommand{\textellipsis}{PD1}{\203}% U+2026  
 12423 % U+2014 EM DASH; emdash  
 12424 \DeclareTextCommand{\textemdash}{PD1}{\204}% U+2014  
 12425 % U+2013 EN DASH; endash  
 12426 \DeclareTextCommand{\textendash}{PD1}{\205}% U+2013  
 12427 % U+0192 LATIN SMALL LETTER F WITH HOOK; florin  
 12428 \DeclareTextCommand{\textflorin}{PD1}{\206}% U+0192  
 12429 % U+2044 FRACTION SLASH; fraction  
 12430 \DeclareTextCommand{\textfractionsolidus}{PD1}{\207}% U+2044  
 12431 % U+2039 SINGLE LEFT-POINTING ANGLE QUOTATION MARK; guilsinglleft  
 12432 \DeclareTextCommand{\guilsinglleft}{PD1}{\210}% U+2039  
 12433 % U+203A SINGLE RIGHT-POINTING ANGLE QUOTATION MARK; guilsinglright  
 12434 \DeclareTextCommand{\guilsinglright}{PD1}{\211}% U+203A  
 12435 % U+2212 MINUS SIGN; minus  
 12436 \DeclareTextCommand{\textminus}{PD1}{\212}% U+2212  
 12437 % U+2030 PER MILLE SIGN; perthousand  
 12438 \DeclareTextCommand{\textperthousand}{PD1}{\213}% U+2030  
 12439 % U+201E DOUBLE LOW-9 QUOTATION MARK; quotedblbase  
 12440 \DeclareTextCommand{\quotedblbase}{PD1}{\214}% U+201E  
 12441 % U+201C LEFT DOUBLE QUOTATION MARK; quotedblleft  
 12442 \DeclareTextCommand{\textquotedblleft}{PD1}{\215}% U+201C  
 12443 % U+201D RIGHT DOUBLE QUOTATION MARK; quotedblright  
 12444 \DeclareTextCommand{\textquotedblright}{PD1}{\216}% U+201D  
 12445 % U+2018 LEFT SINGLE QUOTATION MARK; quoteleft  
 12446 \DeclareTextCommand{\textquoteleft}{PD1}{\217}% U+2018  
 12447 % U+2019 RIGHT SINGLE QUOTATION MARK; quoteright  
 12448 \DeclareTextCommand{\textquoteright}{PD1}{\220}% U+2019  
 12449 % U+201A SINGLE LOW-9 QUOTATION MARK; quotesinglbase  
 12450 \DeclareTextCommand{\quotesinglbase}{PD1}{\221}% U+201A  
 12451 % U+2122 TRADE MARK SIGN; trademark  
 12452 \DeclareTextCommand{\texttrademark}{PD1}{\222}% U+2122  
 12453 % U+FB01 LATIN SMALL LIGATURE FI; fi

12454 \DeclareTextCommand{\textfi}{PD1}{\223}% U+FB01  
12455 % U+FB02 LATIN SMALL LIGATURE FL; fl  
12456 \DeclareTextCommand{\textfl}{PD1}{\224}% U+FB02  
12457 % U+0141 LATIN CAPITAL LETTER L WITH STROKE; Lslash  
12458 \DeclareTextCommand{\L}{PD1}{\225}% U+0141  
12459 % U+0152 LATIN CAPITAL LIGATURE OE; OE  
12460 \DeclareTextCommand{\OE}{PD1}{\226}% U+0152  
12461 % U+0160 LATIN CAPITAL LETTER S WITH CARON; Scaron  
12462 \DeclareTextCompositeCommand{\v}{PD1}{S}{\227}% U+0160  
12463 % U+0178 LATIN CAPITAL LETTER Y WITH DIAERESIS; Ydieresis  
12464 \DeclareTextCompositeCommand{"}{PD1}{Y}{\230}% U+0178  
12465 \DeclareTextCommand{\IJ}{PD1}{\230}  
12466 % U+017D LATIN CAPITAL LETTER Z WITH CARON; Zcaron  
12467 \DeclareTextCompositeCommand{\v}{PD1}{Z}{\231}% U+017D  
12468 % U+0131 LATIN SMALL LETTER DOTLESS I; dotlessi  
12469 \DeclareTextCommand{\i}{PD1}{\232}% U+0131  
12470 % U+0142 LATIN SMALL LETTER L WITH STROKE; lslash  
12471 \DeclareTextCommand{\l}{PD1}{\233}% U+0142  
12472 % U+0153 LATIN SMALL LIGATURE OE; oe  
12473 \DeclareTextCommand{\oe}{PD1}{\234}% U+0153  
12474 % U+0161 LATIN SMALL LETTER S WITH CARON; scaron  
12475 \DeclareTextCompositeCommand{\v}{PD1}{s}{\235}% U+0161  
12476 % U+017E LATIN SMALL LETTER Z WITH CARON; zcaron  
12477 \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.  
12478 % U+20AC EURO SIGN; \*Euro, euro  
12479 \DeclareTextCommand{\texteuro}{PD1}{\240}% U+20AC  
12480 % U+00A1 INVERTED EXCLAMATION MARK; exclamdown  
12481 \DeclareTextCommand{\textexclamdown}{PD1}{\241}% U+00A1  
12482 % U+00A2 CENT SIGN; cent  
12483 \DeclareTextCommand{\textcent}{PD1}{\242}% U+00A2  
12484 % U+00A3 POUND SIGN; sterling  
12485 \DeclareTextCommand{\textsterling}{PD1}{\243}% U+00A3  
12486 % U+00A4 CURRENCY SIGN; currency  
12487 \DeclareTextCommand{\textcurrency}{PD1}{\244}% U+00A4  
12488 % U+00A5 YEN SIGN; yen  
12489 \DeclareTextCommand{\textyen}{PD1}{\245}% U+00A5  
12490 % U+00A6 BROKEN BAR; brokenbar  
12491 \DeclareTextCommand{\textbrokenbar}{PD1}{\246}% U+00A6  
12492 % U+00A7 SECTION SIGN; section  
12493 \DeclareTextCommand{\textsection}{PD1}{\247}% U+00A7  
12494 % U+00A8 DIAERESIS; dieresis  
12495 \DeclareTextCommand{\textasciidieresis}{PD1}{\250}% U+00A8  
12496 % U+00A9 COPYRIGHT SIGN; copyright  
12497 \DeclareTextCommand{\textcopyright}{PD1}{\251}% U+00A9  
12498 % U+00AA FEMININE ORDINAL INDICATOR; ordfeminine  
12499 \DeclareTextCommand{\textordfeminine}{PD1}{\252}% U+00AA  
12500 % U+00AB LEFT-POINTING DOUBLE ANGLE QUOTATION MARK; guillemotleft  
12501 \DeclareTextCommand{\guillemotleft}{PD1}{\253}% U+00AB  
12502 % U+00AC NOT SIGN; logicalnot  
12503 \DeclareTextCommand{\textlogicalnot}{PD1}{\254}% U+00AC  
12504 \DeclareTextCommand{\textlnot}{PD1}{\254}% logical not  
No glyph \255 in PDFDocEncoding.  
12505 % U+00AE REGISTERED SIGN; registered  
12506 \DeclareTextCommand{\textregistered}{PD1}{\256}% U+00AE  
12507 % U+00AF MACRON; \*macron, overscore

12508 \DeclareTextCommand{\textasciimacron}{PD1}{\257}% U+00AF  
12509 % U+00B0 DEGREE SIGN; degree  
12510 \DeclareTextCommand{\textdegree}{PD1}{\260}% U+00B0  
12511 % U+00B1 PLUS-MINUS SIGN; plusminus  
12512 \DeclareTextCommand{\textplusminus}{PD1}{\261}% U+00B1  
12513 % U+00B2 SUPERSCRIPT TWO; twosuperior  
12514 \DeclareTextCommand{\texttwosuperior}{PD1}{\262}% U+00B2  
12515 % U+00B3 SUPERSCRIPT THREE; threesuperior  
12516 \DeclareTextCommand{\textthreesuperior}{PD1}{\263}% U+00B3  
12517 % U+00B4 ACUTE ACCENT; acute  
12518 \DeclareTextCommand{\textacute}{PD1}{\264}% U+00B4  
12519 % U+00B5 MICRO SIGN; mu, mu1  
12520 \DeclareTextCommand{\textmu}{PD1}{\265}% U+00B5  
12521 % U+00B6 PILCROW SIGN; paragraph  
12522 \DeclareTextCommand{\textparagraph}{PD1}{\266}% U+00B6  
12523 % U+00B7 MIDDLE DOT; middot, \*periodcentered  
12524 \DeclareTextCommand{\textperiodcentered}{PD1}{\267}% U+00B7  
12525 % U+00B8 CEDILLA; cedilla  
12526 \DeclareTextCommand{\textcedilla}{PD1}{\270}% U+00B8  
12527 % U+00B9 SUPERSCRIPT ONE; onesuperior  
12528 \DeclareTextCommand{\textonesuperior}{PD1}{\271}% U+00B9  
12529 % U+00BA MASCULINE ORDINAL INDICATOR; ordmasculine  
12530 \DeclareTextCommand{\textordmasculine}{PD1}{\272}% U+00BA  
12531 % U+00BB RIGHT-POINTING DOUBLE ANGLE QUOTATION MARK; guillemotright  
12532 \DeclareTextCommand{\guillemotright}{PD1}{\273}% U+00BB  
12533 % U+00BC VULGAR FRACTION ONE QUARTER; onequarter  
12534 \DeclareTextCommand{\textonequarter}{PD1}{\274}% U+00BC  
12535 % U+00BD VULGAR FRACTION ONE HALF; onehalf  
12536 \DeclareTextCommand{\textonehalf}{PD1}{\275}% U+00BD  
12537 % U+00BE VULGAR FRACTION THREE QUARTERS; threequarters  
12538 \DeclareTextCommand{\textthreequarters}{PD1}{\276}% U+00BE  
12539 % U+00BF INVERTED QUESTION MARK; questiondown  
12540 \DeclareTextCommand{\textquestiondown}{PD1}{\277}% U+00BF  
12541 % U+00C0 LATIN CAPITAL LETTER A WITH GRAVE; Agrave  
12542 \DeclareTextCompositeCommand{\`}{PD1}{A}{\300}% U+00C0  
12543 % U+00C1 LATIN CAPITAL LETTER A WITH ACUTE; Aacute  
12544 \DeclareTextCompositeCommand{\'}{PD1}{A}{\301}% U+00C1  
12545 % U+00C2 LATIN CAPITAL LETTER A WITH CIRCUMFLEX; Acircumflex  
12546 \DeclareTextCompositeCommand{\^}{PD1}{A}{\302}% U+00C2  
12547 % U+00C3 LATIN CAPITAL LETTER A WITH TILDE; Atilde  
12548 \DeclareTextCompositeCommand{\~}{PD1}{A}{\303}% U+00C3  
12549 % U+00C4 LATIN CAPITAL LETTER A WITH DIAERESIS; Adieresis  
12550 \DeclareTextCompositeCommand{\"}{PD1}{A}{\304}% U+00C4  
12551 % U+00C5 LATIN CAPITAL LETTER A WITH RING ABOVE; Aring  
12552 \DeclareTextCompositeCommand{\r}{PD1}{A}{\305}% U+00C5  
12553 % U+00C6 LATIN CAPITAL LETTER AE; AE  
12554 \DeclareTextCommand{\AE}{PD1}{\306}% U+00C6  
12555 % U+00C7 LATIN CAPITAL LETTER C WITH CEDILLA; Ccedilla  
12556 \DeclareTextCompositeCommand{\c}{PD1}{C}{\307}% U+00C7  
12557 % U+00C8 LATIN CAPITAL LETTER E WITH GRAVE; Egrave  
12558 \DeclareTextCompositeCommand{\`}{PD1}{E}{\310}% U+00C8  
12559 % U+00C9 LATIN CAPITAL LETTER E WITH ACUTE; Eacute  
12560 \DeclareTextCompositeCommand{\'}{PD1}{E}{\311}% U+00C9  
12561 % U+00CA LATIN CAPITAL LETTER E WITH CIRCUMFLEX; Ecircumflex  
12562 \DeclareTextCompositeCommand{\^}{PD1}{E}{\312}% U+00CA  
12563 % U+00CB LATIN CAPITAL LETTER E WITH DIAERESIS; Edieresis  
12564 \DeclareTextCompositeCommand{\"}{PD1}{E}{\313}% U+00CB



12565 % U+00CC LATIN CAPITAL LETTER I WITH GRAVE; Igrave  
12566 \DeclareTextCompositeCommand{\`}{PD1}{I}{\314}% U+00CC  
12567 % U+00CD LATIN CAPITAL LETTER I WITH ACUTE; Iacute  
12568 \DeclareTextCompositeCommand{\'}{PD1}{I}{\315}% U+00CD  
12569 % U+00CE LATIN CAPITAL LETTER I WITH CIRCUMFLEX; Icircumflex  
12570 \DeclareTextCompositeCommand{\^}{PD1}{I}{\316}% U+00CE  
12571 % U+00CF LATIN CAPITAL LETTER I WITH DIAERESIS; Idieresis  
12572 \DeclareTextCompositeCommand{\"}{PD1}{I}{\317}% U+00CF  
12573 % U+00D0 LATIN CAPITAL LETTER ETH; Eth  
12574 \DeclareTextCommand{\DH}{PD1}{\320}% U+00D0  
12575 \DeclareTextCommand{\DJ}{PD1}{\320}% U+00D0  
12576 % U+00D1 LATIN CAPITAL LETTER N WITH TILDE; Ntilde  
12577 \DeclareTextCompositeCommand{\~}{PD1}{N}{\321}% U+00D1  
12578 % U+00D2 LATIN CAPITAL LETTER O WITH GRAVE; Ograve  
12579 \DeclareTextCompositeCommand{\`}{PD1}{O}{\322}% U+00D2  
12580 % U+00D3 LATIN CAPITAL LETTER O WITH ACUTE; Oacute  
12581 \DeclareTextCompositeCommand{\'}{PD1}{O}{\323}% U+00D3  
12582 % U+00D4 LATIN CAPITAL LETTER O WITH CIRCUMFLEX; Ocircumflex  
12583 \DeclareTextCompositeCommand{\^}{PD1}{O}{\324}% U+00D4  
12584 % U+00D5 LATIN CAPITAL LETTER O WITH TILDE; Otilde  
12585 \DeclareTextCompositeCommand{\~}{PD1}{O}{\325}% U+00D5  
12586 % U+00D6 LATIN CAPITAL LETTER O WITH DIAERESIS; Odieresis  
12587 \DeclareTextCompositeCommand{\"}{PD1}{O}{\326}% U+00D6  
12588 % U+00D7 MULTIPLICATION SIGN; multiply  
12589 \DeclareTextCommand{\textmultiply}{PD1}{\327}% U+00D7  
12590 % U+00D8 LATIN CAPITAL LETTER O WITH STROKE; Oslash  
12591 \DeclareTextCommand{\O}{PD1}{\330}% U+00D8  
12592 % U+00D9 LATIN CAPITAL LETTER U WITH GRAVE; Ugrave  
12593 \DeclareTextCompositeCommand{\`}{PD1}{U}{\331}% U+00D9  
12594 % U+00DA LATIN CAPITAL LETTER U WITH ACUTE; Uacute  
12595 \DeclareTextCompositeCommand{\'}{PD1}{U}{\332}% U+00DA  
12596 % U+00DB LATIN CAPITAL LETTER U WITH CIRCUMFLEX; Ucircumflex  
12597 \DeclareTextCompositeCommand{\^}{PD1}{U}{\333}% U+00DB  
12598 % U+00DC LATIN CAPITAL LETTER U WITH DIAERESIS; Udieresis  
12599 \DeclareTextCompositeCommand{\"}{PD1}{U}{\334}% U+00DC  
12600 % U+00DD LATIN CAPITAL LETTER Y WITH ACUTE; Yacute  
12601 \DeclareTextCompositeCommand{\'}{PD1}{Y}{\335}% U+00DD  
12602 % U+00DE LATIN CAPITAL LETTER THORN; Thorn  
12603 \DeclareTextCommand{\TH}{PD1}{\336}% U+00DE  
12604 % U+00DF LATIN SMALL LETTER SHARP S; germandbls  
12605 \DeclareTextCommand{\ss}{PD1}{\337}% U+00DF  
12606 % U+00E0 LATIN SMALL LETTER A WITH GRAVE; agrave  
12607 \DeclareTextCompositeCommand{\`}{PD1}{a}{\340}% U+00E0  
12608 % U+00E1 LATIN SMALL LETTER A WITH ACUTE; aacute  
12609 \DeclareTextCompositeCommand{\'}{PD1}{a}{\341}% U+00E1  
12610 % U+00E2 LATIN SMALL LETTER A WITH CIRCUMFLEX; acircumflex  
12611 \DeclareTextCompositeCommand{\^}{PD1}{a}{\342}% U+00E2  
12612 % U+00E3 LATIN SMALL LETTER A WITH TILDE; atilde  
12613 \DeclareTextCompositeCommand{\~}{PD1}{a}{\343}% U+00E3  
12614 % U+00E4 LATIN SMALL LETTER A WITH DIAERESIS; adieresis  
12615 \DeclareTextCompositeCommand{\"}{PD1}{a}{\344}% U+00E4  
12616 % U+00E5 LATIN SMALL LETTER A WITH RING ABOVE; aring  
12617 \DeclareTextCompositeCommand{\r}{PD1}{a}{\345}% U+00E5  
12618 % U+00E6 LATIN SMALL LETTER AE; ae  
12619 \DeclareTextCommand{\ae}{PD1}{\346}% U+00E6  
12620 % U+00E7 LATIN SMALL LETTER C WITH CEDILLA; ccedilla  
12621 \DeclareTextCompositeCommand{\c}{PD1}{c}{\347}% U+00E7

12622 % U+00E8 LATIN SMALL LETTER E WITH GRAVE; egrave  
 12623 \DeclareTextCompositeCommand{\`}{PD1}{e}{\350}% U+00E8  
 12624 % U+00E9 LATIN SMALL LETTER E WITH ACUTE; eacute  
 12625 \DeclareTextCompositeCommand{\'}{PD1}{e}{\351}% U+00E9  
 12626 % U+00EA LATIN SMALL LETTER E WITH CIRCUMFLEX; ecircumflex  
 12627 \DeclareTextCompositeCommand{\^}{PD1}{e}{\352}% U+00EA  
 12628 % U+00EB LATIN SMALL LETTER E WITH DIAERESIS; edieresis  
 12629 \DeclareTextCompositeCommand{\"}{PD1}{e}{\353}% U+00EB  
 12630 % U+00EC LATIN SMALL LETTER I WITH GRAVE; igrave  
 12631 \DeclareTextCompositeCommand{\`}{PD1}{i}{\354}% U+00EC  
 12632 \DeclareTextCompositeCommand{\'}{PD1}{i}{\354}% U+00EC  
 12633 % U+00ED LATIN SMALL LETTER I WITH ACUTE; iacute  
 12634 \DeclareTextCompositeCommand{\'}{PD1}{i}{\355}% U+00ED  
 12635 \DeclareTextCompositeCommand{\'}{PD1}{i}{\355}% U+00ED  
 12636 % U+00EE LATIN SMALL LETTER I WITH CIRCUMFLEX; icircumflex  
 12637 \DeclareTextCompositeCommand{\^}{PD1}{i}{\356}% U+00EE  
 12638 \DeclareTextCompositeCommand{\^}{PD1}{i}{\356}% U+00EE  
 12639 % U+00EF LATIN SMALL LETTER I WITH DIAERESIS; idieresis  
 12640 \DeclareTextCompositeCommand{\"}{PD1}{i}{\357}% U+00EF  
 12641 \DeclareTextCompositeCommand{\"}{PD1}{i}{\357}% U+00EF  
 12642 % U+00F0 LATIN SMALL LETTER ETH; eth  
 12643 \DeclareTextCommand{\dh}{PD1}{\360}% U+00F0  
 12644 % U+00F1 LATIN SMALL LETTER N WITH TILDE; ntilde  
 12645 \DeclareTextCompositeCommand{\~}{PD1}{n}{\361}% U+00F1  
 12646 % U+00F2 LATIN SMALL LETTER O WITH GRAVE; ograve  
 12647 \DeclareTextCompositeCommand{\`}{PD1}{o}{\362}% U+00F2  
 12648 % U+00F3 LATIN SMALL LETTER O WITH ACUTE; oacute  
 12649 \DeclareTextCompositeCommand{\'}{PD1}{o}{\363}% U+00F3  
 12650 % U+00F4 LATIN SMALL LETTER O WITH CIRCUMFLEX; ocircumflex  
 12651 \DeclareTextCompositeCommand{\^}{PD1}{o}{\364}% U+00F4  
 12652 % U+00F5 LATIN SMALL LETTER O WITH TILDE; otilde  
 12653 \DeclareTextCompositeCommand{\~}{PD1}{o}{\365}% U+00F5  
 12654 % U+00F6 LATIN SMALL LETTER O WITH DIAERESIS; odieresis  
 12655 \DeclareTextCompositeCommand{\"}{PD1}{o}{\366}% U+00F6  
 12656 % U+00F7 DIVISION SIGN; divide  
 12657 \DeclareTextCommand{\textdivide}{PD1}{\367}% U+00F7  
 12658 % U+00F8 LATIN SMALL LETTER O WITH STROKE; oslash  
 12659 \DeclareTextCommand{\o}{PD1}{\370}% U+00F8  
 12660 % U+00F9 LATIN SMALL LETTER U WITH GRAVE; ugrave  
 12661 \DeclareTextCompositeCommand{\`}{PD1}{u}{\371}% U+00F9  
 12662 % U+00FA LATIN SMALL LETTER U WITH ACUTE; uacute  
 12663 \DeclareTextCompositeCommand{\'}{PD1}{u}{\372}% U+00FA  
 12664 % U+00FB LATIN SMALL LETTER U WITH CIRCUMFLEX; ucircumflex  
 12665 \DeclareTextCompositeCommand{\^}{PD1}{u}{\373}% U+00FB  
 12666 % U+00FC LATIN SMALL LETTER U WITH DIAERESIS; udieresis  
 12667 \DeclareTextCompositeCommand{\"}{PD1}{u}{\374}% U+00FC  
 12668 % U+00FD LATIN SMALL LETTER Y WITH ACUTE; yacute  
 12669 \DeclareTextCompositeCommand{\'}{PD1}{y}{\375}% U+00FD  
 12670 % U+00FE LATIN SMALL LETTER THORN; thorn  
 12671 \DeclareTextCommand{\th}{PD1}{\376}% U+00FE  
 12672 % U+00FF LATIN SMALL LETTER Y WITH DIAERESIS; ydieresis  
 12673 \DeclareTextCompositeCommand{\"}{PD1}{y}{\377}% U+00FF  
 12674 \DeclareTextCommand{\ij}{PD1}{\377}% U+00FF

Glyphs that consist of several characters.

12675 \DeclareTextCommand{\SS}{PD1}{SS}  
 12676 \DeclareTextCommand{\textcelsius}{PD1}{\textdegree C}

Aliases (german.sty)

```

12677 \DeclareTextCommand{\textglqq}{PD1}{\quotedblbase}
12678 \DeclareTextCommand{\textgrqq}{PD1}{\textquotedblleft}
12679 \DeclareTextCommand{\textglq}{PD1}{\quotesinglbase}
12680 \DeclareTextCommand{\textgrq}{PD1}{\textquoteleft}
12681 \DeclareTextCommand{\textflqq}{PD1}{\guillemotleft}
12682 \DeclareTextCommand{\textfrqq}{PD1}{\guillemotright}
12683 \DeclareTextCommand{\textflq}{PD1}{\guilsinglleft}
12684 \DeclareTextCommand{\textfrq}{PD1}{\guilsinglright}

```

Aliases (math names)

```

12685 \DeclareTextCommand{\textneg}{PD1}{\textlogicalnot}
12686 \DeclareTextCommand{\texttimes}{PD1}{\textmultiply}
12687 \DeclareTextCommand{\textdiv}{PD1}{\textdivide}
12688 \DeclareTextCommand{\textpm}{PD1}{\textplusminus}
12689 \DeclareTextCommand{\textcdot}{PD1}{\textperiodcentered}
12690 \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;

```

12691 \DeclareTextCompositeCommand{\k}{PD1}{a}{a}% aogonek
12692 \DeclareTextCompositeCommand{\'}{PD1}{c}{c}% cacute
12693 \DeclareTextCompositeCommand{\k}{PD1}{e}{e}% eogonek
12694 \DeclareTextCompositeCommand{\'}{PD1}{n}{n}% nacute
12695 \DeclareTextCompositeCommand{\'}{PD1}{s}{s}% sacute
12696 \DeclareTextCompositeCommand{\'}{PD1}{z}{z}% zacute
12697 \DeclareTextCompositeCommand{\.}{PD1}{z}{z}% zdot
12698 \DeclareTextCompositeCommand{\k}{PD1}{A}{A}% Aogonek
12699 \DeclareTextCompositeCommand{\'}{PD1}{C}{C}% Cacute
12700 \DeclareTextCompositeCommand{\k}{PD1}{E}{E}% Eogonek
12701 \DeclareTextCompositeCommand{\'}{PD1}{N}{N}% Nacute
12702 \DeclareTextCompositeCommand{\'}{PD1}{S}{S}% Sacute
12703 \DeclareTextCompositeCommand{\'}{PD1}{Z}{Z}% Zacute
12704 \DeclareTextCompositeCommand{\.}{PD1}{Z}{Z}% Zdot

```

```

12705 </pdlenc>

```

## 50.2 PU encoding

```

12706 <*puenc>
12707 \DeclareFontEncoding{PU}{}{}

```

### 50.2.1 NFSS2 accents

```

12708 % U+0300 COMBINING GRAVE ACCENT; gravecmb, *gravecomb
12709 \DeclareTextCommand{\'}{PU}[1]{#1\83\000}% U+0300
12710 % U+0301 COMBINING ACUTE ACCENT; acutecmb, *acutecomb
12711 \DeclareTextCommand{\'}{PU}[1]{#1\83\001}% U+0301
12712 % U+0302 COMBINING CIRCUMFLEX ACCENT; circumflexcmb
12713 \DeclareTextCommand{\^}{PU}[1]{#1\83\002}% U+0302
12714 % U+0303 COMBINING TILDE; tildecmb, *tildecomb
12715 \DeclareTextCommand{\~}{PU}[1]{#1\83\003}% U+0303
12716 % U+0304 COMBINING MACRON; macroncmb
12717 \DeclareTextCommand{\=}{PU}[1]{#1\83\004}% U+0304
12718 % U+0306 COMBINING BREVE; brevecmb
12719 \DeclareTextCommand{\u}{PU}[1]{#1\83\006}% U+0306
12720 \DeclareTextCommand{\U}{PU}[1]{#1\83\006}% U+0306
12721 % U+0307 COMBINING DOT ABOVE; dotaccentcmb
12722 \DeclareTextCommand{\.}{PU}[1]{#1\83\007}% U+0307
12723 % U+0308 COMBINING DIAERESIS; dieresiscmb
12724 \DeclareTextCommand{\"}{PU}[1]{#1\83\010}% U+0308
12725 % U+030A COMBINING RING ABOVE; ringcmb

```

```

12726 \DeclareTextCommand{\r}{PU}[1]{#1\83\012}% U+030A
12727 % U+030B COMBINING DOUBLE ACUTE ACCENT; hungarumlautcmb
12728 \DeclareTextCommand{\H}{PU}[1]{#1\83\013}% U+030B
12729 % U+030C COMBINING CARON; caroncmb
12730 \DeclareTextCommand{\v}{PU}[1]{#1\83\014}% U+030C
12731 % U+030F COMBINING DOUBLE GRAVE ACCENT; dblgravecmb
12732 \DeclareTextCommand{\G}{PU}[1]{#1\83\017}% U+030F
12733 \DeclareTextCommand{\C}{PU}[1]{#1\83\017}% U+030F
12734 % U+0311 COMBINING INVERTED BREVE; breveinvertedcmb
12735 \DeclareTextCommand{\newtie}{PU}[1]{#1\83\021}% U+0311
12736 % U+0323 COMBINING DOT BELOW; dotbelowcmb, *dotbelowcmb
12737 \DeclareTextCommand{\d}{PU}[1]{#1\83\043}% U+0323
12738 % U+0331 COMBINING MACRON BELOW; macronbelowcmb
12739 \DeclareTextCommand{\b}{PU}[1]{#1\83\061}% U+0331
12740 % U+0327 COMBINING CEDILLA; cedillacmb
12741 \DeclareTextCommand{\c}{PU}[1]{#1\83\047}% U+0327
12742 % U+0328 COMBINING OGONEK; ogonekcmb
12743 \DeclareTextCommand{\k}{PU}[1]{#1\83\050}% U+0328
12744 % U+0361 COMBINING DOUBLE INVERTED BREVE; breveinverteddoublecmb
12745 \DeclareTextCommand{\t}{PU}[1]{#1\83\141}% U+0361
12746 % U+20DD COMBINING ENCLOSING CIRCLE
12747 \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.
12748 \DeclareTextCompositeCommand{\`}{PU}{\@empty}{\textasciigrave}
12749 \DeclareTextCompositeCommand{\'}{PU}{\@empty}{\textacute}
12750 \DeclareTextCompositeCommand{\~}{PU}{\@empty}{\textasciicircum}
12751 \DeclareTextCompositeCommand{\~}{PU}{\@empty}{\texttilde}
12752 \DeclareTextCompositeCommand{\"}{PU}{\@empty}{\textasciidieresis}
12753 \DeclareTextCompositeCommand{\r}{PU}{\@empty}{\textring}
12754 \DeclareTextCompositeCommand{\v}{PU}{\@empty}{\textasciicaron}
12755 \DeclareTextCompositeCommand{\.}{PU}{\@empty}{\textdotaccent}
12756 \DeclareTextCompositeCommand{\c}{PU}{\@empty}{\textcedilla}
12757 \DeclareTextCompositeCommand{\u}{PU}{\@empty}{\textasciibreve}
12758 \DeclareTextCompositeCommand{\G}{PU}{\@empty}{\textdoublegrave}
12759 \DeclareTextCompositeCommand{\=}{PU}{\@empty}{\textasciimacron}
12760 \DeclareTextCompositeCommand{\H}{PU}{\@empty}{\texthungarumlaut}
12761 \DeclareTextCompositeCommand{\k}{PU}{\@empty}{\textogonek}
12762 \DeclareTextCompositeCommand{\b}{PU}{\@empty}{\textmacronbelow}
12763 \DeclareTextCompositeCommand{\d}{PU}{\@empty}{\textdotbelow}
12764 \DeclareTextCompositeCommand{\t}{PU}{\@empty}{\texttie}
12765 \DeclareTextCompositeCommand{\newtie}{PU}{\@empty}{\textnewtie}
12766 \DeclareTextCompositeCommand{\textcircled}{PU}{\@empty}{\textbigcircle}

12767 \DeclareTextCompositeCommand{\`}{PU}{\ }{\textasciigrave}
12768 \DeclareTextCompositeCommand{\'}{PU}{\ }{\textacute}
12769 \DeclareTextCompositeCommand{\~}{PU}{\ }{\textasciicircum}
12770 \DeclareTextCompositeCommand{\~}{PU}{\ }{\texttilde}
12771 \DeclareTextCompositeCommand{\"}{PU}{\ }{\textasciidieresis}
12772 \DeclareTextCompositeCommand{\r}{PU}{\ }{\textring}
12773 \DeclareTextCompositeCommand{\v}{PU}{\ }{\textasciicaron}
12774 \DeclareTextCompositeCommand{\.}{PU}{\ }{\textdotaccent}
12775 \DeclareTextCompositeCommand{\c}{PU}{\ }{\textcedilla}
12776 \DeclareTextCompositeCommand{\u}{PU}{\ }{\textasciibreve}
12777 \DeclareTextCompositeCommand{\G}{PU}{\ }{\textdoublegrave}
12778 \DeclareTextCompositeCommand{\=}{PU}{\ }{\textasciimacron}
12779 \DeclareTextCompositeCommand{\H}{PU}{\ }{\texthungarumlaut}
12780 \DeclareTextCompositeCommand{\k}{PU}{\ }{\textogonek}

```

```

12781 \DeclareTextCompositeCommand{\b}{PU}{\ }{\textmacronbelow}
12782 \DeclareTextCompositeCommand{\d}{PU}{\ }{\textdotbelow}
12783 \DeclareTextCompositeCommand{\t}{PU}{\ }{\texttie}
12784 \DeclareTextCompositeCommand{\newtie}{PU}{\ }{\textnewtie}
12785 \DeclareTextCompositeCommand{\textcircled}{PU}{\ }{\textbigcircle}

```

Accents for capitals (see encoding TS1)

```

12786 \DeclareTextCommand{\capitalcedilla}{PU}[1]{\c{#1}}
12787 \DeclareTextCommand{\capitalogonek}{PU}[1]{\k{#1}}
12788 \DeclareTextCommand{\capitalgrave}{PU}[1]{\`{#1}}
12789 \DeclareTextCommand{\capitalacute}{PU}[1]{\'{#1}}
12790 \DeclareTextCommand{\capitalcircumflex}{PU}[1]{\^{#1}}
12791 \DeclareTextCommand{\capitaltilde}{PU}[1]{\~{#1}}
12792 \DeclareTextCommand{\capitaldieresis}{PU}[1]{\"{#1}}
12793 \DeclareTextCommand{\capitalhungarumlaut}{PU}[1]{\H{#1}}
12794 \DeclareTextCommand{\capitalring}{PU}[1]{\r{#1}}
12795 \DeclareTextCommand{\capitalcaron}{PU}[1]{\v{#1}}
12796 \DeclareTextCommand{\capitalbreve}{PU}[1]{\u{#1}}
12797 \DeclareTextCommand{\capitalmacron}{PU}[1]{\={#1}}
12798 \DeclareTextCommand{\capitaldotaccent}{PU}[1]{\.{#1}}
12799 \DeclareTextCommand{\capitaltie}{PU}[1]{\t{#1}}
12800 \DeclareTextCommand{\capitalnewtie}{PU}[1]{\newtie{#1}}

```

### 50.2.2 Basic Latin: U+0000 to U+007F

Special white space escape characters.

```

12801 % U+0009 (CHARACTER TABULATION)
12802 \DeclareTextCommand{\textHT}{PU}{\80\011}% U+0009
12803 % U+000A (LINE FEED)
12804 \DeclareTextCommand{\textLF}{PU}{\80\012}% U+000A
12805 % U+000D (CARRIAGE RETURN)
12806 \DeclareTextCommand{\textCR}{PU}{\80\015}% U+000D

\80\040: U+0020 SPACE; space, spacehackarabic
\80\041: U+0021 EXCLAMATION MARK; exclam

12807 % U+0022 QUOTATION MARK; quotedbl
12808 \DeclareTextCommand{\textquotedbl}{PU}{\string"}% \80\042 U+0022
12809 % U+0023 NUMBER SIGN; numbersign
12810 \DeclareTextCommand{\textnumbersign}{PU}{\80\043}% U+0023
12811 % U+0024 DOLLAR SIGN; dollar
12812 \DeclareTextCommand{\textdollar}{PU}{\80\044}% U+0024
12813 % U+0025 PERCENT SIGN; percent
12814 \DeclareTextCommand{\textpercent}{PU}{\80\045}% U+0025
12815 % U+0026 AMPERSAND; ampersand
12816 \DeclareTextCommand{\textampersand}{PU}{\80\046}% U+0026
12817 % U+0027 APOSTROPHE; quotesingle
12818 \DeclareTextCommand{\textquotesingle}{PU}{\80\047}% U+0027
12819 % U+0028 LEFT PARENTHESIS; parenleft
12820 \DeclareTextCommand{\textparenleft}{PU}{\80\050}% U+0028
12821 % U+0029 RIGHT PARENTHESIS; parenright
12822 \DeclareTextCommand{\textparenright}{PU}{\80\051}% U+0029
12823 % U+002A ASTERISK; asterisk
12824 \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  
 12825 % U+003C LESS-THAN SIGN; less  
 12826 \DeclareTextCommand{\textless}{PU}{<}% \80\074 U+003C  
 \80\075: U+003D EQUALS SIGN; equal  
 12827 % U+003E GREATER-THAN SIGN; greater  
 12828 \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  
 12829 % U+005C REVERSE SOLIDUS; backslash  
 12830 \DeclareTextCommand{\textbackslash}{PU}{\80\134}% U+005C  
 \80\135: U+005D RIGHT SQUARE BRACKET; bracketright  
 12831 % U+005E CIRCUMFLEX ACCENT; asciicircum  
 12832 \DeclareTextCommand{\textasciicircum}{PU}{\80\136}% U+005E  
 12833 % U+005F LOW LINE; underscore  
 12834 \DeclareTextCommand{\textunderscore}{PU}{\80\137}% U+005F  
 12835 % U+0060 GRAVE ACCENT; grave  
 12836 \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  
 12837 % U+0069 LATIN SMALL LETTER I; i  
 12838 \DeclareTextCompositeCommand{\.}{PU}{\i}{i}% \80\151 U+0069  
 12839 \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  
 12840 % U+007B LEFT CURLY BRACKET; braceleft  
 12841 \DeclareTextCommand{\textbraceleft}{PU}{\80\173}% U+007B  
 12842 % U+007C VERTICAL LINE; \*bar, verticalbar  
 12843 \DeclareTextCommand{\textbar}{PU}{|}% \80\174 U+007C  
 12844 % U+007D RIGHT CURLY BRACKET; braceright  
 12845 \DeclareTextCommand{\textbraceright}{PU}{\80\175}% U+007D  
 12846 % U+007E TILDE; asciitilde  
 12847 \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  
 12848 % U+00A1 INVERTED EXCLAMATION MARK; exclamdown  
 12849 \DeclareTextCommand{\textexclamdown}{PU}{\80\241}% U+00A1  
 12850 % U+00A2 CENT SIGN; cent  
 12851 \DeclareTextCommand{\textcent}{PU}{\80\242}% U+00A2  
 12852 % U+00A3 POUND SIGN; sterling  
 12853 \DeclareTextCommand{\textsterling}{PU}{\80\243}% U+00A3  
 12854 % U+00A4 CURRENCY SIGN; currency

12855 \DeclareTextCommand{\textcurrency}{PU}{\80\244}% U+00A4  
 12856 % U+00A5 YEN SIGN; yen  
 12857 \DeclareTextCommand{\textyen}{PU}{\80\245}% U+00A5  
 12858 % U+00A6 BROKEN BAR; brokenbar  
 12859 \DeclareTextCommand{\textbrokenbar}{PU}{\80\246}% U+00A6  
 12860 % U+00A7 SECTION SIGN; section  
 12861 \DeclareTextCommand{\textsection}{PU}{\80\247}% U+00A7  
 12862 % U+00A8 DIAERESIS; dieresis  
 12863 \DeclareTextCommand{\textasciidieresis}{PU}{\80\250}% U+00A8  
 12864 % U+00A9 COPYRIGHT SIGN; copyright  
 12865 \DeclareTextCommand{\textcopyright}{PU}{\80\251}% U+00A9  
 12866 % U+00AA FEMININE ORDINAL INDICATOR; ordfeminine  
 12867 \DeclareTextCommand{\textordfeminine}{PU}{\80\252}% U+00AA  
 12868 % U+00AB LEFT-POINTING DOUBLE ANGLE QUOTATION MARK; guillemotleft  
 12869 \DeclareTextCommand{\guillemotleft}{PU}{\80\253}% U+00AB  
 12870 % U+00AC NOT SIGN; logicalnot  
 12871 \DeclareTextCommand{\textlogicalnot}{PU}{\80\254}% U+00AC  
 12872 \DeclareTextCommand{\textlnot}{PU}{\80\254}% U+00AC  
 \80\255: U+00AD SOFT HYPHEN; sfthyphen, softthyphen  
 12873 % U+00AE REGISTERED SIGN; registered  
 12874 \DeclareTextCommand{\textregistered}{PU}{\80\256}% U+00AE  
 12875 % U+00AF MACRON; \*macron, overscore  
 12876 \DeclareTextCommand{\textasciimacron}{PU}{\80\257}% U+00AF  
 12877 % U+00B0 DEGREE SIGN; degree  
 12878 \DeclareTextCommand{\textdegree}{PU}{\80\260}% U+00B0  
 12879 % U+00B1 PLUS-MINUS SIGN; plusminus  
 12880 \DeclareTextCommand{\textplusminus}{PU}{\80\261}% U+00B1  
 12881 % U+00B2 SUPERScript TWO; twosuperior  
 12882 \DeclareTextCommand{\texttwosuperior}{PU}{\80\262}% U+00B2  
 12883 % U+00B3 SUPERScript THREE; threesuperior  
 12884 \DeclareTextCommand{\textthreesuperior}{PU}{\80\263}% U+00B3  
 12885 % U+00B4 ACUTE ACCENT; acute  
 12886 \DeclareTextCommand{\textacute}{PU}{\80\264}% U+00B4  
 12887 \DeclareTextCommand{\textasciiacute}{PU}{\80\264}% U+00B4  
 12888 % U+00B5 MICRO SIGN; mu, mu1  
 12889 \DeclareTextCommand{\textmu}{PU}{\80\265}% U+00B5  
 12890 % U+00B6 PILCROW SIGN; paragraph  
 12891 \DeclareTextCommand{\textparagraph}{PU}{\80\266}% U+00B6  
 12892 % U+00B7 MIDDLE DOT; middot, \*periodcentered  
 12893 \DeclareTextCommand{\textperiodcentered}{PU}{\80\267}% U+00B7  
 12894 % U+00B8 CEDILLA; cedilla  
 12895 \DeclareTextCommand{\textcedilla}{PU}{\80\270}% U+00B8  
 12896 % U+00B9 SUPERScript ONE; onesuperior  
 12897 \DeclareTextCommand{\textonesuperior}{PU}{\80\271}% U+00B9  
 12898 % U+00BA MASCULINE ORDINAL INDICATOR; ordmasculine  
 12899 \DeclareTextCommand{\textordmasculine}{PU}{\80\272}% U+00BA  
 12900 % U+00BB RIGHT-POINTING DOUBLE ANGLE QUOTATION MARK; guillemotright  
 12901 \DeclareTextCommand{\guillemotright}{PU}{\80\273}% U+00BB  
 12902 % U+00BC VULGAR FRACTION ONE QUARTER; onequarter  
 12903 \DeclareTextCommand{\textonequarter}{PU}{\80\274}% U+00BC  
 12904 % U+00BD VULGAR FRACTION ONE HALF; onehalf  
 12905 \DeclareTextCommand{\textonehalf}{PU}{\80\275}% U+00BD  
 12906 % U+00BE VULGAR FRACTION THREE QUARTERS; threequarters  
 12907 \DeclareTextCommand{\textthreequarters}{PU}{\80\276}% U+00BE  
 12908 % U+00BF INVERTED QUESTION MARK; questiondown  
 12909 \DeclareTextCommand{\textquestiondown}{PU}{\80\277}% U+00BF  
 12910 % U+00C0 LATIN CAPITAL LETTER A WITH GRAVE; Agrave

12911 \DeclareTextCompositeCommand{\`}{PU}{A}{\80\300}% U+00C0  
12912 % U+00C1 LATIN CAPITAL LETTER A WITH ACUTE; Aacute  
12913 \DeclareTextCompositeCommand{\'}{PU}{A}{\80\301}% U+00C1  
12914 % U+00C2 LATIN CAPITAL LETTER A WITH CIRCUMFLEX; Acircumflex  
12915 \DeclareTextCompositeCommand{\^}{PU}{A}{\80\302}% U+00C2  
12916 % U+00C3 LATIN CAPITAL LETTER A WITH TILDE; Atilde  
12917 \DeclareTextCompositeCommand{\~}{PU}{A}{\80\303}% U+00C3  
12918 % U+00C4 LATIN CAPITAL LETTER A WITH DIAERESIS; Adieresis  
12919 \DeclareTextCompositeCommand{\"}{PU}{A}{\80\304}% U+00C4  
12920 % U+00C5 LATIN CAPITAL LETTER A WITH RING ABOVE; Aring  
12921 \DeclareTextCompositeCommand{\r}{PU}{A}{\80\305}% U+00C5  
12922 % U+00C6 LATIN CAPITAL LETTER AE; AE  
12923 \DeclareTextCommand{\AE}{PU}{\80\306}% U+00C6  
12924 % U+00C7 LATIN CAPITAL LETTER C WITH CEDILLA; Ccedilla  
12925 \DeclareTextCompositeCommand{\c}{PU}{C}{\80\307}% U+00C7  
12926 % U+00C8 LATIN CAPITAL LETTER E WITH GRAVE; Egrave  
12927 \DeclareTextCompositeCommand{\`}{PU}{E}{\80\310}% U+00C8  
12928 % U+00C9 LATIN CAPITAL LETTER E WITH ACUTE; Eacute  
12929 \DeclareTextCompositeCommand{\'}{PU}{E}{\80\311}% U+00C9  
12930 % U+00CA LATIN CAPITAL LETTER E WITH CIRCUMFLEX; Ecircumflex  
12931 \DeclareTextCompositeCommand{\^}{PU}{E}{\80\312}% U+00CA  
12932 % U+00CB LATIN CAPITAL LETTER E WITH DIAERESIS; Edieresis  
12933 \DeclareTextCompositeCommand{\"}{PU}{E}{\80\313}% U+00CB  
12934 % U+00CC LATIN CAPITAL LETTER I WITH GRAVE; Igrave  
12935 \DeclareTextCompositeCommand{\`}{PU}{I}{\80\314}% U+00CC  
12936 % U+00CD LATIN CAPITAL LETTER I WITH ACUTE; Iacute  
12937 \DeclareTextCompositeCommand{\'}{PU}{I}{\80\315}% U+00CD  
12938 % U+00CE LATIN CAPITAL LETTER I WITH CIRCUMFLEX; Icircumflex  
12939 \DeclareTextCompositeCommand{\^}{PU}{I}{\80\316}% U+00CE  
12940 % U+00CF LATIN CAPITAL LETTER I WITH DIAERESIS; Idieresis  
12941 \DeclareTextCompositeCommand{\"}{PU}{I}{\80\317}% U+00CF  
12942 % U+00D0 LATIN CAPITAL LETTER ETH; Eth  
12943 \DeclareTextCommand{\DH}{PU}{\80\320}% U+00D0  
12944 % U+00D1 LATIN CAPITAL LETTER N WITH TILDE; Ntilde  
12945 \DeclareTextCompositeCommand{\~}{PU}{N}{\80\321}% U+00D1  
12946 % U+00D2 LATIN CAPITAL LETTER O WITH GRAVE; Ograve  
12947 \DeclareTextCompositeCommand{\`}{PU}{O}{\80\322}% U+00D2  
12948 % U+00D3 LATIN CAPITAL LETTER O WITH ACUTE; Oacute  
12949 \DeclareTextCompositeCommand{\'}{PU}{O}{\80\323}% U+00D3  
12950 % U+00D4 LATIN CAPITAL LETTER O WITH CIRCUMFLEX; Ocircumflex  
12951 \DeclareTextCompositeCommand{\^}{PU}{O}{\80\324}% U+00D4  
12952 % U+00D5 LATIN CAPITAL LETTER O WITH TILDE; Otilde  
12953 \DeclareTextCompositeCommand{\~}{PU}{O}{\80\325}% U+00D5  
12954 % U+00D6 LATIN CAPITAL LETTER O WITH DIAERESIS; Odieresis  
12955 \DeclareTextCompositeCommand{\"}{PU}{O}{\80\326}% U+00D6  
12956 % U+00D7 MULTIPLICATION SIGN; multiply  
12957 \DeclareTextCommand{\textmultiply}{PU}{\80\327}% U+00D7  
12958 % U+00D8 LATIN CAPITAL LETTER O WITH STROKE; Oslash  
12959 \DeclareTextCommand{\O}{PU}{\80\330}% U+00D8  
12960 % U+00D9 LATIN CAPITAL LETTER U WITH GRAVE; Ugrave  
12961 \DeclareTextCompositeCommand{\`}{PU}{U}{\80\331}% U+00D9  
12962 % U+00DA LATIN CAPITAL LETTER U WITH ACUTE; Uacute  
12963 \DeclareTextCompositeCommand{\'}{PU}{U}{\80\332}% U+00DA  
12964 % U+00DB LATIN CAPITAL LETTER U WITH CIRCUMFLEX; Ucircumflex  
12965 \DeclareTextCompositeCommand{\^}{PU}{U}{\80\333}% U+00DB  
12966 % U+00DC LATIN CAPITAL LETTER U WITH DIAERESIS; Udieresis  
12967 \DeclareTextCompositeCommand{\"}{PU}{U}{\80\334}% U+00DC



12968 % U+00DD LATIN CAPITAL LETTER Y WITH ACUTE; Yacute  
12969 \DeclareTextCompositeCommand{\'}{PU}{Y}{\80\335}% U+00DD  
12970 % U+00DE LATIN CAPITAL LETTER THORN; Thorn  
12971 \DeclareTextCommand{\TH}{PU}{\80\336}% U+00DE  
12972 % U+00DF LATIN SMALL LETTER SHARP S; germandbls  
12973 \DeclareTextCommand{\ss}{PU}{\80\337}% U+00DF  
12974 % U+00E0 LATIN SMALL LETTER A WITH GRAVE; agrave  
12975 \DeclareTextCompositeCommand{\`}{PU}{a}{\80\340}% U+00E0  
12976 % U+00E1 LATIN SMALL LETTER A WITH ACUTE; aacute  
12977 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\341}% U+00E1  
12978 % U+00E2 LATIN SMALL LETTER A WITH CIRCUMFLEX; acircumflex  
12979 \DeclareTextCompositeCommand{\~}{PU}{a}{\80\342}% U+00E2  
12980 % U+00E3 LATIN SMALL LETTER A WITH TILDE; atilde  
12981 \DeclareTextCompositeCommand{\~}{PU}{a}{\80\343}% U+00E3  
12982 % U+00E4 LATIN SMALL LETTER A WITH DIAERESIS; adieresis  
12983 \DeclareTextCompositeCommand{\"}{PU}{a}{\80\344}% U+00E4  
12984 % U+00E5 LATIN SMALL LETTER A WITH RING ABOVE; aring  
12985 \DeclareTextCompositeCommand{\r}{PU}{a}{\80\345}% U+00E5  
12986 % U+00E6 LATIN SMALL LETTER AE; ae  
12987 \DeclareTextCommand{\ae}{PU}{\80\346}% U+00E6  
12988 % U+00E7 LATIN SMALL LETTER C WITH CEDILLA; ccedilla  
12989 \DeclareTextCompositeCommand{\c}{PU}{c}{\80\347}% U+00E7  
12990 % U+00E8 LATIN SMALL LETTER E WITH GRAVE; egrave  
12991 \DeclareTextCompositeCommand{\`}{PU}{e}{\80\350}% U+00E8  
12992 % U+00E9 LATIN SMALL LETTER E WITH ACUTE; eacute  
12993 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\351}% U+00E9  
12994 % U+00EA LATIN SMALL LETTER E WITH CIRCUMFLEX; ecircumflex  
12995 \DeclareTextCompositeCommand{\~}{PU}{e}{\80\352}% U+00EA  
12996 % U+00EB LATIN SMALL LETTER E WITH DIAERESIS; edieresis  
12997 \DeclareTextCompositeCommand{\"}{PU}{e}{\80\353}% U+00EB  
12998 % U+00EC LATIN SMALL LETTER I WITH GRAVE; igrave  
12999 \DeclareTextCompositeCommand{\`}{PU}{i}{\80\354}% U+00EC  
13000 \DeclareTextCompositeCommand{\`}{PU}{i}{\80\354}% U+00EC  
13001 % U+00ED LATIN SMALL LETTER I WITH ACUTE; iacute  
13002 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\355}% U+00ED  
13003 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\355}% U+00ED  
13004 % U+00EE LATIN SMALL LETTER I WITH CIRCUMFLEX; icircumflex  
13005 \DeclareTextCompositeCommand{\~}{PU}{i}{\80\356}% U+00EE  
13006 \DeclareTextCompositeCommand{\~}{PU}{i}{\80\356}% U+00EE  
13007 % U+00EF LATIN SMALL LETTER I WITH DIAERESIS; idieresis  
13008 \DeclareTextCompositeCommand{\"}{PU}{i}{\80\357}% U+00EF  
13009 \DeclareTextCompositeCommand{\"}{PU}{i}{\80\357}% U+00EF  
13010 % U+00F0 LATIN SMALL LETTER ETH; eth  
13011 \DeclareTextCommand{\dh}{PU}{\80\360}% U+00F0  
13012 % U+00F1 LATIN SMALL LETTER N WITH TILDE; ntilde  
13013 \DeclareTextCompositeCommand{\~}{PU}{n}{\80\361}% U+00F1  
13014 % U+00F2 LATIN SMALL LETTER O WITH GRAVE; ograve  
13015 \DeclareTextCompositeCommand{\`}{PU}{o}{\80\362}% U+00F2  
13016 % U+00F3 LATIN SMALL LETTER O WITH ACUTE; oacute  
13017 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\363}% U+00F3  
13018 % U+00F4 LATIN SMALL LETTER O WITH CIRCUMFLEX; ocircumflex  
13019 \DeclareTextCompositeCommand{\~}{PU}{o}{\80\364}% U+00F4  
13020 % U+00F5 LATIN SMALL LETTER O WITH TILDE; otilde  
13021 \DeclareTextCompositeCommand{\~}{PU}{o}{\80\365}% U+00F5  
13022 % U+00F6 LATIN SMALL LETTER O WITH DIAERESIS; odieresis  
13023 \DeclareTextCompositeCommand{\"}{PU}{o}{\80\366}% U+00F6  
13024 % U+00F7 DIVISION SIGN; divide

13025 \DeclareTextCommand{\textdivide}{PU}{\80\367}% U+00F7  
 13026 % U+00F8 LATIN SMALL LETTER O WITH STROKE; oslash  
 13027 \DeclareTextCommand{\o}{PU}{\80\370}% U+00F8  
 13028 % U+00F9 LATIN SMALL LETTER U WITH GRAVE; ugrave  
 13029 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\371}% U+00F9  
 13030 % U+00FA LATIN SMALL LETTER U WITH ACUTE; uacute  
 13031 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\372}% U+00FA  
 13032 % U+00FB LATIN SMALL LETTER U WITH CIRCUMFLEX; ucircumflex  
 13033 \DeclareTextCompositeCommand{\^}{PU}{u}{\80\373}% U+00FB  
 13034 % U+00FC LATIN SMALL LETTER U WITH DIAERESIS; udieresis  
 13035 \DeclareTextCompositeCommand{\"}{PU}{u}{\80\374}% U+00FC  
 13036 % U+00FD LATIN SMALL LETTER Y WITH ACUTE; yacute  
 13037 \DeclareTextCompositeCommand{\'}{PU}{y}{\80\375}% U+00FD  
 13038 % U+00FE LATIN SMALL LETTER THORN; thorn  
 13039 \DeclareTextCommand{\th}{PU}{\80\376}% U+00FE  
 13040 % U+00FF LATIN SMALL LETTER Y WITH DIAERESIS; ydieresis  
 13041 \DeclareTextCompositeCommand{\"}{PU}{y}{\80\377}% U+00FF

## 50.2.4 Latin Extended-A: U+0080 to U+017F

13042 % U+0100 LATIN CAPITAL LETTER A WITH MACRON; Amacron  
 13043 \DeclareTextCompositeCommand{\=}{PU}{A}{\81\000}% U+0100  
 13044 % U+0101 LATIN SMALL LETTER A WITH MACRON; amacron  
 13045 \DeclareTextCompositeCommand{\=}{PU}{a}{\81\001}% U+0101  
 13046 % U+0102 LATIN CAPITAL LETTER A WITH BREVE; Abreve  
 13047 \DeclareTextCompositeCommand{\u}{PU}{A}{\81\002}% U+0102  
 13048 % U+0103 LATIN SMALL LETTER A WITH BREVE; abreve  
 13049 \DeclareTextCompositeCommand{\u}{PU}{a}{\81\003}% U+0103  
 13050 % U+0104 LATIN CAPITAL LETTER A WITH OGONEK; Aogonek  
 13051 \DeclareTextCompositeCommand{\k}{PU}{A}{\81\004}% U+0104  
 13052 % U+0105 LATIN SMALL LETTER A WITH OGONEK; aogonek  
 13053 \DeclareTextCompositeCommand{\k}{PU}{a}{\81\005}% U+0105  
 13054 % U+0106 LATIN CAPITAL LETTER C WITH ACUTE; Cacute  
 13055 \DeclareTextCompositeCommand{\'}{PU}{C}{\81\006}% U+0106  
 13056 % U+0107 LATIN SMALL LETTER C WITH ACUTE; cacute  
 13057 \DeclareTextCompositeCommand{\'}{PU}{c}{\81\007}% U+0107  
 13058 % U+0108 LATIN CAPITAL LETTER C WITH CIRCUMFLEX; Ccircumflex  
 13059 \DeclareTextCompositeCommand{\^}{PU}{C}{\81\010}% U+0108  
 13060 % U+0109 LATIN SMALL LETTER C WITH CIRCUMFLEX; ccircumflex  
 13061 \DeclareTextCompositeCommand{\^}{PU}{c}{\81\011}% U+0109  
 13062 % U+010A LATIN CAPITAL LETTER C WITH DOT ABOVE; Cdot, Cdotaccent  
 13063 \DeclareTextCompositeCommand{\.}{PU}{C}{\81\012}% U+010A  
 13064 % U+010B LATIN SMALL LETTER C WITH DOT ABOVE; cdot, cdotaccent  
 13065 \DeclareTextCompositeCommand{\.}{PU}{c}{\81\013}% U+010B  
 13066 % U+010C LATIN CAPITAL LETTER C WITH CARON; Ccaron  
 13067 \DeclareTextCompositeCommand{\v}{PU}{C}{\81\014}% U+010C  
 13068 % U+010D LATIN SMALL LETTER C WITH CARON; ccaron  
 13069 \DeclareTextCompositeCommand{\v}{PU}{c}{\81\015}% U+010D  
 13070 % U+010E LATIN CAPITAL LETTER D WITH CARON; Dcaron  
 13071 \DeclareTextCompositeCommand{\v}{PU}{D}{\81\016}% U+010E  
 13072 % U+010F LATIN SMALL LETTER D WITH CARON; dcaron  
 13073 \DeclareTextCompositeCommand{\v}{PU}{d}{\81\017}% U+010F  
 13074 % U+0110 LATIN CAPITAL LETTER D WITH STROKE; Dcroat, Dslash  
 13075 \DeclareTextCommand{\DJ}{PU}{\81\020}% U+0110  
 13076 % U+0111 LATIN SMALL LETTER D WITH STROKE; dcroat, dmacron  
 13077 \DeclareTextCommand{\dj}{PU}{\81\021}% U+0111  
 13078 % U+0112 LATIN CAPITAL LETTER E WITH MACRON; Emacron

13079 \DeclareTextCompositeCommand{\=}{PU}{E}{\81\022}% U+0112  
13080 % U+0113 LATIN SMALL LETTER E WITH MACRON; emacron  
13081 \DeclareTextCompositeCommand{\=}{PU}{e}{\81\023}% U+0113  
13082 % U+0114 LATIN CAPITAL LETTER E WITH BREVE; Ebreve  
13083 \DeclareTextCompositeCommand{\u}{PU}{E}{\81\024}% U+0114  
13084 % U+0115 LATIN SMALL LETTER E WITH BREVE; ebreve  
13085 \DeclareTextCompositeCommand{\u}{PU}{e}{\81\025}% U+0115  
13086 % U+0116 LATIN CAPITAL LETTER E WITH DOT ABOVE; Edot, Edotaccent  
13087 \DeclareTextCompositeCommand{\.}{PU}{E}{\81\026}% U+0116  
13088 % U+0117 LATIN SMALL LETTER E WITH DOT ABOVE; edot, edotaccent  
13089 \DeclareTextCompositeCommand{\.}{PU}{e}{\81\027}% U+0117  
13090 % U+0118 LATIN CAPITAL LETTER E WITH OGONEK; Eogonek  
13091 \DeclareTextCompositeCommand{\k}{PU}{E}{\81\030}% U+0118  
13092 % U+0119 LATIN SMALL LETTER E WITH OGONEK; eogonek  
13093 \DeclareTextCompositeCommand{\k}{PU}{e}{\81\031}% U+0119  
13094 % U+011A LATIN CAPITAL LETTER E WITH CARON; Ecaron  
13095 \DeclareTextCompositeCommand{\v}{PU}{E}{\81\032}% U+011A  
13096 % U+011B LATIN SMALL LETTER E WITH CARON; ecaron  
13097 \DeclareTextCompositeCommand{\v}{PU}{e}{\81\033}% U+011B  
13098 % U+011C LATIN CAPITAL LETTER G WITH CIRCUMFLEX; Gcircumflex  
13099 \DeclareTextCompositeCommand{\^}{PU}{G}{\81\034}% U+011C  
13100 % U+011D LATIN SMALL LETTER G WITH CIRCUMFLEX; gcircumflex  
13101 \DeclareTextCompositeCommand{\^}{PU}{g}{\81\035}% U+011D  
13102 % U+011E LATIN CAPITAL LETTER G WITH BREVE; Gbreve  
13103 \DeclareTextCompositeCommand{\u}{PU}{G}{\81\036}% U+011E  
13104 % U+011F LATIN SMALL LETTER G WITH BREVE; gbreve  
13105 \DeclareTextCompositeCommand{\u}{PU}{g}{\81\037}% U+011F  
13106 % U+0120 LATIN CAPITAL LETTER G WITH DOT ABOVE; Gdot, Gdotaccent  
13107 \DeclareTextCompositeCommand{\.}{PU}{G}{\81\040}% U+0120  
13108 % U+0121 LATIN SMALL LETTER G WITH DOT ABOVE; gdot, gdotaccent  
13109 \DeclareTextCompositeCommand{\.}{PU}{g}{\81\041}% U+0121  
13110 % U+0122 LATIN CAPITAL LETTER G WITH CEDILLA; Gcedilla, Gcommaaccent  
13111 \DeclareTextCompositeCommand{\c}{PU}{G}{\81\042}% U+0122  
13112 % U+0123 LATIN SMALL LETTER G WITH CEDILLA; gcedilla, gcommaaccent  
13113 \DeclareTextCompositeCommand{\c}{PU}{g}{\81\043}% U+0123  
13114 % U+0124 LATIN CAPITAL LETTER H WITH CIRCUMFLEX; Hcircumflex  
13115 \DeclareTextCompositeCommand{\^}{PU}{H}{\81\044}% U+0124  
13116 % U+0125 LATIN SMALL LETTER H WITH CIRCUMFLEX; hcircumflex  
13117 \DeclareTextCompositeCommand{\^}{PU}{h}{\81\045}% U+0125  
13118 % U+0126 LATIN CAPITAL LETTER H WITH STROKE; Hbar  
13119 \DeclareTextCommand{\textHslash}{PU}{\81\046}% U+0126  
13120 % U+0127 LATIN SMALL LETTER H WITH STROKE; hbar  
13121 \DeclareTextCommand{\texthslash}{PU}{\81\047}% U+0127  
13122 % U+0128 LATIN CAPITAL LETTER I WITH TILDE; Itilde  
13123 \DeclareTextCompositeCommand{\~}{PU}{I}{\81\050}% U+0128  
13124 % U+0129 LATIN SMALL LETTER I WITH TILDE; itilde  
13125 \DeclareTextCompositeCommand{\~}{PU}{i}{\81\051}% U+0129  
13126 \DeclareTextCompositeCommand{\~}{PU}{\i}{\81\051}% U+0129  
13127 % U+012A LATIN CAPITAL LETTER I WITH MACRON; Imacron  
13128 \DeclareTextCompositeCommand{\=}{PU}{I}{\81\052}% U+012A  
13129 % U+012B LATIN SMALL LETTER I WITH MACRON; imacron  
13130 \DeclareTextCompositeCommand{\=}{PU}{i}{\81\053}% U+012B  
13131 \DeclareTextCompositeCommand{\=}{PU}{\i}{\81\053}% U+012B  
13132 % U+012C LATIN CAPITAL LETTER I WITH BREVE; Ibreve  
13133 \DeclareTextCompositeCommand{\u}{PU}{I}{\81\054}% U+012C  
13134 % U+012D LATIN SMALL LETTER I WITH BREVE; ibreve  
13135 \DeclareTextCompositeCommand{\u}{PU}{i}{\81\055}% U+012D

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13136 \DeclareTextCompositeCommand{\u}{PU}{\i}{\81\055}% U+012D
13137 % U+012E LATIN CAPITAL LETTER I WITH OGONEK; Iogonek
13138 \DeclareTextCompositeCommand{\k}{PU}{I}{\81\056}% U+012E
13139 % U+012F LATIN SMALL LETTER I WITH OGONEK; iogonek
13140 \DeclareTextCompositeCommand{\k}{PU}{i}{\81\057}% U+012F
13141 \DeclareTextCompositeCommand{\k}{PU}{i}{\81\057}% U+012F
13142 % U+0130 LATIN CAPITAL LETTER I WITH DOT ABOVE; Idot, Idotaccent
13143 \DeclareTextCompositeCommand{\.}{PU}{I}{\81\060}% U+0130
13144 % U+0131 LATIN SMALL LETTER DOTLESS I; dotlessi
13145 \DeclareTextCommand{\i}{PU}{\81\061}% U+0131
13146 % U+0132 LATIN CAPITAL LIGATURE IJ; IJ
13147 \DeclareTextCommand{\IJ}{PU}{\81\062}% U+0132
13148 % U+0133 LATIN SMALL LIGATURE IJ; ij
13149 \DeclareTextCommand{\ij}{PU}{\81\063}% U+0133
13150 % U+0134 LATIN CAPITAL LETTER J WITH CIRCUMFLEX; Jcircumflex
13151 \DeclareTextCompositeCommand{\^}{PU}{J}{\81\064}% U+0134
13152 % U+0135 LATIN SMALL LETTER J WITH CIRCUMFLEX; jcircumflex
13153 \DeclareTextCompositeCommand{\^}{PU}{j}{\81\065}% U+0135
13154 \DeclareTextCompositeCommand{\^}{PU}{j}{\81\065}% U+0135
13155 % U+0136 LATIN CAPITAL LETTER K WITH CEDILLA; Kcedilla, Kcommaaccent
13156 \DeclareTextCompositeCommand{\c}{PU}{K}{\81\066}% U+0136
13157 % U+0137 LATIN SMALL LETTER K WITH CEDILLA; kcedilla, kcommaaccent
13158 \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`.

```

13159 % U+0138 LATIN SMALL LETTER KRA; kgreenlandic
13160 \DeclareTextCommand{\textkra}{PU}{\81\070}% U+0138
13161 % U+0139 LATIN CAPITAL LETTER L WITH ACUTE; Lacute
13162 \DeclareTextCompositeCommand{\'}{PU}{L}{\81\071}% U+0139
13163 % U+013A LATIN SMALL LETTER L WITH ACUTE; lacute
13164 \DeclareTextCompositeCommand{\'}{PU}{l}{\81\072}% U+013A
13165 % U+013B LATIN CAPITAL LETTER L WITH CEDILLA; Lcedilla, Lcommaaccent
13166 \DeclareTextCompositeCommand{\c}{PU}{L}{\81\073}% U+013B
13167 % U+013C LATIN SMALL LETTER L WITH CEDILLA; lcedilla, lcommaaccent
13168 \DeclareTextCompositeCommand{\c}{PU}{l}{\81\074}% U+013C
13169 % U+013D LATIN CAPITAL LETTER L WITH CARON; Lcaron
13170 \DeclareTextCompositeCommand{\v}{PU}{L}{\81\075}% U+013D
13171 % U+013E LATIN SMALL LETTER L WITH CARON; lcaron
13172 \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`.

```

13173 % U+013F LATIN CAPITAL LETTER L WITH MIDDLE DOT; Ldot, Ldotaccent
13174 \DeclareTextCompositeCommand{\.}{PU}{L}{\81\077}% U+013F
13175 % U+0140 LATIN SMALL LETTER L WITH MIDDLE DOT; ldot, ldotaccent
13176 \DeclareTextCompositeCommand{\.}{PU}{l}{\81\100}% U+0140
13177 % U+0141 LATIN CAPITAL LETTER L WITH STROKE; Lslash
13178 \DeclareTextCommand{\L}{PU}{\81\101}% U+0141
13179 % U+0142 LATIN SMALL LETTER L WITH STROKE; lslash
13180 \DeclareTextCommand{\l}{PU}{\81\102}% U+0142
13181 % U+0143 LATIN CAPITAL LETTER N WITH ACUTE; Nacute
13182 \DeclareTextCompositeCommand{\'}{PU}{N}{\81\103}% U+0143
13183 % U+0144 LATIN SMALL LETTER N WITH ACUTE; nacute
13184 \DeclareTextCompositeCommand{\'}{PU}{n}{\81\104}% U+0144
13185 % U+0145 LATIN CAPITAL LETTER N WITH CEDILLA; Ncedilla, Ncommaaccent
13186 \DeclareTextCompositeCommand{\c}{PU}{N}{\81\105}% U+0145

```

13187 % U+0146 LATIN SMALL LETTER N WITH CEDILLA; ncedilla, ncommaaccent  
13188 \DeclareTextCompositeCommand{\c}{PU}{n}{\81\106}% U+0146  
13189 % U+0147 LATIN CAPITAL LETTER N WITH CARON; Ncaron  
13190 \DeclareTextCompositeCommand{\v}{PU}{N}{\81\107}% U+0147  
13191 % U+0148 LATIN SMALL LETTER N WITH CARON; ncaron  
13192 \DeclareTextCompositeCommand{\v}{PU}{n}{\81\110}% U+0148  
13193 % U+0149 LATIN SMALL LETTER N PRECEDED BY APOSTROPHE; napostrophe, quoterightn  
13194 \DeclareTextCommand{\textnapostrophe}{PU}{\81\111}% U+0149  
13195 % U+014A LATIN CAPITAL LETTER ENG; Eng  
13196 \DeclareTextCommand{\NG}{PU}{\81\112}% U+014A  
13197 % U+014B LATIN SMALL LETTER ENG; eng  
13198 \DeclareTextCommand{\ng}{PU}{\81\113}% U+014B  
13199 % U+014C LATIN CAPITAL LETTER O WITH MACRON; Omacron  
13200 \DeclareTextCompositeCommand{=} {PU}{O}{\81\114}% U+014C  
13201 % U+014D LATIN SMALL LETTER O WITH MACRON; omacron  
13202 \DeclareTextCompositeCommand{=} {PU}{o}{\81\115}% U+014D  
13203 % U+014E LATIN CAPITAL LETTER O WITH BREVE; Obreve  
13204 \DeclareTextCompositeCommand{\u}{PU}{O}{\81\116}% U+014E  
13205 % U+014F LATIN SMALL LETTER O WITH BREVE; obreve  
13206 \DeclareTextCompositeCommand{\u}{PU}{o}{\81\117}% U+014F  
13207 % U+0150 LATIN CAPITAL LETTER O WITH DOUBLE ACUTE; Odblacute, Ohungarumlaut  
13208 \DeclareTextCompositeCommand{\H}{PU}{O}{\81\120}% U+0150  
13209 % U+0151 LATIN SMALL LETTER O WITH DOUBLE ACUTE; odblacute, ohungarumlaut  
13210 \DeclareTextCompositeCommand{\H}{PU}{o}{\81\121}% U+0151  
13211 % U+0152 LATIN CAPITAL LIGATURE OE; OE  
13212 \DeclareTextCommand{\OE}{PU}{\81\122}% U+0152  
13213 % U+0153 LATIN SMALL LIGATURE OE; oe  
13214 \DeclareTextCommand{\oe}{PU}{\81\123}% U+0153  
13215 % U+0154 LATIN CAPITAL LETTER R WITH ACUTE; Racute  
13216 \DeclareTextCompositeCommand{\'}{PU}{R}{\81\124}% U+0154  
13217 % U+0155 LATIN SMALL LETTER R WITH ACUTE; racute  
13218 \DeclareTextCompositeCommand{\'}{PU}{r}{\81\125}% U+0155  
13219 % U+0156 LATIN CAPITAL LETTER R WITH CEDILLA; Rcedilla, Rcommaaccent  
13220 \DeclareTextCompositeCommand{\c}{PU}{R}{\81\126}% U+0156  
13221 % U+0157 LATIN SMALL LETTER R WITH CEDILLA; rcedilla, rcommaaccent  
13222 \DeclareTextCompositeCommand{\c}{PU}{r}{\81\127}% U+0157  
13223 % U+0158 LATIN CAPITAL LETTER R WITH CARON; Rcaron  
13224 \DeclareTextCompositeCommand{\v}{PU}{R}{\81\130}% U+0158  
13225 % U+0159 LATIN SMALL LETTER R WITH CARON; rcaron  
13226 \DeclareTextCompositeCommand{\v}{PU}{r}{\81\131}% U+0159  
13227 % U+015A LATIN CAPITAL LETTER S WITH ACUTE; Sacute  
13228 \DeclareTextCompositeCommand{\'}{PU}{S}{\81\132}% U+015A  
13229 % U+015B LATIN SMALL LETTER S WITH ACUTE; sacute  
13230 \DeclareTextCompositeCommand{\'}{PU}{s}{\81\133}% U+015B  
13231 % U+015C LATIN CAPITAL LETTER S WITH CIRCUMFLEX; Scircumflex  
13232 \DeclareTextCompositeCommand{\^}{PU}{S}{\81\134}% U+015C  
13233 % U+015D LATIN SMALL LETTER S WITH CIRCUMFLEX; scircumflex  
13234 \DeclareTextCompositeCommand{\^}{PU}{s}{\81\135}% U+015D  
13235 % U+015E LATIN CAPITAL LETTER S WITH CEDILLA; Scedilla  
13236 \DeclareTextCompositeCommand{\c}{PU}{S}{\81\136}% U+015E  
13237 % U+015F LATIN SMALL LETTER S WITH CEDILLA; scedilla  
13238 \DeclareTextCompositeCommand{\c}{PU}{s}{\81\137}% U+015F  
13239 % U+0160 LATIN CAPITAL LETTER S WITH CARON; Scaron  
13240 \DeclareTextCompositeCommand{\v}{PU}{S}{\81\140}% U+0160  
13241 % U+0161 LATIN SMALL LETTER S WITH CARON; scaron  
13242 \DeclareTextCompositeCommand{\v}{PU}{s}{\81\141}% U+0161  
13243 % U+0162 LATIN CAPITAL LETTER T WITH CEDILLA; Tcedilla, Tcommaaccent

13244 \DeclareTextCompositeCommand{\c}{PU}{T}{\81\142}% U+0162  
13245 % U+0163 LATIN SMALL LETTER T WITH CEDILLA; tcedilla, tcommaaccent  
13246 \DeclareTextCompositeCommand{\c}{PU}{t}{\81\143}% U+0163  
13247 % U+0164 LATIN CAPITAL LETTER T WITH CARON; Tcaron  
13248 \DeclareTextCompositeCommand{\v}{PU}{T}{\81\144}% U+0164  
13249 % U+0165 LATIN SMALL LETTER T WITH CARON; tcaron  
13250 \DeclareTextCompositeCommand{\v}{PU}{t}{\81\145}% U+0165  
13251 % U+0166 LATIN CAPITAL LETTER T WITH STROKE; Tbar  
13252 \DeclareTextCommand{\textTslash}{PU}{\81\146}% U+0166  
13253 % U+0167 LATIN SMALL LETTER T WITH STROKE; tbar  
13254 \DeclareTextCommand{\texttslash}{PU}{\81\147}% U+0167  
13255 % U+0168 LATIN CAPITAL LETTER U WITH TILDE; Utilde  
13256 \DeclareTextCompositeCommand{\~}{PU}{U}{\81\150}% U+0168  
13257 % U+0169 LATIN SMALL LETTER U WITH TILDE; utilde  
13258 \DeclareTextCompositeCommand{\~}{PU}{u}{\81\151}% U+0169  
13259 % U+016A LATIN CAPITAL LETTER U WITH MACRON; Umacron  
13260 \DeclareTextCompositeCommand{\=}{PU}{U}{\81\152}% U+016A  
13261 % U+016B LATIN SMALL LETTER U WITH MACRON; umacron  
13262 \DeclareTextCompositeCommand{\=}{PU}{u}{\81\153}% U+016B  
13263 % U+016C LATIN CAPITAL LETTER U WITH BREVE; Ubreve  
13264 \DeclareTextCompositeCommand{\u}{PU}{U}{\81\154}% U+016C  
13265 % U+016D LATIN SMALL LETTER U WITH BREVE; ubreve  
13266 \DeclareTextCompositeCommand{\u}{PU}{u}{\81\155}% U+016D  
13267 % U+016E LATIN CAPITAL LETTER U WITH RING ABOVE; Uring  
13268 \DeclareTextCompositeCommand{\r}{PU}{U}{\81\156}% U+016E  
13269 % U+016F LATIN SMALL LETTER U WITH RING ABOVE; uring  
13270 \DeclareTextCompositeCommand{\r}{PU}{u}{\81\157}% U+016F  
13271 % U+0170 LATIN CAPITAL LETTER U WITH DOUBLE ACUTE; Udblacute, Uhungarumlaut  
13272 \DeclareTextCompositeCommand{\H}{PU}{U}{\81\160}% U+0170  
13273 % U+0171 LATIN SMALL LETTER U WITH DOUBLE ACUTE; udblacute, uhungarumlaut  
13274 \DeclareTextCompositeCommand{\H}{PU}{u}{\81\161}% U+0171  
13275 % U+0172 LATIN CAPITAL LETTER U WITH OGONEK; Uogonek  
13276 \DeclareTextCompositeCommand{\k}{PU}{U}{\81\162}% U+0172  
13277 % U+0173 LATIN SMALL LETTER U WITH OGONEK; uogonek  
13278 \DeclareTextCompositeCommand{\k}{PU}{u}{\81\163}% U+0173  
13279 % U+0174 LATIN CAPITAL LETTER W WITH CIRCUMFLEX; Wcircumflex  
13280 \DeclareTextCompositeCommand{\^}{PU}{W}{\81\164}% U+0174  
13281 % U+0175 LATIN SMALL LETTER W WITH CIRCUMFLEX; wcircumflex  
13282 \DeclareTextCompositeCommand{\^}{PU}{w}{\81\165}% U+0175  
13283 % U+0176 LATIN CAPITAL LETTER Y WITH CIRCUMFLEX; Ycircumflex  
13284 \DeclareTextCompositeCommand{\^}{PU}{Y}{\81\166}% U+0176  
13285 % U+0177 LATIN SMALL LETTER Y WITH CIRCUMFLEX; ycircumflex  
13286 \DeclareTextCompositeCommand{\^}{PU}{y}{\81\167}% U+0177  
13287 % U+0178 LATIN CAPITAL LETTER Y WITH DIAERESIS; Ydieresis  
13288 \DeclareTextCompositeCommand{\"}{PU}{Y}{\81\170}% U+0178  
13289 % U+0179 LATIN CAPITAL LETTER Z WITH ACUTE; Zacute  
13290 \DeclareTextCompositeCommand{\'}{PU}{Z}{\81\171}% U+0179  
13291 % U+017A LATIN SMALL LETTER Z WITH ACUTE; zacute  
13292 \DeclareTextCompositeCommand{\'}{PU}{z}{\81\172}% U+017A  
13293 % U+017B LATIN CAPITAL LETTER Z WITH DOT ABOVE; Zdot, Zdotaccent  
13294 \DeclareTextCompositeCommand{\.}{PU}{Z}{\81\173}% U+017B  
13295 % U+017C LATIN SMALL LETTER Z WITH DOT ABOVE; zdot, zdotaccent  
13296 \DeclareTextCompositeCommand{\.}{PU}{z}{\81\174}% U+017C  
13297 % U+017D LATIN CAPITAL LETTER Z WITH CARON; Zcaron  
13298 \DeclareTextCompositeCommand{\v}{PU}{Z}{\81\175}% U+017D  
13299 % U+017E LATIN SMALL LETTER Z WITH CARON; zcaron  
13300 \DeclareTextCompositeCommand{\v}{PU}{z}{\81\176}% U+017E

13301 % U+017F LATIN SMALL LETTER LONG S; longs, slong  
 13302 \DeclareTextCommand{\textlongS}{PU}{\81\177}% U+017F

## 50.2.5 Latin Extended-B: U+0180 to U+024F

13303 % U+0192 LATIN SMALL LETTER F WITH HOOK; florin  
 13304 \DeclareTextCommand{\textflorin}{PU}{\81\222}% U+0192  
 13305 % U+01CD LATIN CAPITAL LETTER A WITH CARON; Acaron  
 13306 \DeclareTextCompositeCommand{\v}{PU}{A}{\81\315}% U+01CD  
 13307 % U+01CE LATIN SMALL LETTER A WITH CARON; acaron  
 13308 \DeclareTextCompositeCommand{\v}{PU}{a}{\81\316}% U+01CE  
 13309 % U+01CF LATIN CAPITAL LETTER I WITH CARON; Icaron  
 13310 \DeclareTextCompositeCommand{\v}{PU}{I}{\81\317}% U+01CF  
 13311 % U+01D0 LATIN SMALL LETTER I WITH CARON; icaron  
 13312 \DeclareTextCompositeCommand{\v}{PU}{i}{\81\320}% U+01D0  
 13313 \DeclareTextCompositeCommand{\v}{PU}{i}{\81\320}% U+01D0  
 13314 % U+01D1 LATIN CAPITAL LETTER O WITH CARON; Ocaron  
 13315 \DeclareTextCompositeCommand{\v}{PU}{O}{\81\321}% U+01D1  
 13316 % U+01D2 LATIN SMALL LETTER O WITH CARON; ocaron  
 13317 \DeclareTextCompositeCommand{\v}{PU}{o}{\81\322}% U+01D2  
 13318 % U+01D3 LATIN CAPITAL LETTER U WITH CARON; Ucaron  
 13319 \DeclareTextCompositeCommand{\v}{PU}{U}{\81\323}% U+01D3  
 13320 % U+01D4 LATIN SMALL LETTER U WITH CARON; ucaron  
 13321 \DeclareTextCompositeCommand{\v}{PU}{u}{\81\324}% U+01D4  
 13322 % U+01E4 LATIN CAPITAL LETTER G WITH STROKE; Gstroke  
 13323 \DeclareTextCommand{\textGslash}{PU}{\81\344}% U+01E4  
 13324 % U+01E5 LATIN SMALL LETTER G WITH STROKE; gstroke  
 13325 \DeclareTextCommand{\textgslash}{PU}{\81\345}% U+01E5  
 13326 % U+01E6 LATIN CAPITAL LETTER G WITH CARON; Gcaron  
 13327 \DeclareTextCompositeCommand{\v}{PU}{G}{\81\346}% U+01E6  
 13328 % U+01E7 LATIN SMALL LETTER G WITH CARON; gcaron  
 13329 \DeclareTextCompositeCommand{\v}{PU}{g}{\81\347}% U+01E7  
 13330 % U+01E8 LATIN CAPITAL LETTER K WITH CARON; Kcaron  
 13331 \DeclareTextCompositeCommand{\v}{PU}{K}{\81\350}% U+01E8  
 13332 % U+01E9 LATIN SMALL LETTER K WITH CARON; kcaron  
 13333 \DeclareTextCompositeCommand{\v}{PU}{k}{\81\351}% U+01E9  
 13334 % U+01EA LATIN CAPITAL LETTER O WITH OGONEK; Oogonek  
 13335 \DeclareTextCompositeCommand{\k}{PU}{O}{\81\352}% U+01EA  
 13336 % U+01EB LATIN SMALL LETTER O WITH OGONEK; oogonek  
 13337 \DeclareTextCompositeCommand{\k}{PU}{o}{\81\353}% U+01EB  
 13338 % U+01F0 LATIN SMALL LETTER J WITH CARON; jcaron  
 13339 \DeclareTextCompositeCommand{\v}{PU}{j}{\81\360}% U+01F0  
 13340 \DeclareTextCompositeCommand{\v}{PU}{j}{\81\360}% U+01F0  
 13341 % U+01F4 LATIN CAPITAL LETTER G WITH ACUTE; Gacute  
 13342 \DeclareTextCompositeCommand{\'}{PU}{G}{\81\364}% U+01F4  
 13343 % U+01F5 LATIN SMALL LETTER G WITH ACUTE; gacute  
 13344 \DeclareTextCompositeCommand{\'}{PU}{g}{\81\365}% U+01F5  
 13345 % U+01F8 LATIN CAPITAL LETTER N WITH GRAVE  
 13346 \DeclareTextCompositeCommand{\`}{PU}{N}{\81\370}% U+01F8  
 13347 % U+01F9 LATIN SMALL LETTER N WITH GRAVE  
 13348 \DeclareTextCompositeCommand{\`}{PU}{n}{\81\371}% U+01F9  
 13349 % U+01FC LATIN CAPITAL LETTER AE WITH ACUTE; AEacute  
 13350 \DeclareTextCompositeCommand{\'}{PU}{\AE}{\81\374}% U+01FC  
 13351 % U+01FD LATIN SMALL LETTER AE WITH ACUTE; aeacute  
 13352 \DeclareTextCompositeCommand{\'}{PU}{\ae}{\81\375}% U+01FD  
 13353 % U+01FE LATIN CAPITAL LETTER O WITH STROKE AND ACUTE; \*Oslashacute, Ostrokeacut  
 13354 \DeclareTextCompositeCommand{\'}{PU}{O}{\81\376}% U+01FE  
 13355 % U+01FF LATIN SMALL LETTER O WITH STROKE AND ACUTE; \*oslashacute, ostrokeacute

13356 \DeclareTextCompositeCommand{\'}{PU}{\o}{\81\377}% U+01FF  
13357 % U+0200 LATIN CAPITAL LETTER A WITH DOUBLE GRAVE; Adblgrave  
13358 \DeclareTextCompositeCommand{\G}{PU}{A}{\82\000}% U+0200  
13359 % U+0201 LATIN SMALL LETTER A WITH DOUBLE GRAVE; adblgrave  
13360 \DeclareTextCompositeCommand{\G}{PU}{a}{\82\001}% U+0201  
13361 % U+0204 LATIN CAPITAL LETTER E WITH DOUBLE GRAVE; Edblgrave  
13362 \DeclareTextCompositeCommand{\G}{PU}{E}{\82\004}% U+0204  
13363 % U+0205 LATIN SMALL LETTER E WITH DOUBLE GRAVE; edblgrave  
13364 \DeclareTextCompositeCommand{\G}{PU}{e}{\82\005}% U+0205  
13365 % U+0208 LATIN CAPITAL LETTER I WITH DOUBLE GRAVE; Idblgrave  
13366 \DeclareTextCompositeCommand{\G}{PU}{I}{\82\010}% U+0208  
13367 % U+0209 LATIN SMALL LETTER I WITH DOUBLE GRAVE; idblgrave  
13368 \DeclareTextCompositeCommand{\G}{PU}{i}{\82\011}% U+0209  
13369 \DeclareTextCompositeCommand{\G}{PU}{j}{\82\011}% U+0209  
13370 % U+020C LATIN CAPITAL LETTER O WITH DOUBLE GRAVE; Odblgrave  
13371 \DeclareTextCompositeCommand{\G}{PU}{O}{\82\014}% U+020C  
13372 % U+020D LATIN SMALL LETTER O WITH DOUBLE GRAVE; odblgrave  
13373 \DeclareTextCompositeCommand{\G}{PU}{o}{\82\015}% U+020D  
13374 % U+0210 LATIN CAPITAL LETTER R WITH DOUBLE GRAVE; Rdblgrave  
13375 \DeclareTextCompositeCommand{\G}{PU}{R}{\82\020}% U+0210  
13376 % U+0211 LATIN SMALL LETTER R WITH DOUBLE GRAVE; rdblgrave  
13377 \DeclareTextCompositeCommand{\G}{PU}{r}{\82\021}% U+0211  
13378 % U+0214 LATIN CAPITAL LETTER U WITH DOUBLE GRAVE; Udblgrave  
13379 \DeclareTextCompositeCommand{\G}{PU}{U}{\82\024}% U+0214  
13380 % U+0215 LATIN SMALL LETTER U WITH DOUBLE GRAVE; udblgrave  
13381 \DeclareTextCompositeCommand{\G}{PU}{u}{\82\025}% U+0215  
13382 % U+021E LATIN CAPITAL LETTER H WITH CARON  
13383 \DeclareTextCompositeCommand{\v}{PU}{H}{\82\036}% U+021E  
13384 % U+021F LATIN SMALL LETTER H WITH CARON  
13385 \DeclareTextCompositeCommand{\v}{PU}{h}{\82\037}% U+021F  
13386 % U+0226 LATIN CAPITAL LETTER A WITH DOT ABOVE  
13387 \DeclareTextCompositeCommand{\.}{PU}{A}{\82\046}% U+0226  
13388 % U+0227 LATIN SMALL LETTER A WITH DOT ABOVE  
13389 \DeclareTextCompositeCommand{\.}{PU}{a}{\82\047}% U+0227  
13390 % U+0228 LATIN CAPITAL LETTER E WITH CEDILLA  
13391 \DeclareTextCompositeCommand{\c}{PU}{E}{\82\050}% U+0228  
13392 % U+0229 LATIN SMALL LETTER E WITH CEDILLA  
13393 \DeclareTextCompositeCommand{\c}{PU}{e}{\82\051}% U+0229  
13394 % U+022E LATIN CAPITAL LETTER O WITH DOT ABOVE  
13395 \DeclareTextCompositeCommand{\.}{PU}{O}{\82\056}% U+022E  
13396 % U+022F LATIN SMALL LETTER O WITH DOT ABOVE  
13397 \DeclareTextCompositeCommand{\.}{PU}{o}{\82\057}% U+022F  
13398 % U+0232 LATIN CAPITAL LETTER Y WITH MACRON  
13399 \DeclareTextCompositeCommand{\=}{PU}{Y}{\82\062}% U+0232  
13400 % U+0233 LATIN SMALL LETTER Y WITH MACRON  
13401 \DeclareTextCompositeCommand{\=}{PU}{y}{\82\063}% U+0233  
13402 % U+0237 LATIN SMALL LETTER DOTLESS J  
13403 \DeclareTextCommand{\j}{PU}{\82\067}% U+0237

## 50.2.6 Spacing Modifier Letters: U+02B0 to U+02FF

13404 % U+02C7 CARON; caron  
13405 \DeclareTextCommand{\textasciicaron}{PU}{\82\307}% U+02C7  
13406 % U+02D8 BREVE; breve  
13407 \DeclareTextCommand{\textasciibreve}{PU}{\82\330}% U+02D8  
13408 % U+02D9 DOT ABOVE; dotaccent  
13409 \DeclareTextCommand{\textdotaccent}{PU}{\82\331}% U+02D9  
13410 % U+02DA RING ABOVE; ring



13411 \DeclareTextCommand{\textring}{PU}{\82\332}% U+02DA  
 13412 % U+02DB OGONEK; ogonek  
 13413 \DeclareTextCommand{\textogonek}{PU}{\82\333}% U+02DB  
 13414 % U+02DC SMALL TILDE; ilde, \*tilde  
 13415 \DeclareTextCommand{\texttilde}{PU}{\82\334}% U+02DC  
 13416 % U+02DD DOUBLE ACUTE ACCENT; hungarumlaut  
 13417 \DeclareTextCommand{\texthungarumlaut}{PU}{\82\335}% U+02DD  
 13418 \DeclareTextCommand{\textacutedbl}{PU}{\texthungarumlaut}% U+02DD  
 13419 % U+02F5 MODIFIER LETTER MIDDLE DOUBLE GRAVE ACCENT  
 13420 \DeclareTextCommand{\textgravedbl}{PU}{\82\365}% U+02F5  
 13421 % U+02F7 MODIFIER LETTER LOW TILDE  
 13422 \DeclareTextCommand{\texttildelow}{PU}{\82\367}% U+02F7

## 50.2.7 Combining Diacritical Marks: U+0300 to U+036F

13423 % U+030F COMBINING DOUBLE GRAVE ACCENT; dblgravecmb  
 13424 \DeclareTextCommand{\textdoublegrave}{PU}{\83\017}% U+030F  
 13425 % U+0311 COMBINING INVERTED BREVE; breveinvertedcmb  
 13426 \DeclareTextCommand{\textnewtie}{PU}{\83\021}% U+0311  
 13427 % U+0323 COMBINING DOT BELOW; dotbelowcmb, \*dotbelowcmb  
 13428 \DeclareTextCommand{\textdotbelow}{PU}{\83\043}% U+0323  
 13429 % U+0331 COMBINING MACRON BELOW; macronbelowcmb  
 13430 \DeclareTextCommand{\textmacronbelow}{PU}{\83\061}% U+0331  
 13431 % U+0361 COMBINING DOUBLE INVERTED BREVE; breveinverteddoublecmb  
 13432 \DeclareTextCommand{\texttie}{PU}{\83\141}% U+0361

## 50.2.8 Greek and Coptic: U+0370 to U+03FF

13433 % U+0374 GREEK NUMERAL SIGN; numeralsigngreek  
 13434 \DeclareTextCommand{\textnumeralsigngreek}{PU}{\83\164}% U+0374  
 13435 % U+0375 GREEK LOWER NUMERAL SIGN; numeralsignlowergreek  
 13436 \DeclareTextCommand{\textnumeralsignlowergreek}{PU}{\83\165}% U+0375  
 13437 % U+0386 GREEK CAPITAL LETTER ALPHA WITH TONOS; Alphatonos  
 13438 \DeclareTextCompositeCommand{\'}{PU}{\textAlpha}{\83\206}% U+0386  
 13439 % U+0388 GREEK CAPITAL LETTER EPSILON WITH TONOS; Epsilontonos  
 13440 \DeclareTextCompositeCommand{\'}{PU}{\textEpsilon}{\83\210}% U+0388  
 13441 % U+0389 GREEK CAPITAL LETTER ETA WITH TONOS; Etatonos  
 13442 \DeclareTextCompositeCommand{\'}{PU}{\textEta}{\83\211}% U+0389  
 13443 % U+038A GREEK CAPITAL LETTER IOTA WITH TONOS; Iotatonos  
 13444 \DeclareTextCompositeCommand{\'}{PU}{\textIota}{\83\212}% U+038A  
 13445 % U+038C GREEK CAPITAL LETTER OMICRON WITH TONOS; Omicrontonos  
 13446 \DeclareTextCompositeCommand{\'}{PU}{\textOmicron}{\83\214}% U+038C  
 13447 % U+038E GREEK CAPITAL LETTER UPSILON WITH TONOS; Upsilonontonos  
 13448 \DeclareTextCompositeCommand{\'}{PU}{\textUpsilon}{\83\216}% U+038E  
 13449 % U+038F GREEK CAPITAL LETTER OMEGA WITH TONOS; Omegatonos  
 13450 \DeclareTextCompositeCommand{\'}{PU}{\textOmega}{\83\217}% U+038F  
 13451 % U+0390 GREEK SMALL LETTER IOTA WITH DIALYTIKA AND TONOS; iotadieresis  
 13452 \DeclareTextCompositeCommand{\'}{PU}{\textIotadieresis}{\83\220}% U+0390  
 13453 % U+0391 GREEK CAPITAL LETTER ALPHA; Alpha  
 13454 \DeclareTextCommand{\textAlpha}{PU}{\83\221}% U+0391  
 13455 % U+0392 GREEK CAPITAL LETTER BETA; Beta  
 13456 \DeclareTextCommand{\textBeta}{PU}{\83\222}% U+0392  
 13457 % U+0393 GREEK CAPITAL LETTER GAMMA; Gamma  
 13458 \DeclareTextCommand{\textGamma}{PU}{\83\223}% U+0393  
 13459 % U+0394 GREEK CAPITAL LETTER DELTA; Deltagreek, \*Delta  
 13460 \DeclareTextCommand{\textDelta}{PU}{\83\224}% U+0394  
 13461 % U+0395 GREEK CAPITAL LETTER EPSILON; Epsilon  
 13462 \DeclareTextCommand{\textEpsilon}{PU}{\83\225}% U+0395  
 13463 % U+0396 GREEK CAPITAL LETTER ZETA; Zeta

13464 \DeclareTextCommand{\textZeta}{PU}{\83\226}% U+0396  
13465 % U+0397 GREEK CAPITAL LETTER ETA; Eta  
13466 \DeclareTextCommand{\textEta}{PU}{\83\227}% U+0397  
13467 % U+0398 GREEK CAPITAL LETTER THETA; Theta  
13468 \DeclareTextCommand{\textTheta}{PU}{\83\230}% U+0398  
13469 % U+0399 GREEK CAPITAL LETTER IOTA; Iota  
13470 \DeclareTextCommand{\textIota}{PU}{\83\231}% U+0399  
13471 % U+039A GREEK CAPITAL LETTER KAPPA; Kappa  
13472 \DeclareTextCommand{\textKappa}{PU}{\83\232}% U+039A  
13473 % U+039B GREEK CAPITAL LETTER LAMDA; Lambda  
13474 \DeclareTextCommand{\textLambda}{PU}{\83\233}% U+039B  
13475 % U+039C GREEK CAPITAL LETTER MU; Mu  
13476 \DeclareTextCommand{\textMu}{PU}{\83\234}% U+039C  
13477 % U+039D GREEK CAPITAL LETTER NU; Nu  
13478 \DeclareTextCommand{\textNu}{PU}{\83\235}% U+039D  
13479 % U+039E GREEK CAPITAL LETTER XI; Xi  
13480 \DeclareTextCommand{\textXi}{PU}{\83\236}% U+039E  
13481 % U+039F GREEK CAPITAL LETTER OMICRON; Omicron  
13482 \DeclareTextCommand{\textOmicron}{PU}{\83\237}% U+039F  
13483 % U+03A0 GREEK CAPITAL LETTER PI; Pi  
13484 \DeclareTextCommand{\textPi}{PU}{\83\240}% U+03A0  
13485 % U+03A1 GREEK CAPITAL LETTER RHO; Rho  
13486 \DeclareTextCommand{\textRho}{PU}{\83\241}% U+03A1  
13487 % U+03A3 GREEK CAPITAL LETTER SIGMA; Sigma  
13488 \DeclareTextCommand{\textSigma}{PU}{\83\243}% U+03A3  
13489 % U+03A4 GREEK CAPITAL LETTER TAU; Tau  
13490 \DeclareTextCommand{\textTau}{PU}{\83\244}% U+03A4  
13491 % U+03A5 GREEK CAPITAL LETTER UPSILON; Upsilon  
13492 \DeclareTextCommand{\textUpsilon}{PU}{\83\245}% U+03A5  
13493 % U+03A6 GREEK CAPITAL LETTER PHI; Phi  
13494 \DeclareTextCommand{\textPhi}{PU}{\83\246}% U+03A6  
13495 % U+03A7 GREEK CAPITAL LETTER CHI; Chi  
13496 \DeclareTextCommand{\textChi}{PU}{\83\247}% U+03A7  
13497 % U+03A8 GREEK CAPITAL LETTER PSI; Psi  
13498 \DeclareTextCommand{\textPsi}{PU}{\83\250}% U+03A8  
13499 % U+03A9 GREEK CAPITAL LETTER OMEGA; Omegagreek, \*Omega  
13500 \DeclareTextCommand{\textOmega}{PU}{\83\251}% U+03A9  
13501 % U+03AA GREEK CAPITAL LETTER IOTA WITH DIALYTIKA; Iotadieresis  
13502 \DeclareTextCommand{\textIotadieresis}{PU}{\83\252}% U+03AA  
13503 \DeclareTextCompositeCommand{"}{PU}{\textIota}{\83\252}% U+03AA  
13504 % U+03AB GREEK CAPITAL LETTER UPSILON WITH DIALYTIKA; Upsilondieresis  
13505 \DeclareTextCompositeCommand{"}{PU}{\textUpsilon}{\83\253}% U+03AB  
13506 % U+03AC GREEK SMALL LETTER ALPHA WITH TONOS; alphanos  
13507 \DeclareTextCompositeCommand{'}{PU}{\textalpha}{\83\254}% U+03AC  
13508 % U+03AD GREEK SMALL LETTER EPSILON WITH TONOS; epsilon  
13509 \DeclareTextCompositeCommand{'}{PU}{\textepsilon}{\83\255}% U+03AD  
13510 % U+03AE GREEK SMALL LETTER ETA WITH TONOS; etanotone  
13511 \DeclareTextCompositeCommand{'}{PU}{\texteta}{\83\256}% U+03AE  
13512 % U+03AF GREEK SMALL LETTER IOTA WITH TONOS; iotanotone  
13513 \DeclareTextCompositeCommand{'}{PU}{\textiota}{\83\257}% U+03AF  
13514 % U+03B0 GREEK SMALL LETTER UPSILON WITH DIALYTIKA AND TONOS; upsilondieresis  
13515 \DeclareTextCompositeCommand{"}{PU}{\textupsilon}{\83\260}% U+03B0  
13516 % U+03B1 GREEK SMALL LETTER ALPHA; alpha  
13517 \DeclareTextCommand{\textalpha}{PU}{\83\261}% U+03B1  
13518 % U+03B2 GREEK SMALL LETTER BETA; beta  
13519 \DeclareTextCommand{\textbeta}{PU}{\83\262}% U+03B2  
13520 % U+03B3 GREEK SMALL LETTER GAMMA; gamma

13521 \DeclareTextCommand{\textgamma}{PU}{\83\263}% U+03B3  
13522 % U+03B4 GREEK SMALL LETTER DELTA; delta  
13523 \DeclareTextCommand{\textdelta}{PU}{\83\264}% U+03B4  
13524 % U+03B5 GREEK SMALL LETTER EPSILON; epsilon  
13525 \DeclareTextCommand{\textepsilon}{PU}{\83\265}% U+03B5  
13526 % U+03B6 GREEK SMALL LETTER ZETA; zeta  
13527 \DeclareTextCommand{\textzeta}{PU}{\83\266}% U+03B6  
13528 % U+03B7 GREEK SMALL LETTER ETA; eta  
13529 \DeclareTextCommand{\texteta}{PU}{\83\267}% U+03B7  
13530 % U+03B8 GREEK SMALL LETTER THETA; theta  
13531 \DeclareTextCommand{\texttheta}{PU}{\83\270}% U+03B8  
13532 % U+03B9 GREEK SMALL LETTER IOTA; iota  
13533 \DeclareTextCommand{\textiota}{PU}{\83\271}% U+03B9  
13534 % U+03BA GREEK SMALL LETTER KAPPA; kappa  
13535 \DeclareTextCommand{\textkappa}{PU}{\83\272}% U+03BA  
13536 % U+03BB GREEK SMALL LETTER LAMDA; lambda  
13537 \DeclareTextCommand{\textlambda}{PU}{\83\273}% U+03BB  
13538 % U+03BC GREEK SMALL LETTER MU; mugreek, \*mu  
13539 \DeclareTextCommand{\textmugreek}{PU}{\83\274}% U+03BC  
13540 % U+03BD GREEK SMALL LETTER NU; nu  
13541 \DeclareTextCommand{\textnu}{PU}{\83\275}% U+03BD  
13542 % U+03BE GREEK SMALL LETTER XI; xi  
13543 \DeclareTextCommand{\textxi}{PU}{\83\276}% U+03BE  
13544 % U+03BF GREEK SMALL LETTER OMICRON; omicron  
13545 \DeclareTextCommand{\textomicron}{PU}{\83\277}% U+03BF  
13546 % U+03C0 GREEK SMALL LETTER PI; pi  
13547 \DeclareTextCommand{\textpi}{PU}{\83\300}% U+03C0  
13548 % U+03C1 GREEK SMALL LETTER RHO; rho  
13549 \DeclareTextCommand{\textrho}{PU}{\83\301}% U+03C1  
13550 % U+03C2 GREEK SMALL LETTER FINAL SIGMA; \*sigma1, sigmafinal  
13551 \DeclareTextCommand{\textvarsigma}{PU}{\83\302}% U+03C2  
13552 % U+03C3 GREEK SMALL LETTER SIGMA; sigma  
13553 \DeclareTextCommand{\textsigma}{PU}{\83\303}% U+03C3  
13554 % U+03C4 GREEK SMALL LETTER TAU; tau  
13555 \DeclareTextCommand{\texttau}{PU}{\83\304}% U+03C4  
13556 % U+03C5 GREEK SMALL LETTER UPSILON; upsilon  
13557 \DeclareTextCommand{\textupsilon}{PU}{\83\305}% U+03C5  
13558 % U+03C6 GREEK SMALL LETTER PHI; phi  
13559 \DeclareTextCommand{\textphi}{PU}{\83\306}% U+03C6  
13560 % U+03C7 GREEK SMALL LETTER CHI; chi  
13561 \DeclareTextCommand{\textchi}{PU}{\83\307}% U+03C7  
13562 % U+03C8 GREEK SMALL LETTER PSI; psi  
13563 \DeclareTextCommand{\textpsi}{PU}{\83\310}% U+03C8  
13564 % U+03C9 GREEK SMALL LETTER OMEGA; omega  
13565 \DeclareTextCommand{\textomega}{PU}{\83\311}% U+03C9  
13566 % U+03CA GREEK SMALL LETTER IOTA WITH DIALYTIKA; iodadieresis  
13567 \DeclareTextCompositeCommand{"}{PU}{\textiota}{\83\312}% U+03CA  
13568 % U+03CB GREEK SMALL LETTER UPSILON WITH DIALYTIKA; upsilondieresis  
13569 \DeclareTextCompositeCommand{"}{PU}{\textupsilon}{\83\313}% U+03CB  
13570 % U+03CC GREEK SMALL LETTER OMICRON WITH TONOS; omicrontonos  
13571 \DeclareTextCompositeCommand{'}{PU}{\textomicron}{\83\314}% U+03CC  
13572 % U+03CD GREEK SMALL LETTER UPSILON WITH TONOS; upsilontonos  
13573 \DeclareTextCommand{\textupsilonacute}{PU}{\83\315}% U+03CD  
13574 \DeclareTextCompositeCommand{'}{PU}{\textupsilon}{\83\315}% U+03CD  
13575 % U+03CE GREEK SMALL LETTER OMEGA WITH TONOS; omegatonos  
13576 \DeclareTextCompositeCommand{'}{PU}{\textomega}{\83\316}% U+03CE  
13577 % U+03DA GREEK LETTER STIGMA; Stigmatreek

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13578 \DeclareTextCommand{\textStigmagreek}{PU}{\83\332}% U+03DA
13579 % U+03DB GREEK SMALL LETTER STIGMA
13580 \DeclareTextCommand{\textstigmagreek}{PU}{\83\333}% U+03DB
13581 % U+03DC GREEK LETTER DIGAMMA; Digammagreek
13582 \DeclareTextCommand{\textDigammagreek}{PU}{\83\334}% U+03DC
13583 % U+03DD GREEK SMALL LETTER DIGAMMA
13584 \DeclareTextCommand{\textdigammagreek}{PU}{\83\335}% U+03DD
13585 % U+03DE GREEK LETTER KOPPA; Koppagreek
13586 \DeclareTextCommand{\textKoppagreek}{PU}{\83\336}% U+03DE
13587 % U+03DF GREEK SMALL LETTER KOPPA
13588 \DeclareTextCommand{\textkoppagreek}{PU}{\83\337}% U+03DF
13589 % U+03E0 GREEK LETTER SAMPI; Sampigreek
13590 \DeclareTextCommand{\textSampigreek}{PU}{\83\340}% U+03E0
13591 % U+03E1 GREEK SMALL LETTER SAMPI
13592 \DeclareTextCommand{\textsampigreek}{PU}{\83\341}% U+03E1

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## 50.2.9 Cyrillic: U+0400 to U+04FF

Thanks to Vladimir Volovich (vov@vov.vsu.ru) for the help with the Cyrillic glyph names.

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13593 % U+0400 CYRILLIC CAPITAL LETTER IE WITH GRAVE
13594 \DeclareTextCompositeCommand{\'}{PU}{\CYRE}{\84\000}% U+0400
13595 % U+0401 CYRILLIC CAPITAL LETTER IO; Iocyrrillic, *afii10023
13596 \DeclareTextCommand{\CYRYO}{PU}{\84\001}% U+0401
13597 \DeclareTextCompositeCommand{\"}{PU}{\CYRE}{\84\001}% ???
13598 % U+0402 CYRILLIC CAPITAL LETTER DJE; Djecyrillic, *afii10051
13599 \DeclareTextCommand{\CYRDJE}{PU}{\84\002}% U+0402
13600 % U+0403 CYRILLIC CAPITAL LETTER GJE; Gjecyrillic, *afii10052
13601 \DeclareTextCompositeCommand{\'}{PU}{\CYRG}{\84\003}% U+0403
13602 % U+0404 CYRILLIC CAPITAL LETTER UKRAINIAN IE; Ecyrrillic, *afii10053
13603 \DeclareTextCommand{\CYRIE}{PU}{\84\004}% U+0404
13604 % U+0405 CYRILLIC CAPITAL LETTER DZE; Dzecyrillic, *afii10054
13605 \DeclareTextCommand{\CYRDZE}{PU}{\84\005}% U+0405
13606 % U+0406 CYRILLIC CAPITAL LETTER BYELORUSSIAN-UKRAINIAN I; Icyrrillic, *afii10055
13607 \DeclareTextCommand{\CYRII}{PU}{\84\006}% U+0406
13608 % U+0407 CYRILLIC CAPITAL LETTER YI; Yicyrrillic, *afii10056
13609 \DeclareTextCommand{\CYRYI}{PU}{\84\007}% U+0407
13610 \DeclareTextCompositeCommand{\"}{PU}{\CYRII}{\84\007}% U+0407
13611 % U+0408 CYRILLIC CAPITAL LETTER JE; Jecyrillic, *afii10057
13612 \DeclareTextCommand{\CYRJE}{PU}{\84\010}% U+0408
13613 % U+0409 CYRILLIC CAPITAL LETTER LJE; Ljecyrillic, *afii10058
13614 \DeclareTextCommand{\CYRLJE}{PU}{\84\011}% U+0409
13615 % U+040A CYRILLIC CAPITAL LETTER NJE; Njecyrillic, *afii10059
13616 \DeclareTextCommand{\CYRNJE}{PU}{\84\012}% U+040A
13617 % U+040B CYRILLIC CAPITAL LETTER TSHE; Tshecyrillic, *afii10060
13618 \DeclareTextCommand{\CYRTSHE}{PU}{\84\013}% U+040B
13619 % U+040C CYRILLIC CAPITAL LETTER KJE; Kjecyrillic, *afii10061
13620 \DeclareTextCompositeCommand{\'}{PU}{\CYRK}{\84\014}% U+040C
13621 % U+040D CYRILLIC CAPITAL LETTER I WITH GRAVE
13622 \DeclareTextCompositeCommand{\'}{PU}{\CYRI}{\84\015}% U+040D
13623 % U+040E CYRILLIC CAPITAL LETTER SHORT U; Ushortcyrrillic, *afii10062
13624 \DeclareTextCommand{\CYRUSHRT}{PU}{\84\016}% U+040E
13625 \DeclareTextCompositeCommand{\U}{PU}{\CYRU}{\84\016}% U+040E
13626 % U+040F CYRILLIC CAPITAL LETTER DZHE; Dzhecyrrillic, *afii10145
13627 \DeclareTextCommand{\CYRDZHE}{PU}{\84\017}% U+040F
13628 % U+0410 CYRILLIC CAPITAL LETTER A; Acyrrillic, *afii10017
13629 \DeclareTextCommand{\CYRA}{PU}{\84\020}% U+0410
13630 % U+0411 CYRILLIC CAPITAL LETTER BE; Becyrrillic, *afii10018

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13631 \DeclareTextCommand{\CYRB}{PU}{\84\021}% U+0411  
13632 % U+0412 CYRILLIC CAPITAL LETTER VE; Vecyrillic, \*afii10019  
13633 \DeclareTextCommand{\CYRV}{PU}{\84\022}% U+0412  
13634 % U+0413 CYRILLIC CAPITAL LETTER GHE; Gecyrillic, \*afii10020  
13635 \DeclareTextCommand{\CYRG}{PU}{\84\023}% U+0413  
13636 % U+0414 CYRILLIC CAPITAL LETTER DE; Decyrillic, \*afii10021  
13637 \DeclareTextCommand{\CYRD}{PU}{\84\024}% U+0414  
13638 % U+0415 CYRILLIC CAPITAL LETTER IE; Iecyrillic, \*afii10022  
13639 \DeclareTextCommand{\CYRE}{PU}{\84\025}% U+0415  
13640 % U+0416 CYRILLIC CAPITAL LETTER ZHE; Zhecyrillic, \*afii10024  
13641 \DeclareTextCommand{\CYRZH}{PU}{\84\026}% U+0416  
13642 % U+0417 CYRILLIC CAPITAL LETTER ZE; Zecyrillic, \*afii10025  
13643 \DeclareTextCommand{\CYRZ}{PU}{\84\027}% U+0417  
13644 % U+0418 CYRILLIC CAPITAL LETTER I; Iicyrillic, \*afii10026  
13645 \DeclareTextCommand{\CYRI}{PU}{\84\030}% U+0418  
13646 % U+0419 CYRILLIC CAPITAL LETTER SHORT I; Iishortcyrillic, \*afii10027  
13647 \DeclareTextCommand{\CYRISHRT}{PU}{\84\031}% U+0419  
13648 \DeclareTextCompositeCommand{\U}{PU}{\CYRI}{\84\031}% U+0419  
13649 % U+041A CYRILLIC CAPITAL LETTER KA; Kacyrillic, \*afii10028  
13650 \DeclareTextCommand{\CYRK}{PU}{\84\032}% U+041A  
13651 % U+041B CYRILLIC CAPITAL LETTER EL; Elcyrillic, \*afii10029  
13652 \DeclareTextCommand{\CYRL}{PU}{\84\033}% U+041B  
13653 % U+041C CYRILLIC CAPITAL LETTER EM; Emcyrillic, \*afii10030  
13654 \DeclareTextCommand{\CYRM}{PU}{\84\034}% U+041C  
13655 % U+041D CYRILLIC CAPITAL LETTER EN; Encyrillic, \*afii10031  
13656 \DeclareTextCommand{\CYRN}{PU}{\84\035}% U+041D  
13657 % U+041E CYRILLIC CAPITAL LETTER O; Ocyrillic, \*afii10032  
13658 \DeclareTextCommand{\CYRO}{PU}{\84\036}% U+041E  
13659 % U+041F CYRILLIC CAPITAL LETTER PE; Pecyrillic, \*afii10033  
13660 \DeclareTextCommand{\CYRP}{PU}{\84\037}% U+041F  
13661 % U+0420 CYRILLIC CAPITAL LETTER ER; Ercyrillic, \*afii10034  
13662 \DeclareTextCommand{\CYRR}{PU}{\84\040}% U+0420  
13663 % U+0421 CYRILLIC CAPITAL LETTER ES; Escyrillic, \*afii10035  
13664 \DeclareTextCommand{\CYRS}{PU}{\84\041}% U+0421  
13665 % U+0422 CYRILLIC CAPITAL LETTER TE; Tecyrillic, \*afii10036  
13666 \DeclareTextCommand{\CYRT}{PU}{\84\042}% U+0422  
13667 % U+0423 CYRILLIC CAPITAL LETTER U; Ucyrillic, \*afii10037  
13668 \DeclareTextCommand{\CYRU}{PU}{\84\043}% U+0423  
13669 % U+0424 CYRILLIC CAPITAL LETTER EF; Efcyrillic, \*afii10038  
13670 \DeclareTextCommand{\CYRF}{PU}{\84\044}% U+0424  
13671 % U+0425 CYRILLIC CAPITAL LETTER HA; Khacyrillic, \*afii10039  
13672 \DeclareTextCommand{\CYRH}{PU}{\84\045}% U+0425  
13673 % U+0426 CYRILLIC CAPITAL LETTER TSE; Tsecyrillic, \*afii10040  
13674 \DeclareTextCommand{\CYRC}{PU}{\84\046}% U+0426  
13675 % U+0427 CYRILLIC CAPITAL LETTER CHE; Checyrillic, \*afii10041  
13676 \DeclareTextCommand{\CYRCH}{PU}{\84\047}% U+0427  
13677 % U+0428 CYRILLIC CAPITAL LETTER SHA; Shacyrillic, \*afii10042  
13678 \DeclareTextCommand{\CYRSH}{PU}{\84\050}% U+0428  
13679 % U+0429 CYRILLIC CAPITAL LETTER SHCHA; Shchacyrillic, \*afii10043  
13680 \DeclareTextCommand{\CYRSHCH}{PU}{\84\051}% U+0429  
13681 % U+042A CYRILLIC CAPITAL LETTER HARD SIGN; Hardsigncyrillic, \*afii10044  
13682 \DeclareTextCommand{\CYRHRDSN}{PU}{\84\052}% U+042A  
13683 % U+042B CYRILLIC CAPITAL LETTER YERU; Yericyrillic, \*afii10045  
13684 \DeclareTextCommand{\CYRERY}{PU}{\84\053}% U+042B  
13685 % U+042C CYRILLIC CAPITAL LETTER SOFT SIGN; Softsigncyrillic, \*afii10046  
13686 \DeclareTextCommand{\CYRSFTSN}{PU}{\84\054}% U+042C  
13687 % U+042D CYRILLIC CAPITAL LETTER E; Ereversedcyrillic, \*afii10047

13688 \DeclareTextCommand{\CYREREV}{PU}{\84\055}% U+042D  
13689 % U+042E CYRILLIC CAPITAL LETTER YU; IUcyrillic, \*afii10048  
13690 \DeclareTextCommand{\CYRYU}{PU}{\84\056}% U+042E  
13691 % U+042F CYRILLIC CAPITAL LETTER YA; IAcyrillic, \*afii10049  
13692 \DeclareTextCommand{\CYRYA}{PU}{\84\057}% U+042F  
13693 % U+0430 CYRILLIC SMALL LETTER A; acyrillic, \*afii10065  
13694 \DeclareTextCommand{\cyra}{PU}{\84\060}% U+0430  
13695 % U+0431 CYRILLIC SMALL LETTER BE; \*afii10066, becyrillic  
13696 \DeclareTextCommand{\cyrb}{PU}{\84\061}% U+0431  
13697 % U+0432 CYRILLIC SMALL LETTER VE; \*afii10067, vecyrillic  
13698 \DeclareTextCommand{\cyrv}{PU}{\84\062}% U+0432  
13699 % U+0433 CYRILLIC SMALL LETTER GHE; \*afii10068, gecyrillic  
13700 \DeclareTextCommand{\cyrg}{PU}{\84\063}% U+0433  
13701 % U+0434 CYRILLIC SMALL LETTER DE; \*afii10069, decyrillic  
13702 \DeclareTextCommand{\cyrd}{PU}{\84\064}% U+0434  
13703 % U+0435 CYRILLIC SMALL LETTER IE; \*afii10070, iecyrillic  
13704 \DeclareTextCommand{\cyre}{PU}{\84\065}% U+0435  
13705 % U+0436 CYRILLIC SMALL LETTER ZHE; \*afii10072, zhecyrillic  
13706 \DeclareTextCommand{\cyrzh}{PU}{\84\066}% U+0436  
13707 % U+0437 CYRILLIC SMALL LETTER ZE; \*afii10073, zecyrillic  
13708 \DeclareTextCommand{\cyrz}{PU}{\84\067}% U+0437  
13709 % U+0438 CYRILLIC SMALL LETTER I; \*afii10074, iicyrillic  
13710 \DeclareTextCommand{\cyri}{PU}{\84\070}% U+0438  
13711 % U+0439 CYRILLIC SMALL LETTER SHORT I; \*afii10075, iishortcyrillic  
13712 \DeclareTextCommand{\cyrishrt}{PU}{\84\071}% U+0439  
13713 \DeclareTextCompositeCommand{\U}{PU}{\cyri}{\84\071}% U+0439  
13714 % U+043A CYRILLIC SMALL LETTER KA; \*afii10076, kacyrillic  
13715 \DeclareTextCommand{\cyrk}{PU}{\84\072}% U+043A  
13716 % U+043B CYRILLIC SMALL LETTER EL; \*afii10077, elcyrillic  
13717 \DeclareTextCommand{\cyr1}{PU}{\84\073}% U+043B  
13718 % U+043C CYRILLIC SMALL LETTER EM; \*afii10078, emcyrillic  
13719 \DeclareTextCommand{\cyrm}{PU}{\84\074}% U+043C  
13720 % U+043D CYRILLIC SMALL LETTER EN; \*afii10079, encyrillic  
13721 \DeclareTextCommand{\cyrn}{PU}{\84\075}% U+043D  
13722 % U+043E CYRILLIC SMALL LETTER O; \*afii10080, ocyrillic  
13723 \DeclareTextCommand{\cyro}{PU}{\84\076}% U+043E  
13724 % U+043F CYRILLIC SMALL LETTER PE; \*afii10081, pecyrillic  
13725 \DeclareTextCommand{\cyrp}{PU}{\84\077}% U+043F  
13726 % U+0440 CYRILLIC SMALL LETTER ER; \*afii10082, ercyrillic  
13727 \DeclareTextCommand{\cyrr}{PU}{\84\100}% U+0440  
13728 % U+0441 CYRILLIC SMALL LETTER ES; \*afii10083, escyrillic  
13729 \DeclareTextCommand{\cyrs}{PU}{\84\101}% U+0441  
13730 % U+0442 CYRILLIC SMALL LETTER TE; \*afii10084, tecyrillic  
13731 \DeclareTextCommand{\cyrt}{PU}{\84\102}% U+0442  
13732 % U+0443 CYRILLIC SMALL LETTER U; \*afii10085, ucyrillic  
13733 \DeclareTextCommand{\cyru}{PU}{\84\103}% U+0443  
13734 % U+0444 CYRILLIC SMALL LETTER EF; \*afii10086, efcyrillic  
13735 \DeclareTextCommand{\cyrf}{PU}{\84\104}% U+0444  
13736 % U+0445 CYRILLIC SMALL LETTER HA; \*afii10087, khacyrillic  
13737 \DeclareTextCommand{\cyrh}{PU}{\84\105}% U+0445  
13738 % U+0446 CYRILLIC SMALL LETTER TSE; \*afii10088, tsecyrillic  
13739 \DeclareTextCommand{\cyrc}{PU}{\84\106}% U+0446  
13740 % U+0447 CYRILLIC SMALL LETTER CHE; \*afii10089, checyrillic  
13741 \DeclareTextCommand{\cyrch}{PU}{\84\107}% U+0447  
13742 % U+0448 CYRILLIC SMALL LETTER SHA; \*afii10090, shacyrillic  
13743 \DeclareTextCommand{\cyrsh}{PU}{\84\110}% U+0448  
13744 % U+0449 CYRILLIC SMALL LETTER SHCHA; \*afii10091, shchacyrillic

13745 \DeclareTextCommand{\cyrshch}{PU}{\84\111}% U+0449  
13746 % U+044A CYRILLIC SMALL LETTER HARD SIGN; \*afii10092, hardsigncyrillic  
13747 \DeclareTextCommand{\cyrhrdsn}{PU}{\84\112}% U+044A  
13748 % U+044B CYRILLIC SMALL LETTER YERU; \*afii10093, yericyrillic  
13749 \DeclareTextCommand{\cyrery}{PU}{\84\113}% U+044B  
13750 % U+044C CYRILLIC SMALL LETTER SOFT SIGN; \*afii10094, softsigncyrillic  
13751 \DeclareTextCommand{\cyrstfn}{PU}{\84\114}% U+044C  
13752 % U+044D CYRILLIC SMALL LETTER E; \*afii10095, ereversedcyrillic  
13753 \DeclareTextCommand{\cyrerev}{PU}{\84\115}% U+044D  
13754 % U+044E CYRILLIC SMALL LETTER YU; \*afii10096, iucyrillic  
13755 \DeclareTextCommand{\cyrYu}{PU}{\84\116}% U+044E  
13756 % U+044F CYRILLIC SMALL LETTER YA; \*afii10097, iacyrillic  
13757 \DeclareTextCommand{\cyrYa}{PU}{\84\117}% U+044F  
13758 % U+0450 CYRILLIC SMALL LETTER IE WITH GRAVE  
13759 \DeclareTextCompositeCommand{\'}{PU}{\cyre}{\84\120}% U+0450  
13760 % U+0451 CYRILLIC SMALL LETTER IO; \*afii10071, iocyrillic  
13761 \DeclareTextCommand{\cyrIo}{PU}{\84\121}% U+0451  
13762 \DeclareTextCompositeCommand{\"}{PU}{\cyre}{\84\121}% U+0451  
13763 % U+0452 CYRILLIC SMALL LETTER DJE; \*afii10099, djecyrillic  
13764 \DeclareTextCommand{\cyrdje}{PU}{\84\122}% U+0452  
13765 % U+0453 CYRILLIC SMALL LETTER GJE; \*afii10100, gjecyrillic  
13766 \DeclareTextCompositeCommand{\'}{PU}{\cyrg}{\84\123}% U+0453  
13767 % U+0454 CYRILLIC SMALL LETTER UKRAINIAN IE; \*afii10101, ecyrillic  
13768 \DeclareTextCommand{\cyrIe}{PU}{\84\124}% U+0454  
13769 % U+0455 CYRILLIC SMALL LETTER DZE; \*afii10102, dzecyrillic  
13770 \DeclareTextCommand{\cyrdze}{PU}{\84\125}% U+0455  
13771 % U+0456 CYRILLIC SMALL LETTER BYELORUSSIAN-UKRAINIAN I; \*afii10103, icyrillic  
13772 \DeclareTextCommand{\cyrIi}{PU}{\84\126}% U+0456  
13773 % U+0457 CYRILLIC SMALL LETTER YI; \*afii10104, yicyrillic  
13774 \DeclareTextCommand{\cyrYi}{PU}{\84\127}% U+0457  
13775 \DeclareTextCompositeCommand{\"}{PU}{\cyrIi}{\84\127}% U+0457  
13776 % U+0458 CYRILLIC SMALL LETTER JE; \*afii10105, jecyrillic  
13777 \DeclareTextCommand{\cyrje}{PU}{\84\130}% U+0458  
13778 % U+0459 CYRILLIC SMALL LETTER LJE; \*afii10106, ljecyrillic  
13779 \DeclareTextCommand{\cyrLje}{PU}{\84\131}% U+0459  
13780 % U+045A CYRILLIC SMALL LETTER NJE; \*afii10107, njecyrillic  
13781 \DeclareTextCommand{\cyrnje}{PU}{\84\132}% U+045A  
13782 % U+045B CYRILLIC SMALL LETTER TSHE; \*afii10108, tshecyrillic  
13783 \DeclareTextCommand{\cyrtshe}{PU}{\84\133}% U+045B  
13784 % U+045C CYRILLIC SMALL LETTER KJE; \*afii10109, kjecyrillic  
13785 \DeclareTextCompositeCommand{\'}{PU}{\cyrk}{\84\134}% U+045C  
13786 % U+045D CYRILLIC SMALL LETTER I WITH GRAVE  
13787 \DeclareTextCompositeCommand{\'}{PU}{\cyrI}{\84\135}% U+045D  
13788 % U+045E CYRILLIC SMALL LETTER SHORT U; \*afii10110, ushortcyrillic  
13789 \DeclareTextCommand{\cyrushrt}{PU}{\84\136}% U+045E  
13790 \DeclareTextCompositeCommand{\U}{PU}{\curu}{\84\136}% U+045E  
13791 % U+045F CYRILLIC SMALL LETTER DZHE; \*afii10193, dzhecyrillic  
13792 \DeclareTextCommand{\cyrdzhe}{PU}{\84\137}% U+045F  
13793 % U+0460 CYRILLIC CAPITAL LETTER OMEGA; Omegacyrillic  
13794 \DeclareTextCommand{\CYROMEGA}{PU}{\84\140}% U+0460  
13795 % U+0461 CYRILLIC SMALL LETTER OMEGA; omegacyrillic  
13796 \DeclareTextCommand{\cyromega}{PU}{\84\141}% U+0461  
13797 % U+0462 CYRILLIC CAPITAL LETTER YAT; Yatcyrillic, \*afii10146  
13798 \DeclareTextCommand{\CYRYAT}{PU}{\84\142}% U+0462  
13799 % U+0463 CYRILLIC SMALL LETTER YAT; \*afii10194, yatcyrillic  
13800 \DeclareTextCommand{\cyrYat}{PU}{\84\143}% U+0463  
13801 % U+0464 CYRILLIC CAPITAL LETTER IOTIFIED E; Eiotifiedcyrillic

13802 \DeclareTextCommand{\CYRIOTE}{PU}{\84\144}% U+0464  
13803 % U+0465 CYRILLIC SMALL LETTER IOTIFIED E; eiotifiedcyrillic  
13804 \DeclareTextCommand{\cyriote}{PU}{\84\145}% U+0465  
13805 % U+0466 CYRILLIC CAPITAL LETTER LITTLE YUS; Yuslittlecyrillic  
13806 \DeclareTextCommand{\CYRLYUS}{PU}{\84\146}% U+0466  
13807 % U+0467 CYRILLIC SMALL LETTER LITTLE YUS; yuslittlecyrillic  
13808 \DeclareTextCommand{\cyrlyus}{PU}{\84\147}% U+0467  
13809 % U+0468 CYRILLIC CAPITAL LETTER IOTIFIED LITTLE YUS; Yuslittleiotifiedcyrillic  
13810 \DeclareTextCommand{\CYRIOTLYUS}{PU}{\84\150}% U+0468  
13811 % U+0469 CYRILLIC SMALL LETTER IOTIFIED LITTLE YUS; yuslittleiotifiedcyrillic  
13812 \DeclareTextCommand{\cyriotlyus}{PU}{\84\151}% U+0469  
13813 % U+046A CYRILLIC CAPITAL LETTER BIG YUS; Yusbigcyrillic  
13814 \DeclareTextCommand{\CYRBYUS}{PU}{\84\152}% U+046A  
13815 % U+046B CYRILLIC SMALL LETTER BIG YUS; yusbigcyrillic  
13816 \DeclareTextCommand{\cyrbyus}{PU}{\84\153}% U+046B  
13817 % U+046C CYRILLIC CAPITAL LETTER IOTIFIED BIG YUS; Yusbigiotifiedcyrillic  
13818 \DeclareTextCommand{\CYRIOTBYUS}{PU}{\84\154}% U+046C  
13819 % U+046D CYRILLIC SMALL LETTER IOTIFIED BIG YUS; yusbigiotifiedcyrillic  
13820 \DeclareTextCommand{\cyriotbyus}{PU}{\84\155}% U+046D  
13821 % U+046E CYRILLIC CAPITAL LETTER KSI; Ksicyrillic  
13822 \DeclareTextCommand{\CYRKSI}{PU}{\84\156}% U+046E  
13823 % U+046F CYRILLIC SMALL LETTER KSI; ksicyrillic  
13824 \DeclareTextCommand{\cyrksi}{PU}{\84\157}% U+046F  
13825 % U+0470 CYRILLIC CAPITAL LETTER PSI; Psicyrillic  
13826 \DeclareTextCommand{\CYRPSI}{PU}{\84\160}% U+0470  
13827 % U+0471 CYRILLIC SMALL LETTER PSI; psicyrillic  
13828 \DeclareTextCommand{\cyrpsi}{PU}{\84\161}% U+0471  
13829 % U+0472 CYRILLIC CAPITAL LETTER FITA; Fitacyrillic, \*afii10147  
13830 \DeclareTextCommand{\CYRFITA}{PU}{\84\162}% U+0472  
13831 % U+0473 CYRILLIC SMALL LETTER FITA; \*afii10195, fitacyrillic  
13832 \DeclareTextCommand{\cyrfita}{PU}{\84\163}% U+0473  
13833 % U+0474 CYRILLIC CAPITAL LETTER IZHITSA; Izhitsacyrillic, \*afii10148  
13834 \DeclareTextCommand{\CYRIZH}{PU}{\84\164}% U+0474  
13835 % U+0475 CYRILLIC SMALL LETTER IZHITSA; \*afii10196, izhitsacyrillic  
13836 \DeclareTextCommand{\cyrizh}{PU}{\84\165}% U+0475  
13837 % U+0476 CYRILLIC CAPITAL LETTER IZHITSA WITH DOUBLE GRAVE ACCENT; Izhitsadblgravecyrillic  
13838 \DeclareTextCompositeCommand{\C}{PU}{\CYRIZH}{\84\166}% U+0476  
13839 % U+0477 CYRILLIC SMALL LETTER IZHITSA WITH DOUBLE GRAVE ACCENT; izhitsadblgravecyrillic  
13840 \DeclareTextCompositeCommand{\C}{PU}{\cyrizh}{\84\167}% U+0477  
13841 % U+0478 CYRILLIC CAPITAL LETTER UK; Ukcyrillic  
13842 \DeclareTextCommand{\CYRUK}{PU}{\84\170}% U+0478  
13843 % U+0479 CYRILLIC SMALL LETTER UK; ukcyrillic  
13844 \DeclareTextCommand{\cyruk}{PU}{\84\171}% U+0479  
13845 % U+047A CYRILLIC CAPITAL LETTER ROUND OMEGA; Omegaroundcyrillic  
13846 \DeclareTextCommand{\CYROMEGARND}{PU}{\84\172}% U+047A  
13847 % U+047B CYRILLIC SMALL LETTER ROUND OMEGA; omegaroundcyrillic  
13848 \DeclareTextCommand{\cyromegarnd}{PU}{\84\173}% U+047B  
13849 % U+047C CYRILLIC CAPITAL LETTER OMEGA WITH TITLO; Omegatitlocyrillic  
13850 \DeclareTextCommand{\CYROMEGATITLO}{PU}{\84\174}% U+047C  
13851 % U+047D CYRILLIC SMALL LETTER OMEGA WITH TITLO; omegatitlocyrillic  
13852 \DeclareTextCommand{\cyromegatitlo}{PU}{\84\175}% U+047D  
13853 % U+047E CYRILLIC CAPITAL LETTER OT; Otcyrillic  
13854 \DeclareTextCommand{\CYROT}{PU}{\84\176}% U+047E  
13855 % U+047F CYRILLIC SMALL LETTER OT; otcyrillic  
13856 \DeclareTextCommand{\cyrot}{PU}{\84\177}% U+047F  
13857 % U+0480 CYRILLIC CAPITAL LETTER KOPPA; Koppacyrillic  
13858 \DeclareTextCommand{\CYRKOPPA}{PU}{\84\200}% U+0480



13859 % U+0481 CYRILLIC SMALL LETTER KOPPA; koppacyrillic  
 13860 \DeclareTextCommand{\cyrkoppa}{PU}{\84\201}% U+0481  
 13861 % U+0482 CYRILLIC THOUSANDS SIGN; thousandcyrillic  
 13862 \DeclareTextCommand{\cyrthousands}{PU}{\84\202}% U+0482  
 \84\203: U+0483 COMBINING CYRILLIC TITLO; titlocyrillicmb  
 \84\204: U+0484 COMBINING CYRILLIC PALATALIZATION; palatalizationcyrillicmb  
 \84\205: U+0485 COMBINING CYRILLIC DASIA PNEUMATA; dasiapneumatacyrillicmb  
 \84\206: U+0486 COMBINING CYRILLIC PSILI PNEUMATA; psilipneumatacyrillicmb  
 \84\207: U+0487 COMBINING CYRILLIC POKRYTIE  
 \84\210: U+0488 COMBINING CYRILLIC HUNDRED THOUSANDS SIGN  
 \84\211: U+0489 COMBINING CYRILLIC MILLIONS SIGN  
 13863 % U+048A CYRILLIC CAPITAL LETTER SHORT I WITH TAIL  
 13864 \DeclareTextCommand{\CYRISHRTDSC}{PU}{\84\212}% U+048A  
 13865 % U+048B CYRILLIC SMALL LETTER SHORT I WITH TAIL  
 13866 \DeclareTextCommand{\cyrishrtdsc}{PU}{\84\213}% U+048B  
 13867 % U+048C CYRILLIC CAPITAL LETTER SEMISOFT SIGN  
 13868 \DeclareTextCommand{\CYRSEMISFTSN}{PU}{\84\214}% U+048C  
 13869 % U+048D CYRILLIC SMALL LETTER SEMISOFT SIGN  
 13870 \DeclareTextCommand{\cyrsemisftsn}{PU}{\84\215}% U+048D  
 13871 % U+048E CYRILLIC CAPITAL LETTER ER WITH TICK  
 13872 \DeclareTextCommand{\CYRRTICK}{PU}{\84\216}% U+048E  
 13873 % U+048F CYRILLIC SMALL LETTER ER WITH TICK  
 13874 \DeclareTextCommand{\cyrrtick}{PU}{\84\217}% U+048F  
 13875 % U+0490 CYRILLIC CAPITAL LETTER GHE WITH UPTURN; Gheupturncyrillic, \*afii10050  
 13876 \DeclareTextCommand{\CYRGUP}{PU}{\84\220}% U+0490  
 13877 % U+0491 CYRILLIC SMALL LETTER GHE WITH UPTURN; \*afii10098, gheupturncyrillic  
 13878 \DeclareTextCommand{\cyrgup}{PU}{\84\221}% U+0491  
 13879 % U+0492 CYRILLIC CAPITAL LETTER GHE WITH STROKE; Ghestrokecyrillic  
 13880 \DeclareTextCommand{\CYRGHCRS}{PU}{\84\222}% U+0492  
 13881 % U+0493 CYRILLIC SMALL LETTER GHE WITH STROKE; ghestrokecyrillic  
 13882 \DeclareTextCommand{\cyrghcrs}{PU}{\84\223}% U+0493  
 13883 % U+0494 CYRILLIC CAPITAL LETTER GHE WITH MIDDLE HOOK; Ghemiddlehookcyrillic  
 13884 \DeclareTextCommand{\CYRGHK}{PU}{\84\224}% U+0494  
 13885 % U+0495 CYRILLIC SMALL LETTER GHE WITH MIDDLE HOOK; ghemiddlehookcyrillic  
 13886 \DeclareTextCommand{\cyrghk}{PU}{\84\225}% U+0495  
 13887 % U+0496 CYRILLIC CAPITAL LETTER ZHE WITH DESCENDER; Zhedescendercyrillic  
 13888 \DeclareTextCommand{\CYRZHDSC}{PU}{\84\226}% U+0496  
 13889 % U+0497 CYRILLIC SMALL LETTER ZHE WITH DESCENDER; zhedescendercyrillic  
 13890 \DeclareTextCommand{\cyrzhdsc}{PU}{\84\227}% U+0497  
 13891 % U+0498 CYRILLIC CAPITAL LETTER ZE WITH DESCENDER; Zedescendercyrillic  
 13892 \DeclareTextCommand{\CYRZDSC}{PU}{\84\230}% U+0498  
 13893 \DeclareTextCompositeCommand{\c}{PU}{\CYRZ}{\84\230}% U+0498  
 13894 % U+0499 CYRILLIC SMALL LETTER ZE WITH DESCENDER; zedescendercyrillic  
 13895 \DeclareTextCommand{\cyrzdsc}{PU}{\84\231}% U+0499  
 13896 \DeclareTextCompositeCommand{\c}{PU}{\cyrz}{\84\231}% U+0499  
 13897 % U+049A CYRILLIC CAPITAL LETTER KA WITH DESCENDER; Kadescendercyrillic  
 13898 \DeclareTextCommand{\CYRKDSC}{PU}{\84\232}% U+049A  
 13899 % U+049B CYRILLIC SMALL LETTER KA WITH DESCENDER; kadescendercyrillic  
 13900 \DeclareTextCommand{\cyrkdsc}{PU}{\84\233}% U+049B  
 13901 % U+049C CYRILLIC CAPITAL LETTER KA WITH VERTICAL STROKE; Kavertikalstrokecyrillic  
 13902 \DeclareTextCommand{\CYRKVCRS}{PU}{\84\234}% U+049C  
 13903 % U+049D CYRILLIC SMALL LETTER KA WITH VERTICAL STROKE; kavertikalstrokecyrillic  
 13904 \DeclareTextCommand{\cyrkvcrs}{PU}{\84\235}% U+049D

13905 % U+049E CYRILLIC CAPITAL LETTER KA WITH STROKE; Kastrokecyrillic  
13906 \DeclareTextCommand{\CYRKHCRS}{PU}{\84\236}% U+049E  
13907 % U+049F CYRILLIC SMALL LETTER KA WITH STROKE; kastrokecyrillic  
13908 \DeclareTextCommand{\cyrkhrs}{PU}{\84\237}% U+049F  
13909 % U+04A0 CYRILLIC CAPITAL LETTER BASHKIR KA; Kabashkircyrillic  
13910 \DeclareTextCommand{\CYRKBEAK}{PU}{\84\240}% U+04A0  
13911 % U+04A1 CYRILLIC SMALL LETTER BASHKIR KA; kabashkircyrillic  
13912 \DeclareTextCommand{\cyrkbeak}{PU}{\84\241}% U+04A1  
13913 % U+04A2 CYRILLIC CAPITAL LETTER EN WITH DESCENDER; Endescendercyrillic  
13914 \DeclareTextCommand{\CYRNDSC}{PU}{\84\242}% U+04A2  
13915 % U+04A3 CYRILLIC SMALL LETTER EN WITH DESCENDER; endescendercyrillic  
13916 \DeclareTextCommand{\cyrndsc}{PU}{\84\243}% U+04A3  
13917 % U+04A4 CYRILLIC CAPITAL LIGATURE EN GHE; Enghecyrillic  
13918 \DeclareTextCommand{\CYRNG}{PU}{\84\244}% U+04A4  
13919 % U+04A5 CYRILLIC SMALL LIGATURE EN GHE; enghecyrillic  
13920 \DeclareTextCommand{\cyrng}{PU}{\84\245}% U+04A5  
13921 % U+04A6 CYRILLIC CAPITAL LETTER PE WITH MIDDLE HOOK; Pemiddlehookcyrillic  
13922 \DeclareTextCommand{\CYRPHK}{PU}{\84\246}% U+04A6  
13923 % U+04A7 CYRILLIC SMALL LETTER PE WITH MIDDLE HOOK; pemiddlehookcyrillic  
13924 \DeclareTextCommand{\cyrphk}{PU}{\84\247}% U+04A7  
13925 % U+04A8 CYRILLIC CAPITAL LETTER ABKHASIAN HA; Haabkhasiancyrillic  
13926 \DeclareTextCommand{\CYRABHHA}{PU}{\84\250}% U+04A8  
13927 % U+04A9 CYRILLIC SMALL LETTER ABKHASIAN HA; haabkhasiancyrillic  
13928 \DeclareTextCommand{\cyrabhha}{PU}{\84\251}% U+04A9  
13929 % U+04AA CYRILLIC CAPITAL LETTER ES WITH DESCENDER; Esdescendercyrillic  
13930 \DeclareTextCommand{\CYRSDSC}{PU}{\84\252}% U+04AA  
13931 \DeclareTextCompositeCommand{\CYRSDSC}{PU}{\CYRS}{\84\252}% U+04AA  
13932 % U+04AB CYRILLIC SMALL LETTER ES WITH DESCENDER; esdescendercyrillic  
13933 \DeclareTextCommand{\cyrsdsc}{PU}{\84\253}% U+04AB  
13934 \DeclareTextCompositeCommand{\k}{PU}{\cyrs}{\84\253}% U+04AB  
13935 % U+04AC CYRILLIC CAPITAL LETTER TE WITH DESCENDER; Tedescendercyrillic  
13936 \DeclareTextCommand{\CYRTDSC}{PU}{\84\254}% U+04AC  
13937 % U+04AD CYRILLIC SMALL LETTER TE WITH DESCENDER; tedescendercyrillic  
13938 \DeclareTextCommand{\cyrttdsc}{PU}{\84\255}% U+04AD  
13939 % U+04AE CYRILLIC CAPITAL LETTER STRAIGHT U; Ustraightcyrillic  
13940 \DeclareTextCommand{\CYRY}{PU}{\84\256}% U+04AE  
13941 % U+04AF CYRILLIC SMALL LETTER STRAIGHT U; ustraightcyrillic  
13942 \DeclareTextCommand{\cyry}{PU}{\84\257}% U+04AF  
13943 % U+04B0 CYRILLIC CAPITAL LETTER STRAIGHT U WITH STROKE; Ustraightstrokecyrillic  
13944 \DeclareTextCommand{\CYRYHCRS}{PU}{\84\260}% U+04B0  
13945 % U+04B1 CYRILLIC SMALL LETTER STRAIGHT U WITH STROKE; ustraightstrokecyrillic  
13946 \DeclareTextCommand{\cyryhcrs}{PU}{\84\261}% U+04B1  
13947 % U+04B2 CYRILLIC CAPITAL LETTER HA WITH DESCENDER; Hadescendercyrillic  
13948 \DeclareTextCommand{\CYRHDSC}{PU}{\84\262}% U+04B2  
13949 % U+04B3 CYRILLIC SMALL LETTER HA WITH DESCENDER; hadescendercyrillic  
13950 \DeclareTextCommand{\cyrhdsc}{PU}{\84\263}% U+04B3  
13951 % U+04B4 CYRILLIC CAPITAL LIGATURE TE TSE; Tetsecyrillic  
13952 \DeclareTextCommand{\CYRTETSE}{PU}{\84\264}% U+04B4  
13953 % U+04B5 CYRILLIC SMALL LIGATURE TE TSE; tetsecyrillic  
13954 \DeclareTextCommand{\cyrtetse}{PU}{\84\265}% U+04B5  
13955 % U+04B6 CYRILLIC CAPITAL LETTER CHE WITH DESCENDER; Chedescendercyrillic  
13956 \DeclareTextCommand{\CYRCHRDSC}{PU}{\84\266}% U+04B6  
13957 % U+04B7 CYRILLIC SMALL LETTER CHE WITH DESCENDER; chedescendercyrillic  
13958 \DeclareTextCommand{\cyrchrdsc}{PU}{\84\267}% U+04B7  
13959 % U+04B8 CYRILLIC CAPITAL LETTER CHE WITH VERTICAL STROKE; Cheverticalstrokecyrillic  
13960 \DeclareTextCommand{\CYRCHVCRS}{PU}{\84\270}% U+04B8  
13961 % U+04B9 CYRILLIC SMALL LETTER CHE WITH VERTICAL STROKE; cheverticalstrokecyrillic

13962 \DeclareTextCommand{\cyrchvcrs}{PU}{\84\271}% U+04B9  
 13963 % U+04BA CYRILLIC CAPITAL LETTER SHHA; Shhacyrillic  
 13964 \DeclareTextCommand{\CYRSHHA}{PU}{\84\272}% U+04BA  
 13965 % U+04BB CYRILLIC SMALL LETTER SHHA; shhacyrillic  
 13966 \DeclareTextCommand{\cyrshha}{PU}{\84\273}% U+04BB  
 13967 % U+04BC CYRILLIC CAPITAL LETTER ABKHASIAN CHE; Cheabkhasiancyrillic  
 13968 \DeclareTextCommand{\CYRABHCH}{PU}{\84\274}% U+04BC  
 13969 % U+04BD CYRILLIC SMALL LETTER ABKHASIAN CHE; cheabkhasiancyrillic  
 13970 \DeclareTextCommand{\cyrabhch}{PU}{\84\275}% U+04BD  
 13971 % U+04BE CYRILLIC CAPITAL LETTER ABKHASIAN CHE WITH DESCENDER; Chedescenderabkhasiancyrillic  
 13972 \DeclareTextCommand{\CYRABHCHDSC}{PU}{\84\276}% U+04BE  
 13973 \DeclareTextCompositeCommand{\k}{PU}{\CYRABHCH}{\84\276}% U+04BE  
 13974 % U+04BF CYRILLIC SMALL LETTER ABKHASIAN CHE WITH DESCENDER; chedescenderabkhasiancyrillic  
 13975 \DeclareTextCommand{\cyrabhchdsc}{PU}{\84\277}% U+04BF  
 13976 \DeclareTextCompositeCommand{\k}{PU}{\cyrabhch}{\84\277}% U+04BF  
 13977 % U+04C0 CYRILLIC LETTER PALOCHKA; palochkacyrillic  
 13978 \DeclareTextCommand{\CYRpalochka}{PU}{\84\300}% U+04C0  
 13979 % U+04C1 CYRILLIC CAPITAL LETTER ZHE WITH BREVE; Zhebrevecyrillic  
 13980 \DeclareTextCompositeCommand{\U}{PU}{\CYRZH}{\84\301}% U+04C1  
 13981 % U+04C2 CYRILLIC SMALL LETTER ZHE WITH BREVE; zhebrevecyrillic  
 13982 \DeclareTextCompositeCommand{\U}{PU}{\cyrzh}{\84\302}% U+04C2  
 13983 % U+04C3 CYRILLIC CAPITAL LETTER KA WITH HOOK; Kahookcyrillic  
 13984 \DeclareTextCommand{\CYRKHK}{PU}{\84\303}% U+04C3  
 13985 % U+04C4 CYRILLIC SMALL LETTER KA WITH HOOK; kahookcyrillic  
 13986 \DeclareTextCommand{\cyrkhk}{PU}{\84\304}% U+04C4  
 13987 % U+04C5 CYRILLIC CAPITAL LETTER EL WITH TAIL  
 13988 \DeclareTextCommand{\CYRLDSC}{PU}{\84\305}% U+04C5  
 13989 % U+04C6 CYRILLIC SMALL LETTER EL WITH TAIL  
 13990 \DeclareTextCommand{\cyrldsc}{PU}{\84\306}% U+04C6  
 13991 % U+04C7 CYRILLIC CAPITAL LETTER EN WITH HOOK; Enhookcyrillic  
 13992 \DeclareTextCommand{\CYRNHK}{PU}{\84\307}% U+04C7  
 13993 % U+04C8 CYRILLIC SMALL LETTER EN WITH HOOK; enhookcyrillic  
 13994 \DeclareTextCommand{\cyrnhk}{PU}{\84\310}% U+04C8  
 13995 % U+04CB CYRILLIC CAPITAL LETTER KHAKASSIAN CHE; Chekhakassiancyrillic  
 13996 \DeclareTextCommand{\CYRCHLDSC}{PU}{\84\313}% U+04CB  
 13997 % U+04CC CYRILLIC SMALL LETTER KHAKASSIAN CHE; chekhakassiancyrillic  
 13998 \DeclareTextCommand{\cyrchldsc}{PU}{\84\314}% U+04CC  
 13999 % U+04CD CYRILLIC CAPITAL LETTER EM WITH TAIL  
 14000 \DeclareTextCommand{\CYRMDSC}{PU}{\84\315}% U+04CD  
 14001 % U+04CE CYRILLIC SMALL LETTER EM WITH TAIL  
 14002 \DeclareTextCommand{\cyrmdsc}{PU}{\84\316}% U+04CE  
 \84\317: U+04CF CYRILLIC SMALL LETTER PALOCHKA  
 14003 % U+04D0 CYRILLIC CAPITAL LETTER A WITH BREVE; Abrevecyrillic  
 14004 \DeclareTextCompositeCommand{\U}{PU}{\CYRA}{\84\320}% U+04D0  
 14005 % U+04D1 CYRILLIC SMALL LETTER A WITH BREVE; abrevecyrillic  
 14006 \DeclareTextCompositeCommand{\U}{PU}{\cyra}{\84\321}% U+04D1  
 14007 % U+04D2 CYRILLIC CAPITAL LETTER A WITH DIAERESIS; Adieresiscyrillic  
 14008 \DeclareTextCompositeCommand{"}{PU}{\CYRA}{\84\322}% U+04D2  
 14009 % U+04D3 CYRILLIC SMALL LETTER A WITH DIAERESIS; adieresiscyrillic  
 14010 \DeclareTextCompositeCommand{"}{PU}{\cyra}{\84\323}% U+04D3  
 14011 % U+04D4 CYRILLIC CAPITAL LIGATURE A IE; Aiecyrillic  
 14012 \DeclareTextCommand{\CYRAE}{PU}{\84\324}% U+04D4  
 14013 % U+04D5 CYRILLIC SMALL LIGATURE A IE; aiecyrillic  
 14014 \DeclareTextCommand{\cyrae}{PU}{\84\325}% U+04D5  
 14015 % U+04D6 CYRILLIC CAPITAL LETTER IE WITH BREVE; Iebrevecyrillic  
 14016 \DeclareTextCompositeCommand{\U}{PU}{\CYRE}{\84\326}% U+04D6  
 14017 % U+04D7 CYRILLIC SMALL LETTER IE WITH BREVE; iebrevecyrillic

14018 \DeclareTextCompositeCommand{\U}{PU}{\cyre}{\84\327}% U+04D7  
14019 % U+04D8 CYRILLIC CAPITAL LETTER SCHWA; Schwacyrillic  
14020 \DeclareTextCommand{\CYRSCHWA}{PU}{\84\330}% U+04D8  
14021 % U+04D9 CYRILLIC SMALL LETTER SCHWA; \*afii10846, schwacyrillic  
14022 \DeclareTextCommand{\cyrschwa}{PU}{\84\331}% U+04D9  
14023 % U+04DA CYRILLIC CAPITAL LETTER SCHWA WITH DIAERESIS; Schwadiesiscyrillic  
14024 \DeclareTextCompositeCommand{"}{PU}{\CYRSCHWA}{\84\332}% U+04DA  
14025 % U+04DB CYRILLIC SMALL LETTER SCHWA WITH DIAERESIS; schwadiesiscyrillic  
14026 \DeclareTextCompositeCommand{"}{PU}{\cyrschwa}{\84\333}% U+04DB  
14027 % U+04DC CYRILLIC CAPITAL LETTER ZHE WITH DIAERESIS; Zhedieresiscyrillic  
14028 \DeclareTextCompositeCommand{"}{PU}{\CYRZH}{\84\334}% U+04DC  
14029 % U+04DD CYRILLIC SMALL LETTER ZHE WITH DIAERESIS; zhedieresiscyrillic  
14030 \DeclareTextCompositeCommand{"}{PU}{\cyrzh}{\84\335}% U+04DD  
14031 % U+04DE CYRILLIC CAPITAL LETTER ZE WITH DIAERESIS; Zedieresiscyrillic  
14032 \DeclareTextCompositeCommand{"}{PU}{\CYRZ}{\84\336}% U+04DE  
14033 % U+04DF CYRILLIC SMALL LETTER ZE WITH DIAERESIS; zedieresiscyrillic  
14034 \DeclareTextCompositeCommand{"}{PU}{\cyrz}{\84\337}% U+04DF  
14035 % U+04E0 CYRILLIC CAPITAL LETTER ABKHASIAN DZE; Dzeabkhasiancyrillic  
14036 \DeclareTextCommand{\CYRABHDZE}{PU}{\84\340}% U+04E0  
14037 % U+04E1 CYRILLIC SMALL LETTER ABKHASIAN DZE; dzeabkhasiancyrillic  
14038 \DeclareTextCommand{\cyrabhdze}{PU}{\84\341}% U+04E1  
14039 % U+04E2 CYRILLIC CAPITAL LETTER I WITH MACRON; Imacroncyrillic  
14040 \DeclareTextCompositeCommand{=}{PU}{\CYRI}{\84\342}% U+04E2  
14041 % U+04E3 CYRILLIC SMALL LETTER I WITH MACRON; imacroncyrillic  
14042 \DeclareTextCompositeCommand{=}{PU}{\cyri}{\84\343}% U+04E3  
14043 % U+04E4 CYRILLIC CAPITAL LETTER I WITH DIAERESIS; Idieresiscyrillic  
14044 \DeclareTextCompositeCommand{"}{PU}{\CYRI}{\84\344}% U+04E4  
14045 % U+04E5 CYRILLIC SMALL LETTER I WITH DIAERESIS; idieresiscyrillic  
14046 \DeclareTextCompositeCommand{"}{PU}{\cyri}{\84\345}% U+04E5  
14047 % U+04E6 CYRILLIC CAPITAL LETTER O WITH DIAERESIS; Odieresiscyrillic  
14048 \DeclareTextCompositeCommand{"}{PU}{\CYRO}{\84\346}% U+04E6  
14049 % U+04E7 CYRILLIC SMALL LETTER O WITH DIAERESIS; odieresiscyrillic  
14050 \DeclareTextCompositeCommand{"}{PU}{\cyro}{\84\347}% U+04E7  
14051 % U+04E8 CYRILLIC CAPITAL LETTER BARRED O; Obarredcyrillic  
14052 \DeclareTextCommand{\CYROTLD}{PU}{\84\350}% U+04E8  
14053 % U+04E9 CYRILLIC SMALL LETTER BARRED O; obarredcyrillic  
14054 \DeclareTextCommand{\cyrotld}{PU}{\84\351}% U+04E9  
14055 % U+04EA CYRILLIC CAPITAL LETTER BARRED O WITH DIAERESIS; Obarreddieresiscyrillic  
14056 \DeclareTextCompositeCommand{"}{PU}{\CYROTLD}{\84\352}% U+04EA  
14057 % U+04EB CYRILLIC SMALL LETTER BARRED O WITH DIAERESIS; obarreddieresiscyrillic  
14058 \DeclareTextCompositeCommand{"}{PU}{\cyrotld}{\84\353}% U+04EB  
14059 % U+04EC CYRILLIC CAPITAL LETTER E WITH DIAERESIS  
14060 \DeclareTextCompositeCommand{"}{PU}{\CYREREV}{\84\354}% U+04EC  
14061 % U+04ED CYRILLIC SMALL LETTER E WITH DIAERESIS  
14062 \DeclareTextCompositeCommand{"}{PU}{\cyreref}{\84\355}% U+04ED  
14063 % U+04EE CYRILLIC CAPITAL LETTER U WITH MACRON; Umacroncyrillic  
14064 \DeclareTextCompositeCommand{=}{PU}{\CYRU}{\84\356}% U+04EE  
14065 % U+04EF CYRILLIC SMALL LETTER U WITH MACRON; umacroncyrillic  
14066 \DeclareTextCompositeCommand{=}{PU}{\cyru}{\84\357}% U+04EF  
14067 % U+04F0 CYRILLIC CAPITAL LETTER U WITH DIAERESIS; Udieresiscyrillic  
14068 \DeclareTextCompositeCommand{"}{PU}{\CYRU}{\84\360}% U+04F0  
14069 % U+04F1 CYRILLIC SMALL LETTER U WITH DIAERESIS; udieresiscyrillic  
14070 \DeclareTextCompositeCommand{"}{PU}{\cyru}{\84\361}% U+04F1  
14071 % U+04F2 CYRILLIC CAPITAL LETTER U WITH DOUBLE ACUTE; Uhungarumlautcyrillic  
14072 \DeclareTextCompositeCommand{\H}{PU}{\CYRU}{\84\362}% U+04F2  
14073 % U+04F3 CYRILLIC SMALL LETTER U WITH DOUBLE ACUTE; uhungarumlautcyrillic  
14074 \DeclareTextCompositeCommand{\H}{PU}{\cyru}{\84\363}% U+04F3

14075 % U+04F4 CYRILLIC CAPITAL LETTER CHE WITH DIAERESIS; Chedieresiscyrillic  
 14076 \DeclareTextCompositeCommand{"}{PU}{\CYRCH}{\84\364}% U+04F4  
 14077 % U+04F5 CYRILLIC SMALL LETTER CHE WITH DIAERESIS; chedieresiscyrillic  
 14078 \DeclareTextCompositeCommand{"}{PU}{\cyrch}{\84\365}% U+04F5  
 14079 % U+04F6 CYRILLIC CAPITAL LETTER GHE WITH DESCENDER  
 14080 \DeclareTextCommand{\CYRGDSC}{PU}{\84\366}% U+04F6  
 14081 % U+04F7 CYRILLIC SMALL LETTER GHE WITH DESCENDER  
 14082 \DeclareTextCommand{\cyrgdsc}{PU}{\84\367}% U+04F7  
 14083 % U+04F8 CYRILLIC CAPITAL LETTER YERU WITH DIAERESIS; Yerudieresiscyrillic  
 14084 \DeclareTextCompositeCommand{"}{PU}{\CYRERY}{\84\370}% U+04F8  
 14085 % U+04F9 CYRILLIC SMALL LETTER YERU WITH DIAERESIS; yerudieresiscyrillic  
 14086 \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  
 14087 % U+04FC CYRILLIC CAPITAL LETTER HA WITH HOOK  
 14088 \DeclareTextCommand{\CYRHHK}{PU}{\84\374}% U+04FC  
 14089 % U+04FD CYRILLIC SMALL LETTER HA WITH HOOK  
 14090 \DeclareTextCommand{\cyrrhk}{PU}{\84\375}% U+04FD  
 \84\376: U+04FE CYRILLIC CAPITAL LETTER HA WITH STROKE  
 \84\377: U+04FF CYRILLIC SMALL LETTER HA WITH STROKE

#### 50.2.10 Thai: U+0E00 to U+0E7F

14091 % U+0E3F THAI CURRENCY SYMBOL BAHT; bahtthai  
 14092 \DeclareTextCommand{\textbaht}{PU}{\9016\077}% U+0E3F

#### 50.2.11 Latin Extended Additional: U+1E00 to U+1EFF

14093 % U+1E02 LATIN CAPITAL LETTER B WITH DOT ABOVE; Bdotaccent  
 14094 \DeclareTextCompositeCommand{.}{PU}{B}{\9036\002}% U+1E02  
 14095 % U+1E03 LATIN SMALL LETTER B WITH DOT ABOVE; bdotaccent  
 14096 \DeclareTextCompositeCommand{.}{PU}{b}{\9036\003}% U+1E03  
 14097 % U+1E06 LATIN CAPITAL LETTER B WITH LINE BELOW; Blinebelow  
 14098 \DeclareTextCompositeCommand{\b}{PU}{B}{\9036\006}% U+1E06  
 14099 % U+1E07 LATIN SMALL LETTER B WITH LINE BELOW; blinebelow  
 14100 \DeclareTextCompositeCommand{\b}{PU}{b}{\9036\007}% U+1E07  
 14101 % U+1E0A LATIN CAPITAL LETTER D WITH DOT ABOVE; Ddotaccent  
 14102 \DeclareTextCompositeCommand{.}{PU}{D}{\9036\012}% U+1E0A  
 14103 % U+1E0B LATIN SMALL LETTER D WITH DOT ABOVE; ddotaccent  
 14104 \DeclareTextCompositeCommand{.}{PU}{d}{\9036\013}% U+1E0B  
 14105 % U+1E0E LATIN CAPITAL LETTER D WITH LINE BELOW; Dlinebelow  
 14106 \DeclareTextCompositeCommand{\b}{PU}{D}{\9036\016}% U+1E0E  
 14107 % U+1E0F LATIN SMALL LETTER D WITH LINE BELOW; dlinebelow  
 14108 \DeclareTextCompositeCommand{\b}{PU}{d}{\9036\017}% U+1E0F  
 14109 % U+1E10 LATIN CAPITAL LETTER D WITH CEDILLA; Dcedilla  
 14110 \DeclareTextCompositeCommand{\c}{PU}{D}{\9036\020}% U+1E10  
 14111 % U+1E11 LATIN SMALL LETTER D WITH CEDILLA; dcedilla  
 14112 \DeclareTextCompositeCommand{\c}{PU}{d}{\9036\021}% U+1E11  
 14113 % U+1E1E LATIN CAPITAL LETTER F WITH DOT ABOVE; Fdotaccent  
 14114 \DeclareTextCompositeCommand{.}{PU}{F}{\9036\036}% U+1E1E  
 14115 % U+1E1F LATIN SMALL LETTER F WITH DOT ABOVE; fdotaccent  
 14116 \DeclareTextCompositeCommand{.}{PU}{f}{\9036\037}% U+1E1F  
 14117 % U+1E20 LATIN CAPITAL LETTER G WITH MACRON; Gmacron  
 14118 \DeclareTextCompositeCommand{=}{PU}{G}{\9036\040}% U+1E20  
 14119 % U+1E21 LATIN SMALL LETTER G WITH MACRON; gmacron  
 14120 \DeclareTextCompositeCommand{=}{PU}{g}{\9036\041}% U+1E21  
 14121 % U+1E22 LATIN CAPITAL LETTER H WITH DOT ABOVE; Hdotaccent

14122 \DeclareTextCompositeCommand{.}{PU}{H}{\9036\042}% U+1E22  
14123 % U+1E23 LATIN SMALL LETTER H WITH DOT ABOVE; hdotaccent  
14124 \DeclareTextCompositeCommand{.}{PU}{h}{\9036\043}% U+1E23  
14125 % U+1E26 LATIN CAPITAL LETTER H WITH DIAERESIS; Hdieresis  
14126 \DeclareTextCompositeCommand{"}{PU}{H}{\9036\046}% U+1E26  
14127 % U+1E27 LATIN SMALL LETTER H WITH DIAERESIS; hdieresis  
14128 \DeclareTextCompositeCommand{"}{PU}{h}{\9036\047}% U+1E27  
14129 % U+1E28 LATIN CAPITAL LETTER H WITH CEDILLA; Hcedilla  
14130 \DeclareTextCompositeCommand{c}{PU}{H}{\9036\050}% U+1E28  
14131 % U+1E29 LATIN SMALL LETTER H WITH CEDILLA; hcedilla  
14132 \DeclareTextCompositeCommand{c}{PU}{h}{\9036\051}% U+1E29  
14133 % U+1E30 LATIN CAPITAL LETTER K WITH ACUTE; Kacute  
14134 \DeclareTextCompositeCommand{'}{PU}{K}{\9036\060}% U+1E30  
14135 % U+1E31 LATIN SMALL LETTER K WITH ACUTE; kacute  
14136 \DeclareTextCompositeCommand{'}{PU}{k}{\9036\061}% U+1E31  
14137 % U+1E34 LATIN CAPITAL LETTER K WITH LINE BELOW; Klinebelow  
14138 \DeclareTextCompositeCommand{b}{PU}{K}{\9036\064}% U+1E34  
14139 % U+1E35 LATIN SMALL LETTER K WITH LINE BELOW; klinebelow  
14140 \DeclareTextCompositeCommand{b}{PU}{k}{\9036\065}% U+1E35  
14141 % U+1E3A LATIN CAPITAL LETTER L WITH LINE BELOW; Llinebelow  
14142 \DeclareTextCompositeCommand{b}{PU}{L}{\9036\072}% U+1E3A  
14143 % U+1E3B LATIN SMALL LETTER L WITH LINE BELOW; llinebelow  
14144 \DeclareTextCompositeCommand{b}{PU}{l}{\9036\073}% U+1E3B  
14145 % U+1E3E LATIN CAPITAL LETTER M WITH ACUTE; Macute  
14146 \DeclareTextCompositeCommand{'}{PU}{M}{\9036\076}% U+1E3E  
14147 % U+1E3F LATIN SMALL LETTER M WITH ACUTE; macute  
14148 \DeclareTextCompositeCommand{'}{PU}{m}{\9036\077}% U+1E3F  
14149 % U+1E40 LATIN CAPITAL LETTER M WITH DOT ABOVE; Mdotaccent  
14150 \DeclareTextCompositeCommand{.}{PU}{M}{\9036\100}% U+1E40  
14151 % U+1E41 LATIN SMALL LETTER M WITH DOT ABOVE; mdotaccent  
14152 \DeclareTextCompositeCommand{.}{PU}{m}{\9036\101}% U+1E41  
14153 % U+1E44 LATIN CAPITAL LETTER N WITH DOT ABOVE; Ndotaccent  
14154 \DeclareTextCompositeCommand{.}{PU}{N}{\9036\104}% U+1E44  
14155 % U+1E45 LATIN SMALL LETTER N WITH DOT ABOVE; ndotaccent  
14156 \DeclareTextCompositeCommand{.}{PU}{n}{\9036\105}% U+1E45  
14157 % U+1E48 LATIN CAPITAL LETTER N WITH LINE BELOW; Nlinebelow  
14158 \DeclareTextCompositeCommand{b}{PU}{N}{\9036\110}% U+1E48  
14159 % U+1E49 LATIN SMALL LETTER N WITH LINE BELOW; nlinebelow  
14160 \DeclareTextCompositeCommand{b}{PU}{n}{\9036\111}% U+1E49  
14161 % U+1E54 LATIN CAPITAL LETTER P WITH ACUTE; Pacute  
14162 \DeclareTextCompositeCommand{'}{PU}{P}{\9036\124}% U+1E54  
14163 % U+1E55 LATIN SMALL LETTER P WITH ACUTE; pacute  
14164 \DeclareTextCompositeCommand{'}{PU}{p}{\9036\125}% U+1E55  
14165 % U+1E56 LATIN CAPITAL LETTER P WITH DOT ABOVE; Pdotaccent  
14166 \DeclareTextCompositeCommand{.}{PU}{P}{\9036\126}% U+1E56  
14167 % U+1E57 LATIN SMALL LETTER P WITH DOT ABOVE; pdotaccent  
14168 \DeclareTextCompositeCommand{.}{PU}{p}{\9036\127}% U+1E57  
14169 % U+1E58 LATIN CAPITAL LETTER R WITH DOT ABOVE; Rdotaccent  
14170 \DeclareTextCompositeCommand{.}{PU}{R}{\9036\130}% U+1E58  
14171 % U+1E59 LATIN SMALL LETTER R WITH DOT ABOVE; rdotaccent  
14172 \DeclareTextCompositeCommand{.}{PU}{r}{\9036\131}% U+1E59  
14173 % U+1E5E LATIN CAPITAL LETTER R WITH LINE BELOW; Rlinebelow  
14174 \DeclareTextCompositeCommand{b}{PU}{R}{\9036\136}% U+1E5E  
14175 % U+1E5F LATIN SMALL LETTER R WITH LINE BELOW; rlinebelow  
14176 \DeclareTextCompositeCommand{b}{PU}{r}{\9036\137}% U+1E5F  
14177 % U+1E60 LATIN CAPITAL LETTER S WITH DOT ABOVE; Sdotaccent  
14178 \DeclareTextCompositeCommand{.}{PU}{S}{\9036\140}% U+1E60

14179 % U+1E61 LATIN SMALL LETTER S WITH DOT ABOVE; sdotaccent  
14180 \DeclareTextCompositeCommand{\.}{PU}{s}{\9036\141}% U+1E61  
14181 % U+1E6E LATIN CAPITAL LETTER T WITH LINE BELOW; Tlinebelow  
14182 \DeclareTextCompositeCommand{\b}{PU}{T}{\9036\156}% U+1E6E  
14183 % U+1E6F LATIN SMALL LETTER T WITH LINE BELOW; tlinebelow  
14184 \DeclareTextCompositeCommand{\b}{PU}{t}{\9036\157}% U+1E6F  
14185 % U+1E7C LATIN CAPITAL LETTER V WITH TILDE; Vtilde  
14186 \DeclareTextCompositeCommand{\~}{PU}{V}{\9036\174}% U+1E7C  
14187 % U+1E7D LATIN SMALL LETTER V WITH TILDE; vtilde  
14188 \DeclareTextCompositeCommand{\~}{PU}{v}{\9036\175}% U+1E7D  
14189 % U+1E80 LATIN CAPITAL LETTER W WITH GRAVE; Wgrave  
14190 \DeclareTextCompositeCommand{\`}{PU}{W}{\9036\200}% U+1E80  
14191 % U+1E81 LATIN SMALL LETTER W WITH GRAVE; wgrave  
14192 \DeclareTextCompositeCommand{\`}{PU}{w}{\9036\201}% U+1E81  
14193 % U+1E82 LATIN CAPITAL LETTER W WITH ACUTE; Wacute  
14194 \DeclareTextCompositeCommand{\'}{PU}{W}{\9036\202}% U+1E82  
14195 % U+1E83 LATIN SMALL LETTER W WITH ACUTE; wacute  
14196 \DeclareTextCompositeCommand{\'}{PU}{w}{\9036\203}% U+1E83  
14197 % U+1E84 LATIN CAPITAL LETTER W WITH DIAERESIS; Wdieresis  
14198 \DeclareTextCompositeCommand{\"}{PU}{W}{\9036\204}% U+1E84  
14199 % U+1E85 LATIN SMALL LETTER W WITH DIAERESIS; wdieresis  
14200 \DeclareTextCompositeCommand{\"}{PU}{w}{\9036\205}% U+1E85  
14201 % U+1E86 LATIN CAPITAL LETTER W WITH DOT ABOVE; Wdotaccent  
14202 \DeclareTextCompositeCommand{\.}{PU}{W}{\9036\206}% U+1E86  
14203 % U+1E87 LATIN SMALL LETTER W WITH DOT ABOVE; wdotaccent  
14204 \DeclareTextCompositeCommand{\.}{PU}{w}{\9036\207}% U+1E87  
14205 % U+1E8A LATIN CAPITAL LETTER X WITH DOT ABOVE; Xdotaccent  
14206 \DeclareTextCompositeCommand{\.}{PU}{X}{\9036\212}% U+1E8A  
14207 % U+1E8B LATIN SMALL LETTER X WITH DOT ABOVE; xdotaccent  
14208 \DeclareTextCompositeCommand{\.}{PU}{x}{\9036\213}% U+1E8B  
14209 % U+1E8C LATIN CAPITAL LETTER X WITH DIAERESIS; Xdieresis  
14210 \DeclareTextCompositeCommand{\"}{PU}{X}{\9036\214}% U+1E8C  
14211 % U+1E8D LATIN SMALL LETTER X WITH DIAERESIS; xdieresis  
14212 \DeclareTextCompositeCommand{\"}{PU}{x}{\9036\215}% U+1E8D  
14213 % U+1E8E LATIN CAPITAL LETTER Y WITH DOT ABOVE; Ydotaccent  
14214 \DeclareTextCompositeCommand{\.}{PU}{Y}{\9036\216}% U+1E8E  
14215 % U+1E8F LATIN SMALL LETTER Y WITH DOT ABOVE; ydotaccent  
14216 \DeclareTextCompositeCommand{\.}{PU}{y}{\9036\217}% U+1E8F  
14217 % U+1E90 LATIN CAPITAL LETTER Z WITH CIRCUMFLEX; Zcircumflex  
14218 \DeclareTextCompositeCommand{\^}{PU}{Z}{\9036\220}% U+1E90  
14219 % U+1E91 LATIN SMALL LETTER Z WITH CIRCUMFLEX; zcircumflex  
14220 \DeclareTextCompositeCommand{\^}{PU}{z}{\9036\221}% U+1E91  
14221 % U+1E94 LATIN CAPITAL LETTER Z WITH LINE BELOW; Zlinebelow  
14222 \DeclareTextCompositeCommand{\b}{PU}{Z}{\9036\224}% U+1E94  
14223 % U+1E95 LATIN SMALL LETTER Z WITH LINE BELOW; zlinebelow  
14224 \DeclareTextCompositeCommand{\b}{PU}{z}{\9036\225}% U+1E95  
14225 % U+1E96 LATIN SMALL LETTER H WITH LINE BELOW; hlinebelow  
14226 \DeclareTextCompositeCommand{\b}{PU}{h}{\9036\226}% U+1E96  
14227 % U+1E97 LATIN SMALL LETTER T WITH DIAERESIS; tdieresis  
14228 \DeclareTextCompositeCommand{\"}{PU}{t}{\9036\227}% U+1E97  
14229 % U+1E98 LATIN SMALL LETTER W WITH RING ABOVE; wring  
14230 \DeclareTextCompositeCommand{\r}{PU}{w}{\9036\230}% U+1E98  
14231 % U+1E99 LATIN SMALL LETTER Y WITH RING ABOVE; yring  
14232 \DeclareTextCompositeCommand{\r}{PU}{y}{\9036\231}% U+1E99  
14233 % U+1E9B LATIN SMALL LETTER LONG S WITH DOT ABOVE; slongdotaccent  
14234 \DeclareTextCompositeCommand{\.}{PU}{\textlongs}{\9036\233}% U+1E9B  
14235 % U+1EBC LATIN CAPITAL LETTER E WITH TILDE; Etilde

14236 \DeclareTextCompositeCommand{\~}{PU}{E}{\9036\274}% U+1EB3  
 14237 % U+1EBD LATIN SMALL LETTER E WITH TILDE; etilde  
 14238 \DeclareTextCompositeCommand{\~}{PU}{e}{\9036\275}% U+1EBD  
 14239 % U+1EF2 LATIN CAPITAL LETTER Y WITH GRAVE; Ygrave  
 14240 \DeclareTextCompositeCommand{\`}{PU}{Y}{\9036\362}% U+1EF2  
 14241 % U+1EF3 LATIN SMALL LETTER Y WITH GRAVE; ygrave  
 14242 \DeclareTextCompositeCommand{\`}{PU}{y}{\9036\363}% U+1EF3  
 14243 % U+1EF8 LATIN CAPITAL LETTER Y WITH TILDE; Ytilde  
 14244 \DeclareTextCompositeCommand{\~}{PU}{Y}{\9036\370}% U+1EF8  
 14245 % U+1EF9 LATIN SMALL LETTER Y WITH TILDE; ytilde  
 14246 \DeclareTextCompositeCommand{\~}{PU}{y}{\9036\371}% U+1EF9

## 50.2.12 General Punctuation: U+2000 to U+206F

14247 % U+200C ZERO WIDTH NON-JOINER; \*afii61664, zerowidthnonjoiner  
 14248 \DeclareTextCommand{\textcompwordmark}{PU}{\9040\014}% U+200C  
 14249 % U+2013 EN DASH; endash  
 14250 \DeclareTextCommand{\textendash}{PU}{\9040\023}% U+2013  
 14251 % U+2014 EM DASH; emdash  
 14252 \DeclareTextCommand{\textemdash}{PU}{\9040\024}% U+2014  
 14253 % U+2016 DOUBLE VERTICAL LINE; dblverticalbar  
 14254 \DeclareTextCommand{\textbardbl}{PU}{\9040\026}% U+2016  
 14255 % U+2018 LEFT SINGLE QUOTATION MARK; quoteleft  
 14256 \DeclareTextCommand{\textquoteleft}{PU}{\9040\030}% U+2018  
 14257 % U+2019 RIGHT SINGLE QUOTATION MARK; quoteright  
 14258 \DeclareTextCommand{\textquoteright}{PU}{\9040\031}% U+2019  
 14259 % U+201A SINGLE LOW-9 QUOTATION MARK; quotesinglbase  
 14260 \DeclareTextCommand{\quotesinglbase}{PU}{\9040\032}% U+201A  
 14261 % U+201C LEFT DOUBLE QUOTATION MARK; quotedblleft  
 14262 \DeclareTextCommand{\textquotedblleft}{PU}{\9040\034}% U+201C  
 14263 % U+201D RIGHT DOUBLE QUOTATION MARK; quotedblright  
 14264 \DeclareTextCommand{\textquotedblright}{PU}{\9040\035}% U+201D  
 14265 % U+201E DOUBLE LOW-9 QUOTATION MARK; quotedblbase  
 14266 \DeclareTextCommand{\quotedblbase}{PU}{\9040\036}% U+201E  
 14267 % U+2020 DAGGER; dagger  
 14268 \DeclareTextCommand{\textdagger}{PU}{\9040\040}% U+2020  
 14269 % U+2021 DOUBLE DAGGER; daggerdbl  
 14270 \DeclareTextCommand{\textdaggerdbl}{PU}{\9040\041}% U+2021  
 14271 % U+2022 BULLET; bullet  
 14272 \DeclareTextCommand{\textbullet}{PU}{\9040\042}% U+2022  
 14273 % U+2026 HORIZONTAL ELLIPSIS; ellipsis  
 14274 \DeclareTextCommand{\textellipsis}{PU}{\9040\046}% U+2026  
 14275 % U+2030 PER MILLE SIGN; perthousand  
 14276 \DeclareTextCommand{\textperthousand}{PU}{\9040\060}% U+2030  
 14277 % U+2031 PER TEN THOUSAND SIGN  
 14278 \DeclareTextCommand{\textpertenthousand}{PU}{\9040\061}% U+2031  
 14279 % U+2039 SINGLE LEFT-POINTING ANGLE QUOTATION MARK; guilsinglleft  
 14280 \DeclareTextCommand{\guilsinglleft}{PU}{\9040\071}% U+2039  
 14281 % U+203A SINGLE RIGHT-POINTING ANGLE QUOTATION MARK; guilsinglright  
 14282 \DeclareTextCommand{\guilsinglright}{PU}{\9040\072}% U+203A  
 14283 % U+203B REFERENCE MARK; referencemark  
 14284 \DeclareTextCommand{\textreferencemark}{PU}{\9040\073}% U+203B  
 14285 % U+203D INTERROBANG  
 14286 \DeclareTextCommand{\textinterrobang}{PU}{\9040\075}% U+203D  
 14287 % U+2044 FRACTION SLASH; fraction  
 14288 \DeclareTextCommand{\textfractionsolidus}{PU}{\9040\104}% U+2044  
 14289 % U+2045 LEFT SQUARE BRACKET WITH QUILL  
 14290 \DeclareTextCommand{\textlquill}{PU}{\9040\105}% U+2045



14291 % U+2046 RIGHT SQUARE BRACKET WITH QUILL  
14292 \DeclareTextCommand{\texttrquill}{PU}{\9040\106}% U+2046  
14293 % U+2052 COMMERCIAL MINUS SIGN  
14294 \DeclareTextCommand{\textdiscount}{PU}{\9040\122}% U+2052

### 50.2.13 Superscripts and Subscripts: U+2070 to U+209F

14295 % U+2070 SUPERSCRIPT ZERO; zerosuperior  
14296 \DeclareTextCommand{\textzerosuperior}{PU}{\9040\160}% U+2070  
14297 % U+2074 SUPERSCRIPT FOUR; foursuperior  
14298 \DeclareTextCommand{\textfoursuperior}{PU}{\9040\164}% U+2074  
14299 % U+2075 SUPERSCRIPT FIVE; fivesuperior  
14300 \DeclareTextCommand{\textfivesuperior}{PU}{\9040\165}% U+2075  
14301 % U+2076 SUPERSCRIPT SIX; sixsuperior  
14302 \DeclareTextCommand{\textsixsuperior}{PU}{\9040\166}% U+2076  
14303 % U+2077 SUPERSCRIPT SEVEN; sevensuperior  
14304 \DeclareTextCommand{\textsevensuperior}{PU}{\9040\167}% U+2077  
14305 % U+2078 SUPERSCRIPT EIGHT; eightsuperior  
14306 \DeclareTextCommand{\texteightsuperior}{PU}{\9040\170}% U+2078  
14307 % U+2079 SUPERSCRIPT NINE; ninesuperior  
14308 \DeclareTextCommand{\textninesuperior}{PU}{\9040\171}% U+2079  
14309 % U+207A SUPERSCRIPT PLUS SIGN; plussuperior  
14310 \DeclareTextCommand{\textplussuperior}{PU}{\9040\172}% U+207A  
14311 % U+207B SUPERSCRIPT MINUS  
14312 \DeclareTextCommand{\textminussuperior}{PU}{\9040\173}  
14313 % U+207C SUPERSCRIPT EQUALS SIGN; equalsuperior  
14314 \DeclareTextCommand{\textequalsuperior}{PU}{\9040\174}  
14315 % U+207D SUPERSCRIPT LEFT PARENTHESIS; parenleftsuperior  
14316 \DeclareTextCommand{\textparenleftsuperior}{PU}{\9040\175}  
14317 % U+207E SUPERSCRIPT RIGHT PARENTHESIS; parenrightsuperior  
14318 \DeclareTextCommand{\textparenrightsuperior}{PU}{\9040\176}  
14319 % U+207F SUPERSCRIPT LATIN SMALL LETTER N; nsuperior  
14320 \DeclareTextCommand{\textnsuperior}{PU}{\9040\177}  
14321 % U+2080 SUBSCRIPT ZERO; zeroinferior  
14322 \DeclareTextCommand{\textzeroinferior}{PU}{\9040\200}% U+2080  
14323 % U+2081 SUBSCRIPT ONE; oneinferior  
14324 \DeclareTextCommand{\textoneinferior}{PU}{\9040\201}% U+2081  
14325 % U+2082 SUBSCRIPT TWO; twoinferior  
14326 \DeclareTextCommand{\texttwoinferior}{PU}{\9040\202}% U+2082  
14327 % U+2083 SUBSCRIPT THREE; threeinferior  
14328 \DeclareTextCommand{\textthreeinferior}{PU}{\9040\203}% U+2083  
14329 % U+2084 SUBSCRIPT FOUR; fourinferior  
14330 \DeclareTextCommand{\textfourinferior}{PU}{\9040\204}% U+2084  
14331 % U+2085 SUBSCRIPT FIVE; fiveinferior  
14332 \DeclareTextCommand{\textfiveinferior}{PU}{\9040\205}% U+2085  
14333 % U+2086 SUBSCRIPT SIX; sixinferior  
14334 \DeclareTextCommand{\textsixinferior}{PU}{\9040\206}% U+2086  
14335 % U+2087 SUBSCRIPT SEVEN; seveninferior  
14336 \DeclareTextCommand{\textseveninferior}{PU}{\9040\207}% U+2087  
14337 % U+2088 SUBSCRIPT EIGHT; eightinferior  
14338 \DeclareTextCommand{\texteightinferior}{PU}{\9040\210}% U+2088  
14339 % U+2089 SUBSCRIPT NINE; nineinferior  
14340 \DeclareTextCommand{\textnineinferior}{PU}{\9040\211}% U+2089  
14341 % U+208D SUBSCRIPT LEFT PARENTHESIS; parenleftinferior  
14342 \DeclareTextCommand{\textparenleftinferior}{PU}{\9040\215}% U+208D  
14343 % U+208E SUBSCRIPT RIGHT PARENTHESIS; parenrightinferior  
14344 \DeclareTextCommand{\textparenrightinferior}{PU}{\9040\216}% U+208E

#### 50.2.14 Currency Symbols: U+20A0 to U+20CF

14345 % U+20A1 COLON SIGN; \*colonmonetary, colonsign  
14346 \DeclareTextCommand{\textcolonmonetary}{PU}{\9040\241}% U+20A1  
14347 % U+20A4 LIRA SIGN; afii08941, \*lira  
14348 \DeclareTextCommand{\textlira}{PU}{\9040\244}% U+20A4  
14349 % U+20A6 NAIRA SIGN  
14350 \DeclareTextCommand{\textnaira}{PU}{\9040\246}% U+20A6  
14351 % U+20A7 PESETA SIGN; peseta  
14352 \DeclareTextCommand{\textpeseta}{PU}{\9040\247}% U+20A7  
14353 % U+20A9 WON SIGN; won  
14354 \DeclareTextCommand{\textwon}{PU}{\9040\251}% U+20A9  
14355 % U+20AB DONG SIGN; dong  
14356 \DeclareTextCommand{\textdong}{PU}{\9040\253}% U+20AB  
14357 % U+20AC EURO SIGN; \*Euro, euro  
14358 \DeclareTextCommand{\texteuro}{PU}{\9040\254}% U+20AC  
14359 % U+20B1 PESO SIGN  
14360 \DeclareTextCommand{\textpeso}{PU}{\9040\261}% U+20B1  
14361 % U+20B2 GUARANI SIGN  
14362 \DeclareTextCommand{\textguarani}{PU}{\9040\262}% U+20B2

#### 50.2.15 Letterlike Symbols: U+2100 to U+214F

14363 % U+2103 DEGREE CELSIUS; centigrade  
14364 \DeclareTextCommand{\textcelsius}{PU}{\9041\003}% U+2103  
14365 % U+2116 NUMERO SIGN; \*afii61352, numero  
14366 \DeclareTextCommand{\textnumero}{PU}{\9041\026}% U+2116  
14367 % U+2117 SOUND RECORDING COPYRIGHT  
14368 \DeclareTextCommand{\textcircledP}{PU}{\9041\027}% U+2117  
14369 % U+211E PRESCRIPTION TAKE; prescription  
14370 \DeclareTextCommand{\textrecipe}{PU}{\9041\036}% U+211E  
14371 % U+2120 SERVICE MARK  
14372 \DeclareTextCommand{\textservicemark}{PU}{\9041\040}% U+2120  
14373 % U+2122 TRADE MARK SIGN; trademark  
14374 \DeclareTextCommand{\texttrademark}{PU}{\9041\042}% U+2122  
14375 % U+2126 OHM SIGN; Ohm, Omega  
14376 \DeclareTextCommand{\textohm}{PU}{\9041\046}% U+2126  
14377 % U+2127 INVERTED OHM SIGN  
14378 \DeclareTextCommand{\textmho}{PU}{\9041\047}% U+2127  
14379 % U+212B ANGSTROM SIGN; angstrom  
14380 \DeclareTextCommand{\textangstrom}{PU}{\9041\053}% U+212B  
14381 % U+212E ESTIMATED SYMBOL; estimated  
14382 \DeclareTextCommand{\textestimated}{PU}{\9041\056}% U+212E  
14383 % U+2135 ALEF SYMBOL; aleph  
14384 \DeclareTextCommand{\textaleph}{PU}{\9041\065}% U+2135

#### 50.2.16 Arrows: U+2190 to U+21FF

14385 % U+2190 LEFTWARDS ARROW; arrowleft  
14386 \DeclareTextCommand{\textleftarrow}{PU}{\9041\220}% U+2190  
14387 % U+2191 UPWARDS ARROW; arrowup  
14388 \DeclareTextCommand{\textuparrow}{PU}{\9041\221}% U+2191  
14389 % U+2192 RIGHTWARDS ARROW; arrowright  
14390 \DeclareTextCommand{\textrightarrow}{PU}{\9041\222}% U+2192  
14391 % U+2193 DOWNWARDS ARROW; arrowdown  
14392 \DeclareTextCommand{\textdownarrow}{PU}{\9041\223}% U+2193

#### 50.2.17 Mathematical Operators: U+2200 to U+22FF

14393 % U+2212 MINUS SIGN; minus  
14394 \DeclareTextCommand{\textminus}{PU}{\9042\022}% U+2212

14395 % U+221A SQUARE ROOT; radical  
14396 \DeclareTextCommand{\textsurd}{PU}{\9042\032}% U+221A

### 50.2.18 Miscellaneous Technical: U+2300 to U+23FF

14397 % U+2329 LEFT-POINTING ANGLE BRACKET; angleleft  
14398 \DeclareTextCommand{\textlangle}{PU}{\9043\051}% U+2329  
14399 % U+232A RIGHT-POINTING ANGLE BRACKET; angleright  
14400 \DeclareTextCommand{\textrangle}{PU}{\9043\052}% U+232A

### 50.2.19 Control Pictures: U+2400 to U+243F

14401 % U+2422 BLANK SYMBOL  
14402 \DeclareTextCommand{\textblank}{PU}{\9044\042}% U+2422  
14403 % U+2423 OPEN BOX; blank  
14404 \DeclareTextCommand{\textvisiblespace}{PU}{\9044\043}% U+2423

### 50.2.20 Enclosed Alphanumerics: U+2460 to U+24FF

14405 % U+2460 CIRCLED DIGIT ONE; onecircle  
14406 \DeclareTextCompositeCommand{\textcircled}{PU}{1}{\9044\140}% U+2460  
14407 % U+2461 CIRCLED DIGIT TWO; twocircle  
14408 \DeclareTextCompositeCommand{\textcircled}{PU}{2}{\9044\141}% U+2461  
14409 % U+2462 CIRCLED DIGIT THREE; threecircle  
14410 \DeclareTextCompositeCommand{\textcircled}{PU}{3}{\9044\142}% U+2462  
14411 % U+2463 CIRCLED DIGIT FOUR; fourcircle  
14412 \DeclareTextCompositeCommand{\textcircled}{PU}{4}{\9044\143}% U+2463  
14413 % U+2464 CIRCLED DIGIT FIVE; fivecircle  
14414 \DeclareTextCompositeCommand{\textcircled}{PU}{5}{\9044\144}% U+2464  
14415 % U+2465 CIRCLED DIGIT SIX; sixcircle  
14416 \DeclareTextCompositeCommand{\textcircled}{PU}{6}{\9044\145}% U+2465  
14417 % U+2466 CIRCLED DIGIT SEVEN; sevencircle  
14418 \DeclareTextCompositeCommand{\textcircled}{PU}{7}{\9044\146}% U+2466  
14419 % U+2467 CIRCLED DIGIT EIGHT; eightcircle  
14420 \DeclareTextCompositeCommand{\textcircled}{PU}{8}{\9044\147}% U+2467  
14421 % U+2468 CIRCLED DIGIT NINE; ninecircle  
14422 \DeclareTextCompositeCommand{\textcircled}{PU}{9}{\9044\150}% U+2468  
14423 % U+2469 CIRCLED NUMBER TEN; tencircle  
14424 \DeclareTextCompositeCommand{\textcircled}{PU}{10}{\9044\151}% U+2469  
14425 % U+246A CIRCLED NUMBER ELEVEN; elevencircle  
14426 \DeclareTextCompositeCommand{\textcircled}{PU}{11}{\9044\152}% U+246A  
14427 % U+246B CIRCLED NUMBER TWELVE; twelvecircle  
14428 \DeclareTextCompositeCommand{\textcircled}{PU}{12}{\9044\153}% U+246B  
14429 % U+246C CIRCLED NUMBER THIRTEEN; thirteencircle  
14430 \DeclareTextCompositeCommand{\textcircled}{PU}{13}{\9044\154}% U+246C  
14431 % U+246D CIRCLED NUMBER FOURTEEN; fourteencircle  
14432 \DeclareTextCompositeCommand{\textcircled}{PU}{14}{\9044\155}% U+246D  
14433 % U+246E CIRCLED NUMBER FIFTEEN; fifteencircle  
14434 \DeclareTextCompositeCommand{\textcircled}{PU}{15}{\9044\156}% U+246E  
14435 % U+246F CIRCLED NUMBER SIXTEEN; sixteencircle  
14436 \DeclareTextCompositeCommand{\textcircled}{PU}{16}{\9044\157}% U+246F  
14437 % U+2470 CIRCLED NUMBER SEVENTEEN; seventeencircle  
14438 \DeclareTextCompositeCommand{\textcircled}{PU}{17}{\9044\160}% U+2470  
14439 % U+2471 CIRCLED NUMBER EIGHTEEN; eighteencircle  
14440 \DeclareTextCompositeCommand{\textcircled}{PU}{18}{\9044\161}% U+2471  
14441 % U+2472 CIRCLED NUMBER NINETEEN; nineteencircle  
14442 \DeclareTextCompositeCommand{\textcircled}{PU}{19}{\9044\162}% U+2472  
14443 % U+2473 CIRCLED NUMBER TWENTY; twentycircle  
14444 \DeclareTextCompositeCommand{\textcircled}{PU}{20}{\9044\163}% U+2473  
14445 % U+24B6 CIRCLED LATIN CAPITAL LETTER A; Acircle

14446 \DeclareTextCompositeCommand{\textcircled}{PU}{A}{\9044\266}% U+24B6  
14447 % U+24B7 CIRCLED LATIN CAPITAL LETTER B; Bcircle  
14448 \DeclareTextCompositeCommand{\textcircled}{PU}{B}{\9044\267}% U+24B7  
14449 % U+24B8 CIRCLED LATIN CAPITAL LETTER C; Ccircle  
14450 \DeclareTextCompositeCommand{\textcircled}{PU}{C}{\9044\270}% U+24B8  
14451 % U+24B9 CIRCLED LATIN CAPITAL LETTER D; Dcircle  
14452 \DeclareTextCompositeCommand{\textcircled}{PU}{D}{\9044\271}% U+24B9  
14453 % U+24BA CIRCLED LATIN CAPITAL LETTER E; Ecircle  
14454 \DeclareTextCompositeCommand{\textcircled}{PU}{E}{\9044\272}% U+24BA  
14455 % U+24BB CIRCLED LATIN CAPITAL LETTER F; Fcircle  
14456 \DeclareTextCompositeCommand{\textcircled}{PU}{F}{\9044\273}% U+24BB  
14457 % U+24BC CIRCLED LATIN CAPITAL LETTER G; Gcircle  
14458 \DeclareTextCompositeCommand{\textcircled}{PU}{G}{\9044\274}% U+24BC  
14459 % U+24BD CIRCLED LATIN CAPITAL LETTER H; Hcircle  
14460 \DeclareTextCompositeCommand{\textcircled}{PU}{H}{\9044\275}% U+24BD  
14461 % U+24BE CIRCLED LATIN CAPITAL LETTER I; Icircle  
14462 \DeclareTextCompositeCommand{\textcircled}{PU}{I}{\9044\276}% U+24BE  
14463 % U+24BF CIRCLED LATIN CAPITAL LETTER J; Jcircle  
14464 \DeclareTextCompositeCommand{\textcircled}{PU}{J}{\9044\277}% U+24BF  
14465 % U+24C0 CIRCLED LATIN CAPITAL LETTER K; Kcircle  
14466 \DeclareTextCompositeCommand{\textcircled}{PU}{K}{\9044\300}% U+24C0  
14467 % U+24C1 CIRCLED LATIN CAPITAL LETTER L; Lcircle  
14468 \DeclareTextCompositeCommand{\textcircled}{PU}{L}{\9044\301}% U+24C1  
14469 % U+24C2 CIRCLED LATIN CAPITAL LETTER M; Mcircle  
14470 \DeclareTextCompositeCommand{\textcircled}{PU}{M}{\9044\302}% U+24C2  
14471 % U+24C3 CIRCLED LATIN CAPITAL LETTER N; Ncircle  
14472 \DeclareTextCompositeCommand{\textcircled}{PU}{N}{\9044\303}% U+24C3  
14473 % U+24C4 CIRCLED LATIN CAPITAL LETTER O; Ocircle  
14474 \DeclareTextCompositeCommand{\textcircled}{PU}{O}{\9044\304}% U+24C4  
14475 % U+24C5 CIRCLED LATIN CAPITAL LETTER P; Pcircle  
14476 \DeclareTextCompositeCommand{\textcircled}{PU}{P}{\9044\305}% U+24C5  
14477 % U+24C6 CIRCLED LATIN CAPITAL LETTER Q; Qcircle  
14478 \DeclareTextCompositeCommand{\textcircled}{PU}{Q}{\9044\306}% U+24C6  
14479 % U+24C7 CIRCLED LATIN CAPITAL LETTER R; Rcircle  
14480 \DeclareTextCompositeCommand{\textcircled}{PU}{R}{\9044\307}% U+24C7  
14481 % U+24C8 CIRCLED LATIN CAPITAL LETTER S; Scircle  
14482 \DeclareTextCompositeCommand{\textcircled}{PU}{S}{\9044\310}% U+24C8  
14483 % U+24C9 CIRCLED LATIN CAPITAL LETTER T; Tcircle  
14484 \DeclareTextCompositeCommand{\textcircled}{PU}{T}{\9044\311}% U+24C9  
14485 % U+24CA CIRCLED LATIN CAPITAL LETTER U; Ucircle  
14486 \DeclareTextCompositeCommand{\textcircled}{PU}{U}{\9044\312}% U+24CA  
14487 % U+24CB CIRCLED LATIN CAPITAL LETTER V; Vcircle  
14488 \DeclareTextCompositeCommand{\textcircled}{PU}{V}{\9044\313}% U+24CB  
14489 % U+24CC CIRCLED LATIN CAPITAL LETTER W; Wcircle  
14490 \DeclareTextCompositeCommand{\textcircled}{PU}{W}{\9044\314}% U+24CC  
14491 % U+24CD CIRCLED LATIN CAPITAL LETTER X; Xcircle  
14492 \DeclareTextCompositeCommand{\textcircled}{PU}{X}{\9044\315}% U+24CD  
14493 % U+24CE CIRCLED LATIN CAPITAL LETTER Y; Ycircle  
14494 \DeclareTextCompositeCommand{\textcircled}{PU}{Y}{\9044\316}% U+24CE  
14495 % U+24CF CIRCLED LATIN CAPITAL LETTER Z; Zcircle  
14496 \DeclareTextCompositeCommand{\textcircled}{PU}{Z}{\9044\317}% U+24CF  
14497 % U+24D0 CIRCLED LATIN SMALL LETTER A; acircle  
14498 \DeclareTextCompositeCommand{\textcircled}{PU}{a}{\9044\320}% U+24D0  
14499 % U+24D1 CIRCLED LATIN SMALL LETTER B; bcircle  
14500 \DeclareTextCompositeCommand{\textcircled}{PU}{b}{\9044\321}% U+24D1  
14501 % U+24D2 CIRCLED LATIN SMALL LETTER C; ccircle  
14502 \DeclareTextCompositeCommand{\textcircled}{PU}{c}{\9044\322}% U+24D2

14503 % U+24D3 CIRCLED LATIN SMALL LETTER D; dcircle  
 14504 \DeclareTextCompositeCommand{\textcircled}{PU}{d}{\9044\323}% U+24D3  
 14505 % U+24D4 CIRCLED LATIN SMALL LETTER E; ecircle  
 14506 \DeclareTextCompositeCommand{\textcircled}{PU}{e}{\9044\324}% U+24D4  
 14507 % U+24D5 CIRCLED LATIN SMALL LETTER F; fcircle  
 14508 \DeclareTextCompositeCommand{\textcircled}{PU}{f}{\9044\325}% U+24D5  
 14509 % U+24D6 CIRCLED LATIN SMALL LETTER G; gcircle  
 14510 \DeclareTextCompositeCommand{\textcircled}{PU}{g}{\9044\326}% U+24D6  
 14511 % U+24D7 CIRCLED LATIN SMALL LETTER H; hcircle  
 14512 \DeclareTextCompositeCommand{\textcircled}{PU}{h}{\9044\327}% U+24D7  
 14513 % U+24D8 CIRCLED LATIN SMALL LETTER I; icircle  
 14514 \DeclareTextCompositeCommand{\textcircled}{PU}{i}{\9044\330}% U+24D8  
 14515 % U+24D9 CIRCLED LATIN SMALL LETTER J; jcircle  
 14516 \DeclareTextCompositeCommand{\textcircled}{PU}{j}{\9044\331}% U+24D9  
 14517 % U+24DA CIRCLED LATIN SMALL LETTER K; kcircle  
 14518 \DeclareTextCompositeCommand{\textcircled}{PU}{k}{\9044\332}% U+24DA  
 14519 % U+24DB CIRCLED LATIN SMALL LETTER L; lcircle  
 14520 \DeclareTextCompositeCommand{\textcircled}{PU}{l}{\9044\333}% U+24DB  
 14521 % U+24DC CIRCLED LATIN SMALL LETTER M; mcircle  
 14522 \DeclareTextCompositeCommand{\textcircled}{PU}{m}{\9044\334}% U+24DC  
 14523 % U+24DD CIRCLED LATIN SMALL LETTER N; ncircle  
 14524 \DeclareTextCompositeCommand{\textcircled}{PU}{n}{\9044\335}% U+24DD  
 14525 % U+24DE CIRCLED LATIN SMALL LETTER O; ocircle  
 14526 \DeclareTextCompositeCommand{\textcircled}{PU}{o}{\9044\336}% U+24DE  
 14527 % U+24DF CIRCLED LATIN SMALL LETTER P; pcircle  
 14528 \DeclareTextCompositeCommand{\textcircled}{PU}{p}{\9044\337}% U+24DF  
 14529 % U+24E0 CIRCLED LATIN SMALL LETTER Q; qcircle  
 14530 \DeclareTextCompositeCommand{\textcircled}{PU}{q}{\9044\340}% U+24E0  
 14531 % U+24E1 CIRCLED LATIN SMALL LETTER R; rcircle  
 14532 \DeclareTextCompositeCommand{\textcircled}{PU}{r}{\9044\341}% U+24E1  
 14533 % U+24E2 CIRCLED LATIN SMALL LETTER S; scircle  
 14534 \DeclareTextCompositeCommand{\textcircled}{PU}{s}{\9044\342}% U+24E2  
 14535 % U+24E3 CIRCLED LATIN SMALL LETTER T; tcircle  
 14536 \DeclareTextCompositeCommand{\textcircled}{PU}{t}{\9044\343}% U+24E3  
 14537 % U+24E4 CIRCLED LATIN SMALL LETTER U; ucircle  
 14538 \DeclareTextCompositeCommand{\textcircled}{PU}{u}{\9044\344}% U+24E4  
 14539 % U+24E5 CIRCLED LATIN SMALL LETTER V; vcircle  
 14540 \DeclareTextCompositeCommand{\textcircled}{PU}{v}{\9044\345}% U+24E5  
 14541 % U+24E6 CIRCLED LATIN SMALL LETTER W; wcircle  
 14542 \DeclareTextCompositeCommand{\textcircled}{PU}{w}{\9044\346}% U+24E6  
 14543 % U+24E7 CIRCLED LATIN SMALL LETTER X; xcircle  
 14544 \DeclareTextCompositeCommand{\textcircled}{PU}{x}{\9044\347}% U+24E7  
 14545 % U+24E8 CIRCLED LATIN SMALL LETTER Y; ycircle  
 14546 \DeclareTextCompositeCommand{\textcircled}{PU}{y}{\9044\350}% U+24E8  
 14547 % U+24E9 CIRCLED LATIN SMALL LETTER Z; zcircle  
 14548 \DeclareTextCompositeCommand{\textcircled}{PU}{z}{\9044\351}% U+24E9  
 14549 % U+24EA CIRCLED DIGIT ZERO  
 14550 \DeclareTextCompositeCommand{\textcircled}{PU}{0}{\9044\352}% U+24EA

### 50.2.21 Box Drawing: U+2500 to U+257F

14551 % U+25E6 WHITE BULLET; \*openbullet, whitebullet  
 14552 \DeclareTextCommand{\textopenbullet}{PU}{\9045\346}% U+25E6  
 14553 % U+25EF LARGE CIRCLE; largecircle  
 14554 \DeclareTextCommand{\textbigcircle}{PU}{\9045\357}% U+25EF

### 50.2.22 Miscellaneous Symbols: U+2600 to U+26FF

14555 % U+266A EIGHTH NOTE; musicalnote

```

14556 \DeclareTextCommand{\textmusicalnote}{PU}{\9046\152}% U+266A
14557 % U+26AD MARRIAGE SYMBOL
14558 \DeclareTextCommand{\textmarried}{PU}{\9046\255}% U+26AD
14559 % U+26AE DIVORCE SYMBOL
14560 \DeclareTextCommand{\textdivorced}{PU}{\9046\256}% U+26AE

```

### 50.2.23 Miscellaneous Mathematical Symbols-A: U+27C0 to U+27EF

```

14561 % U+27E6 MATHEMATICAL LEFT WHITE SQUARE BRACKET
14562 \DeclareTextCommand{\textlbrackdbl}{PU}{\9047\346}% U+27E6
14563 % U+27E7 MATHEMATICAL RIGHT WHITE SQUARE BRACKET
14564 \DeclareTextCommand{\textrbrackdbl}{PU}{\9047\347}% U+27E7

```

### 50.2.24 Alphabetic Presentation Forms: U+FB00 to U+FB4F

```

14565 % U+FB01 LATIN SMALL LIGATURE FI; fi
14566 \DeclareTextCommand{\textfi}{PU}{\9373\001}% U+FB01
14567 % U+FB02 LATIN SMALL LIGATURE FL; fl
14568 \DeclareTextCommand{\textfl}{PU}{\9373\002}% U+FB02

```

### 50.2.25 Miscellaneous

```

14569 \DeclareTextCommand{\SS}{PU}{SS}

```

### 50.2.26 Aliases

Aliases (german.sty)

```

14570 \DeclareTextCommand{\textglqq}{PU}{\quotedblbase}
14571 \DeclareTextCommand{\textgrqq}{PU}{\textquotedblleft}
14572 \DeclareTextCommand{\textglq}{PU}{\quotesinglbase}
14573 \DeclareTextCommand{\textgrq}{PU}{\textquoteleft}
14574 \DeclareTextCommand{\textflqq}{PU}{\guillemotleft}
14575 \DeclareTextCommand{\textfrqq}{PU}{\guillemotright}
14576 \DeclareTextCommand{\textflq}{PU}{\guilsinglleft}
14577 \DeclareTextCommand{\textfrq}{PU}{\guilsinglright}

```

Aliases (math names)

```

14578 \DeclareTextCommand{\textneg}{PU}{\textlogicalnot}
14579 \DeclareTextCommand{\texttimes}{PU}{\textmultiply}
14580 \DeclareTextCommand{\textdiv}{PU}{\textdivide}
14581 \DeclareTextCommand{\textpm}{PU}{\textplusminus}
14582 \DeclareTextCommand{\textcdot}{PU}{\textperiodcentered}
14583 </puenc>

```

## 50.3 PU encoding, additions for VnTeX

This file is provided by Han The Thanh.

```

14584 <*puvnenc>
14585 \DeclareTextCommand{\abreve}{PU}{\81\003}
14586 \DeclareTextCommand{\acircumflex}{PU}{\80\342}
14587 \DeclareTextCommand{\dj}{PU}{\81\021}
14588 \DeclareTextCommand{\ecircumflex}{PU}{\80\352}
14589 \DeclareTextCommand{\ocircumflex}{PU}{\80\364}
14590 \DeclareTextCommand{\ohorn}{PU}{\81\241}
14591 \DeclareTextCommand{\uhorn}{PU}{\81\260}
14592 \DeclareTextCommand{\ABREVE}{PU}{\81\002}
14593 \DeclareTextCommand{\ACIRCUMFLEX}{PU}{\80\302}
14594 \DeclareTextCommand{\DJ}{PU}{\81\020}
14595 \DeclareTextCommand{\ECIRCUMFLEX}{PU}{\80\312}

```

14596 \DeclareTextCommand{\OCIRCUMFLEX}{PU}{\80\324}  
14597 \DeclareTextCommand{\OHORN}{PU}{\81\240}  
14598 \DeclareTextCommand{\UHORN}{PU}{\81\257}  
  
14599 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\341}  
14600 \DeclareTextCompositeCommand{\d}{PU}{a}{\9036\241}  
14601 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\340}  
14602 \DeclareTextCompositeCommand{\h}{PU}{a}{\9036\243}  
14603 \DeclareTextCompositeCommand{\~}{PU}{a}{\80\343}  
14604 \DeclareTextCompositeCommand{\'}{PU}{\abreve}{\9036\257}  
14605 \DeclareTextCompositeCommand{\d}{PU}{\abreve}{\9036\267}  
14606 \DeclareTextCompositeCommand{\'}{PU}{\abreve}{\9036\261}  
14607 \DeclareTextCompositeCommand{\h}{PU}{\abreve}{\9036\263}  
14608 \DeclareTextCompositeCommand{\~}{PU}{\abreve}{\9036\265}  
14609 \DeclareTextCompositeCommand{\'}{PU}{\acircumflex}{\9036\245}  
14610 \DeclareTextCompositeCommand{\d}{PU}{\acircumflex}{\9036\255}  
14611 \DeclareTextCompositeCommand{\'}{PU}{\acircumflex}{\9036\247}  
14612 \DeclareTextCompositeCommand{\h}{PU}{\acircumflex}{\9036\251}  
14613 \DeclareTextCompositeCommand{\~}{PU}{\acircumflex}{\9036\253}  
14614 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\351}  
14615 \DeclareTextCompositeCommand{\d}{PU}{e}{\9036\271}  
14616 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\350}  
14617 \DeclareTextCompositeCommand{\h}{PU}{e}{\9036\273}  
14618 \DeclareTextCompositeCommand{\~}{PU}{e}{\9036\275}  
14619 \DeclareTextCompositeCommand{\'}{PU}{\ecircumflex}{\9036\277}  
14620 \DeclareTextCompositeCommand{\d}{PU}{\ecircumflex}{\9036\307}  
14621 \DeclareTextCompositeCommand{\'}{PU}{\ecircumflex}{\9036\301}  
14622 \DeclareTextCompositeCommand{\h}{PU}{\ecircumflex}{\9036\303}  
14623 \DeclareTextCompositeCommand{\~}{PU}{\ecircumflex}{\9036\305}  
14624 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\355}  
14625 \DeclareTextCompositeCommand{\d}{PU}{i}{\9036\313}  
14626 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\354}  
14627 \DeclareTextCompositeCommand{\h}{PU}{i}{\9036\311}  
14628 \DeclareTextCompositeCommand{\~}{PU}{i}{\81\051}  
14629 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\363}  
14630 \DeclareTextCompositeCommand{\d}{PU}{o}{\9036\315}  
14631 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\362}  
14632 \DeclareTextCompositeCommand{\h}{PU}{o}{\9036\317}  
14633 \DeclareTextCompositeCommand{\~}{PU}{o}{\80\365}  
14634 \DeclareTextCompositeCommand{\'}{PU}{\ocircumflex}{\9036\321}  
14635 \DeclareTextCompositeCommand{\d}{PU}{\ocircumflex}{\9036\331}  
14636 \DeclareTextCompositeCommand{\'}{PU}{\ocircumflex}{\9036\323}  
14637 \DeclareTextCompositeCommand{\h}{PU}{\ocircumflex}{\9036\325}  
14638 \DeclareTextCompositeCommand{\~}{PU}{\ocircumflex}{\9036\327}  
14639 \DeclareTextCompositeCommand{\'}{PU}{\ohorn}{\9036\333}  
14640 \DeclareTextCompositeCommand{\d}{PU}{\ohorn}{\9036\343}  
14641 \DeclareTextCompositeCommand{\'}{PU}{\ohorn}{\9036\335}  
14642 \DeclareTextCompositeCommand{\h}{PU}{\ohorn}{\9036\337}  
14643 \DeclareTextCompositeCommand{\~}{PU}{\ohorn}{\9036\341}  
14644 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\372}  
14645 \DeclareTextCompositeCommand{\d}{PU}{u}{\9036\345}  
14646 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\371}  
14647 \DeclareTextCompositeCommand{\h}{PU}{u}{\9036\347}  
14648 \DeclareTextCompositeCommand{\~}{PU}{u}{\81\151}  
14649 \DeclareTextCompositeCommand{\'}{PU}{\uhorn}{\9036\351}  
14650 \DeclareTextCompositeCommand{\d}{PU}{\uhorn}{\9036\361}  
14651 \DeclareTextCompositeCommand{\'}{PU}{\uhorn}{\9036\353}  
14652 \DeclareTextCompositeCommand{\h}{PU}{\uhorn}{\9036\355}

14653 \DeclareTextCompositeCommand{\~}{PU}{\uhorn}{\9036\357}  
14654 \DeclareTextCompositeCommand{\'}{PU}{y}{\80\375}  
14655 \DeclareTextCompositeCommand{\d}{PU}{y}{\9036\365}  
14656 \DeclareTextCompositeCommand{\'}{PU}{y}{\9036\363}  
14657 \DeclareTextCompositeCommand{\h}{PU}{y}{\9036\367}  
14658 \DeclareTextCompositeCommand{\~}{PU}{y}{\9036\371}  
14659 \DeclareTextCompositeCommand{\'}{PU}{A}{\80\301}  
14660 \DeclareTextCompositeCommand{\d}{PU}{A}{\9036\240}  
14661 \DeclareTextCompositeCommand{\'}{PU}{A}{\80\300}  
14662 \DeclareTextCompositeCommand{\h}{PU}{A}{\9036\242}  
14663 \DeclareTextCompositeCommand{\~}{PU}{A}{\80\303}  
14664 \DeclareTextCompositeCommand{\'}{PU}{\ABREVE}{\9036\256}  
14665 \DeclareTextCompositeCommand{\d}{PU}{\ABREVE}{\9036\266}  
14666 \DeclareTextCompositeCommand{\'}{PU}{\ABREVE}{\9036\260}  
14667 \DeclareTextCompositeCommand{\h}{PU}{\ABREVE}{\9036\262}  
14668 \DeclareTextCompositeCommand{\~}{PU}{\ABREVE}{\9036\264}  
14669 \DeclareTextCompositeCommand{\'}{PU}{\ACIRCUMFLEX}{\9036\244}  
14670 \DeclareTextCompositeCommand{\d}{PU}{\ACIRCUMFLEX}{\9036\254}  
14671 \DeclareTextCompositeCommand{\'}{PU}{\ACIRCUMFLEX}{\9036\246}  
14672 \DeclareTextCompositeCommand{\h}{PU}{\ACIRCUMFLEX}{\9036\250}  
14673 \DeclareTextCompositeCommand{\~}{PU}{\ACIRCUMFLEX}{\9036\252}  
14674 \DeclareTextCompositeCommand{\'}{PU}{E}{\80\311}  
14675 \DeclareTextCompositeCommand{\d}{PU}{E}{\9036\270}  
14676 \DeclareTextCompositeCommand{\'}{PU}{E}{\80\310}  
14677 \DeclareTextCompositeCommand{\h}{PU}{E}{\9036\272}  
14678 \DeclareTextCompositeCommand{\~}{PU}{E}{\9036\274}  
14679 \DeclareTextCompositeCommand{\'}{PU}{\ECIRCUMFLEX}{\9036\276}  
14680 \DeclareTextCompositeCommand{\d}{PU}{\ECIRCUMFLEX}{\9036\306}  
14681 \DeclareTextCompositeCommand{\'}{PU}{\ECIRCUMFLEX}{\9036\300}  
14682 \DeclareTextCompositeCommand{\h}{PU}{\ECIRCUMFLEX}{\9036\302}  
14683 \DeclareTextCompositeCommand{\~}{PU}{\ECIRCUMFLEX}{\9036\304}  
14684 \DeclareTextCompositeCommand{\'}{PU}{I}{\80\315}  
14685 \DeclareTextCompositeCommand{\d}{PU}{I}{\9036\312}  
14686 \DeclareTextCompositeCommand{\'}{PU}{I}{\80\314}  
14687 \DeclareTextCompositeCommand{\h}{PU}{I}{\9036\310}  
14688 \DeclareTextCompositeCommand{\~}{PU}{I}{\81\050}  
14689 \DeclareTextCompositeCommand{\'}{PU}{O}{\80\323}  
14690 \DeclareTextCompositeCommand{\d}{PU}{O}{\9036\314}  
14691 \DeclareTextCompositeCommand{\'}{PU}{O}{\80\322}  
14692 \DeclareTextCompositeCommand{\h}{PU}{O}{\9036\316}  
14693 \DeclareTextCompositeCommand{\~}{PU}{O}{\80\325}  
14694 \DeclareTextCompositeCommand{\'}{PU}{\OCIRCUMFLEX}{\9036\320}  
14695 \DeclareTextCompositeCommand{\d}{PU}{\OCIRCUMFLEX}{\9036\330}  
14696 \DeclareTextCompositeCommand{\'}{PU}{\OCIRCUMFLEX}{\9036\322}  
14697 \DeclareTextCompositeCommand{\h}{PU}{\OCIRCUMFLEX}{\9036\324}  
14698 \DeclareTextCompositeCommand{\~}{PU}{\OCIRCUMFLEX}{\9036\326}  
14699 \DeclareTextCompositeCommand{\'}{PU}{\OHORN}{\9036\332}  
14700 \DeclareTextCompositeCommand{\d}{PU}{\OHORN}{\9036\342}  
14701 \DeclareTextCompositeCommand{\'}{PU}{\OHORN}{\9036\334}  
14702 \DeclareTextCompositeCommand{\h}{PU}{\OHORN}{\9036\336}  
14703 \DeclareTextCompositeCommand{\~}{PU}{\OHORN}{\9036\340}  
14704 \DeclareTextCompositeCommand{\'}{PU}{U}{\80\332}  
14705 \DeclareTextCompositeCommand{\d}{PU}{U}{\9036\344}  
14706 \DeclareTextCompositeCommand{\'}{PU}{U}{\80\331}  
14707 \DeclareTextCompositeCommand{\h}{PU}{U}{\9036\346}  
14708 \DeclareTextCompositeCommand{\~}{PU}{U}{\81\150}  
14709 \DeclareTextCompositeCommand{\'}{PU}{\UHORN}{\9036\350}



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14710 \DeclareTextCompositeCommand{\d}{PU}{\UHORN}{\9036\360}
14711 \DeclareTextCompositeCommand{\'}{PU}{\UHORN}{\9036\352}
14712 \DeclareTextCompositeCommand{\h}{PU}{\UHORN}{\9036\354}
14713 \DeclareTextCompositeCommand{\~}{PU}{\UHORN}{\9036\356}
14714 \DeclareTextCompositeCommand{\'}{PU}{Y}{\80\335}
14715 \DeclareTextCompositeCommand{\d}{PU}{Y}{\9036\364}
14716 \DeclareTextCompositeCommand{\'}{PU}{Y}{\9036\362}
14717 \DeclareTextCompositeCommand{\h}{PU}{Y}{\9036\366}
14718 \DeclareTextCompositeCommand{\~}{PU}{Y}{\9036\370}
14719 </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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14720 <*puarenc>
14721 \DeclareTextCommand{\hamza}{PU}{\86\041}% 0621;afii57409;ARABIC LETTER HAMZA
14722 \DeclareTextCommand{\alefmadda}{PU}{\86\042}% 0622;afii57410;ARABIC LETTER ALEF WITH MADDA A
14723 \DeclareTextCommand{\alefhamza}{PU}{\86\043}% 0623;afii57411;ARABIC LETTER ALEF WITH HAMZA A
14724 \DeclareTextCommand{\wawhamza}{PU}{\86\044}% 0624;afii57412;ARABIC LETTER WAW WITH HAMZA AB
14725 \DeclareTextCommand{\aleflowerhamza}{PU}{\86\045}% 0625;afii57413;ARABIC LETTER ALEF WITH HA
14726 \DeclareTextCommand{\yahamza}{PU}{\86\046}% 0626;afii57414;ARABIC LETTER YEH WITH HAMZA ABOVE
14727 \DeclareTextCommand{\alef}{PU}{\86\047}% 0627;afii57415;ARABIC LETTER ALEF
14728 \DeclareTextCommand{\baa}{PU}{\86\050}% 0628;afii57416;ARABIC LETTER BEH
14729 \DeclareTextCommand{\T}{PU}{\86\051}% 0629;afii57417;ARABIC LETTER TEH MARBUTA
14730 \DeclareTextCommand{\taa}{PU}{\86\052}% 062A;afii57418;ARABIC LETTER TEH
14731 \DeclareTextCommand{\thaa}{PU}{\86\053}% 062B;afii57419;ARABIC LETTER THEH
14732 \DeclareTextCommand{\jeem}{PU}{\86\054}% 062C;afii57420;ARABIC LETTER JEEM
14733 \DeclareTextCommand{\Haa}{PU}{\86\055}% 062D;afii57421;ARABIC LETTER HAH
14734 \DeclareTextCommand{\kha}{PU}{\86\056}% 062E;afii57422;ARABIC LETTER KHAH
14735 \DeclareTextCommand{\dal}{PU}{\86\057}% 062F;afii57423;ARABIC LETTER DAL
14736 \DeclareTextCommand{\dhal}{PU}{\86\060}% 0630;afii57424;ARABIC LETTER THAL
14737 \DeclareTextCommand{\ra}{PU}{\86\061}% 0631;afii57425;ARABIC LETTER REH
14738 \DeclareTextCommand{\zay}{PU}{\86\062}% 0632;afii57426;ARABIC LETTER ZAIN
14739 \DeclareTextCommand{\seen}{PU}{\86\063}% 0633;afii57427;ARABIC LETTER SEEN
14740 \DeclareTextCommand{\sheen}{PU}{\86\064}% 0634;afii57428;ARABIC LETTER SHEEN
14741 \DeclareTextCommand{\sad}{PU}{\86\065}% 0635;afii57429;ARABIC LETTER SAD
14742 \DeclareTextCommand{\dad}{PU}{\86\066}% 0636;afii57430;ARABIC LETTER DAD
14743 \DeclareTextCommand{\Ta}{PU}{\86\067}% 0637;afii57431;ARABIC LETTER TAH
14744 \DeclareTextCommand{\za}{PU}{\86\070}% 0638;afii57432;ARABIC LETTER ZAH
14745 \DeclareTextCommand{\ayn}{PU}{\86\071}% 0639;afii57433;ARABIC LETTER AIN
14746 \DeclareTextCommand{\ghayn}{PU}{\86\072}% 063A;afii57434;ARABIC LETTER GHAIN
14747 \DeclareTextCommand{\tatweel}{PU}{\86\100}% 0640;afii57440;ARABIC TATWEEL
14748 \DeclareTextCommand{\fa}{PU}{\86\101}% 0641;afii57441;ARABIC LETTER FEH
14749 \DeclareTextCommand{\qaf}{PU}{\86\102}% 0642;afii57442;ARABIC LETTER QAF
14750 \DeclareTextCommand{\kaf}{PU}{\86\103}% 0643;afii57443;ARABIC LETTER KAF
14751 \DeclareTextCommand{\lam}{PU}{\86\104}% 0644;afii57444;ARABIC LETTER LAM
14752 \DeclareTextCommand{\meem}{PU}{\86\105}% 0645;afii57445;ARABIC LETTER MEEM
14753 \DeclareTextCommand{\nun}{PU}{\86\106}% 0646;afii57446;ARABIC LETTER NOON
14754 \DeclareTextCommand{\ha}{PU}{\86\107}% 0647;afii57470;ARABIC LETTER HEH
14755 \DeclareTextCommand{\waw}{PU}{\86\110}% 0648;afii57448;ARABIC LETTER WAW
14756 \DeclareTextCommand{\alefmaqsura}{PU}{\86\111}% 0649;afii57449;ARABIC LETTER ALEF MAKSURA
14757 \DeclareTextCommand{\ya}{PU}{\86\112}% 064A;afii57450;ARABIC LETTER YEH
14758 \DeclareTextCommand{\nasb}{PU}{\86\113}% 064B;afii57451;ARABIC FATHATAN
14759 \DeclareTextCommand{\raff}{PU}{\86\114}% 064C;afii57452;ARABIC DAMMATAN
14760 \DeclareTextCommand{\jarr}{PU}{\86\115}% 064D;afii57453;ARABIC KASRATAN
14761 \DeclareTextCommand{\fatha}{PU}{\86\116}% 064E;afii57454;ARABIC FATHA

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14762 \DeclareTextCommand{\damma}{PU}{\86\117}% 064F;afii57455;ARABIC DAMMA
14763 \DeclareTextCommand{\kasra}{PU}{\86\120}% 0650;afii57456;ARABIC KASRA
14764 \DeclareTextCommand{\shadda}{PU}{\86\121}% 0651;afii57457;ARABIC SHADDA
14765 \DeclareTextCommand{\sukun}{PU}{\86\122}% 0652;afii57458;ARABIC SUKUN

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Farsi

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14766 \DeclareTextCommand{\peh}{PU}{\86\176}% 067E;afii57506;ARABIC LETTER PEH
14767 \DeclareTextCommand{\tcheh}{PU}{\86\206}% 0686;afii57507;ARABIC LETTER TCHEH
14768 \DeclareTextCommand{\jeh}{PU}{\86\230}% 0698;afii57508;ARABIC LETTER JEH
14769 \DeclareTextCommand{\farsikaf}{PU}{\86\251}% 06A9???;afii????;FARSI LETTER KAF
14770 \DeclareTextCommand{\gaf}{PU}{\86\257}% 06AF;afii57509;ARABIC LETTER GAF
14771 \DeclareTextCommand{\farsiya}{PU}{\86\314}% 06CC;afii????;FARSI LETTER YEH

14772 \DeclareTextCommand{\ZWNJ}{PU}{\9040\014}% 200C;ZWNJ%
14773 \DeclareTextCommand{\noboundary}{PU}{\86\325}% 200D;ZWJ

14774 </puarenc>

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## 51 End of file hyccheck.tex

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14775 <*check>
14776 \typeout{}
14777 \begin{document}
14778 \end{document}
14779 </check>

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