

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

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## 1 Documentation overview for hyperref

The documentation for package hyperref consists of several files:

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

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


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

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

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

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

Source code documentation:

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

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

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

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### 3 File hyccheck.tex

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

```

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

\checklatex Optional argument: release date of  $\LaTeX$ .
4 \newcommand*{\checklatex}[1][]{\%
5 \typeout{}}\%
6 \typeout{* Format: 'LaTeX2e' #1}\%
7 \typeout{\space\space Loaded: '\fmtname' \fmtversion}\%
8 }\%
```

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

```

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

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

```

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

`\HyC@checkPackage`

```

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

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

```

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

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

```

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

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

```

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

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

```

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

`\HyC@noValue`

```

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

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



```

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

```

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

```

90 \newtoks\HyC@Toks

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

```

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

```

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

```

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

```

`\HyC@checkItem` A single check.

```

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

```

`\HyC@string` Some shorthands.

```

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

```

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

```

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

```

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

```

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

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

```

## 4 Package options and setup

### 4.1 Save catcodes

There are many packages that change the standard catcodes.

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

```

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

```

\Hy@SetCatcodes

```

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

```

\Hy@RestoreCatcodes

```

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

```

```

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

```

```

231 \Hy@SetCatcodes

```

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

```

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

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

```

```

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

```

## 4.2 Version check

\Hy@VersionChecked

```

289 \chardef\Hy@VersionChecked=0 %

```

\Hy@VersionCheck

```

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

```

```

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

```

\Hy@@VersionCheck

```

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

```

### 4.3 Checks with regular expressions

```

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

```

```

372 }%
373 }%
374 }

```

## 4.4 Compatibility with format dumps

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

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

```

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

```

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

```

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

```

`\Hy@AtEndOfPackage`

```

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

```

`\Hy@AtBeginDocumentHook`

```

384 \def\Hy@AtBeginDocumentHook{}

```

`\Hy@AtEndOfPackageHook`

```

385 \def\Hy@AtEndOfPackageHook{}

```

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

```

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

```

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

```

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

```

## 4.5 Switches

```

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

```

```

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

```

Defaults for the switches are now set.

```

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

```



```

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

```

## 5 Common help macros

\Hy@StepCount

```

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

```

\Hy@GlobalStepCount

```

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

```

```

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

```

### 5.1 Macros for recursions

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

```

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

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

```

### 5.2 Babel's protection of shorthand characters

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

```

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

```

### 5.3 Coordinate transformations

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

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

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

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

Example (TeX):

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

`\hypercalcbp`

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

```

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

```

## 6 Dealing with PDF strings

The PDF string stuff done by Heiko Oberdiek.

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

### 6.1 Description of PDF strings

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

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

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

### 6.2 Definition of `\pdfstringdef`

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

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

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

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

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

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

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

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

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

```
536 \begingroup
```

### 6.2.1 Preprocessing

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

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

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

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

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

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

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

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

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

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

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

```
542 \ifHy@unicode
```

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

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

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

```
546 \HyPsd@UTFviii
```

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

```
548 \else
```

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

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

```
551 \fi
```

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

```
553 \enc@update
```

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

```

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

```

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

```

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

```

**Package color.**

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

**Upper- and lowercase.**

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

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

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

Disable \cyr, used in russianb.ldf.

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

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

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

**Package german.**

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

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

**Package FrenchPro.** This package uses:

```
\if@mid@expandable{not fully expandable code}{fully expandable code}
651 \let\if@mid@expandable\@firstoftwo
```

**AMS classes.**

```
652 \HyPsd@AMSclassfix
```

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

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

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

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

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

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

**Miscellaneous commands.**

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

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

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

**Patch for cjk bookmarks.**

```
668 \HyPsd@CJKhook
```

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

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

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

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

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

**Package xspace.**

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



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

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

`\@ifstar` is defined in  $\LaTeX$  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:

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

Support for package 'xargs':

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

## 6.2.2 Expansion

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

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

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

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

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

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

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

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

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

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

### 6.2.3 Postprocessing

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

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

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

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

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

```

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

```

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

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

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

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

```

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

```

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

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

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

```

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

```

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

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

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

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

```

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

```

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

```

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

```

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

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

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

```

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

```

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

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

```

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

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

```

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

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

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

```

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

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

With Unicode the spaces are replaced by their octal sequences.

```

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

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

```

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

### Try conversion back to PDFDocEncoding.

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

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

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

`\Hy@pdfstringdef`

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

## 6.3 Encodings

### 6.3.1 XeTeX

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

```

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

```

```

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

```

### 6.3.2 Workaround for package linguex

```

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

```

### 6.3.3 PD1 encoding

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

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

```

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

```

### 6.3.4 PU encoding

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

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

```

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

```



```

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

```

## 6.4 Additional user commands

### 6.4.1 `\texorpdfstring`

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

```

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

```

### 6.4.2 Hooks for `\pdfstringdef`

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

```

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

```

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

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

```

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

```

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

```

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

```

`\HyPsd@DisableCommands`

```

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

```

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

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

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

```

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

```

## 6.5 Help macros for expansion

### 6.5.1 `\ignorespaces`

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

```

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

```

### 6.5.2 Babel languages

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

```

\pdfstringdefDisableCommands{%
  \languageshorthands\system}%
}

```

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

```

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

```

```

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

  Nothing to do for english.

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

```

```

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

```

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

```

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

```

```

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

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

```

```

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

```

```

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

```

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

-.

```

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

```

### 6.5.3 CJK patch

```

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

```

\HyPsd@CJKhook

```

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

```

#### 6.5.4 CJK bookmarks

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

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

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

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

```

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

```



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

```

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

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

```

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

### 6.5.5 CJK unicode

`\HyPsd@CJKhook@unicode`

```

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

\HyPsd@CJK@Unicode

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

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

```

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

```

```

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

```

```

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

```

```

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

```

### 6.5.6 \@inmathwarn-Patch

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

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

```

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

```

```

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

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

```

\HyPsd@add@accent

```

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

```

### 6.5.7 Unexpandable spaces

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

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

These properties are used in \HyPsd@CheckCatcodes.

```

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

```

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

```

1602 \HyPsd@LetUnexpandableSpace\HyPsd@UnexpandableSpace

```

### 6.5.8 Marker for commands

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

```

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

```

### 6.5.9 \hspace fix

\HyPsd@hspace

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

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

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

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

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

### 6.5.10 Fix for AMS classes

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

### 6.5.11 Reference commands

\HyPsd@href

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

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

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

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

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



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

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

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

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

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

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

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

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

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

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

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

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

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

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

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

`\HyPsd@@autorefname`

```

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

```

### 6.5.12 Redefining the defining commands

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

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

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

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

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

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

```

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

```

```

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

```

### 6.5.13 \ifnextchar

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

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

```

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

```

### 6.5.14 \@protected@testoptifnextchar

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

```

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

```

## 6.6 Help macros for postprocessing

### 6.6.1 Generic warning.

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

```

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

```

### 6.6.2 Protecting spaces

```

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

```

1776 {%

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

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

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

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

### Remove mask.

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

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

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

### 6.6.3 Remove grouping braces

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

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

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

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

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

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

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

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

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

```

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

```

#### 6.6.4 Catcode check

##### Check catcodes.

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

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

```

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

```

```

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

```

### Remove counts, dimens, skips.

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

```

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

```

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

```

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

```



```

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

```

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

```

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

```

### Catcode warnings.

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

```

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

```

`\HyPsd@RemoveSpaceWarning`

```

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

```

```

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

```

\HyPsd@ReplaceSpaceWarning

```

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

```

### 6.6.5 Check for wrong glyphs

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

```

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

```

## Spaces.

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

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

### 6.6.6 Replacing tokens

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

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

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

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

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

`\HyPsd@EscapeTeX`

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

```

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

```

### 6.6.7 Support for package xspace

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

```

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

```

### 6.6.8 Converting to Unicode

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

```

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

```

`\HyPsd@ConvertToUnicode`

```

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

```

```

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

```

\HyPsd@DoConvert

```

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

```

\HyPsd@DoEscape

```

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

```

\HyPsd@GetTwoBytes

```

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

```

\HyPsd@GetOneByte

```

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

```

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

```

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

```

\HyPsd@Char

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

### 6.6.9 Support for UTF-8 input encoding

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

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

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

```

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

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

```

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

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

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

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

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

$$(5)$$

```

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

```

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

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

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

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

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

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

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

$$(12)$$

```

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

```

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

```

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

```

```

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

```



```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

```

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

```

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

```

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

```

## 7 Support of other packages

### 7.1 Class memoir

```

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

```

### 7.2 Package subfigure

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

```

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

```

```

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

```

### 7.3 Package xr and xr-hyper

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

```

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

```

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

```

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

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

```

Providing dummy definitions.

```

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

```

## 8 Help macros for links

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

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

```

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

```

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

```

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

```

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

```

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

```

```

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

```

## 9 Options

```

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

```

### 9.1 Help macros

\Hy@boolkey

```

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

```

```

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

```

\Hy@WarnOptionValue

```

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

```

\Hy@DisableOption

```

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

```

\Hy@WarnOptionDisabled

```

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

```

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

```

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

```

```

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

```

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

```

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

```

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

```

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

```

`\Hy@UseNameKey`

```

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

```

## 9.2 Defining the options

```

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

```

```

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

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

```

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

```

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

```



```

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

```

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

```

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

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

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

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

```

Determines whether an automatic anchor is put on each page

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

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

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

```

```

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

```

```

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

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

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

```

## 10 Options for different drivers

```

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

```

```

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

```

```

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

```

```

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

```

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

```

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

```

```

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

```

## 11 Options to add extra features

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

```

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

```

The automatic footnote linking can be disabled by option hyperfootnotes.

```

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

```

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

```

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

```

```

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

```

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

```

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

```

Configuration of encap char.

```

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

```

## 12 Language options

The `\autoref` feature depends on the language.

```

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

```



```

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

```

```

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

```

Next commented section for Russian is provided by Olga Lapko.

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

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

is the `\appendixautorefname`.

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

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

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

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

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

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

```
3204 % }%
```

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

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

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

```
3207 }%
```

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

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

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

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

```
3211 % }%
```

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

```
3224 % }%
```

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

```

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

```

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

```

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

```

```

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

```

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

```

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

```

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

```

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

```

```

3363 }%
3364 }

```

## 13 Options to change appearance of links

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

```

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

```

## 14 Bookmarking

```

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

```

```

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

```

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

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

```

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

```

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

```

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

```

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

```

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

```



```

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

Option CJKbookmarks enables the patch for CJK bookmarks.

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

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

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

```

## 15 PDF-specific options

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

```

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

```

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

```

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

```

```

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

```

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

```

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

```

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

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

```

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

```

```

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

```

```

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

```

```

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

```

```

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

```

```

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

```

```

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

```



```

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

```

```

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

```

Default values:

```

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

```

```

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

```

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

```

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

```

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

```

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

```

Add option tex4ht if package tex4ht is loaded.

```

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

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

```

After processing options.

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

## 15.1 PDF/A

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

```

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

```

## 15.2 Patch for babel's \texttilde

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

```

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

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

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

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

```

```

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

```

### 15.2.1 Driver loading

```

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

```

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

```

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

```

```

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

```

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

```

4270 \def\HyOpt@DriverType{}%
4271 \ifx\Hy@driver\@empty
4272   \def\HyOpt@DriverType{ (autodetected)}%
4273   \providecommand*{\Hy@defaultdriver}{hypertex}%
4274   \ifpdf
4275     \def\Hy@driver{hpdtex}%
4276   \else
4277     \ifxetex
4278       \def\Hy@driver{hxetex}%
4279     \else
4280       \ifvtexhtml
4281         \def\Hy@driver{hvtexhtm}%
4282         \def\MaybeStopEarly{%
4283           \Hy@Message{Stopped early}%
4284           \Hy@AtBeginDocument{%
4285             \PDF@FinishDoc
4286             \gdef\PDF@FinishDoc{}%
4287           }%
4288           \endinput
4289         }%
4290       \else
4291         \ifvtexpdf
4292           \def\Hy@driver{hvtex}%
4293         \else
4294           \ifvtexps
4295             \def\Hy@driver{hvtex}%
4296           \else
4297             \ifx\HyOpt@DriverFallback\ltx@empty
4298               \let\Hy@driver\Hy@defaultdriver
4299               \def\HyOpt@DriverType{ (default)}%
4300             \else
4301               \begingroup
4302               \toks@{\expandafter{\HyOpt@DriverFallback}}%
4303               \edef\x{\endgroup
4304                 \noexpand\kvsetkeys{Hyp}{\the\toks@}}%
4305               }%
4306             \x
4307             \ifx\Hy@driver\ltx@empty
4308               \let\Hy@driver\Hy@defaultdriver
4309               \def\HyOpt@DriverType{ (default)}%
4310             \else
4311               \def\HyOpt@DriverType{ (fallback)}%
4312             \fi

```



```

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

```

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

```

4354 \newif\ifHy@DvipdfmxOutlineOpen
4355 \ifxetex
4356     \ifdim\number\XeTeXversion\XeTeXrevision in<0.9995in %
4357     \else
4358         \chardef\SpecialDvipdfmxOutlineOpen\@ne
4359         \Hy@DvipdfmxOutlineOpentrue
4360     \fi
4361 \fi
4362 \begingroup\expandafter\expandafter\expandafter\endgroup
4363 \expandafter\ifx\csname SpecialDvipdfmxOutlineOpen\endcsname\relax
4364 \else
4365     \ifnum\SpecialDvipdfmxOutlineOpen>\z@
4366         \Hy@DvipdfmxOutlineOpentrue

```

```

4367 \fi
4368 \fi

```

## 15.2.2 Bookmarks

```

4369 \def\WriteBookmarks{0}
4370 \def\@bookmarkopenstatus#1{%
4371   \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:

```

4372   \ifnum#1<\expandafter\@firstofone\expandafter
4373     {\number\@bookmarksopenlevel} % explicit space
4374   \else
4375     -%
4376   \fi
4377 \else
4378   -%
4379 \fi
4380 }
4381 \ifHy@bookmarks
4382   \Hy@Info{Bookmarks ON}%
4383   \ifx\@pdfpagemode\@empty
4384     \def\@pdfpagemode{UseOutlines}%
4385   \fi
4386 \else
4387   \def\@bookmarkopenstatus#1{%}%
4388   \Hy@Info{Bookmarks OFF}%
4389   \Hy@AtEndOfPackage{%
4390     \global\let\ReadBookmarks\relax
4391     \global\let\WriteBookmarks\relax
4392   }%
4393   \ifx\@pdfpagemode\@empty
4394     \def\@pdfpagemode{UseNone}%
4395   \fi
4396 \fi
4397 \Hy@DisableOption{bookmarks}

```

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

```

4398 \def\Hy@CatcodeWrapper#1{%
4399   \def\Hy@endWrap{%}%
4400   \def\TMP@EnsureCode##1##2{%
4401     \edef\Hy@endWrap{%
4402       \Hy@endWrap
4403       \catcode##1 \the\catcode##1\relax
4404     }%
4405     \catcode##1 ##2\relax
4406   }%
4407   \TMP@EnsureCode{10}{12}% ^^J
4408   \TMP@EnsureCode{33}{12}% !
4409   \TMP@EnsureCode{34}{12}% "
4410   \TMP@EnsureCode{36}{3}% $ (math)
4411   \TMP@EnsureCode{38}{4}% & (alignment)
4412   \TMP@EnsureCode{39}{12}% '
4413   \TMP@EnsureCode{40}{12}% (
4414   \TMP@EnsureCode{41}{12}% )
4415   \TMP@EnsureCode{42}{12}% *
4416   \TMP@EnsureCode{43}{12}% +
4417   \TMP@EnsureCode{44}{12}% ,
4418   \TMP@EnsureCode{45}{12}% -

```

```

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

```

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

```

4437 \Hy@AtBeginDocument{%
4438   \ifHy@ocgcolorlinks
4439     \kvsetkeys{Hyp}{colorlinks}%
4440     \ifHy@pdfa
4441       \Hy@Warning{%
4442         PDF/A: Optional Content Groups are prohibited,\MessageBreak
4443         using 'colorlinks' instead of 'ocgcolorlinks'%
4444       }%
4445       \Hy@ocgcolorlinksfalse
4446     \fi
4447   \fi
4448   \ifHy@ocgcolorlinks
4449   \else
4450     \Hy@DisableOption{ocgcolorlinks}%
4451   \fi
4452   \ifHy@colorlinks
4453     \def\@pdfborder{0 0 0}%
4454     \let\@pdfborderstyle\@empty
4455     \ifHy@typexml
4456     \else
4457       \Hy@CatcodeWrapper{%
4458         \RequirePackage{color}%
4459       }%
4460     \fi
4461     \def\Hy@colorlink#1{%
4462       \begingroup
4463       \HyColor@UseColor#1%
4464     }%
4465     \def\Hy@endcolorlink{\endgroup}%
4466     \Hy@Info{Link coloring ON}%
4467   \else
4468     \ifHy@frenchlinks
4469       \def\Hy@colorlink#1{\begingroup\fontshape{sc}\selectfont}%
4470       \def\Hy@endcolorlink{\endgroup}%
4471       \Hy@Info{French linking ON}%
4472     \else

```

for grouping consistency:

```

4473 \def\Hy@colorlink#1{\begingroup}%
4474 \def\Hy@endcolorlink{\endgroup}%
4475 \Hy@Info{Link coloring OFF}%
4476 \fi
4477 \fi
4478 \Hy@DisableOption{colorlinks}%
4479 \Hy@DisableOption{frenchlinks}%
4480 \ifHy@texht
4481 \long\def\@firstoffive#1#2#3#4#5{#1}%
4482 \long\def\@secondoffive#1#2#3#4#5{#2}%
4483 \long\def\@thirdoffive#1#2#3#4#5{#3}%
4484 \long\def\@fourthoffive#1#2#3#4#5{#4}%
4485 \long\def\@fifthoffive#1#2#3#4#5{#5}%
4486 \providecommand*\@safe@activetrue{}%
4487 \providecommand*\@safe@activesfalse{}%
4488 \def\T@ref#1{%
4489 \Hy@safe@activetrue
4490 \expandafter\@setref\csname r@#1\endcsname\@firstoffive{#1}%
4491 \Hy@safe@activesfalse
4492 }%
4493 \def\T@pageref#1{%
4494 \Hy@safe@activetrue
4495 \expandafter\@setref\csname r@#1\endcsname\@secondoffive{#1}%
4496 \Hy@safe@activesfalse
4497 }%
4498 \else
4499 \ifHy@typexml
4500 \else
4501 \Hy@CatcodeWrapper{%
4502 \RequirePackage{nameref}%
4503 }%
4504 \fi
4505 \fi
4506 \DeclareRobustCommand\ref{%
4507 \@ifstar\@refstar\T@ref
4508 }%
4509 \DeclareRobustCommand\pageref{%
4510 \@ifstar\@pagerefstar\T@pageref
4511 }%
4512 % \@ifclassloaded{memoir}{%
4513 % \ltx@ifundefined{@mem@titlerefno link}\ltx@secondoftwo{%
4514 % \ltx@ifundefined{@mem@titleref}\ltx@secondoftwo\ltx@firstoftwo
4515 % }%
4516 % }\ltx@secondoftwo
4517 % {%
4518 % \DeclareRobustCommand*{\nameref}{%
4519 % \@ifstar\@mem@titlerefno link\@mem@titleref
4520 % }%
4521 % }{%
4522 \DeclareRobustCommand*{\nameref}{%
4523 \@ifstar\@namerefstar\T@nameref
4524 }%
4525 % }%
4526 }
4527 \Hy@AtBeginDocument{%
4528 \ifHy@texht
4529 \else

```

```

4530 \Hy@CatcodeWrapper\ReadBookmarks
4531 \fi
4532 }

4533 \ifHy@backref
4534 \RequirePackage{backref}%
4535 \else
4536 \let\Hy@backout\@gobble
4537 \fi
4538 \Hy@DisableOption{backref}
4539 \Hy@DisableOption{pagebackref}

4540 \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.

```

4541 \begingroup
4542 \endlinechar=-1 %
4543 \catcode'\^^A=14 %
4544 \catcode'\^^M\active
4545 \catcode'\%\active
4546 \catcode'\#\active
4547 \catcode'\_\active
4548 \catcode'\$\active
4549 \catcode'\&\active
4550 \gdef\hyper@normalise{^^A
4551 \begingroup
4552 \catcode'\^^M\active
4553 \def^^M{ }^^A
4554 \catcode'\%\active
4555 \let%\@percentchar
4556 \let%\@percentchar
4557 \catcode'\#\active
4558 \def#{\hyper@hash}^^A
4559 \def\#{\hyper@hash}^^A
4560 \@makeother\&^^A
4561 \edef&{\string&}^^A
4562 \edef\&{\string&}^^A
4563 \edef\textunderscore{\string_}^^A
4564 \let\_ \textunderscore
4565 \catcode'\_\active
4566 \let\_ \textunderscore
4567 \let~\hyper@tilde
4568 \let~\hyper@tilde
4569 \let\textasciitilde\hyper@tilde
4570 \let\\ \@backslashchar
4571 \edef$\string$}^^A
4572 \Hy@safe@activetrue
4573 \hyper@n@rmalise
4574 }^^A
4575 \catcode'\#=6 ^^A
4576 \gdef\Hy@ActiveCarriageReturn{^^M}^^A

```

```

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

4611 \def\hyperlink#1#2{%
4612 \hyper@@link{#1}{#2}%
4613 }

4614 \def\Hy@VerboseLinkStart#1#2{%
4615 \ifHy@verbose
4616 \begingroup
4617 \Hy@safe@activetrue
4618 \xdef\Hy@VerboseGlobalTemp{(#1) '#2'}%
4619 \Hy@Info{Reference \Hy@VerboseGlobalTemp}%
4620 \xdef\Hy@VerboseGlobalTemp{%
4621 \Hy@VerboseGlobalTemp, %
4622 line \the\inputlineno
4623 }%
4624 \endgroup
4625 \let\Hy@VerboseLinkInfo\Hy@VerboseGlobalTemp
4626 \@onelevel@sanitize\Hy@VerboseLinkInfo
4627 \fi
4628 }

4629 \def\Hy@VerboseLinkInfo{<VerboseLinkInfo>}
4630 \def\Hy@VerboseLinkStop{%
4631 \ifHy@verbose
4632 \begingroup

```

```

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

4642 \def\Hy@VerboseAnchor#1{%
4643 \ifHy@verbose
4644 \begingroup
4645 \Hy@safe@activetrue
4646 \Hy@Info{Anchor '\HyperDestNameFilter{#1}'}%
4647 \endgroup
4648 \fi
4649 }

4650 \def\Hy@AllowHyphens{%
4651 \relax
4652 \ifhmode
4653 \penalty\@M
4654 \hskip\z@skip
4655 \fi
4656 }

4657 \DeclareRobustCommand*\href}[1][]{%
4658 \begingroup
4659 \setkeys{href}{#1}%
4660 \@ifnextchar\bgroup\Hy@href{\hyper@normalise\href@}%
4661 }

4662 \def\Hy@href#1{%
4663 \hyper@normalise\href@
4664 }

4665 \begingroup
4666 \catcode'\$=6 %
4667 \catcode'\#=12 %
4668 \gdef\href@#1{\expandafter\href@split$1##\}%
4669 \gdef\href@split$1#2#3\4{%
4670 \hyper@@link{$1}{$2}{$3}$4}%
4671 \endgroup
4672 }%
4673 \endgroup

```

Option 'page'.

```

4674 \define@key{href}{page}{%
4675 \def\Hy@href@page{#1}%
4676 }

4677 \let\Hy@href@page\@empty
4678 \newcount\c@Hy@tempcnt
4679 \def\theHy@tempcnt{\the\c@Hy@tempcnt}
4680 \def\Hy@MakeRemoteAction{%
4681 \ifx\Hy@href@page\@empty
4682 \def\Hy@href@page{0}%
4683 \else
4684 \setcounter{Hy@tempcnt}{\Hy@href@page}%
4685 \ifnum\c@Hy@tempcnt<\@ne
4686 \Hy@Warning{%
4687 Invalid page number (\theHy@tempcnt)\MessageBreak

```

```

4688     for remote PDF file.\MessageBreak
4689     Using page 1%
4690 }%
4691 \def\Hy@href@page{0}%
4692 \else
4693 \global\advance\c@Hy@tempcnt\m@ne
4694 \edef\Hy@href@page{\theHy@tempcnt}%
4695 \fi
4696 \fi

```

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

```

4697 \ifx\Hy@href@nextactionraw\@empty
4698 \else
4699 \Hy@newwindowsettrue
4700 \Hy@newwindowtrue
4701 \fi
4702 }

```

Option ‘pdfremotestartview’.

```

4703 \define@key{href}{pdfremotestartview}{%
4704 \setkeys{Hyp}{pdfremotestartview={#1}}}%
4705 }

```

Option ‘pdfnewwindow’.

```

4706 \let\KV@href@pdfnewwindow\KV@Hyp@pdfnewwindow
4707 \let\KV@href@pdfnewwindow@default\KV@Hyp@pdfnewwindow@default

```

Option ‘ismap’.

```

4708 \newif\ifHy@href@ismap
4709 \define@key{href}{ismap}[true]{%
4710 \ltx@ifundefined{Hy@href@ismap#1}{%
4711 \Hy@Error{%
4712 Invalid value (#1) for key ‘ismap’.\MessageBreak
4713 Permitted values are ‘true’ or ‘false’.\MessageBreak
4714 Ignoring ‘ismap’%
4715 } \@ehc
4716 }{%
4717 \csname Hy@href@ismap#1\endcsname
4718 }%
4719 }

```

Option ‘nextactionraw’.

```

4720 \let\Hy@href@nextactionraw\@empty
4721 \define@key{href}{nextactionraw}{%
4722 \edef\Hy@href@nextactionraw{#1}%
4723 \ifx\Hy@href@nextactionraw\@empty
4724 \else
4725 \Hy@Match\Hy@href@nextactionraw{%
4726 ^(\HyPat@ObjRef/|<<.*[/S[/].+>>|
4727 \[( ?\HyPat@ObjRef/|<<.*[/S[/].+>>)+ ?])$%
4728 }{ }{%
4729 \Hy@Warning{Invalid value for ‘nextactionraw’:\MessageBreak
4730 \Hy@href@nextactionraw\MessageBreak
4731 The action is discarded%
4732 }%
4733 }%
4734 \ifx\Hy@href@nextactionraw\@empty
4735 \else

```



```

4736 \edef\Hy@href@nextactionraw{/Next \Hy@href@nextactionraw}%
4737 \fi
4738 \fi
4739 }
4740 \def\HyPat@ObjRef/{.+}

```

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

```

4741 \RequirePackage{url}
4742 \let\HyOrg@url\url
4743 \def\Hurl{\begingroup \Url}
4744 \DeclareRobustCommand*\nolinkurl{\hyper@normalise\nolinkurl@}
4745 \def\nolinkurl@#1{\Hurl{#1}}
4746 \DeclareRobustCommand*\url{\hyper@normalise\url@}
4747 \def\url@#1{\hyper@linkurl{\Hurl{#1}}{#1}}
4748 \DeclareRobustCommand*\hyperimage{\hyper@normalise\hyper@image}
4749 \providecommand\hyper@image[2]{#2}
4750 \def\hypertarget#1#2{%
4751 \ifHy@nesting
4752 \hyper@@anchor{#1}{#2}%
4753 \else
4754 \hyper@@anchor{#1}{\relax}#2%
4755 \fi
4756 }

```

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

```

4757 \DeclareRobustCommand*\hyperref{%
4758 \@ifnextchar{\Hy@babelnormalise\label@hyperref}\@hyperref
4759 }
4760 \def\Hy@babelnormalise#1[#2]{%
4761 \begingroup
4762 \Hy@safe@activetrue
4763 \edef\Hy@tempa{%
4764 \endgroup
4765 \noexpand#1[{#2}]%
4766 }%
4767 \Hy@tempa
4768 }
4769 \def\@hyperref{\hyper@normalise\@hyperref}
4770 \def\@hyperref#1#2#3{%
4771 \edef\ref@one{\ifx\#2\\\else#2.\fi#3}%
4772 \expandafter\tryhyper@link\ref@one\{#1}%
4773 }
4774 \def\tryhyper@link#1\#2{%
4775 \hyper@@link{#2}{#1}%
4776 }
4777 \def\hyperdef{\@ifnextchar{\label@hyperdef}\@hyperdef}
4778 \def\@hyperdef#1#2#3{%, category, name, text
4779 \ifx\#1\%
4780 \def\Hy@AnchorName{#2}%
4781 \else
4782 \def\Hy@AnchorName{#1.#2}%

```

```

4783 \fi
4784 \ifHy@nesting
4785   \expandafter\hyper@@anchor\expandafter{\Hy@AnchorName}{#3}%
4786 \else
4787   \expandafter\hyper@@anchor\expandafter{\Hy@AnchorName}{\relax}#3%
4788 \fi
4789 }

```

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.

```

4790 \def\label@hyperref[#1]{%
4791   \expandafter\label@@hyperref\csname r@#1\endcsname{#1}%
4792 }%
4793 \def\label@@hyperref#1#2#3{%
4794   \ifx#1\relax
4795     \protect\G@refundefinedtrue
4796     \@latex@warning{%
4797       Hyper reference ‘#2’ on page \thepage \space undefined%
4798     }%
4799     \hyper@@link{}{??}{#3}%
4800 \else
4801   \hyper@@link{\expandafter\@fifthoffive#1}%
4802     {\expandafter\@fourthoffive#1\@empty\@empty}{#3}%
4803 \fi
4804 }
4805 \def\label@hyperdef[#1]#2#3#4{% label name, category, name,
4806                               % anchor text
4807   \@bsphack
4808   \ifx\#2\%
4809     \def\Hy@AnchorName{#3}%
4810 \else
4811   \def\Hy@AnchorName{#2.#3}%
4812 \fi
4813 \if@filesw
4814   \protected@write\@auxout{}{%
4815     \string\newlabel{#1}{#2}{#3}{\Hy@AnchorName}}%
4816   }%
4817 \fi
4818 \@esphack
4819 \ifHy@nesting
4820   \expandafter\hyper@@anchor\expandafter{\Hy@AnchorName}{#4}%
4821 \else
4822   \expandafter\hyper@@anchor\expandafter{\Hy@AnchorName}{\relax}#4%
4823 \fi
4824 }

```

## 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.

```

4825 \def\hyper@@link{\let\Hy@reserved@a\relax
4826   \@ifnextchar[{\hyper@link@}{\hyper@link@[link]}%
4827 }
4828 \def\hyper@link@[#1]#2#3#4{%

```

```

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

```

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.

```

4852 \def\hyper@readexternallink#1\#2#3#4{%
4853 \begingroup
4854 \let\relax
4855 \expandafter\endgroup
4856 \expandafter\@hyper@@readexternallink#1\{#2}{#3}{#4}%
4857 }
4858 \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.

```

4859 \@hyper@readexternallink{#2}{#3}{#4}#1::\{#1}%
4860 }

```

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

```

4861 \def\@pdftempwordfile{file}%
4862 \def\@pdftempwordrun{run}%
4863 \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:

```

4864 \ifx\\#6\\%
4865 \@hyper@linkfile file:#7\\{#3}{#2}{#7}%
4866 \else
4867 \ifx\\#4\\%
4868 \@hyper@linkfile file:#7\\{#3}{#2}{#7}%
4869 \else

```

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

```

4870 \def\@pdftempa{#4}%
4871 \ifx\@pdftempa\@pdftempwordfile
4872 \@hyper@linkfile#7\\{#3}{#2}{#7}%
4873 \else

```

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

```

4874 \ifx\@pdftempa\@pdftempwordrun
4875 \ifHy@pdfa
4876 \Hy@Error{%
4877 PDF/A: Launch action is prohibited%
4878 }\@ehc
4879 \begingroup
4880 \leavevmode
4881 #2%
4882 \endgroup
4883 \else
4884 \@hyper@launch#7\\{#3}{#2}%
4885 \fi
4886 \else

```

otherwise its a URL

```

4887 \hyper@linkurl{#3}{#7\ifx\\#2\\else\hyper@hash#2\fi}%
4888 \fi
4889 \fi
4890 \fi
4891 \fi
4892 }

```

By default, turn run: into file:

```

4893 \def\@hyper@launch run:#1\\#2#3{% filename, anchor text, linkname
4894 \hyper@linkurl{#2}{%
4895 \Hy@linkfileprefix
4896 #1%
4897 \ifx\\#3\\%
4898 \else
4899 \hyper@hash
4900 #3%
4901 \fi
4902 }%
4903 }

```

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

```

4904 \def\@hyper@linkfile file:#1\\#2#3#4{%
4905 %file url,link string, name, original uri
4906 \filename@parse{#1}%
4907 \ifx\filename@ext\relax

```

```

4908 \edef\filename@ext{\XR@ext}%
4909 \fi
4910 \def\use@file{\filename@area\filename@base.\filename@ext}%
4911 \Hy@ifStringEndsWith\filename@ext\XR@ext{%
4912 \hyper@linkfile{#2}{\use@file}{#3}%
4913 }{%
4914 \ifx\@baseurl\@empty
4915 \hyper@linkurl{#2}{%
4916 #4\ifx\\#3\\else\hyper@hash#3\fi
4917 }%
4918 \else
4919 \hyper@linkurl{#2}{\use@file\ifx\\#3\\else\hyper@hash#3\fi}%
4920 \fi
4921 }%
4922 }

4923 \def\Hy@ifStringEndsWith#1#2{%
4924 \begingroup
4925 \edef\x{#1}%
4926 \@onelevel@sanitize\x
4927 \edef\x{.\x}%
4928 \edef\y{#2}%
4929 \@onelevel@sanitize\y
4930 \edef\y{.\y}%
4931 \expandafter\def\expandafter\z\expandafter##\expandafter1\y##2\@nil{%
4932 \endgroup
4933 \ifx\relax##2\relax
4934 \expandafter\ltx@secondoftwo
4935 \else
4936 \expandafter\ltx@firstoftwo
4937 \fi
4938 }%
4939 \expandafter\expandafter\expandafter\z\expandafter\x\y\@nil
4940 }

4941 \def\Hy@StringLocalhost{localhost}
4942 \@onelevel@sanitize\Hy@StringLocalhost
4943 \def\Hy@CleanupFile#1{%
4944 \edef#1{#1}%
4945 \expandafter\Hy@@CleanupFile#1\hbox{//\hbox\@nil{#1}%
4946 }
4947 \def\Hy@@CleanupFile#1//#2/#3\hbox#4\@nil#5{%
4948 \begingroup
4949 \toks@{\endgroup}%
4950 \def\x{#1}%
4951 \ifx\x\@empty
4952 \def\x{#2}%
4953 \ifx\x\@empty
4954 \toks@{\endgroup\def#5{/#3}}%
4955 \else
4956 \@onelevel@sanitize\x
4957 \ifx\x\Hy@StringLocalhost
4958 \toks@{\endgroup\def#5{/#3}}%
4959 \fi
4960 \fi
4961 \fi
4962 \the\toks@
4963 }

```

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.

```

4964 \long\def\hyper@@anchor#1#2{\@hyper@@anchor#1\relax#2\relax}
4965 \long\def\@hyper@@anchor#1\relax#2#3\relax{%
4966   \ifx\#1\%
4967     #2\Hy@Warning{Ignoring empty anchor}%
4968   \else
4969     \def\anchor@spot{#2#3}%
4970     \let\put@me@back\@empty
4971     \ifx\relax#2\relax
4972     \else
4973       \ifHy@nesting
4974       \else
4975         \ifcat a\noexpand#2\relax
4976         \else
4977           \ifcat 0\noexpand#2 \relax
4978           \else
4979             \typeout{Anchor start is not alphanumeric %
4980               on input line\the\inputlineno%
4981             }%
4982             \let\anchor@spot\@empty
4983             \def\put@me@back{#2#3}%
4984           \fi
4985         \fi
4986       \fi
4987     \fi
4988     \ifHy@activeanchor
4989       \anchor@spot
4990     \else
4991       \hyper@anchor{#1}%
4992     \fi
4993     \expandafter\put@me@back
4994   \fi
4995   \let\anchor@spot\@empty
4996 }
4997 \def\anchor@spot{}
```

## 18 Compatibility with the *LT<sub>ε</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.

```

4998 \let\htmladdimg\hyperimage
4999 \def\htmladdnormallink#1#2{\href{#2}{#1}}
5000 \def\htmladdnormallinkfoot#1#2{\href{#2}{#1}\footnote{#2}}
5001 \def\htmlref#1#2{% anchor text, label
```

```

5002 \label@hyperref[#{#2}]{#1}%
5003 }

```

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

```

5004 \def\@latex2htmlX{%
5005   \let\hhyperref\hyperref
5006   \def\hyperref##1##2##3##4{% anchor text for HTML
5007     % text to print before label in print
5008     % label
5009     % post-label text in print
5010     ##2\ref{##4}##3%
5011   }%
5012 }

```

## 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.

```

5013 \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
5014 \def\HyField@NewFlag#1#2{%
5015   \lowercase{\HyField@NewOption{#2}}%
5016   \lowercase{\HyField@NewBitsetFlag{#2}}{#2}{#1}%
5017 }

```

```

\HyField@NewFlagOnly
5018 \def\HyField@NewFlagOnly#1#2{%
5019   \lowercase{\HyField@NewBitsetFlag{#2}}{#2}{#1}%
5020 }

```

```

\HyField@NewOption #1: option name
5021 \def\HyField@NewOption#1{%
5022   \expandafter\newif\csname ifFld@#1\endcsname
5023   \define@key{Field}{#1}[true]{%
5024     \lowercase{\Field@boolkey{##1}}{#1}%
5025   }%
5026 }

```

\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

5027 \def\HyField@NewBitsetFlag#1#2#3#4{%
5028   \begingroup
5029   \count@=#4\relax
5030   \advance\count@\m@ne
5031   \def\x##1{%
5032     \endgroup
5033     \expandafter\def\csname HyField@#3@#1\endcsname{##1}%
5034     \expandafter\ifx\csname HyField@#3@##1\endcsname\relax
5035       \expandafter\edef\csname HyField@#3@##1\endcsname{%
5036         (\number#4) #2%
5037       }%
5038     \else
5039       \expandafter\edef\csname HyField@#3@##1\endcsname{%
5040         \csname HyField@#3@##1\endcsname
5041         /#2%
5042       }%
5043     \fi
5044   }%
5045   \expandafter\x\expandafter{\the\count@}%
5046 }
```

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

```
5047 \def\HyField@UseFlag#1#2{%
5048   \lowercase{\HyField@@UseFlag{#2}}{#1}%
5049 }
```

\HyField@@UseFlag

```
5050 \def\HyField@@UseFlag#1#2{%
5051   \bitsetSetValue{HyField@#2}{%
5052     \csname HyField@#2@#1\endcsname
5053   }{%
5054     \csname ifFld@#1\endcsname 1\else 0\fi
5055   }%
5056 }
```

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

```
5057 \def\HyField@SetFlag#1#2{%
5058   \lowercase{\HyField@@SetFlag{#2}}{#1}%
5059 }
```

\HyField@@SetFlag

```
5060 \def\HyField@@SetFlag#1#2{%
5061   \bitsetSetValue{HyField@#2}{%
5062     \csname HyField@#2@#1\endcsname
5063   }{1}%
5064 }
```

\HyField@PrintFlags

```
5065 \def\HyField@PrintFlags#1#2{%
5066   \ifHy@verbose
5067     \begingroup
```



```

5068 \let\Hy@temp\@empty
5069 \let\MessageBreak\relax
5070 \expandafter\@for\expandafter\x\expandafter:\expandafter=%
5071 \bitsetGetSetBitList{HyField@#1}\do{%
5072 \edef\Hy@temp{%
5073 \Hy@temp
5074 \csname HyField@#1@\x\endcsname\MessageBreak
5075 }%
5076 }%
5077 \edef\x{\endgroup
5078 \noexpand\Hy@Info{%
5079 Field flags: %
5080 \expandafter\ifx\@car#1\@nil S\else/\fi
5081 #1 %
5082 \bitsetGetDec{HyField@#1} %
5083 (0x\bitsetGetHex{HyField@#1}{32})\MessageBreak
5084 \Hy@temp
5085 for #2%
5086 }%
5087 }\x
5088 \fi
5089 }

```

### 19.1.1 Declarations of field flags

“Table 8.70 Field flags common to all field types”

```

5090 \HyField@NewFlag{Ff}{ReadOnly}{1}
5091 \HyField@NewFlag{Ff}{Required}{2}
5092 \HyField@NewFlag{Ff}{NoExport}{3}

```

“Table 8.75 Field flags specific to button fields”

```

5093 \HyField@NewFlag{Ff}{NoToggleToOff}{15}
5094 \HyField@NewFlag{Ff}{Radio}{16}
5095 \HyField@NewFlag{Ff}{Pushbutton}{17}
5096 \HyField@NewFlag{Ff}{RadiosInUnison}{26}

```

“Table 8.77 Field flags specific to text fields”

```

5097 \HyField@NewFlag{Ff}{Multiline}{13}
5098 \HyField@NewFlag{Ff}{Password}{14}
5099 \HyField@NewFlag{Ff}{FileSelect}{21}% PDF 1.4
5100 \HyField@NewFlag{Ff}{DoNotSpellCheck}{23}% PDF 1.4
5101 \HyField@NewFlag{Ff}{DoNotScroll}{24}% PDF 1.4
5102 \HyField@NewFlag{Ff}{Comb}{25}% PDF 1.4
5103 \HyField@NewFlag{Ff}{RichText}{26}% PDF 1.5

```

“Table 8.79 field flags specific to choice fields”

```

5104 \HyField@NewFlag{Ff}{Combo}{18}
5105 \HyField@NewFlag{Ff}{Edit}{19}
5106 \HyField@NewFlag{Ff}{Sort}{20}
5107 \HyField@NewFlag{Ff}{MultiSelect}{22}% PDF 1.4
5108 % \HyField@NewFlag{Ff}{DoNotSpellCheck}{23}% PDF 1.4
5109 \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.

```

5110 \newif\iffld@popdown
5111 \define@key{Field}{popdown}[true]{%

```

```

5112 \lowercase{\Field@boolkey{#1}}{popdown}%
5113 }

```

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.

```

5114 \HyField@NewFlag{F}{Invisible}{1}
5115 \HyField@NewFlag{F}{Hidden}{2}% PDF 1.2
5116 \HyField@NewFlag{F}{Print}{3}% PDF 1.2
5117 \HyField@NewFlag{F}{NoZoom}{4}% PDF 1.2
5118 \HyField@NewFlag{F}{NoRotate}{5}% PDF 1.3
5119 \HyField@NewFlag{F}{NoView}{6}% PDF 1.3
5120 \HyField@NewFlag{F}{Locked}{8}% PDF 1.4
5121 \HyField@NewFlag{F}{ToggleNoView}{9}% PDF 1.5
5122 \HyField@NewFlag{F}{LockedContents}{10}% PDF 1.7

5123 \ifHy@pdfa
5124 \def\HyField@PDFAFldWarning#1#2{%
5125   \Hy@Warning{%
5126     PDF/A: Annotation flag '#1' must\MessageBreak
5127     be set to '#2'%
5128   }%
5129 }%
5130 \Fld@invisiblefalse
5131 \def\Fld@invisibletrue{%
5132   \HyField@PDFAFldWarning{invisible}{false}%
5133 }%
5134 \Fld@hiddenfalse
5135 \def\Fld@hiddenttrue{%
5136   \HyField@PDFAFldWarning{hidden}{false}%
5137 }%
5138 \Fld@printtrue
5139 \def\Fld@printfalse{%
5140   \HyField@PDFAFldWarning{print}{true}%
5141 }%
5142 \Fld@nozoomtrue
5143 \def\Fld@nozoomfalse{%
5144   \HyField@PDFAFldWarning{nozoom}{true}%
5145 }%
5146 \Fld@norotatetrue
5147 \def\Fld@norotatefalse{%
5148   \HyField@PDFAFldWarning{norotate}{true}%
5149 }%
5150 \Fld@noviewfalse
5151 \def\Fld@noviewtrue{%
5152   \HyField@PDFAFldWarning{noview}{false}%
5153 }%
5154 \fi

```

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

```

5155 \HyField@NewFlag{Submit}{IncludeNoValueFields}{2}
5156 \HyField@NewFlagOnly{Submit}{ExportFormat}{3}
5157 \HyField@NewFlag{Submit}{GetMethod}{4}
5158 \HyField@NewFlag{Submit}{SubmitCoordinates}{5}
5159 \HyField@NewFlagOnly{Submit}{XFDF}{6}
5160 \HyField@NewFlag{Submit}{IncludeAppendSaves}{7}

```

```

5161 \HyField@NewFlag{Submit}{IncludeAnnotations}{8}
5162 \HyField@NewFlagOnly{Submit}{SubmitPDF}{9}
5163 \HyField@NewFlag{Submit}{CanonicalFormat}{10}
5164 \HyField@NewFlag{Submit}{ExclNonUserAnnots}{11}
5165 \HyField@NewFlag{Submit}{ExclFKey}{12}
5166 \HyField@NewFlag{Submit}{EmbedForm}{14}

5167 \define@key{Field}{export}{%
5168   \lowercase{\def\Hy@temp{#1}}%
5169   \@ifundefined{Fld@export@\Hy@temp}{%
5170     \@onelevel@sanitize\Hy@temp
5171     \Hy@Error{%
5172       Unknown export format '\Hy@temp'.\MessageBreak
5173       Known formats are 'FDF', 'HTML', 'XFDF', and 'PDF'%
5174     }\@ehc
5175   }{%
5176     \let\Fld@export\Hy@temp
5177   }%
5178 }
5179 \def\Fld@export{fdf}
5180 \@namedef{Fld@export@fdf}{0}%
5181 \@namedef{Fld@export@html}{1}%
5182 \@namedef{Fld@export@xfdf}{2}%
5183 \@namedef{Fld@export@pdf}{3}%

```

### 19.1.2 Set submit flags

\HyField@FlagsSubmit

```

5184 \def\HyField@FlagsSubmit{%
5185   \bitsetReset{HyField@Submit}%
5186   \ifcase\@nameuse{Fld@export@\Fld@export} %
5187     % FDF
5188     \HyField@UseFlag{Submit}{IncludeNoValueFields}%
5189     \HyField@UseFlag{Submit}{SubmitCoordinates}%
5190     \HyField@UseFlag{Submit}{IncludeAppendSaves}%
5191     \HyField@UseFlag{Submit}{IncludeAnnotations}%
5192     \HyField@UseFlag{Submit}{CanonicalFormat}%
5193     \HyField@UseFlag{Submit}{ExclNonUserAnnots}%
5194     \HyField@UseFlag{Submit}{ExclFKey}%
5195     \HyField@UseFlag{Submit}{EmbedForm}%
5196   \or % HTML
5197     \HyField@SetFlag{Submit}{ExportFormat}%
5198     \HyField@UseFlag{Submit}{IncludeNoValueFields}%
5199     \HyField@UseFlag{Submit}{GetMethod}%
5200     \HyField@UseFlag{Submit}{SubmitCoordinates}%
5201     \HyField@UseFlag{Submit}{CanonicalFormat}%
5202   \or % XFDF
5203     \HyField@SetFlag{Submit}{XFDF}%
5204     \HyField@UseFlag{Submit}{IncludeNoValueFields}%
5205     \HyField@UseFlag{Submit}{SubmitCoordinates}%
5206     \HyField@UseFlag{Submit}{CanonicalFormat}%
5207   \or % PDF
5208     \HyField@SetFlag{Submit}{SubmitPDF}%
5209     \HyField@UseFlag{Submit}{GetMethod}%
5210   \fi
5211   \HyField@PrintFlags{Submit}{submit button field}%
5212   \bitsetIsEmpty{HyField@Submit}{%
5213     \def\Fld@submitflags{%

```

```

5214 }{%
5215     \edef\Fld@submitflags{/Flags \bitsetGetDec{HyField@Submit}}}%
5216 }%
5217 }

```

### 19.1.3 Set annot flags in fields

\HyField@FlagsAnnot

```

5218 \def\HyField@FlagsAnnot#1{%
5219     \bitsetReset{HyField@F}%
5220     \HyField@UseFlag{F}{Invisible}%
5221     \HyField@UseFlag{F}{Hidden}%
5222     \HyField@UseFlag{F}{Print}%
5223     \HyField@UseFlag{F}{NoZoom}%
5224     \HyField@UseFlag{F}{NoRotate}%
5225     \HyField@UseFlag{F}{NoView}%
5226     \HyField@UseFlag{F}{Locked}%
5227     \HyField@UseFlag{F}{ToggleNoView}%
5228     \HyField@UseFlag{F}{LockedContents}%
5229     \HyField@PrintFlags{F}{#1}%
5230     \bitsetIsEmpty{HyField@F}{%
5231         \def\Fld@annotflags{%
5232             }{%
5233                 \edef\Fld@annotflags{/F \bitsetGetDec{HyField@F}}}%
5234             }%
5235         }

```

### 19.1.4 Pushbutton field

\HyField@FlagsPushButton

```

5236 \def\HyField@FlagsPushButton{%
5237     \HyField@FlagsAnnot{push button field}%
5238     \bitsetReset{HyField@Ff}%
5239     \HyField@UseFlag{Ff}{ReadOnly}%
5240     \HyField@UseFlag{Ff}{Required}%
5241     \HyField@UseFlag{Ff}{NoExport}%
5242     \HyField@SetFlag{Ff}{Pushbutton}%
5243     \HyField@PrintFlags{Ff}{push button field}%
5244     \bitsetIsEmpty{HyField@Ff}{%
5245         \def\Fld@flags{%
5246             }{%
5247                 \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}}%
5248             }%
5249         }

```

### 19.1.5 Check box field

\HyField@FlagsCheckBox

```

5250 \def\HyField@FlagsCheckBox{%
5251     \HyField@FlagsAnnot{check box field}%
5252     \bitsetReset{HyField@Ff}%
5253     \HyField@UseFlag{Ff}{ReadOnly}%
5254     \HyField@UseFlag{Ff}{Required}%
5255     \HyField@UseFlag{Ff}{NoExport}%
5256     \HyField@PrintFlags{Ff}{check box field}%
5257     \bitsetIsEmpty{HyField@Ff}{%

```

```

5258 \def\Fld@flags{%
5259 }{%
5260 \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
5261 }%
5262 }

```

### 19.1.6 Radio button field

\HyField@FlagsRadioButton

```

5263 \def\HyField@FlagsRadioButton{%
5264 \HyField@FlagsAnnot{radio button field}%
5265 \bitsetReset{HyField@Ff}%
5266 \HyField@UseFlag{Ff}{ReadOnly}%
5267 \HyField@UseFlag{Ff}{Required}%
5268 \HyField@UseFlag{Ff}{NoExport}%
5269 \HyField@UseFlag{Ff}{NoToggleToOff}%
5270 \HyField@SetFlag{Ff}{Radio}%
5271 \HyField@UseFlag{Ff}{RadiosInUnison}%
5272 \HyField@PrintFlags{Ff}{radio button field}%
5273 \bitsetIsEmpty{HyField@Ff}{%
5274 \def\Fld@flags{%
5275 }{%
5276 \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
5277 }%
5278 }

```

### 19.1.7 Text fields

\HyField@FlagsText

```

5279 \def\HyField@FlagsText{%
5280 \HyField@FlagsAnnot{text field}%
5281 \bitsetReset{HyField@Ff}%
5282 \HyField@UseFlag{Ff}{ReadOnly}%
5283 \HyField@UseFlag{Ff}{Required}%
5284 \HyField@UseFlag{Ff}{NoExport}%
5285 \HyField@UseFlag{Ff}{Multiline}%
5286 \HyField@UseFlag{Ff}{Password}%
5287 \HyField@UseFlag{Ff}{FileSelect}%
5288 \HyField@UseFlag{Ff}{DoNotSpellCheck}%
5289 \HyField@UseFlag{Ff}{DoNotScroll}%
5290 \ifFld@comb
5291 \ifcase0\ifFld@multiline
5292 \else\ifFld@password
5293 \else\ifFld@fileselect
5294 \else 1\fi\fi\fi\relax
5295 \Hy@Error{%
5296 Field option ‘comb’ cannot used together with\MessageBreak
5297 ‘multiline’, ‘password’, or ‘fileselect’%
5298 }\@ehc
5299 \else
5300 \HyField@UseFlag{Ff}{Comb}%
5301 \fi
5302 \fi
5303 \HyField@UseFlag{Ff}{RichText}%
5304 \HyField@PrintFlags{Ff}{text field}%
5305 \bitsetIsEmpty{HyField@Ff}{%

```

```

5306 \def\Fld@flags{%
5307 }{%
5308 \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
5309 }%
5310 }

```

### 19.1.8 Choice fields

\HyField@FlagsChoice

```

5311 \def\HyField@FlagsChoice{%
5312 \HyField@FlagsAnnot{choice field}%
5313 \bitsetReset{HyField@Ff}%
5314 \HyField@UseFlag{Ff}{ReadOnly}%
5315 \HyField@UseFlag{Ff}{Required}%
5316 \HyField@UseFlag{Ff}{NoExport}%
5317 \HyField@UseFlag{Ff}{Combo}%
5318 \ifFld@combo
5319 \HyField@UseFlag{Ff}{Edit}%
5320 \fi
5321 \HyField@UseFlag{Ff}{Sort}%
5322 \HyField@UseFlag{Ff}{MultiSelect}%
5323 \ifFld@combo
5324 \ifFld@edit
5325 \HyField@UseFlag{Ff}{DoNotSpellCheck}%
5326 \fi
5327 \fi
5328 \HyField@UseFlag{Ff}{CommitOnSelChange}%
5329 \HyField@PrintFlags{Ff}{choice field}%
5330 \bitsetIsEmpty{HyField@Ff}{%
5331 \def\Fld@flags{%
5332 }{%
5333 \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
5334 }%
5335 }

```

## 19.2 Choice field

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

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

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

```

5336 \def\HyField@PDFChoices#1{%
5337 \begingroup
5338 \gdef\Fld@choices{%
5339 \def\HyTmp@Optlist{%
5340 \let\HyTmp@Optitem\relax
5341 \count@=0 %
5342 \kv@parse{#1}{%
5343 \Hy@pdfstringdef\kv@key\kv@key
5344 \ifx\kv@value\relax
5345 \ifnum\Hy@pdfversion<3 % implementation note 122, PDF spec 1.7
5346 \xdef\Fld@choices{\Fld@choices[(\kv@key)(\kv@key)]}%
5347 \else
5348 \xdef\Fld@choices{\Fld@choices(\kv@key)}%
5349 \fi
5350 \else
5351 \Hy@pdfstringdef\kv@value\kv@value

```

```

5352 \xdef\Fld@choices{\Fld@choices[(\kv@value)(\kv@key)]}%
5353 \fi
5354 \edef\HyTmp@optlist{%
5355 \HyTmp@optlist
5356 \HyTmp@optitem{\the\count@}{\kv@key}0%
5357 }%
5358 \advance\count@ by 1 %
5359 \@gobbletwo
5360 }%
5361 \xdef\Fld@choices{/Opt[\Fld@choices]}%
5362 \ifFld@multiselect
5363 \HyField@@PDFChoices{DV}\Fld@default
5364 \HyField@@PDFChoices{V}\Fld@value
5365 \else
5366 \ifx\Fld@default\relax
5367 \else
5368 \pdfstringdef\Hy@gtemp\Fld@default
5369 \xdef\Fld@choices{\Fld@choices/DV(\Hy@gtemp)}%
5370 \fi
5371 \ifx\Fld@value\relax
5372 \else
5373 \pdfstringdef\Hy@gtemp\Fld@value
5374 \xdef\Fld@choices{\Fld@choices/V(\Hy@gtemp)}%
5375 \fi
5376 \fi
5377 \endgroup
5378 }

```

\HyField@@PDFChoices

```

5379 \def\HyField@@PDFChoices#1#2{%
5380 \ifx#2\relax
5381 \else
5382 \count@=0 %
5383 \def\HyTmp@optitem##1##2##3{%
5384 \def\HyTmp@key{##2}%
5385 \ifx\HyTmp@key\Hy@gtemp
5386 \expandafter\def\expandafter\HyTmp@optlist\expandafter{%
5387 \HyTmp@optlist
5388 \HyTmp@optitem{##1}{##2}1%
5389 }%
5390 \let\HyTmp@found=Y%
5391 \else
5392 \expandafter\def\expandafter\HyTmp@optlist\expandafter{%
5393 \HyTmp@optlist
5394 \HyTmp@optitem{##1}{##2}##3%
5395 }%
5396 \fi
5397 }%
5398 \expandafter\comma@parse\expandafter{#2}{%
5399 \pdfstringdef\Hy@gtemp\comma@entry
5400 \let\HyTmp@found=N %
5401 \expandafter\let\expandafter\HyTmp@optlist\expandafter\@empty
5402 \HyTmp@optlist
5403 \ifx\HyTmp@found Y%
5404 \advance\count@ by 1 %
5405 \else
5406 \@onelevel@sanitize\comma@entry

```

```

5407 \PackageWarning{hyperref}{%
5408 \string\ChoiceBox: Ignoring value '\comma@entry',%
5409 \MessageBreak
5410 it cannot be found in the choices%
5411 }%
5412 \fi
5413 \@gobble
5414 }%
5415 \def\HyTmp@optitem##1##2##3{%
5416 \ifnum##3=1 %
5417 (##2)%
5418 \fi
5419 }%
5420 \ifcase\count@
5421 \or
5422 \xdef\Fld@choices{\Fld@choices/#1\HyTmp@optlist}%
5423 \else
5424 \xdef\Fld@choices{\Fld@choices/#1[\HyTmp@optlist]}%
5425 \ifx#1V%
5426 \def\HyTmp@optitem##1##2##3{%
5427 \ifnum##3=1 %
5428 \@firstofone{ ##1}%
5429 \fi
5430 }%
5431 \edef\HyTmp@optlist{\HyTmp@optlist}%
5432 \xdef\Fld@choices{%
5433 \Fld@choices
5434 /I[\expandafter\@firstofone\HyTmp@optlist]%
5435 }%
5436 \fi
5437 \fi
5438 \fi
5439 }

```

## 19.3 Forms

\HyField@SetKeys

```

5440 \def\HyField@SetKeys{%
5441 \kvsetkeys{Field}%
5442 }

5443 \newif\ifFld@checked
5444 \newif\ifFld@disabled
5445 \Fld@checkedfalse
5446 \Fld@disabledfalse
5447 \newcount\Fld@menulength
5448 \newdimen\Fld@Width
5449 \newdimen\Fld@charsize
5450 \Fld@charsize=10\p@
5451 \def\Fld@maxlen{0}
5452 \def\Fld@align{0}
5453 \def\Fld@color{0 0 0 rg}
5454 \def\Fld@bcolor{1 1 1}
5455 \def\Fld@bordercolor{1 0 0}
5456 \def\Fld@bordersep{1\p@}
5457 \def\Fld@borderwidth{1}
5458 \def\Fld@borderstyle{S}

```



```

5459 \def\Fld@cbsymbol{4}
5460 \def\Fld@radiosymbol{H}
5461 \def\Fld@rotation{0}
5462 \def\Form{\@ifnextchar[{\@Form}{\@Form[]}}
5463 \def\endForm{\@endForm}
5464 \newif\ifForm@html
5465 \Form@htmlfalse
5466 \def\Form@boolkey#1#2{%
5467   \csname Form@#2\ifx\relax#1\relax true\else#1\fi\endcsname
5468 }
5469 \define@key{Form}{action}{%
5470   \hyper@normalise\Hy@DefFormAction{#1}%
5471 }
5472 \def\Hy@DefFormAction{\def\Form@action}
5473 \def\enc@html{html}
5474 \define@key{Form}{encoding}{%
5475   \def\Hy@tempa{#1}%
5476   \ifx\Hy@tempa\enc@html
5477     \Form@htmltrue
5478     \def\Fld@export{html}%
5479   \else
5480     \Hy@Warning{%
5481       Form 'encoding' key with \MessageBreak
5482       unknown value '#1'%
5483     }%
5484     \Form@htmlfalse
5485   \fi
5486 }
5487 \define@key{Form}{method}{%
5488   \lowercase{\def\Hy@temp{#1}}%
5489   \@ifundefined{Form@method@\Hy@temp}{%
5490     \@onelevel@sanitize\Hy@temp
5491     \Hy@Error{%
5492       Unknown method '\Hy@temp'\MessageBreak
5493       Known values are 'post' and 'get'%
5494     }\@ehc
5495   }{%
5496     \let\Form@method\Hy@temp
5497     \ifcase\@nameuse{Form@method@\Hy@temp} %
5498       \Fld@getmethodfalse
5499     \else
5500       \Fld@getmethodtrue
5501     \fi
5502   }%
5503 }
5504 \def\Form@method{}
5505 \@namedef{Form@method@post}{0}
5506 \@namedef{Form@method@get}{1}
5507 \newif\ifHyField@NeedAppearances
5508 \def\HyField@NeedAppearancesfalse{%
5509   \global\let\ifHyField@NeedAppearances\iffalse
5510 }
5511 \def\HyField@NeedAppearancetrue{%
5512   \global\let\ifHyField@NeedAppearances\iftrue
5513 }
5514 \HyField@NeedAppearancetrue
5515 \define@key{Form}{NeedAppearances}[true]{%

```

```

5516 \edef\Hy@tempa{#1}%
5517 \ifx\Hy@tempa\Hy>true
5518   \HyField@NeedAppearancetrue
5519 \else
5520   \ifx\Hy@tempa\Hy>false
5521     \HyField@NeedAppearancesfalse
5522   \else
5523     \Hy@Error{%
5524       Unexpected value '\Hy@tempa'\MessageBreak
5525       of option 'NeedAppearances' instead of\MessageBreak
5526       'true' or 'false'%
5527     }\@ehc
5528   \fi
5529 \fi
5530 }
5531 \def\Field@boolkey#1#2{%
5532   \csname Fld@#2\ifx\relax#1\relax true\else#1\fi\endcsname
5533 }
5534 \ifHy@texht
5535   \newtoks\Field@toks
5536   \Field@toks={ }%
5537   \def\Field@addtoks#1#2{%
5538     \edef\@processme{\Field@toks{\the\Field@toks\space #1="#2"}}%
5539     \@processme
5540   }%
5541 \else
5542   \def\Hy@WarnHTMLFieldOption#1{%
5543     \Hy@Warning{%
5544       HTML field option '#1'\MessageBreak
5545       is ignored%
5546     }%
5547   }%
5548 \fi
5549 \def\Fld@checkequals#1=#2=#3\\{%
5550   \def\@currDisplay{#1}%
5551   \ifx\\#2\\%
5552     \def\@currValue{#1}%
5553   \else
5554     \def\@currValue{#2}%
5555   \fi
5556 }
5557 \define@key{Field}{loc}{%
5558   \def\Fld@loc{#1}%
5559 }
5560 \define@key{Field}{checked}[true]{%
5561   \lowercase{\Field@boolkey{#1}}{checked}%
5562 }
5563 \define@key{Field}{disabled}[true]{%
5564   \lowercase{\Field@boolkey{#1}}{disabled}%
5565 }
5566 \ifHy@texht
5567   \define@key{Field}{accesskey}{%
5568     \Field@addtoks{accesskey}{#1}%
5569   }%
5570   \define@key{Field}{tabkey}{%
5571     \Field@addtoks{tabkey}{#1}%
5572   }%

```

```

5573 \else
5574   \define@key{Field}{accesskey}{%
5575     \Hy@WarnHTMLFieldOption{accesskey}%
5576   }%
5577   \define@key{Field}{tabkey}{%
5578     \Hy@WarnHTMLFieldOption{tabkey}%
5579   }%
5580 \fi
5581 \define@key{Field}{name}{%
5582   \def\Fld@name{#1}%
5583 }
5584 \let\Fld@altname\relax
5585 \define@key{Field}{altname}{%
5586   \def\Fld@altname{#1}%
5587 }
5588 \let\Fld@mappingname\relax
5589 \define@key{Field}{mappingname}{%
5590   \def\Fld@mappingname{#1}%
5591 }
5592 \define@key{Field}{width}{%
5593   \def\Fld@width{#1}%
5594   \Field@Width#1\setbox0=\hbox{m}%
5595 }
5596 \define@key{Field}{maxlen}{%
5597   \def\Fld@maxlen{#1}%
5598 }
5599 \define@key{Field}{menulength}{%
5600   \Fld@menulength=#1\relax
5601 }
5602 \define@key{Field}{height}{%
5603   \def\Fld@height{#1}%
5604 }
5605 \define@key{Field}{charsize}{%
5606   \Fld@charsize#1%
5607 }
5608 \define@key{Field}{borderwidth}{%
5609   \def\Fld@borderwidth{#1}%
5610 }
5611 \define@key{Field}{borderstyle}{%
5612   \let\Hy@temp\Fld@borderstyle
5613   \def\Fld@borderstyle{#1}%
5614   \Hy@Match\Fld@borderstyle{%
5615     ~[SDBIU]$%
5616   }{}{%
5617     \Hy@Warning{%
5618       Invalid value ‘\@pdfborderstyle’\MessageBreak
5619       for option ‘pdfborderstyle’. Valid values:\MessageBreak
5620       \space\space S (Solid), D (Dashed), B (Beveled),\MessageBreak
5621       \space\space I (Inset), U (Underline)\MessageBreak
5622       Option setting is ignored%
5623     }%
5624     \let\Fld@borderstyle\Hy@temp
5625   }%
5626 }
5627 \define@key{Field}{bordersep}{%
5628   \def\Fld@bordersep{#1}%
5629 }

```

```

5630 \define@key{Field}{default}{%
5631   \def\Fld@default{#1}%
5632 }
5633 \define@key{Field}{align}{%
5634   \def\Fld@align{#1}%
5635 }
5636 \define@key{Field}{value}{%
5637   \def\Fld@value{#1}%
5638 }
5639 \define@key{Field}{checkboxsymbol}{%
5640   \Fld@DingDef\Fld@cbsymbol{#1}%
5641 }
5642 \define@key{Field}{radiosymbol}{%
5643   \Fld@DingDef\Fld@radiosymbol{#1}%
5644 }
5645 \def\Fld@DingDef#1#2{%
5646   \def\Fld@temp{}%
5647   \Fld@@DingDef#2\ding{}\@nil
5648   \let#1\Fld@temp
5649 }
5650 \def\Fld@@DingDef#1\ding#2#3\@nil{%
5651   \expandafter\def\expandafter\Fld@temp\expandafter{%
5652     \Fld@temp
5653     #1%
5654   }%
5655   \ifx\\#3\\%
5656     \expandafter\@gobble
5657   \else
5658     \begingroup
5659     \lccode'0=#2\relax
5660     \lowercase{\endgroup
5661       \expandafter\def\expandafter\Fld@temp\expandafter{%
5662         \Fld@temp
5663         0%
5664       }%
5665     }%
5666     \expandafter\@firstofone
5667   \fi
5668   {%
5669     \Fld@@DingDef#3\@nil
5670   }%
5671 }

5672 \define@key{Field}{rotation}{%
5673   \def\Fld@rotation{#1}%
5674 }

5675 \define@key{Field}{backgroundcolor}{%
5676   \HyColor@FieldBColor{#1}\Fld@bcolor{hyperref}{backgroundcolor}%
5677 }
5678 \define@key{Field}{bordercolor}{%
5679   \HyColor@FieldBColor{#1}\Fld@bordercolor{hyperref}{bordercolor}%
5680 }
5681 \define@key{Field}{color}{%
5682   \HyColor@FieldColor{#1}\Fld@color{hyperref}{color}%
5683 }

5684 \def\Fld@onclick@code{}
5685 \def\Fld@format@code{}

```

```

5686 \def\Fld@validate@code{}
5687 \def\Fld@calculate@code{}
5688 \def\Fld@keystroke@code{}
5689 \def\Fld@onfocus@code{}
5690 \def\Fld@onblur@code{}
5691 \def\Fld@onmousedown@code{}
5692 \def\Fld@onmouseup@code{}
5693 \def\Fld@onenter@code{}
5694 \def\Fld@onexit@code{}
5695 \def\Hy@temp#1{%
5696   \expandafter\Hy@@temp\csname Fld@#1@code\endcsname{#1}%
5697 }
5698 \def\Hy@@temp#1#2{%
5699   \ifHy@pdfa
5700     \define@key{Field}{#2}{%
5701       \Hy@Error{%
5702         PDF/A: Additional action ‘#2’ is prohibited%
5703       }\@ehc
5704     }%
5705   \else
5706     \define@key{Field}{#2}{%
5707       \def#1{##1}%
5708     }%
5709   \fi
5710 }
5711 \Hy@temp{keystroke}
5712 \Hy@temp{format}
5713 \Hy@temp{validate}
5714 \Hy@temp{calculate}
5715 \Hy@temp{onfocus}
5716 \Hy@temp{onblur}
5717 \Hy@temp{onenter}
5718 \Hy@temp{onexit}
5719 \ifHy@texht
5720   \def\Hy@temp#1{%
5721     \define@key{Field}{#1}{%
5722       \Field@addtoks{#1}{##1}%
5723     }%
5724   }%
5725 \else
5726   \def\Hy@temp#1{%
5727     \define@key{Field}{#1}{%
5728       \Hy@WarnHTMLFieldOption{#1}%
5729     }%
5730   }%
5731 \fi
5732 \Hy@temp{ondblclick}
5733 \Hy@temp{onmousedown}
5734 \Hy@temp{onmouseup}
5735 \Hy@temp{onmouseover}
5736 \Hy@temp{onmousemove}
5737 \Hy@temp{onmouseout}
5738 \Hy@temp{onkeydown}
5739 \Hy@temp{onkeyup}
5740 \Hy@temp{onselect}
5741 \Hy@temp{onchange}
5742 \Hy@temp{onkeypress}

```

```

5743 \ifHy@texht
5744   \define@key{Field}{onclick}{%
5745     \Field@addtoks{onclick}{#1}%
5746   }%
5747 \else
5748   \ifHy@pdfa
5749     \define@key{Field}{onclick}{%
5750       \Hy@Error{%
5751         PDF/A: Action 'onclick' is prohibited%
5752       }\@ehc
5753     }%
5754   \else
5755     \define@key{Field}{onclick}{%
5756       \def\Fld@onclick@code{#1}%
5757     }%
5758   \fi
5759 \fi

5760 \DeclareRobustCommand\TextField{%
5761   \@ifnextchar[{\@TextField}{\@TextField[]}%
5762 }
5763 \DeclareRobustCommand\ChoiceMenu{%
5764   \@ifnextchar[{\@ChoiceMenu}{\@ChoiceMenu[]}%
5765 }
5766 \DeclareRobustCommand\CheckBox{%
5767   \@ifnextchar[{\@CheckBox}{\@CheckBox[]}%
5768 }
5769 \DeclareRobustCommand\PushButton{%
5770   \@ifnextchar[{\@PushButton}{\@PushButton[]}%
5771 }
5772 \DeclareRobustCommand\Gauge{%
5773   \@ifnextchar[{\@Gauge}{\@Gauge[]}%
5774 }
5775 \DeclareRobustCommand\Submit{%
5776   \@ifnextchar[{\@Submit}{\@Submit[]}%
5777 }
5778 \DeclareRobustCommand\Reset{%
5779   \@ifnextchar[{\@Reset}{\@Reset[]}%
5780 }
5781 \def\LayoutTextField#1#2{% label, field
5782   #1 #2%
5783 }
5784 \def\LayoutChoiceField#1#2{% label, field
5785   #1 #2%
5786 }
5787 \def\LayoutCheckField#1#2{% label, field
5788   #1 #2%
5789 }
5790 \def\LayoutPushButtonField#1{% button
5791   #1%
5792 }
5793 \def\MakeRadioField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
5794 \def\MakeCheckField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
5795 \def\MakeTextField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
5796 \def\MakeChoiceField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
5797 \def\MakeButtonField#1{%
5798   \sbox0{%
5799     \hskip\Fld@borderwidth bp#1\hskip\Fld@borderwidth bp%

```

```

5800 }%
5801 \@tempdima\ht0 %
5802 \advance\@tempdima by \Fld@borderwidth bp %
5803 \advance\@tempdima by \Fld@borderwidth bp %
5804 \ht0\@tempdima
5805 \@tempdima\dp0 %
5806 \advance\@tempdima by \Fld@borderwidth bp %
5807 \advance\@tempdima by \Fld@borderwidth bp %
5808 \dp0\@tempdima
5809 \box0\relax
5810 }
5811 \def\DefaultHeightofSubmit{14pt}
5812 \def\DefaultWidthofSubmit{2cm}
5813 \def\DefaultHeightofReset{14pt}
5814 \def\DefaultWidthofReset{2cm}
5815 \def\DefaultHeightofCheckBox{\baselineskip}
5816 \def\DefaultWidthofCheckBox{\baselineskip}
5817 \def\DefaultHeightofChoiceMenu{\baselineskip}
5818 \def\DefaultWidthofChoiceMenu{\baselineskip}
5819 \def\DefaultHeightofText{\baselineskip}
5820 \def\DefaultHeightofTextMultiline{4\baselineskip}
5821 \def\DefaultWidthofText{3cm}
5822 \def\DefaultOptionsofSubmit{print,name=Submit,noexport}
5823 \def\DefaultOptionsofReset{print,name=Reset,noexport}
5824 \def\DefaultOptionsofPushButton{print}
5825 \def\DefaultOptionsofCheckBox{print}
5826 \def\DefaultOptionsofText{print}

```

Default options for the types of \ChoiceMenu.

```

5827 \def\DefaultOptionsofListBox{print}
5828 \def\DefaultOptionsofComboBox{print,edit,sort}
5829 \def\DefaultOptionsofPopdownBox{print}
5830 \def\DefaultOptionsofRadio{print,notoggletooff}

```

## 20 Setup

```

5831 \ifHy@figures
5832 \Hy@Info{Hyper figures ON}%
5833 \else
5834 \Hy@Info{Hyper figures OFF}%
5835 \fi
5836 \ifHy@nesting
5837 \Hy@Info{Link nesting ON}%
5838 \else
5839 \Hy@Info{Link nesting OFF}%
5840 \fi
5841 \ifHy@hyperindex
5842 \Hy@Info{Hyper index ON}%
5843 \else
5844 \Hy@Info{Hyper index OFF}%
5845 \fi
5846 \ifHy@backref
5847 \Hy@Info{backreferencing ON}%
5848 \else
5849 \Hy@Info{backreferencing OFF}%
5850 \fi
5851 \ifHy@colorlinks

```

```

5852 \Hy@Info{Link coloring ON}%
5853 \else
5854 \Hy@Info{Link coloring OFF}%
5855 \fi
5856 \ifHy@ocgcolorlinks
5857 \Hy@Info{Link coloring with OCG ON}%
5858 \else
5859 \Hy@Info{Link coloring with OCG OFF}%
5860 \fi
5861 \ifHy@pdfa
5862 \Hy@Info{PDF/A mode ON}%
5863 \else
5864 \Hy@Info{PDF/A mode OFF}%
5865 \fi

```

## 21 Low-level utility macros

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

```

5866 \edef\hyper@hash{\string#}
5867 \edef\hyper@tilde{\string~}
5868 \edef\hyper@quote{\string"}

```

Support \label before \begin{document}.

```

5869 \def\@currentHref{Doc-Start}
5870 \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.

```

5871 \Hy@AtBeginDocument{%
5872 \Hy@pdfstringtrue
5873 \PDF@SetupDoc
5874 \let\PDF@SetupDoc\@empty
5875 \Hy@DisableOption{pdfpagescrop}%
5876 \Hy@DisableOption{pdfpagemode}%
5877 \Hy@DisableOption{pdfnonfullscreenpagemode}%
5878 \Hy@DisableOption{pdfdirection}%
5879 \Hy@DisableOption{pdfviewarea}%
5880 \Hy@DisableOption{pdfviewclip}%
5881 \Hy@DisableOption{pdfprintarea}%
5882 \Hy@DisableOption{pdfprintclip}%
5883 \Hy@DisableOption{pdfprintscaling}%
5884 \Hy@DisableOption{pdfduplex}%
5885 \Hy@DisableOption{pdfpicktraybypdfsize}%
5886 \Hy@DisableOption{pdfprintpagerange}%
5887 \Hy@DisableOption{pdfnumcopies}%
5888 \Hy@DisableOption{pdfstartview}%
5889 \Hy@DisableOption{pdfstartpage}%
5890 \Hy@DisableOption{pdftoolbar}%
5891 \Hy@DisableOption{pdfmenubar}%
5892 \Hy@DisableOption{pdfwindowui}%
5893 \Hy@DisableOption{pdfitwindow}%
5894 \Hy@DisableOption{pdfcenterwindow}%
5895 \Hy@DisableOption{pdfdisplaydoctitle}%
5896 \Hy@DisableOption{pdfpagelayout}%
5897 \Hy@DisableOption{pdflang}%
5898 \Hy@DisableOption{baseurl}%
5899 \ifHy@texht\else\hyper@anchorstart{Doc-Start}\hyper@anchorend\fi
5900 \Hy@pdfstringfalse

```



```

5901 }
    Ignore star from referencing macros:
5902 \LetLtxMacro\NoHy@OrgRef\ref
5903 \DeclareRobustCommand*\ref{%
5904   \@ifstar\NoHy@OrgRef\NoHy@OrgRef
5905 }
5906 \LetLtxMacro\NoHy@OrgPageRef\pageref
5907 \DeclareRobustCommand*\pageref{%
5908   \@ifstar\NoHy@OrgPageRef\NoHy@OrgPageRef
5909 }

```

## 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.

```

5910 \def\NoHyper{%
5911   \def\hyper@link@{##1}##2##3##4{##4}%
5912   \def\hyper@@anchor##1{%
5913     \global\let\hyper@livelink\hyper@link
5914     \gdef\hyper@link##1##2##3{##3}%
5915     \def\hyper@anchor##1{%
5916       \def\hyper@anchorstart##1{%
5917         \let\hyper@anchorend\@empty
5918         \def\hyper@linkstart##1##2{%
5919           \let\hyper@linkend\@empty
5920           \def\hyper@linkurl##1##2{##1}%
5921           \def\hyper@linkfile##1##2##3{##1}%
5922           \def\hyper@link@{##1}##2##3{%
5923             \let\Hy@backout\@gobble
5924           }
5925           \def\stop@hyper{%
5926             \def\hyper@link@{##1}##2##3##4{##4}%
5927             \let\Hy@backout\@gobble
5928             \def\hyper@@anchor##1{%
5929               \def\hyper@link##1##2##3{##3}%
5930               \def\hyper@anchor##1{%
5931                 \def\hyper@anchorstart##1{%
5932                   \let\hyper@anchorend\@empty
5933                   \def\hyper@linkstart##1##2{%
5934                     \let\hyper@linkend\@empty
5935                     \def\hyper@linkurl##1##2{##1}%
5936                     \def\hyper@linkfile##1##2##3{##1}%
5937                     \def\hyper@link@{##1}##2##3{%
5938                       }
5939                   }
5940                   \global\let\hyper@link\hyper@livelink
5941                 }
5942               }

```

## 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:

```

5943 <*nohyperref>
5944 \RequirePackage{letltxmacro}[2008/06/13]
5945 \let\hyper@@anchor\@gobble
5946 \def\hyper@link#1#2#3{#3}%
5947 \let\hyper@anchorstart\@gobble
5948 \let\hyper@anchorend\@empty
5949 \let\hyper@linkstart\@gobbletwo
5950 \let\hyper@linkend\@empty
5951 \def\hyper@linkurl#1#2{#1}%
5952 \def\hyper@linkfile#1#2#3{#1}%
5953 \def\hyper@link@{#1}#2#3{#3}%
5954 \let\PDF@SetupDoc\@empty
5955 \let\PDF@FinishDoc\@empty
5956 \def\nohyperpage#1{#1}

```

Some top-level commands:

```

5957 \def\Acrobatmenu#1#2{\leavevmode#2}
5958 \let\pdfstringdefDisableCommands\@gobbletwo
5959 \let\texorpdfstring\@firstoftwo
5960 \let\pdfbookmark\@undefined
5961 \newcommand\pdfbookmark[3]{}{}
5962 \let\phantomsection\@empty
5963 \let\hypersetup\@gobble
5964 \let\hyperbaseurl\@gobble
5965 \newcommand*{\href}[3]{}{#3}
5966 \let\hyperdef\@gobbletwo
5967 \let\hyperlink\@gobble
5968 \let\hypertarget\@gobble
5969 \def\hyperref{%
5970   \@ifnextchar[\@gobbleopt{\expandafter\@gobbletwo\@gobble}%
5971 }
5972 \long\def\@gobbleopt[#1]{}
5973 \let\hyperpage\@empty

```

Ignore star from referencing macros:

```

5974 \LetLtxMacro\NoHy@OrgRef\ref
5975 \DeclareRobustCommand*{\ref}{%
5976   \@ifstar\NoHy@OrgRef\NoHy@OrgRef
5977 }
5978 \LetLtxMacro\NoHy@OrgPageRef\pageref
5979 \DeclareRobustCommand*{\pageref}{%
5980   \@ifstar\NoHy@OrgPageRef\NoHy@OrgPageRef
5981 }
5982 </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}`

```

5983 <*package>

```

```
5984 \Hy@AtBeginDocument{%
```

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

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

```
5985 \if@filesw
5986 \ifHy@typexml
5987 \immediate\closeout\@mainaux
5988 \immediate\openout\@mainaux\jobname.aux\relax
5989 \immediate\write\@auxout{<relaxxml>\relax}%
5990 \fi
5991 \immediate\write\@auxout{%
5992 \string\providecommand\string\HyperFirstAtBeginDocument{%
5993 \string\AtBeginDocument}^^J%
5994 \string\HyperFirstAtBeginDocument{%
5995 \string\ifx\string\hyper@anchor\string\@undefined^^J%
5996 \string\global\string\let\string\oldcontentsline\string\contentsline^^J%
5997 \string\gdef\string\contentsline%
5998 \string#1\string#2\string#3\string#4{%
5999 \string\oldcontentsline%
6000 {\string#1}{\string#2}{\string#3}}^^J%
6001 \string\global\string\let\string\oldnewlabel\string\newlabel^^J%
6002 \string\gdef\string\newlabel\string#1\string#2{%
6003 \string\newlabelxx{\string#1}\string#2}^^J%
6004 \string\gdef\string\newlabelxx%
6005 \string#1\string#2\string#3\string#4\string#5\string#6{%
6006 \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.

```
6007 \string\AtEndDocument{%
6008 \string\ifx\string\hyper@anchor\string\@undefined^^J%
6009 \string\let\string\contentsline\string\oldcontentsline^^J%
6010 \string\let\string\newlabel\string\oldnewlabel^^J%
6011 \string\fi%
6012 }^^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.

```
6013 \string\fi%
6014 }^^J%
6015 \string\global\string\let\string\hyper@last\relax^^J%
6016 \string\gdef\string\HyperFirstAtBeginDocument\string#1{\string#1}%
6017 }%
6018 \fi
6019 \def\HyperFirstAtBeginDocument#1{#1}%
```

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

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

```
6020 \ifx\hyper@last\@undefined
6021 \def\@starttoc#1{%
6022 \begingroup
6023 \makeatletter
6024 \IfFileExists{\jobname.#1}{%
6025 \Hy@WarningNoLine{%
```

```

6026         old #1 file detected, not used; run LaTeX again%
6027     }%
6028 }{}%
6029 \if@filesw
6030     \expandafter\newwrite\csname tf@#1\endcsname
6031     \immediate\openout\csname tf@#1\endcsname \jobname.#1\relax
6032 \fi
6033 \@nobeckfalse
6034 \endgroup
6035 }%
6036 \def\newlabel#1#2{\@newl@bel r{#1}{#2}{-}{-}}%
6037 \fi
6038 }

```

## 25 Title strings

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

```

6039 \ifHy@usetitle
6040 \let\HyOrg@title\title
6041 \let\HyOrg@author\author
6042 \def\title{\@ifnextchar{\Hy@scanopttitle}{\Hy@scantitle}}%
6043 \def\Hy@scanopttitle[#1]{%
6044     \gdef\Hy@title{#1}%
6045     \HyOrg@title{#1}%
6046 }%
6047 \def\Hy@scantitle#1{%
6048     \gdef\Hy@title{#1}%
6049     \HyOrg@title{#1}%
6050 }%
6051 \def\author{\@ifnextchar{\Hy@scanoptauthor}{\Hy@scanauthor}}%
6052 \def\Hy@scanoptauthor[#1]{%
6053     \gdef\Hy@author{#1}%
6054     \HyOrg@author{#1}%
6055 }%
6056 \def\Hy@scanauthor#1{%
6057     \gdef\Hy@author{#1}%
6058     \HyOrg@author{#1}%
6059 }%

```

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.

```

6060 \begingroup
6061 \def\process@me#1\@nil#2{%
6062     \expandafter\let\expandafter\x\csname @#2\endcsname
6063     \edef\y{\expandafter\strip@prefix\meaning\x}%
6064     \def\c##1#1##2\@nil{%
6065         \ifx\##1\%
6066             \else
6067                 \expandafter\gdef\csname Hy@#2\expandafter\endcsname
6068                 \expandafter{x}%
6069             \fi
6070         }%
6071     \expandafter\c\y\relax#1\@nil
6072 }%
6073 \expandafter\process@me\string\@latex@\@nil{title}%

```

```

6074 \expandafter\process@me\string\@latex@\@nil{author}%
6075 \endgroup
6076 \fi
6077 \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.

```

6078 \def\Hy@UseMaketitleString#1{%
6079 \ltx@ifundefined{Hy@#1}{}{}%
6080 \begingroup
6081 \let\Hy@saved@hook\pdfstringdefPreHook
6082 \pdfstringdefDisableCommands{%
6083 \expandafter\let\expandafter\\ \csname Hy@newline@#1\endcsname
6084 \let\newline\\%
6085 }%
6086 \expandafter\ifx\csname @pdf#1\endcsname\@empty
6087 \expandafter\pdfstringdef\csname @pdf#1\endcsname{%
6088 \csname Hy@#1\endcsname\@empty
6089 }%
6090 \fi
6091 \global\let\pdfstringdefPreHook\Hy@saved@hook
6092 \endgroup
6093 }%
6094 }
6095 \def\Hy@newline@title#1{ #1}
6096 \def\Hy@newline@author#1{, #1}
6097 \def\Hy@UseMaketitleInfos{%
6098 \Hy@UseMaketitleString{title}%
6099 \Hy@UseMaketitleString{author}%
6100 }

```

## 26 Page numbers

This stuff is done by Heiko Oberdiek.

## 27 Every page

```

6101 \RequirePackage{atbegshi}[2007/09/09]
6102 \def\Hy@EveryPageHook{}
6103 \def\Hy@EveryPageBoxHook{}
6104 \def\Hy@FirstPageHook{}
6105 \AtBeginShipout{%
6106 \Hy@EveryPageHook
6107 \ifx\Hy@EveryPageBoxHook\@empty
6108 \else
6109 \setbox\AtBeginShipoutBox=\vbox{%
6110 \offinterlineskip
6111 \Hy@EveryPageBoxHook

```

```

6112 \box\AtBeginShipoutBox
6113 }%
6114 \fi
6115 }
6116 \AtBeginShipoutFirst{%
6117 \Hy@FirstPageHook
6118 }
6119 \g@addto@macro\Hy@FirstPageHook{%
6120 \PDF@FinishDoc
6121 \gdef\PDF@FinishDoc{}}%
6122 }

```

## 27.1 PDF /PageLabels

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

```

6123 \ifHy@pagelabels
6124 \begingroup\expandafter\expandafter\expandafter\endgroup
6125 \expandafter\ifx\csname thepage\endcsname\relax
6126 \Hy@pagelabelsfalse
6127 \Hy@WarningNoLine{%
6128 Option 'pdfpagelabels' is turned off\MessageBreak
6129 because \string\thepage\space is undefined%
6130 }%
6131 \csname fi\endcsname
6132 \csname iffalse\expandafter\endcsname
6133 \fi

```

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

```

6134 \def\thispdfpagelabel#1{%
6135 \gdef\HyPL@thisLabel{#1}%
6136 }%
6137 \global\let\HyPL@thisLabel\relax

```

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

```

6138 \def\HyPL@Labels{}%

```

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

```

6139 \newcount\Hy@abspage
6140 \Hy@abspage=0 %

```

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

```

6141 \def\HyPL@LastType{init}%
6142 \def\HyPL@LastNumber{0}%
6143 \def\HyPL@LastPrefix{}%

```

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

```

6144 \def\HyPL@arabic{D}%
6145 \def\HyPL@Roman{R}%
6146 \def\HyPL@roman{r}%
6147 \def\HyPL@Alph{A}%
6148 \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.

```

6149 \def\HyPL@EveryPage{%
6150 \begingroup

```

```

6151 \ifx\HyPL@thisLabel\relax
6152 \let\HyPL@page\thepage
6153 \else
6154 \let\HyPL@page\HyPL@thisLabel
6155 \global\let\HyPL@thisLabel\relax
6156 \fi
6157 \let\HyPL@Type\relax
6158 \ifnum\the\c@page>0 %
6159 \expandafter\HyPL@CheckThePage\HyPL@page\@nil
6160 \fi
6161 \let\Hy@temp Y%
6162 \ifx\HyPL@Type\HyPL@LastType
6163 \else
6164 \let\Hy@temp N%
6165 \fi
6166 \ifx\HyPL@Type\relax
6167 \pdfstringdef\HyPL@Prefix{\HyPL@page}%
6168 \else
6169 \pdfstringdef\HyPL@Prefix\HyPL@Prefix
6170 \fi
6171 \ifx\HyPL@Prefix\HyPL@LastPrefix
6172 \else
6173 \let\Hy@temp N%
6174 \fi
6175 \if Y\Hy@temp
6176 \advance\c@page by -1 %
6177 \ifnum\HyPL@LastNumber=\the\c@page\relax
6178 \else
6179 \let\Hy@temp N%
6180 \fi
6181 \Hy@StepCount\c@page
6182 \fi
6183 \if N\Hy@temp
6184 \ifx\HyPL@Type\relax
6185 \HyPL@storePageLabel{/P(\HyPL@Prefix)}%
6186 \else
6187 \HyPL@storePageLabel{%
6188 \ifx\HyPL@Prefix\@empty
6189 \else
6190 /P(\HyPL@Prefix)%
6191 \fi
6192 /S/\csname HyPL\HyPL@Type\endcsname
6193 \ifnum\the\c@page=1 %
6194 \else
6195 \space/St \the\c@page
6196 \fi
6197 }%
6198 \fi
6199 \fi
6200 \xdef\HyPL@LastNumber{\the\c@page}%
6201 \global\let\HyPL@LastType\HyPL@Type
6202 \global\let\HyPL@LastPrefix\HyPL@Prefix
6203 \endgroup
6204 \Hy@GlobalStepCount\Hy@abspage
6205 }%

```

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

```

6206 \def\HyPL@CheckThePage#1\@nil{%
6207   \HyPL@@CheckThePage{#1}#1\csname\endcsname\c@page\@nil
6208 }%

```

`\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`.

```

6209 \def\HyPL@@CheckThePage#1#2\csname#3\endcsname\c@page#4\@nil{%
6210   \def\Hy@tempa{#4}%
6211   \def\Hy@tempb{\csname\endcsname\c@page}%
6212   \ifx\Hy@tempa\Hy@tempb
6213     \expandafter\ifx\csname HyPL#3\endcsname\relax
6214     \else
6215       \def\HyPL@Type{#3}%
6216       \def\HyPL@Prefix{#2}%
6217       \fi
6218     \else
6219       \begingroup
6220         \let\Hy@next\endgroup
6221         \let\HyPL@found\@undefined
6222         \def\arabic{\HyPL@Format{arabic}}%
6223         \def\Roman{\HyPL@Format{Roman}}%
6224         \def\roman{\HyPL@Format{roman}}%
6225         \def\Alph{\HyPL@Format{Alph}}%
6226         \def\alph{\HyPL@Format{alph}}%
6227         \protected@edef\Hy@temp{#1}%
6228         \ifx\HyPL@found\relax
6229           \toks@{\expandafter{\Hy@temp}}%
6230           \edef\Hy@next{\endgroup
6231             \noexpand\HyPL@@@CheckThePage\the\toks@
6232             \noexpand\HyPL@found\relax\noexpand\@nil
6233           }%
6234           \fi
6235           \Hy@next
6236         \fi
6237       }%

```

`\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`.

```

6238 \def\HyPL@Format#1#2{%
6239   \ifx\HyPL@found\@undefined
6240     \expandafter\ifx\csname c@#2\endcsname\c@page
6241       \expandafter\noexpand\csname HyPL@found\endcsname{#1}%
6242     \else
6243       \expandafter\noexpand\csname#1\endcsname{#2}%
6244     \fi
6245   \else
6246     \expandafter\noexpand\csname#1\endcsname{#2}%
6247   \fi
6248 }%

```

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



```

6249 \def\HyPL@@@CheckThePage#1\HyPL@found#2#3\@nil{%
6250 \def\Hy@tempa{#3}%
6251 \def\Hy@tempb{\HyPL@found\relax}%
6252 \ifx\Hy@tempa\Hy@tempb
6253 \def\HyPL@Type{#2}%
6254 \def\HyPL@Prefix{#1}%
6255 \fi
6256 }%

```

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

```

6257 \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`.

```

6258 \def\HyPL@Useless{0<</S/D>>}%
6259 \@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.

```

6260 \def\HyPL@SetPageLabels{%
6261 \@onelevel@sanitize\HyPL@Labels
6262 \ifx\HyPL@Labels\@empty
6263 \else
6264 \ifx\HyPL@Labels\HyPL@Useless
6265 \else
6266 \Hy@PutCatalog{/PageLabels<</Nums[\HyPL@Labels]>>}%
6267 \fi
6268 \fi
6269 }%

```

```

6270 \g@addto@macro\Hy@EveryPageHook{\HyPL@EveryPage}%
6271 \fi

```

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

```

6272 \Hy@DisableOption{pdfpagelabels}
6273 </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`

```

6274 <*pdfTeX>
6275 \pdf@ifdraftmode{%
6276 \let\Hy@PutCatalog\ltx@gobble
6277 }{%
6278 \let\Hy@PutCatalog\pdfcatalog
6279 }
6280 </pdfTeX>

```

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

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

```

6281 <*vTeX>

```

```

6282 \providecommand*{\XR@ext}{pdf}
6283 \edef\Hy@VTeXversion{%
6284   \ifx\VTeXversion\@undefined
6285     \z@
6286   \else
6287     \ifx\VTeXversion\relax
6288       \z@
6289     \else
6290       \VTeXversion
6291     \fi
6292   \fi
6293 }
6294 \begingroup
6295   \ifnum\Hy@VTeXversion<660 %
6296     \gdef\Hy@PutCatalog#1{%
6297       \Hy@WarningNoLine{%
6298         VTeX 6.59g or above required for pdfpagelabels%
6299       }%
6300     }%
6301   \else
6302     \gdef\Hy@PutCatalog#1{%
6303       \Hy@vt@PutCatalog#1/PageLabels<<>>\@nil
6304     }%
6305     \gdef\Hy@vt@PutCatalog#1/PageLabels<<#2>>#3\@nil{%
6306       \ifx\#2\%
6307         \else
6308           \immediate\special{!pdfpagelabels #2}%
6309         \fi
6310       }%
6311     \fi
6312 \endgroup
6313 </vtex>

6314 <*pdfTeX | vtex>

```

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

```

6315 \ifHy@pagelabels
6316   \def\HyPL@StorePageLabel#1{%
6317     \toks@\expandafter{\HyPL@Labels}%
6318     \xdef\HyPL@Labels{%
6319       \the\toks@
6320       \the\Hy@abspage<<#1>>%
6321     }%
6322   }%

```

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.

```

6323 \RequirePackage{atveryend}[2009/12/07]%
6324 \AtVeryEndDocument{%
6325   \HyPL@SetPageLabels
6326 }%

6327 \fi
6328 </pdfTeX | vtex>

```

## 27.1.2 xetex

```

6329 <*xetex>
6330 \HyPsd@LoadUnicode
6331 \Hy@unicodetrue
6332 \ifx\HyPsd@pdfencoding\HyPsd@pdfencoding@unicode
6333 \else
6334 \let\HyPsd@pdfencoding\HyPsd@pdfencoding@auto
6335 \fi
6336 \HyPsd@LoadStringEnc
6337 \define@key{Hyp}{unicode}[true]{%
6338 \Hy@boolkey{unicode}{#1}%
6339 \ifHy@unicode
6340 \else
6341 \Hy@Warning{%
6342 XeTeX driver only supports 'unicode=true'. Ignoring\MessageBreak
6343 option setting 'unicode=false'%
6344 }%
6345 \Hy@unicodetrue
6346 \fi
6347 }
6348 \define@key{Hyp}{pdfencoding}{%
6349 \edef\HyPsd@temp{#1}%
6350 \ifx\HyPsd@temp\HyPsd@pdfencoding@unicode
6351 \let\HyPsd@pdfencoding\HyPsd@temp
6352 \else
6353 \ifx\HyPsd@temp\HyPsd@pdfencoding@auto
6354 \let\HyPsd@pdfencoding\HyPsd@temp
6355 \else
6356 \Hy@Warning{%
6357 XeTeX driver only supports\MessageBreak
6358 'pdfencoding=unicode|auto'. Ignoring option\MessageBreak
6359 setting 'pdfencoding=\HyPsd@temp'%
6360 }%
6361 \fi
6362 \fi
6363 }
6364 \let\HyXeTeX@CheckUnicode\relax
6365 </xetex>

```

### 27.1.3 pdfmarkbase, dvipdfm, xetex

```

6366 <*pdfmarkbase>
6367 \begingroup
6368 \@ifundefined{headerps@out}{}{%
6369 \toks@{\expandafter\Hy@FirstPageHook}%
6370 \xdef\Hy@FirstPageHook{%
6371 \noexpand\headerps@out{%
6372 systemdict /pdfmark known%
6373 {%
6374 userdict /?pdfmark systemdict /exec get put%
6375 }{%
6376 userdict /?pdfmark systemdict /pop get put %
6377 userdict /pdfmark systemdict /cleartomark get put%
6378 }%
6379 ifelse%
6380 }%
6381 \the\toks@
6382 }%
6383 }%

```

```

6384 \endgroup
6385 \pdfmarkbase>

\Hy@PutCatalog

6386 <dvipdfm | xetex>\def\Hy@PutCatalog#1{\@pdfm@mark{docview << #1 >>}}
6387 <*pdfmarkbase>
6388 \def\Hy@PutCatalog#1{%
6389   \pdfmark{pdfmark=/PUT,Raw={\string{Catalog\string} << #1 >>}}%
6390 }
6391 \pdfmarkbase>

6392 <*pdfmarkbase | dvipdfm | xetex>
6393 \ifHy@pagelabels

```

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

```

6394 \def\HyPL@StorePageLabel#1{%
6395   \if@filesw
6396     \begingroup
6397     \edef\Hy@tempa{\the\Hy@abspage<<#1>>}%
6398     \immediate\write\@mainaux{%
6399       \string\HyPL@Entry{\Hy@tempa}%
6400     }%
6401   \endgroup
6402   \fi
6403 }%

```

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.

```

6404 \Hy@AtBeginDocument{%
6405   \if@filesw
6406     \immediate\write\@mainaux{%
6407       \string\providecommand\string*\string\HyPL@Entry[1]{}%
6408     }%
6409   \fi
6410   \ifx\HyPL@Labels\@empty
6411     \Hy@WarningNoLine{Rerun to get /PageLabels entry}%
6412   \else
6413     \HyPL@SetPageLabels
6414   \fi
6415   \let\HyPL@Entry\@gobble
6416 }%

```

\HyPL@Entry

```

6417 \def\HyPL@Entry#1{%
6418   \expandafter\gdef\expandafter\HyPL@Labels\expandafter{%
6419     \HyPL@Labels
6420     #1%
6421   }%
6422 }%

6423 \fi
6424 \pdfmarkbase | dvipdfm | xetex>
6425 <*package>
6426 \MaybeStopEarly

```

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

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

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

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

Start with a fallback for equations

```

6427 \def\Hy@CounterExists#1{%
6428   \begingroup\expandafter\expandafter\expandafter\endgroup
6429   \expandafter\ifx\csname c@#1\endcsname\relax
6430     \expandafter\@gobble
6431   \else
6432     \begingroup\expandafter\expandafter\expandafter\endgroup
6433     \expandafter\ifx\csname the#1\endcsname\relax
6434       \expandafter\expandafter\expandafter\@gobble
6435     \else
6436       \expandafter\expandafter\expandafter\@firstofone
6437     \fi
6438   \fi
6439 }
6440 \Hy@CounterExists{section}{%
6441   \newcommand\theHequation{\theHsection.\arabic{equation}}}%
6442 }
6443 \Hy@CounterExists{part}{%
6444   \newcommand\theHpart{\arabic{part}}}%
6445 }
6446 \ltx@ifundefined{thechapter}{%
6447   \newcommand\theHsection   {\arabic{section}}}%
6448   \newcommand\theHfigure    {\arabic{figure}}}%
6449   \newcommand\theHtable     {\arabic{table}}}%
6450 }{%
6451   \newcommand\theHchapter    {\arabic{chapter}}}%
6452   \newcommand\theHfigure     {\theHchapter.\arabic{figure}}}%
6453   \newcommand\theHtable      {\theHchapter.\arabic{table}}}%
6454   \newcommand\theHsection    {\theHchapter.\arabic{section}}}%
6455 }
6456 \newcommand\theHsubsection   {\theHsection.\arabic{subsection}}
6457 \newcommand\theHsubsubsection{\theHsubsection.\arabic{subsubsection}}
6458 \newcommand\theHparagraph    {\theHsubsubsection.\arabic{paragraph}}
6459 \newcommand\theHsubparagraph {\theHparagraph.\arabic{subparagraph}}
6460 \newcommand\theHtheorem      {\theHsection.\arabic{theorem}}
6461 \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.

```

6462 \let\H@item\item
6463 \newcounter{Item}
6464 \def\theHItem{\arabic{Item}}
6465 \def\item{%
6466   \@hyper@itemfalse
6467   \ifnmbrlist\@hyper@itemtrue\fi
6468   \H@item
6469 }

6470 \newcommand\theHenumi   {\theHItem}
6471 \newcommand\theHenumii  {\theHItem}
6472 \newcommand\theHenumiii {\theHItem}
6473 \newcommand\theHenumiv  {\theHItem}
6474 \newcommand\theHHfootnote {\arabic{Hfootnote}}
6475 \newcommand\theHmpfootnote{\arabic{mpfootnote}}
6476 \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.

```

6477 \let\H@refstepcounter\refstepcounter
6478 \edef\name@of@eq{equation}%
6479 \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.

```

6480 \newif\if@hyper@item
6481 \newif\if@skiphyperref
6482 \@hyper@itemfalse
6483 \@skiphyperreffalse
6484 \def\refstepcounter#1{%
6485   \ifHy@pdfstring
6486   \else
6487     \H@refstepcounter{#1}%
6488     \edef\This@name{#1}%
6489     \ifx\This@name\name@of@slide
6490     \else
6491       \if@skiphyperref
6492       \else
6493         \if@hyper@item
6494           \stepcounter{Item}%
6495           \hyper@refstepcounter{Item}%
6496           \@hyper@itemfalse
6497         \else
6498           \hyper@refstepcounter{#1}%
6499         \fi
6500       \fi
6501     \fi
6502   \fi
6503 }
6504 \let\Hy@saved@refstepcounter\refstepcounter

```

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

```

6505 \@ifpackageloaded{amsmath}{-}{\newif\ifmeasuring@\measuring@false}

```

`\hyper@refstepcounter`

```

6506 \def\hyper@refstepcounter#1{%
6507   \edef\This@name{#1}%
6508   \ifx\This@name\name@of@eq
6509     \@ifundefined{theHequation}{%
6510       \make@stripped@name{\theequation}%
6511       \let\theHequation\newname
6512     }{}%
6513   \fi
6514   \@ifundefined{theH#1}{%
6515     \expandafter\def\csname theH#1\endcsname{\arabic{#1}}%
6516   }{}%
6517   \hyper@makecurrent{#1}%
6518   \ifmeasuring@
6519   \else
6520     \Hy@raisedlink{%
6521       \hyper@anchorstart{\@currentHref}\hyper@anchorend
6522     }%
6523   \fi
6524 }

```

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`.

```

6525 \begingroup\expandafter\expandafter\expandafter\endgroup
6526 \expandafter\ifx\csname chapter\endcsname\relax
6527   \def\Hy@chapterstring{section}%
6528 \else
6529   \def\Hy@chapterstring{chapter}%
6530 \fi
6531 \def\Hy@appendixstring{appendix}
6532 \def\Hy@chapapp{\Hy@chapterstring}
6533 \ltx@ifundefined{appendix}{%
6534 }{%
6535   \let\HyOrg@appendix\appendix
6536   \def\appendix{%
6537     \ltx@ifundefined{chapter}%
6538     {\gdef\theHsection{\Alph{section}}}%
6539     {\gdef\theHchapter{\Alph{chapter}}}%
6540     \xdef\Hy@chapapp{\Hy@appendixstring}%
6541     \HyOrg@appendix
6542   }%
6543 }

```

`\Hy@Test@alph`

```

6544 \def\Hy@Test@alph#1{%
6545   \ifcase#1\or
6546     a\or b\or c\or d\or e\or f\or g\or h\or i\or j\or
6547     k\or l\or m\or n\or o\or p\or q\or r\or s\or t\or
6548     u\or v\or w\or x\or y\or z%
6549   \else
6550     \ctrerr
6551   \fi
6552 }

```

\Hy@Test@Alph

```
6553 \def\Hy@Test@Alph#1{%
6554   \ifcase#1\or
6555     A\or B\or C\or D\or E\or F\or G\or H\or I\or J\or
6556     K\or L\or M\or N\or O\or P\or Q\or R\or S\or T\or
6557     U\or V\or W\or X\or Y\or Z%
6558   \else
6559     \@ctrerr
6560   \fi
6561 }
```

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

```
6562 \def\hyper@makecurrent#1{%
6563   \begingroup
6564     \edef\Hy@param{#1}%
6565     \ifx\Hy@param\Hy@chapterstring
6566       \let\Hy@param\Hy@chapapp
6567     \fi
6568     \ifHy@hypertextnames
6569       \let\@number\@firstofone
6570       \def\@fnsymbol##1{fnsymbol\number##1}%
6571       \ifx\@alph\Hy@Test@alph
6572         \else
6573           \def\@alph{alph\number}%
6574         \fi
6575       \ifx\@Alph\Hy@Test@Alph
6576         \else
6577           \def\@Alph{Alph\number}%
6578         \fi
6579       \ifHy@naturalnames
6580         \let\textlatin\@firstofone
6581         \xdef\HyperGlobalCurrentHref{\csname the#1\endcsname}%
6582       \else
6583         \xdef\HyperGlobalCurrentHref{%
6584           \csname
6585             the%
6586             \expandafter\ifx\csname theH#1\endcsname\relax\else H\fi
6587             #1%
6588           \endcsname
6589         }%
6590       \fi
6591       \xdef\HyperGlobalCurrentHref{%
6592         \Hy@param.\expandafter\strip@prefix\meaning\HyperGlobalCurrentHref
6593       }%
6594     \else
6595       \Hy@GlobalStepCount\Hy@linkcounter
6596       \xdef\HyperGlobalCurrentHref{\Hy@param.\the\Hy@linkcounter}%
6597     \fi
6598   \endgroup
6599   \let\HyperLocalCurrentHref\HyperGlobalCurrentHref
6600   \ifHy@localanchorname
6601     \let\@currentHref\HyperLocalCurrentHref
6602   \else
6603     \global\let\@currentHref\HyperGlobalCurrentHref
6604   \fi
6605 }
```



`\Hy@MakeCurrentHref`

```

6606 \def\Hy@MakeCurrentHref#1{%
6607   \edef\HyperLocalCurrentHref{#1}%
6608   \@onelevel@sanitize\HyperLocalCurrentHref
6609   \global\let\HyperGlobalCurrentHref\HyperLocalCurrentHref
6610   \let\HyperLocalCurrentHref\HyperGlobalCurrentHref
6611   \ifHy@localanchorname
6612     \let\@currentHref\HyperLocalCurrentHref
6613   \else
6614     \global\let\@currentHref\HyperGlobalCurrentHref
6615   \fi
6616 }

```

`\Hy@MakeCurrentHrefAuto`

```

6617 \def\Hy@MakeCurrentHrefAuto#1{%
6618   \Hy@GlobalStepCount\Hy@linkcounter
6619   \Hy@MakeCurrentHref{#1.\the\Hy@linkcounter}%
6620 }

```

`\@currentHlabel` `\@currentHlabel` is only defined for compatibility with package ‘hydvips’.

```

6621 \def\@currentHlabel{\@currentHref}

6622 \@ifpackageloaded{fancyvrb}{%
6623   \@ifpackagelater{fancyvrb}{1998/05/20}{%
6624     \def\FV@StepLineNo{%
6625       \FV@SetLineNo
6626       \def\FV@StepLineNo{\H@refstepcounter{FancyVerbLine}}%
6627       \FV@StepLineNo
6628     }%
6629   }%
6630 }{}

```

## 29 Package lastpage support

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

`\lastpage@putlabel`

```

6631 \Hy@AtBeginDocument{%
6632   \@ifclassloaded{revtex4}{%
6633     \@namedef{ver@lastpage.sty}{1994/06/25}%
6634   }{}%
6635   \@ifpackageloaded{lastpage}{%
6636     \ifHy@pageanchor
6637     \else
6638       \Hy@WarningNoLine{%
6639         The \string\pageref{LastPage} link doesn't work\MessageBreak
6640         with disabled option 'pageanchor'%
6641       }%
6642     \fi

```

```

6643 \def\lastpage@putlabel{%
6644   \addtocounter{page}{-1}%
6645   \if@filesw
6646     \begingroup
6647     \let\@number\@firstofone
6648     \ifHy@pageanchor
6649       \ifHy@hypertexnames
6650         \ifHy@plainpages
6651           \def\Hy@temp{\arabic{page}}%
6652         \else
6653           \Hy@unicodefalse
6654           \pdfstringdef\Hy@temp{\thepage}%
6655         \fi
6656       \else
6657         \def\Hy@temp{\the\Hy@pagecounter}%
6658       \fi
6659     \fi
6660     \immediate\write\@auxout{%
6661       \string\newlabel
6662       {LastPage}{\the\Hy@temp}{\thepage}{\thepage}%
6663       \ifHy@pageanchor page.\Hy@temp\fi}{\thepage}}%
6664   }%
6665 \endgroup
6666 \fi
6667 \addtocounter{page}{1}%
6668 }%
6669 \@ifclassloaded{revtex4}{%
6670   \begingroup
6671   \toks@\expandafter{\lastpage@putlabel}%
6672   \edef\x{\endgroup
6673     \def\noexpand\lastpage@putlabel{%
6674       \noexpand\stepcounter{page}%
6675       \the\toks@
6676       \noexpand\addtocounter{page}\noexpand\m@ne
6677     }%
6678   }%
6679   \x
6680 }{}%
6681 }{}%
6682 }
6683 \</package>
6684 \< *check>
6685 \checkpackage{lastpage}[1994/06/25]
6686 \checkcommand\def\lastpage@putlabel{%
6687   \addtocounter{page}{-1}%
6688   \immediate\write\@auxout{%
6689     \string\newlabel{LastPage}{\the\Hy@temp}{\thepage}{\thepage}%
6690   }%
6691   \addtocounter{page}{1}%
6692 }
6693 \</check>
6694 \< *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.

```
6695 \def\hypergetref#1{\getrefbykeydefault{#1}{-}{??}}
6696 \def\hypergetpageref#1{\getrefbykeydefault{#1}{page}{0}}
```

## 31 Package titlesec and titletoc support

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

Package titlesec support:

```
6697 \ifpackageloaded{titlesec}{%
6698   \def\ttl@Hy@steplink#1{%
6699     \Hy@MakeCurrentHrefAuto{#1*}%
6700     \edef\ttl@Hy@saveanchor{%
6701       \noexpand\Hy@raisedlink{%
6702         \noexpand\hyper@anchorstart{\@currentHref}%
6703         \noexpand\hyper@anchorend
6704         \def\noexpand\ttl@Hy@SavedCurrentHref{\@currentHref}%
6705         \noexpand\ttl@Hy@PatchSaveWrite
6706       }%
6707     }%
6708   }%
6709   \def\ttl@Hy@PatchSaveWrite{%
6710     \begingroup
6711     \toks@\expandafter{\ttl@savewrite}%
6712     \edef\x{\endgroup
6713       \def\noexpand\ttl@savewrite{%
6714         \let\noexpand\@currentHref
6715         \noexpand\ttl@Hy@SavedCurrentHref
6716         \the\toks@
6717       }%
6718     }%
6719     \x
6720   }%
6721   \def\ttl@Hy@refstepcounter#1{%
6722     \let\ttl@b\Hy@raisedlink
6723     \def\Hy@raisedlink##1{%
6724       \def\ttl@Hy@saveanchor{\Hy@raisedlink{##1}}%
6725     }%
6726     \refstepcounter{#1}%
6727     \let\Hy@raisedlink\ttl@b
6728   }%
6729 }{}
```

Package titletoc support:

```
6730 \ifpackageloaded{titletoc}{%
6731   \def\ttl@gobblecontents#1#2#3#4{\ignorespaces}%
6732 }{}
```

## 32 Package varioref support

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

```
6733 \def\Hy@varioref@undefined{??}{??}{-}{-}{-}
6734 \ifpackageloaded{varioref}{%
6735   \def\vref@pagenum#1#2{%
```

```

6736 \ifundefined{r@#2}{%
6737 \expandafter\let\csname r@#2\endcsname\Hy@varioref@undefined
6738 }{}%
6739 \edef#1{\getpagerefnumber{#2}}%
6740 }%
6741 }{}

```

Package varioref redefines \refstepcounter, thus it needs fixing, if the package is loaded *after* hyperref.

```

6742 \def\Hy@varioref@refstepcounter#1{%
6743 \stepcounter{#1}%
6744 \protected@edef\@currentlabel{%
6745 \csname p@#1\expandafter\endcsname\csname the#1\endcsname
6746 }%
6747 }
6748 \AtBeginDocument{%
6749 \ifx\refstepcounter\Hy@varioref@refstepcounter
6750 \let\H@refstepcounter\refstepcounter
6751 \let\refstepcounter\Hy@saved@refstepcounter
6752 \fi
6753 }

```

### 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

```

6754 \ifpackageloaded{longtable}{%
6755 \begingroup
6756 \def\y{\LT@array}%
6757 \ifundefined{scr@LT@array}{%
6758 \ifundefined{adl@LT@array}{\def\y{\adl@LT@array}}%
6759 }\def\y{\scr@LT@array}%
6760 \long\def\x\refstepcounter#1#2\@sharp#3#4\@nil{%
6761 \expandafter\endgroup
6762 \expandafter\def\y[#1]#2{%
6763 \H@refstepcounter{#1}%
6764 \hyper@makecurrent{table}%
6765 \let\Hy@LT@currentHref\@currentHref
6766 #2\@sharp###4%
6767 }%
6768 }%
6769 \expandafter\expandafter\expandafter\x\y[{#1}]{#2}\@nil

```

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

```

6770 \begingroup
6771 \def\x#1\ifvoid\LT@foot#2\fi#3\@nil{%
6772 \endgroup
6773 \def\LT@start{%
6774 #1%
6775 \ifvoid\LT@foot#2\fi
6776 \let\@currentHref\Hy@LT@currentHref
6777 \Hy@raisedlink{%
6778 \hyper@anchorstart{\@currentHref}\hyper@anchorend

```

```

6779     }%
6780     #3%
6781     }%
6782     }%
6783     \expandafter\x\LT@start\@nil
6784 }{}

```

## 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.

```

6785 \let\new@refstepcounter\refstepcounter
6786 \let\H@equation\equation
6787 \let\H@endequation\endequation
6788 \ifpackageloaded{amsmath}{%
6789   \long\def\Hy@temp{%
6790     \incr@eqnum
6791     \mathdisplay@push
6792     \st@rredfalse \global\@eqnswtrue
6793     \mathdisplay{equation}%
6794   }%
6795   \ifx\Hy@temp\equation
6796     \expandafter\ifx\csname if@fleqn\expandafter\endcsname
6797       \csname iftrue\endcsname
6798   \else
6799     \long\def\equation{%
6800       \mathdisplay@push
6801       \st@rredfalse \global\@eqnswtrue
6802       \mathdisplay{equation}%
6803       \incr@eqnum
6804     }%
6805   \fi
6806 \fi
6807 }{}%
6808 \def\equation{%
6809   \let\refstepcounter\H@refstepcounter
6810   \H@equation
6811   \ifundefined{theHequation}{%
6812     \make@stripped@name{\theequation}%
6813     \let\theHequation\newname
6814   }{}%
6815   \hyper@makecurrent{equation}%
6816   \Hy@raisedlink{\hyper@anchorstart{\@currentHref}}%
6817   \let\refstepcounter\new@refstepcounter
6818 }%
6819 \def\endequation{\Hy@raisedlink{\hyper@anchorend}\H@endequation}%
6820 }

```

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.

```

6821 \newif\if@eqnstar
6822 \@eqnstarfalse
6823 \let\H@eqnarray\eqnarray
6824 \let\H@endeqnarray\endeqnarray
6825 \def\eqnarray{%
6826   \let\Hy@reserved@a\relax
6827   \def\@currentHref{}%
6828   \H@eqnarray
6829   \if@eqnstar
6830   \else
6831     \ifx\\ \@currentHref\\%
6832     \else
6833       \@ifundefined{theHequation}{%
6834         \make@stripped@name{\theequation}%
6835         \let\theHequation\newname
6836       }{}%
6837       \hyper@makecurrent{equation}%
6838       \hyper@anchorstart{\@currentHref}{ }\hyper@anchorend
6839     \fi
6840   \fi
6841 }
6842 \def\endeqnarray{%
6843   \H@endeqnarray
6844 }

```

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.

```

6845 \@namedef{eqnarray*}{%
6846   \def\@eqncr{\nonumber\@seqncr}\@eqnstartrue\eqnarray
6847 }
6848 \@namedef{endeqnarray*}{%
6849   \nonumber\endeqnarray\@eqnstarfalse
6850 }

```

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

```

6851 \ltx@ifundefined{subeqnarray}{}{}%
6852 \let\H@subeqnarray\subeqnarray
6853 \let\H@endsubeqnarray\endsubeqnarray
6854 \def\subeqnarray{%
6855   \let\Hy@reserved@a\relax
6856   \H@subeqnarray
6857   \@ifundefined{theHequation}{%
6858     \make@stripped@name{\theequation}%
6859     \let\theHequation\newname
6860   }{}%
6861   \hyper@makecurrent{equation}%
6862   \hyper@anchorstart{\@currentHref}{ }\hyper@anchorend
6863 }%
6864 \def\endsubeqnarray{%
6865   \H@endsubeqnarray
6866 }%
6867 \newcommand\theHsubequation{\theHequation\alph{subequation}}%
6868 }

```

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

```

6869 \def\make@stripped@name#1{%
6870   \begingroup
6871   \escapechar\m@ne

```

```

6872 \global\let\newname\@empty
6873 \protected@edef\Hy@tempa{#1}%
6874 \edef\@tempb{%
6875   \noexpand\@tfor\noexpand\Hy@tempa:=%
6876   \expandafter\strip@prefix\meaning\Hy@tempa
6877 }%
6878 \@tempb\do{%
6879   \if\Hy@tempa\else
6880   \if\Hy@tempa\else
6881     \xdef\newname{\newname\Hy@tempa}%
6882   \fi
6883   \fi
6884 }%
6885 \endgroup
6886 }

```

Support for amsmath's subequations:

```

6887 \begingroup\expandafter\expandafter\expandafter\endgroup
6888 \expandafter\ifx\csname subequations\endcsname\relax
6889 \else
6890   \let\HyOrg@subequations\subequations
6891   \def\subequations{%
6892     \stepcounter{equation}%
6893     \protected@edef\theHparentequation{%
6894       \@ifundefined{theHequation}\theequation\theHequation
6895     }%
6896     \addtocounter{equation}{-1}%
6897     \HyOrg@subequations
6898     \def\theHequation{\theHparentequation\alph{equation}}%
6899     \ignorespaces
6900   }%
6901 \fi

```

Support for package amsthm (Daniel Müllner):

```

6902 \@ifpackageloaded{amsthm}{%
6903   \def\@thm#1#2#3{%
6904     \ifhmode
6905       \unskip\unskip\par
6906     \fi
6907     \normalfont
6908     \trivlist
6909     \let\thmheadnl\relax
6910     \let\thm@swap\@gobble
6911     \thm@notefont{\fontseries\mddefault\upshape}%
6912     \thm@headpunct{.}% add period after heading
6913     \thm@headsep 5\p@ plus\p@ minus\p@\relax
6914     \thm@space@setup
6915     #1% style overrides
6916     \@topsep \thm@preskip % used by thm head
6917     \@topsepadd \thm@postskip % used by \@endparenv
6918     \def\dth@counter{#2}%
6919     \ifx\@empty\dth@counter
6920       \def\@tempa{%
6921         \@oparg{\@begintheorem{#3}{}}{}%
6922       }%
6923     \else
6924       \H@refstepcounter{#2}%
6925       \hyper@makecurrent{#2}%

```

```

6926 \let\Hy@dth@currentHref\@currentHref
6927 \def\@tempa{%
6928   \@oparg{\@begintheorem{#3}{\csname the#2\endcsname}}[]%
6929   }%
6930 \fi
6931 \@tempa
6932 }%
6933 \dth@everypar={%
6934   \@minipagefalse
6935   \global\@newlistfalse
6936   \@noparitemfalse
6937   \if@inlabel
6938     \global\@inlabelfalse
6939     \begingroup
6940       \setbox\z@\lastbox
6941       \ifvoid\z@
6942         \kern-\itemindent
6943       \fi
6944     \endgroup
6945     \ifx\@empty\dth@counter
6946     \else
6947       \Hy@raisedlink{%
6948         \hyper@anchorstart{%
6949           \ltx@ifundefined{Hy@dth@currentHref}%
6950             \@currentHref\Hy@dth@currentHref
6951         }\hyper@anchorend
6952       }%
6953     \fi
6954     \unhbox\@labels
6955   \fi
6956   \if@nobreak
6957     \@nobreakfalse \clubpenalty\@M
6958   \else
6959     \clubpenalty\@clubpenalty \everypar{}%
6960   \fi
6961 }%
6962 }{}

```

## 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.

```

6963 \@ifpackageloaded{tabularx}{\Hy@hyperfootnotesfalse}{}
6964 \ifHy@hyperfootnotes
6965   \newcounter{Hfootnote}%
6966   \let\H@@footnotetext\@footnotetext
6967   \let\H@@footnotemark\@footnotemark
6968   \def\@xfootnotenext[#1]{%
6969     \begingroup
6970       \csname c@\@mpfn\endcsname #1\relax
6971       \unrestored@protected@xdef\@thefnmark{\thempfn}%
6972     \endgroup
6973     \ifx\@footnotetext\@mpfootnotetext

```



```

6974 \expandafter\H@@mpfootnotetext
6975 \else
6976 \expandafter\H@@footnotetext
6977 \fi
6978 }%
6979 \def\@xfootnotemark[#1]{%
6980 \begingroup
6981 \c@footnote #1\relax
6982 \unrestored@protected@xdef\@thefnmark{\thefootnote}%
6983 \endgroup
6984 \H@@@footnotemark
6985 }%
6986 \let\H@@mpfootnotetext\@mpfootnotetext
6987 \long\def\@mpfootnotetext#1{%
6988 \H@@mpfootnotetext{%
6989 \ifHy@nesting
6990 \expandafter\hyper@@@anchor\expandafter{%
6991 \Hy@footnote@currentHref
6992 }{#1}%
6993 \else
6994 \Hy@raisedlink{%
6995 \expandafter\hyper@@@anchor\expandafter{%
6996 \Hy@footnote@currentHref
6997 }{\relax}%
6998 }#1%
6999 \fi
7000 }%
7001 }%
7002 \long\def\@footnotetext#1{%
7003 \H@@@footnotetext{%
7004 \ifHy@nesting
7005 \expandafter\hyper@@@anchor\expandafter{%
7006 \Hy@footnote@currentHref
7007 }{#1}%
7008 \else
7009 \Hy@raisedlink{%
7010 \expandafter\hyper@@@anchor\expandafter{%
7011 \Hy@footnote@currentHref
7012 }{\relax}%
7013 }%
7014 \let\@currentHref\Hy@footnote@currentHref
7015 \let\@currentlabelname\@empty
7016 #1%
7017 \fi
7018 }%
7019 }%

```

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.

```

7020 \def\@footnotemark{%
7021 \leavevmode
7022 \ifhmode\edef\@x@sf{\the\spacefactor}\nobreak\fi
7023 \stepcounter{Hfootnote}%
7024 \global\let\Hy@saved@currentHref\@currentHref
7025 \hyper@makecurrent{Hfootnote}%
7026 \global\let\Hy@footnote@currentHref\@currentHref

```

```

7027 \global\let\@currentHref\Hy@saved@currentHref
7028 \hyper@linkstart{link}{\Hy@footnote@currentHref}%
7029 \@makefnmark
7030 \hyper@linkend
7031 \ifhmode\spacefactor\@x@sf\fi
7032 \relax
7033 }%

```

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

```

7034 \@ifpackageloaded{longtable}{%
7035 \CheckCommand*{\LT@p@ftntext}[1]{%
7036 \edef\@tempa{%
7037 \the\LT@p@ftn
7038 \noexpand\footnotetext[\the\c@footnote]%
7039 }%
7040 \global\LT@p@ftn\expandafter{\@tempa{#1}}%
7041 }%
7042 \long\def\LT@p@ftntext#1{%
7043 \edef\@tempa{%
7044 \the\LT@p@ftn
7045 \begingroup
7046 \noexpand\c@footnote=\the\c@footnote\relax
7047 \noexpand\protected@xdef\noexpand\@thefnmark{%
7048 \noexpand\thempfn
7049 }%
7050 \noexpand\Hy@LT@footnotetext{%
7051 \Hy@footnote@currentHref
7052 }%
7053 }%
7054 \global\LT@p@ftn\expandafter{%
7055 \@tempa{#1}%
7056 \endgroup
7057 }%
7058 }%
7059 \long\def\Hy@LT@footnotetext#1#2{%
7060 \H@@@footnotetext{%
7061 \ifHy@nesting
7062 \hyper@@anchor{#1}{#2}%
7063 \else
7064 \Hy@raisedlink{%
7065 \hyper@@anchor{#1}{\relax}%
7066 }%
7067 \def\@currentHref{#1}%
7068 \let\@currentlabelname\@empty
7069 #2%
7070 \fi
7071 }%
7072 }%
7073 }{}%

```

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

```

7074 \@ifpackageloaded{fancyvrb}{%
7075 \def\V@@@footnotetext{%
7076 \insert\footins\bgroup
7077 \csname reset@font\endcsname

```

```

7078 \footnotesize
7079 \interlinepenalty\interfootnotelinepenalty
7080 \splittopskip\footnotesep
7081 \splitmaxdepth\dp\strutbox
7082 \floatingpenalty \@MM
7083 \hsize\columnwidth
7084 \@parboxrestore
7085 \edef\@currentlabel{\csname p@footnote\endcsname\@thefnmark}%
7086 \@makefnmark{}%
7087 \rule{\z@}{\footnotesep}%
7088 \bgroup
7089 \aftergroup\V@@@footnotetext
7090 \Hy@raisedlink{%
7091 \expandafter\hyper@@anchor\expandafter{%
7092 \Hy@footnote@currentHref
7093 }{\relax}%
7094 }%
7095 \let\@currentHref\Hy@footnote@currentHref
7096 \let\@currentlabelname\@empty
7097 \ignorespaces
7098 }%
7099 }{}%

```

KOMA-Script defines `\footref` that uses both `\ref` and `\@footnotemark` resulting in two links, one of them wrong.

```

7100 \def\Hy@temp#1{%
7101 \begingroup
7102 \unrestored@protected\xdef\@thefnmark{\ref{#1}}%
7103 \endgroup
7104 \@footnotemark
7105 }%
7106 \ifx\Hy@temp\footref
7107 \def\footref#1{%
7108 \begingroup
7109 \unrestored@protected\xdef\@thefnmark{\ref{#1}}%
7110 \endgroup
7111 \H@@@footnotemark
7112 }%
7113 \fi

```

But the special footnotes in `\maketitle` are much too hard to deal with properly. Let them revert to plain behaviour. The koma classes add an optional argument.

```

7114 \let\HyOrg@maketitle\maketitle
7115 \def\maketitle{%
7116 \let\Hy@saved@footnotemark\@footnotemark
7117 \let\Hy@saved@footnotetext\@footnotetext
7118 \let\@footnotemark\H@@@footnotemark
7119 \let\@footnotetext\H@@@footnotetext
7120 \@ifnextchar[\Hy@maketitle@optarg{% ]
7121 \HyOrg@maketitle
7122 \Hy@maketitle@end
7123 }%
7124 }%
7125 \def\Hy@maketitle@optarg[#1]{%
7126 \HyOrg@maketitle[#{#1}]%
7127 \Hy@maketitle@end
7128 }%
7129 \def\Hy@maketitle@end{%

```

```

7130 \ifx\@footnotemark\H\@footnotemark
7131 \let\@footnotemark\Hy@saved@footnotemark
7132 \fi
7133 \ifx\@footnotetext\H\@footnotetext
7134 \let\@footnotetext\Hy@saved@footnotetext
7135 \fi
7136 }%

```

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

```

7137 \def\realfootnote{%
7138 \ifnextchar[\@xfootnote{%
7139 \stepcounter{\@mpfn}%
7140 \protected@xdef\@thefnmark{\thempfn}%
7141 \H\@footnotemark\H\@footnotetext
7142 }%
7143 }%

7144 \fi
7145 \Hy@DisableOption{hyperfootnotes}

7146 </package>
7147 <*check>
7148 \checklatex
7149 \checkcommand\def\@xfootnotenext[#1]{%
7150 \begingroup
7151 \csname c@\@mpfn\endcsname #1\relax
7152 \unrestored@protected@xdef\@thefnmark{\thempfn}%
7153 \endgroup
7154 \@footnotetext
7155 }
7156 \checkcommand\def\@xfootnotemark[#1]{%
7157 \begingroup
7158 \c@footnote #1\relax
7159 \unrestored@protected@xdef\@thefnmark{\thefootnote}%
7160 \endgroup
7161 \@footnotemark
7162 }
7163 \checkcommand\def\@footnotemark{%
7164 \leavevmode
7165 \ifhmode\edef\@x@sf{\the\spacefactor}\nobreak\fi
7166 \makefnmark
7167 \ifhmode\spacefactor\@x@sf\fi
7168 \relax
7169 }
7170 </check>
7171 <*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.

```

7172 \def\caption{%
7173 \ifx\@cuptype\@undefined
7174 \latex@error{\noexpand\caption outside float}\@ehd
7175 \expandafter\@gobble
7176 \else
7177 \H@refstepcounter\@cuptype

```

```

7178 \let\Hy@tempa\@caption
7179 \@ifundefined{float@caption}{%
7180 }{%
7181   \expandafter\ifx\csname @float@c@\@capttype\endcsname
7182     \float@caption
7183     \let\Hy@tempa\Hy@float@caption
7184   \fi
7185 }%
7186 \expandafter\@firstofone
7187 \fi
7188 {\@dblarg{\Hy@tempa\@capttype}}}%
7189 }
7190 \long\def\@caption#1[#2]#3{%
7191   \expandafter\ifx\csname if@capstart\expandafter\endcsname
7192     \csname iftrue\endcsname
7193     \global\let\@currentHref\hc@currentHref
7194   \else
7195     \hyper@makecurrent{\@capttype}%
7196   \fi
7197   \@ifundefined{NR@gettitle}{%
7198     \def\@currentlabelname{#2}%
7199   }{%
7200     \NR@gettitle{#2}%
7201   }%
7202   \par\addcontentsline{\csname ext@#1\endcsname}{#1}{%
7203     \protect\numberline{\csname the#1\endcsname}{\ignorespaces #2}%
7204   }%
7205   \begingroup
7206     \@parboxrestore
7207     \if@minipage
7208       \@setminipage
7209     \fi
7210     \normalsize
7211     \expandafter\ifx\csname if@capstart\expandafter\endcsname
7212       \csname iftrue\endcsname
7213       \global\@capstartfalse
7214       \@makecaption{\csname fnum@#1\endcsname}{\ignorespaces#3}%
7215     \else
7216       \@makecaption{\csname fnum@#1\endcsname}{%
7217         \ignorespaces

```

If we cannot have nesting, the anchor is empty.

```

7218   \ifHy@nesting
7219     \expandafter\hyper@@anchor\expandafter{\@currentHref}{#3}%
7220   \else
7221     \Hy@raisedlink{%
7222       \expandafter\hyper@@anchor\expandafter{%
7223         \@currentHref
7224       }\relax}%
7225     }%
7226     #3%
7227   \fi
7228 }%
7229 \fi
7230 \par
7231 \endgroup
7232 }

```

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.

```

7233 \let\Hy@float@caption\@caption
7234 \@ifpackageloaded{float}{%
7235   \def\Hy@float@caption{%
7236     \ifx\Hy@float@currentHref\@undefined
7237       \hyper@makecurrent{\@captive}%
7238       \global\let\Hy@float@currentHref\@currentHref
7239     \else
7240       \let\@currentHref\Hy@float@currentHref
7241     \fi
7242   \float@caption
7243 }%
7244 \let\HyOrg@float@makebox\float@makebox
7245 \renewcommand{\float@makebox}[1]{%
7246   \HyOrg@float@makebox{%
7247     #1\relax
7248     \ifx\Hy@float@currentHref\@undefined
7249     \else
7250       \expandafter\hyper@@anchor\expandafter{%
7251         \Hy@float@currentHref
7252       }\relax}%
7253     \global\let\Hy@float@currentHref\@undefined
7254   \fi
7255 }%
7256 }%
7257 }{}

7258 \end{package}
7259 \check
7260 \checklatex[1999/06/01 - 2000/06/01]
7261 \checkcommand\def\caption{%
7262   \ifx\@captive\@undefined
7263     \@latex@error{\noexpand\caption outside float}\@ehd
7264     \expandafter\@gobble
7265   \else
7266     \refstepcounter{\@captive}
7267     \expandafter\@firstofone
7268   \fi
7269   {\@dblarg{\@caption\@captive}}%
7270 }
7271 \checkcommand\long\def\@caption#1[#2]#3{%
7272   \par
7273   \addcontentsline{\csname ext@#1\endcsname}{#1}{%
7274     \protect\numberline{\csname the#1\endcsname}{\ignorespaces #2}%
7275   }%
7276   \begingroup
7277     \@parboxrestore
7278     \if@minipage
7279       \setminipage
7280     \fi
7281     \normalsize
7282     \@makecaption{\csname fnum@#1\endcsname}{\ignorespaces #3}\par
7283   \endgroup
7284 }
7285 \check
7286 \end{package}

```

## 37 Bibliographic references

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

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

```

7287 \def\hyper@natlinkstart#1{%
7288   \Hy@backout{#1}%
7289   \hyper@linkstart{cite}{cite.#1}%
7290   \def\hyper@nat@current{#1}%
7291 }
7292 \def\hyper@natlinkend{%
7293   \hyper@linkend
7294 }
7295 \def\hyper@natlinkbreak#1#2{%
7296   \hyper@linkend#1\hyper@linkstart{cite}{cite.#2}%
7297 }
7298 \def\hyper@natanchorstart#1{%
7299   \Hy@raisedlink{\hyper@anchorstart{cite.#1}}%
7300 }
7301 \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.

```

7302 \ltx@ifundefined{NAT@parse}{%
7303   \providecommand*\@extra@binfo{}%
7304   \providecommand*\@extra@b@citeb{}%
7305   \def\bibcite#1#2{%
7306     \@newl@bel{b}{#1\@extra@binfo}{%
7307       \hyper@link[cite]{cite.#1\@extra@b@citeb}{#2}%
7308     }%
7309   }%
7310   \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.”.

```

7311 \let\Hy@bibcite\bibcite
7312 \begingroup
7313   \ifundefined{bbl@cite@choice}{}{%
7314     \g@addto@macro\bbl@cite@choice{%
7315       \let\bibcite\Hy@bibcite
7316     }%
7317   }%
7318 \endgroup

```

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

```

7319 \providecommand*\@BIBLABEL{\@biblabel}%
7320 \def\@lbibitem[#1]#2{%
7321   \@skiphyperreftrue
7322   \H@item[%
7323     \ifx\Hy@raisedlink\@empty

```

```

7324     \hyper@anchorstart{cite.#2\@extra@b@citeb}%
7325     \@BIBLABEL{#1}%
7326     \hyper@anchorend
7327   \else
7328     \Hy@raisedlink{%
7329       \hyper@anchorstart{cite.#2\@extra@b@citeb}\hyper@anchorend
7330     }%
7331     \@BIBLABEL{#1}%
7332   \fi
7333   \hfill
7334 }%
7335 \@skiphyperreffalse
7336 \if@filesw
7337   \begingroup
7338     \let\protect\noexpand
7339     \immediate\write\@auxout{%
7340       \string\bibcite{#2}{#1}%
7341     }%
7342   \endgroup
7343 \fi
7344 \ignorespaces
7345 }%

```

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

```

7346 \def\@bibitem#1{%
7347   \@skiphyperrefftrue\H@item\@skiphyperreffalse
7348   \Hy@raisedlink{%
7349     \hyper@anchorstart{cite.#1\@extra@b@citeb}\relax\hyper@anchorend
7350   }%
7351   \if@filesw
7352     \begingroup
7353       \let\protect\noexpand
7354       \immediate\write\@auxout{%
7355         \string\bibcite{#1}{\the\value{\@listctr}}%
7356       }%
7357     \endgroup
7358   \fi
7359   \ignorespaces
7360 }%
7361 }{}

7362 \</package>
7363 \<*check>
7364 \checklatex
7365 \checkcommand\def\@lbibitem[#1]#2{%
7366   \item[\@biblabel{#1}\hfill]%
7367   \if@filesw
7368     {%
7369       \let\protect\noexpand
7370       \immediate\write\@auxout{%
7371         \string\bibcite{#2}{#1}%
7372       }%
7373     }%
7374   \fi
7375   \ignorespaces
7376 }
7377 \checkcommand\def\@bibitem#1{%

```



```

7378 \item
7379 \if@filesw
7380 \immediate\write\@auxout{%
7381 \string\bibcite{#1}{\the\value{\@listctr}}}%
7382 }%
7383 \fi
7384 \ignorespaces
7385 }
7386 \end{check}
7387 \end{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.

```

7388 \@ifclassloaded{revtex}{%
7389 \Hy@Info{*** compatibility with revtex **** }%
7390 \def\revtex@checking#1#2{%
7391 \expandafter\let\expandafter\T@temp\csname b@#1\endcsname
7392 \expandafter\def\csname b@#1\endcsname{#2}%
7393 \@SetMaxRnhefLabel{#1}%
7394 \expandafter\let\csname b@#1\endcsname\T@temp
7395 }%

```

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

```

7396 \@ifundefined{@CITE}{\def@CITE{\@cite}}{%
7397 \providecommand*{\@extra@b@citeb}{}%
7398 \def\CITE[#1]#2{%
7399 \let\@citea\@empty
7400 \leavevmode
7401 \unskip
7402 $\sim$%
7403 \scriptstyle
7404 \@CITE{%
7405 \@for\@citeb:=#2\do{%
7406 \@citea
7407 \def\@citea{,\penalty\@m\ }%
7408 \edef\@citeb{\expandafter\@firstofone\@citeb}%
7409 \if@filesw
7410 \immediate\write\@auxout{\string\citation{\@citeb}}%
7411 \fi
7412 \@ifundefined{b@\@citeb\extra@b@citeb}{%
7413 \mbox{\reset@font\bfseries ?}%
7414 \G@refundefinedtrue
7415 \@latex@warning{%
7416 Citation '\@citeb' on page \thepage \space undefined%
7417 }%
7418 }{%
7419 {\csname b@\@citeb\extra@b@citeb\endcsname}%
7420 }%
7421 }%
7422 }{#1}%
7423 }$%
7424 }%

```

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.

```

7425 \def\citex[#1]#2{%

```

```

7426 \let\@citea\@empty
7427 \@cite{%
7428   \@for\@citeb:=#2\do{%
7429     \@citea
7430     \def\@citea{,\penalty\@m\ }%
7431     \edef\@citeb{\expandafter\@firstofone\@citeb}%
7432     \if@filesw
7433       \immediate\write\@auxout{\string\citation{\@citeb}}%
7434     \fi
7435     \ifundefined{b@\@citeb\@extra@b@citeb}{%
7436       \mbox{\reset@font\bfseries ?}%
7437       \G@refundefinedtrue
7438       \@latex@warning{%
7439         Citation '\@citeb' on page \thepage \space undefined%
7440       }%
7441     }{%
7442       \hbox{\csname b@\@citeb\@extra@b@citeb\endcsname}%
7443     }%
7444   }%
7445 }{#1}%
7446 }%
7447 }{}

```

### 37.1 Package harvard

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

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

```

7448 \ifpackageloaded{harvard}{%
7449   \Hy@AtBeginDocument{%
7450     \Hy@Info{*** compatibility with harvard **** }%
7451     \Hy@raiselinksfalse
7452     \def\harvardcite#1#2#3#4{%
7453       \global\@namedef{HAR@fn@#1}{\hyper@link[cite]{\cite.#1}{#2}}%
7454       \global\@namedef{HAR@an@#1}{\hyper@link[cite]{\cite.#1}{#3}}%
7455       \global\@namedef{HAR@yr@#1}{\hyper@link[cite]{\cite.#1}{#4}}%
7456       \global\@namedef{HAR@df@#1}{\csname HAR@fn@#1\endcsname}%
7457     }%
7458     \def\HAR@citetoaux#1{%
7459       \if@filesw\immediate\write\@auxout{\string\citation{#1}}\fi%
7460       \ifHy@backref
7461         \ifx\@empty\@currentlabel
7462           \else
7463             \@bsphack
7464             \if@filesw
7465               \protected@write\@auxout{}{%
7466                 \string\@writefile{brf}{%
7467                   \string\backcite{#1}{%
7468                     {\thepage}{\@currentlabel}{\@currentHref}%
7469                   }%
7470               }%
7471             }%
7472           \fi

```

```

7473     \@esphack
7474     \fi
7475   \fi
7476 }%
7477 \def\harvarditem{%
7478   \@ifnextchar[{\@harvarditem}{\@harvarditem[\null]}%
7479 }%
7480 \def\@harvarditem[#1]#2#3#4#5\par{%
7481   \item[]%
7482   \hyper@anchorstart{cite.#4}\relax\hyper@anchorend
7483   \if@filesw
7484     \begingroup
7485     \def\protect##1{\string ##1\space}%
7486     \ifthenelse{\equal{#1}{\null}}{%
7487       {\def\next{{#4}{#2}{#3}}}%
7488       {\def\next{{#4}{#2}{#1}{#3}}}%
7489     \immediate\write\@auxout{\string\harvardcite\codeof\next}%
7490   \endgroup
7491   \fi
7492   \protect\hspace*{-\labelwidth}%
7493   \protect\hspace*{-\labelsep}%
7494   \ignorespaces
7495   #5%
7496   \ifHy@backref
7497     \newblock
7498     \backref{\csname br@#4\endcsname}%
7499   \fi
7500   \par
7501 }%

```

\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:

```

7502 \long\def\HAR@checkcitations#1#2#3#4{%
7503   \def\HAR@tempa{\hyper@@link[cite]{\cite.#1}{#2}}%
7504   \expandafter\ifx\csname HAR@fn@#1\endcsname\HAR@tempa
7505     \def\HAR@tempa{\hyper@@link[cite]{\cite.#1}{#3}}%
7506     \expandafter\ifx\csname HAR@an@#1\endcsname\HAR@tempa
7507       \def\HAR@tempa{\hyper@@link[cite]{\cite.#1}{#4}}%
7508       \expandafter\ifx\csname HAR@yr@#1\endcsname\HAR@tempa
7509         \else
7510           \@tempwattrue
7511         \fi
7512       \else
7513         \@tempwattrue
7514       \fi
7515     \else
7516       \@tempwattrue
7517     \fi
7518   }%
7519 }%
7520 }{}

```

## 37.2 Package chicago

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

```

7521 \@ifpackageloaded{chicago}{%
\citeN
7522 \def\citeN{%
7523 \def\@citesep{-1000}%
7524 \def\@cite##1##2{##1}%
7525 \def\citeauthoryear##1##2##3{##1 (##3\@cite@opt)}}%
7526 \@citedata@opt
7527 }%

\shortciteN
7528 \def\shortciteN{%
7529 \def\@citesep{-1000}%
7530 \def\@cite##1##2{##1}%
7531 \def\citeauthoryear##1##2##3{##2 (##3\@cite@opt)}}%
7532 \@citedata@opt
7533 }%

\@citedata@opt
7534 \def\@citedata@opt{%
7535 \let\@cite@opt\@empty
7536 \@ifnextchar [{%
7537 \@tempwattrue
7538 \@citedatax@opt
7539 }{%
7540 \@tempwafalse
7541 \@citedatax[]%
7542 }%
7543 }%

\@citedatax@opt
7544 \def\@citedatax@opt[#1]{%
7545 \def\@cite@opt{, #1}%
7546 \@citedatax[{#1}]%
7547 }%

7548 }-{}

```

## 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.

```

7549 \def\Hy@EveryPageAnchor{%
7550 \Hy@DistillerDestFix
7551 \ifHy@pageanchor
7552 \ifHy@hypertextnames
7553 \ifHy@plainpages
7554 \def\Hy@TempPageAnchor{\hyper@@anchor{page.\the\c@page}}%
7555 \else
7556 \begingroup
7557 \let\@number\@firstofone

```

```

7558     \Hy@unicodedefalse
7559     \pdfstringdef\@the@H@page{\thepage}%
7560     \endgroup
7561     \def\Hy@TempPageAnchor{\hyper@@anchor{page.\@the@H@page}}%
7562     \fi
7563   \else
7564     \Hy@GlobalStepCount\Hy@pagecounter
7565     \def\Hy@TempPageAnchor{%
7566       \hyper@@anchor{page.\the\Hy@pagecounter}%
7567     }%
7568     \fi
7569     \vbox to 0pt{%
7570       \kern\voffset
7571       \kern\topmargin
7572       \kern-1bp\relax
7573       \hbox to 0pt{%
7574         \kern\hoffset
7575         \kern\ifodd\value{page}%
7576           \oddsidemargin
7577         \else
7578           \evensidemargin
7579         \fi
7580         \kern-1bp\relax
7581         \Hy@TempPageAnchor\relax
7582         \hss
7583       }%
7584     \vss
7585   }%
7586 \fi
7587 }
7588 \g@addto@macro\Hy@EveryPageBoxHook{%
7589   \Hy@EveryPageAnchor
7590 }

```

## 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.

```

7591 \def\addcontentsline#1#2#3{% toc extension, type, tag
7592   \begingroup
7593   \let\label\@gobble
7594   \ifx\@currentHref\@empty
7595     \Hy@Warning{%
7596       No destination for bookmark of \string\addcontentsline,%
7597       \MessageBreak destination is added%
7598     }%
7599     \phantomsection
7600   \fi
7601   \expandafter\ifx\csname toplevel@#2\endcsname\relax
7602     \begingroup
7603     \def\Hy@tempa{#1}%
7604     \ifx\Hy@tempa\Hy@bookmarkstype
7605       \Hy@WarningNoLine{%
7606         bookmark level for unknown #2 defaults to 0%
7607       }%

```

```

7608     \else
7609         \Hy@Info{bookmark level for unknown #2 defaults to 0}%
7610     \fi
7611 \endgroup
7612 \expandafter\gdef\csname toclevel@#2\endcsname{0}%
7613 \fi
7614 \edef\Hy@toclevel{\csname toclevel@#2\endcsname}%
7615 \Hy@writebookmark{\csname the#2\endcsname}%
7616     {#3}%
7617     {\@currentHref}%
7618     {\Hy@toclevel}%
7619     {#1}%
7620 \ifHy@verbose
7621     \begingroup
7622     \def\Hy@tempa{#3}%
7623     \@onelevel@sanitize\Hy@tempa
7624     \let\temp@online\on@line
7625     \let\on@line\@empty
7626     \Hy@Info{%
7627         bookmark\temp@online:\MessageBreak
7628         thecounter {\csname the#2\endcsname}\MessageBreak
7629         text {\Hy@tempa}\MessageBreak
7630         reference {\@currentHref}\MessageBreak
7631         toclevel {\Hy@toclevel}\MessageBreak
7632         type {#1}%
7633     }%
7634 \endgroup
7635 \fi
7636 \addtocontents{#1}{%
7637     \protect\contentsline{#2}{#3}{\thepage}{\@currentHref}%
7638 }%
7639 \endgroup
7640 }
7641 \def\contentsline#1#2#3#4{%
7642     \ifx\\#4\\%
7643         \csname l@#1\endcsname{#2}{#3}%
7644     \else
7645         \ifcase\Hy@linktoc % none
7646             \csname l@#1\endcsname{#2}{#3}%
7647         \or % section
7648             \csname l@#1\endcsname{%
7649                 \hyper@linkstart{link}{#4}{#2}\hyper@linkend
7650             }{#3}%
7651         \or % page
7652             \csname l@#1\endcsname{{#2}}{%
7653                 \hyper@linkstart{link}{#4}{#3}\hyper@linkend
7654             }%
7655         \else % all
7656             \csname l@#1\endcsname{%
7657                 \hyper@linkstart{link}{#4}{#2}\hyper@linkend
7658             }{%
7659                 \hyper@linkstart{link}{#4}{#3}\hyper@linkend
7660             }%
7661         \fi
7662     \fi
7663 }
7664 \end{package}

```

```

7665 <*check>
7666 \checklatex
7667 \checkcommand\def\addcontentsline#1#2#3{%
7668   \addtocontents{#1}{\protect\contentsline{#2}{#3}{\thepage}}}%
7669 }
7670 \checkcommand\def\contentsline#1{\csname l@#1\endcsname}
7671 </check>
7672 <*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.

```

7673 \let\H@definecounter\@definecounter
7674 \def\@definecounter#1{%
7675   \H@definecounter{#1}%
7676   \expandafter\def\csname theH#1\endcsname{\arabic{#1}}%
7677 }

```

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.

```

7678 \let\H@newctr\@newctr
7679 \def\@newctr#1[#2]{%
7680   \H@newctr#1[{#2}]%
7681   \expandafter\def\csname theH#1\endcsname{%
7682     \csname the\@ifundefined{theH#2}{H}{H}#2\endcsname.\arabic{#1}%
7683   }%
7684 }

```

## 41 AMS $\LaTeX$ compatibility

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

Version 6.77p uses a patch by Ross Moore.

```

7685 \ifpackageloaded{amsmath}{%
7686   \def\Hy@make@anchor{%
7687     \Hy@MakeCurrentHrefAuto{AMS}%
7688     \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
7689   }%
7690   \def\Hy@make@df@tag@@#1{%
7691     \gdef\df@tag{%
7692       \maketag@@@{\Hy@make@anchor#1}%
7693       \def\@currentlabel{#1}%
7694     }%
7695   }%
7696   \def\Hy@make@df@tag@@@#1{%
7697     \gdef\df@tag{%
7698       \tagform@{\Hy@make@anchor#1}%
7699       \toks@{\xp{\p@equation{#1}}}%
7700       \edef\@currentlabel{\the\toks@}%
7701     }%
7702   }%

```

```

7703 \let\HyOrg@make@df@tag@@\make@df@tag@@
7704 \let\HyOrg@make@df@tag@@@make@df@tag@@@
7705 \let\make@df@tag@@\Hy@make@df@tag@@
7706 \let\make@df@tag@@@Hy@make@df@tag@@@
7707 }{}

```

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

```

7708 \ifpackagewith{hyperref}{pdfTeX}{%
7709   \let\H@seteqlabel\@seteqlabel
7710   \def\@seteqlabel#1{%
7711     \H@seteqlabel{#1}%
7712     \xdef\@currentHref{AMS.\the\Hy@linkcounter}%
7713     \Hy@raisedlink{%
7714       \hyper@anchorstart{\@currentHref}\hyper@anchorend
7715     }%
7716   }%
7717 }{}

```

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.

```

7718 \let\HyOrg@addtoreset\@addtoreset
7719 \def\@addtoreset#1#2{%
7720   \HyOrg@addtoreset{#1}{#2}%
7721   \expandafter\xdef\csname theH#1\endcsname{%
7722     \expandafter\noexpand
7723     \csname the\@ifundefined{theH#2}{H#2}\endcsname
7724     .\noexpand\the\noexpand\value{#1}%
7725   }%
7726 }

```

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

```

7727 </package>
7728 <*check>
7729 \checkpackage{amsmath}[1999/12/14 - 2000/06/06]
7730 \checkcommand\newcommand{\numberwithin}[3][\arabic]{%
7731   \@ifundefined{c@#2}{\@nocounterr{#2}}{%
7732     \@ifundefined{c@#3}{\@nocnterr{#3}}{%
7733       \@addtoreset{#2}{#3}%
7734       \xp\xdef\csname the#2\endcsname{%
7735         \xp\xnx\csname the#3\endcsname .\nx#1{#2}%
7736       }%
7737     }%
7738   }%

```



```

7739 }%
7740 </check>
7741 <*package>
7742 \Ifpackageloaded{amsmath}{%
7743   \Ifpackagelater{amsmath}{1999/12/14}{%
7744     \renewcommand*{\numberwithin}{3}[\arabic]{%
7745       \Ifundefined{c@#2}{\@nocounterr{#2}}{%
7746         \Ifundefined{c@#3}{\@nocnterr{#3}}{%
7747           \HyOrg@addtoreset{#2}{#3}%
7748           \@xp\xdef\csname the#2\endcsname{%
7749             \@xp\@nx\csname the#3\endcsname .\@nx#1{#2}%
7750           }%
7751           \@xp\xdef\csname theH#2\endcsname{%
7752             \@xp\@nx
7753             \csname the\Ifundefined{theH#3}{H#3}\endcsname
7754             .\@nx#1{#2}%
7755           }%
7756         }%
7757       }%
7758     }%
7759   }{%
7760     \Hy@WarningNoLine{%
7761       \string\numberwithin\space of package ‘amsmath’ %
7762       only fixed\MessageBreak
7763       for version 2000/06/06 v2.12 or newer%
7764     }%
7765   }%
7766 }{}

```

## 42 Included figures

Simply intercept the low level graphics package macro.

```

7767 \ifHy@figures
7768   \let\Hy@Gin@setfile\Gin@setfile
7769   \def\Gin@setfile#1#2#3{%
7770     \hyperimage{#3}{\Hy@Gin@setfile{#1}{#2}{#3}}%
7771   }%
7772 \fi
7773 \Hy@DisableOption{hyperfigures}

```

## 43 hyperindex entries

Internal command names are prefixed with \HyInd@.

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

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

```

7774 \ifHy@hyperindex
7775   \def\HyInd@ParenLeft{({}%
7776   \def\HyInd@ParenRight{)}}%

```

```

7777 \def\hyperindexformat#1#2{%
7778   \let\HyOrg@hyperpage\hyperpage
7779   \let\hyperpage\@firstofone
7780   #1{\HyOrg@hyperpage{#2}}}%
7781   \let\hyperpage\HyOrg@hyperpage
7782 }%
7783 \Hy@nextfalse
7784 \@ifpackageloaded{multind}{\Hy@nexttrue}{}%
7785 \@ifpackageloaded{index}{\Hy@nexttrue}{}%
7786 \@ifpackageloaded{amsmidx}{\Hy@nexttrue}{}%
7787 \begingroup
7788   \lccode'\|=\expandafter'\HyInd@EncapChar\relax
7789   \lccode'\|/'\relax
7790 \lowercase{\endgroup
7791 \ifHy@next
7792   \let\HyInd@org@wrindex\@wrindex
7793   \def\@wrindex#1#2{\HyInd@\@wrindex{#1}#2||\}%
7794   \def\HyInd@\@wrindex#1#2|#3|#4\{\%
7795     \ifx\|#3\%
7796       \HyInd@org@wrindex{#1}{#2|hyperpage}%
7797     \else
7798       \HyInd@@@wrindex{#1}{#2}#3\%
7799     \fi
7800   }%
7801   \def\HyInd@@@wrindex#1#2#3#4\{\%
7802   \def\Hy@temp@A{#3}%
7803   \ifcase0\ifx\Hy@temp@A\HyInd@ParenLeft 1\fi
7804     \ifx\Hy@temp@A\HyInd@ParenRight 1\fi
7805     \relax
7806     \HyInd@org@wrindex{#1}{%
7807       #2|hyperindexformat{/#3#4}%
7808     }%
7809   \else
7810     \ifx\|#4\%
7811       \ifx\Hy@temp@A\HyInd@ParenRight
7812         \HyInd@org@wrindex{#1}{#2|#3}%
7813       \else
7814         \HyInd@org@wrindex{#1}{#2|#3hyperpage}%
7815       \fi
7816     \else
7817       \HyInd@org@wrindex{#1}{%
7818         #2|#3hyperindexformat{/#4}%
7819       }%
7820     \fi
7821   \fi
7822 }%
7823 \else
7824   \def\@wrindex#1{\@wrindex#1||\}%
7825   \def\@wrindex#1|#2|#3\{\%
7826   \if@filesw
7827     \ifx\|#2\%
7828       \protected@write\@indexfile{\%
7829         \string\indexentry{#1|hyperpage}{\thepage}%
7830       }%
7831     \else
7832       \HyInd@@@wrindex{#1}#2\%
7833     \fi

```

```

7834 \fi
7835 \endgroup
7836 \@esphack
7837 }%
7838 \def\HyInd@@@wrindex#1#2#3\{\{%
7839 \def\Hy@temp@A{#2}%
7840 \ifcase0\ifx\Hy@temp@A\HyInd@ParenLeft 1\fi
7841 \ifx\Hy@temp@A\HyInd@ParenRight 1\fi
7842 \relax
7843 \protected@write\@indexfile{\{\{%
7844 \string\indexentry{\%
7845 #1|hyperindexformat{/#2#3}%
7846 }\{thepage}%
7847 }%
7848 \else
7849 \ifx\#3\{\%
7850 \ifx\Hy@temp@A\HyInd@ParenRight
7851 \protected@write\@indexfile{\{\{%
7852 \string\indexentry{#1|#2}\{thepage}%
7853 }%
7854 \else
7855 \protected@write\@indexfile{\{\{%
7856 \string\indexentry{#1|#2hyperpage}\{thepage}%
7857 }%
7858 \fi
7859 \else
7860 \protected@write\@indexfile{\{\{%
7861 \string\indexentry{\%
7862 #1|#2hyperindexformat{/#3}%
7863 }\{thepage}%
7864 }%
7865 \fi
7866 \fi
7867 }%
7868 \fi
7869 }%
7870 \fi
7871 \Hy@DisableOption{hyperindex}
7872 \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.

```
7873 \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.

```

7874 \def\hyperpage#1{\%
7875 \HyInd@hyperpage#1\nohyperpage{\}\@nil
7876 }
7877 \def\HyInd@hyperpage#1\nohyperpage#2#3\@nil{\%
7878 \HyInd@@@hyperpage{#1}%
7879 #2%
7880 \def\Hy@temp{#3}%
7881 \ifx\Hy@temp\@empty
7882 \else
7883 \Hy@ReturnAfterFi{\%
7884 \HyInd@hyperpage#3\@nil

```

```

7885 }%
7886 \fi
7887 }
7888 \def\HyInd@@hyperpage#1{\@hyperpage#1----\}
7889 \def\@hyperpage#1--#2--#3\{%
7890 \ifx\#2\%
7891 \@commahyperpage{#1}%
7892 \else
7893 \HyInd@pagelink{#1}--\HyInd@pagelink{#2}%
7894 \fi
7895 }
7896 \def\@commahyperpage#1{\@commahyperpage#1, ,\}
7897 \def\@commahyperpage#1, #2,#3\{%
7898 \ifx\#2\%
7899 \HyInd@pagelink{#1}%
7900 \else
7901 \HyInd@pagelink{#1}, \HyInd@pagelink{#2}%
7902 \fi
7903 }

```

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

```

7904 \def\HyInd@pagelink#1{%
7905 \begingroup
7906 \toks@={}%
7907 \HyInd@removespaces#1 \@nil
7908 \endgroup
7909 }
7910 \def\HyInd@removespaces#1 #2\@nil{%
7911 \toks@=\expandafter{\the\toks@#1}%
7912 \ifx\#2\%
7913 \edef\x{\the\toks@}%
7914 \ifx\x\@empty
7915 \else
7916 \hyperlink{page.\the\toks@}{\the\toks@}%
7917 \fi
7918 \else
7919 \Hy@ReturnAfterFi{%
7920 \HyInd@removespaces#2\@nil
7921 }%
7922 \fi
7923 }

```

## 44 Compatibility with foiltex

```

7924 \@ifclassloaded{foils}{%
7925 \providecommand*\ext@table{lot}%
7926 \providecommand*\ext@figure{lof}%
7927 }{}

```

## 45 Compatibility with seminar slide package

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

```

7928 \@ifclassloaded{seminar}{%
7929 \Hy@seminarslides true\newcommand\theHslide{\arabic{slide}}}%

```

```

7930 }{%
7931   \Hy@seminarslidesfalse
7932 }
7933 \@ifpackageloaded{slidesec}{%
7934   \newcommand\theHslidesection  {\arabic{slidesection}}%
7935   \newcommand\theHslidesubsection{%
7936     \theHslidesection.\arabic{slidesubsection}}%
7937   }%
7938   \def\slide@heading[#1]#2{%
7939     \H@refstepcounter{slidesection}%
7940     \@addtoreset{slidesubsection}{slidesection}%
7941     \addtocontents{los}{%
7942       \protect\l@slide{\the\c@slidesection}{\ignorespaces#1}%
7943       {\@SCTR}{\slideheading.\theslidesection}}%
7944     }%
7945   \def\Hy@tempa{#2}%
7946   \ifx\Hy@tempa\@empty
7947   \else
7948     {%
7949       \edef\@currentlabel{%
7950         \csname p@slidesection\endcsname\theslidesection
7951       }%
7952       \makeslideheading{#2}%
7953     }%
7954   \fi
7955   \gdef\theslideheading{#1}%
7956   \gdef\theslidesubheading{}%
7957   \ifHy@bookmarksnumbered
7958     \def\Hy@slidetitle{\theslidesection\space #1}%
7959   \else
7960     \def\Hy@slidetitle{#1}%
7961   \fi
7962   \ifHy@hypertextnames
7963     \ifHy@naturalnames
7964       \hyper@@anchor{slideheading.\theslidesection}{\relax}%
7965       \Hy@writebookmark
7966         {\theslidesection}%
7967         {\Hy@slidetitle}%
7968         {slideheading.\theslidesection}%
7969         {1}%
7970         {toc}%
7971     \else
7972       \hyper@@anchor{slideheading.\theHslidesection}{\relax}%
7973       \Hy@writebookmark
7974         {\theslidesection}%
7975         {\Hy@slidetitle}%
7976         {slideheading.\theHslidesection}%
7977         {1}%
7978         {toc}%
7979     \fi
7980   \else
7981     \Hy@GlobalStepCount\Hy@linkcounter
7982     \hyper@@anchor{slideheading.\the\Hy@linkcounter}{\relax}%
7983     \Hy@writebookmark
7984       {\theslidesection}%
7985       {\Hy@slidetitle}%
7986       {slideheading.\the\Hy@linkcounter}%

```

```

7987 {1}%
7988 {toc}%
7989 \fi
7990 }%
7991 \def\slide@subheading[#1]#2{%
7992 \H@refstepcounter{slidesubsection}%
7993 \addtocontents{los}{%
7994 \protect\l@subslide{\the\c@slidesubsection}{\ignorespaces#1}%
7995 {\@SCTR}{slideheading.\theslidesubsection}%
7996 }%
7997 \def\Hy@tempa{#2}%
7998 \ifx\Hy@tempa\@empty
7999 \else
8000 {%
8001 \edef\@currentlabel{%
8002 \csname p@slidesubsection\endcsname\theslidesubsection
8003 }%
8004 \makeslidesubheading{#2}%
8005 }%
8006 \fi
8007 \gdef\theslidesubheading{#1}%
8008 \ifHy@bookmarksnumbered
8009 \def\Hy@slidetitle{\theslidesubsection\space #1}%
8010 \else
8011 \def\Hy@slidetitle{#1}%
8012 \fi
8013 \ifHy@hypertextnames
8014 \ifHy@naturalnames
8015 \hyper@@anchor{slideheading.\theslidesubsection}{\relax}%
8016 \Hy@writebookmark
8017 {\theslidesubsection}%
8018 {\Hy@slidetitle}%
8019 {slideheading.\theslidesubsection}%
8020 {2}%
8021 {toc}%
8022 \else
8023 \hyper@@anchor{slideheading.\theHslidesubsection}{\relax}%
8024 \Hy@writebookmark
8025 {\theslidesubsection}%
8026 {\Hy@slidetitle}%
8027 {slideheading.\theHslidesubsection}%
8028 {2}%
8029 {toc}%
8030 \fi
8031 \else
8032 \Hy@GlobalStepCount\Hy@linkcounter
8033 \hyper@@anchor{slideheading.\the\Hy@linkcounter}{\relax}%
8034 \Hy@writebookmark
8035 {\theslidesubsection}%
8036 {\Hy@slidetitle}%
8037 {slideheading.\the\Hy@linkcounter}%
8038 {1}%
8039 {toc}%
8040 \fi
8041 }%
8042 \providecommand*{\listslidenam}{List of Slides}%
8043 \def\listofslides{%

```

```

8044 \section*{%
8045 \listslidename
8046 \@mkboth{%
8047 \expandafter\MakeUppercase\listslidename
8048 }{%
8049 \expandafter\MakeUppercase\listslidename
8050 }%
8051 }%
8052 \def\l@slide##1##2##3##4{%
8053 \slide@undottedcline{%
8054 \slidenumberline{##3}{\hyperlink{##4}{##2}}}%
8055 }{%
8056 }%
8057 \let\l@subslide\l@slide
8058 \@startlos
8059 }%
8060 \def\slide@contents{%
8061 \def\l@slide##1##2##3##4{%
8062 \slide@ccline{\slidenumberline{##3}{\hyperlink{##4}{##2}}}{##3}%
8063 }%
8064 \let\l@subslide\@gobblefour
8065 \@startlos
8066 }%
8067 \def\Slide@contents{%
8068 \def\l@slide##1##2##3##4{%
8069 \ifcase\lslide@flag
8070 \message{##1 ** \the\c@slidesection}%
8071 \ifnum##1>\c@slidesection
8072 \def\lslide@flag{1}%
8073 {%
8074 \large
8075 \slide@ccline{%
8076 \slidenumberline{$\rightarrow\bullet$}%
8077 {\hyperlink{##4}{##2}}}%
8078 }{##3}%
8079 }%
8080 \else
8081 {%
8082 \large
8083 \slide@ccline{%
8084 \slidenumberline{$\surd\;\bullet$}%
8085 {\hyperlink{##4}{##2}}}%
8086 }{##3}%
8087 }%
8088 \fi
8089 \or
8090 \def\lslide@flag{2}%
8091 {%
8092 \large
8093 \slide@ccline{%
8094 \slidenumberline{$\bullet$}%
8095 {\hyperlink{##4}{##2}}}%
8096 }{##3}%
8097 }%
8098 \or
8099 {%
8100 \large

```

```

8101      \slide@cline{%
8102      \slidenumberline{$\bullet$}%
8103      {\hyperlink{##4}{##2}}}%
8104      }{##3}%
8105      }%
8106      \fi
8107      }%
8108      \def\l@subslide##1##2##3##4{%
8109      \ifnum\lslide@flag=1 %
8110      \@undottedtocline{2}{3.8em}{3.2em}{\hyperlink{##4}{##2}}}%
8111      \fi
8112      }%
8113      \def\lslide@flag{0}%
8114      \@startlos
8115      }%
8116      }{}

```

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.)

```

8117 \ifHy@texht
8118   \expandafter\endinput
8119 \fi
8120 \let\real@setref\@setref
8121 \def\@setref#1#2#3{% csname, extract group, refname
8122   \ifx#1\relax
8123     \protect\G@refundefinedtrue
8124     \nfss@text{\reset@font\bfseries ??}%
8125     \@latex@warning{%
8126       Reference ‘#3’ on page \thepage \space undefined%
8127     }%
8128   \else
8129     \expandafter\Hy@setref@link#1\@empty\@empty\@nil{#2}%
8130   \fi
8131 }

```

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

```

8132 \def\Hy@setref@link#1#2#3#4#5#6\@nil#7{%
8133   \begingroup
8134   \toks0={\hyper@@link{#5}{#4}}%
8135   \toks1=\expandafter{#7{#1}{#2}{#3}{#4}{#5}}%
8136   \edef\x{\endgroup
8137     \the\toks0 {\the\toks1 }%
8138   }%
8139   \x
8140 }
8141 \def\@pagesetref#1#2#3{% csname, extract macro, ref
8142   \ifx#1\relax
8143     \protect\G@refundefinedtrue
8144     \nfss@text{\reset@font\bfseries ??}%
8145     \@latex@warning{%
8146       Reference ‘#3’ on page \thepage \space undefined%
8147     }%
8148   \else
8149     \protect\hyper@@link
8150     {\expandafter\@fifthoffive#1}%
8151     {page.\expandafter\@secondoffive#1}%

```



```

8152     {\expandafter\@secondoffive#1}%
8153   \fi
8154 }

8155 \</package>
8156 \<*check>
8157 \checklatex
8158 \checkcommand\def\@setref#1#2#3{%
8159   \ifx#1\relax
8160     \protect\G@refundefinedtrue
8161     \nfss@text{\reset@font\bfseries ??}%
8162     \@latex@warning{%
8163       Reference '#3' on page \thepage\space undefined%
8164     }%
8165   \else
8166     \expandafter#2#1\null
8167   \fi
8168 }
8169 \</check>
8170 \<*package>

```

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

```

8171 \def\HyRef@StarSetRef#1{%
8172   \begingroup
8173   \Hy@safe@activetrue
8174   \edef\x{#1}%
8175   \@onelevel@sanitize\x
8176   \edef\x{\endgroup
8177     \noexpand\HyRef@@StarSetRef
8178     \expandafter\noexpand\csname r@\x\endcsname{\x}%
8179   }%
8180   \x
8181 }

8182 \def\HyRef@@StarSetRef#1#2#3{%
8183   \ifx#1\@undefined
8184     \let#1\relax
8185   \fi
8186   \real@setref#1#3{#2}%
8187 }

8188 \def\@refstar#1{%
8189   \HyRef@StarSetRef{#1}\@firstoffive
8190 }

8191 \def\@pagerefstar#1{%
8192   \HyRef@StarSetRef{#1}\@secondoffive
8193 }

8194 \def\@namerefstar#1{%
8195   \HyRef@StarSetRef{#1}\@thirdoffive
8196 }

8197 \Hy@AtBeginDocument{%
8198   \@ifpackageloaded{varioref}{%
8199     \def\@Refstar#1{%
8200       \HyRef@StarSetRef{#1}\HyRef@MakeUppercaseFirstOfFive
8201     }%
8202     \def\HyRef@MakeUppercaseFirstOfFive#1#2#3#4#5{%
8203       \MakeUppercase#1%
8204     }%
8205     \DeclareRobustCommand*\Ref}{%

```

```

8206 \c@ifstar\c@Refstar\HyRef@Ref
8207 }%
8208 \def\HyRef@Ref#1{%
8209 \hyperref[#1]{\Ref*{#1}}%
8210 }%
8211 \def\vr@f#1{%
8212 \leavevmode\unskip\vref@space
8213 \hyperref[#1]{%
8214 \Ref*{#1}%
8215 \let\vref@space\nobreakspace
8216 \@vpageref\unskip}{#1}%
8217 }%
8218 }%
8219 \def\vr@f#1{%
8220 \leavevmode\unskip\vref@space
8221 \begingroup
8222 \let\T@pageref\@pagerefstar
8223 \hyperref[#1]{%
8224 \ref*{#1}%
8225 \vpageref\unskip}{#1}%
8226 }%
8227 \endgroup
8228 }%
8229 }{}%
8230 }
8231 \DeclareRobustCommand*\autopageref{%
8232 \c@ifstar{%
8233 \HyRef@autopagerefname\pageref*%
8234 }\HyRef@autopageref
8235 }
8236 \def\HyRef@autopageref#1{%
8237 \hyperref[#1]{\HyRef@autopagerefname\pageref*{#1}}%
8238 }
8239 \def\HyRef@autopagerefname{%
8240 \ltx@ifundefined{pageautorefname}{%
8241 \ltx@ifundefined{pagename}{%
8242 \Hy@Warning{No autoref name for 'page'}%
8243 }{%
8244 \pagename\nobreakspace
8245 }%
8246 }{}%
8247 \pageautorefname\nobreakspace
8248 }%
8249 }
8250 \DeclareRobustCommand*\autoref{%
8251 \c@ifstar{\HyRef@autoref@gobbletwo}{\HyRef@autoref\hyper@@link}%
8252 }
8253 \def\HyRef@autoref#1#2{%
8254 \begingroup
8255 \Hy@safe@activetrue
8256 \expandafter\HyRef@autosetref\c@name r@#2\endcsname{#2}{#1}%
8257 \endgroup
8258 }
8259 \def\HyRef@autosetref#1#2#3{% link command, csname, refname
8260 \HyRef@ShowKeysRef{#2}%
8261 \ifcase 0\ifx#1\relax 1\fi\ifx#1\Hy@varioref@undefined 1\fi\relax
8262 \edef\HyRef@thisref{%

```

```

8263 \expandafter\@fourthoffive#1\@empty\@empty\@empty
8264 }%
8265 \expandafter\HyRef@testreftype\HyRef@thisref.\.%
8266 \Hy@safe@activesfalse
8267 #3{%
8268 \expandafter\@fifthoffive#1\@empty\@empty\@empty
8269 }{%
8270 \expandafter\@fourthoffive#1\@empty\@empty\@empty
8271 }{%
8272 \HyRef@currentHtag
8273 \expandafter\@firstoffive#1\@empty\@empty\@empty
8274 \null
8275 }%
8276 \else
8277 \protect\G@refundefinedtrue
8278 \nfss@text{\reset@font\bfseries ??}%
8279 \@latex@warning{%
8280 Reference '#2' on page \thepage\space undefined%
8281 }%
8282 \fi
8283 }
8284 \def\HyRef@testreftype#1.#2\.{%
8285 \ltx@ifundefined{#1autorefname}{%
8286 \ltx@ifundefined{#1name}{%
8287 \HyRef@StripStar#1\*\@nil{#1}%
8288 \ltx@ifundefined{\HyRef@name autorefname}{%
8289 \ltx@ifundefined{\HyRef@name name}{%
8290 \def\HyRef@currentHtag{%
8291 \Hy@Warning{No autoref name for '#1'}%
8292 }{%
8293 \edef\HyRef@currentHtag{%
8294 \expandafter\noexpand\csname\HyRef@name name\endcsname
8295 \noexpand~%
8296 }%
8297 }%
8298 }{%
8299 \edef\HyRef@currentHtag{%
8300 \expandafter\noexpand
8301 \csname\HyRef@name autorefname\endcsname
8302 \noexpand~%
8303 }%
8304 }%
8305 }{%
8306 \edef\HyRef@currentHtag{%
8307 \expandafter\noexpand\csname#1name\endcsname
8308 \noexpand~%
8309 }%
8310 }%
8311 }{%
8312 \edef\HyRef@currentHtag{%
8313 \expandafter\noexpand\csname#1autorefname\endcsname
8314 \noexpand~%
8315 }%
8316 }%
8317 }
8318 \def\HyRef@StripStar#1*\@nil#3{%
8319 \def\HyRef@name{#2}%

```

```

8320 \ifx\HyRef@name\HyRef@CaseStar
8321 \def\HyRef@name{#1}%
8322 \else
8323 \def\HyRef@name{#3}%
8324 \fi
8325 }
8326 \def\HyRef@CaseStar{*\\}
8327 \def\HyRef@currentHtag{}

```

Support for package showkeys.

\HyRef@ShowKeysRef

```

8328 \let\HyRef@ShowKeysRef\@gobble
8329 \def\HyRef@ShowKeysInit{%
8330 \begingroup\expandafter\expandafter\expandafter\endgroup
8331 \expandafter\ifx\csname SK@@label\endcsname\relax
8332 \else
8333 \ifx\SK@ref\@empty
8334 \else
8335 \def\HyRef@ShowKeysRef{%
8336 \SK@\SK@\@ref
8337 }%
8338 \fi
8339 \fi
8340 }
8341 \@ifpackageloaded{showkeys}{%
8342 \HyRef@ShowKeysInit
8343 }{%
8344 \Hy@AtBeginDocument{%
8345 \@ifpackageloaded{showkeys}{%
8346 \HyRef@ShowKeysInit
8347 }{}%
8348 }%
8349 }

```

Defaults for the names that \autoref uses.

```

8350 \providecommand*\AMSautorefname{\equationautorefname}
8351 \providecommand*\Hfootnoteautorefname{\footnoteautorefname}
8352 \providecommand*\Itemautorefname{\itemautorefname}
8353 \providecommand*\itemautorefname{item}
8354 \providecommand*\equationautorefname{Equation}
8355 \providecommand*\footnoteautorefname{footnote}
8356 \providecommand*\itemautorefname{item}
8357 \providecommand*\figureautorefname{Figure}
8358 \providecommand*\tableautorefname{Table}
8359 \providecommand*\partautorefname{Part}
8360 \providecommand*\appendixautorefname{Appendix}
8361 \providecommand*\chapterautorefname{chapter}
8362 \providecommand*\sectionautorefname{section}
8363 \providecommand*\subsectionautorefname{subsection}
8364 \providecommand*\subsubsectionautorefname{subsubsection}
8365 \providecommand*\paragraphautorefname{paragraph}
8366 \providecommand*\subparagraphautorefname{subparagraph}
8367 \providecommand*\FancyVerbLineautorefname{line}
8368 \providecommand*\theoremautorefname{Theorem}
8369 \providecommand*\pageautorefname{page}
8370 \</package>

```

## 46 Configuration files

### 46.1 PS/PDF strings

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

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

```
8371 <*pdfTeX | dvipdfm | xetex | vtex | pdfmarkbase | dviwindo>
8372 \begingroup\expandafter\expandafter\expandafter\endgroup
8373 \expandafter\ifx\csname pdf@escapestring\endcsname\relax
8374 \begingroup
8375 \catcode'\|=0 %
8376 \@makeother\|%
8377 |@firstofone{ |endgroup
8378 |def|Hy@pstringdef#1#2{%
8379 |begingroup
8380 |edef~{|string~}%
8381 |xdef|Hy@gtemp{#2}%
8382 |endgroup
8383 |let#1|Hy@gtemp
8384 |@onelevel@sanitize#1%
8385 |edef#1{|expandafter|Hy@ExchangeBackslash#1\|@nil}%
8386 |edef#1{|expandafter|Hy@ExchangeLeftParenthesis#1(|@nil}%
8387 |edef#1{|expandafter|Hy@ExchangeRightParenthesis#1)|@nil}%
8388 }%
8389 |def|Hy@ExchangeBackslash#1\#2|@nil{%
8390 #1%
8391 |ifx\|#2\|%%
8392 |else
8393 \|%
8394 |Hy@ReturnAfterFi{%
8395 |Hy@ExchangeBackslash#2|@nil
8396 }%
8397 |fi
8398 }%
8399 }%
8400 \def\Hy@ExchangeLeftParenthesis#1(#2\@nil{%
8401 #1%
8402 \ifx\|#2\|%%
8403 \else
8404 \@backslashchar(%
8405 \Hy@ReturnAfterFi{%
8406 \Hy@ExchangeLeftParenthesis#2\@nil
8407 }%
8408 \fi
8409 }%
8410 \def\Hy@ExchangeRightParenthesis#1)#2\@nil{%
8411 #1%
8412 \ifx\|#2\|%%
8413 \else
8414 \@backslashchar)%
8415 \Hy@ReturnAfterFi{%
8416 \Hy@ExchangeRightParenthesis#2\@nil
```

```

8417 }%
8418 \fi
8419 }%
8420 \else
8421 \def\Hy@pstringdef#1#2{%
8422 \begingroup
8423 \edef~{\string~}%
8424 \xdef\Hy@gtemp{\pdf@escapestring{#2}}%
8425 \endgroup
8426 \let#1\Hy@gtemp
8427 }%
8428 \fi
8429 </pdfTeX | dvipdfm | xetex | vtex | pdfmarkbase | dviwindo>

```

## 46.2 pdfTeX

```

8430 <*pdfTeX>
8431 \providecommand*\XR@ext}{pdf}
8432 \Hy@setbreaklinks{true}
8433 \def\HyPat@ObjRef{%
8434 [0-9]*[1-9][0-9]* 0 R%
8435 }

```

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

Set PDF version if requested by option pdfversion.

- pdfT<sub>E</sub>X 1.10a, 2003-01-16: \pdfoptionpdfminorversion
- pdfT<sub>E</sub>X 1.30, 2005-08-081: \pdfminorversion

```

8436 \let\Hy@pdfminorversion\relax
8437 \begingroup\expandafter\expandafter\expandafter\endgroup
8438 \expandafter\ifx\csname pdfminorversion\endcsname\relax
8439 \begingroup\expandafter\expandafter\expandafter\endgroup
8440 \expandafter\ifx\csname pdfoptionpdfminorversion\endcsname\relax
8441 \else
8442 \def\Hy@pdfminorversion{\pdfoptionpdfminorversion}%
8443 \fi
8444 \else
8445 \def\Hy@pdfminorversion{\pdfminorversion}%
8446 \fi
8447 \@ifundefined{Hy@pdfminorversion}{%
8448 \PackageInfo{hyperref}{%
8449 PDF version is not set, because pdfTeX is too old (<1.10a)%
8450 }%
8451 }{%
8452 \ifHy@ocgcolorlinks
8453 \ifnum\Hy@pdfminorversion<5 %
8454 \kvsetkeys{Hyp}{pdfversion=1.5}%
8455 \fi
8456 \fi
8457 \ifHy@setpdfversion
8458 \ifnum\Hy@pdfminorversion=\Hy@pdfversion\relax
8459 \else
8460 \Hy@pdfminorversion=\Hy@pdfversion\relax
8461 \fi
8462 \PackageInfo{hyperref}{%

```

```

8463 \expandafter\string\Hy@pdfminorversion
8464 :=\number\Hy@pdfversion\space
8465 }%
8466 \fi
8467 \edef\Hy@pdfversion{\number\Hy@pdfminorversion}%
8468 }
8469 \Hy@DisableOption{pdfversion}%

8470 \ifHy@ocgcolorlinks
8471 \pdf@ifdraftmode{}\{%
8472 \immediate\pdfobj{%
8473 <<%
8474 /Type/OCG%
8475 /Name(View)%
8476 /Usage<<%
8477 /Print<<%
8478 /PrintState/OFF%
8479 >>%
8480 /View<<%
8481 /ViewState/ON%
8482 >>%
8483 >>%
8484 >>%
8485 }%
8486 \edef\OBJ@OCG@view{\the\pdflastobj\space 0 R}%
8487 \immediate\pdfobj{%
8488 <<%
8489 /Type/OCG%
8490 /Name(Print)%
8491 /Usage<<%
8492 /Print<<%
8493 /PrintState/ON%
8494 >>%
8495 /View<<%
8496 /ViewState/OFF%
8497 >>%
8498 >>%
8499 >>%
8500 }%
8501 \edef\OBJ@OCG@print{\the\pdflastobj\space 0 R}%
8502 \immediate\pdfobj{%
8503 [%
8504 \OBJ@OCG@view\space\OBJ@OCG@print
8505 ]%
8506 }%
8507 \edef\OBJ@OCGs{\the\pdflastobj\space 0 R}%
8508 \pdfcatalog{%
8509 /OCProperties<<%
8510 /OCGs \OBJ@OCGs
8511 /D<<%
8512 /OFF[\OBJ@OCG@print]%
8513 /AS[%
8514 <<%
8515 /Event/View%
8516 /OCGs \OBJ@OCGs
8517 /Category[/View]%
8518 >>%
8519 <<%

```

```

8520         /Event/Print%
8521         /OCGs \OBJ@OCGs
8522         /Category[/Print]%
8523     >>%
8524     <<%
8525         /Event/Export%
8526         /OCGs \OBJ@OCGs
8527         /Category[/Print]%
8528     >>%
8529     ]%
8530     >>%
8531     >>%
8532     }%
8533     \beginngroup
8534     \edef\x{\endgroup
8535     \pdfpageresources{%
8536         /Properties<<%
8537         /OCView \OBJ@OCG@view
8538         /OCPrint \OBJ@OCG@print
8539     >>%
8540     }%
8541     }%
8542     \x
8543     }%
8544     \Hy@AtBeginDocument{%
8545     \def\Hy@colorlink#1{%
8546     \beginngroup
8547     \ifHy@ocgcolorlinks
8548     \def\Hy@ocgcolor{#1}%
8549     \setbox0=\hbox\bgroup\color@beginngroup
8550     \else
8551     \HyColor@UseColor#1%
8552     \fi
8553     }%
8554     \def\Hy@endcolorlink{%
8555     \ifHy@ocgcolorlinks
8556     \color@endgroup\egroup
8557     \mbox{%
8558     \pdfliteral page{/OC/OCPrint BDC}%
8559     \rlap{\copy0}%
8560     \pdfliteral page{EMC/OC/OCView BDC}%
8561     \beginngroup
8562     \expandafter\HyColor@UseColor\Hy@ocgcolor
8563     \box0 %
8564     \endgroup
8565     \pdfliteral page{EMC}%
8566     }%
8567     \fi
8568     \endgroup
8569     }%
8570     }%
8571     \else
8572     \Hy@DisableOption{ocgcolorlinks}%
8573     \fi

```

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

```

8574 \def\setpdfinkmargin#1{\pdfinkmargin#1}
8575 \ifx\pdfstartlink\@undefined% less than version 14

```



```

8576 \let\pdfstartlink\pdfannotlink
8577 \let\pdfinkmargin\@tempdima
8578 \let\pdfxform\pdfform
8579 \let\pdflastxform\pdflastform
8580 \let\pdfrefxform\pdfrefform
8581 \else
8582 \pdfinkmargin1pt %
8583 \fi

```

First set up the default linking

```
8584 \providecommand*\@pdfview{XYZ}
```

First define the anchors:

```

8585 \Hy@WrapperDef\new@pdfink#1{%
8586 \ifhmode
8587 \@savs\spacefactor
8588 \fi
8589 \Hy@SaveLastskip
8590 \Hy@VerboseAnchor{#1}%
8591 \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
8592 \Hy@DestName\Hy@pstringDest\@pdfview
8593 \Hy@RestoreLastskip
8594 \ifhmode
8595 \spacefactor\@savs
8596 \fi
8597 }
8598 \let\pdf@endanchor\@empty

```

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

```

8599 \def\Hy@DestName#1#2{%
8600 \pdfdest name{#1}#2\relax
8601 }

```

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.

```

8602 \providecommand*\@pdfborder{0 0 1}
8603 \providecommand*\@pdfborderstyle{}
8604 \def\Hy@undefinedname{UNDEFINED}
8605 \def\find@pdfink#1#2{%
8606 \leavevmode
8607 \protected@edef\Hy@testname{#2}%
8608 \ifx\Hy@testname\@empty
8609 \Hy@Warning{%
8610 Empty destination name,\MessageBreak
8611 using '\Hy@undefinedname'%
8612 }%
8613 \let\Hy@testname\Hy@undefinedname
8614 \else
8615 \Hy@pstringdef\Hy@testname{%
8616 \expandafter\HyperDestNameFilter\expandafter{\Hy@testname}%
8617 }%
8618 \fi
8619 \Hy@StartlinkName{%
8620 \ifHy@pdfa /F 4\fi
8621 \Hy@setpdfborder

```

```

8622 \ifx\@pdfhighlight\@empty
8623 \else
8624 /H\@pdfhighlight
8625 \fi
8626 \ifx\CurrentBorderColor\relax
8627 \else
8628 /C[\CurrentBorderColor]%
8629 \fi
8630 }\Hy@testname
8631 \expandafter\Hy@colorlink\csname @#1color\endcsname
8632 }
8633 \def\Hy@StartlinkName#1#2{%
8634 \pdfstartlink attr{#1}goto name{#2}\relax
8635 }
8636 \def\close@pdflink{%
8637 \Hy@endcolorlink
8638 \Hy@VerboseLinkStop
8639 \pdfendlink
8640 }
8641 \def\hyper@anchor#1{%
8642 \new@pdflink{#1}\anchor@spot\pdf@endanchor
8643 }
8644 \def\hyper@anchorstart#1{%
8645 \new@pdflink{#1}%
8646 \Hy@activeanchortrue
8647 }
8648 \def\hyper@anchorend{%
8649 \pdf@endanchor
8650 \Hy@activeanchorfalse
8651 }
8652 \def\hyper@linkstart#1#2{%
8653 \Hy@VerboseLinkStart{#1}{#2}%
8654 \ltx@ifundefined{@#1bordercolor}{%
8655 \let\CurrentBorderColor\relax
8656 }{%
8657 \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
8658 }%
8659 \find@pdflink{#1}{#2}%
8660 }
8661 \def\hyper@linkend{\close@pdflink}
8662 \def\hyper@link#1#2#3{%
8663 \Hy@VerboseLinkStart{#1}{#2}%
8664 \ltx@ifundefined{@#1bordercolor}{%
8665 \let\CurrentBorderColor\relax
8666 }{%
8667 \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
8668 }%
8669 \find@pdflink{#1}{#2}#3%
8670 \close@pdflink
8671 }
8672 \let\CurrentBorderColor\@linkbordercolor
8673 \def\hyper@linkurl#1#2{%
8674 \begingroup
8675 \Hy@pstringdef\Hy@pstringURI{#2}%
8676 \hyper@chars
8677 \leavevmode
8678 \pdfstartlink

```

```

8679 attr{%
8680   \Hy@setpdfborder
8681   \ifx\@pdfhighlight\@empty
8682   \else
8683     /H\@pdfhighlight
8684   \fi
8685   \ifx\@urlbordercolor\relax
8686   \else
8687     /C[\@urlbordercolor]%
8688   \fi
8689 }%
8690 user{%
8691   /Subtype/Link%
8692   \ifHy@pdfa /F 4\fi
8693   /A<<%
8694     /Type/Action%
8695     /S/URI%
8696     /URI(\Hy@pstringURI)%
8697     \ifHy@href@ismap
8698       /IsMap true%
8699     \fi
8700     \Hy@href@nextactionraw
8701   >>%
8702 }%
8703 \relax
8704 \Hy@colorlink\@urlcolor#1%
8705 \close@pdfink
8706 \endgroup
8707 }
8708 \def\hyper@linkfile#1#2#3{% anchor text, filename, linkname
8709 \begingroup
8710   \def\Hy@pstringF{#2}%
8711   \Hy@CleanupFile\Hy@pstringF
8712   \Hy@pstringdef\Hy@pstringF\Hy@pstringF
8713   \Hy@pstringdef\Hy@pstringD{#3}%
8714   \Hy@MakeRemoteAction
8715   \leavevmode
8716   \pdfstartlink
8717   attr{%
8718     \Hy@setpdfborder
8719     \ifx\@pdfhighlight\@empty
8720     \else
8721       /H\@pdfhighlight
8722     \fi
8723     \ifx\@filebordercolor\relax
8724     \else
8725       /C[\@filebordercolor]%
8726     \fi
8727   }%
8728   user {%
8729     /Subtype/Link%
8730     \ifHy@pdfa /F 4\fi
8731     /A<<%
8732       /F(\Hy@pstringF)%
8733       /S/GoToR%
8734     \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}
```

```
8735      \ifx\#3\%  
8736      /D[\Hy@href@page\@pdfremotestartview]%  
8737      \else  
8738      /D(\Hy@pstringD)%  
8739      \fi  
8740      \Hy@href@nextactionraw  
8741      >>%  
8742      }%  
8743      \relax  
8744      \Hy@colorlink\@filecolor#1%  
8745      \close@pdflink  
8746      \endgroup  
8747 }  
8748 \def\@hyper@launch run:#1\#2#3{% filename, anchor text linkname  
8749 \begingroup  
8750 \Hy@pstringdef\Hy@pstringF{#1}%  
8751 \Hy@pstringdef\Hy@pstringP{#3}%  
8752 \leavevmode  
8753 \pdfstartlink  
8754 attr{%  
8755   \Hy@setpdfborder  
8756   \ifx\@pdfhighlight\@empty  
8757   \else  
8758   /H\@pdfhighlight  
8759   \fi  
8760   \ifx\@runbordercolor\relax  
8761   \else  
8762   /C[\@runbordercolor]%  
8763   \fi  
8764 }%  
8765 user {%  
8766   /Subtype/Link%  
8767   \ifHy@pdfa /F 4\fi  
8768   /A<<%  
8769   /F(\Hy@pstringF)%  
8770   /S/Launch%  
8771   \Hy@SetNewWindow  
8772   \ifx\#3\%  
8773   \else  
8774   /Win<</P(\Hy@pstringP)/F(\Hy@pstringF)>>%  
8775   \fi  
8776   \Hy@href@nextactionraw  
8777   >>%  
8778   }%  
8779   \relax  
8780   \Hy@colorlink\@runcolor#2%
```

```

8781 \close@pdflink
8782 \endgroup
8783 }

```

\@pdfproducer

```

8784 \ifx\@pdfproducer\relax
8785 \begingroup\expandafter\expandafter\expandafter\endgroup
8786 \expandafter\ifx\csname luatexversion\endcsname\relax
8787 \def\@pdfproducer{pdfTeX}%
8788 \ifx\eTeXversion\@undefined
8789 \else
8790 \ifx\eTeXversion\relax
8791 \else
8792 \ifnum\eTeXversion>0 %
8793 \def\@pdfproducer{pdfTeX}%
8794 \fi
8795 \fi
8796 \fi
8797 \ifx\pdfTeXversion\@undefined
8798 \else
8799 \ifnum\pdfTeXversion<100 %
8800 \edef\@pdfproducer{%
8801 \@pdfproducer
8802 \the\pdfTeXversion.\pdfTeXrevision
8803 }%
8804 \else
8805 \ifnum\pdfTeXversion<130 %
8806 \edef\@pdfproducer{%
8807 \@pdfproducer-%
8808 \expandafter\@car\the\pdfTeXversion\@empty\@nil.%
8809 \expandafter\@cdr\the\pdfTeXversion\@empty\@nil
8810 \pdfTeXrevision
8811 }%
8812 \else
8813 \ifnum\pdfTeXversion<140 %
8814 \else
8815 \def\@pdfproducer{pdfTeX}%
8816 \fi
8817 \edef\@pdfproducer{%
8818 \@pdfproducer-%
8819 \expandafter\@car\the\pdfTeXversion\@empty\@nil.%
8820 \expandafter\@cdr\the\pdfTeXversion\@empty\@nil.%
8821 \pdfTeXrevision
8822 }%
8823 \fi
8824 \fi
8825 \fi
8826 \else
8827 \begingroup
8828 \count@=\luatexversion
8829 \divide\count@ by 100 %
8830 \edef\x{\the\count@}%
8831 \count@=-\x\relax
8832 \multiply\count@ by 100 %
8833 \advance\count@ by \luatexversion
8834 \edef\x{\endgroup
8835 \def\noexpand\@pdfproducer{%

```

```

8836      LuaTeX-\x.\the\count@.\luatexrevision
8837      }%
8838      }%
8839      \x
8840      \fi
8841      \fi

```

\PDF@SetupDox

```

8842 \def\PDF@SetupDoc{%
8843   \ifx\@pdfpagescrop\@empty
8844   \else
8845     \edef\process@me{%
8846       \pdfpagesattr={%
8847         /CropBox[\@pdfpagescrop]%
8848         \expandafter\ifx\expandafter\\the\pdfpagesattr\\%
8849         \else
8850           ^^J\the\pdfpagesattr
8851         \fi
8852       }%
8853     }%
8854     \process@me
8855   \fi
8856   \Hy@pstringdef\Hy@pstringB{\@baseurl}%
8857   \pdfcatalog{%
8858     /PageMode/\@pdfpagemode
8859     \ifx\@baseurl\@empty
8860     \else
8861       /URI<</Base(\Hy@pstringB)>>%
8862     \fi
8863   }%
8864   \ifx\@pdfstartpage\@empty
8865   \else
8866     \ifx\@pdfstartview\@empty
8867     \else
8868       openaction goto page\@pdfstartpage{\@pdfstartview}%
8869     \fi
8870   \fi
8871   \edef\Hy@temp{%
8872     \ifHy@toolbar\else /HideToolbar true\fi
8873     \ifHy@menubar\else /HideMenubar true\fi
8874     \ifHy>windowui\else /HideWindowUI true\fi
8875     \ifHy@fitwindow /FitWindow true\fi
8876     \ifHy@centerwindow /CenterWindow true\fi
8877     \ifHy@displaydoctitle /DisplayDocTitle true\fi
8878     \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
8879     \Hy@UseNameKey{Direction}\@pdfdirection
8880     \Hy@UseNameKey{ViewArea}\@pdfviewarea
8881     \Hy@UseNameKey{ViewClip}\@pdfviewclip
8882     \Hy@UseNameKey{PrintArea}\@pdfprintarea
8883     \Hy@UseNameKey{PrintClip}\@pdfprintclip
8884     \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
8885     \Hy@UseNameKey{Duplex}\@pdfduplex
8886     \ifx\@pdfpicktraybypdfsize\@empty
8887     \else
8888       /PickTrayByPDFSize \@pdfpicktraybypdfsize
8889     \fi
8890     \ifx\@pdfprintpagerange\@empty

```

```

8891 \else
8892   /PrintPageRange[\@pdfprintpagerange]%
8893 \fi
8894 \ifx\@pdfnumcopies\@empty
8895 \else
8896   /NumCopies \@pdfnumcopies
8897 \fi
8898 }%
8899 \pdfcatalog{%
8900 \ifx\Hy@temp\@empty
8901 \else
8902   /ViewerPreferences<<\Hy@temp>>%
8903 \fi
8904 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
8905 \ifx\@pdflang\@empty
8906 \else
8907   /Lang(\@pdflang)%
8908 \fi
8909 }%
8910 }

```

#### \PDF@FinishDoc

```

8911 \def\PDF@FinishDoc{%
8912 \pdf@ifdraftmode{}%
8913 \Hy@UseMaketitleInfos
8914 \HyInfo@GenerateAddons
8915 \pdfinfo{%
8916   /Author(\@pdfauthor)%
8917   /Title(\@pdftitle)%
8918   /Subject(\@pdfsubject)%
8919   /Creator(\@pdfcreator)%
8920   \ifx\@pdfcreationdate\@empty
8921   \else
8922     /CreationDate(\@pdfcreationdate)%
8923   \fi
8924   \ifx\@pdfmoddate\@empty
8925   \else
8926     /ModDate(\@pdfmoddate)%
8927   \fi
8928   \ifx\@pdfproducer\relax
8929   \else
8930     /Producer(\@pdfproducer)%
8931   \fi
8932   /Keywords(\@pdfkeywords)%
8933   \ifx\@pdftrapped\@empty
8934   \else
8935     /Trapped/\@pdftrapped
8936   \fi
8937   \HyInfo@Addons
8938 }%
8939 }%
8940 \Hy@DisableOption{pdfauthor}%
8941 \Hy@DisableOption{pdftitle}%
8942 \Hy@DisableOption{pdfsubject}%
8943 \Hy@DisableOption{pdfcreator}%
8944 \Hy@DisableOption{pdfcreationdate}%
8945 \Hy@DisableOption{pdfmoddate}%

```

```

8946 \Hy@DisableOption{pdfproducer}%
8947 \Hy@DisableOption{pdfkeywords}%
8948 \Hy@DisableOption{pdftrapped}%
8949 \Hy@DisableOption{pdfinfo}%
8950 }

```

`\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`.

```

8951 \def\hyper@pagetransition{%
8952   \ifx\@pdfpagetransition\relax
8953   \else
8954     \expandafter\Hy@RemoveTransPageAttr
8955     \the\pdfpageattr^^J/Trans{>>\END
8956     \ifx\@pdfpagetransition\@empty
8957     \else
8958       \edef\@processme{%
8959         \global\pdfpageattr{%
8960           \the\pdfpageattr
8961             ^^J/Trans << /S /\@pdfpagetransition\space >>%
8962         }%
8963       }%
8964       \@processme
8965     \fi
8966   \fi
8967 }

```

`\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.

```

8968 \gdef\Hy@RemoveTransPageAttr#1^^J/Trans#2#3>>#4\END{%
8969   \ifx\#2\%
8970     \global\pdfpageattr{#1}%
8971   \else
8972     \Hy@RemoveTransPageAttr#1#4\END
8973   \fi
8974 }

```

`\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`.

```

8975 \def\hyper@pageduration{%
8976   \ifx\@pdfpageduration\relax
8977   \else
8978     \expandafter
8979     \Hy@RemoveDurPageAttr\the\pdfpageattr^^J/Dur{} \END
8980     \ifx\@pdfpageduration\@empty
8981     \else
8982       \edef\@processme{%
8983         \global\pdfpageattr{%
8984           \the\pdfpageattr
8985             ^^J/Dur \@pdfpageduration\space
8986         }%
8987       }%
8988       \@processme
8989     \fi

```



```
8990 \fi
8991 }
```

`\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.

```
8992 \gdef\Hy@RemoveDurPageAttr#1^^J/Dur#2#3 #4\END{%
8993 \ifx\#2\%
8994 \global\pdfpageattr{#1}%
8995 \else
8996 \Hy@RemoveDurPageAttr#1#4\END
8997 \fi
8998 }
```

`\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).

```
8999 \def\hyper@pagehidden{%
9000 \ifHy@useHidKey
9001 \expandafter
9002 \Hy@RemoveHidPageAttr\the\pdfpageattr^^J/Hid{} \END
9003 \ifHy@pdfpagehidden
9004 \edef\@processme{%
9005 \global\pdfpageattr{%
9006 \the\pdfpageattr
9007 ^^J/Hid true % SPACE
9008 }%
9009 }%
9010 \@processme
9011 \fi
9012 \fi
9013 }
```

`\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.

```
9014 \gdef\Hy@RemoveHidPageAttr#1^^J/Hid#2#3 #4\END{%
9015 \ifx\#2\%
9016 \global\pdfpageattr{#1}%
9017 \else
9018 \Hy@RemoveHidPageAttr#1#4\END
9019 \fi
9020 }

9021 \pdf@ifdraftmode{}{%
9022 \g@addto@macro\Hy@EveryPageHook{%
9023 \hyper@pagetransition
9024 \hyper@pageduration
9025 \hyper@pagehidden
9026 }%
9027 }
```

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

```
9028 \pdfTeX
```

```

9029 <*pdftex | xetex>
9030 \Hy@AtBeginDocument{%
9031   \ifHy@setpagesize
9032     \expandafter\@firstofone
9033   \else
9034     \expandafter\@gobble
9035   \fi
9036   {%
9037     \ifclassloaded{seminar}{%
9038 <*pdftex>
9039   \setlength{\pdfhorigin}{1truein}%
9040   \setlength{\pdfvorigin}{1truein}%
9041 </pdftex>
9042   \ifportrait
9043     \ifdim\paperwidth=\z@
9044     \else
9045       \setlength{\pdfpagewidth}{\strip@pt\paperwidth truept}%
9046     \fi
9047     \ifdim\paperheight=\z@
9048     \else
9049       \setlength{\pdfpageheight}{\strip@pt\paperheight truept}%
9050     \fi
9051   \else
9052     \ifdim\paperheight=\z@
9053     \else
9054       \setlength{\pdfpagewidth}{\strip@pt\paperheight truept}%
9055     \fi
9056     \ifdim\paperwidth=\z@
9057     \else
9058       \setlength{\pdfpageheight}{\strip@pt\paperwidth truept}%
9059     \fi
9060   \fi
9061 }{%
9062   \ltx@ifundefined{stockwidth}{%
9063     \ifdim\paperwidth>\z@
9064       \setlength{\pdfpagewidth}{\paperwidth}%
9065     \fi
9066     \ifdim\paperheight>\z@
9067       \setlength{\pdfpageheight}{\paperheight}%
9068     \fi
9069   }{%
9070     \ifdim\stockwidth>\z@
9071       \setlength{\pdfpagewidth}{\stockwidth}%
9072     \fi
9073     \ifdim\stockheight>\z@
9074       \setlength{\pdfpageheight}{\stockheight}%
9075     \fi
9076   }%
9077 }%
9078 }%
9079 \Hy@DisableOption{setpagesize}%
9080 }
9081 </pdftex | xetex>
9082 <*pdftex>
9083 \def\Acrobatmenu#1#2{%
9084   \Hy@Acrobatmenu{#1}{#2}{%
9085     \pdfstartlink

```

```

9086 attr{%
9087   \Hy@setpdfborder
9088   \ifx\@pdfhighlight\@empty
9089   \else
9090     /H\@pdfhighlight
9091   \fi
9092   \ifx\@menubordercolor\relax
9093   \else
9094     /C[\@menubordercolor]%
9095   \fi
9096 }%
9097 user{%
9098   /Subtype/Link%
9099   \ifHy@pdfa /F 4\fi
9100   /A<<%
9101     /S/Named%
9102     /N/#1%
9103     \Hy@href@nextactionraw
9104   >>%
9105 }%
9106 \relax
9107 \Hy@colorlink\@menucolor#2%
9108 \close@pdflink
9109 }%
9110 }

```

#### 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`.

```

9111 \def\Hy@FixNotFirstPage{%
9112   \gdef\Hy@FixNotFirstPage{%
9113     \setbox\AtBeginShipoutBox=\hbox{%
9114       \copy\AtBeginShipoutBox
9115     }%
9116   }%
9117 }
9118 \AtBeginShipout{\Hy@FixNotFirstPage}
9119 </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 T<sub>E</sub>X file — the T<sub>E</sub>X commands between the two ends of a pair form an *anchor* in the document. In the case of an *href* command, the *anchor* is to be highlighted in the *dvi* viewer, and when clicked on will cause the scene to shift to the destination specified by *href\_string*. The *anchor* associated with a name command represents a possible location to which other hypertext links may refer, either as local references (of the form href="#name\_string" with the *name\_string* identical to the one in the name command) or as part of a URL (of the form URL#name\_string). Here *href\_string* is a valid URL or local identifier, while *name\_string* could be any string at all: the only caveat is that “” characters should be escaped with a backslash (\), and if it looks like a URL name it may cause problems.

```
9120 \*hypertext
9121 \providecommand*\XR@ext\{dvi}
9122 \def\PDF@FinishDoc{}
9123 \def\PDF@SetupDoc{%
9124   \ifx\@baseurl\@empty
9125   \else
9126     \special{html:<base href="\@baseurl">}%
9127   \fi
9128 }
9129 \Hy@WrapperDef\hyper@anchor#1{%
9130   \Hy@SaveLastskip
9131   \Hy@VerboseAnchor{#1}%
9132   \begingroup
9133     \let\protect=\string
9134     \hyper@chars
9135     \special{html:<a name=%
9136       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
9137   \endgroup
9138   \Hy@Activeanchortrue
9139   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
9140   \special{html:</a>}%
9141   \Hy@Activeanchorfalse
9142   \Hy@RestoreLastskip
9143 }
9144 \Hy@WrapperDef\hyper@anchorstart#1{%
9145   \Hy@SaveLastskip
9146   \Hy@VerboseAnchor{#1}%
9147   \begingroup
9148     \hyper@chars
9149     \special{html:<a name=%
9150       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
9151   \endgroup
9152   \Hy@Activeanchortrue
9153 }
9154 \def\hyper@anchorend{%
9155   \special{html:</a>}%
9156   \Hy@Activeanchorfalse
```

```

9157 \Hy@RestoreLastskip
9158 }
9159 \def\@urlltype{url}
9160 \def\hyper@linkstart#1#2{%
9161 \Hy@VerboseLinkStart{#1}{#2}%
9162 \expandafter\Hy@colorlink\csname @#1color\endcsname
9163 \def\Hy@tempa{#1}%
9164 \ifx\Hy@tempa\@urlltype
9165 \special{html:<a href=\hyper@quote#2\hyper@quote>}%
9166 \else
9167 \begingroup
9168 \hyper@chars
9169 \special{html:<a href=%
9170 \hyper@quote\#\Hy@DestNameFilter{#2}\hyper@quote>}%
9171 \endgroup
9172 \fi
9173 }
9174 \def\hyper@linkend{%
9175 \special{html:</a>}%
9176 \Hy@endcolorlink
9177 }
9178 \def\hyper@linkfile#1#2#3{%
9179 \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\#3\\#3\\\else\#3\fi}%
9180 }
9181 \def\hyper@linkurl#1#2{%

```

If we want to raise up the final link `\special`, we need to get its height; ask me why L<sup>A</sup>T<sub>E</sub>X constructs make this totally foul up, and make us revert to basic T<sub>E</sub>X. I do not know.

```

9182 \leavevmode
9183 \ifHy@raiselinks
9184 \Hy@SaveSpaceFactor
9185 \Hy@SaveSavedSpaceFactor
9186 \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
9187 \Hy@RestoreSavedSpaceFactor
9188 \@linkdim\dp\@tempboxa
9189 \lower\@linkdim\hbox{%
9190 \hyper@chars
9191 \special{html:<a href=\hyper@quote#2\hyper@quote>}%
9192 }%
9193 \Hy@colorlink\@urlcolor
9194 \Hy@RestoreSpaceFactor
9195 #1%
9196 \Hy@SaveSpaceFactor
9197 \@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).

```

9198 \advance\@linkdim by -6.5\p@
9199 \raise\@linkdim\hbox{\special{html:</a>}}%
9200 \Hy@endcolorlink
9201 \Hy@RestoreSpaceFactor
9202 \else
9203 \begingroup
9204 \hyper@chars
9205 \special{html:<a href=\hyper@quote#2\hyper@quote>}%
9206 \Hy@colorlink\@urlcolor#1%
9207 \special{html:</a>}%

```

```

9208 \Hy@endcolorlink
9209 \endgroup
9210 \fi
9211 }

```

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

```

9212 \def\hyper@link#1#2#3{%
9213 \Hy@VerboseLinkStart{#1}{#2}%
9214 \hyper@linkurl{#3}{\#HyperDestNameFilter{#2}}%
9215 }

9216 \def\hyper@image#1#2{%
9217 \begingroup
9218 \hyper@chars
9219 \special{html:<img src=\hyper@quote#1\hyper@quote>}%
9220 \endgroup
9221 }
9222 </hypertex>
9223 <*dviwindo>

```

## 46.4 dviwindo

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

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

```

9224 \providecommand*{\XR@ext}{dvi}
9225 \providecommand*\wwwbrowser{c:\string\netscape\string\netscape}
9226 \Hy@WrapperDef\hyper@anchor#1{%
9227 \Hy@SaveLastskip
9228 \Hy@VerboseAnchor{#1}%
9229 \begingroup
9230 \let\protect=\string
9231 \special{mark: #1}%
9232 \endgroup
9233 \Hy@activeanchortrue
9234 \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
9235 \Hy@activeanchorfalse
9236 \Hy@RestoreLastskip
9237 }
9238 \Hy@WrapperDef\hyper@anchorstart#1{%
9239 \Hy@SaveLastskip
9240 \Hy@VerboseAnchor{#1}%
9241 \special{mark: #1}%
9242 \Hy@activeanchortrue
9243 }
9244 \def\hyper@anchorend{%
9245 \Hy@activeanchorfalse
9246 \Hy@RestoreLastskip
9247 }
9248 \def\hyper@linkstart#1#2{%

```

```

9249 \Hy@VerboseLinkStart{#1}{#2}%
9250 \expandafter\Hy@colorlink\csname @#1color\endcsname
9251 \special{button: %
9252 10000000 %
9253 \number\baselineskip\space
9254 #2%
9255 }%
9256 }
9257 \def\hyper@linkend{%
9258 \Hy@endcolorlink
9259 }
9260 \def\hyper@link#1#2#3{%
9261 \Hy@VerboseLinkStart{#1}{#2}%
9262 \leavevmode
9263 \ifHy@raiselinks
9264 \Hy@SaveSpaceFactor
9265 \Hy@SaveSavedSpaceFactor
9266 \sbox\@tempboxa{\Hy@RestoreSpaceFactor#3}%
9267 \Hy@RestoreSavedSpaceFactor
9268 \@linkdim\dp\@tempboxa
9269 \lower\@linkdim\hbox{%
9270 \special{button: %
9271 \number\wd\@tempboxa\space
9272 \number\ht\@tempboxa\space
9273 #2%
9274 }%
9275 \expandafter\Hy@colorlink\csname @#1color\endcsname
9276 \Hy@RestoreSpaceFactor
9277 #3%
9278 \Hy@SaveSpaceFactor
9279 \Hy@endcolorlink
9280 }%
9281 \@linkdim\ht\@tempboxa
9282 \advance\@linkdim by -6.5\p@
9283 \raise\@linkdim\hbox{}%
9284 \Hy@RestoreSpaceFactor
9285 \else
9286 \special{button: %
9287 \number\wd\@tempboxa\space
9288 \number\ht\@tempboxa\space
9289 #2%
9290 }%
9291 \expandafter\Hy@colorlink\csname @#1color\endcsname
9292 #3%
9293 \Hy@endcolorlink
9294 \fi
9295 }
9296 \def\hyper@linkurl#1#2{%
9297 \begingroup
9298 \hyper@chars
9299 \leavevmode
9300 \ifHy@raiselinks
9301 \Hy@SaveSpaceFactor
9302 \Hy@SaveSavedSpaceFactor
9303 \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
9304 \Hy@RestoreSavedSpaceFactor
9305 \@linkdim\dp\@tempboxa

```

```

9306 \lower\@linkdim\hbox{%
9307 \special{button: %
9308 \number\wd\@tempboxa\space
9309 \number\ht\@tempboxa\space
9310 launch: \wwwbrowser\space
9311 #2%
9312 }%
9313 \Hy@colorlink\@urlcolor
9314 \Hy@RestoreSpaceFactor
9315 #1%
9316 \Hy@SaveSpaceFactor
9317 \Hy@endcolorlink
9318 }%
9319 \@linkdim\ht\@tempboxa
9320 \advance\@linkdim by -6.5\p@
9321 \raise\@linkdim\hbox{}%
9322 \Hy@RestoreSpaceFactor
9323 \else
9324 \special{button: %
9325 \number\wd\@tempboxa\space
9326 \number\ht\@tempboxa\space
9327 launch: \wwwbrowser\space
9328 #2%
9329 }%
9330 \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
9331 \fi
9332 \endgroup
9333 }
9334 \def\hyper@linkfile#1#2#3{%
9335 \begingroup
9336 \hyper@chars
9337 \leavevmode
9338 \ifHy@raiselinks
9339 \Hy@SaveSpaceFactor
9340 \Hy@SaveSavedSpaceFactor
9341 \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
9342 \Hy@RestoreSavedSpaceFactor
9343 \@linkdim\dp\@tempboxa
9344 \lower\@linkdim\hbox{%
9345 \special{button: %
9346 \number\wd\@tempboxa\space
9347 \number\ht\@tempboxa\space
9348 #3,%
9349 file: #2%
9350 }%
9351 \Hy@colorlink\@filecolor
9352 \Hy@RestoreSpaceFactor
9353 #1%
9354 \Hy@SaveSpaceFactor
9355 \Hy@endcolorlink
9356 }%
9357 \@linkdim\ht\@tempboxa
9358 \advance\@linkdim by -6.5\p@
9359 \raise\@linkdim\hbox{}%
9360 \Hy@RestoreSpaceFactor
9361 \else
9362 \special{button: %

```



```

9363      \number\wd\@tempboxa\space
9364      \number\ht\@tempboxa\space
9365      #3,%
9366      file: #2%
9367      }%
9368      \Hy@colorlink\@filecolor#1\Hy@endcolorlink
9369      \fi
9370 \endgroup
9371 }
9372 \ifx\@pdfproducer\relax
9373 \def\@pdfproducer{dviwindo + Distiller}%
9374 \fi
9375 \HyInfo@AddonUnsupportedtrue
9376 \def\PDF@FinishDoc{%
9377 \Hy@UseMaketitleInfos
9378 \HyInfo@TrappedUnsupported
9379 \special{PDF: Keywords \@pdfkeywords}%
9380 \special{PDF: Title \@pdftitle}%
9381 \special{PDF: Creator \@pdfcreator}%
9382 \ifx\@pdfcreationdate\@empty
9383 \else
9384 \special{PDF: CreationDate \@pdfcreationdate}%
9385 \fi
9386 \ifx\@pdfmoddate\@empty
9387 \else
9388 \special{PDF: ModDate \@pdfmoddate}%
9389 \fi
9390 \special{PDF: Author \@pdfauthor}%
9391 \ifx\@pdfproducer\relax
9392 \else
9393 \special{PDF: Producer \@pdfproducer}%
9394 \fi
9395 \special{PDF: Subject \@pdfsubject}%
9396 \Hy@DisableOption{pdfauthor}%
9397 \Hy@DisableOption{pdftitle}%
9398 \Hy@DisableOption{pdfsubject}%
9399 \Hy@DisableOption{pdfcreator}%
9400 \Hy@DisableOption{pdfcreationdate}%
9401 \Hy@DisableOption{pdfmoddate}%
9402 \Hy@DisableOption{pdfproducer}%
9403 \Hy@DisableOption{pdfkeywords}%
9404 \Hy@DisableOption{pdftrapped}%
9405 \Hy@DisableOption{pdfinfo}%
9406 }
9407 \def\PDF@SetupDoc{%
9408 \ifx\@baseurl\@empty
9409 \else
9410 \special{PDF: Base \@baseurl}%
9411 \fi
9412 \ifx\@pdfpagescrop\@empty\else
9413 \special{PDF: BBox \@pdfpagescrop}%
9414 \fi
9415 \def\Hy@temp{}%
9416 \ifx\@pdfstartpage\@empty
9417 \else
9418 \ifx\@pdfstartview\@empty
9419 \else

```

```

9420     \edef\Hy@tempf{%
9421         ,Page=\@pdfstartpage
9422         ,View=\@pdfstartview
9423     }%
9424     \fi
9425 \fi
9426 \edef\Hy@tempf{%
9427     \noexpand\pdfmark{%
9428         pdfmark=/DOCVIEW,%
9429         PageMode=/\@pdfpagemode
9430     }\Hy@temp
9431 }%
9432 }%
9433 \Hy@temp
9434 \ifx\@pdfpagescrop\@empty
9435 \else
9436     \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
9437 \fi
9438 \edef\Hy@tempf{%
9439     \ifHy@toolbar\else /HideToolbar true\fi
9440     \ifHy@menubar\else /HideMenubar true\fi
9441     \ifHy>windowui\else /HideWindowUI true\fi
9442     \ifHy@fitwindow /FitWindow true\fi
9443     \ifHy@centerwindow /CenterWindow true\fi
9444     \ifHy@displaydoctitle /DisplayDocTitle true\fi
9445     \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
9446     \Hy@UseNameKey{Direction}\@pdfdirection
9447     \Hy@UseNameKey{ViewArea}\@pdfviewarea
9448     \Hy@UseNameKey{ViewClip}\@pdfviewclip
9449     \Hy@UseNameKey{PrintArea}\@pdfprintarea
9450     \Hy@UseNameKey{PrintClip}\@pdfprintclip
9451     \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
9452     \Hy@UseNameKey{Duplex}\@pdfduplex
9453     \ifx\@pdfpicktraybypdfsize\@empty
9454     \else
9455         /PickTrayByPDFSize \@pdfpicktraybypdfsize
9456     \fi
9457     \ifx\@pdfprintpagerange\@empty
9458     \else
9459         /PrintPageRange[\@pdfprintpagerange]%
9460     \fi
9461     \ifx\@pdfnumcopies\@empty
9462     \else
9463         /NumCopies \@pdfnumcopies
9464     \fi
9465 }%
9466 \pdfmark{pdfmark=/PUT,%
9467     Raw={%
9468         \string{Catalog}\string}<<%
9469         \ifx\Hy@temp\@empty
9470         \else
9471             /ViewerPreferences<<\Hy@temp>>%
9472         \fi
9473         \Hy@UseNameKey{PageLayout}\@pdfpagelayout
9474         \ifx\@pdflang\@empty
9475         \else
9476             /Lang(\@pdflang)%

```

```

9477     \fi
9478     >>%
9479   }%
9480 }%
9481 }
9482 \end{dviwindo}
9483 \end{dvipdfm} \xetex

```

## 46.5 dvipdfm/xetex dvi to PDF converter

Provided by Mark Wicks (mwicks@kettering.edu)

```

9484 \providecommand*\XR@ext}{pdf}
9485 \Hy@setbreaklinks{true}
9486 \def\HyPat@ObjRef{%
9487   @[\ ]+%
9488 }
9489 \newsavebox{\pdfm@box}
9490 \def\@pdfm@mark#1{\special{pdf:#1}}
9491 \Hy@WrapperDef\@pdfm@dest#1{%
9492   \Hy@SaveLastskip
9493   \Hy@VerboseAnchor{#1}%
9494   \begingroup
9495     \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
9496     \def\x{XYZ}%
9497     \ifx\x\@pdfview
9498       \def\x{XYZ @xpos @ypos null}%
9499     \else
9500       \def\x{FitH}%
9501       \ifx\x\@pdfview
9502         \def\x{FitH @ypos}%
9503       \else
9504         \def\x{FitBH}%
9505         \ifx\x\@pdfview
9506           \def\x{FitBH @ypos}%
9507         \else
9508           \def\x{FitV}%
9509           \ifx\x\@pdfview
9510             \def\x{FitV @xpos}%
9511           \else
9512             \def\x{FitBV}%
9513             \ifx\x\@pdfview
9514               \def\x{FitBV @xpos}%
9515             \else
9516               \def\x{Fit}%
9517               \ifx\x\@pdfview
9518                 \let\x\@pdfview
9519               \else
9520                 \def\x{FitB}%
9521                 \ifx\x\@pdfview
9522                   \let\x\@pdfview
9523                 \else
9524                   \def\x{FitR}%
9525                   \ifx\x\@pdfview
9526                     \Hy@Warning{'pdfview=FitR' is not supported}%
9527                     \def\x{XYZ @xpos @ypos null}%
9528                   \else
9529                     \@onelevel@sanitize\@pdfview

```

```

9530             \Hy@Warning{%
9531                 Unknown value '\@pdfview' for pdfview%
9532             }%
9533             \def\x{XYZ @xpos @ypos null}%
9534         \fi
9535     \fi
9536 \fi
9537 \fi
9538 \fi
9539 \fi
9540 \fi
9541 \fi
9542 \@pdfm@mark{dest (\Hy@pstringDest) [@thispage /\x]}%
9543 \endgroup
9544 \Hy@RestoreLastskip
9545 }
9546 \providecommand*\@pdfview{XYZ}
9547 \providecommand*\@pdfborder{0 0 1}
9548 \providecommand*\@pdfborderstyle{}
9549 \def\hyper@anchor#1{%
9550     \@pdfm@dest{#1}%
9551 }
9552 \def\hyper@anchorstart#1{%
9553     \Hy@activeanchortrue
9554     \@pdfm@dest{#1}%
9555 }
9556 \def\hyper@anchorend{%
9557     \Hy@activeanchorfalse
9558 }

9559 \newcounter{Hy@AnnotLevel}

9560 \ifHy@ocgcolorlinks
9561     \def\OBJ@OCG@view{@OCG@view}%
9562     \@pdfm@mark{%
9563         obj \OBJ@OCG@view <<%
9564             /Type/OCG%
9565             /Name(View)%
9566             /Usage<<%
9567             /Print<<%
9568             /PrintState/OFF%
9569         >>%
9570         /View<<%
9571         /ViewState/ON%
9572         >>%
9573         >>%
9574     >>%
9575 }%
9576 \@pdfm@mark{close \OBJ@OCG@view}%
9577 \def\OBJ@OCG@print{@OCG@print}%
9578 \@pdfm@mark{%
9579     obj \OBJ@OCG@print <<%
9580         /Type/OCG%
9581         /Name(Print)%
9582         /Usage<<%
9583         /Print<<%
9584         /PrintState/ON%
9585         >>%
9586         /View<<%

```

```

9587      /ViewState/OFF%
9588      >>%
9589      >>%
9590      >>%
9591  }%
9592  \@pdfm@mark{close \OBJ@OCG@print}%
9593  \def\OBJ@OCGs{\@OCGs}%
9594  \@pdfm@mark{%
9595      obj \OBJ@OCGs [%
9596          \OBJ@OCG@view\space\OBJ@OCG@print
9597      ]%
9598  }%
9599  \@pdfm@mark{close \OBJ@OCGs}%
9600  \@pdfm@mark{%
9601      put @catalog <<%
9602          /OCProperties<<%
9603          /OCGs \OBJ@OCGs
9604          /D<<%
9605          /OFF[\OBJ@OCG@print]%
9606          /AS[%
9607              <<%
9608                  /Event/View%
9609                  /OCGs \OBJ@OCGs
9610                  /Category[/View]%
9611              >>%
9612              <<%
9613                  /Event/Print%
9614                  /OCGs \OBJ@OCGs
9615                  /Category[/Print]%
9616              >>%
9617              <<%
9618                  /Event/Export%
9619                  /OCGs \OBJ@OCGs
9620                  /Category[/Print]%
9621              >>%
9622              ]%
9623          >>%
9624          >>%
9625          >>%
9626      }%
9627  \AtBeginShipout{%
9628      \setbox\AtBeginShipoutBox=\hbox{%
9629          \copy\AtBeginShipoutBox
9630          \@pdfm@mark{%
9631              put @resources <<%
9632                  /Properties<<%
9633                  /OCView \OBJ@OCG@view
9634                  /OCPrint \OBJ@OCG@print
9635              >>%
9636              >>%
9637          }%
9638      }%
9639  }%
9640  \Hy@AtBeginDocument{%
9641      \def\Hy@colorlink#1{%
9642          \begingroup
9643              \ifHy@ocgcolorlinks

```

```

9644     \def\Hy@ocgcolor{#1}%
9645     \setbox0=\hbox\bgroup\color@begingroup
9646     \else
9647     \HyColor@UseColor#1%
9648     \fi
9649 }%
9650 \def\Hy@endcolorlink{%
9651 \ifHy@ocgcolorlinks
9652 \color@endgroup\egroup
9653 \mbox{%
9654 \@pdfm@mark{content /OC/OCPrint BDC}%
9655 \rlap{\copy0}%
9656 \@pdfm@mark{content EMC/OC/OCView BDC}%
9657 \begingroup
9658 \expandafter\HyColor@UseColor\Hy@ocgcolor
9659 \box0 %
9660 \endgroup
9661 \@pdfm@mark{content EMC}%
9662 }%
9663 \fi
9664 \endgroup
9665 }%
9666 }%
9667 \else
9668 \Hy@DisableOption{ocgcolorlinks}%
9669 \fi

9670 \def\Hy@BeginAnnot#1{%
9671 \stepcounter{Hy@AnnotLevel}%
9672 \ifnum\value{Hy@AnnotLevel}=\@ne
9673 #1%
9674 \fi
9675 }
9676 \def\Hy@endAnnot{%
9677 \ifnum\value{Hy@AnnotLevel}=\@ne
9678 \Hy@endcolorlink
9679 \@pdfm@mark{eann}%
9680 \fi
9681 \addtocounter{Hy@AnnotLevel}\m@ne
9682 }

9683 \def\Hy@undefinedname{UNDEFINED}
9684 \def\hyper@linkstart#1#2{%
9685 \Hy@VerboseLinkStart{#1}{#2}%
9686 \Hy@BeginAnnot{%
9687 \protected@edef\Hy@testname{#2}%
9688 \ifx\Hy@testname\@empty
9689 \Hy@Warning{%
9690 Empty destination name,\MessageBreak
9691 using '\Hy@undefinedname'%
9692 }%
9693 \let\Hy@testname\Hy@undefinedname
9694 \else
9695 \Hy@pstringdef\Hy@testname{%
9696 \expandafter\HyperDestNameFilter\expandafter{%
9697 \Hy@testname
9698 }%
9699 }%
9700 \fi

```

```

9701 \pdfmark{
9702   bann<<
9703   /Type/Annot
9704   /Subtype/Link
9705   \ifHy@pdfa /F 4\fi
9706   \Hy@setpdfborder
9707   \expandafter\ifx\csname @#1bordercolor\endcsname\relax
9708   \else
9709     /C[\csname @#1bordercolor\endcsname]%
9710   \fi
9711   /A<<
9712   /S/GoTo
9713   /D(\Hy@testname)%
9714   \Hy@href@nextactionraw
9715   >>
9716   >>
9717 }%
9718 \expandafter\Hy@colorlink\csname @#1color\endcsname
9719 }%
9720 }
9721 \def\hyper@linkend{\Hy@EndAnnot}%
9722 \def\hyper@link#1#2#3{%
9723   \hyper@linkstart{#1}{#2}#3\hyper@linkend
9724 }
9725 \def\hyper@linkfile#1#2#3{%
9726   \leavevmode
9727   \Hy@BeginAnnot{
9728     \def\Hy@pstringF{#2}%
9729     \Hy@CleanupFile\Hy@pstringF
9730     \Hy@pstringdef\Hy@pstringF\Hy@pstringF
9731     \Hy@pstringdef\Hy@pstringD{#3}%
9732     \Hy@MakeRemoteAction
9733     \pdfmark{
9734       bann<<
9735       /Type/Annot
9736       /Subtype/Link
9737       \ifHy@pdfa /F 4\fi
9738       \Hy@setpdfborder
9739       \ifx\@filebordercolor\relax
9740       \else
9741         /C[\@filebordercolor]%
9742       \fi
9743       /A<<
9744       /S/GoToR
9745       /F(\Hy@pstringF)%
9746       /D%
9747       \ifx\#3\%
9748         [\Hy@href@page\@pdfremotestartview]%
9749       \else
9750         (\Hy@pstringD)%
9751       \fi
9752       \Hy@SetNewWindow
9753       \Hy@href@nextactionraw
9754       >>
9755       >>
9756     }%
9757     \Hy@colorlink\@filecolor

```

```

9758 }%
9759 #1%
9760 \Hy@EndAnnot
9761 }
9762 \def\hyper@linkurl#1#2{%
9763 \leavevmode
9764 \Hy@BeginAnnot{%
9765 \Hy@pstringdef\Hy@pstringURI{#2}%
9766 \@pdfm@mark{%
9767 bann<<%
9768 /Type/Annot%
9769 /Subtype/Link%
9770 \ifHy@pdfa /F 4\fi
9771 \Hy@setpdfborder
9772 \ifx\@urlbordercolor\relax
9773 \else
9774 /C[\@urlbordercolor]%
9775 \fi
9776 /A<<%
9777 /S/URI%
9778 /URI(\Hy@pstringURI)%
9779 \ifHy@href@ismap
9780 /IsMap true%
9781 \fi
9782 \Hy@href@nextactionraw
9783 >>%
9784 >>%
9785 }%
9786 \Hy@colorlink\@urlcolor
9787 }%
9788 #1%
9789 \Hy@EndAnnot
9790 }
9791 \def\Acrobatmenu#1#2{%
9792 \Hy@Acrobatmenu{#1}{#2}{%
9793 \Hy@BeginAnnot{%
9794 \@pdfm@mark{%
9795 bann<<%
9796 /Type/Annot%
9797 /Subtype/Link%
9798 \ifHy@pdfa /F 4\fi
9799 /A<<%
9800 /S/Named%
9801 /N/#1%
9802 \Hy@href@nextactionraw
9803 >>%
9804 \Hy@setpdfborder
9805 \ifx\@menubordercolor\relax
9806 \relax
9807 /C[\@menubordercolor]%
9808 \fi
9809 >>%
9810 }%
9811 \Hy@colorlink\@menucolor
9812 }%
9813 #2%
9814 \Hy@EndAnnot

```



```

9815 }%
9816 }
9817 \ifx\@pdfproducer\relax
9818 \def\@pdfproducer{dvipdfm}%

```

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

```

9819 \begingroup\expandafter\expandafter\expandafter\endgroup
9820 \expandafter\ifx\csname XeTeXversion\endcsname\relax
9821 \else
9822 \edef\@pdfproducer{XeTeX \the\XeTeXversion\XeTeXrevision}%
9823 \fi
9824 \fi
9825 \def\PDF@FinishDoc{%
9826 \Hy@UseMaketitleInfos
9827 \HyInfo@GenerateAddons
9828 \@pdfm@mark{%
9829 docinfo<<%
9830 /Title(\@pdftitle)%
9831 /Subject(\@pdfsubject)%
9832 /Creator(\@pdfcreator)%
9833 \ifx\@pdfcreationdate\@empty
9834 \else
9835 /CreationDate(\@pdfcreationdate)%
9836 \fi
9837 \ifx\@pdfmoddate\@empty
9838 \else
9839 /ModDate(\@pdfmoddate)%
9840 \fi
9841 /Author(\@pdfauthor)%
9842 \ifx\@pdfproducer\relax
9843 \else
9844 /Producer(\@pdfproducer)%
9845 \fi
9846 /Keywords(\@pdfkeywords)%
9847 \ifx\@pdftrapped\@empty
9848 \else
9849 /Trapped/\@pdftrapped
9850 \fi
9851 \HyInfo@Addons
9852 >>%
9853 }%
9854 \Hy@DisableOption{pdfauthor}%
9855 \Hy@DisableOption{pdftitle}%
9856 \Hy@DisableOption{pdfsubject}%
9857 \Hy@DisableOption{pdfcreator}%
9858 \Hy@DisableOption{pdfcreationdate}%
9859 \Hy@DisableOption{pdfmoddate}%
9860 \Hy@DisableOption{pdfproducer}%
9861 \Hy@DisableOption{pdfkeywords}%
9862 \Hy@DisableOption{pdftrapped}%
9863 \Hy@DisableOption{pdfinfo}%
9864 }
9865 \def\PDF@SetupDoc{%
9866 \edef\Hy@temp{%
9867 \ifHy@toolbar\else /HideToolbar true\fi
9868 \ifHy@menubar\else /HideMenubar true\fi
9869 \ifHy>windowui\else /HideWindowUI true\fi

```

```

9870 \ifHy@fitwindow /FitWindow true\fi
9871 \ifHy@centerwindow /CenterWindow true\fi
9872 \ifHy@displaydoctitle /DisplayDocTitle true\fi
9873 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
9874 \Hy@UseNameKey{Direction}\@pdfdirection
9875 \Hy@UseNameKey{ViewArea}\@pdfviewarea
9876 \Hy@UseNameKey{ViewClip}\@pdfviewclip
9877 \Hy@UseNameKey{PrintArea}\@pdfprintarea
9878 \Hy@UseNameKey{PrintClip}\@pdfprintclip
9879 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
9880 \Hy@UseNameKey{Duplex}\@pdfduplex
9881 \ifx\@pdfpicktraybypdfsize\@empty
9882 \else
9883 /PickTrayByPDFSize \@pdfpicktraybypdfsize
9884 \fi
9885 \ifx\@pdfprintpagerange\@empty
9886 \else
9887 /PrintPageRange\@pdfprintpagerange]%
9888 \fi
9889 \ifx\@pdfnumcopies\@empty
9890 \else
9891 /NumCopies \@pdfnumcopies
9892 \fi
9893 }%
9894 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
9895 \@pdfm@mark{%
9896 docview<<%
9897 \ifx\@pdfstartpage\@empty
9898 \else
9899 \ifx\@pdfstartview\@empty
9900 \else
9901 /OpenAction[ @page\@pdfstartpage\@pdfstartview]%
9902 \fi
9903 \fi
9904 \ifx\@baseurl\@empty
9905 \else
9906 /URI<</Base(\Hy@pstringB)>>%
9907 \fi
9908 /PageMode/\@pdfpagemode
9909 \ifx\Hy@temp\@empty
9910 \else
9911 /ViewerPreferences<<\Hy@temp>>%
9912 \fi
9913 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
9914 \ifx\@pdflang\@empty
9915 \else
9916 /Lang(\@pdflang)%
9917 \fi
9918 >>%
9919 }%
9920 \ifx\@pdfpagescrop\@empty
9921 \else
9922 \@pdfm@mark{put @pages <</CropBox[\@pdfpagescrop]>>}%
9923 \fi
9924 }
9925 </dvi pdfm | xetex>

```

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

```

9926 <*dvipdfm>
9927 \AtBeginShipoutFirst{%
9928   \ifHy@setpagesize
9929     \begingroup
9930       \ifundefined{stockwidth}{%
9931         \ifdim\paperwidth>\z@
9932           \ifdim\paperheight>\z@
9933             \special{papersize=\the\paperwidth,\the\paperheight}%
9934           \fi
9935         \fi
9936       }{%
9937         \ifdim\stockwidth>\z@
9938           \ifdim\stockheight>\z@
9939             \special{papersize=\the\stockwidth,\the\stockheight}%
9940           \fi
9941         \fi
9942       }%
9943     \endgroup
9944   \fi
9945   \Hy@DisableOption{setpagesize}%
9946 }
9947 </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.

```

9948 <*vtexhtml>
9949 \providecommand*{\XR@ext}{htm}
9950 \RequirePackage{vtexhtml}
9951 \newif\if@Localurl
9952 \def\PDF@FinishDoc{}
9953 \def\PDF@SetupDoc{%
9954   \ifx\@baseurl\@empty
9955     \else
9956       \special{!direct <base href="\@baseurl">}%
9957     \fi
9958 }
9959 \def\@urltype{url}
9960 \def\hyper@link#1#2#3{%
9961   \Hy@VerboseLinkStart{#1}{#2}%
9962   \leavevmode
9963   \special{!direct <a href=%
9964     \hyper@quote\hyper@hash\HyperDestNameFilter{#2}\hyper@quote>}%
9965   #3%
9966   \special{!direct </a>}%
9967 }
9968 \def\hyper@linkurl#1#2{%
9969   \begingroup
9970     \hyper@chars
9971     \leavevmode
9972     \MathBSuppress=1\relax
9973     \special{!direct <a href=%
9974       \hyper@quote\HyperDestNameFilter{#2}\hyper@quote>}%

```

```

9975   #1%
9976   \MathBSuppress=0\relax
9977   \special{!direct </a>}%
9978 \endgroup
9979 }
9980 \def\hyper@linkfile#1#2#3{%
9981   \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\else\##3\fi}%
9982 }
9983 \def\hyper@linkstart#1#2{%
9984   \Hy@VerboseLinkStart{#1}{#2}%
9985   \def\Hy@tempa{#1}\ifx\Hy@tempa\@urltype
9986     \@Localurltrue
9987     \special{!direct <a href=\hyper@quote#2\hyper@quote>}%
9988   \else
9989     \@Localurlfalse
9990   \begingroup
9991     \hyper@chars
9992     \special{!aref \HyperDestNameFilter{#2}}%
9993   \endgroup
9994 \fi
9995 }
9996 \def\hyper@linkend{%
9997   \if@Localurl
9998     \special{!endaref}%
9999   \else
10000     \special{!direct </a>}%
10001 \fi
10002 }
10003 \Hy@WrapperDef\hyper@anchorstart#1{%
10004   \Hy@SaveLastskip
10005   \Hy@VerboseAnchor{#1}%
10006   \begingroup
10007     \hyper@chars
10008     \special{!aname #1}%
10009     \special{!direct <a name=%
10010       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
10011   \endgroup
10012   \Hy@activeanchortrue
10013 }
10014 \def\hyper@anchorend{%
10015   \special{!direct </a>}%
10016   \Hy@activeanchorfalse
10017   \Hy@RestoreLastskip
10018 }
10019 \Hy@WrapperDef\hyper@anchor#1{%
10020   \Hy@SaveLastskip
10021   \Hy@VerboseAnchor{#1}%
10022   \begingroup
10023     \let\protect=\string
10024     \hyper@chars
10025     \leavevmode
10026     \special{!aname #1}%
10027     \special{!direct <a name=%
10028       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
10029   \endgroup
10030   \Hy@activeanchortrue
10031   \bgroup\anchor@spot\egroup

```

```

10032 \special{!direct </a>}%
10033 \Hy@activeanchorfalse
10034 \Hy@RestoreLastskip
10035 }
10036 \def\@Form[#1]{%
10037 \Hy@Message{Sorry, TeXpider does not yet support FORMs}%
10038 }
10039 \def\@endForm{}
10040 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
10041 \Hy@Message{Sorry, TeXpider does not yet support FORM gauges}%
10042 }
10043 \def\@TextField[#1]#2{% parameters, label
10044 \Hy@Message{Sorry, TeXpider does not yet support FORM text fields}%
10045 }
10046 \def\@CheckBox[#1]#2{% parameters, label
10047 \Hy@Message{Sorry, TeXpider does not yet support FORM checkboxes}%
10048 }
10049 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
10050 \Hy@Message{Sorry, TeXpider does not yet support FORM choice menus}%
10051 }
10052 \def\@PushButton[#1]#2{% parameters, label
10053 \Hy@Message{Sorry, TeXpider does not yet support FORM pushbuttons}%
10054 }
10055 \def\@Reset[#1]#2{%
10056 \Hy@Message{Sorry, TeXpider does not yet support FORMs}%
10057 }
10058 \def\@Submit[#1]#2{%
10059 \Hy@Message{Sorry, TeXpider does not yet support FORMs}%
10060 }
10061 </vtexhtml>
10062 <*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.

```

10063 \ifx\mediaheight\@undefined
10064 \else
10065 \ifx\mediaheight\relax
10066 \else
10067 \ifHy@setpagesize
10068 \providecommand*{\VTeXInitMediaSize}{%
10069 \ltx@ifundefined{stockwidth}{%
10070 \ifdim\paperheight>0pt %
10071 \setlength\mediaheight\paperheight
10072 \fi
10073 \ifdim\paperheight>0pt %
10074 \setlength\mediawidth\paperwidth
10075 \fi
10076 }{%
10077 \ifdim\stockheight>0pt %
10078 \setlength\mediaheight\stockheight
10079 \fi
10080 \ifdim\stockwidth>0pt %
10081 \setlength\mediawidth\stockwidth
10082 \fi
10083 }%
10084 }%

```

```

10085 \Hy@AtBeginDocument{\VTeXInitMediaSize}%
10086 \fi
10087 \Hy@DisableOption{setpagesize}%
10088 \fi
10089 \fi

Older versions of VTeX require xyz in lower case.

10090 \providecommand*\@pdfview{xyz}
10091 \providecommand*\@pdfborder{0 0 1}
10092 \providecommand*\@pdfborderstyle{}
10093 \let\CurrentBorderColor\@linkbordercolor
10094 \Hy@WrapperDef\hyper@anchor#1{%
10095 \Hy@SaveLastskip
10096 \Hy@VerboseAnchor{#1}%
10097 \begingroup
10098 \let\protect=\string
10099 \hyper@chars
10100 \special{!aname \HyperDestNameFilter{#1};\@pdfview}%
10101 \endgroup
10102 \Hy@activeanchortrue
10103 \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
10104 \Hy@activeanchorfalse
10105 \Hy@RestoreLastskip
10106 }
10107 \Hy@WrapperDef\hyper@anchorstart#1{%
10108 \Hy@SaveLastskip
10109 \Hy@VerboseAnchor{#1}%
10110 \begingroup
10111 \hyper@chars
10112 \special{!aname \HyperDestNameFilter{#1};\@pdfview}%
10113 \endgroup
10114 \Hy@activeanchortrue
10115 }
10116 \def\hyper@anchorend{%
10117 \Hy@activeanchorfalse
10118 \Hy@RestoreLastskip
10119 }
10120 \def\@urltype{url}
10121 \def\Hy@undefinedname{UNDEFINED}
10122 \def\hyper@linkstart#1#2{%
10123 \Hy@VerboseLinkStart{#1}{#2}%
10124 \Hy@pstringdef\Hy@pstringURI{#2}%
10125 \expandafter\Hy@colorlink\csname @#1color\endcsname
10126 \ltx@ifundefined{@#1bordercolor}{%
10127 \let\CurrentBorderColor\relax
10128 }{%
10129 \edef\CurrentBorderColor{%
10130 \csname @#1bordercolor\endcsname
10131 }%
10132 }%
10133 \def\Hy@tempa{#1}%
10134 \ifx\Hy@tempa\@urltype
10135 \special{!%
10136 aref <u=/Type/Action/S/URI/URI(\Hy@pstringURI)%
10137 \ifHy@href@ismap
10138 /IsMap true%
10139 \fi
10140 \Hy@href@nextactionraw

```

```

10141     >,%
10142     a=<%
10143     \ifHy@pdfa /F 4\fi
10144     \Hy@setpdfborder
10145     \ifx\CurrentBorderColor\relax
10146     \else
10147     /C [\CurrentBorderColor]%
10148     \fi
10149     >%
10150     }%
10151 \else
10152 \protected@edef\Hy@testname{#2}%
10153 \ifx\Hy@testname\@empty
10154 \Hy@Warning{%
10155     Empty destination name,\MessageBreak
10156     using '\Hy@undefinedname'%
10157 }%
10158 \let\Hy@testname\Hy@undefinedname
10159 \fi
10160 \special{!%
10161     aref \expandafter\HyperDestNameFilter
10162     \expandafter{\Hy@testname};%
10163     a=<%
10164     \ifHy@pdfa /F 4\fi
10165     \Hy@setpdfborder
10166     \ifx\CurrentBorderColor\relax
10167     \else
10168     /C [\CurrentBorderColor]%
10169     \fi
10170     >%
10171     }%
10172 \fi
10173 }
10174 \def\hyper@linkend{%
10175 \special{!endaref}%
10176 \Hy@endcolorlink
10177 }
10178 \def\hyper@linkfile#1#2#3{%
10179 \leavevmode
10180 \def\Hy@pstringF{#2}%
10181 \Hy@CleanupFile\Hy@pstringF
10182 \special{!%
10183     aref <%
10184     \ifnum\Hy@VTeXversion>753 \ifHy@newwindow n\fi\fi
10185     f=\Hy@pstringF>#3;%
10186     a=<%
10187     \ifHy@pdfa /F 4\fi
10188     \Hy@setpdfborder
10189     \ifx\@filebordercolor\relax
10190     \else
10191     /C [\@filebordercolor]%
10192     \fi
10193     >%
10194     }%
10195     \Hy@colorlink\@filecolor#1\Hy@endcolorlink
10196     \special{!endaref}%
10197 }

```

```

10198 \def\hyper@linkurl#1#2{%
10199   \begingroup
10200   \Hy@pstringdef\Hy@pstringURI{#2}%
10201   \hyper@chars
10202   \leavevmode
10203   \special{!%
10204     aref <u=/Type/Action/S/URI/URI(\Hy@pstringURI)%
10205       \ifHy@href@ismap
10206         /IsMap true%
10207       \fi
10208       \Hy@href@nextactionraw
10209       >,%
10210     a=<%
10211       \ifHy@pdfa /F 4\fi
10212       \Hy@setpdfborder
10213       \ifx\@urlbordercolor\relax
10214         \else
10215           /C [\@urlbordercolor]%
10216         \fi
10217       >%
10218     }%
10219     \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
10220     \special{!endaref}%
10221   \endgroup
10222 }
10223 \def\hyper@link#1#2#3{%
10224   \Hy@VerboseLinkStart{#1}{#2}%
10225   \ltx@ifundefined{@#1bordercolor}{%
10226     \let\CurrentBorderColor\relax
10227   }{%
10228     \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
10229   }%
10230   \leavevmode
10231   \protected@edef\Hy@testname{#2}%
10232   \ifx\Hy@testname\@empty
10233     \Hy@Warning{%
10234       Empty destination name,\MessageBreak
10235       using '\Hy@undefinedname'%
10236     }%
10237     \let\Hy@testname\Hy@undefinedname
10238   \fi
10239   \special{!%
10240     aref \expandafter\HyperDestNameFilter
10241       \expandafter{\Hy@testname};%
10242     a=<%
10243       \ifHy@pdfa /F 4\fi
10244       \Hy@setpdfborder
10245       \ifx\CurrentBorderColor\relax
10246         \else
10247           /C [\CurrentBorderColor]%
10248         \fi
10249       >%
10250     }%
10251   \expandafter
10252     \Hy@colorlink\csname @#1color\endcsname#3\Hy@endcolorlink
10253   \special{!endaref}%
10254 }

```



```

10255 \def\hyper@image#1#2{%
10256   \hyper@linkurl{#2}{#1}%
10257 }
10258 \def\@hyper@launch run:#1\#2#3{%
10259   \Hy@pstringdef\Hy@pstringF{#1}%
10260   \Hy@pstringdef\Hy@pstringP{#3}%
10261   \leavevmode
10262   \special{!aref %
10263     <u=%
10264       /Type/Action%
10265       /S/Launch%
10266       /F(\Hy@pstringF)%
10267       \Hy@SetNewWindow
10268       \ifx\#3\%
10269         \else
10270           /Win<</F(\Hy@pstringF)/P(\Hy@pstringP)>>%
10271         \fi
10272         \Hy@href@nextactionraw
10273       >,%
10274       a=<%
10275         \ifHy@pdfa /F 4\fi
10276         \Hy@setpdfborder
10277         \ifx\@runbordercolor\relax
10278           \else
10279             /C[\@runbordercolor]%
10280           \fi
10281         >%
10282       }%
10283   \Hy@colorlink\@runcolor#2\Hy@endcolorlink
10284   \special{!endaref}%
10285 }
10286 \def\Acrobatmenu#1#2{%
10287   \Hy@Acrobatmenu{#1}{#2}{%
10288     \special{!%
10289       aref <u=/S /Named /N /#1>,%
10290       a=<%
10291         \ifHy@pdfa /F 4\fi
10292         \Hy@setpdfborder
10293         \ifx\@menubordercolor\relax
10294           \else
10295             /C[\@menubordercolor]%
10296           \fi
10297         >%
10298       }%
10299   \Hy@colorlink\@menucolor#2\Hy@endcolorlink
10300   \special{!endaref}%
10301   }%
10302 }

```

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

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

Please never use  $\text{\texttt{\@ifundefined{VTeXversion}\{..\}\{..\}}}$  globally.

```

10303 \ifnum\Hy@VTeXversion<702 %
10304 \else
10305   \def\hyper@pagetransition{%
10306     \ifx\@pdfpagetransition\relax
10307       \else
10308         \ifx\@pdfpagetransition\@empty

```

Standard incantation.

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

```
10309 \else
10310 \hvtex@parse@trans\@pdfpagetransition
10311 \fi
10312 \fi
10313 }%
```

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

Syntax of VT<sub>E</sub>X \special{!trans <transition\_effect>}:

```
<transition_effect> ::= <transition_style>[,<transition_duration>]
<transition_style> ::= <Blinds_effect> | <Box_effect> |
                       <Dissolve_effect> | <Glitter_effect> |
                       <Split_effect> | <Wipe_effect>
<Blinds_effect> ::= B[<effect_dimension>]
<Box_effect> ::= X[<effect_motion>]
<Dissolve_effect> ::= D
<Glitter_effect> ::= G[<effect_direction>]
<Split_effect> ::= S[<effect_motion>][<effect_dimension>]
<Wipe_effect> ::= W[<effect_direction>]
<Replace_effect> ::= R
<effect_direction> ::= <number>
<effect_dimension> ::= H | V
<effect_motion> ::= I | O
<transition_duration> ::= <number>
```

Transition codes:

```
10314 \def\hvtex@trans@effect@Blinds{\def\hvtex@trans@code{B}}%
10315 \def\hvtex@trans@effect@Box{\def\hvtex@trans@code{X}}%
10316 \def\hvtex@trans@effect@Dissolve{\def\hvtex@trans@code{D}}%
10317 \def\hvtex@trans@effect@Glitter{\def\hvtex@trans@code{G}}%
10318 \def\hvtex@trans@effect@Split{\def\hvtex@trans@code{S}}%
10319 \def\hvtex@trans@effect@Wipe{\def\hvtex@trans@code{W}}%
10320 \def\hvtex@trans@effect@R{\def\hvtex@trans@code{R}}%
```

Optional parameters:

```
10321 \def\hvtex@par@dimension{/Dm}%
10322 \def\hvtex@par@direction{/Di}%
10323 \def\hvtex@par@duration{/D}%
10324 \def\hvtex@par@motion{/M}%
```

Tokenizer:

```
10325 \def\hvtex@gettoken{%
10326 \expandafter\hvtex@gettoken@\hvtex@buffer\@nil
10327 }%
```

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

```
10328 \def\hvtex@gettoken@#1 #2\@nil{%
10329 \edef\hvtex@token{#1}%
10330 \edef\hvtex@buffer{#2}%
10331 }%
10332 \def\hvtex@parse@trans#1{%
```

Initializing code:

```
10333 \let\hvtex@trans@code\@empty
10334 \let\hvtex@param@dimension\@empty
10335 \let\hvtex@param@direction\@empty
```

```

10336 \let\hvtex@param@duration\@empty
10337 \let\hvtex@param@motion\@empty
10338 \edef\hvtex@buffer{#1\space}%

```

First token is the PDF transition name without escape.

```

10339 \hvtex@gettoken
10340 \ifx\hvtex@token\@empty

```

Leading space(s)?

```

10341 \ifx\hvtex@buffer\@empty

```

The buffer is empty, nothing to do.

```

10342 \else
10343 \hvtex@gettoken
10344 \fi
10345 \fi
10346 \csname hvtex@trans@effect@\hvtex@token\endcsname

```

Now is time to parse optional parameters.

```

10347 \hvtex@trans@params
10348 }%

```

Reentrant macro to parse optional parameters.

```

10349 \def\hvtex@trans@params{%
10350 \ifx\hvtex@buffer\@empty
10351 \else
10352 \hvtex@gettoken
10353 \let\hvtex@trans@par\hvtex@token
10354 \ifx\hvtex@buffer\@empty
10355 \else
10356 \hvtex@gettoken
10357 \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.

```

10358 \let\hvtex@param@duration\hvtex@token
10359 \else \ifx\hvtex@trans@par\hvtex@par@motion

```

/M can be either /I or /O

```

10360 \expandafter\edef\expandafter\hvtex@param@motion
10361 \expandafter{\expandafter\@gobble\hvtex@token}%
10362 \else \ifx\hvtex@trans@par\hvtex@par@dimension

```

/Dm can be either /H or /V

```

10363 \expandafter\edef\expandafter\hvtex@param@dimension
10364 \expandafter{\expandafter\@gobble\hvtex@token}%
10365 \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).

```

10366 \let\hvtex@param@direction\hvtex@token
10367 \fi\fi\fi\fi
10368 \fi
10369 \fi
10370 \ifx\hvtex@buffer\@empty
10371 \let\next\hvtex@produce@trans
10372 \else
10373 \let\next\hvtex@trans@params
10374 \fi
10375 \next
10376 }%

```

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

```

10377 \def\hvtex@produce@trans{%
10378   \let\vtex@trans@special\@empty
10379   \if S\hvtex@trans@code
10380     \edef\vtex@trans@special{\hvtex@trans@code
10381       \hvtex@param@dimension\hvtex@param@motion}%
10382   \else\if B\hvtex@trans@code
10383     \edef\vtex@trans@special{%
10384       \hvtex@trans@code\hvtex@param@dimension
10385     }%
10386   \else\if X\hvtex@trans@code
10387     \edef\vtex@trans@special{%
10388       \hvtex@trans@code\hvtex@param@motion
10389     }%
10390   \else\if W\hvtex@trans@code
10391     \edef\vtex@trans@special{%
10392       \hvtex@trans@code\hvtex@param@direction
10393     }%
10394   \else\if D\hvtex@trans@code
10395     \let\vtex@trans@special\hvtex@trans@code
10396   \else\if R\hvtex@trans@code
10397     \let\vtex@trans@special\hvtex@trans@code
10398   \else\if G\hvtex@trans@code
10399     \edef\vtex@trans@special{%
10400       \hvtex@trans@code\hvtex@param@direction
10401     }%
10402   \fi\fi\fi\fi\fi\fi
10403   \ifx\vtex@trans@special\@empty
10404   \else
10405     \ifx\hvtex@param@duration\@empty
10406     \else
10407       \setlength{\dimen@}{\hvtex@param@duration\p}%

```

I'm not guilty of possible overflow.

```

10408   \multiply\dimen@\@m
10409   \edef\vtex@trans@special{%
10410     \vtex@trans@special,\strip@pt\dimen@
10411   }%
10412   \fi

```

And all the mess is just for this.

```

10413   \special{!trans \vtex@trans@special}%
10414   \fi
10415 }%

10416 \def\hyper@pageduration{%
10417   \ifx\@pdfpageduration\relax
10418   \else
10419     \ifx\@pdfpageduration\@empty
10420       \special{!duration-}%
10421     \else
10422       \special{!duration \@pdfpageduration}%
10423     \fi
10424   \fi
10425 }%
10426 \def\hyper@pagehidden{%
10427   \ifHy@useHidKey

```

```

10428 \special{!hidden\ifHy@pdfpagehidden +\else -\fi}%
10429 \fi
10430 }%
10431 \g@addto@macro\Hy@EveryPageBoxHook{%
10432 \hyper@pagetransition
10433 \hyper@pageduration
10434 \hyper@pagehidden
10435 }%
10436 \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

```

10437 \ifx\@pdfproducer\relax
10438 \def\@pdfproducer{VTeX}%
10439 \ifnum\Hy@VTeXversion>\z@
10440 \count@\VTeXversion
10441 \divide\count@ 100 %
10442 \edef\@pdfproducer{\@pdfproducer\space v\the\count@}%
10443 \multiply\count@ -100 %
10444 \advance\count@\VTeXversion
10445 \edef\@pdfproducer{%
10446 \@pdfproducer
10447 .\ifnum\count@<10 0\fi\the\count@
10448 \ifx\VTeXOS\@undefined\else
10449 \ifnum\VTeXOS>0 %
10450 \ifnum\VTeXOS<6 %
10451 \space(%
10452 \ifcase\VTeXOS
10453 \or Windows\or Linux\or OS/2\or MacOS\or MacOS/X%
10454 \fi
10455 )%
10456 \fi
10457 \fi
10458 \fi
10459 ,\space
10460 \ifnum\OpMode=\@one PDF\else PS\fi
10461 \space backend%
10462 \ifx\gexmode\@undefined\else
10463 \ifnum\gexmode>\z@\space with GeX\fi
10464 \fi
10465 }%
10466 \fi
10467 \fi

```

Current `!pdftinfo` 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).

```

10468 \def\PDF@SetupDoc{%
10469 \ifx\@pdfpagescrop\@empty
10470 \else
10471 \special{!pdfinfo b=<\@pdfpagescrop>}%
10472 \fi
10473 \ifx\@pdfstartpage\@empty
10474 \else
10475 \ifx\@pdfstartview\@empty
10476 \else
10477 \special{!onopen Page\@pdfstartpage}%
10478 \fi
10479 \fi
10480 \special{!pdfinfo p=</\@pdfpagemode>}%
10481 \ifx\@baseurl\@empty
10482 \else
10483 \special{!pdfinfo u=<<</Base (\@baseurl)>>>}%
10484 \fi
10485 \special{!pdfinfo v=<<<%
10486 \ifHy@toolbar\else /HideToolbar true\fi
10487 \ifHy@menubar\else /HideMenubar true\fi
10488 \ifHy>windowui\else /HideWindowUI true\fi
10489 \ifHy@fitwindow /FitWindow true\fi
10490 \ifHy@centerwindow /CenterWindow true\fi
10491 \ifHy@displaydoctitle /DisplayDocTitle true\fi
10492 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
10493 \Hy@UseNameKey{Direction}\@pdfdirection
10494 \Hy@UseNameKey{ViewArea}\@pdfviewarea
10495 \Hy@UseNameKey{ViewClip}\@pdfviewclip
10496 \Hy@UseNameKey{PrintArea}\@pdfprintarea
10497 \Hy@UseNameKey{PrintClip}\@pdfprintclip
10498 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
10499 \Hy@UseNameKey{Duplex}\@pdfduplex
10500 \ifx\@pdfpicktraybypdfsize\@empty
10501 \else
10502 /PickTrayByPDFSize \@pdfpicktraybypdfsize
10503 \fi
10504 \ifx\@pdfprintpagerange\@empty
10505 \else
10506 /PrintPageRange[\@pdfprintpagerange]%
10507 \fi
10508 \ifx\@pdfnumcopies\@empty
10509 \else
10510 /NumCopies \@pdfnumcopies

```

```

10511 \fi
10512 >>>}%
10513 \ifx\@pdfpagelayout\@empty
10514 \else
10515 \special{!pdfinfo l=</\@pdfpagelayout\space>}%
10516 \fi
10517 }%
10518 \HyInfo@AddonUnsupportedtrue
10519 \def\PDF@FinishDoc{%
10520 \Hy@UseMaketitleInfos
10521 \HyInfo@TrappedUnsupported
10522 \special{!pdfinfo a=<\@pdfauthor>}%
10523 \special{!pdfinfo t=<\@pdftitle>}%
10524 \special{!pdfinfo s=<\@pdfsubject>}%
10525 \special{!pdfinfo c=<\@pdfcreator>}%
10526 \ifx\@pdfproducer\relax
10527 \else
10528 \special{!pdfinfo r=<\@pdfproducer>}%
10529 \fi
10530 \special{!pdfinfo k=<\@pdfkeywords>}%
10531 \Hy@DisableOption{pdfauthor}%
10532 \Hy@DisableOption{pdftitle}%
10533 \Hy@DisableOption{pdfsubject}%
10534 \Hy@DisableOption{pdfcreator}%
10535 \Hy@DisableOption{pdfcreationdate}%
10536 \Hy@DisableOption{pdfmoddate}%
10537 \Hy@DisableOption{pdfproducer}%
10538 \Hy@DisableOption{pdfkeywords}%
10539 \Hy@DisableOption{pdftrapped}%
10540 \Hy@DisableOption{pdfinfo}%
10541 }
10542 </vtex>

```

## 46.7 Fix for Adobe bug number 466320

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

```

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

```

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

```

10543 <dviwindo>\def\literalps@out#1{\special{ps:#1}}%
10544 <package>\providecommand*{\Hy@DistillerDestFix}{%
10545 <*pdfmark | dviwindo>
10546 \def\Hy@DistillerDestFix{%
10547 \beginngroup
10548 \let\x\literalps@out

```

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

```

10549 \ifnum \@ifundefined{OpMode}{0}{%
10550 \ifundefined{gexmode}{0}{%
10551 \ifnum\gexmode>0 \OpMode\else 0\fi
10552 }}>1 %

```

```

10553 \def\x##1{%
10554 \immediate\special{!=##1}%
10555 }%
10556 \fi
10557 \x{%
10558 /product where{%
10559 pop %
10560 product(Distiller)search{%
10561 pop pop pop %
10562 version(.)search{%
10563 exch pop exch pop%
10564 (3011)eq{%
10565 gsave %
10566 newpath 0 0 moveto closepath clip%
10567 /Courier findfont 10 scalefont setfont %
10568 72 72 moveto(.)show %
10569 grestore%
10570 }if%
10571 }{pop}ifelse%
10572 }{pop}ifelse%
10573 }if%
10574 }%
10575 \endgroup
10576 }
10577 </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

```

10578 <*pdfmark>
10579 \Hy@breaklinks@unsupported
10580 \def\HyPat@ObjRef{%
10581 \[{}+}%
10582 }
10583 \Hy@WrapperDef\hyper@anchor#1{%
10584 \Hy@SaveLastskip
10585 \Hy@VerboseAnchor{#1}%
10586 \begingroup
10587 \pdfmark[\anchor@spot]{%
10588 pdfmark=/DEST,%
10589 linktype=anchor,%
10590 View=/\@pdfview \@pdfviewparams,%
10591 DestAnchor={#1}%
10592 }%
10593 \endgroup

```



```

10594 \Hy@RestoreLastskip
10595 }
10596 \ltx@ifundefined{hyper@anchorstart}{\endinput}
10597 \Hy@WrapperDef\hyper@anchorstart#1{%
10598 \Hy@SaveLastskip
10599 \Hy@VerboseAnchor{#1}%
10600 \literalps@out{H.S}%
10601 \Hy@AllowHyphens
10602 \xdef\hyper@currentanchor{#1}%
10603 \Hy@activeanchortrue
10604 }
10605 \def\hyper@anchorend{%
10606 \literalps@out{\strip@pt@and@otherjunk\baselineskip\space H.A}%
10607 \pdfmark{%
10608 pdfmark=/DEST,%
10609 linktype=anchor,%
10610 View=/\@pdfview \@pdfviewparams,%
10611 DestAnchor=\hyper@currentanchor,%
10612 }%
10613 \Hy@activeanchorfalse
10614 \Hy@RestoreLastskip
10615 }
10616 \def\hyper@linkstart#1#2{%
10617 \Hy@VerboseLinkStart{#1}{#2}%
10618 \ifHy@breaklinks
10619 \else
10620 \leavevmode
10621 \ifmmode
10622 \def\Hy@LinkMath{$}%
10623 \else
10624 \def\Hy@LinkMath{}%
10625 \fi
10626 \Hy@SaveSpaceFactor
10627 \hbox\bgroup
10628 \Hy@RestoreSpaceFactor
10629 \Hy@LinkMath
10630 \fi
10631 \expandafter\Hy@colorlink\csname @#1color\endcsname
10632 \literalps@out{H.S}%
10633 \Hy@AllowHyphens
10634 \xdef\hyper@currentanchor{#2}%
10635 \gdef\hyper@currentlinktype{#1}%
10636 }
10637 \def\hyper@linkend{%
10638 \literalps@out{\strip@pt@and@otherjunk\baselineskip\space H.L}%
10639 \ltx@ifundefined{@\hyper@currentlinktype bordercolor}{%
10640 \let\Hy@tempcolor\relax
10641 }{%
10642 \edef\Hy@tempcolor{%
10643 \csname @\hyper@currentlinktype bordercolor\endcsname
10644 }%
10645 }%
10646 \pdfmark{%
10647 pdfmark=/ANN,%
10648 linktype=link,%
10649 Subtype=/Link,%
10650 PDFAMlags=4,%

```

```

10651   Dest=\hyper@currentanchor,%
10652   AcroHighlight=\@pdfhighlight,%
10653   Border=\@pdfborder,%
10654   BorderStyle=\@pdfborderstyle,%
10655   Color=\Hy@tempcolor,%
10656   Raw=H.B%
10657 }%
10658 \Hy@endcolorlink
10659 \ifHy@breaklinks
10660 \else
10661   \Hy@LinkMath
10662   \Hy@SaveSpaceFactor
10663   \egroup
10664   \Hy@RestoreSpaceFactor
10665 \fi
10666 }

```

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.

```

10667 \begingroup
10668   \catcode'P=12 %
10669   \catcode'T=12 %
10670   \lowercase{\endgroup
10671   \gdef\rem@ptetc#1.#2PT#3!{#1\ifnum#2>\z@.#2\fi}%
10672 }
10673 \def\strip@pt@and@otherjunk#1{\expandafter\rem@ptetc\the#1!}

```

`\hyper@pagetransition`

```

10674 \def\hyper@pagetransition{%
10675   \ifx\@pdfpagetransition\relax
10676   \else
10677     \ifx\@pdfpagetransition\@empty
10678       % 1. Does an old entry have to be deleted?
10679       % 2. If 1=yes, how to delete?
10680     \else
10681       \pdfmark{%
10682         pdfmark=/PUT,%
10683         Raw={%
10684           \string{ThisPage\string}%
10685           <</Trans << /S /\@pdfpagetransition\space >> >>%
10686         }%
10687       }%
10688     \fi
10689   \fi
10690 }

```

`\hyper@pageduration`

```

10691 \def\hyper@pageduration{%
10692   \ifx\@pdfpageduration\relax
10693   \else
10694     \ifx\@pdfpageduration\@empty
10695       % 1. Does an old entry have to be deleted?
10696       % 2. If 1=yes, how to delete?
10697     \else
10698       \pdfmark{%
10699         pdfmark=/PUT,%

```

```

10700     Raw={%
10701         \string{ThisPage\string}%
10702         <</Dur \@pdfpageduration>>%
10703     }%
10704 }%
10705 \fi
10706 \fi
10707 }

```

\hyper@pagehidden

```

10708 \def\hyper@pagehidden{%
10709     \ifHy@useHidKey
10710         \pdfmark{%
10711             pdfmark=/PUT,%
10712             Raw={%
10713                 \string{ThisPage\string}%
10714                 <</Hid \ifHy@pdfpagehidden true\else false\fi>>%
10715             }%
10716         }%
10717     \fi
10718 }

10719 \g@addto@macro\Hy@EveryPageBoxHook{%
10720     \hyper@pagetransition
10721     \hyper@pageduration
10722     \hyper@pagehidden
10723 }

10724 \def\hyper@image#1#2{%
10725     \hyper@linkurl{#2}{#1}%
10726 }

10727 \def\Hy@undefinedname{UNDEFINED}
10728 \def\hyper@link#1#2#3{%
10729     \Hy@VerboseLinkStart{#1}{#2}%
10730     \ltx@ifundefined{@#1bordercolor}{%
10731         \let\Hy@tempcolor\relax
10732     }{%
10733         \edef\Hy@tempcolor{\csname @#1bordercolor\endcsname}%
10734     }%
10735     \begingroup
10736         \protected@edef\Hy@testname{#2}%
10737         \ifx\Hy@testname\@empty
10738             \Hy@Warning{%
10739                 Empty destination name,\MessageBreak
10740                 using '\Hy@undefinedname'%
10741             }%
10742         \let\Hy@testname\Hy@undefinedname
10743     \fi
10744     \pdfmark[{#3}]{%
10745         Color=\Hy@tempcolor,%
10746         linktype={#1},%
10747         AcroHighlight=\@pdfhighlight,%
10748         Border=\@pdfborder,%
10749         BorderStyle=\@pdfborderstyle,%
10750         pdfmark=/ANN,%
10751         Subtype=/Link,%
10752         PDFAFlags=4,%
10753         Dest=\Hy@testname

```

```

10754 }%
10755 \endgroup
10756 }
10757 \newtoks\pdf@docset
10758 \def\PDF@FinishDoc{%
10759 \Hy@UseMaketitleInfos
10760 \HyInfo@GenerateAddons
10761 \let\Hy@temp\@empty
10762 \ifx\@pdfcreationdate\@empty
10763 \else
10764 \def\Hy@temp{CreationDate=\@pdfcreationdate,}%
10765 \fi
10766 \ifx\@pdfmoddate\@empty
10767 \else
10768 \expandafter\def\expandafter\Hy@temp\expandafter{%
10769 \Hy@temp
10770 ModDate=\@pdfmoddate,%
10771 }%
10772 \fi
10773 \ifx\@pdfproducer\relax
10774 \else
10775 \expandafter\def\expandafter\Hy@temp\expandafter{%
10776 \Hy@temp
10777 Producer=\@pdfproducer,%
10778 }%
10779 \fi
10780 \expandafter
10781 \pdfmark\expandafter{%
10782 \Hy@temp
10783 pdfmark=/DOCINFO,%
10784 Title=\@pdftitle,%
10785 Subject=\@pdfsubject,%
10786 Creator=\@pdfcreator,%
10787 Author=\@pdfauthor,%
10788 Keywords=\@pdfkeywords,%
10789 Trapped=\@pdftrapped
10790 }%
10791 \ifx\HyInfo@Addons\@empty
10792 \else
10793 \pdfmark{%
10794 pdfmark=/DOCINFO,%
10795 Raw={\HyInfo@Addons}%
10796 }%
10797 \fi
10798 \Hy@DisableOption{pdfauthor}%
10799 \Hy@DisableOption{pdftitle}%
10800 \Hy@DisableOption{pdfsubject}%
10801 \Hy@DisableOption{pdfcreator}%
10802 \Hy@DisableOption{pdfcreationdate}%
10803 \Hy@DisableOption{pdfmoddate}%
10804 \Hy@DisableOption{pdfproducer}%
10805 \Hy@DisableOption{pdfkeywords}%
10806 \Hy@DisableOption{pdftrapped}%
10807 \Hy@DisableOption{pdfinfo}%
10808 }
10809 \def\PDF@SetupDoc{%
10810 \def\Hy@temp{}%

```

```

10811 \ifx\@pdfstartpage\@empty
10812 \else
10813 \ifx\@pdfstartview\@empty
10814 \else
10815 \edef\Hy@temp{%
10816   ,Page=\@pdfstartpage
10817   ,View=\@pdfstartview
10818 }%
10819 \fi
10820 \fi
10821 \edef\Hy@temp{%
10822 \noexpand\pdfmark{%
10823   pdfmark=/DOCVIEW,%
10824   PageMode=/\@pdfpagemode
10825   \Hy@temp
10826 }%
10827 }%
10828 \Hy@temp
10829 \ifx\@pdfpagescrop\@empty
10830 \else
10831 \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
10832 \fi
10833 \edef\Hy@temp{%
10834 \ifHy@toolbar\else /HideToolbar true\fi
10835 \ifHy@menubar\else /HideMenubar true\fi
10836 \ifHy>windowui\else /HideWindowUI true\fi
10837 \ifHy@fitwindow /FitWindow true\fi
10838 \ifHy@centerwindow /CenterWindow true\fi
10839 \ifHy@displaydoctitle /DisplayDocTitle true\fi
10840 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
10841 \Hy@UseNameKey{Direction}\@pdfdirection
10842 \Hy@UseNameKey{ViewArea}\@pdfviewarea
10843 \Hy@UseNameKey{ViewClip}\@pdfviewclip
10844 \Hy@UseNameKey{PrintArea}\@pdfprintarea
10845 \Hy@UseNameKey{PrintClip}\@pdfprintclip
10846 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
10847 \Hy@UseNameKey{Duplex}\@pdfduplex
10848 \ifx\@pdfpicktraybypdfsize\@empty
10849 \else
10850 /PickTrayByPDFSize \@pdfpicktraybypdfsize
10851 \fi
10852 \ifx\@pdfprintpagerange\@empty
10853 \else
10854 /PrintPageRange[\@pdfprintpagerange]%
10855 \fi
10856 \ifx\@pdfnumcopies\@empty
10857 \else
10858 /NumCopies \@pdfnumcopies
10859 \fi
10860 }%
10861 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
10862 \pdfmark{%
10863   pdfmark=/PUT,%
10864   Raw={%
10865     \string{Catalog\string}<<%
10866     \ifx\Hy@temp\@empty
10867

```

```

10868      /ViewerPreferences<<\Hy@temp>>%
10869    \fi
10870    \Hy@UseNameKey{PageLayout}\@pdfpagelayout
10871    \ifx\@pdflang\@empty
10872    \else
10873      /Lang(\@pdflang)%
10874    \fi
10875    \ifx\@baseurl\@empty
10876    \else
10877      /URI<</Base(\Hy@pstringB)>>%
10878    \fi
10879    >>%
10880  }%
10881 }%
10882 }
10883 </pdfmark>
10884 <*pdfmarkbase>

```

We define a single macro, pdfmark, which uses the ‘keyval’ system to define the various allowable keys; these are *exactly* as listed in the pdfmark reference for Acrobat 3.0. The only addition is pdfmark which specifies the type of pdfmark to create (like ANN, LINK etc). The surrounding round and square brackets in the pdfmark commands are supplied, but you have to put in / characters as needed for the values.

```

10885 \newif\ifHy@pdfmarkerror
10886 \def\pdfmark{\@ifnextchar[{\pdfmark@}{\pdfmark@[]}}
10887 \def\pdfmark@[#1]#2{%
10888   \Hy@pdfmarkerrorfalse
10889   \edef\@processme{\noexpand\pdf@toks={\the\pdf@defaulttoks}}%
10890   \@processme
10891   \let\pdf@type\relax
10892   \kvsetkeys{PDF}{#2}%
10893   \ifHy@pdfmarkerror
10894   \else
10895     \ifx\pdf@type\relax
10896       \Hy@WarningNoLine{no pdfmark type specified in #2!!}%
10897       \ifx\#1\%
10898       \else
10899         \pdf@rect{#1}%
10900       \fi
10901     \else
10902       \ifx\#1\%
10903       \literalps@out{%
10904         [\the\pdf@toks\space\pdf@type\space pdfmark%
10905       }%
10906     \else
10907       \ltx@ifundefined{@\pdf@linktype color}{%
10908         \Hy@colorlink\@linkcolor
10909       }{%
10910         \expandafter\Hy@colorlink
10911           \csname @\pdf@linktype color\endcsname
10912       }%
10913       \pdf@rect{#1}%
10914       \literalps@out{%
10915         [\the\pdf@toks\space\pdf@type\space pdfmark%
10916       }%
10917       \Hy@endcolorlink
10918     \fi

```

```

10919 \fi
10920 \fi
10921 }

```

The complicated bit is working out the right enclosing rectangle of some piece of TeX text, needed by the /Rect key. This solution originates with Toby Thain (tobyth@netspace.net.au).

For the case breaklinks is enabled, I have added two hooks, the first one for package setouterhbox, it provides a hopefully better method without setting the text twice.

```
\usepackage[hyperref]{setouterhbox}
```

With the second hook, also you can set the text twice, e.g.:

```

\long\def\Hy@setouterhbox#1#2{\long\def\my@temp{#2}}
\def\Hy@breaklinksunhbox#1{\my@temp}

```

```

10922 \newsavebox{\pdf@box}
10923 \providecommand*{\Hy@setouterhbox}{\sbox}
10924 \providecommand*{\Hy@breaklinksunhbox}{\unhbox}
10925 \def\Hy@DEST{/DEST}
10926 \def\pdf@rect#1{%
10927   \begingroup
10928     \chardef\x=1 %
10929     \def\Hy@temp{#1}%
10930     \ifx\Hy@temp\ltx@empty
10931       \chardef\x=0 %
10932     \else
10933       \def\y{\anchor@spot}%
10934       \ifx\Hy@temp\y
10935         \def\y{\relax}%
10936         \ifx\anchor@spot\y
10937           \chardef\x=0 %
10938         \fi
10939       \fi
10940     \fi
10941   \expandafter\endgroup
10942   \ifcase\x
10943     \literalps@out{H.S}%
10944     \literalps@out{H.R}%
10945   \else
10946     \leavevmode
10947     \Hy@SaveSpaceFactor
10948     \ifmmode
10949       \def\Hy@LinkMath{$}%
10950     \else
10951       \def\Hy@LinkMath{}%
10952     \fi
10953     \ifHy@breaklinks
10954       \Hy@setouterhbox\pdf@box{%
10955         \Hy@RestoreSpaceFactor
10956         \Hy@LinkMath
10957         \Hy@AllowHyphens#1%
10958         \Hy@LinkMath
10959         \Hy@SaveSpaceFactor
10960       }%
10961     \else
10962       \sbox\pdf@box{%
10963         \Hy@RestoreSpaceFactor
10964         \Hy@LinkMath

```

```

10965      #1%
10966      \Hy@LinkMath
10967      \Hy@SaveSpaceFactor
10968    }%
10969    \fi
10970    \dimen@ \ht \pdf@box
10971    \ifdim \dp \pdf@box = \z@
10972      \literalps@out{H.S}%
10973    \else
10974      \lower \dp \pdf@box \hbox{\literalps@out{H.S}}%
10975    \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...).

```

10976    \ifHy@breaklinks
10977      \expandafter \Hy@breaklinksunhbox
10978    \else
10979      \expandafter \box
10980    \fi
10981    \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

10982    \ifdim \dimen@ = \z@
10983      \literalps@out{H.R}%
10984    \else
10985      \raise \dimen@ \hbox{\literalps@out{H.R}}%
10986    \fi
10987    \Hy@RestoreSpaceFactor
10988  \fi
10989  \ifx \pdf@type \Hy@DEST
10990  \else
10991    \pdf@addtoksx{H.B}%
10992  \fi
10993 }

```

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.

```

10994 \newtoks \pdf@toks
10995 \newtoks \pdf@defaulttoks
10996 \pdf@defaulttoks = {}%
10997 \def \pdf@addtoks #1 #2 {%
10998   \edef \@processme {\pdf@toks {\the \pdf@toks / #2 #1}}%
10999   \@processme
11000 }
11001 \def \pdf@addtoksx #1 {%
11002   \edef \@processme {\pdf@toks {\the \pdf@toks \space #1}}%
11003   \@processme
11004 }
11005 \def \PDFdefaults #1 {%
11006   \pdf@defaulttoks = {#1}%
11007 }

```

This is the list of allowed keys. See the Acrobat manual for an explanation.

```

11008 % what is the type of pdfmark?

```



```

11009 \define@key{PDF}{pdfmark}{\def\pdf@type{#1}}
11010 % what is the link type?
11011 \define@key{PDF}{linktype}{\def\pdf@linktype{#1}}
11012 \def\pdf@linktype{link}
11013 % parameter is a stream of PDF
11014 \define@key{PDF}{Raw}{\pdf@addtoksx{#1}}
11015 % parameter is a name
11016 \define@key{PDF}{Action}{\pdf@addtoks{#1}{Action}}
11017 % parameter is a array
11018 \define@key{PDF}{Border}{%
11019   \edef\Hy@temp{#1}%
11020   \ifx\Hy@temp\@empty
11021     \else
11022       \pdf@addtoks{[#1]\Hy@BorderArrayPatch}{Border}% hash-ok
11023   \fi
11024 }
11025 \let\Hy@BorderArrayPatch\@empty
11026 % parameter is a dictionary
11027 \define@key{PDF}{BorderStyle}{%
11028   \edef\Hy@temp{#1}%
11029   \ifx\Hy@temp\@empty
11030     \else
11031       \pdf@addtoks{<<#1>>}{BS}%
11032   \fi
11033 }
11034 % parameter is a array
11035 \define@key{PDF}{Color}{%
11036   \ifx\relax#1\relax
11037     \else
11038       \pdf@addtoks{[#1]}{Color}% hash-ok
11039   \fi
11040 }
11041 % parameter is a string
11042 \define@key{PDF}{Contents}{\pdf@addtoks{(#1)}{Contents}}
11043 % parameter is a integer
11044 \define@key{PDF}{Count}{\pdf@addtoks{#1}{Count}}
11045 % parameter is a array
11046 \define@key{PDF}{CropBox}{\pdf@addtoks{[#1]}{CropBox}}% hash-ok
11047 % parameter is a string
11048 \define@key{PDF}{DOSFile}{\pdf@addtoks{(#1)}{DOSFile}}
11049 % parameter is a string or file
11050 \define@key{PDF}{DataSource}{\pdf@addtoks{(#1)}{DataSource}}
11051 % parameter is a destination
11052 \define@key{PDF}{Dest}{%
11053   \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
11054   \ifx\Hy@pstringDest\@empty
11055     \Hy@pdfmarkerrortrue
11056     \Hy@Warning{Destination with empty name ignored}%
11057   \else
11058     \pdf@addtoks{(\Hy@pstringDest) cvn}{Dest}%
11059   \fi
11060 }
11061 \define@key{PDF}{DestAnchor}{%
11062   \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
11063   \ifx\Hy@pstringDest\@empty
11064     \Hy@pdfmarkerrortrue
11065     \Hy@Warning{Destination with empty name ignored}%

```

```

11066 \else
11067 \pdf@addtoks{(\Hy@pstringDest) cvn}{Dest}%
11068 \fi
11069 }
11070 % parameter is a string
11071 \define@key{PDF}{Dir}{\pdf@addtoks{(#1)}{Dir}}
11072 % parameter is a string
11073 \define@key{PDF}{File}{\pdf@addtoks{(#1)}{File}}
11074 % parameter is a int
11075 \define@key{PDF}{Flags}{\pdf@addtoks{#1}{Flags}}
11076 \define@key{PDF}{PDFAFlags}{%
11077 \ifHy@pdfa
11078 \pdf@addtoks{#1}{F}%
11079 \fi
11080 }
11081 % parameter is a name
11082 \define@key{PDF}{AcroHighlight}{%
11083 \begingroup
11084 \edef\x{#1}%
11085 \expandafter\endgroup\ifx\x\@empty
11086 \else
11087 \pdf@addtoks{#1}{H}%
11088 \fi
11089 }
11090 % parameter is a string
11091 \define@key{PDF}{ID}{\pdf@addtoks{[#1]}{ID}}% hash-ok
11092 % parameter is a string
11093 \define@key{PDF}{MacFile}{\pdf@addtoks{(#1)}{MacFile}}
11094 % parameter is a string
11095 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
11096 % parameter is a string
11097 \define@key{PDF}{Op}{\pdf@addtoks{(#1)}{Op}}
11098 % parameter is a Boolean
11099 \define@key{PDF}{Open}{\pdf@addtoks{#1}{Open}}
11100 % parameter is a integer or name
11101 \define@key{PDF}{Page}{\pdf@addtoks{#1}{Page}}
11102 % parameter is a name
11103 \define@key{PDF}{PageMode}{\pdf@addtoks{#1}{PageMode}}
11104 % parameter is a string
11105 \define@key{PDF}{Params}{\pdf@addtoks{(#1)}{Params}}
11106 % parameter is a array
11107 \define@key{PDF}{Rect}{\pdf@addtoks{[#1]}{Rect}}% hash-ok
11108 % parameter is a integer
11109 \define@key{PDF}{SrcPg}{\pdf@addtoks{#1}{SrcPg}}
11110 % parameter is a name
11111 \define@key{PDF}{Subtype}{\pdf@addtoks{#1}{Subtype}}
11112 % parameter is a string
11113 \define@key{PDF}{Title}{\pdf@addtoks{(#1)}{Title}}
11114 % parameter is a string
11115 \define@key{PDF}{Unix}{\pdf@addtoks{(#1)}{Unix}}
11116 % parameter is a string
11117 \define@key{PDF}{UnixFile}{\pdf@addtoks{(#1)}{UnixFile}}
11118 % parameter is an array
11119 \define@key{PDF}{View}{\pdf@addtoks{[#1]}{View}}% hash-ok
11120 % parameter is a string
11121 \define@key{PDF}{WinFile}{\pdf@addtoks{(#1)}{WinFile}}

```

These are the keys used in the DOCINFO section.

```

11122 \define@key{PDF}{Author}{\pdf@addtoks{(#1)}{Author}}
11123 \define@key{PDF}{Creator}{\pdf@addtoks{(#1)}{Creator}}
11124 \define@key{PDF}{CreationDate}{\pdf@addtoks{(#1)}{CreationDate}}
11125 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
11126 \define@key{PDF}{Producer}{\pdf@addtoks{(#1)}{Producer}}
11127 \define@key{PDF}{Subject}{\pdf@addtoks{(#1)}{Subject}}
11128 \define@key{PDF}{Keywords}{\pdf@addtoks{(#1)}{Keywords}}
11129 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
11130 \define@key{PDF}{Base}{\pdf@addtoks{(#1)}{Base}}
11131 \define@key{PDF}{URI}{\pdf@addtoks{(#1)}{URI}}
11132 \define@key{PDF}{Trapped}{%
11133   \edef\Hy@temp{#1}%
11134   \ifx\Hy@temp\@empty
11135     \else
11136       \pdf@addtoks{/#1}{Trapped}%
11137   \fi
11138 }
11139
11140 </pdfmarkbase>
11141 <*pdfmark>
11142 \def\Acrobatmenu#1#2{%
11143   \Hy@Acrobatmenu{#1}{#2}{%
11144     \pdfmark[{#2}]{%
11145       linktype=menu,%
11146       pdfmark=/ANN,%
11147       AcroHighlight=\@pdfhighlight,%
11148       Border=\@pdfborder,%
11149       BorderStyle=\@pdfborderstyle,%
11150       Action={<< /Subtype /Named /N /#1 >>},%
11151       Subtype=/Link,%
11152       PDFAFlags=4%
11153     }%
11154   }%
11155 }

```

And now for some useful examples:

```

11156 \def\PDFNextPage{\@ifnextchar[{\PDFNextPage@}{\PDFNextPage@[]}}
11157 \def\PDFNextPage@[#1]#2{%
11158   \pdfmark[{#2}]{%
11159     #1,%
11160     Border=\@pdfborder,%
11161     BorderStyle=\@pdfborderstyle,%
11162     Color=.2 .1 .5,%
11163     pdfmark=/ANN,%
11164     Subtype=/Link,%
11165     PDFAFlags=4,%
11166     Page=/Next%
11167   }%
11168 }
11169 \def\PDFPreviousPage{%
11170   \@ifnextchar[{\PDFPreviousPage@}{\PDFPreviousPage@[]}]%
11171 }
11172 \def\PDFPreviousPage@[#1]#2{%
11173   \pdfmark[{#2}]{%
11174     #1,%
11175     Border=\@pdfborder,%
11176     BorderStyle=\@pdfborderstyle,%
11177     Color=.4 .4 .1,%

```

```

11178 pdfmark=/ANN,%
11179 Subtype=/Link,%
11180 PDFAFlags=4,%
11181 Page=/Prev%
11182 }%
11183 }
11184 \def\PDFOpen#1{%
11185 \pdfmark{#1,pdfmark=/DOCVIEW}%
11186 }

```

This will only work if you use Distiller 2.1 or higher.

```

11187 \def\hyper@linkurl#1#2{%
11188 \begingroup
11189 \Hy@pstringdef\Hy@pstringURI{#2}%
11190 \hyper@chars
11191 \leavevmode
11192 \pdfmark[{#1}]{%
11193 pdfmark=/ANN,%
11194 linktype=url,%
11195 AcroHighlight=\@pdfhighlight,%
11196 Border=\@pdfborder,%
11197 BorderStyle=\@pdfborderstyle,%
11198 Color=\@urlbordercolor,%
11199 Action={<<%
11200 /Subtype/URI%
11201 /URI(\Hy@pstringURI)%
11202 \ifHy@href@ismap
11203 /IsMap true%
11204 \fi
11205 >>},%
11206 Subtype=/Link,%
11207 PDFAFlags=4%
11208 }%
11209 \endgroup
11210 }
11211 \def\hyper@linkfile#1#2#3{%
11212 \begingroup
11213 \def\Hy@pstringF{#2}%
11214 \Hy@CleanupFile\Hy@pstringF
11215 \Hy@pstringdef\Hy@pstringF\Hy@pstringF
11216 \Hy@pstringdef\Hy@pstringD{#3}%
11217 \Hy@MakeRemoteAction
11218 \leavevmode
11219 \pdfmark[{#1}]{%
11220 pdfmark=/ANN,%
11221 Subtype=/Link,%
11222 PDFAFlags=4,%
11223 AcroHighlight=\@pdfhighlight,%
11224 Border=\@pdfborder,%
11225 BorderStyle=\@pdfborderstyle,%
11226 linktype=file,%
11227 Color=\@filebordercolor,%
11228 Action={%
11229 <<%
11230 /S/GoToR%
11231 \Hy@SetNewWindow
11232 /F(\Hy@pstringF)%
11233 /D%

```

```

11234 \ifx\#3\%
11235 [\Hy@href@page\@pdfremotestartview]%
11236 \else
11237 (\Hy@pstringD)cvn%
11238 \fi
11239 \Hy@href@nextactionraw
11240 >>%
11241 }%
11242 }%
11243 \endgroup
11244 }
11245 \def\@hyper@launch run:#1\#2#3{%
11246 \begingroup
11247 \Hy@pstringdef\Hy@pstringF{#1}%
11248 \Hy@pstringdef\Hy@pstringP{#3}%
11249 \leavevmode
11250 \pdfmark[{#2}]{%
11251 pdfmark=/ANN,%
11252 Subtype=/Link,%
11253 PDFAFlags=4,%
11254 AcroHighlight=\@pdfhighlight,%
11255 Border=\@pdfborder,%
11256 BorderStyle=\@pdfborderstyle,%
11257 linktype=run,%
11258 Color=\@runbordercolor,%
11259 Action={%
11260 <<%
11261 /S/Launch%
11262 \Hy@SetNewWindow
11263 /F(\Hy@pstringF)%
11264 \ifx\#3\%
11265 \else
11266 /Win<</P(\Hy@pstringP)/F(\Hy@pstringF)>>%
11267 \fi
11268 \Hy@href@nextactionraw
11269 >>%
11270 }%
11271 }%
11272 \endgroup
11273 }
11274 \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.

```

11275 <*dvips>
11276 \providecommand*{\XR@ext}{pdf}
11277 \def\Hy@raisedlink{}
11278 \def\literalps@out#1{\special{ps:SDict begin #1 end}}%
11279 \def\headerps@out#1{\special{! #1}}%
11280 \input{pdfmark.def}%
11281 \ifx\@pdfproducer\relax

```

```

11282 \def\@pdfproducer{dvips + Distiller}%
11283 \fi
11284 \providecommand*\@pdfborder{0 0 1}
11285 \providecommand*\@pdfborderstyle{}
11286 \providecommand*\@pdfview{XYZ}
11287 \providecommand*\@pdfviewparams{ H.V}
11288 \def\Hy@BorderArrayPatch{BorderArrayPatch}

11289 \g@addto@macro\Hy@FirstPageHook{%
11290 \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.

```

11291 /DvipsToPDF{72.27 mul Resolution div} def%
11292 /PDFToDvips{72.27 div Resolution mul} def%
11293 /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.

```

11294 /BorderArrayPatch{%
11295   [exch{%
11296     dup dup type/integertype eq exch type/realtype eq or%
11297     {BPToDvips}if%
11298   }forall]%
11299 }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.

```

11300 /HyperBorder {1 PDFToDvips} def%
11301 /H.V {pdf@hoff pdf@voff null} def%
11302 /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

```

11303 /H.S {%
11304   currentpoint %
11305   HyperBorder add /pdf@lly exch def %
11306   dup DvipsToPDF 72 add /pdf@hoff exch def %
11307   HyperBorder sub /pdf@llx exch def%
11308 } def%

```

The calculation of upper left *y* is done without raising the point in T<sub>E</sub>X, by simply adding on the current \baselineskip to the current *y*. This is usually too much, so we remove a notional 2 points.

We have to see what the current baselineskip is, and convert it to the dvips coordinate system.

Argument: baselineskip in pt. The  $x$  and  $y$  coordinates of the current point, minus the baselineskip

```

11309 /H.L {%
11310 2 sub dup%
11311 /HyperBasePt exch def %
11312 PDFToDvips /HyperBaseDvips exch def %
11313 currentpoint %
11314 HyperBaseDvips sub /pdf@ury exch def%
11315 /pdf@urx exch def%
11316 } def%
11317 /H.A {%
11318 H.L %
11319 % | /pdf@voff| = the distance from the top of the page to a point
11320 % | \baselineskip| above the current point in PDF coordinates
11321 currentpoint exch pop %
11322 vsize 72 sub exch DvipsToPDF %
11323 HyperBasePt sub % baseline skip
11324 sub /pdf@voff exch def%
11325 } def%
11326 /H.R {%
11327 currentpoint %
11328 HyperBorder sub /pdf@ury exch def %
11329 HyperBorder add /pdf@urx exch def %
11330 % | /pdf@voff| = the distance from the top of the page to the current point, in
11331 % PDF coordinates
11332 currentpoint exch pop vsize 72 sub %
11333 exch DvipsToPDF sub /pdf@voff exch def%
11334 } def%
11335 }%
11336 }
11337 \AtBeginShipoutFirst{%
11338 \ifHy@setpagesize
11339 \begingroup
11340 \@ifundefined{stockwidth}{%
11341 \ifdim\paperwidth>\z@
11342 \ifdim\paperheight>\z@
11343 \special{papersize=\the\paperwidth,\the\paperheight}%
11344 \fi
11345 \fi
11346 }{%
11347 \ifdim\stockwidth>\z@
11348 \ifdim\stockheight>\z@
11349 \special{papersize=\the\stockwidth,\the\stockheight}%
11350 \fi
11351 \fi
11352 }%
11353 \endgroup
11354 \fi
11355 \Hy@DisableOption{setpagesize}%
11356 }
11357 \</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.

```

11358 <*vtexpdfmark>
11359 \providecommand*{\XR@ext}{pdf}
11360 \def\Hy@raisedlink{}
11361 \def\literalps@out#1{\special{pS:#1}}%
11362 \def\headerps@out#1{\immediate\special{pS:#1}}%
11363 \input{pdfmark.def}%
11364 \ifx\@pdfproducer\relax
11365   \ifnum\OpMode=\@ne
11366     \def\@pdfproducer{VTeX}%
11367   \else
11368     \def\@pdfproducer{VTeX + Distiller}%
11369   \fi
11370 \fi
11371 \providecommand*\@pdfborder{0 0 1}
11372 \providecommand*\@pdfborderstyle{}
11373 \providecommand*\@pdfview{XYZ}
11374 \providecommand*\@pdfviewparams{ H.V}
11375 \g@addto@macro\Hy@FirstPageHook{%
11376   \headerps@out{%
11377     /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.

```

11378   /HyperBorder {1} def%
11379   /H.V {pdf@hoff pdf@voff null} def%
11380   /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:  $\text{pdf@lly} = Y_c - \text{HyperBorder}$ ,  $\text{pdf@hoff} = X_c + 72$ ,  $\text{pdf@llx} = X_c - \text{HyperBorder}$

```

11381   /H.S {%
11382     currentpoint %
11383     HyperBorder sub%
11384     /pdf@lly exch def %
11385     dup 72 add /pdf@hoff exch def %
11386     HyperBorder sub%
11387     /pdf@llx exch def%
11388   } def%

```

The  $x$  and  $y$  coordinates of the current point, minus the `\baselineskip`:  $\text{pdf@ury} = Y_c + \text{HyperBasePt} + \text{HyperBorder}$ ,  $\text{pdf@urx} = X_c + \text{HyperBorder}$

```

11389   /H.L {%
11390     2 sub%
11391     /HyperBasePt exch def %
11392     currentpoint %
11393     HyperBasePt add HyperBorder add%
11394     /pdf@ury exch def %
11395     HyperBorder add%
11396     /pdf@urx exch def%
11397   } def%
11398   /H.A {%
11399     H.L %
11400     currentpoint exch pop %
11401     vsize 72 sub exch %
11402     HyperBasePt add add%
11403     /pdf@voff exch def%
11404   } def%

```



$\text{pdf@ury} = Y_c + \text{HyperBorder}$ ,  $\text{pdf@urx} = X_c + \text{HyperBorder}$

```

11405 /H.R. {%
11406   currentpoint %
11407   HyperBorder add%
11408 /pdf@ury exch def %
11409 HyperBorder add%
11410 /pdf@urx exch def %
11411 currentpoint exch pop vsize 72 sub add%
11412 /pdf@voff exch def%
11413 } def%
11414 }%
11415 }
11416 </vtexpdfmark>

```

## 46.11 Textures

```

11417 <*textures>
11418 \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.

```

11419 \begingroup
11420 \obeylines %
11421 \gdef\Hy@ps@CR{\noexpand
11422 }%
11423 \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`.

```

11424 \def\literalps@out#1{%
11425   \special{postscript 0 0 transform}%
11426   \special{rawpostscript itransform moveto\Hy@ps@CR #1}%
11427 }%
11428 %

```

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.

```

11429 \def\headerps@out#1{%
11430   \special{%
11431     prepostscript TeXdict begin\Hy@ps@CR
11432     #1\Hy@ps@CR
11433     end%

```

```

11434 }%
11435 }%
11436 %

```

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.

```

11437 \g@addto@macro\Hy@FirstPageHook{%
11438   \headerps@out{%
11439     /betterpdfmark {%
11440       systemdict begin %
11441         dup /BP eq%
11442         {cleartomark gsave nulldevice []}%
11443         {dup /EP eq%
11444           {cleartomark cleartomark grestore}%
11445           {cleartomark}%
11446         ifelse%
11447       }ifelse %
11448     end%
11449   }def\Hy@ps@CR
11450   ___pdfmark___ not{/pdfmark /betterpdfmark load def}if%
11451 }% end of \headerps@out
11452 }% end of \AtBeginShipoutFirst
11453 %
11454 \input{pdfmark.def}%
11455 %
11456 \ifx\@pdfproducer\relax
11457   \def\@pdfproducer{Textures + Distiller}%
11458 \fi
11459 \providecommand*\@pdfborder{0 0 1}
11460 \providecommand*\@pdfborderstyle{}
11461 \providecommand*\@pdfview{XYZ}
11462 \providecommand*\@pdfviewparams{ H.V}
11463 %

```

These are called at the start and end of unboxed links; their job is to leave available PS variables called pdf@llx pdf@lly pdf@urx pdf@ury, which are the coordinates of the bounding rectangle of the link, and pdf@hoff pdf@voff which are the PDF page offsets. The Rect pair are called at the LL and UR corners of a box known to  $\TeX$ .

```

11464 \Hy@AtBeginDocument{%
11465   \headerps@out{%

```

Textures lives in normal points, I think. So conversion from one coordinate system to another involves doing nothing.

```

11466   /vsize {\Hy@pageheight} def%
11467   /DvipsToPDF {} def%
11468   /PDFToDvips {} def%
11469   /BPTToDvips {} def%
11470   /HyperBorder { 1 PDFToDvips } def\Hy@ps@CR
11471   /H.V {pdf@hoff pdf@voff null} def\Hy@ps@CR
11472   /H.B {/Rect[pdf@llx pdf@lly pdf@urx pdf@ury]} def\Hy@ps@CR
11473   /H.S {%
11474     currentpoint %
11475     HyperBorder add /pdf@lly exch def %
11476     dup DvipsToPDF 72 add /pdf@hoff exch def %
11477     HyperBorder sub /pdf@llx exch def%
11478   } def\Hy@ps@CR
11479   /H.L {%

```

```

11480 2 sub %
11481 PDFToDvips /HyperBase exch def %
11482 currentpoint %
11483 HyperBase sub /pdf@ury exch def%
11484 /pdf@urx exch def%
11485 } def\Hy@ps@CR
11486 /H.A {%
11487 H.L %
11488 currentpoint exch pop %
11489 vsize 72 sub exch DvipsToPDF %
11490 HyperBase sub % baseline skip
11491 sub /pdf@voff exch def%
11492 } def\Hy@ps@CR
11493 /H.R {%
11494 currentpoint %
11495 HyperBorder sub /pdf@ury exch def %
11496 HyperBorder add /pdf@urx exch def %
11497 currentpoint exch pop vsize 72 sub %
11498 exch DvipsToPDF sub /pdf@voff exch def%
11499 } def\Hy@ps@CR
11500 }%
11501 }

11502 \Hy@AtBeginDocument{%
11503 \ifHy@colorlinks
11504 \headerps@out{/PDFBorder{/Border [0 0 0]}def}%
11505 \fi
11506 }

```

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.

```

11507 \expandafter\let\expandafter\keepPDF@SetupDoc
11508 \csname PDF@SetupDoc\endcsname
11509 \def\PDF@SetupDoc{%
11510 \ifx\@baseurl\@empty
11511 \else
11512 \special{html:<base href="\@baseurl">}%
11513 \fi
11514 \keepPDF@SetupDoc
11515 }

11516 \Hy@WrapperDef\hyper@anchor#1{%
11517 \Hy@SaveLastskip
11518 \Hy@VerboseAnchor{#1}%
11519 \begingroup
11520 \let\protect=\string
11521 \special{html:<a name=%
11522 \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
11523 \endgroup
11524 \Hy@activeanchortrue
11525 \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
11526 \special{html:</a>}%
11527 \Hy@activeanchorfalse
11528 \Hy@RestoreLastskip
11529 }

11530 \Hy@WrapperDef\hyper@anchorstart#1{%
11531 \Hy@SaveLastskip
11532 \Hy@VerboseAnchor{#1}%
11533 \begingroup

```

```

11534 \hyper@chars
11535 \special{html:<a name=%
11536 \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
11537 \endgroup
11538 \Hy@activeanchortrue
11539 }
11540 \def\hyper@anchorend{%
11541 \special{html:</a>}%
11542 \Hy@activeanchorfalse
11543 \Hy@RestoreLastskip
11544 }
11545 \def\@urlltype{url}
11546 \def\hyper@linkstart#1#2{%
11547 \Hy@VerboseLinkStart{#1}{#2}%
11548 \expandafter\Hy@colorlink\csname @#1color\endcsname
11549 \def\Hy@tempa{#1}%
11550 \ifx\Hy@tempa\@urlltype
11551 \special{html:<a href=\hyper@quote#2\hyper@quote>}%
11552 \else
11553 \begingroup
11554 \hyper@chars
11555 \special{%
11556 html:<a href=%
11557 \hyper@quote\#\HyperDestNameFilter{#2}\hyper@quote>%
11558 }%
11559 \endgroup
11560 \fi
11561 }
11562 \def\hyper@linkend{%
11563 \special{html:</a>}%
11564 \Hy@endcolorlink
11565 }
11566 \def\hyper@linkfile#1#2#3{%
11567 \hyper@linkurl{#1}{%
11568 \Hy@linkfileprefix#2\ifx\\#3\\\else\##3\fi
11569 }%
11570 }
11571 \def\hyper@linkurl#1#2{%
11572 \leavevmode
11573 \ifHy@raiselinks
11574 \Hy@SaveSpaceFactor
11575 \Hy@SaveSavedSpaceFactor
11576 \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
11577 \Hy@RestoreSavedSpaceFactor
11578 \@linkdim\dp\@tempboxa
11579 \lower\@linkdim\hbox{%
11580 \hyper@chars
11581 \special{html:<a href=\hyper@quote#2\hyper@quote>}%
11582 }%
11583 \Hy@colorlink\@urllcolor
11584 \Hy@RestoreSpaceFactor
11585 #1%
11586 \Hy@SaveSpaceFactor
11587 \@linkdim\ht\@tempboxa
11588 \advance\@linkdim by -6.5\p@
11589 \raise\@linkdim\hbox{\special{html:</a>}}%
11590 \Hy@endcolorlink

```

```

11591 \Hy@RestoreSpaceFactor
11592 \else
11593 \begingroup
11594 \hyper@chars
11595 \special{html:<a href=\hyper@quote#2\hyper@quote>}%
11596 \Hy@colorlink\@urlcolor#1%
11597 \special{html:</a>}%
11598 \Hy@endcolorlink
11599 \endgroup
11600 \fi
11601 }

```

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

```

11602 \def\hyper@link#1#2#3{%
11603 \Hy@VerboseLinkStart{#1}{#2}%
11604 \hyper@linkurl{#3}{\# \Hy@DestNameFilter{#2}}%
11605 }
11606 \def\hyper@image#1#2{%
11607 \begingroup
11608 \hyper@chars
11609 \special{html:<img src=\hyper@quote#1\hyper@quote>}%
11610 \endgroup
11611 }
11612 </textures>

```

## 46.12 dvipsone

```

11613 % \subsection{dvipsone driver}
11614 % Over-ride the default setup macro in pdfmark driver to use Y\&Y
11615 % |\special| commands.
11616 <*dvipsone>
11617 \providecommand*\XR@ext}{pdf}
11618 \def\Hy@raisedlink{}
11619 \providecommand*\@pdfborder{0 0 1}
11620 \providecommand*\@pdfborderstyle{}
11621 \def\literalps@out#1{\special{ps:#1}}%
11622 \def\headerps@out#1{\special{headertext=#1}}%
11623 \input{pdfmark.def}%
11624 \ifx\@pdfproducer\relax
11625 \def\@pdfproducer{dvipsone + Distiller}%
11626 \fi
11627 \HyInfo@AddonUnsupportedtrue
11628 \def\PDF@FinishDoc{%
11629 \Hy@UseMaketitleInfos
11630 \HyInfo@TrappedUnsupported
11631 \special{PDF: Keywords \@pdfkeywords}%
11632 \special{PDF: Title \@pdftitle}%
11633 \special{PDF: Creator \@pdfcreator}%
11634 \ifx\@pdfcreationdate\@empty
11635 \else
11636 \special{PDF: CreationDate \@pdfcreationdate}%
11637 \fi
11638 \ifx\@pdfmoddate\@empty
11639 \else
11640 \special{PDF: ModDate \@pdfmoddate}%
11641 \fi
11642 \special{PDF: Author \@pdfauthor}%
11643 \ifx\@pdfproducer\relax

```

```

11644 \else
11645   \special{PDF: Producer \@pdfproducer}%
11646 \fi
11647 \special{PDF: Subject \@pdfsubject}%
11648 \Hy@DisableOption{pdfauthor}%
11649 \Hy@DisableOption{pdftitle}%
11650 \Hy@DisableOption{pdfsubject}%
11651 \Hy@DisableOption{pdfcreator}%
11652 \Hy@DisableOption{pdfcreationdate}%
11653 \Hy@DisableOption{pdfmoddate}%
11654 \Hy@DisableOption{pdfproducer}%
11655 \Hy@DisableOption{pdfkeywords}%
11656 \Hy@DisableOption{pdftrapped}%
11657 \Hy@DisableOption{pdfinfo}%
11658 }
11659 \def\PDF@SetupDoc{%
11660   \def\Hy@temp{}%
11661   \ifx\@pdfstartpage\@empty
11662     \else
11663       \ifx\@pdfstartview\@empty
11664         \else
11665           \edef\Hy@temp{%
11666             ,Page=\@pdfstartpage
11667             ,View=\@pdfstartview
11668           }%
11669         \fi
11670       \fi
11671       \edef\Hy@temp{%
11672         \noexpand\pdfmark{%
11673           pdfmark=/DOCVIEW,%
11674           PageMode=/\@pdfpagemode
11675         }\Hy@temp
11676       }%
11677     }%
11678   \Hy@temp
11679   \ifx\@pdfpagescrop\@empty
11680     \else
11681       \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
11682     \fi
11683   \edef\Hy@temp{%
11684     \ifHy@toolbar\else /HideToolbar true\fi
11685     \ifHy@menubar\else /HideMenubar true\fi
11686     \ifHy>windowui\else /HideWindowUI true\fi
11687     \ifHy@fitwindow /FitWindow true\fi
11688     \ifHy@centerwindow /CenterWindow true\fi
11689     \ifHy@displaydoctitle /DisplayDocTitle true\fi
11690     \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
11691     \Hy@UseNameKey{Direction}\@pdfdirection
11692     \Hy@UseNameKey{ViewArea}\@pdfviewarea
11693     \Hy@UseNameKey{ViewClip}\@pdfviewclip
11694     \Hy@UseNameKey{PrintArea}\@pdfprintarea
11695     \Hy@UseNameKey{PrintClip}\@pdfprintclip
11696     \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
11697     \Hy@UseNameKey{Duplex}\@pdfduplex
11698     \ifx\@pdfpicktraybypdfsize\@empty
11699       \else
11700         /PickTrayByPDFSize \@pdfpicktraybypdfsize

```

```

11701 \fi
11702 \ifx\@pdfprintpagerange\@empty
11703 \else
11704   /PrintPageRange[\@pdfprintpagerange]%
11705 \fi
11706 \ifx\@pdfnumcopies\@empty
11707 \else
11708   /NumCopies \@pdfnumcopies
11709 \fi
11710 }%
11711 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
11712 \pdfmark{%
11713   pdfmark=/PUT,%
11714   Raw={%
11715     \string{Catalog\string}<<%
11716     \ifx\Hy@temp\@empty
11717     \else
11718       /ViewerPreferences<<\Hy@temp>>%
11719     \fi
11720     \Hy@UseNameKey{PageLayout}\@pdfpagelayout
11721     \ifx\@pdflang\@empty
11722     \else
11723       /Lang(\@pdflang)%
11724     \fi
11725     \ifx\@baseurl\@empty
11726     \else
11727       /URI<</Base(\Hy@pstringB)>>%
11728     \fi
11729     >>%
11730   }%
11731 }%
11732 }
11733 \providecommand*\@pdfview{XYZ}
11734 \providecommand*\@pdfviewparams{ %
11735   gsave revscl currentpoint grestore %
11736   72 add exch pop null exch null%
11737 }
11738 \def\Hy@BorderArrayPatch{BorderArrayPatch}

```

These are called at the start and end of unboxed links; their job is to leave available PS variables called pdf@llx pdf@lly pdf@urx pdf@ury, which are the coordinates of the bounding rectangle of the link, and pdf@hoff pdf@voff which are the PDF page offsets. These latter are currently not used in the dvipsone setup. The Rect pair are called at the LL and UR corners of a box known to  $\TeX$ .

```

11739 \g@addto@macro\Hy@FirstPageHook{%
11740   \headerps@out{%

```

dvipsone lives in scaled points; does this mean 65536 or 65781?

```

11741   /DvipsToPDF { 65781 div } def%
11742   /PDFToDvips { 65781 mul } def%
11743   /BPToDvips{65781 mul}def%
11744   /HyperBorder { 1 PDFToDvips } def%
11745   /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.

```

11746   /BorderArrayPatch{%
11747     [exch{%

```

```

11748      dup dup type/integertype eq exch type/realtype eq or%
11749      {BPToDvips}if%
11750    }forall}%
11751  }def%
11752  /H.S {%
11753    currentpoint %
11754    HyperBorder add /pdf@lly exch def %
11755    dup DvipsToPDF 72 add /pdf@hoff exch def %
11756    HyperBorder sub /pdf@llx exch def%
11757  } def%
11758  /H.L {%
11759    2 sub %
11760    PDFToDvips /HyperBase exch def %
11761    currentpoint %
11762    HyperBase sub /pdf@ury exch def%
11763    /pdf@urx exch def%
11764  } def%
11765  /H.A {%
11766    H.L %
11767    currentpoint exch pop %
11768    HyperBase sub % baseline skip
11769    DvipsToPDF /pdf@voff exch def%
11770  } def%
11771  /H.R {%
11772    currentpoint %
11773    HyperBorder sub /pdf@ury exch def %
11774    HyperBorder add /pdf@urx exch def %
11775    currentpoint exch pop DvipsToPDF /pdf@voff exch def%
11776  } def%
11777  }%
11778 }
11779 </dvipsone>

```

## 46.13 TeX4ht

```

11780 <*tex4ht>
11781 \providecommand*{\XR@ext}{html}
11782 \def\Hy@raisedlink{}
11783 \ifpackageloaded{tex4ht}{%
11784   \Hy@InfoNoLine{tex4ht is already loaded}%
11785 }{%
11786   \RequirePackage[hTeX4ht]{tex4ht}%
11787 }
11788 \hyperlinkfileprefix{}
11789 \def\PDF@FinishDoc{}
11790 \def\PDF@SetupDoc{%
11791   \ifx\@baseurl\@empty
11792   \else
11793     \special{t4ht=<base href="\@baseurl">}%
11794   \fi
11795 }
11796 \Hy@WrapperDef\hyper@anchor#1{%
11797   \Hy@SaveLastskip
11798   \Hy@VerboseAnchor{#1}%
11799   \begingroup
11800     \let\protect=\string
11801     \special{t4ht=<a name=%
11802       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%

```



```

11803 \endgroup
11804 \Hy@activeanchortrue
11805 \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
11806 \special{t4ht=</a>}%
11807 \Hy@activeanchorfalse
11808 \Hy@RestoreLastskip
11809 }
11810 \Hy@WrapperDef\hyper@anchorstart#1{%
11811 \Hy@SaveLastskip
11812 \Hy@VerboseAnchor{#1}%
11813 \begingroup
11814 \hyper@chars\special{t4ht=<a name=%
11815 \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
11816 \endgroup
11817 \Hy@activeanchortrue
11818 }
11819 \def\hyper@anchorend{%
11820 \special{t4ht=</a>}%
11821 \Hy@activeanchorfalse
11822 \Hy@RestoreLastskip
11823 }
11824 \def\@urlltype{url}
11825 \def\hyper@linkstart#1#2{%
11826 \Hy@VerboseLinkStart{#1}{#2}%
11827 \expandafter\Hy@colorlink\csname @#1color\endcsname
11828 \def\Hy@tempa{#1}%
11829 \ifx\Hy@tempa\@urlltype
11830 \special{t4ht=<a href=\hyper@quote#2\hyper@quote>}%
11831 \else
11832 \begingroup
11833 \hyper@chars
11834 \special{t4ht=<a href=%
11835 \hyper@quote\#\HyperDestNameFilter{#2}\hyper@quote>}%
11836 \endgroup
11837 \fi
11838 }
11839 \def\hyper@linkend{%
11840 \special{t4ht=</a>}%
11841 \Hy@endcolorlink
11842 }
11843 \def\hyper@linkfile#1#2#3{%
11844 \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\else\##3\fi}%
11845 }
11846 \def\hyper@linkurl#1#2{%
11847 \leavevmode
11848 \ifHy@raiselinks
11849 \Hy@SaveSpaceFactor
11850 \Hy@SaveSavedSpaceFactor
11851 \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
11852 \Hy@RestoreSavedSpaceFactor
11853 \@linkdim\dp\@tempboxa
11854 \lower\@linkdim\hbox{%
11855 \begingroup
11856 \hyper@chars
11857 \special{%
11858 t4ht=<a href=\hyper@quote#2\hyper@quote>%
11859 }%

```

```

11860 \endgroup
11861 }%
11862 \Hy@colorlink\@urlcolor
11863 \Hy@RestoreSpaceFactor
11864 #1%
11865 \Hy@SaveSpaceFactor
11866 \Hy@endcolorlink
11867 \@linkdim\ht\@tempboxa
11868 \advance\@linkdim by -6.5\p@
11869 \raise\@linkdim\hbox{\special{t4ht=</a>}}%
11870 \Hy@RestoreSpaceFactor
11871 \else
11872 \begingroup
11873 \hyper@chars
11874 \special{t4ht=<a href=\hyper@quote#2\hyper@quote>}%
11875 \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
11876 \special{t4ht=</a>}%
11877 \endgroup
11878 \fi
11879 }

```

Poor implementation of \hyper@link without considering #1.

```

11880 \def\hyper@link#1#2#3{%
11881 \Hy@VerboseLinkStart{#1}{#2}%
11882 \hyper@linkurl{#3}{\#\HyperDestNameFilter{#2}}%
11883 }
11884 \def\hyper@image#1#2{%
11885 \begingroup
11886 \hyper@chars
11887 \special{t4ht=<img src=\hyper@quote#1\hyper@quote>}%
11888 \endgroup
11889 }
11890 \let\autoref\ref
11891 \ifx \rEfLiNK \UnDef
11892 \def\rEfLiNK #1#2{#2}%
11893 \fi
11894 \def\backref#1{}

```

Fix for tex4ht.

```

11895 \AtBeginDocument{%
11896 \expandafter\let\expandafter\Hy@OrgMakeLabel\csname Make:Label\endcsname
11897 \expandafter\def\csname Make:Label\endcsname#1#2{%
11898 \ifhmode
11899 \Hy@SaveSpaceFactor
11900 \else
11901 \global\Hy@SavedSpaceFactor=1000 %
11902 \fi
11903 \Hy@OrgMakeLabel{#1}{%
11904 \Hy@RestoreSpaceFactor
11905 #2%
11906 \Hy@SaveSpaceFactor
11907 }%
11908 \Hy@RestoreSpaceFactor
11909 }%
11910 }
11911 </tex4ht>
11912 <*tex4htcfg>
11913 \IfFileExists{\jobname.cfg}{\endinput}{}
11914 \Preamble{html}

```

```

11915 \begin{document}%
11916 \EndPreamble
11917 \def\TeX{\TeX}
11918 \def\OMEGA{\Omega}
11919 \def\LaTeX{\LaTeX}
11920 \def\LaTeXe{\LaTeX2e}
11921 \def\TeX{e-\TeX}
11922 \def\MF{Metafont}
11923 \def\MP{MetaPost}
11924 \</tex4htcfg>

```

## 47 Driver-specific form support

### 47.1 pdfmarks

```

11925 \<*pdfmark>
11926 \long\def\@Form[#1]{%
11927 \g@addto@macro\Hy@FirstPageHook{%
11928 \headerps@out{%
11929 [%
11930 \_objdef{pdfDocEncoding}%
11931 /type/dict%
11932 /OBJ pdfmark%
11933 [%
11934 {pdfDocEncoding}%
11935 <<%
11936 /Type/Encoding%
11937 /Differences[%
11938 24/breve/caron/circumflex/dotaccent/hungarumlaut/ogonek/ring%
11939 /tilde %
11940 39/quotesingle %
11941 96/grave %
11942 128/bullet/dagger/daggerdbl/ellipsis/emdash/endash/florin%
11943 /fraction/guilsinglleft/guilsinglright/minus/perthousand%
11944 /quotedblbase/quotedblleft/quotedblright/quoteleft%
11945 /quoteright/quotesinglbase/trademark/fi/fl/Lslash/OE/Scaron%
11946 /Ydieresis/Zcaron/dotlessi/lslash/oe/scaron/zcaron %
11947 164/currency %
11948 166/brokenbar %
11949 168/dieresis/copyright/ordfeminine %
11950 172/logicalnot/.notdef/registered/macron/degree/plusminus%
11951 /twosuperior/threesuperior/acute/mu %
11952 183/periodcentered/cedilla/onesuperior/ordmasculine %
11953 188/onequarter/onehalf/threequarters %
11954 192/Agrave/Aacute/Acircumflex/Atilde/Adieresis/Aring/AE%
11955 /Ccedilla/Egrave/Eacute/Ecircumflex/Edieresis/Igrave%
11956 /Iacute/Icircumflex/Idieresis/Eth/Ntilde/Ograve/Oacute%
11957 /Ocircumflex/Otilde/Odieresis/multiply/Oslash/Ugrave%
11958 /Uacute/Ucircumflex/Udieresis/Yacute/Thorn/germandbls%
11959 /agrave/aacute/acircumflex/atilde/adieresis/aring/ae%
11960 /ccedilla/egrave/eacute/ecircumflex/edieresis/igrave%
11961 /iacute/icircumflex/idieresis/eth/ntilde/ograde/oacute%
11962 /ocircumflex/otilde/odieresis/divide/oslash/ugrave/uacute%
11963 /ucircumflex/udieresis/yacute/thorn/ydieresis%
11964 ]%
11965 >>%
11966 /PUT pdfmark%
11967 [%

```

```

11968  /__objdef{ZaDb}%
11969  /type/dict%
11970 /OBJ pdfmark%
11971 [%
11972  {ZaDb}%
11973  <<%
11974    /Type/Font%
11975    /Subtype/Type1%
11976    /Name/ZaDb%
11977    /BaseFont/ZapfDingbats%
11978  >>%
11979 /PUT pdfmark%
11980 [%
11981  /__objdef{Helv}%
11982  /type/dict%
11983 /OBJ pdfmark%
11984 [%
11985  {Helv}%
11986  <<%
11987    /Type/Font%
11988    /Subtype/Type1%
11989    /Name/Helv%
11990    /BaseFont/Helvetica%
11991    /Encoding{pdfDocEncoding}%
11992  >>%
11993 /PUT pdfmark%
11994 [%
11995  /__objdef{aform}%
11996  /type/dict%
11997 /OBJ pdfmark%
11998 [%
11999  /__objdef{afields}%
12000  /type/array%
12001 /OBJ pdfmark%
12002 {%
12003  [%
12004    /BBox[0 0 100 100]%
12005    /__objdef{Check}%
12006  /BP pdfmark %
12007  1 0 0 setrgbcolor%
12008  /ZapfDingbats 80 selectfont %
12009  20 20 moveto%
12010  (4)show%
12011  [/EP pdfmark%
12012  [%
12013    /BBox[0 0 100 100]%
12014    /__objdef{Cross}%
12015  /BP pdfmark %
12016  1 0 0 setrgbcolor%
12017  /ZapfDingbats 80 selectfont %
12018  20 20 moveto%
12019  (8)show%
12020  [/EP pdfmark%
12021  [%
12022    /BBox[0 0 250 100]%
12023    /__objdef{Submit}%
12024  /BP pdfmark %

```

```

12025 0.6 setgray %
12026 0 0 250 100 rectfill %
12027 1 setgray %
12028 2 2 moveto %
12029 2 98 lineto %
12030 248 98 lineto %
12031 246 96 lineto %
12032 4 96 lineto %
12033 4 4 lineto %
12034 fill %
12035 0.34 setgray %
12036 248 98 moveto %
12037 248 2 lineto %
12038 2 2 lineto %
12039 4 4 lineto %
12040 246 4 lineto %
12041 246 96 lineto %
12042 fill%
12043 /Helvetica 76 selectfont %
12044 0 setgray %
12045 8 22.5 moveto%
12046 (Submit)show%
12047 [/EP pdfmark%
12048 [%
12049 /BBox[0 0 250 100]%
12050 /_objdef{SubmitP}%
12051 /BP pdfmark %
12052 0.6 setgray %
12053 0 0 250 100 rectfill %
12054 0.34 setgray %
12055 2 2 moveto %
12056 2 98 lineto %
12057 248 98 lineto %
12058 246 96 lineto %
12059 4 96 lineto %
12060 4 4 lineto %
12061 fill %
12062 1 setgray %
12063 248 98 moveto %
12064 248 2 lineto %
12065 2 2 lineto %
12066 4 4 lineto %
12067 246 4 lineto %
12068 246 96 lineto %
12069 fill%
12070 /Helvetica 76 selectfont %
12071 0 setgray %
12072 10 20.5 moveto%
12073 (Submit)show%
12074 [/EP pdfmark%
12075 } ?pdfmark%
12076 [%
12077 {aform}%
12078 <<%
12079 /Fields{afields}%
12080 /DR<<%
12081 /Font<<%

```

```

12082      /ZaDb{ZaDb}%
12083      /Helv{Helv}%
12084      >>%
12085  >>%
12086  /DA(/Helv 10 Tf 0 g)%
12087  /CO{corder}%
12088  \ifHy@pdfa
12089  \else
12090    \ifHyField@NeedAppearances
12091      /NeedAppearances true%
12092    \fi
12093  \fi
12094  >>%
12095  /PUT pdfmark%
12096  [%
12097  {Catalog}%
12098  <<%
12099    /AcroForm{aform}%
12100  >>%
12101  /PUT pdfmark%
12102  [%
12103    /__objdef{corder}%
12104    /type/array%
12105  /OBJ pdfmark% dps
12106  }]%
12107  \kvsetkeys{Form}{#1}%
12108  }
12109  \def\@endForm{}
12110  \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
12111  \Hy@Message{Sorry, pdfmark drivers do not support FORM gauges}%
12112  }
12113  \def\@TextField[#1]#2{% parameters, label
12114  \def\Fld@name{#2}%
12115  \def\Fld@default{}%
12116  \let\Fld@value\@empty
12117  \def\Fld@width{\DefaultWidthofText}%
12118  \def\Fld@height{%
12119  \ifFld@multiline
12120    \DefaultHeightofTextMultiline
12121  \else
12122    \DefaultHeightofText
12123  \fi
12124  }%
12125  \begingroup
12126  \expandafter\HyField@SetKeys\expandafter{%
12127  \DefaultOptionsofText,#1%
12128  }%
12129  \HyField@FlagsText
12130  \ifFld@hidden\def\Fld@width{1sp}\fi
12131  \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
12132  \LayoutTextField{#2}{%
12133  \Hy@escapeform\PDFForm@Text
12134  \pdfmark[\MakeTextField{\Fld@width}{\Fld@height}]{%
12135  pdfmark=/ANN,Raw={\PDFForm@Text}%
12136  }%
12137  }%
12138  \endgroup

```

```

12139 }
12140 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
12141   \def\Fld@name{#2}%
12142   \let\Fld@default\relax
12143   \let\Fld@value\relax
12144   \def\Fld@width{\DefaultWidthofChoiceMenu}%
12145   \def\Fld@height{\DefaultHeightofChoiceMenu}%
12146   \begingroup
12147     \Fld@menulength=0 %
12148     \@tempdima\z@
12149     \@for\@curropt:=#3\do{%
12150       \expandafter\Fld@checkequals\@curropt==\%
12151       \Hy@StepCount\Fld@menulength
12152       \settowidth{\@tempdimb}{\@currDisplay}%
12153       \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
12154     }%
12155     \advance\@tempdima by 15\p@
12156     \begingroup
12157       \HyField@SetKeys{#1}%
12158     \edef\x{\endgroup
12159       \noexpand\expandafter
12160       \noexpand\HyField@SetKeys
12161       \noexpand\expandafter{%
12162         \expandafter\noexpand\csname DefaultOptionsof%
12163           \ifFld@radio
12164             Radio%
12165           \else
12166             \ifFld@combo
12167               \ifFld@popdown
12168                 PopdownBox%
12169               \else
12170                 ComboBox%
12171               \fi
12172             \else
12173               ListBox%
12174             \fi
12175           \fi
12176         \endcsname
12177       }%
12178     }\x
12179     \HyField@SetKeys{#1}%
12180     \ifFld@hidden\def\Fld@width{1sp}\fi
12181     \ifx\Fld@value\relax
12182       \let\Fld@value\Fld@default
12183     \fi
12184     \LayoutChoiceField{#2}{%
12185       \ifFld@radio
12186         \HyField@FlagsRadioButton
12187         \@@Radio{#3}%
12188       \else
12189         \begingroup
12190         \HyField@FlagsChoice
12191         \ifdim\Fld@width<\@tempdima
12192           \ifdim\@tempdima<1cm\@tempdima1cm\fi
12193         \edef\Fld@width{\the\@tempdima}%
12194         \fi
12195         \ifFld@combo

```

```

12196         \else
12197         \@tempdima=\the\Fld@menulength\Fld@charsize
12198         \advance\@tempdima by \Fld@borderwidth bp %
12199         \advance\@tempdima by \Fld@borderwidth bp %
12200         \edef\Fld@height{\the\@tempdima}%
12201         \fi
12202         \@@Listbox{#3}%
12203     \endgroup
12204 \fi
12205 }%
12206 \endgroup
12207 }
12208 \def\@@Radio#1{%
12209     \Fld@listcount=0 %
12210     \EdefEscapeName\Fld@default{\Fld@default}%
12211     \@for\@curropt:=#1\do{%
12212         \expandafter\Fld@checkequals\@curropt==\%
12213         \EdefEscapeName\@currValue{\@currValue}%
12214         \Hy@StepCount\Fld@listcount
12215         \@currDisplay\space
12216         \Hy@escapeform\PDFForm@Radio
12217         \pdfmark[\MakeRadioField{\Fld@width}{\Fld@height}]{%
12218             pdfmark=/ANN,%
12219             Raw={%
12220                 \PDFForm@Radio /AP <</N <</\@currValue\space {Check}>> >>%
12221             }%
12222         } % deliberate space between radio buttons
12223     }%
12224 }
12225 \newcount\Fld@listcount
12226 \def\@@Listbox#1{%
12227     \HyField@PDFChoices{#1}%
12228     \Hy@escapeform\PDFForm@List
12229     \pdfmark[\MakeChoiceField{\Fld@width}{\Fld@height}]{%
12230         pdfmark=/ANN,Raw={\PDFForm@List}%
12231     }%
12232 }
12233 \def\@PushButton[#1]#2{% parameters, label
12234     \def\Fld@name{#2}%
12235     \begingroup
12236         \expandafter\HyField@SetKeys\expandafter{%
12237             \DefaultOptionsofPushButton,#1%
12238         }%
12239         \ifHy@pdfa
12240             \Hy@Error{%
12241                 PDF/A: Push button with JavaScript is prohibited%
12242             }\@ehc
12243             \LayoutPushButtonField{%
12244                 \leavevmode
12245                 \MakeButtonField{#2}%
12246             }%
12247         \else
12248             \HyField@FlagsPushButton
12249             \ifFld@hidden\def\Fld@width{1sp}\fi
12250             \LayoutPushButtonField{%
12251                 \leavevmode
12252                 \Hy@escapeform\PDFForm@Push

```



```

12253     \pdfmark[\MakeButtonField{#2}]{%
12254     pdfmark=/ANN,Raw={\PDFForm@Push}%
12255     }%
12256 }%
12257 \fi
12258 \endgroup
12259 }
12260 \def\@Submit[#1]#2{%
12261 \def\Fld@width{\DefaultWidthofSubmit}%
12262 \def\Fld@height{\DefaultHeightofSubmit}%
12263 \begingroup
12264 \expandafter\HyField@SetKeys\expandafter{%
12265 \DefaultOptionsofSubmit,#1%
12266 }%
12267 \HyField@FlagsPushButton
12268 \HyField@FlagsSubmit
12269 \ifFld@hidden\def\Fld@width{1sp}\fi
12270 \Hy@escapeform\PDFForm@Submit
12271 \pdfmark[\MakeButtonField{#2}]{%
12272 pdfmark=/ANN,%
12273 Raw={\PDFForm@Submit /AP << /N {Submit} /D {SubmitP} >>}%
12274 }%
12275 \endgroup
12276 }
12277 \def\@Reset[#1]#2{%
12278 \def\Fld@width{\DefaultWidthofReset}%
12279 \def\Fld@height{\DefaultHeightofReset}%
12280 \begingroup
12281 \expandafter\HyField@SetKeys\expandafter{%
12282 \DefaultOptionsofReset,#1%
12283 }%
12284 \leavevmode
12285 \ifHy@pdfa
12286 \Hy@Error{%
12287 PDF/A: Reset action is prohibited%
12288 }\@ehc
12289 \MakeButtonField{#2}%
12290 \else
12291 \HyField@FlagsPushButton
12292 \ifFld@hidden\def\Fld@width{1sp}\fi
12293 \Hy@escapeform\PDFForm@Reset
12294 \pdfmark[\MakeButtonField{#2}]{%
12295 pdfmark=/ANN,Raw={\PDFForm@Reset}%
12296 }%
12297 \fi
12298 \endgroup
12299 }%
12300 \def\@CheckBox[#1]#2{% parameters, label
12301 \def\Fld@name{#2}%
12302 \def\Fld@default{0}%
12303 \begingroup
12304 \def\Fld@width{\DefaultWidthofCheckBox}%
12305 \def\Fld@height{\DefaultHeightofCheckBox}%
12306 \expandafter\HyField@SetKeys\expandafter{%
12307 \DefaultOptionsofCheckBox,#1%
12308 }%
12309 \HyField@FlagsCheckBox

```

```

12310 \ifFld@hidden\def\Fld@width{1sp}\fi
12311 \LayoutCheckField{#2}{%
12312 \Hy@escapeform\PDFForm@Check
12313 \pdfmark[\MakeCheckField{\Fld@width}{\Fld@height}]{%
12314 pdfmark=/ANN,Raw={\PDFForm@Check}%
12315 }%
12316 }%
12317 \endgroup
12318 }
12319 \pdfmark>

```

## 47.2 HyperTeX

```

12320 <*hypertex>
12321 \def\@Form[#1]{\Hy@Message{Sorry, HyperTeX does not support FORMs}}
12322 \def\@endForm{}
12323 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
12324 \Hy@Message{Sorry, HyperTeX does not support FORM gauges}%
12325 }
12326 \def\@TextField[#1]#2{% parameters, label
12327 \Hy@Message{Sorry, HyperTeX does not support FORM text fields}%
12328 }
12329 \def\@CheckBox[#1]#2{% parameters, label
12330 \Hy@Message{Sorry, HyperTeX does not support FORM checkboxes}%
12331 }
12332 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
12333 \Hy@Message{Sorry, HyperTeX does not support FORM choice menus}%
12334 }
12335 \def\@PushButton[#1]#2{% parameters, label
12336 \Hy@Message{Sorry, HyperTeX does not support FORM pushbuttons}%
12337 }
12338 \def\@Reset[#1]#2{\Hy@Message{Sorry, HyperTeX does not support FORMs}}
12339 \def\@Submit[#1]#2{\Hy@Message{Sorry, HyperTeX does not support FORMs}}
12340 </hypertex>

```

## 47.3 TeX4ht

```

12341 <*tex4ht>
12342 \def\@Form[#1]{%
12343 \kvsetkeys{Form}{#1}%
12344 \HCode{<form action="\Form@action" method="\Form@method">}%
12345 }
12346 \def\@endForm{\HCode{</form>}}
12347 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
12348 \Hy@Message{Sorry, TeX4ht does not support gauges}%
12349 }
12350 \def\@TextField[#1]#2{% parameters, label
12351 \let\Hy@reserved@a\@empty
12352 \def\Fld@name{#2}%
12353 \def\Fld@default{}%
12354 \bgroup
12355 \Field@toks={ }%
12356 \kvsetkeys{Field}{#1}%
12357 \HCode{<label for="\Fld@name">#2</label>}%
12358 \ifFld@password
12359 \@@@PasswordField
12360 \else
12361 \@@@TextField
12362 \fi

```

```

12363 \egroup
12364 }
12365 \def\@@PasswordField{%
12366 \HCode{%
12367   <input type="password" %
12368   id="\Fld@name" %
12369   name="\Fld@name" %
12370   \ifFld@hidden type="hidden" \fi
12371   value="\Fld@default" %
12372   \the\Field@toks
12373   >%
12374 }%
12375 }
12376 \def\@@TextField{%
12377 \ifFld@multiline
12378 \HCode{<textarea %
12379   \ifFld@readonly readonly \fi
12380   id="\Fld@name" %
12381   name="\Fld@name" %
12382   \ifFld@hidden type="hidden" \fi
12383   \the\Field@toks>%
12384 }%
12385 \Fld@default
12386 \HCode{</textarea>}%
12387 \else
12388 \HCode{<input type="text" %
12389   \ifFld@readonly readonly \fi
12390   id="\Fld@name" %
12391   name="\Fld@name" %
12392   \ifFld@hidden type="hidden" \fi
12393   value="\Fld@default" %
12394   \the\Field@toks>%
12395 }%
12396 \fi
12397 }
12398 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
12399 \def\Fld@name{#2}%
12400 \def\Fld@default{#3}%
12401 \let\Hy@reserved@a\relax
12402 \begingroup
12403 \expandafter\Fld@findlength#3\\%
12404 \Field@toks={ }%
12405 \kvsetkeys{Field}{#1}%
12406 #2%
12407 \ifFld@radio
12408 \expandafter\@@Radio#3\\%
12409 \else
12410 \expandafter\@@Menu#3\\%
12411 \fi
12412 \endgroup
12413 }
12414 \def\Fld@findlength#1\\{%
12415 \Fld@menulength=0 %
12416 \@for\@currupt:=#1\do{\Hy@StepCount\Fld@menulength}%
12417 }
12418 \def\@@Menu#1\\{%
12419 \HCode{<select size="\the\Fld@menulength" %

```

```

12420     name="\Fld@name" %
12421     \the\Field@toks>%
12422 }%
12423 \@for\@curropt:=#1\do{%
12424     \expandafter\Fld@checkequals\@curropt==\\%
12425     \HCode{<option %
12426         \ifx\@curropt\Fld@default selected \fi
12427         value="\@currValue">\@currDisplay</option>%
12428     }%
12429 }%
12430 \HCode{</select>}%
12431 }
12432 \def\@@Radio#1\\{%
12433     \@for\@curropt:=#1\do{%
12434         \expandafter\Fld@checkequals\@curropt==\\%
12435         \HCode{<input type="radio" %
12436             \ifx\@curropt\Fld@default checked \fi
12437             name="\Fld@name" %
12438             value="\@currValue" %
12439             \the\Field@toks>%
12440         }%
12441         \@currDisplay
12442     }%
12443 }
12444 \def\@PushButton[#1]#2{% parameters, label
12445     \def\Fld@name{#2}%
12446     \bgroup
12447     \Field@toks={ }%
12448     \kvsetkeys{Field}{#1}%
12449     \HCode{<input type="button" %
12450         name="\Fld@name" %
12451         value="#2" %
12452         \the\Field@toks>%
12453     }%
12454     \HCode{</button>}%
12455     \egroup
12456 }
12457 \def\@Submit[#1]#2{%
12458     \HCode{<button type="submit">#2</button>}%
12459 }
12460 \def\@Reset[#1]#2{%
12461     \HCode{<button type="reset">#2</button>}%
12462 }
12463 \def\@CheckBox[#1]#2{% parameters, label
12464     \let\Hy@reserved@a\@empty
12465     \def\Fld@name{#2}%
12466     \def\Fld@default{0}%
12467     \bgroup
12468     \Field@toks={ }%
12469     \kvsetkeys{Field}{#1}%
12470     \HCode{<input type="checkbox" %
12471         \ifFld@checked checked \fi
12472         \ifFld@disabled disabled \fi
12473         \ifFld@readonly readonly \fi
12474         name="\Fld@name" %
12475         \ifFld@hidden type="hidden" \fi
12476         value="\Fld@default" %

```

```

12477 \the\Field@toks>%
12478 #2%
12479 }%
12480 \egroup
12481 }
12482 </tex4ht>

```

## 47.4 pdfTeX

```

12483 <*pdfTeX>
12484 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
12485 \Hy@Message{Sorry, pdfTeX does not support FORM gauges}%
12486 }
12487 \def\MakeFieldObject#1#2{\sbox0{#1}%
12488 \immediate\pdfxform0 %
12489 \expandafter\edef\csname #2Object\endcsname{%
12490 \the\pdfastxform\space 0 R%
12491 }%
12492 % \hbox to 0pt{\hskip-\maxdimen{\pdfrefxform \the\pdfastxform}}%
12493 }%
12494 \def\HyField@afields{}
12495 \begingroup\expandafter\expandafter\expandafter\endgroup
12496 \expandafter\ifx\csname pdfastlink\endcsname\relax
12497 \let\HyField@AddToFields\relax
12498 \PackageInfo{hyperref}{%
12499 You need pdfTeX 1.40.0 for setting the /Fields entry.%
12500 \MessageBreak
12501 Adobe Reader/Acrobat accepts an empty /Field array,%
12502 \MessageBreak
12503 but other PDF viewers might complain%
12504 }%
12505 \else
12506 \def\HyField@AuxAddToFields#1{%
12507 \def\HyField@AfterAuxOpen{\Hy@AtBeginDocument}%
12508 \Hy@AtBeginDocument{%
12509 \if@filesw
12510 \immediate\write\@mainaux{%
12511 \string\providecommand\string\HyField@AuxAddToFields[1]{}%
12512 }%
12513 \fi
12514 \let\HyField@AfterAuxOpen\@firstofone
12515 \def\HyField@AuxAddToFields#1{%
12516 \xdef\HyField@afields{%
12517 \ifx\HyField@afields\@empty
12518 \else
12519 \HyField@afields
12520 \space
12521 \fi
12522 #1 0 R%
12523 }%
12524 }%
12525 }%
12526 \def\HyField@AddToFields{%
12527 \expandafter\HyField@@AddToFields\expandafter{%
12528 \the\pdfastlink
12529 }%
12530 }%
12531 \def\HyField@@AddToFields#1{%

```

```

12532 \HyField@AfterAuxOpen{%
12533 \if@filesw
12534 \write\@mainaux{%
12535 \string\HyField@AuxAddToFields{#1}%
12536 }%
12537 \fi
12538 }%
12539 }%
12540 \fi
12541 \def\@Form[#1]{%
12542 \@ifundefined{textcolor}{\let\textcolor\@gobble}{}%
12543 \kvsetkeys{Form}{#1}%
12544 \pdf@ifdraftmode{}{%
12545 \Hy@FormObjects
12546 \ifnum\pdfTeXversion>13 %
12547 \pdfrefobj\OBJ@pdfdocencoding
12548 \pdfrefobj\OBJ@ZaDb
12549 \pdfrefobj\OBJ@Helv
12550 \fi
12551 \AtVeryEndDocument{%
12552 \immediate\pdfobj{%
12553 <<%
12554 /Fields[\HyField@afields]%
12555 /DR<<%
12556 /Font<<%
12557 /ZaDb \OBJ@ZaDb\space 0 R%
12558 /Helv \OBJ@Helv\space 0 R%
12559 >>%
12560 >>%
12561 /DA(/Helv 10 Tf 0 g)%
12562 \ifHy@pdfa
12563 \else
12564 \ifHyField@NeedAppearances
12565 /NeedAppearances true%
12566 \fi
12567 \fi
12568 >>%
12569 }%
12570 \edef\OBJ@acroform{\the\pdfastobj}%
12571 \pdfcatalog{/AcroForm \OBJ@acroform\space 0 R}%
12572 }%
12573 }%
12574 \MakeFieldObject{%

Same as \ding{123} of package pifont.
12575 \begingroup
12576 \fontfamily{pzd}%
12577 \fontencoding{U}%
12578 \fontseries{m}%
12579 \fontshape{n}%
12580 \selectfont
12581 \char123 %
12582 \endgroup
12583 }{Ding}%
12584 \MakeFieldObject{%
12585 \fbox{\textcolor{yellow}{\textsf{Submit}}}%
12586 }{Submit}%
12587 \MakeFieldObject{%

```

```

12588 \fbox{\textcolor{yellow}{\textsf{SubmitP}}}%
12589 }{SubmitP}%
12590 }
12591 \def\@endForm{}
12592 \def\@TextField[#1]#2{% parameters, label
12593 \def\Fld@name{#2}%
12594 \def\Fld@default{}%
12595 \let\Fld@value\@empty
12596 \def\Fld@width{\DefaultWidthofText}%
12597 \def\Fld@height{%
12598 \ifFld@multiline
12599 \DefaultHeightofTextMultiline
12600 \else
12601 \DefaultHeightofText
12602 \fi
12603 }%
12604 \begingroup
12605 \expandafter\HyField@SetKeys\expandafter{%
12606 \DefaultOptionsofText,#1%
12607 }%
12608 \PDFForm@Name
12609 \HyField@FlagsText
12610 \ifFld@hidden\def\Fld@width{1sp}\fi
12611 \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
12612 \LayoutTextField{#2}{%
12613 \Hy@escapeform\PDFForm@Text
12614 \pdfstartlink user {\PDFForm@Text}\relax
12615 \MakeTextField{\Fld@width}{\Fld@height}\pdfendlink
12616 \HyField@AddToFields
12617 }%
12618 \endgroup
12619 }
12620 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
12621 \def\Fld@name{#2}%
12622 \let\Fld@default\relax
12623 \let\Fld@value\relax
12624 \def\Fld@width{\DefaultWidthofChoiceMenu}%
12625 \def\Fld@height{\DefaultHeightofChoiceMenu}%
12626 \begingroup
12627 \Fld@menulength=0 %
12628 \@tempdima\z@
12629 \@for\@curropt:=#3\do{%
12630 \expandafter\Fld@checkequals\@curropt==\%
12631 \Hy@StepCount\Fld@menulength
12632 \settowidth{\@tempdimb}{\@currDisplay}%
12633 \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
12634 }%
12635 \advance\@tempdima by 15\p@
12636 \begingroup
12637 \HyField@SetKeys{#1}%
12638 \edef\x{\endgroup
12639 \noexpand\expandafter
12640 \noexpand\HyField@SetKeys
12641 \noexpand\expandafter{%
12642 \expandafter\noexpand\curname DefaultOptionsof%
12643 \ifFld@radio
12644 Radio%

```

```

12645     \else
12646     \ifFld@combo
12647     \ifFld@popdown
12648     PopdownBox%
12649     \else
12650     ComboBox%
12651     \fi
12652     \else
12653     ListBox%
12654     \fi
12655     \fi
12656     \endcsname
12657   }%
12658 } \x
12659 \HyField@SetKeys{#1}%
12660 \PDFForm@Name
12661 \ifFld@hidden\def\Fld@width{1sp}\fi
12662 \ifx\Fld@value\relax
12663   \let\Fld@value\Fld@default
12664 \fi
12665 \LayoutChoiceField{#2}{%
12666   \ifFld@radio
12667     \HyField@FlagsRadioButton
12668     \@@Radio{#3}%
12669   \else
12670     \begingroup
12671     \HyField@FlagsChoice
12672     \ifdim\Fld@width<\@tempdima
12673       \ifdim\@tempdima<1cm\@tempdima1cm\fi
12674       \edef\Fld@width{\the\@tempdima}%
12675     \fi
12676     \ifFld@combo
12677     \else
12678       \@tempdima=\the\Fld@menulength\Fld@charsize
12679       \advance\@tempdima by \Fld@borderwidth bp %
12680       \advance\@tempdima by \Fld@borderwidth bp %
12681       \edef\Fld@height{\the\@tempdima}%
12682     \fi
12683     \@@ListBox{#3}%
12684   \endgroup
12685 \fi
12686 }%
12687 \endgroup
12688 }
12689 \def\@@Radio#1{%
12690   \Fld@listcount=0 %
12691   \EdefEscapeName\Fld@default{\Fld@default}%
12692   \@for\@curropt=#1\do{%
12693     \expandafter\Fld@checkequals\@curropt==\%
12694     \EdefEscapeName\@currValue{\@currValue}%
12695     \Hy@StepCount\Fld@listcount
12696     \@currDisplay\space
12697     \leavevmode
12698     \Hy@escapeform\PDFForm@Radio
12699     \pdfstartlink user {%
12700       \PDFForm@Radio
12701       /AP<<%

```



```

12702      /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.
12703      /\@currValue\space \DingObject
12704      >>%
12705      >>%
12706      }%
12707      \relax
12708      \MakeRadioField{\Fld@width}{\Fld@height}\pdfendlink
12709      \ifnum\Fld@listcount=1 %
12710      \HyField@AddToFields
12711      \fi
12712      \space % deliberate space between radio buttons
12713      }%
12714      }
12715      \newcount\Fld@listcount
12716      \def\@@ListBox#1{%
12717      \HyField@PDFChoices{#1}%
12718      \leavevmode
12719      \Hy@escapeform\PDFForm@List
12720      \pdfstartlink user {\PDFForm@List}\relax
12721      \MakeChoiceField{\Fld@width}{\Fld@height}%
12722      \pdfendlink
12723      \HyField@AddToFields
12724      }
12725      \def\@PushButton[#1]#2{% parameters, label
12726      \def\Fld@name{#2}%
12727      \begingroup
12728      \expandafter\HyField@SetKeys\expandafter{%
12729      \DefaultOptionsofPushButton,#1%
12730      }%
12731      \PDFForm@Name
12732      \ifHy@pdfa
12733      \Hy@Error{%
12734      PDF/A: Push button with JavaScript is prohibited%
12735      }\@ehc
12736      \LayoutPushButtonField{%
12737      \leavevmode
12738      \MakeButtonField{#2}%
12739      }%
12740      \else
12741      \HyField@FlagsPushButton
12742      \ifFld@hidden\def\Fld@width{1sp}\fi
12743      \LayoutPushButtonField{%
12744      \leavevmode
12745      \Hy@escapeform\PDFForm@Push
12746      \pdfstartlink user {\PDFForm@Push}\relax
12747      \MakeButtonField{#2}%
12748      \pdfendlink
12749      \HyField@AddToFields
12750      }%
12751      \fi
12752      \endgroup
12753      }
12754      \def\@Submit[#1]#2{%
12755      \def\Fld@width{\DefaultWidthofSubmit}%

```

```

12756 \def\Fld@height{\DefaultHeightofSubmit}%
12757 \begingroup
12758 \expandafter\HyField@SetKeys\expandafter{%
12759   \DefaultOptionsofSubmit,#1%
12760 }%
12761 \HyField@FlagsPushButton
12762 \HyField@FlagsSubmit
12763 \ifFld@hidden\def\Fld@width{1sp}\fi
12764 \leavevmode
12765 \Hy@escapeform\PDFForm@Submit
12766 \pdfstartlink user {%
12767   \PDFForm@Submit
12768   /AP<</N \SubmitObject/D \SubmitPObject>>%
12769 }%
12770 \relax
12771 \MakeButtonField{#2}%
12772 \pdfendlink
12773 \HyField@AddToFields
12774 \endgroup
12775 }
12776 \def\@Reset[#1]#2{%
12777   \def\Fld@width{\DefaultWidthofReset}%
12778   \def\Fld@height{\DefaultHeightofReset}%
12779   \begingroup
12780   \expandafter\HyField@SetKeys\expandafter{%
12781     \DefaultOptionsofReset,#1%
12782   }%
12783   \leavevmode
12784   \ifHy@pdfa
12785     \Hy@Error{%
12786       PDF/A: Reset action is prohibited%
12787     }\@ehc
12788     \MakeButtonField{#2}%
12789   \else
12790     \HyField@FlagsPushButton
12791     \ifFld@hidden\def\Fld@width{1sp}\fi
12792     \Hy@escapeform\PDFForm@Reset
12793     \pdfstartlink user {\PDFForm@Reset}\relax
12794     \MakeButtonField{#2}%
12795     \pdfendlink
12796     \HyField@AddToFields
12797   \fi
12798   \endgroup
12799 }
12800 \def\@CheckBox[#1]#2{% parameters, label
12801   \def\Fld@name{#2}%
12802   \def\Fld@default{0}%
12803   \begingroup
12804     \def\Fld@width{\DefaultWidthofCheckBox}%
12805     \def\Fld@height{\DefaultHeightofCheckBox}%
12806     \expandafter\HyField@SetKeys\expandafter{%
12807       \DefaultOptionsofCheckBox,#1%
12808     }%
12809     \PDFForm@Name
12810     \HyField@FlagsCheckBox
12811     \ifFld@hidden\def\Fld@width{1sp}\fi
12812     \LayoutCheckField{#2}{%

```

```

12813 \Hy@escapeform\PDFForm@Check
12814 \pdfstartlink user {\PDFForm@Check}\relax
12815 \MakeCheckField{\Fld@width}{\Fld@height}%
12816 \pdfendlink
12817 \HyField@AddToFields
12818 }%
12819 \endgroup
12820 }
12821 \def\Hy@FormObjects{%
12822 \pdfobj {%
12823 <<%
12824 /Type/Encoding%
12825 /Differences%
12826 24/breve/caron/circumflex/dotaccent/hungarumlaut/ogonek%
12827 /ring/tilde %
12828 39/quotesingle %
12829 96/grave %
12830 128/bullet/dagger/daggerdbl/ellipsis/emdash/endash/florin%
12831 /fraction/guilsinglleft/guilsinglright/minus/perthousand%
12832 /quotedblbase/quotedblleft/quotedblright/quoteleft%
12833 /quoteright/quotesinglbase/trademark/fi/fl/Lslash/OE%
12834 /Scaron/Ydieresis/Zcaron/dotlessi/lslash/oe/scaron/zcaron %
12835 164/currency %
12836 166/brokenbar %
12837 168/dieresis/copyright/ordfeminine %
12838 172/logicalnot/.notdef/registered/macron/degree/plusminus%
12839 /twosuperior/threesuperior/acute/mu %
12840 183/periodcentered/cedilla/onesuperior/ordmasculine %
12841 188/onequarter/onehalf/threequarters %
12842 192/Agrave/Aacute/Acircumflex/Atilde/Adieresis/Aring/AE%
12843 /Ccedilla/Egrave/Eacute/Ecircumflex/Edieresis/Igrave%
12844 /Iacute/Icircumflex/Idieresis/Eth/Ntilde/Ograve/Oacute%
12845 /Ocircumflex/Otilde/Odieresis/multiply/Oslash/Ugrave%
12846 /Uacute/Ucircumflex/Udieresis/Yacute/Thorn/germandbls%
12847 /agrave/aacute/acircumflex/atilde/adieresis/aring/ae%
12848 /ccedilla/egrave/eacute/ecircumflex/edieresis/igrave%
12849 /iacute/icircumflex/idieresis/eth/ntilde/ograde/oacute%
12850 /ocircumflex/otilde/odieresis/divide/oslash/ugrave%
12851 /uacute/ucircumflex/udieresis/yacute/thorn/ydieresis%
12852 ]%
12853 >>%
12854 }%
12855 \xdef\OBJ@pdfdocencoding{\the\pdflastobj}%
12856 \pdfobj{%
12857 <<%
12858 /Type/Font%
12859 /Subtype/Type1%
12860 /Name/ZaDb%
12861 /BaseFont/ZapfDingbats%
12862 >>%
12863 }%
12864 \xdef\OBJ@ZaDb{\the\pdflastobj}%
12865 \pdfobj{%
12866 <<%
12867 /Type/Font%
12868 /Subtype/Type1%
12869 /Name/Helv%

```

```

12870 /BaseFont/Helvetica%
12871 /Encoding \OBJ@pdfdocencoding\space 0 R%
12872 >>%
12873 }%
12874 \xdef\OBJ@Helv{\the\pdfastobj}%
12875 \global\let\Hy@FormObjects\relax
12876 }
12877 \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.

```
12878 \*dvipdfm | xetex
```

\@Gauge

```

12879 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
12880 \Hy@Message{Sorry, dvipdfm/XeTeX does not support FORM gauges}%
12881 }

```

\@Form

```

12882 \def\@Form[#1]{%
12883 \ifundefined{textcolor}{\let\textcolor\@gobble}{}%
12884 \kvsetkeys{Form}{#1}%
12885 \Hy@FormObjects
12886 \@pdfm@mark{obj @afields []}%
12887 \@pdfm@mark{obj @corder []}%
12888 \@pdfm@mark{%
12889 obj @aform <<%
12890 /Fields @afields%
12891 /DR<<%
12892 /Font<<%
12893 /ZaDb @OBJZaDb%
12894 /Helv @OBJHelv%
12895 >>%
12896 >>%
12897 /DA(/Helv 10 Tf 0 g)%
12898 /CO @corder%
12899 \ifHy@pdfa
12900 \else
12901 \ifHyField@NeedAppearances
12902 /NeedAppearances true%
12903 \fi
12904 \fi
12905 >>%
12906 }%
12907 \@pdfm@mark{put @catalog <</AcroForm @aform>>}%
12908 }

```

\@endForm

```
12909 \def\@endForm{}
```

\dvipdfm@setdim \dvipdfm@setdim sets dimensions for ann using \pdfm@box.

```

12910 \def\dvipdfm@setdim{%
12911 height \the\ht\pdfm@box\space
12912 width \the\wd\pdfm@box\space
12913 depth \the\dp\pdfm@box\space
12914 }

```

\HyField@AnnotCount

```
12915 \newcount\HyField@AnnotCount
12916 \HyField@AnnotCount=\z@
```

\HyField@AdvanceAnnotCount

```
12917 \def\HyField@AdvanceAnnotCount{%
12918   \global\advance\HyField@AnnotCount\@ne
12919 }
```

\HyField@TheAnnotCount

```
12920 \def\HyField@TheAnnotCount{%
12921   \the\HyField@AnnotCount
12922 }
```

\@TextField

```
12923 \def\@TextField[#1]#2{% parameters, label
12924   \def\Fld@name{#2}%
12925   \def\Fld@default{}%
12926   \let\Fld@value\@empty
12927   \def\Fld@width{\DefaultWidthofText}%
12928   \def\Fld@height{%
12929     \ifFld@multiline
12930       \DefaultHeightofTextMultiline
12931     \else
12932       \DefaultHeightofText
12933     \fi
12934   }%
12935   \begingroup
12936     \expandafter\HyField@SetKeys\expandafter{%
12937       \DefaultOptionsofText,#1%
12938     }%
12939     \PDFForm@Name
12940     \HyField@FlagsText
12941     \ifFld@hidden\def\Fld@width{1sp}\fi
12942     \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
12943     \setbox\pdfm@box=\hbox{%
12944       \MakeTextField{\Fld@width}{\Fld@height}%
12945     }%
12946     \HyField@AdvanceAnnotCount
12947     \LayoutTextField{#2}{%
12948       \Hy@escapeform\PDFForm@Text
12949       \@pdfm@mark{%
12950         ann @text\HyField@TheAnnotCount\space
12951         \dvipdfm@setdim << \PDFForm@Text >>%
12952       }%
12953     }%
12954     \unhbox\pdfm@box
12955     \@pdfm@mark{put @afields @text\HyField@TheAnnotCount}%
12956     % record in @afields array
12957   \endgroup
12958 }
```

\@ChoiceMenu

```
12959 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
12960   \def\Fld@name{#2}%
12961   \let\Fld@default\relax
```

```

12962 \let\Fld@value\relax
12963 \def\Fld@width{\DefaultWidthofChoiceMenu}%
12964 \def\Fld@height{\DefaultHeightofChoiceMenu}%
12965 \begingroup
12966 \Fld@menulength=0 %
12967 \@tempdima\z@
12968 \@for\@curropt:=#3\do{%
12969 \expandafter\Fld@checkequals\@curropt==\%
12970 \Hy@StepCount\Fld@menulength
12971 \settowidth{\@tempdimb}{\@currDisplay}%
12972 \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
12973 }%
12974 \advance\@tempdima by 15\p@
12975 \begingroup
12976 \HyField@SetKeys{#1}%
12977 \edef\x{\endgroup
12978 \noexpand\expandafter
12979 \noexpand\HyField@SetKeys
12980 \noexpand\expandafter{%
12981 \expandafter\noexpand\csname DefaultOptionsof%
12982 \ifFld@radio
12983 Radio%
12984 \else
12985 \ifFld@combo
12986 \ifFld@popdown
12987 PopdownBox%
12988 \else
12989 ComboBox%
12990 \fi
12991 \else
12992 ListBox%
12993 \fi
12994 \fi
12995 \endcsname
12996 }%
12997 }\x
12998 \HyField@SetKeys{#1}%
12999 \PDFForm@Name
13000 \ifFld@hidden\def\Fld@width{1sp}\fi
13001 \ifx\Fld@value\relax
13002 \let\Fld@value\Fld@default
13003 \fi
13004 \LayoutChoiceField{#2}{%
13005 \ifFld@radio
13006 \HyField@FlagsRadioButton
13007 \@@Radio{#3}%
13008 \else
13009 \begingroup
13010 \HyField@FlagsChoice
13011 \ifdim\Fld@width<\@tempdima
13012 \ifdim\@tempdima<1cm\@tempdima1cm\fi
13013 \edef\Fld@width{\the\@tempdima}%
13014 \fi
13015 \ifFld@combo
13016 \else
13017 \@tempdima=\the\Fld@menulength\Fld@charsize
13018 \advance\@tempdima by \Fld@borderwidth bp %

```

```

13019         \advance\@tempdima by \Fld@borderwidth bp %
13020         \edef\Fld@height{\the\@tempdima}%
13021         \fi
13022         \@@Listbox{#3}%
13023     \endgroup
13024     \fi
13025 }%
13026 \endgroup
13027 }

```

#### \@@Radio

```

13028 \def\@@Radio#1{%
13029     \Fld@listcount=0 %
13030     \edef\EscapeName\Fld@default{\Fld@default}%
13031     \setbox\pdfm@box=\hbox{%
13032         \MakeRadioField{\Fld@width}{\Fld@height}%
13033     }%
13034     \@for\@curropt:=#1\do{%
13035         \expandafter\Fld@checkequals\@curropt==\%
13036         \edef\EscapeName\@currValue{\@currValue}%
13037         \Hy@StepCount\Fld@listcount
13038         \@currDisplay\space
13039         \leavevmode
13040         \Hy@escapeform\PDFForm@Radio
13041         \ifnum\Fld@listcount=1 %
13042             \HyField@AdvanceAnnotCount
13043         \fi
13044         \@pdfm@mark{%
13045             ann %
13046             \ifnum\Fld@listcount=1 %
13047                 @radio\HyField@TheAnnotCount%
13048             \space
13049         \fi
13050         \dvi pdfm@setdim
13051         <<%
13052             \PDFForm@Radio
13053             /AP<</N<</\@currValue /null>>>>%
13054         >>%
13055     }%
13056     \unhcopy\pdfm@box\space% deliberate space between radio buttons
13057     \ifnum\Fld@listcount=1 %
13058         \@pdfm@mark{%
13059             put @afields @radio\HyField@TheAnnotCount
13060         }%
13061     \fi
13062 }%
13063 }

```

#### \Fld@listcount

```

13064 \newcount\Fld@listcount

```

#### \@@Listbox

```

13065 \def\@@Listbox#1{%
13066     \HyField@PDFChoices{#1}%
13067     \setbox\pdfm@box=\hbox{%
13068         \MakeChoiceField{\Fld@width}{\Fld@height}%
13069     }%

```

```

13070 \leavevmode
13071 \Hy@escapeform\PDFForm@List
13072 \HyField@AdvanceAnnotCount
13073 \@pdfm@mark{%
13074   ann @list\HyField@TheAnnotCount\space
13075   \dvipdfm@setdim
13076   <<\PDFForm@List>>%
13077 }%
13078 \unhbox\pdfm@box
13079 \@pdfm@mark{put @afields @list\HyField@TheAnnotCount}%
13080 }

```

#### \@PushButton

```

13081 \def\@PushButton[#1]#2{% parameters, label
13082   \def\Fld@name{#2}%
13083   \begingroup
13084     \expandafter\HyField@SetKeys\expandafter{%
13085       \DefaultOptionsofPushButton,#1%
13086     }%
13087     \PDFForm@Name
13088     \ifHy@pdfa
13089       \Hy@Error{%
13090         PDF/A: Push button with JavaScript is prohibited%
13091       }\@ehc
13092       \LayoutPushButtonField{%
13093         \leavevmode
13094         \MakeButtonField{#2}%
13095       }%
13096     \else
13097       \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
13098       \HyField@FlagsPushButton
13099       \ifFld@hidden\def\Fld@width{1sp}\fi
13100       \HyField@AdvanceAnnotCount
13101       \LayoutPushButtonField{%
13102         \leavevmode
13103         \Hy@escapeform\PDFForm@Push
13104         \@pdfm@mark{%
13105           ann @push\HyField@TheAnnotCount\space
13106           \dvipdfm@setdim
13107           <<\PDFForm@Push>>%
13108         }%
13109       }%
13110       \unhbox\pdfm@box
13111       \@pdfm@mark{put @afields @push\HyField@TheAnnotCount}%
13112     \fi
13113   \endgroup
13114 }

```

#### \@Submit

```

13115 \def\@Submit[#1]#2{%
13116   \def\Fld@width{\DefaultWidthofSubmit}%
13117   \def\Fld@height{\DefaultHeightofSubmit}%
13118   \begingroup
13119     \expandafter\HyField@SetKeys\expandafter{%
13120       \DefaultOptionsofSubmit,#1%
13121     }%
13122     \HyField@FlagsPushButton

```



```

13123 \HyField@FlagsSubmit
13124 \ifFld@hidden\def\Fld@width{1sp}\fi
13125 \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}}%
13126 \leavevmode
13127 \Hy@escapeform\PDFForm@Submit
13128 \HyField@AdvanceAnnotCount
13129 \@pdfm@mark{%
13130   ann @submit\HyField@TheAnnotCount\space
13131   \dvipdfm@setdim
13132   <<\PDFForm@Submit>>%
13133 }%
13134 \unhbox\pdfm@box%
13135 \@pdfm@mark{put @afields @submit\HyField@TheAnnotCount}%
13136 \endgroup
13137 }

```

\@Reset

```

13138 \def\@Reset[#1]#2{%
13139   \def\Fld@width{\DefaultWidthofReset}%
13140   \def\Fld@height{\DefaultHeightofReset}%
13141   \begingroup
13142     \expandafter\HyField@SetKeys\expandafter{%
13143       \DefaultOptionsofReset,#1%
13144     }%
13145     \leavevmode
13146     \ifHy@pdfa
13147       \Hy@Error{%
13148         PDF/A: Reset action is prohibited%
13149       }\@ehc
13150       \MakeButtonField{#2}%
13151     \else
13152       \HyField@FlagsPushButton
13153       \ifFld@hidden\def\Fld@width{1sp}\fi
13154       \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}}%
13155       \Hy@escapeform\PDFForm@Reset
13156       \HyField@AdvanceAnnotCount
13157       \@pdfm@mark{%
13158         ann @reset\HyField@TheAnnotCount\space
13159         \dvipdfm@setdim
13160         <<\PDFForm@Reset>>%
13161       }%
13162       \unhbox\pdfm@box
13163       \@pdfm@mark{put @afields @reset\HyField@TheAnnotCount}%
13164     \fi
13165   \endgroup
13166 }

```

\@CheckBox

```

13167 \def\@CheckBox[#1]#2{% parameters, label
13168   \def\Fld@name{#2}%
13169   \def\Fld@default{0}%
13170   \begingroup
13171     \def\Fld@width{\DefaultWidthofCheckBox}%
13172     \def\Fld@height{\DefaultHeightofCheckBox}%
13173     \expandafter\HyField@SetKeys\expandafter{%
13174       \DefaultOptionsofCheckBox,#1%
13175     }%

```

```

13176 \PDFForm@Name
13177 \HyField@FlagsCheckBox
13178 \ifFld@hidden\def\Fld@width{1sp}\fi
13179 \setbox\pdfm@box=\hbox{%
13180   \MakeCheckField{\Fld@width}{\Fld@height}%
13181 }%
13182 \HyField@AdvanceAnnotCount
13183 \LayoutCheckField{#2}{%
13184   \Hy@escapeform\PDFForm@Check
13185   \@pdfm@mark{%
13186     ann @check\HyField@TheAnnotCount\space
13187     \dvipdfm@setdim
13188     <<\PDFForm@Check>>%
13189   }%
13190   \unhbox\pdfm@box
13191   \@pdfm@mark{put @afields @check\HyField@TheAnnotCount}%
13192 }%
13193 \endgroup
13194 }

13195 \def\Hy@FormObjects{%
13196   \@pdfm@mark{obj @OBJpdfdocencoding%
13197     <<%
13198       /Type/Encoding%
13199       /Differences[%
13200         24/breve/caron/circumflex/dotaccent/hungarumlaut/ogonek/ring/tilde %
13201         39/quotesingle %
13202         96/grave %
13203         128/bullet/dagger/daggerdbl/ellipsis/emdash/endash/florin%
13204         /fraction/guilsinglleft/guilsinglright/minus/perthousand%
13205         /quotedblbase/quotedblleft/quotedblright/quoteleft/quoteright%
13206         /quotesinglbase/trademark/fi/fl/Lslash/OE/Scaron/Ydieresis%
13207         /Zcaron/dotlessi/lslash/oe/scaron/zcaron %
13208         164/currency %
13209         166/brokenbar %
13210         168/dieresis/copyright/ordfeminine %
13211         172/logicalnot/.notdef/registered/macron/degree/plusminus%
13212         /twosuperior/threesuperior/acute/mu %
13213         183/periodcentered/cedilla/onesuperior/ordmasculine %
13214         188/onequarter/onehalf/threequarters %
13215         192/Agrave/Aacute/Acircumflex/Atilde/Adieresis/Aring/AE%
13216         /Ccedilla/Egrave/Eacute/Ecircumflex/Edieresis/Igrave/Iacute%
13217         /Icircumflex/Idieresis/Eth/Ntilde/Ograve/Oacute/Ocircumflex%
13218         /Otilde/Odieresis/multiply/Oslash/Ugrave/Uacute/Ucircumflex%
13219         /Udieresis/Yacute/Thorn/germandbls/agrave/aacute/acircumflex%
13220         /atilde/adieresis/aring/ae/ccedilla/egrave/eacute%
13221         /ecircumflex/edieresis/igrave/iacute/icircumflex/idieresis%
13222         /eth/ntilde/ograve/oacute/ocircumflex/otilde/odieresis%
13223         /divide/oslash/ugrave/uacute/ucircumflex/udieresis/yacute%
13224         /thorn/ydieresis%
13225       ]%
13226     >>%
13227   }%
13228   \@pdfm@mark{obj @OBJZaDb%
13229     <<%
13230       /Type/Font%
13231       /Subtype/Type1%
13232       /Name/ZaDb%

```

```

13233 /BaseFont/ZapfDingbats%
13234 >>%
13235 }%
13236 \@pdfm@mark{obj @OBJHelv%
13237 <<%
13238 /Type/Font%
13239 /Subtype/Type1%
13240 /Name/Helv%
13241 /BaseFont/Helvetica%
13242 /Encoding @OBJpdfdocencoding%
13243 >>%
13244 }%
13245 \global\let\Hy@FormObjects\relax
13246 }
13247 </dvipdfm | xetex>

```

## 47.6 Common forms part

```

13248 <*pdfform>

```

\Hy@escapestring

```

13249 \begingroup\expandafter\expandafter\expandafter\endgroup
13250 \expandafter\ifx\csname pdfescapestring\endcsname\relax
13251 \let\Hy@escapestring\@firstofone
13252 \def\Hy@escapeform#1{%
13253 \ifHy@escapeform
13254 \def\Hy@escapestring##1{%
13255 \noexpand\Hy@escapestring{\noexpand##1}%
13256 }%
13257 \edef\Hy@temp{#1}%
13258 \expandafter\Hy@@@escapeform\Hy@temp\Hy@escapestring{}\@nil
13259 \def\Hy@escapestring##1{%
13260 \@ifundefined{Hy@esc@\string##1}{%
13261 ##1%
13262 \ThisShouldNotHappen
13263 }{%
13264 \csname Hy@esc@\string##1\endcsname
13265 }%
13266 }%
13267 \else
13268 \let\Hy@escapestring\@firstofone
13269 \fi
13270 }%
13271 \def\Hy@@@escapeform#1\Hy@escapestring#2#3\@nil{%
13272 \ifx\#3\%
13273 \else
13274 \expandafter
13275 \Hy@pstringdef\csname Hy@esc@\string#2\endcsname{#2}%
13276 \Hy@ReturnAfterFi{%
13277 \Hy@@@escapeform#3\@nil
13278 }%
13279 \fi
13280 }%
13281 \else
13282 \def\Hy@escapeform#1{%
13283 \ifHy@escapeform
13284 \let\Hy@escapestring\pdfescapestring

```

```

13285 \else
13286 \let\Hy@escapestring\@firstofone
13287 \fi
13288 }%
13289 \Hy@escapeform{}}%
13290 \fi

```

#### \PDFForm@Name

```

13291 \def\PDFForm@Name{%
13292 \PDFForm@@Name\Fld@name
13293 \ifx\Fld@altname\relax
13294 \else
13295 \PDFForm@@Name\Fld@altname
13296 \fi
13297 \ifx\Fld@mappingname\relax
13298 \else
13299 \PDFForm@@Name\Fld@mappingname
13300 \fi
13301 }

```

#### \PDFForm@@Name

```

13302 \def\PDFForm@@Name#1{%
13303 \begingroup
13304 \ifnum\Hy@pdfversion<5 % implementation note 117, PDF spec 1.7
13305 \ifHy@unicode
13306 \Hy@unicodedefalse
13307 \fi
13308 \fi
13309 \HyPsd@XeTeXBigCharstrue
13310 \pdfstringdef\Hy@gtemp#1%
13311 \endgroup
13312 \let#1\Hy@gtemp
13313 }

```

#### \Fld@additionalactions

```

13314 \def\Fld@@additionalactions{%
K input (keystroke) format
13315 \ifx\Fld@keystroke@code\@empty
13316 \else
13317 /K<</S/JavaScript/JS(\Hy@escapestring{\Fld@keystroke@code})>>%
13318 \fi
F display format
13319 \ifx\Fld@format@code\@empty
13320 \else
13321 /F<</S/JavaScript/JS(\Hy@escapestring{\Fld@format@code})>>%
13322 \fi
V validation
13323 \ifx\Fld@validate@code\@empty
13324 \else
13325 /V<</S/JavaScript/JS(\Hy@escapestring{\Fld@validate@code})>>%
13326 \fi
C calculation
13327 \ifx\Fld@calculate@code\@empty
13328 \else

```

```

13329   /C<</S/JavaScript/JS(\Hy@escapestring{\Fld@calculate@code})>>%
13330   \fi

```

Fo receiving the input focus

```

13331   \ifx\Fld@onfocus@code\@empty
13332   \else
13333   /Fo<</S/JavaScript/JS(\Hy@escapestring{\Fld@onfocus@code})>>%
13334   \fi

```

Bl loosing the input focus (blurred)

```

13335   \ifx\Fld@onblur@code\@empty
13336   \else
13337   /Bl<</S/JavaScript/JS(\Hy@escapestring{\Fld@onblur@code})>>%
13338   \fi

```

D pressing the mouse button (down)

```

13339   \ifx\Fld@onmousedown@code\@empty
13340   \else
13341   /D<</S/JavaScript/JS(\Hy@escapestring{\Fld@onmousedown@code})>>%
13342   \fi

```

U releasing the mouse button (up)

```

13343   \ifx\Fld@onmouseup@code\@empty
13344   \else
13345   /U<</S/JavaScript/JS(\Hy@escapestring{\Fld@onmouseup@code})>>%
13346   \fi

```

E cursor enters the annotation's active area.

```

13347   \ifx\Fld@onenter@code\@empty
13348   \else
13349   /E<</S/JavaScript/JS(\Hy@escapestring{\Fld@onenter@code})>>%
13350   \fi

```

X cursor exits the annotation's active area.

```

13351   \ifx\Fld@onexit@code\@empty
13352   \else
13353   /X<</S/JavaScript/JS(\Hy@escapestring{\Fld@onexit@code})>>%
13354   \fi
13355 }

```

```

13356 \def\Fld@additionalactions{%
13357   \if\Fld@@additionalactions-%
13358   \else
13359   \ifHy@pdfa
13360   \else
13361   /AA<<\Fld@@additionalactions>>%
13362   \fi
13363   \fi
13364 }

```

\Fld@annotnames

```

13365 \def\Fld@annotnames{%
13366   /T(\Fld@name)%
13367   \ifx\Fld@altname\relax
13368   \else
13369   /TU(\Fld@altname)%
13370   \fi
13371   \ifx\Fld@mappingname\relax
13372   \else
13373   /TM(\Fld@mappingname)%
13374   \fi

```

13375 }

\PDFForm@Check

```
13376 \def\PDFForm@Check{%
13377 /Subtype/Widget%
13378 \Fld@annotflags
13379 \Fld@annotnames
13380 /FT/Btn%
13381 \Fld@flags
13382 /Q \Fld@align
13383 /BS<</W \Fld@borderwidth /S/\Fld@borderstyle>>%
13384 /MK<<%
13385 \ifnum\Fld@rotation=\z@
13386 \else
13387 /R \Fld@rotation
13388 \fi
13389 \ifx\Fld@bordercolor\relax
13390 \else
13391 /BC[\Fld@bordercolor]%
13392 \fi
13393 \ifx\Fld@bcolor\relax
13394 \else
13395 /BG[\Fld@bcolor]%
13396 \fi
13397 /CA(\Hy@escapestring{\Fld@cbsymbol})%
13398 >>%
13399 /DA(/ZaDb \strip@pt\Fld@charsize\space Tf%
13400 \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
13401 /H/P%
13402 \ifFld@checked /V/Yes\else /V/Off\fi
13403 \Fld@additionalactions
13404 }
```

\PDFForm@Push

```
13405 \ifHy@pdfa
13406 \else
13407 \def\PDFForm@Push{%
13408 /Subtype/Widget%
13409 \Fld@annotflags
13410 \Fld@annotnames
13411 /FT/Btn%
13412 \Fld@flags
13413 /H/P%
13414 /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
13415 \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
13416 \ifx\Fld@bordercolor\relax\else 1\fi
13417 \space
13418 \else
13419 /MK<<%
13420 \ifnum\Fld@rotation=\z@
13421 \else
13422 /R \Fld@rotation
13423 \fi
13424 \ifx\Fld@bordercolor\relax
13425 \else
13426 /BC[\Fld@bordercolor]%
13427 \fi
```

```

13428     >>%
13429     \fi
13430     /A<</S/JavaScript/JS(\Hy@escapestring{\Fld@onclick@code})>>%
13431     \Fld@additionalactions
13432   }%
13433 \fi

```

#### \PDFForm@List

```

13434 \def\PDFForm@List{%
13435   /Subtype/Widget%
13436   \Fld@annotflags
13437   \Fld@annotnames
13438   /FT/Ch%
13439   \Fld@flags
13440   /Q \Fld@align
13441   /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
13442   \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
13443     \ifx\Fld@bordercolor\relax\else 1\fi
13444     \ifx\Fld@bcolor\relax \else 1\fi
13445     \space
13446   \else
13447     /MK<<%
13448     \ifnum\Fld@rotation=\z@
13449     \else
13450       /R \Fld@rotation
13451     \fi
13452     \ifx\Fld@bordercolor\relax
13453     \else
13454       /BC[\Fld@bordercolor]%
13455     \fi
13456     \ifx\Fld@bcolor\relax
13457     \else
13458       /BG[\Fld@bcolor]%
13459     \fi
13460   >>%
13461   \fi
13462   /DA(/Helv \strip@pt\Fld@charsize\space Tf%
13463     \ifx\Fld@color@empty\else\space\Fld@color\fi)%
13464   \Fld@choices
13465   \Fld@additionalactions
13466 }

```

#### \PDFForm@Radio

```

13467 \def\PDFForm@Radio{%
13468   /Subtype/Widget%
13469   \Fld@annotflags
13470   \Fld@annotnames
13471   /FT/Btn%
13472   \Fld@flags
13473   /H/P%
13474   /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
13475   /MK<<%
13476   \ifnum\Fld@rotation=\z@
13477   \else
13478     /R \Fld@rotation
13479   \fi
13480   \ifx\Fld@bordercolor\relax

```

```

13481 \else
13482 /BC[\Fld@bordercolor]%
13483 \fi
13484 \ifx\Fld@bcolor\relax
13485 \else
13486 /BG[\Fld@bcolor]%
13487 \fi
13488 /CA[\Fld@radiosymbol]%
13489 >>%
13490 /DA(/ZaDb \strip@pt\Fld@charsize\space Tf%
13491 \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
13492 \ifx\@currValue\Fld@default
13493 /V/\Fld@default
13494 /DV/\Fld@default
13495 \else
13496 /V/Off%
13497 /DV/Off%
13498 \fi
13499 \Fld@additionalactions
13500 }

```

\PDFForm@Text

```

13501 \def\PDFForm@Text{%
13502 /Subtype/Widget%
13503 \Fld@annotflags
13504 \Fld@annotnames
13505 /FT/Tx%
13506 \Fld@flags
13507 /Q \Fld@align
13508 /BS<</W \Fld@borderwidth\space /S /\Fld@borderstyle>>%
13509 \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
13510 \ifx\Fld@bordercolor\relax\else 1\fi
13511 \ifx\Fld@bcolor\relax \else 1\fi
13512 \space
13513 \else
13514 /MK<<%
13515 \ifnum\Fld@rotation=\z@
13516 \else
13517 /R \Fld@rotation
13518 \fi
13519 \ifx\Fld@bordercolor\relax
13520 \else
13521 /BC[\Fld@bordercolor]%
13522 \fi
13523 \ifx\Fld@bcolor\relax
13524 \else
13525 /BG[\Fld@bcolor]%
13526 \fi
13527 >>%
13528 \fi
13529 /DA(/Helv \strip@pt\Fld@charsize\space Tf%
13530 \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
13531 /DV(\Hy@escapestring{\Fld@default})%
13532 /V(\Hy@escapestring{\Fld@value})%
13533 \Fld@additionalactions
13534 \ifnum\Fld@maxlen>\z@/MaxLen \Fld@maxlen \fi
13535 }

```



\PDFForm@Submit

```
13536 \def\PDFForm@Submit{%
13537   /Subtype/Widget%
13538   \Fld@annotflags
13539   \Fld@annotnames
13540   /FT/Btn%
13541   \Fld@flags
13542   /H/P%
13543   /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
13544   \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
13545     \ifx\Fld@bordercolor\relax\else 1\fi
13546     \space
13547   \else
13548     /MK<<%
13549     \ifnum\Fld@rotation=\z@
13550     \else
13551       /R \Fld@rotation
13552     \fi
13553     \ifx\Fld@bordercolor\relax
13554     \else
13555       /BC[\Fld@bordercolor]%
13556     \fi
13557   >>%
13558 \fi
13559 /A<<%
13560 /S/SubmitForm%
13561 /F<<%
13562   /FS/URL%
13563   /F(\Hy@escapestring{\Form@action})%
13564 >>%
13565 \Fld@submitflags
13566 >>%
13567 \Fld@additionalactions
13568 }
```

\PDFForm@Reset

```
13569 \ifHy@pdfa
13570 \else
13571   \def\PDFForm@Reset{%
13572     /Subtype/Widget%
13573     \Fld@annotflags
13574     \Fld@annotnames
13575     /FT/Btn%
13576     \Fld@flags
13577     /H/P%
13578     /DA(/Helv \strip@pt\Fld@charsize\space Tf 0 0 1 rg)%
13579     \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
13580       \ifx\Fld@bordercolor\relax\else 1\fi
13581       \space
13582     \else
13583       /MK<<%
13584       \ifnum\Fld@rotation=\z@
13585       \else
13586         /R \Fld@rotation
13587       \fi
13588       \ifx\Fld@bordercolor\relax
13589       \else
```

```

13590      /BC[\Fld@bordercolor]%
13591      \fi
13592 %      /CA (Clear)
13593 %      /AC (Done)
13594      >>%
13595      \fi
13596      /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
13597      /A<</S/ResetForm>>%
13598      \Fld@additionalactions
13599      }%
13600 \fi

13601 </pdfform>
13602 <*package>

```

## 48 Bookmarks in the PDF file

This was originally developed by Yannis Haralambous (it was the separate `repere.sty`); it needed the `repere` or `makebook.pl` post-processor to work properly. Now redundant, as it is done entirely in L<sup>A</sup>T<sub>E</sub>X macros.

To write out the current section title, and its rationalized number, we have to intercept the `\@sect` command, which is rather dangerous. But how else to see the information we need? We do the *same* for `\@ssect`, giving anchors to unnumbered sections. This allows things like bibliographies to get bookmarks when used with a manual `\addcontentsline`

```

13603 \def\phantomsection{%
13604   \Hy@MakeCurrentHrefAuto{section*}%
13605   \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
13606 }
13607 </package>

```

### 48.1 Bookmarks

```
13608 <*outlines>
```

This section was written by Heiko Oberdiek; the code replaces an earlier version by David Carlisle.

The first part of bookmark code is in section 6. Further documentation is available as paper and slides of the talk, that Heiko Oberdiek has given at the EuroTeX'99 meeting in Heidelberg. See `paper.pdf` and `slides.pdf` in the `doc` directory of `hyperref`.

When using the right-to-left typesetting based on  $\varepsilon$ -T<sub>E</sub>X, the order of the `\BOOKMARK` commands written to the `\@outlinefile` could appear wrong, because of mis-feature of  $\varepsilon$ -T<sub>E</sub>X's implementation (that it processes the shipped out lines left-to-right, instead of the order in which they appear in the document). The wrong order will appear when the file contains two bookmarks on the same line typeset right-to-left.

To work around this problem, the `bookmark@seq@number` counter is used to write the bookmark's sequential number into a comment in the `\@outlinefile`, which could be used to post-process it to achieve the proper ordering of `\BOOKMARK` commands in that file.

```

13609 \def\Hy@writebookmark#1#2#3#4#5{%
13610   % section number, text, label, level, file
13611   \ifx\WriteBookmarks\relax%
13612   \else
13613     \ifnum#4>\Hy@bookmarksdepth\relax
13614     \else
13615       \@@writetorep{#1}{#2}{#3}{#4}{#5}%

```

```

13616 \fi
13617 \fi
13618 }
13619 \def\Hy@currentbookmarklevel{0}
13620 \def\Hy@numberline#1{#1 }
13621 \def\@@writetorep#1#2#3#4#5{%
13622 \begingroup
13623 \edef\Hy@tempa{#5}%
13624 \ifx\Hy@tempa\Hy@bookmarkstype
13625 \edef\Hy@level{#4}%
13626 \ifx\Hy@levelcheck Y%
13627 \@tempcnta\Hy@level\relax
13628 \advance\@tempcnta by -1 %
13629 \ifnum\Hy@currentbookmarklevel<\@tempcnta
13630 \advance\@tempcnta by -\Hy@currentbookmarklevel\relax
13631 \advance\@tempcnta by 1 %
13632 \Hy@Warning{%
13633 Difference (\the\@tempcnta) between bookmark levels is %
13634 greater \MessageBreak than one, level fixed%
13635 }%
13636 \@tempcnta\Hy@currentbookmarklevel
13637 \advance\@tempcnta by 1 %
13638 \edef\Hy@level{\the\@tempcnta}%
13639 \fi
13640 \else
13641 \global\let\Hy@levelcheck Y%
13642 \fi
13643 \global\let\Hy@currentbookmarklevel\Hy@level
13644 \@tempcnta\Hy@level\relax
13645 \expandafter\xdef\csname Parent\Hy@level\endcsname{#3}%
13646 \advance\@tempcnta by -1 %
13647 \edef\Hy@tempa{#3}%
13648 \edef\Hy@tempb{\csname Parent\the\@tempcnta\endcsname}%
13649 \ifx\Hy@tempa\Hy@tempb
13650 \Hy@Warning{%
13651 The anchor of a bookmark and its parent's must not%
13652 \MessageBreak be the same. Added a new anchor%
13653 }%
13654 \phantomsection
13655 \fi
13656 \ifHy@bookmarksnumbered
13657 \let\numberline\Hy@numberline
13658 \let\booknumberline\Hy@numberline
13659 \let\partnumberline\Hy@numberline
13660 \let\chapternumberline\Hy@numberline
13661 \else
13662 \let\numberline\@gobble
13663 \let\booknumberline\@gobble
13664 \let\partnumberline\@gobble
13665 \let\chapternumberline\@gobble
13666 \fi
13667 \HyPsd@XeTeXBigCharstrue
13668 \pdfstringdef\Hy@tempa{#2}%
13669 \HyPsd@SanitizeForOutFile\Hy@tempa
13670 \if@fileswo
13671 \stepcounter{bookmark@seq@number}%
13672 \ifundefined{outlinefile}{%

```

```

13673     }{%
13674         \protected@write\@outlinefile{}{%
13675             \protect\BOOKMARK
13676             [\Hy@level][\@bookmarkopenstatus{\Hy@level}]{#3}%
13677             {\Hy@tempa}{\Hy@tempb}%
13678             \@percentchar\space\thebookmark@seq@number
13679         }%
13680     }%
13681     \fi
13682     \fi
13683     \endgroup
13684 }
13685 \newcounter{bookmark@seq@number}

13686 \begingroup
13687 \lccode'('= '{%
13688 \lccode'('= '}%
13689 \lccode'1=\z@
13690 \lccode'2=\z@
13691 \lccode'3=\z@
13692 \lccode'5=\z@
13693 \lccode'7=\z@
13694 \lccode'\#=\z@
13695 \lccode'\'=\z@
13696 \lccode'\{=\z@
13697 \lccode'\}=\z@
13698 \lowercase{%
13699     \endgroup
13700     \def\HyPsd@SanitizeForOutFile#1{%
13701         \@onelevel@sanitize\Hy@tempa
13702         \escapechar'\%
13703         \edef\Hy@tempa{%
13704             \expandafter\HyPsd@SanitizeOut@BraceLeft\Hy@tempa(\@nil
13705         }%
13706         \edef\Hy@tempa{%
13707             \expandafter\HyPsd@SanitizeOut@BraceRight\Hy@tempa)\@nil
13708         }%
13709     }%
13710     \def\HyPsd@SanitizeOut@BraceLeft#1(#2\@nil{%
13711         #1%
13712         \ifx\#2\\%
13713             \expandafter\ltx@gobble
13714         \else
13715             \expandafter\ltx@firstofone
13716         \fi
13717         {%
13718             \string\173%
13719             \HyPsd@SanitizeOut@BraceLeft#2\@nil
13720         }%
13721     }%
13722     \def\HyPsd@SanitizeOut@BraceRight#1)#2\@nil{%
13723         #1%
13724         \ifx\#2\\%
13725             \expandafter\ltx@gobble
13726         \else
13727             \expandafter\ltx@firstofone
13728         \fi
13729         {%

```

```

13730 \string\175%
13731 \HyPsd@SanitizeOut@BraceRight#2\@nil
13732 }%
13733 }%
13734 }

```

In the call of \BOOKMARK the braces around #4 are omitted, because it is not likely, that the level number contains ].

```

13735 \newcommand{\currentpdfbookmark}{%
13736 \pdfbookmark{\Hy@currentbookmarklevel}%
13737 }
13738 \newcommand{\subpdfbookmark}{%
13739 \@tempcnta\Hy@currentbookmarklevel
13740 \Hy@StepCount\@tempcnta
13741 \expandafter\pdfbookmark\expandafter[\the\@tempcnta]%
13742 }
13743 \newcommand{\belowpdfbookmark}[2]{%
13744 \@tempcnta\Hy@currentbookmarklevel
13745 \Hy@StepCount\@tempcnta
13746 \expandafter\pdfbookmark\expandafter[\the\@tempcnta]{#1}{#2}%
13747 \advance\@tempcnta by -1 %
13748 \xdef\Hy@currentbookmarklevel{\the\@tempcnta}%
13749 }

```

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.

```

13750 \renewcommand{\pdfbookmark}[3][0]{%
13751 \Hy@writebookmark}{#2}{#3.#1}{#1}{toc}%
13752 \hyper@anchorstart{#3.#1}\hyper@anchorend
13753 }
13754 \def\BOOKMARK{%
13755 \@ifnextchar[{\@BOOKMARK}{\@@BOOKMARK[1][-]}%
13756 }
13757 \def\@BOOKMARK[#1]{%
13758 \@ifnextchar[{\@@BOOKMARK[{#1}]}{\@@BOOKMARK[{#1}][-]}%
13759 }

```

The macros for calculating structure of outlines are derived from those by Petr Olsak used in the texinfo pdf macros.

#### 48.1.1 Rerun warning

\Hy@OutlineRerunCheck

```

13760 \RequirePackage{rerunfilecheck}[2009/12/10]
13761 \def\Hy@OutlineRerunCheck{%
13762 \RerunFileCheck{\jobname.out}{%
13763 \immediate\closeout\@outlinefile
13764 }{%
13765 Rerun to get outlines right\MessageBreak
13766 or use package ‘bookmark’%
13767 }%
13768 }

```

#### 48.1.2 Driver stuff

The VTEX section was written originally by VTEX, but then amended by Denis Girou (denis.girou@idris.fr), then by by Taco Hoekwater (taco.hoekwater@wkap.nl). The

problem is that VTEX, with its close integration of the PDF backend, does look at the contents of bookmarks, escaping \ and the like.

13769 \\*vtex\

13770 \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.

13771 \begingroup

13772 \catcode'\ '=12 %

13773 \ifnum\Hy@VTeXversion<650 %

13774 \catcode'\ "=12 %

13775 \gdef\hv@pdf@char#1#2#3{%

13776 \char

13777 \ifcase'#1#2#3 %

13778 "00\or"01\or"02\or"03\or"04\or"05\or"06\or"07%

13779 \or"08\or"09\or"0A\or"0B\or"0C\or"0D\or"0E\or"0F%

13780 \or"10\or"11\or"12\or"13\or"14\or"15\or"16\or"17%

13781 \or"18\or"19\or"1A\or"1B\or"1C\or"1D\or"1E\or"1F%

13782 \or"20\or"21\or"22\or"23\or"24\or"25\or"26\or"27%

13783 \or"28\or"29\or"2A\or"2B\or"2C\or"2D\or"2E\or"2F%

13784 \or"30\or"31\or"32\or"33\or"34\or"35\or"36\or"37%

13785 \or"38\or"39\or"3A\or"3B\or"3C\or"3D\or"3E\or"3F%

13786 \or"40\or"41\or"42\or"43\or"44\or"45\or"46\or"47%

13787 \or"48\or"49\or"4A\or"4B\or"4C\or"4D\or"4E\or"4F%

13788 \or"50\or"51\or"52\or"53\or"54\or"55\or"56\or"57%

13789 \or"58\or"59\or"5A\or"5B\or"5C\or"5D\or"5E\or"5F%

13790 \or"60\or"61\or"62\or"63\or"64\or"65\or"66\or"67%

13791 \or"68\or"69\or"6A\or"6B\or"6C\or"6D\or"6E\or"6F%

13792 \or"70\or"71\or"72\or"73\or"74\or"75\or"76\or"77%

13793 \or"78\or"79\or"7A\or"7B\or"7C\or"7D\or"7E\or"7F%

13794 \or"80\or"81\or"82\or"83\or"84\or"85\or"86\or"87%

13795 \or"88\or"89\or"8A\or"8B\or"8C\or"8D\or"8E\or"8F%

13796 \or"90\or"91\or"92\or"93\or"94\or"95\or"96\or"97%

13797 \or"98\or"99\or"9A\or"9B\or"9C\or"9D\or"9E\or"9F%

13798 \or"A0\or"A1\or"A2\or"A3\or"A4\or"A5\or"A6\or"A7%

13799 \or"A8\or"A9\or"AA\or"AB\or"AC\or"AD\or"AE\or"AF%

13800 \or"B0\or"B1\or"B2\or"B3\or"B4\or"B5\or"B6\or"B7%

13801 \or"B8\or"B9\or"BA\or"BB\or"BC\or"BD\or"BE\or"BF%

13802 \or"C0\or"C1\or"C2\or"C3\or"C4\or"C5\or"C6\or"C7%

13803 \or"C8\or"C9\or"CA\or"CB\or"CC\or"CD\or"CE\or"CF%

13804 \or"D0\or"D1\or"D2\or"D3\or"D4\or"D5\or"D6\or"D7%

13805 \or"D8\or"D9\or"DA\or"DB\or"DC\or"DD\or"DE\or"DF%

13806 \or"E0\or"E1\or"E2\or"E3\or"E4\or"E5\or"E6\or"E7%

13807 \or"E8\or"E9\or"EA\or"EB\or"EC\or"ED\or"EE\or"EF%

13808 \or"F0\or"F1\or"F2\or"F3\or"F4\or"F5\or"F6\or"F7%

13809 \or"F8\or"F9\or"FA\or"FB\or"FC\or"FD\or"FE\or"FF%

13810 \fi

13811 }%

13812 \else

13813 \gdef\hv@pdf@char{\char'}%

13814 \fi

13815 \endgroup

\@@BOOKMARK

13816 \def\@@BOOKMARK[#1][#2]#3#4#5{%

```

13817 \expandafter\edef\csname @count@#3\endcsname{%
13818   \the\@serial@counter
13819 }%
13820 \edef\@mycount{\the\@serial@counter}%
13821 \Hy@StepCount\@serial@counter
13822 \edef\@parcount{%
13823   \expandafter\ifx\csname @count@#5\endcsname\relax
13824     0%
13825   \else
13826     \csname @count@#5\endcsname
13827   \fi
13828 }%
13829 \immediate\special{%
13830   !outline \HyperDestNameFilter{#3};p=\@parcount,i=\@mycount,%
13831   s=\ifx#2-c\else o\fi,t=#4%
13832 }%
13833 }%

```

#### \ReadBookmarks

```

13834 \def\ReadBookmarks{%
13835   \begingroup
13836   \def\0{\hv@pdf@char 0}%
13837   \def\1{\hv@pdf@char 1}%
13838   \def\2{\hv@pdf@char 2}%
13839   \def\3{\hv@pdf@char 3}%
13840   \def\({}%
13841   \def\)}%
13842   \def\do##1{%
13843     \ifnum\catcode'##1=\active
13844       \@makeother##1%
13845     \else
13846       \ifnum\catcode'##1=6 %
13847         \@makeother##1%
13848       \fi
13849     \fi
13850   }%
13851   \dospecials
13852   \Hy@safe@activetrue
13853   \InputIfFileExists{\jobname.out}{\}{}%
13854 \endgroup
13855 \ifx\WriteBookmarks\relax
13856 \else
13857   \if@filesw
13858     \newwrite\@outlinefile
13859     \Hy@OutlineRerunCheck
13860     \immediate\openout\@outlinefile=\jobname.out\relax
13861     \ifHy@typexml
13862       \immediate\write\@outlinefile{<relaxxml>\relax}%
13863     \fi
13864   \fi
13865 \fi
13866 }

13867 </vtx>
13868 <!*vtx>
13869 \def\ReadBookmarks{%
13870   \pdf@ifdraftmode{\}{%

```

```

13871 \begingroup
13872 \def\do##1{%
13873   \ifnum\catcode'##1=\active
13874     \@makeother##1%
13875   \else
13876     \ifnum\catcode'##1=6 %
13877       \@makeother##1%
13878     \fi
13879   \fi
13880 }%
13881 \dospecials
13882 \Hy@safe@activetrue
13883 \escapechar='\'%
13884 \def\@@BOOKMARK[##1][##2]###3###4###5{%
13885   \calc@bm@number{##5}%
13886 }%
13887 \InputIfFileExists{\jobname.out}{\relax}{\relax}%
13888 \ifx\WriteBookmarks\relax
13889   \global\let\WriteBookmarks\relax
13890 \fi
13891 \def\@@BOOKMARK[##1][##2]###3###4###5{%
13892   \def\Hy@temp{##4}%
13893 }%
13894 \Hy@pstringdef\Hy@pstringName{\HyperDestNameFilter{##3}}%
13895 \Hy@OutlineName{\Hy@pstringName{
13896   ##2\check@bm@number{##3}}%
13897 }{%
13898   \expandafter\strip@prefix\meaning\Hy@temp
13899 }%
13900 }%
13901 }%
13902 \pdfmark{%
13903   pdfmark=/OUT,%
13904   Count={##2\check@bm@number{##3}},%
13905   Dest={##3},%
13906   Title=\expandafter\strip@prefix\meaning\Hy@temp
13907 }%
13908 }%
13909 }%
13910 \Hy@pstringdef\Hy@pstringName{\HyperDestNameFilter{##3}}%
13911 \@pdfm@mark{%
13912   outline \ifHy@DvipdfmxOutlineOpen
13913     [%
13914     \ifnum##21>\z@
13915     \else
13916     -%
13917     \fi
13918   ] %
13919   \fi
13920   ##1<<%
13921   /Title(\expandafter\strip@prefix\meaning\Hy@temp)%
13922   /A<<%
13923   /S/GoTo%
13924   /D(\Hy@pstringName)%
13925   >>%
13926   >>%
13927 }%

```



```

13928 </dvipdfm | xetex>
13929 }%
13930 \begingroup
13931 \def\WriteBookmarks{0}%
13932 \InputIfFileExists{\jobname.out}{-}{-}%
13933 \endgroup
13934 %{\escapechar\m@ne\InputIfFileExists{\jobname.out}{-}{-}}%
13935 \endgroup
13936 }%
13937 \ifx\WriteBookmarks\relax
13938 \else
13939 \if@filesw
13940 \newwrite\@outlinefile
13941 \Hy@OutlineRerunCheck
13942 \immediate\openout\@outlinefile=\jobname.out\relax
13943 \ifHy@typexml
13944 \immediate\write\@outlinefile{<relaxxml>\relax}%
13945 \fi
13946 \fi
13947 \fi
13948 }
13949 <*pdfTeX>
13950 \def\Hy@OutlineName#1#2#3#4{%
13951 \pdfoutline goto name{#2}count#3{#4}%
13952 }
13953 </pdfTeX>
13954 \def\check@bm@number#1{%
13955 \expandafter\ifx\csname B_#1\endcsname\relax
13956 0%
13957 \else
13958 \csname B_#1\endcsname
13959 \fi
13960 }
13961 \def\calc@bm@number#1{%
13962 \@tempcnta=\check@bm@number{#1}\relax
13963 \advance\@tempcnta by 1 %
13964 \expandafter\xdef\csname B_#1\endcsname{the\@tempcnta}%
13965 }
13966 </!vTeX>

13967 \ifHy@implicit
13968 \else
13969 \expandafter\endinput
13970 \fi

13971 </outlines>
13972 <*outlines | hypertex>

13973 \newlength\Hy@SectionHShift
13974 \def\Hy@SectionAnchorHref#1{%
13975 \ifx\protect\@typeset@protect
13976 \Hy@@@SectionAnchor{#1}%
13977 \fi
13978 }
13979 \DeclareRobustCommand*\Hy@@@SectionAnchor[1]{%
13980 \leavevmode
13981 \hbox to 0pt{%
13982 \kern-\Hy@SectionHShift
13983 \Hy@raisedlink{%

```

```

13984 \hyper@anchorstart{#1}\hyper@anchorend
13985 }%
13986 \hss
13987 }%
13988 }
13989 \let\H@old@ssect\@ssect
13990 \def\@ssect#1#2#3#4#5{%
13991 \Hy@MakeCurrentHrefAuto{section*}%
13992 \setlength{\Hy@SectionHShift}{#1}%
13993 \begingroup
13994 \toks@{\H@old@ssect{#1}{#2}{#3}{#4}}%
13995 \toks\tw@\expandafter{%
13996 \expandafter\Hy@SectionAnchorHref\expandafter{\@currentHref}%
13997 #5%
13998 }%
13999 \edef\x{\endgroup
14000 \the\toks@\the\toks\tw@}%
14001 }\x
14002 }
14003 \let\H@old@schapter\@schapter
14004 \def\@schapter#1{%
14005 \begingroup
14006 \let\@mkboth\@gobbler
14007 \Hy@MakeCurrentHrefAuto{\Hy@chapapp*}%
14008 \Hy@raisedlink{%
14009 \hyper@anchorstart{\@currentHref}\hyper@anchorend
14010 }%
14011 \endgroup
14012 \H@old@schapter{#1}%
14013 }

```

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:

```

14014 \ltx@ifundefined{@chapter}{%}{%
14015 \let\Hy@org@chapter\@chapter
14016 \def\@chapter{%
14017 \def\Hy@next{%
14018 \Hy@MakeCurrentHrefAuto{\Hy@chapapp*}%
14019 \Hy@raisedlink{%
14020 \hyper@anchorstart{\@currentHref}\hyper@anchorend
14021 }%
14022 }%
14023 \ifnum\c@secnumdepth>\m@ne
14024 \ltx@ifundefined{if@mainmatter}%
14025 \iftrue{\csname if@mainmatter\endcsname}%
14026 \let\Hy@next\relax
14027 \fi
14028 \fi
14029 \Hy@next
14030 \Hy@org@chapter
14031 }%
14032 }
14033 \let\H@old@part\@part
14034 \begingroup\expandafter\expandafter\expandafter\endgroup
14035 \expandafter\ifx\csname chapter\endcsname\relax
14036 \let\Hy@secnum@part\z@

```

```

14037 \else
14038   \let\Hy@secnum@part\m@ne
14039 \fi
14040 \def\@part{%
14041   \ifnum\Hy@secnum@part>\c@secnumdepth
14042     \phantomsection
14043   \fi
14044   \H@old@part
14045 }

14046 \let\H@old@spart\@spart
14047 \def\@spart#1{%
14048   \Hy@MakeCurrentHrefAuto{part*}%
14049   \Hy@raisedlink{%
14050     \hyper@anchorstart{\@currentHref}\hyper@anchorend
14051   }%
14052   \H@old@spart{#1}%
14053 }
14054 \let\H@old@sect\@sect
14055 \def\@sect#1#2#3#4#5#6[#7]#8{%
14056   \ifnum #2>\c@secnumdepth
14057     \expandafter\@firstoftwo
14058   \else
14059     \expandafter\@secondoftwo
14060   \fi
14061   {%
14062     \Hy@MakeCurrentHrefAuto{section*}%
14063     \setlength{\Hy@SectionHShift}{#3}%
14064     \begingroup
14065     \toks@{\H@old@sect{#1}{#2}{#3}{#4}{#5}{#6}{#7}}%
14066     \toks\tw@\expandafter{%
14067       \expandafter\Hy@SectionAnchorHref\expandafter{\@currentHref}%
14068       #8%
14069     }%
14070     \edef\x{\endgroup
14071       \the\toks@{\the\toks\tw@}}%
14072     }\x
14073   }{%
14074     \H@old@sect{#1}{#2}{#3}{#4}{#5}{#6}{#7}{#8}%
14075   }%
14076 }

14077 </outlines | hypertex>
14078 <*outlines>

14079 \expandafter\def\csname Parent-4\endcsname{}
14080 \expandafter\def\csname Parent-3\endcsname{}
14081 \expandafter\def\csname Parent-2\endcsname{}
14082 \expandafter\def\csname Parent-1\endcsname{}
14083 \expandafter\def\csname Parent0\endcsname{}
14084 \expandafter\def\csname Parent1\endcsname{}
14085 \expandafter\def\csname Parent2\endcsname{}
14086 \expandafter\def\csname Parent3\endcsname{}
14087 \expandafter\def\csname Parent4\endcsname{}
14088 </outlines>

```

## 49 Compatibility with koma-script classes

14089  $\langle$ \*outlines | hypertex $\rangle$

Hard-wire in an unpleasant over-ride of komascript ‘scrbook’ class for Tobias Isenberg (Tobias.Isenberg@gmx.de). With version 6.71b the hack is also applied to ‘scrreprt’ class and is removed for koma-script versions since 2001/01/01, because Markus Kohm supports hyperref in komascript.

```
14090 \def\Hy@tempa{%
14091   \def\@addchap{##1}##2{%
14092     \typeout{##2}%
14093     \if@twoside
14094       \@mkboth{##1}{}%
14095     \else
14096       \@mkboth{}{##1}%
14097     \fi
14098     \addtocontents{lof}{\protect\addvspace{10\p@}}%
14099     \addtocontents{lot}{\protect\addvspace{10\p@}}%
14100     \Hy@MakeCurrentHrefAuto{\Hy@chapapp*}%
14101     \Hy@raisedlink{%
14102       \hyper@anchorstart{\@currentHref}\hyper@anchorend
14103     }%
14104     \if@twocolumn
14105       \@topnewpage[\@makeschapterhead{##2}]%
14106     \else
14107       \@makeschapterhead{##2}%
14108       \@afterheading
14109     \fi
14110     \addcontentsline{toc}{chapter}{##1}%
14111   }%
14112 }
14113 \ifclassloaded{scrbook}{%
14114   \ifclasslater{scrbook}{2001/01/01}{%
14115     \let\Hy@tempa\@empty
14116   }{}%
14117 }{%
14118   \ifclassloaded{scrreprt}{%
14119     \ifclasslater{scrreprt}{2001/01/01}{%
14120       \let\Hy@tempa\@empty
14121     }{}%
14122   }{%
14123     \let\Hy@tempa\@empty
14124   }%
14125 }%
14126 \Hy@tempa
14127  $\langle$ /outlines | hypertex $\rangle$ 
```

## 50 Encoding definition files for encodings of PDF strings

This was contributed by Heiko Oberdiek.

### 50.1 PD1 encoding

```
14128  $\langle$ *pd1enc $\rangle$ 
14129 \DeclareFontEncoding{PD1}{}{}

Accents
14130 \DeclareTextAccent{\`}{PD1}{\textasciigrave}
14131 \DeclareTextAccent{\'}{PD1}{\textacute}
14132 \DeclareTextAccent{\~}{PD1}{\textasciicircum}
```

```

14133 \DeclareTextAccent{\~}{PD1}{\texttilde}
14134 \DeclareTextAccent{\"}{PD1}{\textasciidieresis}
14135 \DeclareTextAccent{\r}{PD1}{\textring}
14136 \DeclareTextAccent{\v}{PD1}{\textasciicaron}
14137 \DeclareTextAccent{\.}{PD1}{\textdotaccent}
14138 \DeclareTextAccent{\c}{PD1}{\textcedilla}
14139 \DeclareTextAccent{\=}{PD1}{\textasciimacron}
14140 \DeclareTextAccent{\b}{PD1}{\textmacronbelow}
14141 \DeclareTextAccent{\d}{PD1}{\textdotbelow}
14142 \DeclareTextCompositeCommand{\'}{PD1}{\@empty}{\textasciigrave}
14143 \DeclareTextCompositeCommand{\'}{PD1}{\@empty}{\textacute}
14144 \DeclareTextCompositeCommand{\~}{PD1}{\@empty}{\textasciicircum}
14145 \DeclareTextCompositeCommand{\~}{PD1}{\@empty}{\texttilde}
14146 \DeclareTextCompositeCommand{\"}{PD1}{\@empty}{\textasciidieresis}
14147 \DeclareTextCompositeCommand{\r}{PD1}{\@empty}{\textring}
14148 \DeclareTextCompositeCommand{\v}{PD1}{\@empty}{\textasciicaron}
14149 \DeclareTextCompositeCommand{\.}{PD1}{\@empty}{\textdotaccent}
14150 \DeclareTextCompositeCommand{\c}{PD1}{\@empty}{\textcedilla}
14151 \DeclareTextCompositeCommand{\=}{PD1}{\@empty}{\textasciimacron}
14152 \DeclareTextCompositeCommand{\b}{PD1}{\@empty}{\textmacronbelow}
14153 \DeclareTextCompositeCommand{\d}{PD1}{\@empty}{\textdotbelow}
14154 \DeclareTextCompositeCommand{\'}{PD1}{\ }{\textasciigrave}
14155 \DeclareTextCompositeCommand{\'}{PD1}{\ }{\textacute}
14156 \DeclareTextCompositeCommand{\~}{PD1}{\ }{\textasciicircum}
14157 \DeclareTextCompositeCommand{\~}{PD1}{\ }{\texttilde}
14158 \DeclareTextCompositeCommand{\"}{PD1}{\ }{\textasciidieresis}
14159 \DeclareTextCompositeCommand{\r}{PD1}{\ }{\textring}
14160 \DeclareTextCompositeCommand{\v}{PD1}{\ }{\textasciicaron}
14161 \DeclareTextCompositeCommand{\.}{PD1}{\ }{\textdotaccent}
14162 \DeclareTextCompositeCommand{\c}{PD1}{\ }{\textcedilla}
14163 \DeclareTextCompositeCommand{\=}{PD1}{\ }{\textasciimacron}
14164 \DeclareTextCompositeCommand{\b}{PD1}{\ }{\textmacronbelow}
14165 \DeclareTextCompositeCommand{\d}{PD1}{\ }{\textdotbelow}
14166 \DeclareTextCommand{\k}{PD1}[1]{\TextSymbolUnavailable{\k{#1}}#1}
14167 \DeclareTextCommand{\t}{PD1}[1]{\TextSymbolUnavailable{\t{#1}}#1}
14168 \DeclareTextCommand{\newtie}{PD1}[1]{%
14169 \TextSymbolUnavailable{\newtie{#1}}#1%
14170 }

```

Special white space escape characters not for use in bookmarks but for other PDF strings.

```

14171 % U+0009 (CHARACTER TABULATION)
14172 \DeclareTextCommand{\textHT}{PD1}{\011}% U+0009
14173 % U+000A (LINE FEED)
14174 \DeclareTextCommand{\textLF}{PD1}{\012}% U+000A
14175 % U+000D (CARRIAGE RETURN)
14176 \DeclareTextCommand{\textCR}{PD1}{\015}% U+000D

```

Accent glyph names

```

14177 % U+02D8 BREVE; breve
14178 \DeclareTextCommand{\textasciibreve}{PD1}{\030}% U+02D8
14179 % U+02C7 CARON; caron
14180 \DeclareTextCommand{\textasciicaron}{PD1}{\031}% U+02C7
14181 % U+02C6 MODIFIER LETTER CIRCUMFLEX ACCENT; circumflex
14182 \DeclareTextCommand{\textcircumflex}{PD1}{\032}% U+02C6
14183 % U+02D9 DOT ABOVE; dotaccent
14184 \DeclareTextCommand{\textdotaccent}{PD1}{\033}% U+02D9
14185 % U+02DD DOUBLE ACUTE ACCENT; hungarumlaut
14186 \DeclareTextCommand{\texthungarumlaut}{PD1}{\034}% U+02DD
14187 % U+02DB OGONEK; ogonek

```

14188 \DeclareTextCommand{\textogonek}{PD1}{\035}% U+02DB  
 14189 % U+02DA RING ABOVE; ring  
 14190 \DeclareTextCommand{\textring}{PD1}{\036}% U+02DA  
 14191 % U+02DC SMALL TILDE; ilde, \*tilde  
 14192 \DeclareTextCommand{\texttilde}{PD1}{\037}% U+02DC  
 \040: U+0020 SPACE; \*space, spacehackarabic  
 \041: U+0021 EXCLAMATION MARK; exclam  
 14193 % U+0022 QUOTATION MARK; quotedbl  
 14194 \DeclareTextCommand{\textquotedbl}{PD1}{\string"}% \042 U+0022  
 14195 % U+0023 NUMBER SIGN; numbersign  
 14196 \DeclareTextCommand{\textnumbersign}{PD1}{\043}% U+0023  
 14197 % U+0024 DOLLAR SIGN; dollar  
 14198 \DeclareTextCommand{\textdollar}{PD1}{\044}% U+0024  
 14199 % U+0025 PERCENT SIGN; percent  
 14200 \DeclareTextCommand{\textpercent}{PD1}{\045}% U+0025  
 14201 % U+0026 AMPERSAND; ampersand  
 14202 \DeclareTextCommand{\textampersand}{PD1}{\046}% U+0026  
 \047: U+0027 APOSTROPHE; quotesingle  
  
 14203 % U+0028 LEFT PARENTHESIS; parenleft  
 14204 \DeclareTextCommand{\textparenleft}{PD1}{\string\(% \050 U+0028  
 14205 % U+0029 RIGHT PARENTHESIS; parenright  
 14206 \DeclareTextCommand{\textparenright}{PD1}{\string\)% \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  
 14207 % U+002E FULL STOP; period  
 14208 \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  
 14209 % U+003C LESS-THAN SIGN; less  
 14210 \DeclareTextCommand{\textless}{PD1}{<}% \074 U+003C  
 \075: U+003D EQUALS SIGN; equal  
 14211 % U+003E GREATER-THAN SIGN; greater  
 14212 \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  
 14213 % U+005C REVERSE SOLIDUS; backslash  
 14214 \DeclareTextCommand{\textbackslash}{PD1}{\134}% U+005C  
 \135: U+005D RIGHT SQUARE BRACKET; bracketright  
 14215 % U+005E CIRCUMFLEX ACCENT; asciicircum  
 14216 \DeclareTextCommand{\textasciicircum}{PD1}{\136}% U+005E  
 14217 % U+005F LOW LINE; underscore  
 14218 \DeclareTextCommand{\textunderscore}{PD1}{\137}% U+005F

14219 \DeclareTextCommand{\textmacronbelow}{PD1}{\137}% U+005F  
14220 % U+0060 GRAVE ACCENT; grave  
14221 \DeclareTextCommand{\textasciigrave}{PD1}{\140}% U+0060  
\141: U+0061 LATIN SMALL LETTER A; a  
...  
\150: U+0068 LATIN SMALL LETTER H; h  
14222 % U+0069 LATIN SMALL LETTER I; i  
14223 \DeclareTextCompositeCommand{\.}{PD1}{i}{i}% \151 U+0069  
\152: U+006A LATIN SMALL LETTER J; j  
...  
\172: U+007A LATIN SMALL LETTER Z; z  
14224 % U+007B LEFT CURLY BRACKET; braceleft  
14225 \DeclareTextCommand{\textbraceleft}{PD1}{\173}% U+007B  
14226 % U+007C VERTICAL LINE; \*bar, verticalbar  
14227 \DeclareTextCommand{\textbar}{PD1}{|}% U+007C  
14228 % U+007D RIGHT CURLY BRACKET; braceright  
14229 \DeclareTextCommand{\textbraceright}{PD1}{\175}% U+007D  
14230 % U+007E TILDE; asciitilde  
14231 \DeclareTextCommand{\textasciitilde}{PD1}{\176}% U+007E  
Slot \177 (0x7F) is undefined in PDFDocEncoding.  
14232 % U+2022 BULLET; bullet  
14233 \DeclareTextCommand{\textbullet}{PD1}{\200}% U+2022  
14234 % U+2020 DAGGER; dagger  
14235 \DeclareTextCommand{\textdagger}{PD1}{\201}% U+2020  
14236 % U+2021 DOUBLE DAGGER; daggerdbl  
14237 \DeclareTextCommand{\textdaggerdbl}{PD1}{\202}% U+2021  
14238 % U+2026 HORIZONTAL ELLIPSIS; ellipsis  
14239 \DeclareTextCommand{\textellipsis}{PD1}{\203}% U+2026  
14240 % U+2014 EM DASH; emdash  
14241 \DeclareTextCommand{\textemdash}{PD1}{\204}% U+2014  
14242 % U+2013 EN DASH; endash  
14243 \DeclareTextCommand{\textendash}{PD1}{\205}% U+2013  
14244 % U+0192 LATIN SMALL LETTER F WITH HOOK; florin  
14245 \DeclareTextCommand{\textflorin}{PD1}{\206}% U+0192  
14246 % U+2044 FRACTION SLASH; fraction  
14247 \DeclareTextCommand{\textfractionsolidus}{PD1}{\207}% U+2044  
14248 % U+2039 SINGLE LEFT-POINTING ANGLE QUOTATION MARK; guil-  
ingleft  
14249 \DeclareTextCommand{\guilsingleft}{PD1}{\210}% U+2039  
14250 % U+203A SINGLE RIGHT-POINTING ANGLE QUOTATION MARK; guil-  
ingright  
14251 \DeclareTextCommand{\guilsingright}{PD1}{\211}% U+203A  
14252 % U+2212 MINUS SIGN; minus  
14253 \DeclareTextCommand{\textminus}{PD1}{\212}% U+2212  
14254 % U+2030 PER MILLE SIGN; perthousand  
14255 \DeclareTextCommand{\textperthousand}{PD1}{\213}% U+2030  
14256 % U+201E DOUBLE LOW-9 QUOTATION MARK; quotedblbase  
14257 \DeclareTextCommand{\quotedblbase}{PD1}{\214}% U+201E  
14258 % U+201C LEFT DOUBLE QUOTATION MARK; quotedblleft  
14259 \DeclareTextCommand{\textquotedblleft}{PD1}{\215}% U+201C  
14260 % U+201D RIGHT DOUBLE QUOTATION MARK; quotedblright  
14261 \DeclareTextCommand{\textquotedblright}{PD1}{\216}% U+201D  
14262 % U+2018 LEFT SINGLE QUOTATION MARK; quoteleft  
14263 \DeclareTextCommand{\textquoteleft}{PD1}{\217}% U+2018  
14264 % U+2019 RIGHT SINGLE QUOTATION MARK; quoteright  
14265 \DeclareTextCommand{\textquoteright}{PD1}{\220}% U+2019

14266 % U+201A SINGLE LOW-9 QUOTATION MARK; quotesinglbase  
 14267 \DeclareTextCommand{\quotesinglbase}{PD1}{\221}% U+201A  
 14268 % U+2122 TRADE MARK SIGN; trademark  
 14269 \DeclareTextCommand{\texttrademark}{PD1}{\222}% U+2122  
 14270 % U+FB01 LATIN SMALL LIGATURE FI; fi  
 14271 \DeclareTextCommand{\textfi}{PD1}{\223}% U+FB01  
 14272 % U+FB02 LATIN SMALL LIGATURE FL; fl  
 14273 \DeclareTextCommand{\textfl}{PD1}{\224}% U+FB02  
 14274 % U+0141 LATIN CAPITAL LETTER L WITH STROKE; Lslash  
 14275 \DeclareTextCommand{\L}{PD1}{\225}% U+0141  
 14276 % U+0152 LATIN CAPITAL LIGATURE OE; OE  
 14277 \DeclareTextCommand{\OE}{PD1}{\226}% U+0152  
 14278 % U+0160 LATIN CAPITAL LETTER S WITH CARON; Scaron  
 14279 \DeclareTextCompositeCommand{\v}{PD1}{S}{\227}% U+0160  
 14280 % U+0178 LATIN CAPITAL LETTER Y WITH DIAERESIS; Ydieresis  
 14281 \DeclareTextCompositeCommand{\"}{PD1}{Y}{\230}% U+0178  
 14282 \DeclareTextCommand{\IJ}{PD1}{\230}  
 14283 % U+017D LATIN CAPITAL LETTER Z WITH CARON; Zcaron  
 14284 \DeclareTextCompositeCommand{\v}{PD1}{Z}{\231}% U+017D  
 14285 % U+0131 LATIN SMALL LETTER DOTLESS I; dotlessi  
 14286 \DeclareTextCommand{\i}{PD1}{\232}% U+0131  
 14287 % U+0142 LATIN SMALL LETTER L WITH STROKE; lslash  
 14288 \DeclareTextCommand{\l}{PD1}{\233}% U+0142  
 14289 % U+0153 LATIN SMALL LIGATURE OE; oe  
 14290 \DeclareTextCommand{\oe}{PD1}{\234}% U+0153  
 14291 % U+0161 LATIN SMALL LETTER S WITH CARON; scaron  
 14292 \DeclareTextCompositeCommand{\v}{PD1}{s}{\235}% U+0161  
 14293 % U+017E LATIN SMALL LETTER Z WITH CARON; zcaron  
 14294 \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.

14295 % U+20AC EURO SIGN; \*Euro, euro  
 14296 \DeclareTextCommand{\texteuro}{PD1}{\240}% U+20AC  
 14297 % U+00A1 INVERTED EXCLAMATION MARK; exclamdown  
 14298 \DeclareTextCommand{\textexclamdown}{PD1}{\241}% U+00A1  
 14299 % U+00A2 CENT SIGN; cent  
 14300 \DeclareTextCommand{\textcent}{PD1}{\242}% U+00A2  
 14301 % U+00A3 POUND SIGN; sterling  
 14302 \DeclareTextCommand{\textsterling}{PD1}{\243}% U+00A3  
 14303 % U+00A4 CURRENCY SIGN; currency  
 14304 \DeclareTextCommand{\textcurrency}{PD1}{\244}% U+00A4  
 14305 % U+00A5 YEN SIGN; yen  
 14306 \DeclareTextCommand{\textyen}{PD1}{\245}% U+00A5  
 14307 % U+00A6 BROKEN BAR; brokenbar  
 14308 \DeclareTextCommand{\textbrokenbar}{PD1}{\246}% U+00A6  
 14309 % U+00A7 SECTION SIGN; section  
 14310 \DeclareTextCommand{\textsection}{PD1}{\247}% U+00A7  
 14311 % U+00A8 DIAERESIS; dieresis  
 14312 \DeclareTextCommand{\textasciidieresis}{PD1}{\250}% U+00A8  
 14313 % U+00A9 COPYRIGHT SIGN; copyright  
 14314 \DeclareTextCommand{\textcopyright}{PD1}{\251}% U+00A9  
 14315 % U+00AA FEMININE ORDINAL INDICATOR; ordfeminine  
 14316 \DeclareTextCommand{\textordfeminine}{PD1}{\252}% U+00AA  
 14317 % U+00AB LEFT-POINTING DOUBLE ANGLE QUOTATION MARK; guille-  
 motleft  
 14318 \DeclareTextCommand{\guillemotleft}{PD1}{\253}% U+00AB  
 14319 % U+00AC NOT SIGN; logicalnot



14320 \DeclareTextCommand{\textlogicalnot}{PD1}{\254}% U+00AC  
14321 \DeclareTextCommand{\textlnot}{PD1}{\254}% logical not  
No glyph \255 in PDFDocEncoding.  
14322 % U+00AE REGISTERED SIGN; registered  
14323 \DeclareTextCommand{\textregistered}{PD1}{\256}% U+00AE  
14324 % U+00AF MACRON; \*macron, overscore  
14325 \DeclareTextCommand{\textasciimacron}{PD1}{\257}% U+00AF  
14326 % U+00B0 DEGREE SIGN; degree  
14327 \DeclareTextCommand{\textdegree}{PD1}{\260}% U+00B0  
14328 % U+00B1 PLUS-MINUS SIGN; plusminus  
14329 \DeclareTextCommand{\textplusminus}{PD1}{\261}% U+00B1  
14330 % U+00B2 SUPERSCRIPT TWO; twosuperior  
14331 \DeclareTextCommand{\texttwosuperior}{PD1}{\262}% U+00B2  
14332 % U+00B3 SUPERSCRIPT THREE; threesuperior  
14333 \DeclareTextCommand{\textthreesuperior}{PD1}{\263}% U+00B3  
14334 % U+00B4 ACUTE ACCENT; acute  
14335 \DeclareTextCommand{\textacute}{PD1}{\264}% U+00B4  
14336 % U+00B5 MICRO SIGN; mu, mu1  
14337 \DeclareTextCommand{\textmu}{PD1}{\265}% U+00B5  
14338 % U+00B6 PILCROW SIGN; paragraph  
14339 \DeclareTextCommand{\textparagraph}{PD1}{\266}% U+00B6  
14340 % U+00B7 MIDDLE DOT; middot, \*periodcentered  
14341 \DeclareTextCommand{\textperiodcentered}{PD1}{\267}% U+00B7  
14342 % U+00B8 CEDILLA; cedilla  
14343 \DeclareTextCommand{\textcedilla}{PD1}{\270}% U+00B8  
14344 % U+00B9 SUPERSCRIPT ONE; onesuperior  
14345 \DeclareTextCommand{\textonesuperior}{PD1}{\271}% U+00B9  
14346 % U+00BA MASCULINE ORDINAL INDICATOR; ordmasculine  
14347 \DeclareTextCommand{\textordmasculine}{PD1}{\272}% U+00BA  
14348 % U+00BB RIGHT-POINTING DOUBLE ANGLE QUOTATION MARK; guille-  
motright  
14349 \DeclareTextCommand{\guillemotright}{PD1}{\273}% U+00BB  
14350 % U+00BC VULGAR FRACTION ONE QUARTER; onequarter  
14351 \DeclareTextCommand{\textonequarter}{PD1}{\274}% U+00BC  
14352 % U+00BD VULGAR FRACTION ONE HALF; onehalf  
14353 \DeclareTextCommand{\textonehalf}{PD1}{\275}% U+00BD  
14354 % U+00BE VULGAR FRACTION THREE QUARTERS; threequarters  
14355 \DeclareTextCommand{\textthreequarters}{PD1}{\276}% U+00BE  
14356 % U+00BF INVERTED QUESTION MARK; questiondown  
14357 \DeclareTextCommand{\textquestiondown}{PD1}{\277}% U+00BF  
14358 % U+00C0 LATIN CAPITAL LETTER A WITH GRAVE; Agrave  
14359 \DeclareTextCompositeCommand{\`}{PD1}{A}{\300}% U+00C0  
14360 % U+00C1 LATIN CAPITAL LETTER A WITH ACUTE; Aacute  
14361 \DeclareTextCompositeCommand{\'}{PD1}{A}{\301}% U+00C1  
14362 % U+00C2 LATIN CAPITAL LETTER A WITH CIRCUMFLEX; Acircumflex  
14363 \DeclareTextCompositeCommand{\^}{PD1}{A}{\302}% U+00C2  
14364 % U+00C3 LATIN CAPITAL LETTER A WITH TILDE; Atilde  
14365 \DeclareTextCompositeCommand{\~}{PD1}{A}{\303}% U+00C3  
14366 % U+00C4 LATIN CAPITAL LETTER A WITH DIAERESIS; Adieresis  
14367 \DeclareTextCompositeCommand{\"}{PD1}{A}{\304}% U+00C4  
14368 % U+00C5 LATIN CAPITAL LETTER A WITH RING ABOVE; Aring  
14369 \DeclareTextCompositeCommand{\r}{PD1}{A}{\305}% U+00C5  
14370 % U+00C6 LATIN CAPITAL LETTER AE; AE  
14371 \DeclareTextCommand{\AE}{PD1}{\306}% U+00C6  
14372 % U+00C7 LATIN CAPITAL LETTER C WITH CEDILLA; Ccedilla  
14373 \DeclareTextCompositeCommand{\c}{PD1}{C}{\307}% U+00C7  
14374 % U+00C8 LATIN CAPITAL LETTER E WITH GRAVE; Egrave

14375 \DeclareTextCompositeCommand{\'}{PD1}{E}{\310}% U+00C8  
14376 % U+00C9 LATIN CAPITAL LETTER E WITH ACUTE; Eacute  
14377 \DeclareTextCompositeCommand{\'}{PD1}{E}{\311}% U+00C9  
14378 % U+00CA LATIN CAPITAL LETTER E WITH CIRCUMFLEX; Ecircumflex  
14379 \DeclareTextCompositeCommand{\^}{PD1}{E}{\312}% U+00CA  
14380 % U+00CB LATIN CAPITAL LETTER E WITH DIAERESIS; Edieresis  
14381 \DeclareTextCompositeCommand{\"}{PD1}{E}{\313}% U+00CB  
14382 % U+00CC LATIN CAPITAL LETTER I WITH GRAVE; Igrave  
14383 \DeclareTextCompositeCommand{\'}{PD1}{I}{\314}% U+00CC  
14384 % U+00CD LATIN CAPITAL LETTER I WITH ACUTE; Iacute  
14385 \DeclareTextCompositeCommand{\'}{PD1}{I}{\315}% U+00CD  
14386 % U+00CE LATIN CAPITAL LETTER I WITH CIRCUMFLEX; Icircumflex  
14387 \DeclareTextCompositeCommand{\^}{PD1}{I}{\316}% U+00CE  
14388 % U+00CF LATIN CAPITAL LETTER I WITH DIAERESIS; Idieresis  
14389 \DeclareTextCompositeCommand{\"}{PD1}{I}{\317}% U+00CF  
14390 % U+00D0 LATIN CAPITAL LETTER ETH; Eth  
14391 \DeclareTextCommand{\DH}{PD1}{\320}% U+00D0  
14392 \DeclareTextCommand{\DJ}{PD1}{\320}% U+00D0  
14393 % U+00D1 LATIN CAPITAL LETTER N WITH TILDE; Ntilde  
14394 \DeclareTextCompositeCommand{\~}{PD1}{N}{\321}% U+00D1  
14395 % U+00D2 LATIN CAPITAL LETTER O WITH GRAVE; Ograve  
14396 \DeclareTextCompositeCommand{\'}{PD1}{O}{\322}% U+00D2  
14397 % U+00D3 LATIN CAPITAL LETTER O WITH ACUTE; Oacute  
14398 \DeclareTextCompositeCommand{\'}{PD1}{O}{\323}% U+00D3  
14399 % U+00D4 LATIN CAPITAL LETTER O WITH CIRCUMFLEX; Ocircumflex  
14400 \DeclareTextCompositeCommand{\^}{PD1}{O}{\324}% U+00D4  
14401 % U+00D5 LATIN CAPITAL LETTER O WITH TILDE; Otilde  
14402 \DeclareTextCompositeCommand{\~}{PD1}{O}{\325}% U+00D5  
14403 % U+00D6 LATIN CAPITAL LETTER O WITH DIAERESIS; Odieresis  
14404 \DeclareTextCompositeCommand{\"}{PD1}{O}{\326}% U+00D6  
14405 % U+00D7 MULTIPLICATION SIGN; multiply  
14406 \DeclareTextCommand{\textmultiply}{PD1}{\327}% U+00D7  
14407 % U+00D8 LATIN CAPITAL LETTER O WITH STROKE; Oslash  
14408 \DeclareTextCommand{\O}{PD1}{\330}% U+00D8  
14409 % U+00D9 LATIN CAPITAL LETTER U WITH GRAVE; Ugrave  
14410 \DeclareTextCompositeCommand{\'}{PD1}{U}{\331}% U+00D9  
14411 % U+00DA LATIN CAPITAL LETTER U WITH ACUTE; Uacute  
14412 \DeclareTextCompositeCommand{\'}{PD1}{U}{\332}% U+00DA  
14413 % U+00DB LATIN CAPITAL LETTER U WITH CIRCUMFLEX; Ucircumflex  
14414 \DeclareTextCompositeCommand{\^}{PD1}{U}{\333}% U+00DB  
14415 % U+00DC LATIN CAPITAL LETTER U WITH DIAERESIS; Udieresis  
14416 \DeclareTextCompositeCommand{\"}{PD1}{U}{\334}% U+00DC  
14417 % U+00DD LATIN CAPITAL LETTER Y WITH ACUTE; Yacute  
14418 \DeclareTextCompositeCommand{\'}{PD1}{Y}{\335}% U+00DD  
14419 % U+00DE LATIN CAPITAL LETTER THORN; Thorn  
14420 \DeclareTextCommand{\TH}{PD1}{\336}% U+00DE  
14421 % U+00DF LATIN SMALL LETTER SHARP S; germandbls  
14422 \DeclareTextCommand{\ss}{PD1}{\337}% U+00DF  
14423 % U+00E0 LATIN SMALL LETTER A WITH GRAVE; agrave  
14424 \DeclareTextCompositeCommand{\'}{PD1}{a}{\340}% U+00E0  
14425 % U+00E1 LATIN SMALL LETTER A WITH ACUTE; aacute  
14426 \DeclareTextCompositeCommand{\'}{PD1}{a}{\341}% U+00E1  
14427 % U+00E2 LATIN SMALL LETTER A WITH CIRCUMFLEX; acircumflex  
14428 \DeclareTextCompositeCommand{\^}{PD1}{a}{\342}% U+00E2  
14429 % U+00E3 LATIN SMALL LETTER A WITH TILDE; atilde  
14430 \DeclareTextCompositeCommand{\~}{PD1}{a}{\343}% U+00E3  
14431 % U+00E4 LATIN SMALL LETTER A WITH DIAERESIS; adieresis

14432 \DeclareTextCompositeCommand{"}{PD1}{a}{\344}% U+00E4  
14433 % U+00E5 LATIN SMALL LETTER A WITH RING ABOVE; aring  
14434 \DeclareTextCompositeCommand{r}{PD1}{a}{\345}% U+00E5  
14435 % U+00E6 LATIN SMALL LETTER AE; ae  
14436 \DeclareTextCommand{ae}{PD1}{\346}% U+00E6  
14437 % U+00E7 LATIN SMALL LETTER C WITH CEDILLA; ccedilla  
14438 \DeclareTextCompositeCommand{c}{PD1}{c}{\347}% U+00E7  
14439 % U+00E8 LATIN SMALL LETTER E WITH GRAVE; egrave  
14440 \DeclareTextCompositeCommand{'}{PD1}{e}{\350}% U+00E8  
14441 % U+00E9 LATIN SMALL LETTER E WITH ACUTE; eacute  
14442 \DeclareTextCompositeCommand{'}{PD1}{e}{\351}% U+00E9  
14443 % U+00EA LATIN SMALL LETTER E WITH CIRCUMFLEX; ecircumflex  
14444 \DeclareTextCompositeCommand{^}{PD1}{e}{\352}% U+00EA  
14445 % U+00EB LATIN SMALL LETTER E WITH DIAERESIS; edieresis  
14446 \DeclareTextCompositeCommand{"}{PD1}{e}{\353}% U+00EB  
14447 % U+00EC LATIN SMALL LETTER I WITH GRAVE; igrave  
14448 \DeclareTextCompositeCommand{'}{PD1}{i}{\354}% U+00EC  
14449 \DeclareTextCompositeCommand{'}{PD1}{i}{\354}% U+00EC  
14450 % U+00ED LATIN SMALL LETTER I WITH ACUTE; iacute  
14451 \DeclareTextCompositeCommand{'}{PD1}{i}{\355}% U+00ED  
14452 \DeclareTextCompositeCommand{'}{PD1}{i}{\355}% U+00ED  
14453 % U+00EE LATIN SMALL LETTER I WITH CIRCUMFLEX; icircumflex  
14454 \DeclareTextCompositeCommand{^}{PD1}{i}{\356}% U+00EE  
14455 \DeclareTextCompositeCommand{^}{PD1}{i}{\356}% U+00EE  
14456 % U+00EF LATIN SMALL LETTER I WITH DIAERESIS; idieresis  
14457 \DeclareTextCompositeCommand{"}{PD1}{i}{\357}% U+00EF  
14458 \DeclareTextCompositeCommand{"}{PD1}{i}{\357}% U+00EF  
14459 % U+00F0 LATIN SMALL LETTER ETH; eth  
14460 \DeclareTextCommand{dh}{PD1}{\360}% U+00F0  
14461 % U+00F1 LATIN SMALL LETTER N WITH TILDE; ntilde  
14462 \DeclareTextCompositeCommand{~}{PD1}{n}{\361}% U+00F1  
14463 % U+00F2 LATIN SMALL LETTER O WITH GRAVE; ograve  
14464 \DeclareTextCompositeCommand{'}{PD1}{o}{\362}% U+00F2  
14465 % U+00F3 LATIN SMALL LETTER O WITH ACUTE; oacute  
14466 \DeclareTextCompositeCommand{'}{PD1}{o}{\363}% U+00F3  
14467 % U+00F4 LATIN SMALL LETTER O WITH CIRCUMFLEX; ocircumflex  
14468 \DeclareTextCompositeCommand{^}{PD1}{o}{\364}% U+00F4  
14469 % U+00F5 LATIN SMALL LETTER O WITH TILDE; otilde  
14470 \DeclareTextCompositeCommand{~}{PD1}{o}{\365}% U+00F5  
14471 % U+00F6 LATIN SMALL LETTER O WITH DIAERESIS; odieresis  
14472 \DeclareTextCompositeCommand{"}{PD1}{o}{\366}% U+00F6  
14473 % U+00F7 DIVISION SIGN; divide  
14474 \DeclareTextCommand{\textdivide}{PD1}{\367}% U+00F7  
14475 % U+00F8 LATIN SMALL LETTER O WITH STROKE; oslash  
14476 \DeclareTextCommand{o}{PD1}{\370}% U+00F8  
14477 % U+00F9 LATIN SMALL LETTER U WITH GRAVE; ugrave  
14478 \DeclareTextCompositeCommand{'}{PD1}{u}{\371}% U+00F9  
14479 % U+00FA LATIN SMALL LETTER U WITH ACUTE; uacute  
14480 \DeclareTextCompositeCommand{'}{PD1}{u}{\372}% U+00FA  
14481 % U+00FB LATIN SMALL LETTER U WITH CIRCUMFLEX; ucircumflex  
14482 \DeclareTextCompositeCommand{^}{PD1}{u}{\373}% U+00FB  
14483 % U+00FC LATIN SMALL LETTER U WITH DIAERESIS; udieresis  
14484 \DeclareTextCompositeCommand{"}{PD1}{u}{\374}% U+00FC  
14485 % U+00FD LATIN SMALL LETTER Y WITH ACUTE; yacute  
14486 \DeclareTextCompositeCommand{'}{PD1}{y}{\375}% U+00FD  
14487 % U+00FE LATIN SMALL LETTER THORN; thorn  
14488 \DeclareTextCommand{th}{PD1}{\376}% U+00FE

```

14489 % U+00FF LATIN SMALL LETTER Y WITH DIAERESIS; ydieresis
14490 \DeclareTextCompositeCommand{"}{PD1}{y}{\377}% U+00FF
14491 \DeclareTextCommand{\ij}{PD1}{\377}% U+00FF

```

Glyphs that consist of several characters.

```

14492 \DeclareTextCommand{\SS}{PD1}{SS}
14493 \DeclareTextCommand{\textcelsius}{PD1}{\textdegree C}

```

Aliases (german.sty)

```

14494 \DeclareTextCommand{\textglqq}{PD1}{\quotedblbase}
14495 \DeclareTextCommand{\textgrqq}{PD1}{\textquotedblleft}
14496 \DeclareTextCommand{\textglq}{PD1}{\quotesinglbase}
14497 \DeclareTextCommand{\textgrq}{PD1}{\textquoteleft}
14498 \DeclareTextCommand{\textflqq}{PD1}{\guillemotleft}
14499 \DeclareTextCommand{\textfrqq}{PD1}{\guillemotright}
14500 \DeclareTextCommand{\textflq}{PD1}{\guilsinglleft}
14501 \DeclareTextCommand{\textfrq}{PD1}{\guilsinglright}

```

Aliases (math names)

```

14502 \DeclareTextCommand{\textneg}{PD1}{\textlogicalnot}
14503 \DeclareTextCommand{\texttimes}{PD1}{\textmultiply}
14504 \DeclareTextCommand{\textdiv}{PD1}{\textdivide}
14505 \DeclareTextCommand{\textpm}{PD1}{\textplusminus}
14506 \DeclareTextCommand{\textcdot}{PD1}{\textperiodcentered}
14507 \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).

```

14508 \DeclareTextCompositeCommand{\k}{PD1}{a}{a}% aogonek
14509 \DeclareTextCompositeCommand{\'}{PD1}{c}{c}% cacute
14510 \DeclareTextCompositeCommand{\k}{PD1}{e}{e}% eogonek
14511 \DeclareTextCompositeCommand{\'}{PD1}{n}{n}% nacute
14512 \DeclareTextCompositeCommand{\'}{PD1}{s}{s}% sacute
14513 \DeclareTextCompositeCommand{\'}{PD1}{z}{z}% zacute
14514 \DeclareTextCompositeCommand{\.}{PD1}{z}{z}% zdot

14515 \DeclareTextCompositeCommand{\k}{PD1}{A}{A}% Aogonek
14516 \DeclareTextCompositeCommand{\'}{PD1}{C}{C}% Cacute
14517 \DeclareTextCompositeCommand{\k}{PD1}{E}{E}% Eogonek
14518 \DeclareTextCompositeCommand{\'}{PD1}{N}{N}% Nacute
14519 \DeclareTextCompositeCommand{\'}{PD1}{S}{S}% Sacute
14520 \DeclareTextCompositeCommand{\'}{PD1}{Z}{Z}% Zacute
14521 \DeclareTextCompositeCommand{\.}{PD1}{Z}{Z}% Zdot

14522 </pd1enc>

```

## 50.2 PU encoding

```

14523 <*puenc>
14524 \DeclareFontEncoding{PU}{-}{-}

```

### 50.2.1 NFSS2 accents

```

14525 % U+0300 COMBINING GRAVE ACCENT; gravecmb, *gravecomb
14526 \DeclareTextCommand{\'}{PU}[1]{\#1\83\000}% U+0300
14527 % U+0301 COMBINING ACUTE ACCENT; acutecmb, *acutecomb
14528 \DeclareTextCommand{\'}{PU}[1]{\#1\83\001}% U+0301
14529 % U+0302 COMBINING CIRCUMFLEX ACCENT; circumflexcmb
14530 \DeclareTextCommand{\^}{PU}[1]{\#1\83\002}% U+0302
14531 % U+0303 COMBINING TILDE; tildecmb, *tildecmb
14532 \DeclareTextCommand{\~}{PU}[1]{\#1\83\003}% U+0303
14533 % U+0304 COMBINING MACRON; macroncmb

```

14534 \DeclareTextCommand{\=}{PU}[1]{#1\83\004}% U+0304  
 14535 % U+0306 COMBINING BREVE; brevecmb  
 14536 \DeclareTextCommand{\u}{PU}[1]{#1\83\006}% U+0306  
 14537 \DeclareTextCommand{\U}{PU}[1]{#1\83\006}% U+0306  
 14538 % U+0307 COMBINING DOT ABOVE; dotaccentcmb  
 14539 \DeclareTextCommand{\.}{PU}[1]{#1\83\007}% U+0307  
 14540 % U+0308 COMBINING DIAERESIS; dieresiscmb  
 14541 \DeclareTextCommand{\"}{PU}[1]{#1\83\010}% U+0308  
 14542 % U+030A COMBINING RING ABOVE; ringcmb  
 14543 \DeclareTextCommand{\r}{PU}[1]{#1\83\012}% U+030A  
 14544 % U+030B COMBINING DOUBLE ACUTE ACCENT; hungarumlautcmb  
 14545 \DeclareTextCommand{\H}{PU}[1]{#1\83\013}% U+030B  
 14546 % U+030C COMBINING CARON; caroncmb  
 14547 \DeclareTextCommand{\v}{PU}[1]{#1\83\014}% U+030C  
 14548 % U+030F COMBINING DOUBLE GRAVE ACCENT; dblgravecmb  
 14549 \DeclareTextCommand{\G}{PU}[1]{#1\83\017}% U+030F  
 14550 \DeclareTextCommand{\C}{PU}[1]{#1\83\017}% U+030F  
 14551 % U+0311 COMBINING INVERTED BREVE; breveinvertedcmb  
 14552 \DeclareTextCommand{\newtie}{PU}[1]{#1\83\021}% U+0311  
 14553 % U+0323 COMBINING DOT BELOW; dotbelowcmb, \*dotbelowcomb  
 14554 \DeclareTextCommand{\d}{PU}[1]{#1\83\043}% U+0323  
 14555 % U+0331 COMBINING MACRON BELOW; macronbelowcmb  
 14556 \DeclareTextCommand{\b}{PU}[1]{#1\83\061}% U+0331  
 14557 % U+0327 COMBINING CEDILLA; cedillacmb  
 14558 \DeclareTextCommand{\c}{PU}[1]{#1\83\047}% U+0327  
 14559 % U+0328 COMBINING OGONEK; ogonekcmb  
 14560 \DeclareTextCommand{\k}{PU}[1]{#1\83\050}% U+0328  
 14561 % U+0361 COMBINING DOUBLE INVERTED BREVE; breveinverteddoublecmb  
 14562 \DeclareTextCommand{\t}{PU}[1]{#1\83\141}% U+0361  
 14563 % U+20DD COMBINING ENCLOSING CIRCLE  
 14564 \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.

14565 \DeclareTextCompositeCommand{\`}{PU}{\@empty}{\textasciigrave}  
 14566 \DeclareTextCompositeCommand{\'}{PU}{\@empty}{\textacute}  
 14567 \DeclareTextCompositeCommand{\~}{PU}{\@empty}{\textasciicircum}  
 14568 \DeclareTextCompositeCommand{\-}{PU}{\@empty}{\texttilde}  
 14569 \DeclareTextCompositeCommand{\"}{PU}{\@empty}{\textasciidieresis}  
 14570 \DeclareTextCompositeCommand{\r}{PU}{\@empty}{\textring}  
 14571 \DeclareTextCompositeCommand{\v}{PU}{\@empty}{\textasciicaron}  
 14572 \DeclareTextCompositeCommand{\.}{PU}{\@empty}{\textdotaccent}  
 14573 \DeclareTextCompositeCommand{\c}{PU}{\@empty}{\textcedilla}  
 14574 \DeclareTextCompositeCommand{\u}{PU}{\@empty}{\textasciibreve}  
 14575 \DeclareTextCompositeCommand{\G}{PU}{\@empty}{\textdoublegrave}  
 14576 \DeclareTextCompositeCommand{\=}{PU}{\@empty}{\textasciimacron}  
 14577 \DeclareTextCompositeCommand{\H}{PU}{\@empty}{\texthungarumlaut}  
 14578 \DeclareTextCompositeCommand{\k}{PU}{\@empty}{\textogonek}  
 14579 \DeclareTextCompositeCommand{\b}{PU}{\@empty}{\textmacronbelow}  
 14580 \DeclareTextCompositeCommand{\d}{PU}{\@empty}{\textdotbelow}  
 14581 \DeclareTextCompositeCommand{\t}{PU}{\@empty}{\texttie}  
 14582 \DeclareTextCompositeCommand{\newtie}{PU}{\@empty}{\textnewtie}  
 14583 \DeclareTextCompositeCommand{\textcircled}{PU}{\@empty}{\textbigcircle}  
 14584 \DeclareTextCompositeCommand{\`}{PU}{\ }{\textasciigrave}  
 14585 \DeclareTextCompositeCommand{\'}{PU}{\ }{\textacute}  
 14586 \DeclareTextCompositeCommand{\~}{PU}{\ }{\textasciicircum}  
 14587 \DeclareTextCompositeCommand{\-}{PU}{\ }{\texttilde}  
 14588 \DeclareTextCompositeCommand{\"}{PU}{\ }{\textasciidieresis}

```

14589 \DeclareTextCompositeCommand{\r}{PU}{\ }{\textring}
14590 \DeclareTextCompositeCommand{\v}{PU}{\ }{\textasciicaron}
14591 \DeclareTextCompositeCommand{\.}{PU}{\ }{\textdotaccent}
14592 \DeclareTextCompositeCommand{\c}{PU}{\ }{\textcedilla}
14593 \DeclareTextCompositeCommand{\u}{PU}{\ }{\textasciibreve}
14594 \DeclareTextCompositeCommand{\G}{PU}{\ }{\textdoublegrave}
14595 \DeclareTextCompositeCommand{\=}{PU}{\ }{\textasciimacron}
14596 \DeclareTextCompositeCommand{\H}{PU}{\ }{\texthungarumlaut}
14597 \DeclareTextCompositeCommand{\k}{PU}{\ }{\textogonek}
14598 \DeclareTextCompositeCommand{\b}{PU}{\ }{\textmacronbelow}
14599 \DeclareTextCompositeCommand{\d}{PU}{\ }{\textdotbelow}
14600 \DeclareTextCompositeCommand{\t}{PU}{\ }{\texttie}
14601 \DeclareTextCompositeCommand{\newtie}{PU}{\ }{\textnewtie}
14602 \DeclareTextCompositeCommand{\textcircled}{PU}{\ }{\textbigcircle}

```

Accents for capitals (see encoding TS1)

```

14603 \DeclareTextCommand{\capitalcedilla}{PU}[1]{\c{#1}}
14604 \DeclareTextCommand{\capitalogonek}{PU}[1]{\k{#1}}
14605 \DeclareTextCommand{\capitalgrave}{PU}[1]{\`{#1}}
14606 \DeclareTextCommand{\capitalacute}{PU}[1]{\'{#1}}
14607 \DeclareTextCommand{\capitalcircumflex}{PU}[1]{\^{#1}}
14608 \DeclareTextCommand{\capitaltilde}{PU}[1]{\~{#1}}
14609 \DeclareTextCommand{\capitaldieresis}{PU}[1]{\\"{#1}}
14610 \DeclareTextCommand{\capitalhungarumlaut}{PU}[1]{\H{#1}}
14611 \DeclareTextCommand{\capitalring}{PU}[1]{\r{#1}}
14612 \DeclareTextCommand{\capitalcaron}{PU}[1]{\v{#1}}
14613 \DeclareTextCommand{\capitalbreve}{PU}[1]{\u{#1}}
14614 \DeclareTextCommand{\capitalmacron}{PU}[1]{\={#1}}
14615 \DeclareTextCommand{\capitaldotaccent}{PU}[1]{\.{#1}}
14616 \DeclareTextCommand{\capitaltie}{PU}[1]{\t{#1}}
14617 \DeclareTextCommand{\capitalnewtie}{PU}[1]{\newtie{#1}}

```

## 50.2.2 Basic Latin: U+0000 to U+007F

Special white space escape characters.

```

14618 % U+0009 (CHARACTER TABULATION)
14619 \DeclareTextCommand{\textHT}{PU}{\80\011}% U+0009
14620 % U+000A (LINE FEED)
14621 \DeclareTextCommand{\textLF}{PU}{\80\012}% U+000A
14622 % U+000D (CARRIAGE RETURN)
14623 \DeclareTextCommand{\textCR}{PU}{\80\015}% U+000D

\80\040: U+0020 SPACE; space, spacehackarabic
\80\041: U+0021 EXCLAMATION MARK; exclam

14624 % U+0022 QUOTATION MARK; quotedbl
14625 \DeclareTextCommand{\textquotedbl}{PU}{\string"}% \80\042 U+0022
14626 % U+0023 NUMBER SIGN; numbersign
14627 \DeclareTextCommand{\textnumbersign}{PU}{\80\043}% U+0023
14628 % U+0024 DOLLAR SIGN; dollar
14629 \DeclareTextCommand{\textdollar}{PU}{\80\044}% U+0024
14630 % U+0025 PERCENT SIGN; percent
14631 \DeclareTextCommand{\textpercent}{PU}{\80\045}% U+0025
14632 % U+0026 AMPERSAND; ampersand
14633 \DeclareTextCommand{\textampersand}{PU}{\80\046}% U+0026
14634 % U+0027 APOSTROPHE; quotesingle
14635 \DeclareTextCommand{\textquotesingle}{PU}{\80\047}% U+0027
14636 % U+0028 LEFT PARENTHESIS; parenleft
14637 \DeclareTextCommand{\textparenleft}{PU}{\80\050}% U+0028
14638 % U+0029 RIGHT PARENTHESIS; parenright

```

14639 \DeclareTextCommand{\textparenright}{PU}{\80\051}% U+0029  
 14640 % U+002A ASTERISK; asterisk  
 14641 \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  
 14642 % U+003C LESS-THAN SIGN; less  
 14643 \DeclareTextCommand{\textless}{PU}{<}% \80\074 U+003C  
 \80\075: U+003D EQUALS SIGN; equal  
 14644 % U+003E GREATER-THAN SIGN; greater  
 14645 \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  
 14646 % U+005C REVERSE SOLIDUS; backslash  
 14647 \DeclareTextCommand{\textbackslash}{PU}{\80\134}% U+005C  
 \80\135: U+005D RIGHT SQUARE BRACKET; bracketright  
 14648 % U+005E CIRCUMFLEX ACCENT; asciicircum  
 14649 \DeclareTextCommand{\textasciicircum}{PU}{\80\136}% U+005E  
 14650 % U+005F LOW LINE; underscore  
 14651 \DeclareTextCommand{\textunderscore}{PU}{\80\137}% U+005F  
 14652 % U+0060 GRAVE ACCENT; grave  
 14653 \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  
 14654 % U+0069 LATIN SMALL LETTER I; i  
 14655 \DeclareTextCompositeCommand{\.}{PU}{i}% \80\151 U+0069  
 14656 \DeclareTextCompositeCommand{\.}{PU}{i}% \80\151 U+0069  
 \80\152: U+006A LATIN SMALL LETTER J; j  
 ...  
 \80\172: U+007A LATIN SMALL LETTER Z; z  
 14657 % U+007B LEFT CURLY BRACKET; braceleft  
 14658 \DeclareTextCommand{\textbraceleft}{PU}{\80\173}% U+007B  
 14659 % U+007C VERTICAL LINE; \*bar, verticalbar  
 14660 \DeclareTextCommand{\textbar}{PU}{|}% \80\174 U+007C  
 14661 % U+007D RIGHT CURLY BRACKET; braceright  
 14662 \DeclareTextCommand{\textbraceright}{PU}{\80\175}% U+007D  
 14663 % U+007E TILDE; asciitilde  
 14664 \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  
14665 % U+00A1 INVERTED EXCLAMATION MARK; exclamdown  
14666 \DeclareTextCommand{\textexclamdown}{PU}{\80\241}% U+00A1  
14667 % U+00A2 CENT SIGN; cent  
14668 \DeclareTextCommand{\textcent}{PU}{\80\242}% U+00A2  
14669 % U+00A3 POUND SIGN; sterling  
14670 \DeclareTextCommand{\textsterling}{PU}{\80\243}% U+00A3  
14671 % U+00A4 CURRENCY SIGN; currency  
14672 \DeclareTextCommand{\textcurrency}{PU}{\80\244}% U+00A4  
14673 % U+00A5 YEN SIGN; yen  
14674 \DeclareTextCommand{\textyen}{PU}{\80\245}% U+00A5  
14675 % U+00A6 BROKEN BAR; brokenbar  
14676 \DeclareTextCommand{\textbrokenbar}{PU}{\80\246}% U+00A6  
14677 % U+00A7 SECTION SIGN; section  
14678 \DeclareTextCommand{\textsection}{PU}{\80\247}% U+00A7  
14679 % U+00A8 DIAERESIS; dieresis  
14680 \DeclareTextCommand{\textasciidieresis}{PU}{\80\250}% U+00A8  
14681 % U+00A9 COPYRIGHT SIGN; copyright  
14682 \DeclareTextCommand{\textcopyright}{PU}{\80\251}% U+00A9  
14683 % U+00AA FEMININE ORDINAL INDICATOR; ordfeminine  
14684 \DeclareTextCommand{\textordfeminine}{PU}{\80\252}% U+00AA  
14685 % U+00AB LEFT-POINTING DOUBLE ANGLE QUOTATION MARK; guillemotleft  
14686 \DeclareTextCommand{\guillemotleft}{PU}{\80\253}% U+00AB  
14687 % U+00AC NOT SIGN; logicalnot  
14688 \DeclareTextCommand{\textlogicalnot}{PU}{\80\254}% U+00AC  
14689 \DeclareTextCommand{\textlnot}{PU}{\80\254}% U+00AC  
\80\255: U+00AD SOFT HYPHEN; sfthyphen, softthyphen  
14690 % U+00AE REGISTERED SIGN; registered  
14691 \DeclareTextCommand{\textregistered}{PU}{\80\256}% U+00AE  
14692 % U+00AF MACRON; \*macron, overscore  
14693 \DeclareTextCommand{\textasciimacron}{PU}{\80\257}% U+00AF  
14694 % U+00B0 DEGREE SIGN; degree  
14695 \DeclareTextCommand{\textdegree}{PU}{\80\260}% U+00B0  
14696 % U+00B1 PLUS-MINUS SIGN; plusminus  
14697 \DeclareTextCommand{\textplusminus}{PU}{\80\261}% U+00B1  
14698 % U+00B2 SUPERScript TWO; twosuperior  
14699 \DeclareTextCommand{\texttwosuperior}{PU}{\80\262}% U+00B2  
14700 % U+00B3 SUPERScript THREE; threesuperior  
14701 \DeclareTextCommand{\textthreesuperior}{PU}{\80\263}% U+00B3  
14702 % U+00B4 ACUTE ACCENT; acute  
14703 \DeclareTextCommand{\textacute}{PU}{\80\264}% U+00B4  
14704 \DeclareTextCommand{\textasciiacute}{PU}{\80\264}% U+00B4  
14705 % U+00B5 MICRO SIGN; mu, mul  
14706 \DeclareTextCommand{\textmu}{PU}{\80\265}% U+00B5  
14707 % U+00B6 PILCROW SIGN; paragraph  
14708 \DeclareTextCommand{\textparagraph}{PU}{\80\266}% U+00B6  
14709 % U+00B7 MIDDLE DOT; middot, \*periodcentered  
14710 \DeclareTextCommand{\textperiodcentered}{PU}{\80\267}% U+00B7  
14711 % U+00B8 CEDILLA; cedilla  
14712 \DeclareTextCommand{\textcedilla}{PU}{\80\270}% U+00B8  
14713 % U+00B9 SUPERScript ONE; onesuperior  
14714 \DeclareTextCommand{\textonesuperior}{PU}{\80\271}% U+00B9  
14715 % U+00BA MASCULINE ORDINAL INDICATOR; ordmasculine  
14716 \DeclareTextCommand{\textordmasculine}{PU}{\80\272}% U+00BA



14717 % U+00BB RIGHT-POINTING DOUBLE ANGLE QUOTATION MARK; guillemotright  
 14718 \DeclareTextCommand{\guillemotright}{PU}{\80\273}% U+00BB  
 14719 % U+00BC VULGAR FRACTION ONE QUARTER; onequarter  
 14720 \DeclareTextCommand{\textonequarter}{PU}{\80\274}% U+00BC  
 14721 % U+00BD VULGAR FRACTION ONE HALF; onehalf  
 14722 \DeclareTextCommand{\textonehalf}{PU}{\80\275}% U+00BD  
 14723 % U+00BE VULGAR FRACTION THREE QUARTERS; threequarters  
 14724 \DeclareTextCommand{\textthreequarters}{PU}{\80\276}% U+00BE  
 14725 % U+00BF INVERTED QUESTION MARK; questiondown  
 14726 \DeclareTextCommand{\textquestiondown}{PU}{\80\277}% U+00BF  
 14727 % U+00C0 LATIN CAPITAL LETTER A WITH GRAVE; Agrave  
 14728 \DeclareTextCompositeCommand{\`}{PU}{A}{\80\300}% U+00C0  
 14729 % U+00C1 LATIN CAPITAL LETTER A WITH ACUTE; Aacute  
 14730 \DeclareTextCompositeCommand{\'}{PU}{A}{\80\301}% U+00C1  
 14731 % U+00C2 LATIN CAPITAL LETTER A WITH CIRCUMFLEX; Acircumflex  
 14732 \DeclareTextCompositeCommand{\^}{PU}{A}{\80\302}% U+00C2  
 14733 % U+00C3 LATIN CAPITAL LETTER A WITH TILDE; Atilde  
 14734 \DeclareTextCompositeCommand{\~}{PU}{A}{\80\303}% U+00C3  
 14735 % U+00C4 LATIN CAPITAL LETTER A WITH DIAERESIS; Adieresis  
 14736 \DeclareTextCompositeCommand{\"}{PU}{A}{\80\304}% U+00C4  
 14737 % U+00C5 LATIN CAPITAL LETTER A WITH RING ABOVE; Aring  
 14738 \DeclareTextCompositeCommand{\r}{PU}{A}{\80\305}% U+00C5  
 14739 % U+00C6 LATIN CAPITAL LETTER AE; AE  
 14740 \DeclareTextCommand{\AE}{PU}{\80\306}% U+00C6  
 14741 % U+00C7 LATIN CAPITAL LETTER C WITH CEDILLA; Ccedilla  
 14742 \DeclareTextCompositeCommand{\c}{PU}{C}{\80\307}% U+00C7  
 14743 % U+00C8 LATIN CAPITAL LETTER E WITH GRAVE; Egrave  
 14744 \DeclareTextCompositeCommand{\`}{PU}{E}{\80\310}% U+00C8  
 14745 % U+00C9 LATIN CAPITAL LETTER E WITH ACUTE; Eacute  
 14746 \DeclareTextCompositeCommand{\'}{PU}{E}{\80\311}% U+00C9  
 14747 % U+00CA LATIN CAPITAL LETTER E WITH CIRCUMFLEX; Ecircumflex  
 14748 \DeclareTextCompositeCommand{\^}{PU}{E}{\80\312}% U+00CA  
 14749 % U+00CB LATIN CAPITAL LETTER E WITH DIAERESIS; Edieresis  
 14750 \DeclareTextCompositeCommand{\"}{PU}{E}{\80\313}% U+00CB  
 14751 % U+00CC LATIN CAPITAL LETTER I WITH GRAVE; Igrave  
 14752 \DeclareTextCompositeCommand{\`}{PU}{I}{\80\314}% U+00CC  
 14753 % U+00CD LATIN CAPITAL LETTER I WITH ACUTE; Iacute  
 14754 \DeclareTextCompositeCommand{\'}{PU}{I}{\80\315}% U+00CD  
 14755 % U+00CE LATIN CAPITAL LETTER I WITH CIRCUMFLEX; Icircumflex  
 14756 \DeclareTextCompositeCommand{\^}{PU}{I}{\80\316}% U+00CE  
 14757 % U+00CF LATIN CAPITAL LETTER I WITH DIAERESIS; Idieresis  
 14758 \DeclareTextCompositeCommand{\"}{PU}{I}{\80\317}% U+00CF  
 14759 % U+00D0 LATIN CAPITAL LETTER ETH; Eth  
 14760 \DeclareTextCommand{\DH}{PU}{\80\320}% U+00D0  
 14761 % U+00D1 LATIN CAPITAL LETTER N WITH TILDE; Ntilde  
 14762 \DeclareTextCompositeCommand{\~}{PU}{N}{\80\321}% U+00D1  
 14763 % U+00D2 LATIN CAPITAL LETTER O WITH GRAVE; Ograve  
 14764 \DeclareTextCompositeCommand{\`}{PU}{O}{\80\322}% U+00D2  
 14765 % U+00D3 LATIN CAPITAL LETTER O WITH ACUTE; Oacute  
 14766 \DeclareTextCompositeCommand{\'}{PU}{O}{\80\323}% U+00D3  
 14767 % U+00D4 LATIN CAPITAL LETTER O WITH CIRCUMFLEX; Ocircumflex  
 14768 \DeclareTextCompositeCommand{\^}{PU}{O}{\80\324}% U+00D4  
 14769 % U+00D5 LATIN CAPITAL LETTER O WITH TILDE; Otilde  
 14770 \DeclareTextCompositeCommand{\~}{PU}{O}{\80\325}% U+00D5  
 14771 % U+00D6 LATIN CAPITAL LETTER O WITH DIAERESIS; Odieresis  
 14772 \DeclareTextCompositeCommand{\"}{PU}{O}{\80\326}% U+00D6

14773 % U+00D7 MULTIPLICATION SIGN; multiply  
14774 \DeclareTextCommand{\textmultiply}{PU}{\80\327}% U+00D7  
14775 % U+00D8 LATIN CAPITAL LETTER O WITH STROKE; Oslash  
14776 \DeclareTextCommand{\O}{PU}{\80\330}% U+00D8  
14777 % U+00D9 LATIN CAPITAL LETTER U WITH GRAVE; Ugrave  
14778 \DeclareTextCompositeCommand{\`}{PU}{U}{\80\331}% U+00D9  
14779 % U+00DA LATIN CAPITAL LETTER U WITH ACUTE; Uacute  
14780 \DeclareTextCompositeCommand{\'}{PU}{U}{\80\332}% U+00DA  
14781 % U+00DB LATIN CAPITAL LETTER U WITH CIRCUMFLEX; Ucircumflex  
14782 \DeclareTextCompositeCommand{\^}{PU}{U}{\80\333}% U+00DB  
14783 % U+00DC LATIN CAPITAL LETTER U WITH DIAERESIS; Udieresis  
14784 \DeclareTextCompositeCommand{\"}{PU}{U}{\80\334}% U+00DC  
14785 % U+00DD LATIN CAPITAL LETTER Y WITH ACUTE; Yacute  
14786 \DeclareTextCompositeCommand{\'}{PU}{Y}{\80\335}% U+00DD  
14787 % U+00DE LATIN CAPITAL LETTER THORN; Thorn  
14788 \DeclareTextCommand{\TH}{PU}{\80\336}% U+00DE  
14789 % U+00DF LATIN SMALL LETTER SHARP S; germandbls  
14790 \DeclareTextCommand{\ss}{PU}{\80\337}% U+00DF  
14791 % U+00E0 LATIN SMALL LETTER A WITH GRAVE; agrave  
14792 \DeclareTextCompositeCommand{\`}{PU}{a}{\80\340}% U+00E0  
14793 % U+00E1 LATIN SMALL LETTER A WITH ACUTE; aacute  
14794 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\341}% U+00E1  
14795 % U+00E2 LATIN SMALL LETTER A WITH CIRCUMFLEX; acircumflex  
14796 \DeclareTextCompositeCommand{\^}{PU}{a}{\80\342}% U+00E2  
14797 % U+00E3 LATIN SMALL LETTER A WITH TILDE; atilde  
14798 \DeclareTextCompositeCommand{\~}{PU}{a}{\80\343}% U+00E3  
14799 % U+00E4 LATIN SMALL LETTER A WITH DIAERESIS; adieresis  
14800 \DeclareTextCompositeCommand{\"}{PU}{a}{\80\344}% U+00E4  
14801 % U+00E5 LATIN SMALL LETTER A WITH RING ABOVE; aring  
14802 \DeclareTextCompositeCommand{\r}{PU}{a}{\80\345}% U+00E5  
14803 % U+00E6 LATIN SMALL LETTER AE; ae  
14804 \DeclareTextCommand{\ae}{PU}{\80\346}% U+00E6  
14805 % U+00E7 LATIN SMALL LETTER C WITH CEDILLA; ccedilla  
14806 \DeclareTextCompositeCommand{\c}{PU}{c}{\80\347}% U+00E7  
14807 % U+00E8 LATIN SMALL LETTER E WITH GRAVE; egrave  
14808 \DeclareTextCompositeCommand{\`}{PU}{e}{\80\350}% U+00E8  
14809 % U+00E9 LATIN SMALL LETTER E WITH ACUTE; eacute  
14810 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\351}% U+00E9  
14811 % U+00EA LATIN SMALL LETTER E WITH CIRCUMFLEX; ecircumflex  
14812 \DeclareTextCompositeCommand{\^}{PU}{e}{\80\352}% U+00EA  
14813 % U+00EB LATIN SMALL LETTER E WITH DIAERESIS; edieresis  
14814 \DeclareTextCompositeCommand{\"}{PU}{e}{\80\353}% U+00EB  
14815 % U+00EC LATIN SMALL LETTER I WITH GRAVE; igrave  
14816 \DeclareTextCompositeCommand{\`}{PU}{i}{\80\354}% U+00EC  
14817 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\354}% U+00EC  
14818 % U+00ED LATIN SMALL LETTER I WITH ACUTE; iacute  
14819 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\355}% U+00ED  
14820 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\355}% U+00ED  
14821 % U+00EE LATIN SMALL LETTER I WITH CIRCUMFLEX; icircumflex  
14822 \DeclareTextCompositeCommand{\^}{PU}{i}{\80\356}% U+00EE  
14823 \DeclareTextCompositeCommand{\^}{PU}{i}{\80\356}% U+00EE  
14824 % U+00EF LATIN SMALL LETTER I WITH DIAERESIS; idieresis  
14825 \DeclareTextCompositeCommand{\"}{PU}{i}{\80\357}% U+00EF  
14826 \DeclareTextCompositeCommand{\"}{PU}{i}{\80\357}% U+00EF  
14827 % U+00F0 LATIN SMALL LETTER ETH; eth  
14828 \DeclareTextCommand{\dh}{PU}{\80\360}% U+00F0  
14829 % U+00F1 LATIN SMALL LETTER N WITH TILDE; ntilde

14830 \DeclareTextCompositeCommand{\~}{PU}{n}{\80\361}% U+00F1  
 14831 % U+00F2 LATIN SMALL LETTER O WITH GRAVE; ograve  
 14832 \DeclareTextCompositeCommand{\`}{PU}{o}{\80\362}% U+00F2  
 14833 % U+00F3 LATIN SMALL LETTER O WITH ACUTE; oacute  
 14834 \DeclareTextCompositeCommand{\`}{PU}{o}{\80\363}% U+00F3  
 14835 % U+00F4 LATIN SMALL LETTER O WITH CIRCUMFLEX; ocircumflex  
 14836 \DeclareTextCompositeCommand{\^}{PU}{o}{\80\364}% U+00F4  
 14837 % U+00F5 LATIN SMALL LETTER O WITH TILDE; otilde  
 14838 \DeclareTextCompositeCommand{\~}{PU}{o}{\80\365}% U+00F5  
 14839 % U+00F6 LATIN SMALL LETTER O WITH DIAERESIS; odieresis  
 14840 \DeclareTextCompositeCommand{\"}{PU}{o}{\80\366}% U+00F6  
 14841 % U+00F7 DIVISION SIGN; divide  
 14842 \DeclareTextCommand{\textdivide}{PU}{\80\367}% U+00F7  
 14843 % U+00F8 LATIN SMALL LETTER O WITH STROKE; oslash  
 14844 \DeclareTextCommand{\o}{PU}{\80\370}% U+00F8  
 14845 % U+00F9 LATIN SMALL LETTER U WITH GRAVE; ugrave  
 14846 \DeclareTextCompositeCommand{\`}{PU}{u}{\80\371}% U+00F9  
 14847 % U+00FA LATIN SMALL LETTER U WITH ACUTE; uacute  
 14848 \DeclareTextCompositeCommand{\`}{PU}{u}{\80\372}% U+00FA  
 14849 % U+00FB LATIN SMALL LETTER U WITH CIRCUMFLEX; ucircumflex  
 14850 \DeclareTextCompositeCommand{\^}{PU}{u}{\80\373}% U+00FB  
 14851 % U+00FC LATIN SMALL LETTER U WITH DIAERESIS; udieresis  
 14852 \DeclareTextCompositeCommand{\"}{PU}{u}{\80\374}% U+00FC  
 14853 % U+00FD LATIN SMALL LETTER Y WITH ACUTE; yacute  
 14854 \DeclareTextCompositeCommand{\`}{PU}{y}{\80\375}% U+00FD  
 14855 % U+00FE LATIN SMALL LETTER THORN; thorn  
 14856 \DeclareTextCommand{\th}{PU}{\80\376}% U+00FE  
 14857 % U+00FF LATIN SMALL LETTER Y WITH DIAERESIS; ydieresis  
 14858 \DeclareTextCompositeCommand{\"}{PU}{y}{\80\377}% U+00FF

## 50.2.4 Latin Extended-A: U+0080 to U+017F

14859 % U+0100 LATIN CAPITAL LETTER A WITH MACRON; Amacron  
 14860 \DeclareTextCompositeCommand{\=}{PU}{A}{\81\000}% U+0100  
 14861 % U+0101 LATIN SMALL LETTER A WITH MACRON; amacron  
 14862 \DeclareTextCompositeCommand{\=}{PU}{a}{\81\001}% U+0101  
 14863 % U+0102 LATIN CAPITAL LETTER A WITH BREVE; Abreve  
 14864 \DeclareTextCompositeCommand{\u}{PU}{A}{\81\002}% U+0102  
 14865 % U+0103 LATIN SMALL LETTER A WITH BREVE; abreve  
 14866 \DeclareTextCompositeCommand{\u}{PU}{a}{\81\003}% U+0103  
 14867 % U+0104 LATIN CAPITAL LETTER A WITH OGONEK; Aogonek  
 14868 \DeclareTextCompositeCommand{\k}{PU}{A}{\81\004}% U+0104  
 14869 % U+0105 LATIN SMALL LETTER A WITH OGONEK; aogonek  
 14870 \DeclareTextCompositeCommand{\k}{PU}{a}{\81\005}% U+0105  
 14871 % U+0106 LATIN CAPITAL LETTER C WITH ACUTE; Cacute  
 14872 \DeclareTextCompositeCommand{\`}{PU}{C}{\81\006}% U+0106  
 14873 % U+0107 LATIN SMALL LETTER C WITH ACUTE; cacute  
 14874 \DeclareTextCompositeCommand{\`}{PU}{c}{\81\007}% U+0107  
 14875 % U+0108 LATIN CAPITAL LETTER C WITH CIRCUMFLEX; Ccircumflex  
 14876 \DeclareTextCompositeCommand{\^}{PU}{C}{\81\010}% U+0108  
 14877 % U+0109 LATIN SMALL LETTER C WITH CIRCUMFLEX; ccircumflex  
 14878 \DeclareTextCompositeCommand{\^}{PU}{c}{\81\011}% U+0109  
 14879 % U+010A LATIN CAPITAL LETTER C WITH DOT ABOVE; Cdot, Cdotaccent  
 14880 \DeclareTextCompositeCommand{\.}{PU}{C}{\81\012}% U+010A  
 14881 % U+010B LATIN SMALL LETTER C WITH DOT ABOVE; cdot, cdotaccent  
 14882 \DeclareTextCompositeCommand{\.}{PU}{c}{\81\013}% U+010B  
 14883 % U+010C LATIN CAPITAL LETTER C WITH CARON; Ccaron

14884 \DeclareTextCompositeCommand{\v}{PU}{C}{\81\014}% U+010C  
14885 % U+010D LATIN SMALL LETTER C WITH CARON; ccaron  
14886 \DeclareTextCompositeCommand{\v}{PU}{c}{\81\015}% U+010D  
14887 % U+010E LATIN CAPITAL LETTER D WITH CARON; Dcaron  
14888 \DeclareTextCompositeCommand{\v}{PU}{D}{\81\016}% U+010E  
14889 % U+010F LATIN SMALL LETTER D WITH CARON; dcaron  
14890 \DeclareTextCompositeCommand{\v}{PU}{d}{\81\017}% U+010F  
14891 % U+0110 LATIN CAPITAL LETTER D WITH STROKE; Dcroat, Dslash  
14892 \DeclareTextCommand{\DJ}{PU}{\81\020}% U+0110  
14893 % U+0111 LATIN SMALL LETTER D WITH STROKE; dcroat, dmacron  
14894 \DeclareTextCommand{\dj}{PU}{\81\021}% U+0111  
14895 % U+0112 LATIN CAPITAL LETTER E WITH MACRON; Emacron  
14896 \DeclareTextCompositeCommand{\=}{PU}{E}{\81\022}% U+0112  
14897 % U+0113 LATIN SMALL LETTER E WITH MACRON; emacron  
14898 \DeclareTextCompositeCommand{\=}{PU}{e}{\81\023}% U+0113  
14899 % U+0114 LATIN CAPITAL LETTER E WITH BREVE; Ebreve  
14900 \DeclareTextCompositeCommand{\u}{PU}{E}{\81\024}% U+0114  
14901 % U+0115 LATIN SMALL LETTER E WITH BREVE; ebreve  
14902 \DeclareTextCompositeCommand{\u}{PU}{e}{\81\025}% U+0115  
14903 % U+0116 LATIN CAPITAL LETTER E WITH DOT ABOVE; Edot, Edotaccent  
14904 \DeclareTextCompositeCommand{\.}{PU}{E}{\81\026}% U+0116  
14905 % U+0117 LATIN SMALL LETTER E WITH DOT ABOVE; edot, edotaccent  
14906 \DeclareTextCompositeCommand{\.}{PU}{e}{\81\027}% U+0117  
14907 % U+0118 LATIN CAPITAL LETTER E WITH OGONEK; Eogonek  
14908 \DeclareTextCompositeCommand{\k}{PU}{E}{\81\030}% U+0118  
14909 % U+0119 LATIN SMALL LETTER E WITH OGONEK; eogonek  
14910 \DeclareTextCompositeCommand{\k}{PU}{e}{\81\031}% U+0119  
14911 % U+011A LATIN CAPITAL LETTER E WITH CARON; Ecaron  
14912 \DeclareTextCompositeCommand{\v}{PU}{E}{\81\032}% U+011A  
14913 % U+011B LATIN SMALL LETTER E WITH CARON; ecaron  
14914 \DeclareTextCompositeCommand{\v}{PU}{e}{\81\033}% U+011B  
14915 % U+011C LATIN CAPITAL LETTER G WITH CIRCUMFLEX; Gcircumflex  
14916 \DeclareTextCompositeCommand{\^}{PU}{G}{\81\034}% U+011C  
14917 % U+011D LATIN SMALL LETTER G WITH CIRCUMFLEX; gcircumflex  
14918 \DeclareTextCompositeCommand{\^}{PU}{g}{\81\035}% U+011D  
14919 % U+011E LATIN CAPITAL LETTER G WITH BREVE; Gbreve  
14920 \DeclareTextCompositeCommand{\u}{PU}{G}{\81\036}% U+011E  
14921 % U+011F LATIN SMALL LETTER G WITH BREVE; gbreve  
14922 \DeclareTextCompositeCommand{\u}{PU}{g}{\81\037}% U+011F  
14923 % U+0120 LATIN CAPITAL LETTER G WITH DOT ABOVE; Gdot, Gdotaccent  
14924 \DeclareTextCompositeCommand{\.}{PU}{G}{\81\040}% U+0120  
14925 % U+0121 LATIN SMALL LETTER G WITH DOT ABOVE; gdot, gdotaccent  
14926 \DeclareTextCompositeCommand{\.}{PU}{g}{\81\041}% U+0121  
14927 % U+0122 LATIN CAPITAL LETTER G WITH CEDILLA; Gcedilla, Gcommaac-  
cent  
14928 \DeclareTextCompositeCommand{\c}{PU}{G}{\81\042}% U+0122  
14929 % U+0123 LATIN SMALL LETTER G WITH CEDILLA; gcedilla, gcommaaccent  
14930 \DeclareTextCompositeCommand{\c}{PU}{g}{\81\043}% U+0123  
14931 % U+0124 LATIN CAPITAL LETTER H WITH CIRCUMFLEX; Hcircumflex  
14932 \DeclareTextCompositeCommand{\^}{PU}{H}{\81\044}% U+0124  
14933 % U+0125 LATIN SMALL LETTER H WITH CIRCUMFLEX; hcircumflex  
14934 \DeclareTextCompositeCommand{\^}{PU}{h}{\81\045}% U+0125  
14935 % U+0126 LATIN CAPITAL LETTER H WITH STROKE; Hbar  
14936 \DeclareTextCommand{\textHslash}{PU}{\81\046}% U+0126  
14937 % U+0127 LATIN SMALL LETTER H WITH STROKE; hbar  
14938 \DeclareTextCommand{\texthslash}{PU}{\81\047}% U+0127  
14939 % U+0128 LATIN CAPITAL LETTER I WITH TILDE; Itilde

14940 \DeclareTextCompositeCommand{\~}{PU}{i}{\81\050}% U+0128  
14941 % U+0129 LATIN SMALL LETTER I WITH TILDE; itilde  
14942 \DeclareTextCompositeCommand{\-}{PU}{i}{\81\051}% U+0129  
14943 \DeclareTextCompositeCommand{\-}{PU}{i}{\81\051}% U+0129  
14944 % U+012A LATIN CAPITAL LETTER I WITH MACRON; Imacron  
14945 \DeclareTextCompositeCommand{\=}{PU}{I}{\81\052}% U+012A  
14946 % U+012B LATIN SMALL LETTER I WITH MACRON; imacron  
14947 \DeclareTextCompositeCommand{\=}{PU}{i}{\81\053}% U+012B  
14948 \DeclareTextCompositeCommand{\=}{PU}{i}{\81\053}% U+012B  
14949 % U+012C LATIN CAPITAL LETTER I WITH BREVE; Ibreve  
14950 \DeclareTextCompositeCommand{\u}{PU}{I}{\81\054}% U+012C  
14951 % U+012D LATIN SMALL LETTER I WITH BREVE; ibreve  
14952 \DeclareTextCompositeCommand{\u}{PU}{i}{\81\055}% U+012D  
14953 \DeclareTextCompositeCommand{\u}{PU}{i}{\81\055}% U+012D  
14954 % U+012E LATIN CAPITAL LETTER I WITH OGONEK; Iogonek  
14955 \DeclareTextCompositeCommand{\k}{PU}{I}{\81\056}% U+012E  
14956 % U+012F LATIN SMALL LETTER I WITH OGONEK; iogonek  
14957 \DeclareTextCompositeCommand{\k}{PU}{i}{\81\057}% U+012F  
14958 \DeclareTextCompositeCommand{\k}{PU}{i}{\81\057}% U+012F  
14959 % U+0130 LATIN CAPITAL LETTER I WITH DOT ABOVE; Idot, Idotaccent  
14960 \DeclareTextCompositeCommand{\.}{PU}{I}{\81\060}% U+0130  
14961 % U+0131 LATIN SMALL LETTER DOTLESS I; dotlessi  
14962 \DeclareTextCommand{\i}{PU}{\81\061}% U+0131  
14963 % U+0132 LATIN CAPITAL LIGATURE IJ; IJ  
14964 \DeclareTextCommand{\IJ}{PU}{\81\062}% U+0132  
14965 % U+0133 LATIN SMALL LIGATURE IJ; ij  
14966 \DeclareTextCommand{\ij}{PU}{\81\063}% U+0133  
14967 % U+0134 LATIN CAPITAL LETTER J WITH CIRCUMFLEX; Jcircumflex  
14968 \DeclareTextCompositeCommand{\^}{PU}{J}{\81\064}% U+0134  
14969 % U+0135 LATIN SMALL LETTER J WITH CIRCUMFLEX; jcircumflex  
14970 \DeclareTextCompositeCommand{\^}{PU}{j}{\81\065}% U+0135  
14971 \DeclareTextCompositeCommand{\^}{PU}{j}{\81\065}% U+0135  
14972 % U+0136 LATIN CAPITAL LETTER K WITH CEDILLA; Kcedilla, Kcommaac-  
cent  
14973 \DeclareTextCompositeCommand{\c}{PU}{K}{\81\066}% U+0136  
14974 % U+0137 LATIN SMALL LETTER K WITH CEDILLA; kcedilla, kcommaaccent  
14975 \DeclareTextCompositeCommand{\c}{PU}{k}{\81\067}% U+0137

The canonical name of U+0138, small letter kra, would be `\textkgreenlandic`, following the glyph naming convention. However `latex/base/inputenc.dtx` has choosen `\textkra`.

14976 % U+0138 LATIN SMALL LETTER KRA; kgreenlandic  
14977 \DeclareTextCommand{\textkra}{PU}{\81\070}% U+0138  
14978 % U+0139 LATIN CAPITAL LETTER L WITH ACUTE; Lacute  
14979 \DeclareTextCompositeCommand{\'}{PU}{L}{\81\071}% U+0139  
14980 % U+013A LATIN SMALL LETTER L WITH ACUTE; lacute  
14981 \DeclareTextCompositeCommand{\'}{PU}{l}{\81\072}% U+013A  
14982 % U+013B LATIN CAPITAL LETTER L WITH CEDILLA; Lcedilla, Lcommaac-  
cent  
14983 \DeclareTextCompositeCommand{\c}{PU}{L}{\81\073}% U+013B  
14984 % U+013C LATIN SMALL LETTER L WITH CEDILLA; lcedilla, lcommaaccent  
14985 \DeclareTextCompositeCommand{\c}{PU}{l}{\81\074}% U+013C  
14986 % U+013D LATIN CAPITAL LETTER L WITH CARON; Lcaron  
14987 \DeclareTextCompositeCommand{\v}{PU}{L}{\81\075}% U+013D  
14988 % U+013E LATIN SMALL LETTER L WITH CARON; lcaron  
14989 \DeclareTextCompositeCommand{\v}{PU}{l}{\81\076}% U+013E

There seems to be no variants of letters ‘L’ and ‘I’ with a dot above (reasonable). Therefore the \. accent is reused instead of making a separate accent macro \textmiddledot.

14990 % U+013F LATIN CAPITAL LETTER L WITH MIDDLE DOT; Ldot, Ldotaccent  
14991 \DeclareTextCompositeCommand{\.}{PU}{L}{\81\077}% U+013F  
14992 % U+0140 LATIN SMALL LETTER L WITH MIDDLE DOT; ldot, ldotaccent  
14993 \DeclareTextCompositeCommand{\.}{PU}{l}{\81\100}% U+0140  
14994 % U+0141 LATIN CAPITAL LETTER L WITH STROKE; Lslash  
14995 \DeclareTextCommand{\L}{PU}{\81\101}% U+0141  
14996 % U+0142 LATIN SMALL LETTER L WITH STROKE; lslash  
14997 \DeclareTextCommand{\l}{PU}{\81\102}% U+0142  
14998 % U+0143 LATIN CAPITAL LETTER N WITH ACUTE; Nacute  
14999 \DeclareTextCompositeCommand{\' }{PU}{N}{\81\103}% U+0143  
15000 % U+0144 LATIN SMALL LETTER N WITH ACUTE; nacute  
15001 \DeclareTextCompositeCommand{\' }{PU}{n}{\81\104}% U+0144  
15002 % U+0145 LATIN CAPITAL LETTER N WITH CEDILLA; Ncedilla, Ncommaaccent  
15003 \DeclareTextCompositeCommand{\c}{PU}{N}{\81\105}% U+0145  
15004 % U+0146 LATIN SMALL LETTER N WITH CEDILLA; ncedilla, ncommaaccent  
15005 \DeclareTextCompositeCommand{\c}{PU}{n}{\81\106}% U+0146  
15006 % U+0147 LATIN CAPITAL LETTER N WITH CARON; Ncaron  
15007 \DeclareTextCompositeCommand{\v}{PU}{N}{\81\107}% U+0147  
15008 % U+0148 LATIN SMALL LETTER N WITH CARON; ncaron  
15009 \DeclareTextCompositeCommand{\v}{PU}{n}{\81\110}% U+0148  
15010 % U+0149 LATIN SMALL LETTER N PRECEDED BY APOSTROPHE; napostrophe, quoterightn  
15011 \DeclareTextCommand{\textnapostrophe}{PU}{\81\111}% U+0149  
15012 % U+014A LATIN CAPITAL LETTER ENG; Eng  
15013 \DeclareTextCommand{\NG}{PU}{\81\112}% U+014A  
15014 % U+014B LATIN SMALL LETTER ENG; eng  
15015 \DeclareTextCommand{\ng}{PU}{\81\113}% U+014B  
15016 % U+014C LATIN CAPITAL LETTER O WITH MACRON; Omacron  
15017 \DeclareTextCompositeCommand{\=}{PU}{O}{\81\114}% U+014C  
15018 % U+014D LATIN SMALL LETTER O WITH MACRON; omacron  
15019 \DeclareTextCompositeCommand{\=}{PU}{o}{\81\115}% U+014D  
15020 % U+014E LATIN CAPITAL LETTER O WITH BREVE; Obreve  
15021 \DeclareTextCompositeCommand{\u}{PU}{O}{\81\116}% U+014E  
15022 % U+014F LATIN SMALL LETTER O WITH BREVE; obreve  
15023 \DeclareTextCompositeCommand{\u}{PU}{o}{\81\117}% U+014F  
15024 % U+0150 LATIN CAPITAL LETTER O WITH DOUBLE ACUTE; Odblacut  
15025 \DeclareTextCompositeCommand{\H}{PU}{O}{\81\120}% U+0150  
15026 % U+0151 LATIN SMALL LETTER O WITH DOUBLE ACUTE; odblacut, ohungarumlaut  
15027 \DeclareTextCompositeCommand{\H}{PU}{o}{\81\121}% U+0151  
15028 % U+0152 LATIN CAPITAL LIGATURE OE; OE  
15029 \DeclareTextCommand{\OE}{PU}{\81\122}% U+0152  
15030 % U+0153 LATIN SMALL LIGATURE OE; oe  
15031 \DeclareTextCommand{\oe}{PU}{\81\123}% U+0153  
15032 % U+0154 LATIN CAPITAL LETTER R WITH ACUTE; Racute  
15033 \DeclareTextCompositeCommand{\' }{PU}{R}{\81\124}% U+0154  
15034 % U+0155 LATIN SMALL LETTER R WITH ACUTE; racute  
15035 \DeclareTextCompositeCommand{\' }{PU}{r}{\81\125}% U+0155  
15036 % U+0156 LATIN CAPITAL LETTER R WITH CEDILLA; Rcedilla, Rcommaaccent  
15037 \DeclareTextCompositeCommand{\c}{PU}{R}{\81\126}% U+0156  
15038 % U+0157 LATIN SMALL LETTER R WITH CEDILLA; rcedilla, rcommaaccent  
15039 \DeclareTextCompositeCommand{\c}{PU}{r}{\81\127}% U+0157

15040 % U+0158 LATIN CAPITAL LETTER R WITH CARON; Rcaron  
 15041 \DeclareTextCompositeCommand{\v}{PU}{R}{\81\130}% U+0158  
 15042 % U+0159 LATIN SMALL LETTER R WITH CARON; rcaron  
 15043 \DeclareTextCompositeCommand{\v}{PU}{r}{\81\131}% U+0159  
 15044 % U+015A LATIN CAPITAL LETTER S WITH ACUTE; Sacute  
 15045 \DeclareTextCompositeCommand{\'}{PU}{S}{\81\132}% U+015A  
 15046 % U+015B LATIN SMALL LETTER S WITH ACUTE; sacute  
 15047 \DeclareTextCompositeCommand{\'}{PU}{s}{\81\133}% U+015B  
 15048 % U+015C LATIN CAPITAL LETTER S WITH CIRCUMFLEX; Scircumflex  
 15049 \DeclareTextCompositeCommand{\^}{PU}{S}{\81\134}% U+015C  
 15050 % U+015D LATIN SMALL LETTER S WITH CIRCUMFLEX; scircumflex  
 15051 \DeclareTextCompositeCommand{\^}{PU}{s}{\81\135}% U+015D  
 15052 % U+015E LATIN CAPITAL LETTER S WITH CEDILLA; Scedilla  
 15053 \DeclareTextCompositeCommand{\c}{PU}{S}{\81\136}% U+015E  
 15054 % U+015F LATIN SMALL LETTER S WITH CEDILLA; scedilla  
 15055 \DeclareTextCompositeCommand{\c}{PU}{s}{\81\137}% U+015F  
 15056 % U+0160 LATIN CAPITAL LETTER S WITH CARON; Scaron  
 15057 \DeclareTextCompositeCommand{\v}{PU}{S}{\81\140}% U+0160  
 15058 % U+0161 LATIN SMALL LETTER S WITH CARON; scaron  
 15059 \DeclareTextCompositeCommand{\v}{PU}{s}{\81\141}% U+0161  
 15060 % U+0162 LATIN CAPITAL LETTER T WITH CEDILLA; Tcedilla, Tcommaac-  
 cent  
 15061 \DeclareTextCompositeCommand{\c}{PU}{T}{\81\142}% U+0162  
 15062 % U+0163 LATIN SMALL LETTER T WITH CEDILLA; tcedilla, tcommaaccent  
 15063 \DeclareTextCompositeCommand{\c}{PU}{t}{\81\143}% U+0163  
 15064 % U+0164 LATIN CAPITAL LETTER T WITH CARON; Tcaron  
 15065 \DeclareTextCompositeCommand{\v}{PU}{T}{\81\144}% U+0164  
 15066 % U+0165 LATIN SMALL LETTER T WITH CARON; tcaron  
 15067 \DeclareTextCompositeCommand{\v}{PU}{t}{\81\145}% U+0165  
 15068 % U+0166 LATIN CAPITAL LETTER T WITH STROKE; Tbar  
 15069 \DeclareTextCommand{\textTslash}{PU}{\81\146}% U+0166  
 15070 % U+0167 LATIN SMALL LETTER T WITH STROKE; tbar  
 15071 \DeclareTextCommand{\texttslash}{PU}{\81\147}% U+0167  
 15072 % U+0168 LATIN CAPITAL LETTER U WITH TILDE; Utilde  
 15073 \DeclareTextCompositeCommand{\~}{PU}{U}{\81\150}% U+0168  
 15074 % U+0169 LATIN SMALL LETTER U WITH TILDE; utilde  
 15075 \DeclareTextCompositeCommand{\~}{PU}{u}{\81\151}% U+0169  
 15076 % U+016A LATIN CAPITAL LETTER U WITH MACRON; Umacron  
 15077 \DeclareTextCompositeCommand{\=}{PU}{U}{\81\152}% U+016A  
 15078 % U+016B LATIN SMALL LETTER U WITH MACRON; umacron  
 15079 \DeclareTextCompositeCommand{\=}{PU}{u}{\81\153}% U+016B  
 15080 % U+016C LATIN CAPITAL LETTER U WITH BREVE; Ubreve  
 15081 \DeclareTextCompositeCommand{\u}{PU}{U}{\81\154}% U+016C  
 15082 % U+016D LATIN SMALL LETTER U WITH BREVE; ubreve  
 15083 \DeclareTextCompositeCommand{\u}{PU}{u}{\81\155}% U+016D  
 15084 % U+016E LATIN CAPITAL LETTER U WITH RING ABOVE; Uring  
 15085 \DeclareTextCompositeCommand{\r}{PU}{U}{\81\156}% U+016E  
 15086 % U+016F LATIN SMALL LETTER U WITH RING ABOVE; uring  
 15087 \DeclareTextCompositeCommand{\r}{PU}{u}{\81\157}% U+016F  
 15088 % U+0170 LATIN CAPITAL LETTER U WITH DOUBLE ACUTE; Udbla-  
 cute, Uhungarumlaut  
 15089 \DeclareTextCompositeCommand{\H}{PU}{U}{\81\160}% U+0170  
 15090 % U+0171 LATIN SMALL LETTER U WITH DOUBLE ACUTE; udblacute, uhun-  
 garumlaut  
 15091 \DeclareTextCompositeCommand{\H}{PU}{u}{\81\161}% U+0171  
 15092 % U+0172 LATIN CAPITAL LETTER U WITH OGONEK; Uogonek  
 15093 \DeclareTextCompositeCommand{\k}{PU}{U}{\81\162}% U+0172

15094 % U+0173 LATIN SMALL LETTER U WITH OGONEK; uogonek  
 15095 \DeclareTextCompositeCommand{\k}{PU}{u}{\81\163}% U+0173  
 15096 % U+0174 LATIN CAPITAL LETTER W WITH CIRCUMFLEX; Wcircumflex  
 15097 \DeclareTextCompositeCommand{\^}{PU}{W}{\81\164}% U+0174  
 15098 % U+0175 LATIN SMALL LETTER W WITH CIRCUMFLEX; wcircumflex  
 15099 \DeclareTextCompositeCommand{\^}{PU}{w}{\81\165}% U+0175  
 15100 % U+0176 LATIN CAPITAL LETTER Y WITH CIRCUMFLEX; Ycircumflex  
 15101 \DeclareTextCompositeCommand{\^}{PU}{Y}{\81\166}% U+0176  
 15102 % U+0177 LATIN SMALL LETTER Y WITH CIRCUMFLEX; ycircumflex  
 15103 \DeclareTextCompositeCommand{\^}{PU}{y}{\81\167}% U+0177  
 15104 % U+0178 LATIN CAPITAL LETTER Y WITH DIAERESIS; Ydieresis  
 15105 \DeclareTextCompositeCommand{"}{PU}{Y}{\81\170}% U+0178  
 15106 % U+0179 LATIN CAPITAL LETTER Z WITH ACUTE; Zacute  
 15107 \DeclareTextCompositeCommand{\'}{PU}{Z}{\81\171}% U+0179  
 15108 % U+017A LATIN SMALL LETTER Z WITH ACUTE; zacute  
 15109 \DeclareTextCompositeCommand{\'}{PU}{z}{\81\172}% U+017A  
 15110 % U+017B LATIN CAPITAL LETTER Z WITH DOT ABOVE; Zdot, Zdotaccent  
 15111 \DeclareTextCompositeCommand{.}{PU}{Z}{\81\173}% U+017B  
 15112 % U+017C LATIN SMALL LETTER Z WITH DOT ABOVE; zdot, zdotaccent  
 15113 \DeclareTextCompositeCommand{.}{PU}{z}{\81\174}% U+017C  
 15114 % U+017D LATIN CAPITAL LETTER Z WITH CARON; Zcaron  
 15115 \DeclareTextCompositeCommand{\v}{PU}{Z}{\81\175}% U+017D  
 15116 % U+017E LATIN SMALL LETTER Z WITH CARON; zcaron  
 15117 \DeclareTextCompositeCommand{\v}{PU}{z}{\81\176}% U+017E  
 15118 % U+017F LATIN SMALL LETTER LONG S; longs, slong  
 15119 \DeclareTextCommand{\textlongS}{PU}{\81\177}% U+017F

## 50.2.5 Latin Extended-B: U+0180 to U+024F

15120 % U+0192 LATIN SMALL LETTER F WITH HOOK; florin  
 15121 \DeclareTextCommand{\textflorin}{PU}{\81\222}% U+0192  
 15122 % U+01CD LATIN CAPITAL LETTER A WITH CARON; Acaron  
 15123 \DeclareTextCompositeCommand{\v}{PU}{A}{\81\315}% U+01CD  
 15124 % U+01CE LATIN SMALL LETTER A WITH CARON; acaron  
 15125 \DeclareTextCompositeCommand{\v}{PU}{a}{\81\316}% U+01CE  
 15126 % U+01CF LATIN CAPITAL LETTER I WITH CARON; Icaron  
 15127 \DeclareTextCompositeCommand{\v}{PU}{I}{\81\317}% U+01CF  
 15128 % U+01D0 LATIN SMALL LETTER I WITH CARON; icaron  
 15129 \DeclareTextCompositeCommand{\v}{PU}{i}{\81\320}% U+01D0  
 15130 \DeclareTextCompositeCommand{\v}{PU}{i}{\81\320}% U+01D0  
 15131 % U+01D1 LATIN CAPITAL LETTER O WITH CARON; Ocaron  
 15132 \DeclareTextCompositeCommand{\v}{PU}{O}{\81\321}% U+01D1  
 15133 % U+01D2 LATIN SMALL LETTER O WITH CARON; ocaron  
 15134 \DeclareTextCompositeCommand{\v}{PU}{o}{\81\322}% U+01D2  
 15135 % U+01D3 LATIN CAPITAL LETTER U WITH CARON; Ucaron  
 15136 \DeclareTextCompositeCommand{\v}{PU}{U}{\81\323}% U+01D3  
 15137 % U+01D4 LATIN SMALL LETTER U WITH CARON; ucaron  
 15138 \DeclareTextCompositeCommand{\v}{PU}{u}{\81\324}% U+01D4  
 15139 % U+01E4 LATIN CAPITAL LETTER G WITH STROKE; Gstroke  
 15140 \DeclareTextCommand{\textGslash}{PU}{\81\344}% U+01E4  
 15141 % U+01E5 LATIN SMALL LETTER G WITH STROKE; gstroke  
 15142 \DeclareTextCommand{\textgslash}{PU}{\81\345}% U+01E5  
 15143 % U+01E6 LATIN CAPITAL LETTER G WITH CARON; Gcaron  
 15144 \DeclareTextCompositeCommand{\v}{PU}{G}{\81\346}% U+01E6  
 15145 % U+01E7 LATIN SMALL LETTER G WITH CARON; gcaron  
 15146 \DeclareTextCompositeCommand{\v}{PU}{g}{\81\347}% U+01E7  
 15147 % U+01E8 LATIN CAPITAL LETTER K WITH CARON; Kcaron  
 15148 \DeclareTextCompositeCommand{\v}{PU}{K}{\81\350}% U+01E8



15149 % U+01E9 LATIN SMALL LETTER K WITH CARON; kcaron  
15150 \DeclareTextCompositeCommand{\v}{PU}{k}{\81\351}% U+01E9  
15151 % U+01EA LATIN CAPITAL LETTER O WITH OGONEK; Oogonek  
15152 \DeclareTextCompositeCommand{\k}{PU}{O}{\81\352}% U+01EA  
15153 % U+01EB LATIN SMALL LETTER O WITH OGONEK; oogonek  
15154 \DeclareTextCompositeCommand{\k}{PU}{o}{\81\353}% U+01EB  
15155 % U+01F0 LATIN SMALL LETTER J WITH CARON; jcaron  
15156 \DeclareTextCompositeCommand{\v}{PU}{j}{\81\360}% U+01F0  
15157 \DeclareTextCompositeCommand{\v}{PU}{j}{\81\360}% U+01F0  
15158 % U+01F4 LATIN CAPITAL LETTER G WITH ACUTE; Gacute  
15159 \DeclareTextCompositeCommand{\'}{PU}{G}{\81\364}% U+01F4  
15160 % U+01F5 LATIN SMALL LETTER G WITH ACUTE; gacute  
15161 \DeclareTextCompositeCommand{\'}{PU}{g}{\81\365}% U+01F5  
15162 % U+01F8 LATIN CAPITAL LETTER N WITH GRAVE  
15163 \DeclareTextCompositeCommand{\'}{PU}{N}{\81\370}% U+01F8  
15164 % U+01F9 LATIN SMALL LETTER N WITH GRAVE  
15165 \DeclareTextCompositeCommand{\'}{PU}{n}{\81\371}% U+01F9  
15166 % U+01FC LATIN CAPITAL LETTER AE WITH ACUTE; AEacute  
15167 \DeclareTextCompositeCommand{\'}{PU}{AE}{\81\374}% U+01FC  
15168 % U+01FD LATIN SMALL LETTER AE WITH ACUTE; aeacute  
15169 \DeclareTextCompositeCommand{\'}{PU}{ae}{\81\375}% U+01FD  
15170 % U+01FE LATIN CAPITAL LETTER O WITH STROKE AND ACUTE; \*Oslasha-  
cute, Ostrokeacut  
15171 \DeclareTextCompositeCommand{\'}{PU}{O}{\81\376}% U+01FE  
15172 % U+01FF LATIN SMALL LETTER O WITH STROKE AND ACUTE; \*oslasha-  
cute, ostrokeacute  
15173 \DeclareTextCompositeCommand{\'}{PU}{o}{\81\377}% U+01FF  
15174 % U+0200 LATIN CAPITAL LETTER A WITH DOUBLE GRAVE; Adblgrave  
15175 \DeclareTextCompositeCommand{\G}{PU}{A}{\82\000}% U+0200  
15176 % U+0201 LATIN SMALL LETTER A WITH DOUBLE GRAVE; adblgrave  
15177 \DeclareTextCompositeCommand{\G}{PU}{a}{\82\001}% U+0201  
15178 % U+0204 LATIN CAPITAL LETTER E WITH DOUBLE GRAVE; Edblgrave  
15179 \DeclareTextCompositeCommand{\G}{PU}{E}{\82\004}% U+0204  
15180 % U+0205 LATIN SMALL LETTER E WITH DOUBLE GRAVE; edblgrave  
15181 \DeclareTextCompositeCommand{\G}{PU}{e}{\82\005}% U+0205  
15182 % U+0208 LATIN CAPITAL LETTER I WITH DOUBLE GRAVE; Idblgrave  
15183 \DeclareTextCompositeCommand{\G}{PU}{I}{\82\010}% U+0208  
15184 % U+0209 LATIN SMALL LETTER I WITH DOUBLE GRAVE; idblgrave  
15185 \DeclareTextCompositeCommand{\G}{PU}{i}{\82\011}% U+0209  
15186 \DeclareTextCompositeCommand{\G}{PU}{i}{\82\011}% U+0209  
15187 % U+020C LATIN CAPITAL LETTER O WITH DOUBLE GRAVE; Odblgrave  
15188 \DeclareTextCompositeCommand{\G}{PU}{O}{\82\014}% U+020C  
15189 % U+020D LATIN SMALL LETTER O WITH DOUBLE GRAVE; odblgrave  
15190 \DeclareTextCompositeCommand{\G}{PU}{o}{\82\015}% U+020D  
15191 % U+0210 LATIN CAPITAL LETTER R WITH DOUBLE GRAVE; Rdblgrave  
15192 \DeclareTextCompositeCommand{\G}{PU}{R}{\82\020}% U+0210  
15193 % U+0211 LATIN SMALL LETTER R WITH DOUBLE GRAVE; rdblgrave  
15194 \DeclareTextCompositeCommand{\G}{PU}{r}{\82\021}% U+0211  
15195 % U+0214 LATIN CAPITAL LETTER U WITH DOUBLE GRAVE; Udblgrave  
15196 \DeclareTextCompositeCommand{\G}{PU}{U}{\82\024}% U+0214  
15197 % U+0215 LATIN SMALL LETTER U WITH DOUBLE GRAVE; udblgrave  
15198 \DeclareTextCompositeCommand{\G}{PU}{u}{\82\025}% U+0215  
15199 % U+021E LATIN CAPITAL LETTER H WITH CARON  
15200 \DeclareTextCompositeCommand{\v}{PU}{H}{\82\036}% U+021E  
15201 % U+021F LATIN SMALL LETTER H WITH CARON  
15202 \DeclareTextCompositeCommand{\v}{PU}{h}{\82\037}% U+021F  
15203 % U+0226 LATIN CAPITAL LETTER A WITH DOT ABOVE

15204 \DeclareTextCompositeCommand{\.}{PU}{A}{\82\046}% U+0226  
 15205 % U+0227 LATIN SMALL LETTER A WITH DOT ABOVE  
 15206 \DeclareTextCompositeCommand{\.}{PU}{a}{\82\047}% U+0227  
 15207 % U+0228 LATIN CAPITAL LETTER E WITH CEDILLA  
 15208 \DeclareTextCompositeCommand{\c}{PU}{E}{\82\050}% U+0228  
 15209 % U+0229 LATIN SMALL LETTER E WITH CEDILLA  
 15210 \DeclareTextCompositeCommand{\c}{PU}{e}{\82\051}% U+0229  
 15211 % U+022E LATIN CAPITAL LETTER O WITH DOT ABOVE  
 15212 \DeclareTextCompositeCommand{\.}{PU}{O}{\82\056}% U+022E  
 15213 % U+022F LATIN SMALL LETTER O WITH DOT ABOVE  
 15214 \DeclareTextCompositeCommand{\.}{PU}{o}{\82\057}% U+022F  
 15215 % U+0232 LATIN CAPITAL LETTER Y WITH MACRON  
 15216 \DeclareTextCompositeCommand{\=}{PU}{Y}{\82\062}% U+0232  
 15217 % U+0233 LATIN SMALL LETTER Y WITH MACRON  
 15218 \DeclareTextCompositeCommand{\=}{PU}{y}{\82\063}% U+0233  
 15219 % U+0237 LATIN SMALL LETTER DOTLESS J  
 15220 \DeclareTextCommand{\j}{PU}{\82\067}% U+0237

## 50.2.6 Spacing Modifier Letters: U+02B0 to U+02FF

15221 % U+02C7 CARON; caron  
 15222 \DeclareTextCommand{\textasciicaron}{PU}{\82\307}% U+02C7  
 15223 % U+02D8 BREVE; breve  
 15224 \DeclareTextCommand{\textasciibreve}{PU}{\82\330}% U+02D8  
 15225 % U+02D9 DOT ABOVE; dotaccent  
 15226 \DeclareTextCommand{\textdotaccent}{PU}{\82\331}% U+02D9  
 15227 % U+02DA RING ABOVE; ring  
 15228 \DeclareTextCommand{\textring}{PU}{\82\332}% U+02DA  
 15229 % U+02DB OGONEK; ogonek  
 15230 \DeclareTextCommand{\textogonek}{PU}{\82\333}% U+02DB  
 15231 % U+02DC SMALL TILDE; ilde, \*tilde  
 15232 \DeclareTextCommand{\texttilde}{PU}{\82\334}% U+02DC  
 15233 % U+02DD DOUBLE ACUTE ACCENT; hungarumlaut  
 15234 \DeclareTextCommand{\texthungarumlaut}{PU}{\82\335}% U+02DD  
 15235 \DeclareTextCommand{\textacutedbl}{PU}{\texthungarumlaut}% U+02DD  
 15236 % U+02F5 MODIFIER LETTER MIDDLE DOUBLE GRAVE ACCENT  
 15237 \DeclareTextCommand{\textgravedbl}{PU}{\82\365}% U+02F5  
 15238 % U+02F7 MODIFIER LETTER LOW TILDE  
 15239 \DeclareTextCommand{\texttildelow}{PU}{\82\367}% U+02F7

## 50.2.7 Combining Diacritical Marks: U+0300 to U+036F

15240 % U+030F COMBINING DOUBLE GRAVE ACCENT; dblgravecmb  
 15241 \DeclareTextCommand{\textdoublegrave}{PU}{\83\017}% U+030F  
 15242 % U+0311 COMBINING INVERTED BREVE; breveinvertedcmb  
 15243 \DeclareTextCommand{\textnewtie}{PU}{\83\021}% U+0311  
 15244 % U+0323 COMBINING DOT BELOW; dotbelowcmb, \*dotbelowcomb  
 15245 \DeclareTextCommand{\textdotbelow}{PU}{\83\043}% U+0323  
 15246 % U+0331 COMBINING MACRON BELOW; macronbelowcmb  
 15247 \DeclareTextCommand{\textmacronbelow}{PU}{\83\061}% U+0331  
 15248 % U+0361 COMBINING DOUBLE INVERTED BREVE; breveinverteddoublecmb  
 15249 \DeclareTextCommand{\texttie}{PU}{\83\141}% U+0361

## 50.2.8 Greek and Coptic: U+0370 to U+03FF

15250 % U+0374 GREEK NUMERAL SIGN; numeralsigngreek  
 15251 \DeclareTextCommand{\textnumeralsigngreek}{PU}{\83\164}% U+0374  
 15252 % U+0375 GREEK LOWER NUMERAL SIGN; numeralsignlowergreek  
 15253 \DeclareTextCommand{\textnumeralsignlowergreek}{PU}{\83\165}% U+0375  
 15254 % U+0386 GREEK CAPITAL LETTER ALPHA WITH TONOS; Alphanos

15255 \DeclareTextCompositeCommand{'}{PU}{\textAlpha}{\83\206}% U+0386  
15256 % U+0388 GREEK CAPITAL LETTER EPSILON WITH TONOS; Epsilontonos  
15257 \DeclareTextCompositeCommand{'}{PU}{\textEpsilon}{\83\210}% U+0388  
15258 % U+0389 GREEK CAPITAL LETTER ETA WITH TONOS; Etatonos  
15259 \DeclareTextCompositeCommand{'}{PU}{\textEta}{\83\211}% U+0389  
15260 % U+038A GREEK CAPITAL LETTER IOTA WITH TONOS; Iotatonos  
15261 \DeclareTextCompositeCommand{'}{PU}{\textIota}{\83\212}% U+038A  
15262 % U+038C GREEK CAPITAL LETTER OMICRON WITH TONOS; Omi-  
crintonos  
15263 \DeclareTextCompositeCommand{'}{PU}{\textOmicron}{\83\214}% U+038C  
15264 % U+038E GREEK CAPITAL LETTER UPSILON WITH TONOS; Upsilonontonos  
15265 \DeclareTextCompositeCommand{'}{PU}{\textUpsilon}{\83\216}% U+038E  
15266 % U+038F GREEK CAPITAL LETTER OMEGA WITH TONOS; Omegatonos  
15267 \DeclareTextCompositeCommand{'}{PU}{\textOmega}{\83\217}% U+038F  
15268 % U+0390 GREEK SMALL LETTER IOTA WITH DIALYTIKA AND TONOS; io-  
tadiesisistonos  
15269 \DeclareTextCompositeCommand{'}{PU}{\textIotadiesis}{\83\220}% U+0390  
15270 % U+0391 GREEK CAPITAL LETTER ALPHA; Alpha  
15271 \DeclareTextCommand{\textAlpha}{PU}{\83\221}% U+0391  
15272 % U+0392 GREEK CAPITAL LETTER BETA; Beta  
15273 \DeclareTextCommand{\textBeta}{PU}{\83\222}% U+0392  
15274 % U+0393 GREEK CAPITAL LETTER GAMMA; Gamma  
15275 \DeclareTextCommand{\textGamma}{PU}{\83\223}% U+0393  
15276 % U+0394 GREEK CAPITAL LETTER DELTA; Deltagreek, \*Delta  
15277 \DeclareTextCommand{\textDelta}{PU}{\83\224}% U+0394  
15278 % U+0395 GREEK CAPITAL LETTER EPSILON; Epsilon  
15279 \DeclareTextCommand{\textEpsilon}{PU}{\83\225}% U+0395  
15280 % U+0396 GREEK CAPITAL LETTER ZETA; Zeta  
15281 \DeclareTextCommand{\textZeta}{PU}{\83\226}% U+0396  
15282 % U+0397 GREEK CAPITAL LETTER ETA; Eta  
15283 \DeclareTextCommand{\textEta}{PU}{\83\227}% U+0397  
15284 % U+0398 GREEK CAPITAL LETTER THETA; Theta  
15285 \DeclareTextCommand{\textTheta}{PU}{\83\230}% U+0398  
15286 % U+0399 GREEK CAPITAL LETTER IOTA; Iota  
15287 \DeclareTextCommand{\textIota}{PU}{\83\231}% U+0399  
15288 % U+039A GREEK CAPITAL LETTER KAPPA; Kappa  
15289 \DeclareTextCommand{\textKappa}{PU}{\83\232}% U+039A  
15290 % U+039B GREEK CAPITAL LETTER LAMDA; Lambda  
15291 \DeclareTextCommand{\textLambda}{PU}{\83\233}% U+039B  
15292 % U+039C GREEK CAPITAL LETTER MU; Mu  
15293 \DeclareTextCommand{\textMu}{PU}{\83\234}% U+039C  
15294 % U+039D GREEK CAPITAL LETTER NU; Nu  
15295 \DeclareTextCommand{\textNu}{PU}{\83\235}% U+039D  
15296 % U+039E GREEK CAPITAL LETTER XI; Xi  
15297 \DeclareTextCommand{\textXi}{PU}{\83\236}% U+039E  
15298 % U+039F GREEK CAPITAL LETTER OMICRON; Omicron  
15299 \DeclareTextCommand{\textOmicron}{PU}{\83\237}% U+039F  
15300 % U+03A0 GREEK CAPITAL LETTER PI; Pi  
15301 \DeclareTextCommand{\textPi}{PU}{\83\240}% U+03A0  
15302 % U+03A1 GREEK CAPITAL LETTER RHO; Rho  
15303 \DeclareTextCommand{\textRho}{PU}{\83\241}% U+03A1  
15304 % U+03A3 GREEK CAPITAL LETTER SIGMA; Sigma  
15305 \DeclareTextCommand{\textSigma}{PU}{\83\243}% U+03A3  
15306 % U+03A4 GREEK CAPITAL LETTER TAU; Tau  
15307 \DeclareTextCommand{\textTau}{PU}{\83\244}% U+03A4  
15308 % U+03A5 GREEK CAPITAL LETTER UPSILON; Upsilon  
15309 \DeclareTextCommand{\textUpsilon}{PU}{\83\245}% U+03A5

15310 % U+03A6 GREEK CAPITAL LETTER PHI; Phi  
 15311 \DeclareTextCommand{\textPhi}{PU}{\83\246}% U+03A6  
 15312 % U+03A7 GREEK CAPITAL LETTER CHI; Chi  
 15313 \DeclareTextCommand{\textChi}{PU}{\83\247}% U+03A7  
 15314 % U+03A8 GREEK CAPITAL LETTER PSI; Psi  
 15315 \DeclareTextCommand{\textPsi}{PU}{\83\250}% U+03A8  
 15316 % U+03A9 GREEK CAPITAL LETTER OMEGA; Omegagreek, \*Omega  
 15317 \DeclareTextCommand{\textOmega}{PU}{\83\251}% U+03A9  
 15318 % U+03AA GREEK CAPITAL LETTER IOTA WITH DIALYTIKA; Iotadieresis  
 15319 \DeclareTextCommand{\textIotadieresis}{PU}{\83\252}% U+03AA  
 15320 \DeclareTextCompositeCommand{"}{PU}{\textIota}{\83\252}% U+03AA  
 15321 % U+03AB GREEK CAPITAL LETTER UPSILON WITH DIALYTIKA; Up-  
 silondieresis  
 15322 \DeclareTextCompositeCommand{"}{PU}{\textUpsilon}{\83\253}% U+03AB  
 15323 % U+03AC GREEK SMALL LETTER ALPHA WITH TONOS; alphanos  
 15324 \DeclareTextCompositeCommand{'}{PU}{\textalpha}{\83\254}% U+03AC  
 15325 % U+03AD GREEK SMALL LETTER EPSILON WITH TONOS; epsilonos  
 15326 \DeclareTextCompositeCommand{'}{PU}{\textepsilon}{\83\255}% U+03AD  
 15327 % U+03AE GREEK SMALL LETTER ETA WITH TONOS; etanos  
 15328 \DeclareTextCompositeCommand{'}{PU}{\texteta}{\83\256}% U+03AE  
 15329 % U+03AF GREEK SMALL LETTER IOTA WITH TONOS; iotanos  
 15330 \DeclareTextCompositeCommand{'}{PU}{\textiota}{\83\257}% U+03AF  
 15331 % U+03B0 GREEK SMALL LETTER UPSILON WITH DIALYTIKA AND TONOS; up-  
 silondieresis  
 15332 \DeclareTextCompositeCommand{"}{PU}{\textupsilon}{\83\260}% U+03B0  
 15333 % U+03B1 GREEK SMALL LETTER ALPHA; alpha  
 15334 \DeclareTextCommand{\textalpha}{PU}{\83\261}% U+03B1  
 15335 % U+03B2 GREEK SMALL LETTER BETA; beta  
 15336 \DeclareTextCommand{\textbeta}{PU}{\83\262}% U+03B2  
 15337 % U+03B3 GREEK SMALL LETTER GAMMA; gamma  
 15338 \DeclareTextCommand{\textgamma}{PU}{\83\263}% U+03B3  
 15339 % U+03B4 GREEK SMALL LETTER DELTA; delta  
 15340 \DeclareTextCommand{\textdelta}{PU}{\83\264}% U+03B4  
 15341 % U+03B5 GREEK SMALL LETTER EPSILON; epsilon  
 15342 \DeclareTextCommand{\textepsilon}{PU}{\83\265}% U+03B5  
 15343 % U+03B6 GREEK SMALL LETTER ZETA; zeta  
 15344 \DeclareTextCommand{\textzeta}{PU}{\83\266}% U+03B6  
 15345 % U+03B7 GREEK SMALL LETTER ETA; eta  
 15346 \DeclareTextCommand{\texteta}{PU}{\83\267}% U+03B7  
 15347 % U+03B8 GREEK SMALL LETTER THETA; theta  
 15348 \DeclareTextCommand{\texttheta}{PU}{\83\270}% U+03B8  
 15349 % U+03B9 GREEK SMALL LETTER IOTA; iota  
 15350 \DeclareTextCommand{\textiota}{PU}{\83\271}% U+03B9  
 15351 % U+03BA GREEK SMALL LETTER KAPPA; kappa  
 15352 \DeclareTextCommand{\textkappa}{PU}{\83\272}% U+03BA  
 15353 % U+03BB GREEK SMALL LETTER LAMDA; lambda  
 15354 \DeclareTextCommand{\textlambda}{PU}{\83\273}% U+03BB  
 15355 % U+03BC GREEK SMALL LETTER MU; mugreek, \*mu  
 15356 \DeclareTextCommand{\textmugreek}{PU}{\83\274}% U+03BC  
 15357 % U+03BD GREEK SMALL LETTER NU; nu  
 15358 \DeclareTextCommand{\textnu}{PU}{\83\275}% U+03BD  
 15359 % U+03BE GREEK SMALL LETTER XI; xi  
 15360 \DeclareTextCommand{\textxi}{PU}{\83\276}% U+03BE  
 15361 % U+03BF GREEK SMALL LETTER OMICRON; omicron  
 15362 \DeclareTextCommand{\textomicron}{PU}{\83\277}% U+03BF  
 15363 % U+03C0 GREEK SMALL LETTER PI; pi  
 15364 \DeclareTextCommand{\textpi}{PU}{\83\300}% U+03C0

15365 % U+03C1 GREEK SMALL LETTER RHO; rho  
 15366 \DeclareTextCommand{\textrho}{PU}{\83\301}% U+03C1  
 15367 % U+03C2 GREEK SMALL LETTER FINAL SIGMA; \*sigma1, sigmafinal  
 15368 \DeclareTextCommand{\textvarsigma}{PU}{\83\302}% U+03C2  
 15369 % U+03C3 GREEK SMALL LETTER SIGMA; sigma  
 15370 \DeclareTextCommand{\textsigma}{PU}{\83\303}% U+03C3  
 15371 % U+03C4 GREEK SMALL LETTER TAU; tau  
 15372 \DeclareTextCommand{\texttau}{PU}{\83\304}% U+03C4  
 15373 % U+03C5 GREEK SMALL LETTER UPSILON; upsilon  
 15374 \DeclareTextCommand{\textupsilon}{PU}{\83\305}% U+03C5  
 15375 % U+03C6 GREEK SMALL LETTER PHI; phi  
 15376 \DeclareTextCommand{\textphi}{PU}{\83\306}% U+03C6  
 15377 % U+03C7 GREEK SMALL LETTER CHI; chi  
 15378 \DeclareTextCommand{\textchi}{PU}{\83\307}% U+03C7  
 15379 % U+03C8 GREEK SMALL LETTER PSI; psi  
 15380 \DeclareTextCommand{\textpsi}{PU}{\83\310}% U+03C8  
 15381 % U+03C9 GREEK SMALL LETTER OMEGA; omega  
 15382 \DeclareTextCommand{\textomega}{PU}{\83\311}% U+03C9  
 15383 % U+03CA GREEK SMALL LETTER IOTA WITH DIALYTIKA; iotadieresis  
 15384 \DeclareTextCompositeCommand{"}{PU}{\textiota}{\83\312}% U+03CA  
 15385 % U+03CB GREEK SMALL LETTER UPSILON WITH DIALYTIKA; up-  
 silondieresis  
 15386 \DeclareTextCompositeCommand{"}{PU}{\textupsilon}{\83\313}% U+03CB  
 15387 % U+03CC GREEK SMALL LETTER OMICRON WITH TONOS; omicrontonos  
 15388 \DeclareTextCompositeCommand{'}{PU}{\textomicron}{\83\314}% U+03CC  
 15389 % U+03CD GREEK SMALL LETTER UPSILON WITH TONOS; upsilontonos  
 15390 \DeclareTextCommand{\textupsilonacute}{PU}{\83\315}% U+03CD  
 15391 \DeclareTextCompositeCommand{'}{PU}{\textupsilon}{\83\315}% U+03CD  
 15392 % U+03CE GREEK SMALL LETTER OMEGA WITH TONOS; omegatonos  
 15393 \DeclareTextCompositeCommand{'}{PU}{\textomega}{\83\316}% U+03CE  
 15394 % U+03DA GREEK LETTER STIGMA; Stigmagreek  
 15395 \DeclareTextCommand{\textStigmagreek}{PU}{\83\332}% U+03DA  
 15396 % U+03DB GREEK SMALL LETTER STIGMA  
 15397 \DeclareTextCommand{\textstigmagreek}{PU}{\83\333}% U+03DB  
 15398 % U+03DC GREEK LETTER DIGAMMA; Digammagreek  
 15399 \DeclareTextCommand{\textDigammagreek}{PU}{\83\334}% U+03DC  
 15400 % U+03DD GREEK SMALL LETTER DIGAMMA  
 15401 \DeclareTextCommand{\textdigammagreek}{PU}{\83\335}% U+03DD  
 15402 % U+03DE GREEK LETTER KOPPA; Koppagreek  
 15403 \DeclareTextCommand{\textKoppagreek}{PU}{\83\336}% U+03DE  
 15404 % U+03DF GREEK SMALL LETTER KOPPA  
 15405 \DeclareTextCommand{\textkoppagreek}{PU}{\83\337}% U+03DF  
 15406 % U+03E0 GREEK LETTER SAMPI; Sampigreek  
 15407 \DeclareTextCommand{\textSampigreek}{PU}{\83\340}% U+03E0  
 15408 % U+03E1 GREEK SMALL LETTER SAMPI  
 15409 \DeclareTextCommand{\textsampigreek}{PU}{\83\341}% U+03E1

## 50.2.9 Cyrillic: U+0400 to U+04FF

Thanks to Vladimir Volovich (vvv@vvv.vsu.ru) for the help with the Cyrillic glyph names.

15410 % U+0400 CYRILLIC CAPITAL LETTER IE WITH GRAVE  
 15411 \DeclareTextCompositeCommand{'}{PU}{\CYRE}{\84\000}% U+0400  
 15412 % U+0401 CYRILLIC CAPITAL LETTER IO; Iocyrillic, \*afii10023  
 15413 \DeclareTextCommand{\CYRYO}{PU}{\84\001}% U+0401  
 15414 \DeclareTextCompositeCommand{"}{PU}{\CYRE}{\84\001}% ???  
 15415 % U+0402 CYRILLIC CAPITAL LETTER DJE; Djecyrillic, \*afii10051  
 15416 \DeclareTextCommand{\CYRDJE}{PU}{\84\002}% U+0402

15417 % U+0403 CYRILLIC CAPITAL LETTER GJE; Gjecyrillic, \*afii10052  
 15418 \DeclareTextCompositeCommand{\'}{PU}{\CYRG}{\84\003}% U+0403  
 15419 % U+0404 CYRILLIC CAPITAL LETTER UKRAINIAN IE; Ecyrillic, \*afii10053  
 15420 \DeclareTextCommand{\CYRIE}{PU}{\84\004}% U+0404  
 15421 % U+0405 CYRILLIC CAPITAL LETTER DZE; Dzecyrillic, \*afii10054  
 15422 \DeclareTextCommand{\CYRDZE}{PU}{\84\005}% U+0405  
 15423 % U+0406 CYRILLIC CAPITAL LETTER BYELORUSSIAN-UKRAINIAN I; Icyril-  
 lic, \*afii10055  
 15424 \DeclareTextCommand{\CYRII}{PU}{\84\006}% U+0406  
 15425 % U+0407 CYRILLIC CAPITAL LETTER YI; Yicyrillic, \*afii10056  
 15426 \DeclareTextCommand{\CYRYI}{PU}{\84\007}% U+0407  
 15427 \DeclareTextCompositeCommand{\"}{PU}{\CYRII}{\84\007}% U+0407  
 15428 % U+0408 CYRILLIC CAPITAL LETTER JE; Jecyrillic, \*afii10057  
 15429 \DeclareTextCommand{\CYRJE}{PU}{\84\010}% U+0408  
 15430 % U+0409 CYRILLIC CAPITAL LETTER LJE; Ljecyrillic, \*afii10058  
 15431 \DeclareTextCommand{\CYRLJE}{PU}{\84\011}% U+0409  
 15432 % U+040A CYRILLIC CAPITAL LETTER NJE; Njecyrillic, \*afii10059  
 15433 \DeclareTextCommand{\CYRNJE}{PU}{\84\012}% U+040A  
 15434 % U+040B CYRILLIC CAPITAL LETTER TSHE; Tshecyrillic, \*afii10060  
 15435 \DeclareTextCommand{\CYRTSHE}{PU}{\84\013}% U+040B  
 15436 % U+040C CYRILLIC CAPITAL LETTER KJE; Kjecyrillic, \*afii10061  
 15437 \DeclareTextCompositeCommand{\'}{PU}{\CYRK}{\84\014}% U+040C  
 15438 % U+040D CYRILLIC CAPITAL LETTER I WITH GRAVE  
 15439 \DeclareTextCompositeCommand{\`}{PU}{\CYRI}{\84\015}% U+040D  
 15440 % U+040E CYRILLIC CAPITAL LETTER SHORT U; Ushortcyrillic, \*afii10062  
 15441 \DeclareTextCommand{\CYRUSHRT}{PU}{\84\016}% U+040E  
 15442 \DeclareTextCompositeCommand{\U}{PU}{\CYRU}{\84\016}% U+040E  
 15443 % U+040F CYRILLIC CAPITAL LETTER DZHE; Dzhecyrillic, \*afii10145  
 15444 \DeclareTextCommand{\CYRDZHE}{PU}{\84\017}% U+040F  
 15445 % U+0410 CYRILLIC CAPITAL LETTER A; Acyrillic, \*afii10017  
 15446 \DeclareTextCommand{\CYRA}{PU}{\84\020}% U+0410  
 15447 % U+0411 CYRILLIC CAPITAL LETTER BE; Becyrillic, \*afii10018  
 15448 \DeclareTextCommand{\CYRB}{PU}{\84\021}% U+0411  
 15449 % U+0412 CYRILLIC CAPITAL LETTER VE; Vecyrillic, \*afii10019  
 15450 \DeclareTextCommand{\CYRV}{PU}{\84\022}% U+0412  
 15451 % U+0413 CYRILLIC CAPITAL LETTER GHE; Gecyrillic, \*afii10020  
 15452 \DeclareTextCommand{\CYRG}{PU}{\84\023}% U+0413  
 15453 % U+0414 CYRILLIC CAPITAL LETTER DE; Decyrillic, \*afii10021  
 15454 \DeclareTextCommand{\CYRD}{PU}{\84\024}% U+0414  
 15455 % U+0415 CYRILLIC CAPITAL LETTER IE; Iecyrillic, \*afii10022  
 15456 \DeclareTextCommand{\CYRE}{PU}{\84\025}% U+0415  
 15457 % U+0416 CYRILLIC CAPITAL LETTER ZHE; Zhecyrillic, \*afii10024  
 15458 \DeclareTextCommand{\CYRZH}{PU}{\84\026}% U+0416  
 15459 % U+0417 CYRILLIC CAPITAL LETTER ZE; Zecyrillic, \*afii10025  
 15460 \DeclareTextCommand{\CYRZ}{PU}{\84\027}% U+0417  
 15461 % U+0418 CYRILLIC CAPITAL LETTER I; Iicyrillic, \*afii10026  
 15462 \DeclareTextCommand{\CYRI}{PU}{\84\030}% U+0418  
 15463 % U+0419 CYRILLIC CAPITAL LETTER SHORT I; Iishortcyrillic, \*afii10027  
 15464 \DeclareTextCommand{\CYRISHRT}{PU}{\84\031}% U+0419  
 15465 \DeclareTextCompositeCommand{\U}{PU}{\CYRI}{\84\031}% U+0419  
 15466 % U+041A CYRILLIC CAPITAL LETTER KA; Kacyrillic, \*afii10028  
 15467 \DeclareTextCommand{\CYRK}{PU}{\84\032}% U+041A  
 15468 % U+041B CYRILLIC CAPITAL LETTER EL; Elcyrillic, \*afii10029  
 15469 \DeclareTextCommand{\CYRL}{PU}{\84\033}% U+041B  
 15470 % U+041C CYRILLIC CAPITAL LETTER EM; Emcyrillic, \*afii10030  
 15471 \DeclareTextCommand{\CYRM}{PU}{\84\034}% U+041C  
 15472 % U+041D CYRILLIC CAPITAL LETTER EN; Encyrillic, \*afii10031

15473 \DeclareTextCommand{\CYRN}{PU}{\84\035}% U+041D  
15474 % U+041E CYRILLIC CAPITAL LETTER O; Ocyrillic, \*afii10032  
15475 \DeclareTextCommand{\CYRO}{PU}{\84\036}% U+041E  
15476 % U+041F CYRILLIC CAPITAL LETTER PE; Pecyrillic, \*afii10033  
15477 \DeclareTextCommand{\CYRP}{PU}{\84\037}% U+041F  
15478 % U+0420 CYRILLIC CAPITAL LETTER ER; Ercyrillic, \*afii10034  
15479 \DeclareTextCommand{\CYRR}{PU}{\84\040}% U+0420  
15480 % U+0421 CYRILLIC CAPITAL LETTER ES; Escyrillic, \*afii10035  
15481 \DeclareTextCommand{\CYRS}{PU}{\84\041}% U+0421  
15482 % U+0422 CYRILLIC CAPITAL LETTER TE; Tecyrillic, \*afii10036  
15483 \DeclareTextCommand{\CYRT}{PU}{\84\042}% U+0422  
15484 % U+0423 CYRILLIC CAPITAL LETTER U; Ucyrillic, \*afii10037  
15485 \DeclareTextCommand{\CYRU}{PU}{\84\043}% U+0423  
15486 % U+0424 CYRILLIC CAPITAL LETTER EF; Efcyrillic, \*afii10038  
15487 \DeclareTextCommand{\CYRF}{PU}{\84\044}% U+0424  
15488 % U+0425 CYRILLIC CAPITAL LETTER HA; Khacyrillic, \*afii10039  
15489 \DeclareTextCommand{\CYRH}{PU}{\84\045}% U+0425  
15490 % U+0426 CYRILLIC CAPITAL LETTER TSE; Tsecyrillic, \*afii10040  
15491 \DeclareTextCommand{\CYRC}{PU}{\84\046}% U+0426  
15492 % U+0427 CYRILLIC CAPITAL LETTER CHE; Checyrillic, \*afii10041  
15493 \DeclareTextCommand{\CYRCH}{PU}{\84\047}% U+0427  
15494 % U+0428 CYRILLIC CAPITAL LETTER SHA; Shacyrillic, \*afii10042  
15495 \DeclareTextCommand{\CYRSH}{PU}{\84\050}% U+0428  
15496 % U+0429 CYRILLIC CAPITAL LETTER SHCHA; Shchacyrillic, \*afii10043  
15497 \DeclareTextCommand{\CYRSHCH}{PU}{\84\051}% U+0429  
15498 % U+042A CYRILLIC CAPITAL LETTER HARD SIGN; Hardsigncyrillic, \*afii10044  
15499 \DeclareTextCommand{\CYRHRDSN}{PU}{\84\052}% U+042A  
15500 % U+042B CYRILLIC CAPITAL LETTER YERU; Yericyrillic, \*afii10045  
15501 \DeclareTextCommand{\CYRERY}{PU}{\84\053}% U+042B  
15502 % U+042C CYRILLIC CAPITAL LETTER SOFT SIGN; Softsigncyrillic, \*afii10046  
15503 \DeclareTextCommand{\CYRSFTSN}{PU}{\84\054}% U+042C  
15504 % U+042D CYRILLIC CAPITAL LETTER E; Ereversedcyrillic, \*afii10047  
15505 \DeclareTextCommand{\CYREREV}{PU}{\84\055}% U+042D  
15506 % U+042E CYRILLIC CAPITAL LETTER YU; IUcyrillic, \*afii10048  
15507 \DeclareTextCommand{\CYRYU}{PU}{\84\056}% U+042E  
15508 % U+042F CYRILLIC CAPITAL LETTER YA; IAcyrillic, \*afii10049  
15509 \DeclareTextCommand{\CYRYA}{PU}{\84\057}% U+042F  
15510 % U+0430 CYRILLIC SMALL LETTER A; acyrillic, \*afii10065  
15511 \DeclareTextCommand{\cyra}{PU}{\84\060}% U+0430  
15512 % U+0431 CYRILLIC SMALL LETTER BE; \*afii10066, becyrillic  
15513 \DeclareTextCommand{\cyrb}{PU}{\84\061}% U+0431  
15514 % U+0432 CYRILLIC SMALL LETTER VE; \*afii10067, vecyrillic  
15515 \DeclareTextCommand{\cyrv}{PU}{\84\062}% U+0432  
15516 % U+0433 CYRILLIC SMALL LETTER GHE; \*afii10068, gecyrillic  
15517 \DeclareTextCommand{\cyrg}{PU}{\84\063}% U+0433  
15518 % U+0434 CYRILLIC SMALL LETTER DE; \*afii10069, decyrillic  
15519 \DeclareTextCommand{\cyrd}{PU}{\84\064}% U+0434  
15520 % U+0435 CYRILLIC SMALL LETTER IE; \*afii10070, iecyrillic  
15521 \DeclareTextCommand{\cyre}{PU}{\84\065}% U+0435  
15522 % U+0436 CYRILLIC SMALL LETTER ZHE; \*afii10072, zhacyrillic  
15523 \DeclareTextCommand{\cyrz}{PU}{\84\066}% U+0436  
15524 % U+0437 CYRILLIC SMALL LETTER ZE; \*afii10073, zecyrillic  
15525 \DeclareTextCommand{\cyrz}{PU}{\84\067}% U+0437  
15526 % U+0438 CYRILLIC SMALL LETTER I; \*afii10074, iicyrillic  
15527 \DeclareTextCommand{\cyri}{PU}{\84\070}% U+0438  
15528 % U+0439 CYRILLIC SMALL LETTER SHORT I; \*afii10075, iishortcyrillic  
15529 \DeclareTextCommand{\cyrishrt}{PU}{\84\071}% U+0439

15530 \DeclareTextCompositeCommand{\U}{PU}{\cyri}{\84\071}% U+0439  
15531 % U+043A CYRILLIC SMALL LETTER KA; \*afii10076, kacyrillic  
15532 \DeclareTextCommand{\cyrk}{PU}{\84\072}% U+043A  
15533 % U+043B CYRILLIC SMALL LETTER EL; \*afii10077, elcyrillic  
15534 \DeclareTextCommand{\cyrI}{PU}{\84\073}% U+043B  
15535 % U+043C CYRILLIC SMALL LETTER EM; \*afii10078, emcyrillic  
15536 \DeclareTextCommand{\cyrm}{PU}{\84\074}% U+043C  
15537 % U+043D CYRILLIC SMALL LETTER EN; \*afii10079, encyrillic  
15538 \DeclareTextCommand{\cyrn}{PU}{\84\075}% U+043D  
15539 % U+043E CYRILLIC SMALL LETTER O; \*afii10080, ocyrillic  
15540 \DeclareTextCommand{\cyro}{PU}{\84\076}% U+043E  
15541 % U+043F CYRILLIC SMALL LETTER PE; \*afii10081, pecyrillic  
15542 \DeclareTextCommand{\cyrp}{PU}{\84\077}% U+043F  
15543 % U+0440 CYRILLIC SMALL LETTER ER; \*afii10082, ercyrillic  
15544 \DeclareTextCommand{\cyrr}{PU}{\84\100}% U+0440  
15545 % U+0441 CYRILLIC SMALL LETTER ES; \*afii10083, escyrillic  
15546 \DeclareTextCommand{\cyrS}{PU}{\84\101}% U+0441  
15547 % U+0442 CYRILLIC SMALL LETTER TE; \*afii10084, tecyrillic  
15548 \DeclareTextCommand{\cyrt}{PU}{\84\102}% U+0442  
15549 % U+0443 CYRILLIC SMALL LETTER U; \*afii10085, ucyrillic  
15550 \DeclareTextCommand{\cyrU}{PU}{\84\103}% U+0443  
15551 % U+0444 CYRILLIC SMALL LETTER EF; \*afii10086, efcyrillic  
15552 \DeclareTextCommand{\cyrf}{PU}{\84\104}% U+0444  
15553 % U+0445 CYRILLIC SMALL LETTER HA; \*afii10087, khacyrillic  
15554 \DeclareTextCommand{\cyrh}{PU}{\84\105}% U+0445  
15555 % U+0446 CYRILLIC SMALL LETTER TSE; \*afii10088, tsecyrillic  
15556 \DeclareTextCommand{\cyrc}{PU}{\84\106}% U+0446  
15557 % U+0447 CYRILLIC SMALL LETTER CHE; \*afii10089, checyrillic  
15558 \DeclareTextCommand{\cyrch}{PU}{\84\107}% U+0447  
15559 % U+0448 CYRILLIC SMALL LETTER SHA; \*afii10090, shacyrillic  
15560 \DeclareTextCommand{\cyrsh}{PU}{\84\110}% U+0448  
15561 % U+0449 CYRILLIC SMALL LETTER SHCHA; \*afii10091, shchacyrillic  
15562 \DeclareTextCommand{\cyrshch}{PU}{\84\111}% U+0449  
15563 % U+044A CYRILLIC SMALL LETTER HARD SIGN; \*afii10092, hardsigncyrillic  
15564 \DeclareTextCommand{\cyrhrdsn}{PU}{\84\112}% U+044A  
15565 % U+044B CYRILLIC SMALL LETTER YERU; \*afii10093, yericyrillic  
15566 \DeclareTextCommand{\cyrery}{PU}{\84\113}% U+044B  
15567 % U+044C CYRILLIC SMALL LETTER SOFT SIGN; \*afii10094, softsigncyrillic  
15568 \DeclareTextCommand{\cyrSftsn}{PU}{\84\114}% U+044C  
15569 % U+044D CYRILLIC SMALL LETTER E; \*afii10095, ereversedcyrillic  
15570 \DeclareTextCommand{\cyrerev}{PU}{\84\115}% U+044D  
15571 % U+044E CYRILLIC SMALL LETTER YU; \*afii10096, iucyrillic  
15572 \DeclareTextCommand{\cyrU}{PU}{\84\116}% U+044E  
15573 % U+044F CYRILLIC SMALL LETTER YA; \*afii10097, iacyrillic  
15574 \DeclareTextCommand{\cyrY}{PU}{\84\117}% U+044F  
15575 % U+0450 CYRILLIC SMALL LETTER IE WITH GRAVE  
15576 \DeclareTextCompositeCommand{\'}{PU}{\cyre}{\84\120}% U+0450  
15577 % U+0451 CYRILLIC SMALL LETTER IO; \*afii10071, iocyrillic  
15578 \DeclareTextCommand{\cyryo}{PU}{\84\121}% U+0451  
15579 \DeclareTextCompositeCommand{\"}{PU}{\cyre}{\84\121}% U+0451  
15580 % U+0452 CYRILLIC SMALL LETTER DJE; \*afii10099, djecyrillic  
15581 \DeclareTextCommand{\cyrdje}{PU}{\84\122}% U+0452  
15582 % U+0453 CYRILLIC SMALL LETTER GJE; \*afii10100, gjecyrillic  
15583 \DeclareTextCompositeCommand{\'}{PU}{\cyrg}{\84\123}% U+0453  
15584 % U+0454 CYRILLIC SMALL LETTER UKRAINIAN IE; \*afii10101, ecyrillic  
15585 \DeclareTextCommand{\cyrie}{PU}{\84\124}% U+0454  
15586 % U+0455 CYRILLIC SMALL LETTER DZE; \*afii10102, dzecyrillic



15587 \DeclareTextCommand{\cyrdze}{PU}{\84\125}% U+0455  
 15588 % U+0456 CYRILLIC SMALL LETTER BYELORUSSIAN-UKRAINIAN I; \*afii10103, icyril-  
 lic  
 15589 \DeclareTextCommand{\cyrii}{PU}{\84\126}% U+0456  
 15590 % U+0457 CYRILLIC SMALL LETTER YI; \*afii10104, yicyrillic  
 15591 \DeclareTextCommand{\cyryi}{PU}{\84\127}% U+0457  
 15592 \DeclareTextCompositeCommand{"}{PU}{\cyrii}{\84\127}% U+0457  
 15593 % U+0458 CYRILLIC SMALL LETTER JE; \*afii10105, jecyrillic  
 15594 \DeclareTextCommand{\cyrje}{PU}{\84\130}% U+0458  
 15595 % U+0459 CYRILLIC SMALL LETTER LJE; \*afii10106, ljecyrillic  
 15596 \DeclareTextCommand{\cyrlje}{PU}{\84\131}% U+0459  
 15597 % U+045A CYRILLIC SMALL LETTER NJE; \*afii10107, njecyrillic  
 15598 \DeclareTextCommand{\cyrnje}{PU}{\84\132}% U+045A  
 15599 % U+045B CYRILLIC SMALL LETTER TSHE; \*afii10108, tshecyrillic  
 15600 \DeclareTextCommand{\cyrtshe}{PU}{\84\133}% U+045B  
 15601 % U+045C CYRILLIC SMALL LETTER KJE; \*afii10109, kjecyrillic  
 15602 \DeclareTextCompositeCommand{\'}{PU}{\cyrk}{\84\134}% U+045C  
 15603 % U+045D CYRILLIC SMALL LETTER I WITH GRAVE  
 15604 \DeclareTextCompositeCommand{\'}{PU}{\cyri}{\84\135}% U+045D  
 15605 % U+045E CYRILLIC SMALL LETTER SHORT U; \*afii10110, ushortcyrillic  
 15606 \DeclareTextCommand{\cyrushrt}{PU}{\84\136}% U+045E  
 15607 \DeclareTextCompositeCommand{\U}{PU}{\curu}{\84\136}% U+045E  
 15608 % U+045F CYRILLIC SMALL LETTER DZHE; \*afii10193, dzhecyrillic  
 15609 \DeclareTextCommand{\cyrdzhe}{PU}{\84\137}% U+045F  
 15610 % U+0460 CYRILLIC CAPITAL LETTER OMEGA; Omegacyrillic  
 15611 \DeclareTextCommand{\CYROMEGA}{PU}{\84\140}% U+0460  
 15612 % U+0461 CYRILLIC SMALL LETTER OMEGA; omegacyrillic  
 15613 \DeclareTextCommand{\cyromega}{PU}{\84\141}% U+0461  
 15614 % U+0462 CYRILLIC CAPITAL LETTER YAT; Yatcyrillic, \*afii10146  
 15615 \DeclareTextCommand{\CYRYAT}{PU}{\84\142}% U+0462  
 15616 % U+0463 CYRILLIC SMALL LETTER YAT; \*afii10194, yatcyrillic  
 15617 \DeclareTextCommand{\cyryat}{PU}{\84\143}% U+0463  
 15618 % U+0464 CYRILLIC CAPITAL LETTER IOTIFIED E; Eiotifiedcyrillic  
 15619 \DeclareTextCommand{\CYRIOTE}{PU}{\84\144}% U+0464  
 15620 % U+0465 CYRILLIC SMALL LETTER IOTIFIED E; eiotifiedcyrillic  
 15621 \DeclareTextCommand{\cyriote}{PU}{\84\145}% U+0465  
 15622 % U+0466 CYRILLIC CAPITAL LETTER LITTLE YUS; Yuslittlecyrillic  
 15623 \DeclareTextCommand{\CYRLYUS}{PU}{\84\146}% U+0466  
 15624 % U+0467 CYRILLIC SMALL LETTER LITTLE YUS; yuslittlecyrillic  
 15625 \DeclareTextCommand{\cyrlyus}{PU}{\84\147}% U+0467  
 15626 % U+0468 CYRILLIC CAPITAL LETTER IOTIFIED LITTLE YUS; Yuslittleio-  
 tifiedcyrillic  
 15627 \DeclareTextCommand{\CYRIOTLYUS}{PU}{\84\150}% U+0468  
 15628 % U+0469 CYRILLIC SMALL LETTER IOTIFIED LITTLE YUS; yuslittleioti-  
 fiedcyrillic  
 15629 \DeclareTextCommand{\cyriotlyus}{PU}{\84\151}% U+0469  
 15630 % U+046A CYRILLIC CAPITAL LETTER BIG YUS; Yusbigcyrillic  
 15631 \DeclareTextCommand{\CYRBYUS}{PU}{\84\152}% U+046A  
 15632 % U+046B CYRILLIC SMALL LETTER BIG YUS; yusbigcyrillic  
 15633 \DeclareTextCommand{\cyrbyus}{PU}{\84\153}% U+046B  
 15634 % U+046C CYRILLIC CAPITAL LETTER IOTIFIED BIG YUS; Yusbigiotified-  
 cyrillic  
 15635 \DeclareTextCommand{\CYRIOTBYUS}{PU}{\84\154}% U+046C  
 15636 % U+046D CYRILLIC SMALL LETTER IOTIFIED BIG YUS; yusbigiotifiedcyril-  
 lic  
 15637 \DeclareTextCommand{\cyriotbyus}{PU}{\84\155}% U+046D  
 15638 % U+046E CYRILLIC CAPITAL LETTER KSI; Ksicyrillic

15639 \DeclareTextCommand{\CYRKSI}{PU}{\84\156}% U+046E  
 15640 % U+046F CYRILLIC SMALL LETTER KSI; kscyrillic  
 15641 \DeclareTextCommand{\cyrksi}{PU}{\84\157}% U+046F  
 15642 % U+0470 CYRILLIC CAPITAL LETTER PSI; Psicyrillic  
 15643 \DeclareTextCommand{\CYRPSI}{PU}{\84\160}% U+0470  
 15644 % U+0471 CYRILLIC SMALL LETTER PSI; psicyrillic  
 15645 \DeclareTextCommand{\cyrpsi}{PU}{\84\161}% U+0471  
 15646 % U+0472 CYRILLIC CAPITAL LETTER FITA; Fitacyrillic, \*afii10147  
 15647 \DeclareTextCommand{\CYRFITA}{PU}{\84\162}% U+0472  
 15648 % U+0473 CYRILLIC SMALL LETTER FITA; \*afii10195, fitacyrillic  
 15649 \DeclareTextCommand{\cyrfita}{PU}{\84\163}% U+0473  
 15650 % U+0474 CYRILLIC CAPITAL LETTER IZHITSA; Izhitsacyrillic, \*afii10148  
 15651 \DeclareTextCommand{\CYRIZH}{PU}{\84\164}% U+0474  
 15652 % U+0475 CYRILLIC SMALL LETTER IZHITSA; \*afii10196, izhitsacyrillic  
 15653 \DeclareTextCommand{\cyrizh}{PU}{\84\165}% U+0475  
 15654 % U+0476 CYRILLIC CAPITAL LETTER IZHITSA WITH DOUBLE GRAVE AC-  
 CENT; Izhitsadblgravecyrillic  
 15655 \DeclareTextCompositeCommand{\C}{PU}{\CYRIZH}{\84\166}% U+0476  
 15656 % U+0477 CYRILLIC SMALL LETTER IZHITSA WITH DOUBLE GRAVE AC-  
 CENT; izhitsadblgravecyrillic  
 15657 \DeclareTextCompositeCommand{\C}{PU}{\cyrizh}{\84\167}% U+0477  
 15658 % U+0478 CYRILLIC CAPITAL LETTER UK; Ukcyrillic  
 15659 \DeclareTextCommand{\CYRUK}{PU}{\84\170}% U+0478  
 15660 % U+0479 CYRILLIC SMALL LETTER UK; ukcyrillic  
 15661 \DeclareTextCommand{\cyruk}{PU}{\84\171}% U+0479  
 15662 % U+047A CYRILLIC CAPITAL LETTER ROUND OMEGA; Omegaroundcyril-  
 lic  
 15663 \DeclareTextCommand{\CYROMEGARND}{PU}{\84\172}% U+047A  
 15664 % U+047B CYRILLIC SMALL LETTER ROUND OMEGA; omegaroundcyrillic  
 15665 \DeclareTextCommand{\cyromegarnd}{PU}{\84\173}% U+047B  
 15666 % U+047C CYRILLIC CAPITAL LETTER OMEGA WITH TITLO; Omegatitlo-  
 cyrillic  
 15667 \DeclareTextCommand{\CYROMEGATITLO}{PU}{\84\174}% U+047C  
 15668 % U+047D CYRILLIC SMALL LETTER OMEGA WITH TITLO; omegatitlo-  
 cyrillic  
 15669 \DeclareTextCommand{\cyromegatitlo}{PU}{\84\175}% U+047D  
 15670 % U+047E CYRILLIC CAPITAL LETTER OT; Otcyrillic  
 15671 \DeclareTextCommand{\CYROT}{PU}{\84\176}% U+047E  
 15672 % U+047F CYRILLIC SMALL LETTER OT; otcyrillic  
 15673 \DeclareTextCommand{\cyrot}{PU}{\84\177}% U+047F  
 15674 % U+0480 CYRILLIC CAPITAL LETTER KOPPA; Koppacyrillic  
 15675 \DeclareTextCommand{\CYRKOPPA}{PU}{\84\200}% U+0480  
 15676 % U+0481 CYRILLIC SMALL LETTER KOPPA; koppacyrillic  
 15677 \DeclareTextCommand{\cyrkoppa}{PU}{\84\201}% U+0481  
 15678 % U+0482 CYRILLIC THOUSANDS SIGN; thousandcyrillic  
 15679 \DeclareTextCommand{\cyrthousands}{PU}{\84\202}% U+0482  
 \84\203: U+0483 COMBINING CYRILLIC TITLO; titlocyrillicmb  
 \84\204: U+0484 COMBINING CYRILLIC PALATALIZATION; palatalizationcyril-  
 licmb  
 \84\205: U+0485 COMBINING CYRILLIC DASIA PNEUMATA; dasiapneumata-  
 cyrillicmb  
 \84\206: U+0486 COMBINING CYRILLIC PSILI PNEUMATA; psilipneumatacyril-  
 licmb  
 \84\207: U+0487 COMBINING CYRILLIC POKRYTIE  
 \84\210: U+0488 COMBINING CYRILLIC HUNDRED THOUSANDS SIGN  
 \84\211: U+0489 COMBINING CYRILLIC MILLIONS SIGN

15680 % U+048A CYRILLIC CAPITAL LETTER SHORT I WITH TAIL  
 15681 \DeclareTextCommand{\CYRISHRTDSC}{PU}{\84\212}% U+048A  
 15682 % U+048B CYRILLIC SMALL LETTER SHORT I WITH TAIL  
 15683 \DeclareTextCommand{\cyrishrtdsc}{PU}{\84\213}% U+048B  
 15684 % U+048C CYRILLIC CAPITAL LETTER SEMISOFT SIGN  
 15685 \DeclareTextCommand{\CYRSEMISFTSN}{PU}{\84\214}% U+048C  
 15686 % U+048D CYRILLIC SMALL LETTER SEMISOFT SIGN  
 15687 \DeclareTextCommand{\cyrsemisftsn}{PU}{\84\215}% U+048D  
 15688 % U+048E CYRILLIC CAPITAL LETTER ER WITH TICK  
 15689 \DeclareTextCommand{\CYRRTICK}{PU}{\84\216}% U+048E  
 15690 % U+048F CYRILLIC SMALL LETTER ER WITH TICK  
 15691 \DeclareTextCommand{\cyrrtick}{PU}{\84\217}% U+048F  
 15692 % U+0490 CYRILLIC CAPITAL LETTER GHE WITH UPTURN; Gheupturn-  
 cyrillic, \*afii10050  
 15693 \DeclareTextCommand{\CYRGUP}{PU}{\84\220}% U+0490  
 15694 % U+0491 CYRILLIC SMALL LETTER GHE WITH UPTURN; \*afii10098, ghe-  
 upturncyrillic  
 15695 \DeclareTextCommand{\cyrgup}{PU}{\84\221}% U+0491  
 15696 % U+0492 CYRILLIC CAPITAL LETTER GHE WITH STROKE; Ghestroke-  
 cyrillic  
 15697 \DeclareTextCommand{\CYRGHCRS}{PU}{\84\222}% U+0492  
 15698 % U+0493 CYRILLIC SMALL LETTER GHE WITH STROKE; ghestrokecyrillic  
 15699 \DeclareTextCommand{\cyrghcrs}{PU}{\84\223}% U+0493  
 15700 % U+0494 CYRILLIC CAPITAL LETTER GHE WITH MIDDLE HOOK; Ghemid-  
 dlehookcyrillic  
 15701 \DeclareTextCommand{\CYRGHK}{PU}{\84\224}% U+0494  
 15702 % U+0495 CYRILLIC SMALL LETTER GHE WITH MIDDLE HOOK; ghemid-  
 dlehookcyrillic  
 15703 \DeclareTextCommand{\cyrghk}{PU}{\84\225}% U+0495  
 15704 % U+0496 CYRILLIC CAPITAL LETTER ZHE WITH DESCENDER; Zhedescen-  
 dercyrillic  
 15705 \DeclareTextCommand{\CYRZHDSC}{PU}{\84\226}% U+0496  
 15706 % U+0497 CYRILLIC SMALL LETTER ZHE WITH DESCENDER; zhedescen-  
 dercyrillic  
 15707 \DeclareTextCommand{\cyrzhdsc}{PU}{\84\227}% U+0497  
 15708 % U+0498 CYRILLIC CAPITAL LETTER ZE WITH DESCENDER; Zedescen-  
 dercyrillic  
 15709 \DeclareTextCommand{\CYRZDSC}{PU}{\84\230}% U+0498  
 15710 \DeclareTextCompositeCommand{\c}{PU}{\CYRZ}{\84\230}% U+0498  
 15711 % U+0499 CYRILLIC SMALL LETTER ZE WITH DESCENDER; zedescender-  
 cyrillic  
 15712 \DeclareTextCommand{\cyrzds}{PU}{\84\231}% U+0499  
 15713 \DeclareTextCompositeCommand{\c}{PU}{\cyrz}{\84\231}% U+0499  
 15714 % U+049A CYRILLIC CAPITAL LETTER KA WITH DESCENDER; Kadescen-  
 dercyrillic  
 15715 \DeclareTextCommand{\CYRKDSC}{PU}{\84\232}% U+049A  
 15716 % U+049B CYRILLIC SMALL LETTER KA WITH DESCENDER; kadescender-  
 cyrillic  
 15717 \DeclareTextCommand{\cyrkdsc}{PU}{\84\233}% U+049B  
 15718 % U+049C CYRILLIC CAPITAL LETTER KA WITH VERTICAL STROKE; Kaver-  
 ticalstrokecyrillic  
 15719 \DeclareTextCommand{\CYRKVCRS}{PU}{\84\234}% U+049C  
 15720 % U+049D CYRILLIC SMALL LETTER KA WITH VERTICAL STROKE; kaver-  
 ticalstrokecyrillic  
 15721 \DeclareTextCommand{\cyrkvcrs}{PU}{\84\235}% U+049D  
 15722 % U+049E CYRILLIC CAPITAL LETTER KA WITH STROKE; Kastrokecyrillic  
 15723 \DeclareTextCommand{\CYRKHCRS}{PU}{\84\236}% U+049E

15724 % U+049F CYRILLIC SMALL LETTER KA WITH STROKE; kastrokecyrillic  
 15725 \DeclareTextCommand{\cyrkhcrs}{PU}{\84\237}% U+049F  
 15726 % U+04A0 CYRILLIC CAPITAL LETTER BASHKIR KA; Kabashkircyrillic  
 15727 \DeclareTextCommand{\CYRKBEAK}{PU}{\84\240}% U+04A0  
 15728 % U+04A1 CYRILLIC SMALL LETTER BASHKIR KA; kabashkircyrillic  
 15729 \DeclareTextCommand{\cyrkbeak}{PU}{\84\241}% U+04A1  
 15730 % U+04A2 CYRILLIC CAPITAL LETTER EN WITH DESCENDER; Endescen-  
 dercyrillic  
 15731 \DeclareTextCommand{\CYRNDSC}{PU}{\84\242}% U+04A2  
 15732 % U+04A3 CYRILLIC SMALL LETTER EN WITH DESCENDER; endescender-  
 cyrillic  
 15733 \DeclareTextCommand{\cyrndsc}{PU}{\84\243}% U+04A3  
 15734 % U+04A4 CYRILLIC CAPITAL LIGATURE EN GHE; Enghecyrillic  
 15735 \DeclareTextCommand{\CYRNG}{PU}{\84\244}% U+04A4  
 15736 % U+04A5 CYRILLIC SMALL LIGATURE EN GHE; enghecyrillic  
 15737 \DeclareTextCommand{\cyrng}{PU}{\84\245}% U+04A5  
 15738 % U+04A6 CYRILLIC CAPITAL LETTER PE WITH MIDDLE HOOK; Pemid-  
 dlehookcyrillic  
 15739 \DeclareTextCommand{\CYRPHK}{PU}{\84\246}% U+04A6  
 15740 % U+04A7 CYRILLIC SMALL LETTER PE WITH MIDDLE HOOK; pemiddle-  
 hookcyrillic  
 15741 \DeclareTextCommand{\cyrphk}{PU}{\84\247}% U+04A7  
 15742 % U+04A8 CYRILLIC CAPITAL LETTER ABKHASIAN HA; Haabkhasiancyril-  
 lic  
 15743 \DeclareTextCommand{\CYRABHHA}{PU}{\84\250}% U+04A8  
 15744 % U+04A9 CYRILLIC SMALL LETTER ABKHASIAN HA; haabkhasiancyrillic  
 15745 \DeclareTextCommand{\cyrabhha}{PU}{\84\251}% U+04A9  
 15746 % U+04AA CYRILLIC CAPITAL LETTER ES WITH DESCENDER; Esdescen-  
 dercyrillic  
 15747 \DeclareTextCommand{\CYRSDSC}{PU}{\84\252}% U+04AA  
 15748 \DeclareTextCompositeCommand{\CYRSDSC}{PU}{\CYRS}{\84\252}% U+04AA  
 15749 % U+04AB CYRILLIC SMALL LETTER ES WITH DESCENDER; esdescender-  
 cyrillic  
 15750 \DeclareTextCommand{\cyrsdsc}{PU}{\84\253}% U+04AB  
 15751 \DeclareTextCompositeCommand{\k}{PU}{\cyr}{\84\253}% U+04AB  
 15752 % U+04AC CYRILLIC CAPITAL LETTER TE WITH DESCENDER; Tedescen-  
 dercyrillic  
 15753 \DeclareTextCommand{\CYRTDSC}{PU}{\84\254}% U+04AC  
 15754 % U+04AD CYRILLIC SMALL LETTER TE WITH DESCENDER; tedescender-  
 cyrillic  
 15755 \DeclareTextCommand{\cyrtdsc}{PU}{\84\255}% U+04AD  
 15756 % U+04AE CYRILLIC CAPITAL LETTER STRAIGHT U; Ustraightcyrillic  
 15757 \DeclareTextCommand{\CYRY}{PU}{\84\256}% U+04AE  
 15758 % U+04AF CYRILLIC SMALL LETTER STRAIGHT U; ustraightcyrillic  
 15759 \DeclareTextCommand{\cyr}{PU}{\84\257}% U+04AF  
 15760 % U+04B0 CYRILLIC CAPITAL LETTER STRAIGHT U WITH STROKE; Us-  
 traightstrokecyrillic  
 15761 \DeclareTextCommand{\CYRYHCRS}{PU}{\84\260}% U+04B0  
 15762 % U+04B1 CYRILLIC SMALL LETTER STRAIGHT U WITH STROKE; us-  
 traightstrokecyrillic  
 15763 \DeclareTextCommand{\cyrhcrs}{PU}{\84\261}% U+04B1  
 15764 % U+04B2 CYRILLIC CAPITAL LETTER HA WITH DESCENDER; Hadescen-  
 dercyrillic  
 15765 \DeclareTextCommand{\CYRHDSC}{PU}{\84\262}% U+04B2  
 15766 % U+04B3 CYRILLIC SMALL LETTER HA WITH DESCENDER; hadescender-  
 cyrillic  
 15767 \DeclareTextCommand{\cyrhdsc}{PU}{\84\263}% U+04B3

15768 % U+04B4 CYRILLIC CAPITAL LIGATURE TE TSE; Tetsecyrillic  
 15769 \DeclareTextCommand{\CYRTETSE}{PU}{\84\264}% U+04B4  
 15770 % U+04B5 CYRILLIC SMALL LIGATURE TE TSE; tetsecyrillic  
 15771 \DeclareTextCommand{\cyrtetse}{PU}{\84\265}% U+04B5  
 15772 % U+04B6 CYRILLIC CAPITAL LETTER CHE WITH DESCENDER; Chedescendercyrillic  
 15773 \DeclareTextCommand{\CYRCHRDSC}{PU}{\84\266}% U+04B6  
 15774 % U+04B7 CYRILLIC SMALL LETTER CHE WITH DESCENDER; chedescendercyrillic  
 15775 \DeclareTextCommand{\cyrchrdsc}{PU}{\84\267}% U+04B7  
 15776 % U+04B8 CYRILLIC CAPITAL LETTER CHE WITH VERTICAL STROKE; Chev-  
 erticalstrokecyrillic  
 15777 \DeclareTextCommand{\CYRCHVCRS}{PU}{\84\270}% U+04B8  
 15778 % U+04B9 CYRILLIC SMALL LETTER CHE WITH VERTICAL STROKE; chev-  
 erticalstrokecyrillic  
 15779 \DeclareTextCommand{\cyrchvcrs}{PU}{\84\271}% U+04B9  
 15780 % U+04BA CYRILLIC CAPITAL LETTER SHHA; Shhacyrillic  
 15781 \DeclareTextCommand{\CYRSHHA}{PU}{\84\272}% U+04BA  
 15782 % U+04BB CYRILLIC SMALL LETTER SHHA; shhacyrillic  
 15783 \DeclareTextCommand{\cyrshha}{PU}{\84\273}% U+04BB  
 15784 % U+04BC CYRILLIC CAPITAL LETTER ABKHASIAN CHE; Cheabkhasian-  
 cyrillic  
 15785 \DeclareTextCommand{\CYRABHCH}{PU}{\84\274}% U+04BC  
 15786 % U+04BD CYRILLIC SMALL LETTER ABKHASIAN CHE; cheabkhasiancyril-  
 lic  
 15787 \DeclareTextCommand{\cyrabhch}{PU}{\84\275}% U+04BD  
 15788 % U+04BE CYRILLIC CAPITAL LETTER ABKHASIAN CHE WITH DESCEN-  
 DER; Chedescenderabkhasiancyrillic  
 15789 \DeclareTextCommand{\CYRABHCHDSC}{PU}{\84\276}% U+04BE  
 15790 \DeclareTextCompositeCommand{\k}{PU}{\CYRABHCH}{\84\276}% U+04BE  
 15791 % U+04BF CYRILLIC SMALL LETTER ABKHASIAN CHE WITH DESCEN-  
 DER; chedescenderabkhasiancyrillic  
 15792 \DeclareTextCommand{\cyrabhchdsc}{PU}{\84\277}% U+04BF  
 15793 \DeclareTextCompositeCommand{\k}{PU}{\cyrabhch}{\84\277}% U+04BF  
 15794 % U+04C0 CYRILLIC LETTER PALOCHKA; palochkacyrillic  
 15795 \DeclareTextCommand{\CYRpalochka}{PU}{\84\300}% U+04C0  
 15796 % U+04C1 CYRILLIC CAPITAL LETTER ZHE WITH BREVE; Zhebrevecyrillic  
 15797 \DeclareTextCompositeCommand{\U}{PU}{\CYRZH}{\84\301}% U+04C1  
 15798 % U+04C2 CYRILLIC SMALL LETTER ZHE WITH BREVE; zhebrevecyrillic  
 15799 \DeclareTextCompositeCommand{\U}{PU}{\cyrzh}{\84\302}% U+04C2  
 15800 % U+04C3 CYRILLIC CAPITAL LETTER KA WITH HOOK; Kahookcyrillic  
 15801 \DeclareTextCommand{\CYRKHK}{PU}{\84\303}% U+04C3  
 15802 % U+04C4 CYRILLIC SMALL LETTER KA WITH HOOK; kahookcyrillic  
 15803 \DeclareTextCommand{\cyrkhk}{PU}{\84\304}% U+04C4  
 15804 % U+04C5 CYRILLIC CAPITAL LETTER EL WITH TAIL  
 15805 \DeclareTextCommand{\CYRLDSC}{PU}{\84\305}% U+04C5  
 15806 % U+04C6 CYRILLIC SMALL LETTER EL WITH TAIL  
 15807 \DeclareTextCommand{\cyrldsc}{PU}{\84\306}% U+04C6  
 15808 % U+04C7 CYRILLIC CAPITAL LETTER EN WITH HOOK; Enhookcyrillic  
 15809 \DeclareTextCommand{\CYRNHK}{PU}{\84\307}% U+04C7  
 15810 % U+04C8 CYRILLIC SMALL LETTER EN WITH HOOK; enhookcyrillic  
 15811 \DeclareTextCommand{\cyrnhk}{PU}{\84\310}% U+04C8  
 15812 % U+04CB CYRILLIC CAPITAL LETTER KHAKASSIAN CHE; Chekhakassian-  
 cyrillic  
 15813 \DeclareTextCommand{\CYRCHLDSC}{PU}{\84\313}% U+04CB  
 15814 % U+04CC CYRILLIC SMALL LETTER KHAKASSIAN CHE; chekhakassian-  
 cyrillic

15815 \DeclareTextCommand{\cyrchldsc}{PU}{\84\314}% U+04CC  
15816 % U+04CD CYRILLIC CAPITAL LETTER EM WITH TAIL  
15817 \DeclareTextCommand{\CYRMDSC}{PU}{\84\315}% U+04CD  
15818 % U+04CE CYRILLIC SMALL LETTER EM WITH TAIL  
15819 \DeclareTextCommand{\cyrmdsc}{PU}{\84\316}% U+04CE  
\84\317: U+04CF CYRILLIC SMALL LETTER PALOCHKA  
15820 % U+04D0 CYRILLIC CAPITAL LETTER A WITH BREVE; Abrevacyrillic  
15821 \DeclareTextCompositeCommand{\U}{PU}{\CYRA}{\84\320}% U+04D0  
15822 % U+04D1 CYRILLIC SMALL LETTER A WITH BREVE; abrevacyrillic  
15823 \DeclareTextCompositeCommand{\U}{PU}{\cyra}{\84\321}% U+04D1  
15824 % U+04D2 CYRILLIC CAPITAL LETTER A WITH DIAERESIS; Adieresiscyrillic  
15825 \DeclareTextCompositeCommand{\U}{PU}{\CYRA}{\84\322}% U+04D2  
15826 % U+04D3 CYRILLIC SMALL LETTER A WITH DIAERESIS; adieresiscyrillic  
15827 \DeclareTextCompositeCommand{\U}{PU}{\cyra}{\84\323}% U+04D3  
15828 % U+04D4 CYRILLIC CAPITAL LIGATURE A IE; Aiecyrillic  
15829 \DeclareTextCommand{\CYRAE}{PU}{\84\324}% U+04D4  
15830 % U+04D5 CYRILLIC SMALL LIGATURE A IE; aiecyrillic  
15831 \DeclareTextCommand{\cyrae}{PU}{\84\325}% U+04D5  
15832 % U+04D6 CYRILLIC CAPITAL LETTER IE WITH BREVE; Iebrevacyrillic  
15833 \DeclareTextCompositeCommand{\U}{PU}{\CYRE}{\84\326}% U+04D6  
15834 % U+04D7 CYRILLIC SMALL LETTER IE WITH BREVE; iebrevacyrillic  
15835 \DeclareTextCompositeCommand{\U}{PU}{\cyre}{\84\327}% U+04D7  
15836 % U+04D8 CYRILLIC CAPITAL LETTER SCHWA; Schwacyrillic  
15837 \DeclareTextCommand{\CYRSCHWA}{PU}{\84\330}% U+04D8  
15838 % U+04D9 CYRILLIC SMALL LETTER SCHWA; \*afii10846, schwacyrillic  
15839 \DeclareTextCommand{\cyrschwa}{PU}{\84\331}% U+04D9  
15840 % U+04DA CYRILLIC CAPITAL LETTER SCHWA WITH DIAERESIS; Schwadiere-  
15841 \DeclareTextCompositeCommand{\U}{PU}{\CYRSCHWA}{\84\332}% U+04DA  
15842 % U+04DB CYRILLIC SMALL LETTER SCHWA WITH DIAERESIS; schwadiere-  
15843 \DeclareTextCompositeCommand{\U}{PU}{\cyrschwa}{\84\333}% U+04DB  
15844 % U+04DC CYRILLIC CAPITAL LETTER ZHE WITH DIAERESIS; Zhediere-  
15845 \DeclareTextCompositeCommand{\U}{PU}{\CYRZH}{\84\334}% U+04DC  
15846 % U+04DD CYRILLIC SMALL LETTER ZHE WITH DIAERESIS; zhedieres-  
15847 \DeclareTextCompositeCommand{\U}{PU}{\cyrzh}{\84\335}% U+04DD  
15848 % U+04DE CYRILLIC CAPITAL LETTER ZE WITH DIAERESIS; Zedieres-  
15849 \DeclareTextCompositeCommand{\U}{PU}{\CYRZ}{\84\336}% U+04DE  
15850 % U+04DF CYRILLIC SMALL LETTER ZE WITH DIAERESIS; zedieres-  
15851 \DeclareTextCompositeCommand{\U}{PU}{\cyrz}{\84\337}% U+04DF  
15852 % U+04E0 CYRILLIC CAPITAL LETTER ABKHASIAN DZE; Dzeabkhasian-  
15853 \DeclareTextCommand{\CYRABHDZE}{PU}{\84\340}% U+04E0  
15854 % U+04E1 CYRILLIC SMALL LETTER ABKHASIAN DZE; dzeabkhasiancyrillic  
15855 \DeclareTextCommand{\cyrabhdze}{PU}{\84\341}% U+04E1  
15856 % U+04E2 CYRILLIC CAPITAL LETTER I WITH MACRON; Imacroncyrillic  
15857 \DeclareTextCompositeCommand{\U}{PU}{\CYRI}{\84\342}% U+04E2  
15858 % U+04E3 CYRILLIC SMALL LETTER I WITH MACRON; imacroncyrillic  
15859 \DeclareTextCompositeCommand{\U}{PU}{\cyri}{\84\343}% U+04E3  
15860 % U+04E4 CYRILLIC CAPITAL LETTER I WITH DIAERESIS; Idieresiscyrillic  
15861 \DeclareTextCompositeCommand{\U}{PU}{\CYRI}{\84\344}% U+04E4  
15862 % U+04E5 CYRILLIC SMALL LETTER I WITH DIAERESIS; idieresiscyrillic  
15863 \DeclareTextCompositeCommand{\U}{PU}{\cyri}{\84\345}% U+04E5

15864 % U+04E6 CYRILLIC CAPITAL LETTER O WITH DIAERESIS; Odieresiscyrillic  
 15865 \DeclareTextCompositeCommand{"}{PU}{\CYRO}{\84\346}% U+04E6  
 15866 % U+04E7 CYRILLIC SMALL LETTER O WITH DIAERESIS; odieresiscyrillic  
 15867 \DeclareTextCompositeCommand{"}{PU}{\cyro}{\84\347}% U+04E7  
 15868 % U+04E8 CYRILLIC CAPITAL LETTER BARRED O; Obarredcyrillic  
 15869 \DeclareTextCommand{\CYROTLD}{PU}{\84\350}% U+04E8  
 15870 % U+04E9 CYRILLIC SMALL LETTER BARRED O; obarredcyrillic  
 15871 \DeclareTextCommand{\cyrotld}{PU}{\84\351}% U+04E9  
 15872 % U+04EA CYRILLIC CAPITAL LETTER BARRED O WITH DIAERESIS; Obarreddieresiscyrillic  
 15873 \DeclareTextCompositeCommand{"}{PU}{\CYROTLD}{\84\352}% U+04EA  
 15874 % U+04EB CYRILLIC SMALL LETTER BARRED O WITH DIAERESIS; obarreddieresiscyrillic  
 15875 \DeclareTextCompositeCommand{"}{PU}{\cyrotld}{\84\353}% U+04EB  
 15876 % U+04EC CYRILLIC CAPITAL LETTER E WITH DIAERESIS  
 15877 \DeclareTextCompositeCommand{"}{PU}{\CYREREV}{\84\354}% U+04EC  
 15878 % U+04ED CYRILLIC SMALL LETTER E WITH DIAERESIS  
 15879 \DeclareTextCompositeCommand{"}{PU}{\cyreref}{\84\355}% U+04ED  
 15880 % U+04EE CYRILLIC CAPITAL LETTER U WITH MACRON; Umacroncyrillic  
 15881 \DeclareTextCompositeCommand{=}{PU}{\CYRU}{\84\356}% U+04EE  
 15882 % U+04EF CYRILLIC SMALL LETTER U WITH MACRON; umacroncyrillic  
 15883 \DeclareTextCompositeCommand{=}{PU}{\cyru}{\84\357}% U+04EF  
 15884 % U+04F0 CYRILLIC CAPITAL LETTER U WITH DIAERESIS; Udieresiscyrillic  
 15885 \DeclareTextCompositeCommand{"}{PU}{\CYRU}{\84\360}% U+04F0  
 15886 % U+04F1 CYRILLIC SMALL LETTER U WITH DIAERESIS; udieresiscyrillic  
 15887 \DeclareTextCompositeCommand{"}{PU}{\cyru}{\84\361}% U+04F1  
 15888 % U+04F2 CYRILLIC CAPITAL LETTER U WITH DOUBLE ACUTE; Uhungarumlautcyrillic  
 15889 \DeclareTextCompositeCommand{H}{PU}{\CYRU}{\84\362}% U+04F2  
 15890 % U+04F3 CYRILLIC SMALL LETTER U WITH DOUBLE ACUTE; uhungarumlautcyrillic  
 15891 \DeclareTextCompositeCommand{H}{PU}{\cyru}{\84\363}% U+04F3  
 15892 % U+04F4 CYRILLIC CAPITAL LETTER CHE WITH DIAERESIS; Chedieresiscyrillic  
 15893 \DeclareTextCompositeCommand{"}{PU}{\CYRCH}{\84\364}% U+04F4  
 15894 % U+04F5 CYRILLIC SMALL LETTER CHE WITH DIAERESIS; chedieresiscyrillic  
 15895 \DeclareTextCompositeCommand{"}{PU}{\cyrch}{\84\365}% U+04F5  
 15896 % U+04F6 CYRILLIC CAPITAL LETTER GHE WITH DESCENDER  
 15897 \DeclareTextCommand{\CYRGDSC}{PU}{\84\366}% U+04F6  
 15898 % U+04F7 CYRILLIC SMALL LETTER GHE WITH DESCENDER  
 15899 \DeclareTextCommand{\cyrgdsc}{PU}{\84\367}% U+04F7  
 15900 % U+04F8 CYRILLIC CAPITAL LETTER YERU WITH DIAERESIS; Yerudieresiscyrillic  
 15901 \DeclareTextCompositeCommand{"}{PU}{\CYRERY}{\84\370}% U+04F8  
 15902 % U+04F9 CYRILLIC SMALL LETTER YERU WITH DIAERESIS; yerudieresiscyrillic  
 15903 \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  
 15904 % U+04FC CYRILLIC CAPITAL LETTER HA WITH HOOK  
 15905 \DeclareTextCommand{\CYRHHK}{PU}{\84\374}% U+04FC  
 15906 % U+04FD CYRILLIC SMALL LETTER HA WITH HOOK  
 15907 \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

15908 % U+0E3F THAI CURRENCY SYMBOL BAHT; bahtthai  
 15909 \DeclareTextCommand{\textbaht}{PU}{\9016\077}% U+0E3F

### 50.2.11 Latin Extended Additional: U+1E00 to U+1EFF

15910 % U+1E02 LATIN CAPITAL LETTER B WITH DOT ABOVE; Bdotaccent  
 15911 \DeclareTextCompositeCommand{\.}{PU}{B}{\9036\002}% U+1E02  
 15912 % U+1E03 LATIN SMALL LETTER B WITH DOT ABOVE; bdotaccent  
 15913 \DeclareTextCompositeCommand{\.}{PU}{b}{\9036\003}% U+1E03  
 15914 % U+1E06 LATIN CAPITAL LETTER B WITH LINE BELOW; Blinebelow  
 15915 \DeclareTextCompositeCommand{\b}{PU}{B}{\9036\006}% U+1E06  
 15916 % U+1E07 LATIN SMALL LETTER B WITH LINE BELOW; blinebelow  
 15917 \DeclareTextCompositeCommand{\b}{PU}{b}{\9036\007}% U+1E07  
 15918 % U+1E0A LATIN CAPITAL LETTER D WITH DOT ABOVE; Ddotaccent  
 15919 \DeclareTextCompositeCommand{\.}{PU}{D}{\9036\012}% U+1E0A  
 15920 % U+1E0B LATIN SMALL LETTER D WITH DOT ABOVE; ddotaccent  
 15921 \DeclareTextCompositeCommand{\.}{PU}{d}{\9036\013}% U+1E0B  
 15922 % U+1E0E LATIN CAPITAL LETTER D WITH LINE BELOW; Dlinebelow  
 15923 \DeclareTextCompositeCommand{\b}{PU}{D}{\9036\016}% U+1E0E  
 15924 % U+1E0F LATIN SMALL LETTER D WITH LINE BELOW; dlinebelow  
 15925 \DeclareTextCompositeCommand{\b}{PU}{d}{\9036\017}% U+1E0F  
 15926 % U+1E10 LATIN CAPITAL LETTER D WITH CEDILLA; Dcedilla  
 15927 \DeclareTextCompositeCommand{\c}{PU}{D}{\9036\020}% U+1E10  
 15928 % U+1E11 LATIN SMALL LETTER D WITH CEDILLA; dcedilla  
 15929 \DeclareTextCompositeCommand{\c}{PU}{d}{\9036\021}% U+1E11  
 15930 % U+1E1E LATIN CAPITAL LETTER F WITH DOT ABOVE; Fdotaccent  
 15931 \DeclareTextCompositeCommand{\.}{PU}{F}{\9036\036}% U+1E1E  
 15932 % U+1E1F LATIN SMALL LETTER F WITH DOT ABOVE; fdotaccent  
 15933 \DeclareTextCompositeCommand{\.}{PU}{f}{\9036\037}% U+1E1F  
 15934 % U+1E20 LATIN CAPITAL LETTER G WITH MACRON; Gmacron  
 15935 \DeclareTextCompositeCommand{\=}{PU}{G}{\9036\040}% U+1E20  
 15936 % U+1E21 LATIN SMALL LETTER G WITH MACRON; gmacron  
 15937 \DeclareTextCompositeCommand{\=}{PU}{g}{\9036\041}% U+1E21  
 15938 % U+1E22 LATIN CAPITAL LETTER H WITH DOT ABOVE; Hdotaccent  
 15939 \DeclareTextCompositeCommand{\.}{PU}{H}{\9036\042}% U+1E22  
 15940 % U+1E23 LATIN SMALL LETTER H WITH DOT ABOVE; hdotaccent  
 15941 \DeclareTextCompositeCommand{\.}{PU}{h}{\9036\043}% U+1E23  
 15942 % U+1E26 LATIN CAPITAL LETTER H WITH DIAERESIS; Hdieresis  
 15943 \DeclareTextCompositeCommand{\"}{PU}{H}{\9036\046}% U+1E26  
 15944 % U+1E27 LATIN SMALL LETTER H WITH DIAERESIS; hdieresis  
 15945 \DeclareTextCompositeCommand{\"}{PU}{h}{\9036\047}% U+1E27  
 15946 % U+1E28 LATIN CAPITAL LETTER H WITH CEDILLA; Hcedilla  
 15947 \DeclareTextCompositeCommand{\c}{PU}{H}{\9036\050}% U+1E28  
 15948 % U+1E29 LATIN SMALL LETTER H WITH CEDILLA; hcedilla  
 15949 \DeclareTextCompositeCommand{\c}{PU}{h}{\9036\051}% U+1E29  
 15950 % U+1E30 LATIN CAPITAL LETTER K WITH ACUTE; Kacute  
 15951 \DeclareTextCompositeCommand{\'}{PU}{K}{\9036\060}% U+1E30  
 15952 % U+1E31 LATIN SMALL LETTER K WITH ACUTE; kacute  
 15953 \DeclareTextCompositeCommand{\'}{PU}{k}{\9036\061}% U+1E31  
 15954 % U+1E34 LATIN CAPITAL LETTER K WITH LINE BELOW; Klinebelow  
 15955 \DeclareTextCompositeCommand{\b}{PU}{K}{\9036\064}% U+1E34  
 15956 % U+1E35 LATIN SMALL LETTER K WITH LINE BELOW; klinebelow  
 15957 \DeclareTextCompositeCommand{\b}{PU}{k}{\9036\065}% U+1E35



15958 % U+1E3A LATIN CAPITAL LETTER L WITH LINE BELOW; Llinebelow  
15959 \DeclareTextCompositeCommand{\b}{PU}{L}{\9036\072}% U+1E3A  
15960 % U+1E3B LATIN SMALL LETTER L WITH LINE BELOW; llinebelow  
15961 \DeclareTextCompositeCommand{\b}{PU}{l}{\9036\073}% U+1E3B  
15962 % U+1E3E LATIN CAPITAL LETTER M WITH ACUTE; Macute  
15963 \DeclareTextCompositeCommand{\'}{PU}{M}{\9036\076}% U+1E3E  
15964 % U+1E3F LATIN SMALL LETTER M WITH ACUTE; macute  
15965 \DeclareTextCompositeCommand{\'}{PU}{m}{\9036\077}% U+1E3F  
15966 % U+1E40 LATIN CAPITAL LETTER M WITH DOT ABOVE; Mdotaccent  
15967 \DeclareTextCompositeCommand{\.}{PU}{M}{\9036\100}% U+1E40  
15968 % U+1E41 LATIN SMALL LETTER M WITH DOT ABOVE; mdotaccent  
15969 \DeclareTextCompositeCommand{\.}{PU}{m}{\9036\101}% U+1E41  
15970 % U+1E44 LATIN CAPITAL LETTER N WITH DOT ABOVE; Ndotaccent  
15971 \DeclareTextCompositeCommand{\.}{PU}{N}{\9036\104}% U+1E44  
15972 % U+1E45 LATIN SMALL LETTER N WITH DOT ABOVE; ndotaccent  
15973 \DeclareTextCompositeCommand{\.}{PU}{n}{\9036\105}% U+1E45  
15974 % U+1E48 LATIN CAPITAL LETTER N WITH LINE BELOW; Nlinebelow  
15975 \DeclareTextCompositeCommand{\b}{PU}{N}{\9036\110}% U+1E48  
15976 % U+1E49 LATIN SMALL LETTER N WITH LINE BELOW; nlinebelow  
15977 \DeclareTextCompositeCommand{\b}{PU}{n}{\9036\111}% U+1E49  
15978 % U+1E54 LATIN CAPITAL LETTER P WITH ACUTE; Pacute  
15979 \DeclareTextCompositeCommand{\'}{PU}{P}{\9036\124}% U+1E54  
15980 % U+1E55 LATIN SMALL LETTER P WITH ACUTE; pacute  
15981 \DeclareTextCompositeCommand{\'}{PU}{p}{\9036\125}% U+1E55  
15982 % U+1E56 LATIN CAPITAL LETTER P WITH DOT ABOVE; Pdotaccent  
15983 \DeclareTextCompositeCommand{\.}{PU}{P}{\9036\126}% U+1E56  
15984 % U+1E57 LATIN SMALL LETTER P WITH DOT ABOVE; pdotaccent  
15985 \DeclareTextCompositeCommand{\.}{PU}{p}{\9036\127}% U+1E57  
15986 % U+1E58 LATIN CAPITAL LETTER R WITH DOT ABOVE; Rdotaccent  
15987 \DeclareTextCompositeCommand{\.}{PU}{R}{\9036\130}% U+1E58  
15988 % U+1E59 LATIN SMALL LETTER R WITH DOT ABOVE; rdotaccent  
15989 \DeclareTextCompositeCommand{\.}{PU}{r}{\9036\131}% U+1E59  
15990 % U+1E5E LATIN CAPITAL LETTER R WITH LINE BELOW; Rlinebelow  
15991 \DeclareTextCompositeCommand{\b}{PU}{R}{\9036\136}% U+1E5E  
15992 % U+1E5F LATIN SMALL LETTER R WITH LINE BELOW; rlinebelow  
15993 \DeclareTextCompositeCommand{\b}{PU}{r}{\9036\137}% U+1E5F  
15994 % U+1E60 LATIN CAPITAL LETTER S WITH DOT ABOVE; Sdotaccent  
15995 \DeclareTextCompositeCommand{\.}{PU}{S}{\9036\140}% U+1E60  
15996 % U+1E61 LATIN SMALL LETTER S WITH DOT ABOVE; sdotaccent  
15997 \DeclareTextCompositeCommand{\.}{PU}{s}{\9036\141}% U+1E61  
15998 % U+1E6E LATIN CAPITAL LETTER T WITH LINE BELOW; Tlinebelow  
15999 \DeclareTextCompositeCommand{\b}{PU}{T}{\9036\156}% U+1E6E  
16000 % U+1E6F LATIN SMALL LETTER T WITH LINE BELOW; tlinebelow  
16001 \DeclareTextCompositeCommand{\b}{PU}{t}{\9036\157}% U+1E6F  
16002 % U+1E7C LATIN CAPITAL LETTER V WITH TILDE; Vtilde  
16003 \DeclareTextCompositeCommand{\~}{PU}{V}{\9036\174}% U+1E7C  
16004 % U+1E7D LATIN SMALL LETTER V WITH TILDE; vtilde  
16005 \DeclareTextCompositeCommand{\~}{PU}{v}{\9036\175}% U+1E7D  
16006 % U+1E80 LATIN CAPITAL LETTER W WITH GRAVE; Wgrave  
16007 \DeclareTextCompositeCommand{\'}{PU}{W}{\9036\200}% U+1E80  
16008 % U+1E81 LATIN SMALL LETTER W WITH GRAVE; wgrave  
16009 \DeclareTextCompositeCommand{\'}{PU}{w}{\9036\201}% U+1E81  
16010 % U+1E82 LATIN CAPITAL LETTER W WITH ACUTE; Wacute  
16011 \DeclareTextCompositeCommand{\'}{PU}{W}{\9036\202}% U+1E82  
16012 % U+1E83 LATIN SMALL LETTER W WITH ACUTE; wacute  
16013 \DeclareTextCompositeCommand{\'}{PU}{w}{\9036\203}% U+1E83  
16014 % U+1E84 LATIN CAPITAL LETTER W WITH DIAERESIS; Wdieresis

16015 \DeclareTextCompositeCommand{"}{PU}{W}{\9036\204}% U+1E84  
 16016 % U+1E85 LATIN SMALL LETTER W WITH DIAERESIS; wdieresis  
 16017 \DeclareTextCompositeCommand{"}{PU}{w}{\9036\205}% U+1E85  
 16018 % U+1E86 LATIN CAPITAL LETTER W WITH DOT ABOVE; Wdotaccent  
 16019 \DeclareTextCompositeCommand{.}{PU}{W}{\9036\206}% U+1E86  
 16020 % U+1E87 LATIN SMALL LETTER W WITH DOT ABOVE; wdotaccent  
 16021 \DeclareTextCompositeCommand{.}{PU}{w}{\9036\207}% U+1E87  
 16022 % U+1E8A LATIN CAPITAL LETTER X WITH DOT ABOVE; Xdotaccent  
 16023 \DeclareTextCompositeCommand{.}{PU}{X}{\9036\212}% U+1E8A  
 16024 % U+1E8B LATIN SMALL LETTER X WITH DOT ABOVE; xdotaccent  
 16025 \DeclareTextCompositeCommand{.}{PU}{x}{\9036\213}% U+1E8B  
 16026 % U+1E8C LATIN CAPITAL LETTER X WITH DIAERESIS; Xdieresis  
 16027 \DeclareTextCompositeCommand{"}{PU}{X}{\9036\214}% U+1E8C  
 16028 % U+1E8D LATIN SMALL LETTER X WITH DIAERESIS; xdieresis  
 16029 \DeclareTextCompositeCommand{"}{PU}{x}{\9036\215}% U+1E8D  
 16030 % U+1E8E LATIN CAPITAL LETTER Y WITH DOT ABOVE; Ydotaccent  
 16031 \DeclareTextCompositeCommand{.}{PU}{Y}{\9036\216}% U+1E8E  
 16032 % U+1E8F LATIN SMALL LETTER Y WITH DOT ABOVE; ydotaccent  
 16033 \DeclareTextCompositeCommand{.}{PU}{y}{\9036\217}% U+1E8F  
 16034 % U+1E90 LATIN CAPITAL LETTER Z WITH CIRCUMFLEX; Zcircumflex  
 16035 \DeclareTextCompositeCommand{^}{PU}{Z}{\9036\220}% U+1E90  
 16036 % U+1E91 LATIN SMALL LETTER Z WITH CIRCUMFLEX; zcircumflex  
 16037 \DeclareTextCompositeCommand{^}{PU}{z}{\9036\221}% U+1E91  
 16038 % U+1E94 LATIN CAPITAL LETTER Z WITH LINE BELOW; Zlinebelow  
 16039 \DeclareTextCompositeCommand{\b}{PU}{Z}{\9036\224}% U+1E94  
 16040 % U+1E95 LATIN SMALL LETTER Z WITH LINE BELOW; zlinebelow  
 16041 \DeclareTextCompositeCommand{\b}{PU}{z}{\9036\225}% U+1E95  
 16042 % U+1E96 LATIN SMALL LETTER H WITH LINE BELOW; hlinebelow  
 16043 \DeclareTextCompositeCommand{\b}{PU}{h}{\9036\226}% U+1E96  
 16044 % U+1E97 LATIN SMALL LETTER T WITH DIAERESIS; tdieresis  
 16045 \DeclareTextCompositeCommand{"}{PU}{t}{\9036\227}% U+1E97  
 16046 % U+1E98 LATIN SMALL LETTER W WITH RING ABOVE; wring  
 16047 \DeclareTextCompositeCommand{\r}{PU}{w}{\9036\230}% U+1E98  
 16048 % U+1E99 LATIN SMALL LETTER Y WITH RING ABOVE; yring  
 16049 \DeclareTextCompositeCommand{\r}{PU}{y}{\9036\231}% U+1E99  
 16050 % U+1E9B LATIN SMALL LETTER LONG S WITH DOT ABOVE; slongdotac-  
 cent  
 16051 \DeclareTextCompositeCommand{.}{PU}{\textlongs}{\9036\233}% U+1E9B  
 16052 % U+1EBC LATIN CAPITAL LETTER E WITH TILDE; Etilde  
 16053 \DeclareTextCompositeCommand{\~}{PU}{E}{\9036\274}% U+1EBC  
 16054 % U+1EBD LATIN SMALL LETTER E WITH TILDE; etilde  
 16055 \DeclareTextCompositeCommand{\~}{PU}{e}{\9036\275}% U+1EBD  
 16056 % U+1EF2 LATIN CAPITAL LETTER Y WITH GRAVE; Ygrave  
 16057 \DeclareTextCompositeCommand{`}{PU}{Y}{\9036\362}% U+1EF2  
 16058 % U+1EF3 LATIN SMALL LETTER Y WITH GRAVE; ygrave  
 16059 \DeclareTextCompositeCommand{`}{PU}{y}{\9036\363}% U+1EF3  
 16060 % U+1EF8 LATIN CAPITAL LETTER Y WITH TILDE; Ytilde  
 16061 \DeclareTextCompositeCommand{\~}{PU}{Y}{\9036\370}% U+1EF8  
 16062 % U+1EF9 LATIN SMALL LETTER Y WITH TILDE; ytilde  
 16063 \DeclareTextCompositeCommand{\~}{PU}{y}{\9036\371}% U+1EF9

## 50.2.12 General Punctuation: U+2000 to U+206F

16064 % U+200C ZERO WIDTH NON-JOINER; \*afii61664, zerowidthnonjoiner  
 16065 \DeclareTextCommand{\textcompwordmark}{PU}{\9040\014}% U+200C  
 16066 % U+2013 EN DASH; endash  
 16067 \DeclareTextCommand{\textendash}{PU}{\9040\023}% U+2013  
 16068 % U+2014 EM DASH; emdash

16069 \DeclareTextCommand{\textemdash}{PU}{\9040\024}% U+2014  
 16070 % U+2016 DOUBLE VERTICAL LINE; dblverticalbar  
 16071 \DeclareTextCommand{\textbardbl}{PU}{\9040\026}% U+2016  
 16072 % U+2018 LEFT SINGLE QUOTATION MARK; quoteleft  
 16073 \DeclareTextCommand{\textquoteleft}{PU}{\9040\030}% U+2018  
 16074 % U+2019 RIGHT SINGLE QUOTATION MARK; quoteright  
 16075 \DeclareTextCommand{\textquoteright}{PU}{\9040\031}% U+2019  
 16076 % U+201A SINGLE LOW-9 QUOTATION MARK; quotesinglbase  
 16077 \DeclareTextCommand{\quotesinglbase}{PU}{\9040\032}% U+201A  
 16078 % U+201C LEFT DOUBLE QUOTATION MARK; quotedblleft  
 16079 \DeclareTextCommand{\textquotedblleft}{PU}{\9040\034}% U+201C  
 16080 % U+201D RIGHT DOUBLE QUOTATION MARK; quotedblright  
 16081 \DeclareTextCommand{\textquotedblright}{PU}{\9040\035}% U+201D  
 16082 % U+201E DOUBLE LOW-9 QUOTATION MARK; quotedblbase  
 16083 \DeclareTextCommand{\quotedblbase}{PU}{\9040\036}% U+201E  
 16084 % U+2020 DAGGER; dagger  
 16085 \DeclareTextCommand{\textdagger}{PU}{\9040\040}% U+2020  
 16086 % U+2021 DOUBLE DAGGER; daggerdbl  
 16087 \DeclareTextCommand{\textdaggerdbl}{PU}{\9040\041}% U+2021  
 16088 % U+2022 BULLET; bullet  
 16089 \DeclareTextCommand{\textbullet}{PU}{\9040\042}% U+2022  
 16090 % U+2026 HORIZONTAL ELLIPSIS; ellipsis  
 16091 \DeclareTextCommand{\textellipsis}{PU}{\9040\046}% U+2026  
 16092 % U+2030 PER MILLE SIGN; perthousand  
 16093 \DeclareTextCommand{\textperthousand}{PU}{\9040\060}% U+2030  
 16094 % U+2031 PER TEN THOUSAND SIGN  
 16095 \DeclareTextCommand{\textpertenthousand}{PU}{\9040\061}% U+2031  
 16096 % U+2039 SINGLE LEFT-POINTING ANGLE QUOTATION MARK; guil-  
 ingleft  
 16097 \DeclareTextCommand{\guilsingleft}{PU}{\9040\071}% U+2039  
 16098 % U+203A SINGLE RIGHT-POINTING ANGLE QUOTATION MARK; guil-  
 singright  
 16099 \DeclareTextCommand{\guilsingright}{PU}{\9040\072}% U+203A  
 16100 % U+203B REFERENCE MARK; referencemark  
 16101 \DeclareTextCommand{\textreferencemark}{PU}{\9040\073}% U+203B  
 16102 % U+203D INTERROBANG  
 16103 \DeclareTextCommand{\textinterrobang}{PU}{\9040\075}% U+203D  
 16104 % U+2044 FRACTION SLASH; fraction  
 16105 \DeclareTextCommand{\textfractionsolidus}{PU}{\9040\104}% U+2044  
 16106 % U+2045 LEFT SQUARE BRACKET WITH QUILL  
 16107 \DeclareTextCommand{\textlquill}{PU}{\9040\105}% U+2045  
 16108 % U+2046 RIGHT SQUARE BRACKET WITH QUILL  
 16109 \DeclareTextCommand{\textrquill}{PU}{\9040\106}% U+2046  
 16110 % U+2052 COMMERCIAL MINUS SIGN  
 16111 \DeclareTextCommand{\textdiscount}{PU}{\9040\122}% U+2052

### 50.2.13 Superscripts and Subscripts: U+2070 to U+209F

16112 % U+2070 SUPERSCRIPT ZERO; zerosuperior  
 16113 \DeclareTextCommand{\textzerosuperior}{PU}{\9040\160}% U+2070  
 16114 % U+2074 SUPERSCRIPT FOUR; foursuperior  
 16115 \DeclareTextCommand{\textfoursuperior}{PU}{\9040\164}% U+2074  
 16116 % U+2075 SUPERSCRIPT FIVE; fivesuperior  
 16117 \DeclareTextCommand{\textfivesuperior}{PU}{\9040\165}% U+2075  
 16118 % U+2076 SUPERSCRIPT SIX; sixsuperior  
 16119 \DeclareTextCommand{\textsixsuperior}{PU}{\9040\166}% U+2076  
 16120 % U+2077 SUPERSCRIPT SEVEN; sevensuperior  
 16121 \DeclareTextCommand{\textsevensuperior}{PU}{\9040\167}% U+2077

16122 % U+2078 SUPERSCRIPT EIGHT; eightsuperior  
 16123 \DeclareTextCommand{\texteightsuperior}{PU}{\9040\170}% U+2078  
 16124 % U+2079 SUPERSCRIPT NINE; ninesuperior  
 16125 \DeclareTextCommand{\textninesuperior}{PU}{\9040\171}% U+2079  
 16126 % U+207A SUPERSCRIPT PLUS SIGN; plussuperior  
 16127 \DeclareTextCommand{\textplussuperior}{PU}{\9040\172}% U+207A  
 16128 % U+207B SUPERSCRIPT MINUS  
 16129 \DeclareTextCommand{\textminussuperior}{PU}{\9040\173}  
 16130 % U+207C SUPERSCRIPT EQUALS SIGN; equalsuperior  
 16131 \DeclareTextCommand{\textequalsuperior}{PU}{\9040\174}  
 16132 % U+207D SUPERSCRIPT LEFT PARENTHESIS; parenleftsuperior  
 16133 \DeclareTextCommand{\textparenleftsuperior}{PU}{\9040\175}  
 16134 % U+207E SUPERSCRIPT RIGHT PARENTHESIS; parenrightsuperior  
 16135 \DeclareTextCommand{\textparenrightsuperior}{PU}{\9040\176}  
 16136 % U+207F SUPERSCRIPT LATIN SMALL LETTER N; nsuperior  
 16137 \DeclareTextCommand{\textnsuperior}{PU}{\9040\177}  
 16138 % U+2080 SUBSCRIPT ZERO; zeroinferior  
 16139 \DeclareTextCommand{\textzeroinferior}{PU}{\9040\200}% U+2080  
 16140 % U+2081 SUBSCRIPT ONE; oneinferior  
 16141 \DeclareTextCommand{\textoneinferior}{PU}{\9040\201}% U+2081  
 16142 % U+2082 SUBSCRIPT TWO; twoinferior  
 16143 \DeclareTextCommand{\texttwoinferior}{PU}{\9040\202}% U+2082  
 16144 % U+2083 SUBSCRIPT THREE; threeinferior  
 16145 \DeclareTextCommand{\textthreeinferior}{PU}{\9040\203}% U+2083  
 16146 % U+2084 SUBSCRIPT FOUR; fourinferior  
 16147 \DeclareTextCommand{\textfourinferior}{PU}{\9040\204}% U+2084  
 16148 % U+2085 SUBSCRIPT FIVE; fiveinferior  
 16149 \DeclareTextCommand{\textfiveinferior}{PU}{\9040\205}% U+2085  
 16150 % U+2086 SUBSCRIPT SIX; sixinferior  
 16151 \DeclareTextCommand{\textsixinferior}{PU}{\9040\206}% U+2086  
 16152 % U+2087 SUBSCRIPT SEVEN; seveninferior  
 16153 \DeclareTextCommand{\textseveninferior}{PU}{\9040\207}% U+2087  
 16154 % U+2088 SUBSCRIPT EIGHT; eightinferior  
 16155 \DeclareTextCommand{\texteightinferior}{PU}{\9040\210}% U+2088  
 16156 % U+2089 SUBSCRIPT NINE; nineinferior  
 16157 \DeclareTextCommand{\textnineinferior}{PU}{\9040\211}% U+2089  
 16158 % U+208D SUBSCRIPT LEFT PARENTHESIS; parenleftinferior  
 16159 \DeclareTextCommand{\textparenleftinferior}{PU}{\9040\215}% U+208D  
 16160 % U+208E SUBSCRIPT RIGHT PARENTHESIS; parenrightinferior  
 16161 \DeclareTextCommand{\textparenrightinferior}{PU}{\9040\216}% U+208E

#### 50.2.14 Currency Symbols: U+20A0 to U+20CF

16162 % U+20A1 COLON SIGN; \*colonmonetary, colonsign  
 16163 \DeclareTextCommand{\textcolonmonetary}{PU}{\9040\241}% U+20A1  
 16164 % U+20A4 LIRA SIGN; afii08941, \*lira  
 16165 \DeclareTextCommand{\textlira}{PU}{\9040\244}% U+20A4  
 16166 % U+20A6 NAIRA SIGN  
 16167 \DeclareTextCommand{\textnaira}{PU}{\9040\246}% U+20A6  
 16168 % U+20A7 PESETA SIGN; peseta  
 16169 \DeclareTextCommand{\textpeseta}{PU}{\9040\247}% U+20A7  
 16170 % U+20A9 WON SIGN; won  
 16171 \DeclareTextCommand{\textwon}{PU}{\9040\251}% U+20A9  
 16172 % U+20AB DONG SIGN; dong  
 16173 \DeclareTextCommand{\textdong}{PU}{\9040\253}% U+20AB  
 16174 % U+20AC EURO SIGN; \*Euro, euro  
 16175 \DeclareTextCommand{\texteuro}{PU}{\9040\254}% U+20AC  
 16176 % U+20B1 PESO SIGN

16177 \DeclareTextCommand{\textpeso}{PU}{\9040\261}% U+20B1  
 16178 % U+20B2 GUARANI SIGN  
 16179 \DeclareTextCommand{\textguarani}{PU}{\9040\262}% U+20B2

### 50.2.15 Letterlike Symbols: U+2100 to U+214F

16180 % U+2103 DEGREE CELSIUS; centigrade  
 16181 \DeclareTextCommand{\textcelsius}{PU}{\9041\003}% U+2103  
 16182 % U+2116 NUMERO SIGN; \*afi61352, numero  
 16183 \DeclareTextCommand{\textnumero}{PU}{\9041\026}% U+2116  
 16184 % U+2117 SOUND RECORDING COPYRIGHT  
 16185 \DeclareTextCommand{\textcircledP}{PU}{\9041\027}% U+2117  
 16186 % U+211E PRESCRIPTION TAKE; prescription  
 16187 \DeclareTextCommand{\textrecipe}{PU}{\9041\036}% U+211E  
 16188 % U+2120 SERVICE MARK  
 16189 \DeclareTextCommand{\textservicemark}{PU}{\9041\040}% U+2120  
 16190 % U+2122 TRADE MARK SIGN; trademark  
 16191 \DeclareTextCommand{\texttrademark}{PU}{\9041\042}% U+2122  
 16192 % U+2126 OHM SIGN; Ohm, Omega  
 16193 \DeclareTextCommand{\textohm}{PU}{\9041\046}% U+2126  
 16194 % U+2127 INVERTED OHM SIGN  
 16195 \DeclareTextCommand{\textmho}{PU}{\9041\047}% U+2127  
 16196 % U+212B ANGSTROM SIGN; angstrom  
 16197 \DeclareTextCommand{\textangstrom}{PU}{\9041\053}% U+212B  
 16198 % U+212E ESTIMATED SYMBOL; estimated  
 16199 \DeclareTextCommand{\textestimated}{PU}{\9041\056}% U+212E  
 16200 % U+2135 ALEF SYMBOL; aleph  
 16201 \DeclareTextCommand{\textaleph}{PU}{\9041\065}% U+2135

### 50.2.16 Arrows: U+2190 to U+21FF

16202 % U+2190 LEFTWARDS ARROW; arrowleft  
 16203 \DeclareTextCommand{\textleftarrow}{PU}{\9041\220}% U+2190  
 16204 % U+2191 UPWARDS ARROW; arrowup  
 16205 \DeclareTextCommand{\textuparrow}{PU}{\9041\221}% U+2191  
 16206 % U+2192 RIGHTWARDS ARROW; arrowright  
 16207 \DeclareTextCommand{\textrightarrow}{PU}{\9041\222}% U+2192  
 16208 % U+2193 DOWNWARDS ARROW; arrowdown  
 16209 \DeclareTextCommand{\textdownarrow}{PU}{\9041\223}% U+2193

### 50.2.17 Mathematical Operators: U+2200 to U+22FF

16210 % U+2212 MINUS SIGN; minus  
 16211 \DeclareTextCommand{\textminus}{PU}{\9042\022}% U+2212  
 16212 % U+221A SQUARE ROOT; radical  
 16213 \DeclareTextCommand{\textsurd}{PU}{\9042\032}% U+221A

### 50.2.18 Miscellaneous Technical: U+2300 to U+23FF

16214 % U+2329 LEFT-POINTING ANGLE BRACKET; angleleft  
 16215 \DeclareTextCommand{\textlangle}{PU}{\9043\051}% U+2329  
 16216 % U+232A RIGHT-POINTING ANGLE BRACKET; angleright  
 16217 \DeclareTextCommand{\textrangle}{PU}{\9043\052}% U+232A

### 50.2.19 Control Pictures: U+2400 to U+243F

16218 % U+2422 BLANK SYMBOL  
 16219 \DeclareTextCommand{\textblank}{PU}{\9044\042}% U+2422  
 16220 % U+2423 OPEN BOX; blank  
 16221 \DeclareTextCommand{\textvisiblespace}{PU}{\9044\043}% U+2423

### 50.2.20 Enclosed Alphanumerics: U+2460 to U+24FF

16222 % U+2460 CIRCLED DIGIT ONE; onecircle  
 16223 \DeclareTextCompositeCommand{\textcircled}{PU}{1}{\9044\140}% U+2460  
 16224 % U+2461 CIRCLED DIGIT TWO; twocircle  
 16225 \DeclareTextCompositeCommand{\textcircled}{PU}{2}{\9044\141}% U+2461  
 16226 % U+2462 CIRCLED DIGIT THREE; threecircle  
 16227 \DeclareTextCompositeCommand{\textcircled}{PU}{3}{\9044\142}% U+2462  
 16228 % U+2463 CIRCLED DIGIT FOUR; fourcircle  
 16229 \DeclareTextCompositeCommand{\textcircled}{PU}{4}{\9044\143}% U+2463  
 16230 % U+2464 CIRCLED DIGIT FIVE; fivecircle  
 16231 \DeclareTextCompositeCommand{\textcircled}{PU}{5}{\9044\144}% U+2464  
 16232 % U+2465 CIRCLED DIGIT SIX; sixcircle  
 16233 \DeclareTextCompositeCommand{\textcircled}{PU}{6}{\9044\145}% U+2465  
 16234 % U+2466 CIRCLED DIGIT SEVEN; sevenscircle  
 16235 \DeclareTextCompositeCommand{\textcircled}{PU}{7}{\9044\146}% U+2466  
 16236 % U+2467 CIRCLED DIGIT EIGHT; eightcircle  
 16237 \DeclareTextCompositeCommand{\textcircled}{PU}{8}{\9044\147}% U+2467  
 16238 % U+2468 CIRCLED DIGIT NINE; ninecircle  
 16239 \DeclareTextCompositeCommand{\textcircled}{PU}{9}{\9044\150}% U+2468  
 16240 % U+2469 CIRCLED NUMBER TEN; tencircle  
 16241 \DeclareTextCompositeCommand{\textcircled}{PU}{10}{\9044\151}% U+2469  
 16242 % U+246A CIRCLED NUMBER ELEVEN; elevencircle  
 16243 \DeclareTextCompositeCommand{\textcircled}{PU}{11}{\9044\152}% U+246A  
 16244 % U+246B CIRCLED NUMBER TWELVE; twelvecircle  
 16245 \DeclareTextCompositeCommand{\textcircled}{PU}{12}{\9044\153}% U+246B  
 16246 % U+246C CIRCLED NUMBER THIRTEEN; thirteencircle  
 16247 \DeclareTextCompositeCommand{\textcircled}{PU}{13}{\9044\154}% U+246C  
 16248 % U+246D CIRCLED NUMBER FOURTEEN; fourteencircle  
 16249 \DeclareTextCompositeCommand{\textcircled}{PU}{14}{\9044\155}% U+246D  
 16250 % U+246E CIRCLED NUMBER FIFTEEN; fifteencircle  
 16251 \DeclareTextCompositeCommand{\textcircled}{PU}{15}{\9044\156}% U+246E  
 16252 % U+246F CIRCLED NUMBER SIXTEEN; sixteencircle  
 16253 \DeclareTextCompositeCommand{\textcircled}{PU}{16}{\9044\157}% U+246F  
 16254 % U+2470 CIRCLED NUMBER SEVENTEEN; seventeencircle  
 16255 \DeclareTextCompositeCommand{\textcircled}{PU}{17}{\9044\160}% U+2470  
 16256 % U+2471 CIRCLED NUMBER EIGHTEEN; eighteencircle  
 16257 \DeclareTextCompositeCommand{\textcircled}{PU}{18}{\9044\161}% U+2471  
 16258 % U+2472 CIRCLED NUMBER NINETEEN; nineteencircle  
 16259 \DeclareTextCompositeCommand{\textcircled}{PU}{19}{\9044\162}% U+2472  
 16260 % U+2473 CIRCLED NUMBER TWENTY; twentycircle  
 16261 \DeclareTextCompositeCommand{\textcircled}{PU}{20}{\9044\163}% U+2473  
 16262 % U+24B6 CIRCLED LATIN CAPITAL LETTER A; Acircle  
 16263 \DeclareTextCompositeCommand{\textcircled}{PU}{A}{\9044\266}% U+24B6  
 16264 % U+24B7 CIRCLED LATIN CAPITAL LETTER B; Bcircle  
 16265 \DeclareTextCompositeCommand{\textcircled}{PU}{B}{\9044\267}% U+24B7  
 16266 % U+24B8 CIRCLED LATIN CAPITAL LETTER C; Ccircle  
 16267 \DeclareTextCompositeCommand{\textcircled}{PU}{C}{\9044\270}% U+24B8  
 16268 % U+24B9 CIRCLED LATIN CAPITAL LETTER D; Dcircle  
 16269 \DeclareTextCompositeCommand{\textcircled}{PU}{D}{\9044\271}% U+24B9  
 16270 % U+24BA CIRCLED LATIN CAPITAL LETTER E; Ecircle  
 16271 \DeclareTextCompositeCommand{\textcircled}{PU}{E}{\9044\272}% U+24BA  
 16272 % U+24BB CIRCLED LATIN CAPITAL LETTER F; Fcircle  
 16273 \DeclareTextCompositeCommand{\textcircled}{PU}{F}{\9044\273}% U+24BB  
 16274 % U+24BC CIRCLED LATIN CAPITAL LETTER G; Gcircle  
 16275 \DeclareTextCompositeCommand{\textcircled}{PU}{G}{\9044\274}% U+24BC  
 16276 % U+24BD CIRCLED LATIN CAPITAL LETTER H; Hcircle  
 16277 \DeclareTextCompositeCommand{\textcircled}{PU}{H}{\9044\275}% U+24BD  
 16278 % U+24BE CIRCLED LATIN CAPITAL LETTER I; Icircle

16279 \DeclareTextCompositeCommand{\textcircled}{PU}{I}{\9044\276}% U+24BE  
 16280 % U+24BF CIRCLED LATIN CAPITAL LETTER J; Jcircle  
 16281 \DeclareTextCompositeCommand{\textcircled}{PU}{J}{\9044\277}% U+24BF  
 16282 % U+24C0 CIRCLED LATIN CAPITAL LETTER K; Kcircle  
 16283 \DeclareTextCompositeCommand{\textcircled}{PU}{K}{\9044\300}% U+24C0  
 16284 % U+24C1 CIRCLED LATIN CAPITAL LETTER L; Lcircle  
 16285 \DeclareTextCompositeCommand{\textcircled}{PU}{L}{\9044\301}% U+24C1  
 16286 % U+24C2 CIRCLED LATIN CAPITAL LETTER M; Mcircle  
 16287 \DeclareTextCompositeCommand{\textcircled}{PU}{M}{\9044\302}% U+24C2  
 16288 % U+24C3 CIRCLED LATIN CAPITAL LETTER N; Ncircle  
 16289 \DeclareTextCompositeCommand{\textcircled}{PU}{N}{\9044\303}% U+24C3  
 16290 % U+24C4 CIRCLED LATIN CAPITAL LETTER O; Ocircle  
 16291 \DeclareTextCompositeCommand{\textcircled}{PU}{O}{\9044\304}% U+24C4  
 16292 % U+24C5 CIRCLED LATIN CAPITAL LETTER P; Pcircle  
 16293 \DeclareTextCompositeCommand{\textcircled}{PU}{P}{\9044\305}% U+24C5  
 16294 % U+24C6 CIRCLED LATIN CAPITAL LETTER Q; Qcircle  
 16295 \DeclareTextCompositeCommand{\textcircled}{PU}{Q}{\9044\306}% U+24C6  
 16296 % U+24C7 CIRCLED LATIN CAPITAL LETTER R; Rcircle  
 16297 \DeclareTextCompositeCommand{\textcircled}{PU}{R}{\9044\307}% U+24C7  
 16298 % U+24C8 CIRCLED LATIN CAPITAL LETTER S; Scircle  
 16299 \DeclareTextCompositeCommand{\textcircled}{PU}{S}{\9044\310}% U+24C8  
 16300 % U+24C9 CIRCLED LATIN CAPITAL LETTER T; Tcircle  
 16301 \DeclareTextCompositeCommand{\textcircled}{PU}{T}{\9044\311}% U+24C9  
 16302 % U+24CA CIRCLED LATIN CAPITAL LETTER U; Ucircle  
 16303 \DeclareTextCompositeCommand{\textcircled}{PU}{U}{\9044\312}% U+24CA  
 16304 % U+24CB CIRCLED LATIN CAPITAL LETTER V; Vcircle  
 16305 \DeclareTextCompositeCommand{\textcircled}{PU}{V}{\9044\313}% U+24CB  
 16306 % U+24CC CIRCLED LATIN CAPITAL LETTER W; Wcircle  
 16307 \DeclareTextCompositeCommand{\textcircled}{PU}{W}{\9044\314}% U+24CC  
 16308 % U+24CD CIRCLED LATIN CAPITAL LETTER X; Xcircle  
 16309 \DeclareTextCompositeCommand{\textcircled}{PU}{X}{\9044\315}% U+24CD  
 16310 % U+24CE CIRCLED LATIN CAPITAL LETTER Y; Ycircle  
 16311 \DeclareTextCompositeCommand{\textcircled}{PU}{Y}{\9044\316}% U+24CE  
 16312 % U+24CF CIRCLED LATIN CAPITAL LETTER Z; Zcircle  
 16313 \DeclareTextCompositeCommand{\textcircled}{PU}{Z}{\9044\317}% U+24CF  
 16314 % U+24D0 CIRCLED LATIN SMALL LETTER A; acircle  
 16315 \DeclareTextCompositeCommand{\textcircled}{PU}{a}{\9044\320}% U+24D0  
 16316 % U+24D1 CIRCLED LATIN SMALL LETTER B; bcircle  
 16317 \DeclareTextCompositeCommand{\textcircled}{PU}{b}{\9044\321}% U+24D1  
 16318 % U+24D2 CIRCLED LATIN SMALL LETTER C; ccircle  
 16319 \DeclareTextCompositeCommand{\textcircled}{PU}{c}{\9044\322}% U+24D2  
 16320 % U+24D3 CIRCLED LATIN SMALL LETTER D; dcircle  
 16321 \DeclareTextCompositeCommand{\textcircled}{PU}{d}{\9044\323}% U+24D3  
 16322 % U+24D4 CIRCLED LATIN SMALL LETTER E; ecircle  
 16323 \DeclareTextCompositeCommand{\textcircled}{PU}{e}{\9044\324}% U+24D4  
 16324 % U+24D5 CIRCLED LATIN SMALL LETTER F; fcircle  
 16325 \DeclareTextCompositeCommand{\textcircled}{PU}{f}{\9044\325}% U+24D5  
 16326 % U+24D6 CIRCLED LATIN SMALL LETTER G; gcircle  
 16327 \DeclareTextCompositeCommand{\textcircled}{PU}{g}{\9044\326}% U+24D6  
 16328 % U+24D7 CIRCLED LATIN SMALL LETTER H; hcircle  
 16329 \DeclareTextCompositeCommand{\textcircled}{PU}{h}{\9044\327}% U+24D7  
 16330 % U+24D8 CIRCLED LATIN SMALL LETTER I; icircle  
 16331 \DeclareTextCompositeCommand{\textcircled}{PU}{i}{\9044\330}% U+24D8  
 16332 % U+24D9 CIRCLED LATIN SMALL LETTER J; jcircle  
 16333 \DeclareTextCompositeCommand{\textcircled}{PU}{j}{\9044\331}% U+24D9  
 16334 % U+24DA CIRCLED LATIN SMALL LETTER K; kcircle  
 16335 \DeclareTextCompositeCommand{\textcircled}{PU}{k}{\9044\332}% U+24DA

16336 % U+24DB CIRCLED LATIN SMALL LETTER L; lcircle  
16337 \DeclareTextCompositeCommand{\textcircled}{PU}{l}{\9044\333}% U+24DB  
16338 % U+24DC CIRCLED LATIN SMALL LETTER M; mcircle  
16339 \DeclareTextCompositeCommand{\textcircled}{PU}{m}{\9044\334}% U+24DC  
16340 % U+24DD CIRCLED LATIN SMALL LETTER N; ncircle  
16341 \DeclareTextCompositeCommand{\textcircled}{PU}{n}{\9044\335}% U+24DD  
16342 % U+24DE CIRCLED LATIN SMALL LETTER O; ocircle  
16343 \DeclareTextCompositeCommand{\textcircled}{PU}{o}{\9044\336}% U+24DE  
16344 % U+24DF CIRCLED LATIN SMALL LETTER P; pcircle  
16345 \DeclareTextCompositeCommand{\textcircled}{PU}{p}{\9044\337}% U+24DF  
16346 % U+24E0 CIRCLED LATIN SMALL LETTER Q; qcircle  
16347 \DeclareTextCompositeCommand{\textcircled}{PU}{q}{\9044\340}% U+24E0  
16348 % U+24E1 CIRCLED LATIN SMALL LETTER R; rcircle  
16349 \DeclareTextCompositeCommand{\textcircled}{PU}{r}{\9044\341}% U+24E1  
16350 % U+24E2 CIRCLED LATIN SMALL LETTER S; scircle  
16351 \DeclareTextCompositeCommand{\textcircled}{PU}{s}{\9044\342}% U+24E2  
16352 % U+24E3 CIRCLED LATIN SMALL LETTER T; tcircle  
16353 \DeclareTextCompositeCommand{\textcircled}{PU}{t}{\9044\343}% U+24E3  
16354 % U+24E4 CIRCLED LATIN SMALL LETTER U; ucircle  
16355 \DeclareTextCompositeCommand{\textcircled}{PU}{u}{\9044\344}% U+24E4  
16356 % U+24E5 CIRCLED LATIN SMALL LETTER V; vcircle  
16357 \DeclareTextCompositeCommand{\textcircled}{PU}{v}{\9044\345}% U+24E5  
16358 % U+24E6 CIRCLED LATIN SMALL LETTER W; wcircle  
16359 \DeclareTextCompositeCommand{\textcircled}{PU}{w}{\9044\346}% U+24E6  
16360 % U+24E7 CIRCLED LATIN SMALL LETTER X; xcircle  
16361 \DeclareTextCompositeCommand{\textcircled}{PU}{x}{\9044\347}% U+24E7  
16362 % U+24E8 CIRCLED LATIN SMALL LETTER Y; ycircle  
16363 \DeclareTextCompositeCommand{\textcircled}{PU}{y}{\9044\350}% U+24E8  
16364 % U+24E9 CIRCLED LATIN SMALL LETTER Z; zcircle  
16365 \DeclareTextCompositeCommand{\textcircled}{PU}{z}{\9044\351}% U+24E9  
16366 % U+24EA CIRCLED DIGIT ZERO  
16367 \DeclareTextCompositeCommand{\textcircled}{PU}{0}{\9044\352}% U+24EA

### 50.2.21 Box Drawing: U+2500 to U+257F

16368 % U+25E6 WHITE BULLET; \*openbullet, whitebullet  
16369 \DeclareTextCommand{\textopenbullet}{PU}{\9045\346}% U+25E6  
16370 % U+25EF LARGE CIRCLE; largecircle  
16371 \DeclareTextCommand{\textbigcircle}{PU}{\9045\357}% U+25EF

### 50.2.22 Miscellaneous Symbols: U+2600 to U+26FF

16372 % U+266A EIGHTH NOTE; musicalnote  
16373 \DeclareTextCommand{\textmusicalnote}{PU}{\9046\152}% U+266A  
16374 % U+26AD MARRIAGE SYMBOL  
16375 \DeclareTextCommand{\textmarried}{PU}{\9046\255}% U+26AD  
16376 % U+26AE DIVORCE SYMBOL  
16377 \DeclareTextCommand{\textdivorced}{PU}{\9046\256}% U+26AE

### 50.2.23 Miscellaneous Mathematical Symbols-A: U+27C0 to U+27EF

16378 % U+27E6 MATHEMATICAL LEFT WHITE SQUARE BRACKET  
16379 \DeclareTextCommand{\textlbrackdbl}{PU}{\9047\346}% U+27E6  
16380 % U+27E7 MATHEMATICAL RIGHT WHITE SQUARE BRACKET  
16381 \DeclareTextCommand{\textrbrackdbl}{PU}{\9047\347}% U+27E7

### 50.2.24 Alphabetic Presentation Forms: U+FB00 to U+FB4F

16382 % U+FB01 LATIN SMALL LIGATURE FI; fi  
16383 \DeclareTextCommand{\textfi}{PU}{\9373\001}% U+FB01  
16384 % U+FB02 LATIN SMALL LIGATURE FL; fl



```
16385 \DeclareTextCommand{\textfl}{PU}{\9373\002}% U+FB02
```

### 50.2.25 Miscellaneous

```
16386 \DeclareTextCommand{\SS}{PU}{SS}
```

### 50.2.26 Aliases

Aliases (german.sty)

```
16387 \DeclareTextCommand{\textglqq}{PU}{\quotedblbase}
16388 \DeclareTextCommand{\textgrqq}{PU}{\textquotedblleft}
16389 \DeclareTextCommand{\textglq}{PU}{\quotesinglbase}
16390 \DeclareTextCommand{\textgrq}{PU}{\textquoteleft}
16391 \DeclareTextCommand{\textflqq}{PU}{\guillemotleft}
16392 \DeclareTextCommand{\textfrqq}{PU}{\guillemotright}
16393 \DeclareTextCommand{\textflq}{PU}{\guilsinglleft}
16394 \DeclareTextCommand{\textfrq}{PU}{\guilsinglright}
```

Aliases (math names)

```
16395 \DeclareTextCommand{\textneg}{PU}{\textlogicalnot}
16396 \DeclareTextCommand{\texttimes}{PU}{\textmultiply}
16397 \DeclareTextCommand{\textdiv}{PU}{\textdivide}
16398 \DeclareTextCommand{\textpm}{PU}{\textplusminus}
16399 \DeclareTextCommand{\textcdot}{PU}{\textperiodcentered}
16400 </puenc>
```

## 50.3 PU encoding, additions for VnTeX

This file is provided by Han The Thanh.

```
16401 <*puvnenc>
16402 \DeclareTextCommand{\abreve}{PU}{\81\003}
16403 \DeclareTextCommand{\acircumflex}{PU}{\80\342}
16404 \DeclareTextCommand{\dj}{PU}{\81\021}
16405 \DeclareTextCommand{\ecircumflex}{PU}{\80\352}
16406 \DeclareTextCommand{\ocircumflex}{PU}{\80\364}
16407 \DeclareTextCommand{\ohorn}{PU}{\81\241}
16408 \DeclareTextCommand{\uhorn}{PU}{\81\260}
16409 \DeclareTextCommand{\ABREVE}{PU}{\81\002}
16410 \DeclareTextCommand{\ACIRCUMFLEX}{PU}{\80\302}
16411 \DeclareTextCommand{\DJ}{PU}{\81\020}
16412 \DeclareTextCommand{\ECIRCUMFLEX}{PU}{\80\312}
16413 \DeclareTextCommand{\OCIRCUMFLEX}{PU}{\80\324}
16414 \DeclareTextCommand{\OHORN}{PU}{\81\240}
16415 \DeclareTextCommand{\UHORN}{PU}{\81\257}
16416 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\341}
16417 \DeclareTextCompositeCommand{\d}{PU}{a}{\9036\241}
16418 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\340}
16419 \DeclareTextCompositeCommand{\h}{PU}{a}{\9036\243}
16420 \DeclareTextCompositeCommand{\~}{PU}{a}{\80\343}
16421 \DeclareTextCompositeCommand{\'}{PU}{\abreve}{\9036\257}
16422 \DeclareTextCompositeCommand{\d}{PU}{\abreve}{\9036\267}
16423 \DeclareTextCompositeCommand{\'}{PU}{\abreve}{\9036\261}
16424 \DeclareTextCompositeCommand{\h}{PU}{\abreve}{\9036\263}
16425 \DeclareTextCompositeCommand{\~}{PU}{\abreve}{\9036\265}
16426 \DeclareTextCompositeCommand{\'}{PU}{\acircumflex}{\9036\245}
16427 \DeclareTextCompositeCommand{\d}{PU}{\acircumflex}{\9036\255}
16428 \DeclareTextCompositeCommand{\'}{PU}{\acircumflex}{\9036\247}
```

16429 \DeclareTextCompositeCommand{\h}{PU}{\acircumflex}{\9036\251}  
16430 \DeclareTextCompositeCommand{\~}{PU}{\acircumflex}{\9036\253}  
16431 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\351}  
16432 \DeclareTextCompositeCommand{\d}{PU}{e}{\9036\271}  
16433 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\350}  
16434 \DeclareTextCompositeCommand{\h}{PU}{e}{\9036\273}  
16435 \DeclareTextCompositeCommand{\~}{PU}{e}{\9036\275}  
16436 \DeclareTextCompositeCommand{\'}{PU}{\ecircumflex}{\9036\277}  
16437 \DeclareTextCompositeCommand{\d}{PU}{\ecircumflex}{\9036\307}  
16438 \DeclareTextCompositeCommand{\'}{PU}{\ecircumflex}{\9036\301}  
16439 \DeclareTextCompositeCommand{\h}{PU}{\ecircumflex}{\9036\303}  
16440 \DeclareTextCompositeCommand{\~}{PU}{\ecircumflex}{\9036\305}  
16441 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\355}  
16442 \DeclareTextCompositeCommand{\d}{PU}{i}{\9036\313}  
16443 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\354}  
16444 \DeclareTextCompositeCommand{\h}{PU}{i}{\9036\311}  
16445 \DeclareTextCompositeCommand{\~}{PU}{i}{\81\051}  
16446 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\363}  
16447 \DeclareTextCompositeCommand{\d}{PU}{o}{\9036\315}  
16448 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\362}  
16449 \DeclareTextCompositeCommand{\h}{PU}{o}{\9036\317}  
16450 \DeclareTextCompositeCommand{\~}{PU}{o}{\80\365}  
16451 \DeclareTextCompositeCommand{\'}{PU}{\ocircumflex}{\9036\321}  
16452 \DeclareTextCompositeCommand{\d}{PU}{\ocircumflex}{\9036\331}  
16453 \DeclareTextCompositeCommand{\~}{PU}{\ocircumflex}{\9036\323}  
16454 \DeclareTextCompositeCommand{\h}{PU}{\ocircumflex}{\9036\325}  
16455 \DeclareTextCompositeCommand{\~}{PU}{\ocircumflex}{\9036\327}  
16456 \DeclareTextCompositeCommand{\'}{PU}{\ohorn}{\9036\333}  
16457 \DeclareTextCompositeCommand{\d}{PU}{\ohorn}{\9036\343}  
16458 \DeclareTextCompositeCommand{\'}{PU}{\ohorn}{\9036\335}  
16459 \DeclareTextCompositeCommand{\h}{PU}{\ohorn}{\9036\337}  
16460 \DeclareTextCompositeCommand{\~}{PU}{\ohorn}{\9036\341}  
16461 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\372}  
16462 \DeclareTextCompositeCommand{\d}{PU}{u}{\9036\345}  
16463 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\371}  
16464 \DeclareTextCompositeCommand{\h}{PU}{u}{\9036\347}  
16465 \DeclareTextCompositeCommand{\~}{PU}{u}{\81\151}  
16466 \DeclareTextCompositeCommand{\'}{PU}{\uhorn}{\9036\351}  
16467 \DeclareTextCompositeCommand{\d}{PU}{\uhorn}{\9036\361}  
16468 \DeclareTextCompositeCommand{\'}{PU}{\uhorn}{\9036\353}  
16469 \DeclareTextCompositeCommand{\h}{PU}{\uhorn}{\9036\355}  
16470 \DeclareTextCompositeCommand{\~}{PU}{\uhorn}{\9036\357}  
16471 \DeclareTextCompositeCommand{\'}{PU}{y}{\80\375}  
16472 \DeclareTextCompositeCommand{\d}{PU}{y}{\9036\365}  
16473 \DeclareTextCompositeCommand{\'}{PU}{y}{\9036\363}  
16474 \DeclareTextCompositeCommand{\h}{PU}{y}{\9036\367}  
16475 \DeclareTextCompositeCommand{\~}{PU}{y}{\9036\371}  
16476 \DeclareTextCompositeCommand{\'}{PU}{A}{\80\301}  
16477 \DeclareTextCompositeCommand{\d}{PU}{A}{\9036\240}  
16478 \DeclareTextCompositeCommand{\'}{PU}{A}{\80\300}  
16479 \DeclareTextCompositeCommand{\h}{PU}{A}{\9036\242}  
16480 \DeclareTextCompositeCommand{\~}{PU}{A}{\80\303}  
16481 \DeclareTextCompositeCommand{\'}{PU}{\ABREVE}{\9036\256}  
16482 \DeclareTextCompositeCommand{\d}{PU}{\ABREVE}{\9036\266}  
16483 \DeclareTextCompositeCommand{\'}{PU}{\ABREVE}{\9036\260}  
16484 \DeclareTextCompositeCommand{\h}{PU}{\ABREVE}{\9036\262}  
16485 \DeclareTextCompositeCommand{\~}{PU}{\ABREVE}{\9036\264}

```

16486 \DeclareTextCompositeCommand{'}{PU}{\ACIRCUMFLEX}{\9036\244}
16487 \DeclareTextCompositeCommand{d}{PU}{\ACIRCUMFLEX}{\9036\254}
16488 \DeclareTextCompositeCommand{'}{PU}{\ACIRCUMFLEX}{\9036\246}
16489 \DeclareTextCompositeCommand{h}{PU}{\ACIRCUMFLEX}{\9036\250}
16490 \DeclareTextCompositeCommand{~}{PU}{\ACIRCUMFLEX}{\9036\252}
16491 \DeclareTextCompositeCommand{'}{PU}{E}{\80\311}
16492 \DeclareTextCompositeCommand{d}{PU}{E}{\9036\270}
16493 \DeclareTextCompositeCommand{'}{PU}{E}{\80\310}
16494 \DeclareTextCompositeCommand{h}{PU}{E}{\9036\272}
16495 \DeclareTextCompositeCommand{~}{PU}{E}{\9036\274}
16496 \DeclareTextCompositeCommand{'}{PU}{\ECIRCUMFLEX}{\9036\276}
16497 \DeclareTextCompositeCommand{d}{PU}{\ECIRCUMFLEX}{\9036\306}
16498 \DeclareTextCompositeCommand{'}{PU}{\ECIRCUMFLEX}{\9036\300}
16499 \DeclareTextCompositeCommand{h}{PU}{\ECIRCUMFLEX}{\9036\302}
16500 \DeclareTextCompositeCommand{~}{PU}{\ECIRCUMFLEX}{\9036\304}
16501 \DeclareTextCompositeCommand{'}{PU}{I}{\80\315}
16502 \DeclareTextCompositeCommand{d}{PU}{I}{\9036\312}
16503 \DeclareTextCompositeCommand{'}{PU}{I}{\80\314}
16504 \DeclareTextCompositeCommand{h}{PU}{I}{\9036\310}
16505 \DeclareTextCompositeCommand{~}{PU}{I}{\81\050}
16506 \DeclareTextCompositeCommand{'}{PU}{O}{\80\323}
16507 \DeclareTextCompositeCommand{d}{PU}{O}{\9036\314}
16508 \DeclareTextCompositeCommand{'}{PU}{O}{\80\322}
16509 \DeclareTextCompositeCommand{h}{PU}{O}{\9036\316}
16510 \DeclareTextCompositeCommand{~}{PU}{O}{\80\325}
16511 \DeclareTextCompositeCommand{'}{PU}{\OCIRCUMFLEX}{\9036\320}
16512 \DeclareTextCompositeCommand{d}{PU}{\OCIRCUMFLEX}{\9036\330}
16513 \DeclareTextCompositeCommand{'}{PU}{\OCIRCUMFLEX}{\9036\322}
16514 \DeclareTextCompositeCommand{h}{PU}{\OCIRCUMFLEX}{\9036\324}
16515 \DeclareTextCompositeCommand{~}{PU}{\OCIRCUMFLEX}{\9036\326}
16516 \DeclareTextCompositeCommand{'}{PU}{\OHORN}{\9036\332}
16517 \DeclareTextCompositeCommand{d}{PU}{\OHORN}{\9036\342}
16518 \DeclareTextCompositeCommand{'}{PU}{\OHORN}{\9036\334}
16519 \DeclareTextCompositeCommand{h}{PU}{\OHORN}{\9036\336}
16520 \DeclareTextCompositeCommand{~}{PU}{\OHORN}{\9036\340}
16521 \DeclareTextCompositeCommand{'}{PU}{U}{\80\332}
16522 \DeclareTextCompositeCommand{d}{PU}{U}{\9036\344}
16523 \DeclareTextCompositeCommand{'}{PU}{U}{\80\331}
16524 \DeclareTextCompositeCommand{h}{PU}{U}{\9036\346}
16525 \DeclareTextCompositeCommand{~}{PU}{U}{\81\150}
16526 \DeclareTextCompositeCommand{'}{PU}{\UHORN}{\9036\350}
16527 \DeclareTextCompositeCommand{d}{PU}{\UHORN}{\9036\360}
16528 \DeclareTextCompositeCommand{'}{PU}{\UHORN}{\9036\352}
16529 \DeclareTextCompositeCommand{h}{PU}{\UHORN}{\9036\354}
16530 \DeclareTextCompositeCommand{~}{PU}{\UHORN}{\9036\356}
16531 \DeclareTextCompositeCommand{'}{PU}{Y}{\80\335}
16532 \DeclareTextCompositeCommand{d}{PU}{Y}{\9036\364}
16533 \DeclareTextCompositeCommand{'}{PU}{Y}{\9036\362}
16534 \DeclareTextCompositeCommand{h}{PU}{Y}{\9036\366}
16535 \DeclareTextCompositeCommand{~}{PU}{Y}{\9036\370}
16536 </puvnenc>

```

## 50.4 PU encoding, additions for Arabi

This file is provided and maintained by Youssef Jabri.

```
16537 <*puarenc>
```

16538 \DeclareTextCommand{\hamza}{PU}{\86\041}% 0621;afi57409;ARABIC LETTER HAMZA

16539 \DeclareTextCommand{\alefmadda}{PU}{\86\042}% 0622;afi57410;ARABIC LETTER ALEF WITH MADDA ABOVE

16540 \DeclareTextCommand{\alefhamza}{PU}{\86\043}% 0623;afi57411;ARABIC LETTER ALEF WITH HAMZA ABOVE

16541 \DeclareTextCommand{\wawhamza}{PU}{\86\044}% 0624;afi57412;ARABIC LETTER WAW WITH HAMZA ABOVE

16542 \DeclareTextCommand{\aleflowerhamza}{PU}{\86\045}% 0625;afi57413;ARABIC LETTER ALEF WITH HAMZA BELOW

16543 \DeclareTextCommand{\yahamza}{PU}{\86\046}% 0626;afi57414;ARABIC LETTER YEH WITH HAMZA ABOVE

16544 \DeclareTextCommand{\alef}{PU}{\86\047}% 0627;afi57415;ARABIC LETTER ALEF

16545 \DeclareTextCommand{\baa}{PU}{\86\050}% 0628;afi57416;ARABIC LETTER BEH

16546 \DeclareTextCommand{\T}{PU}{\86\051}% 0629;afi57417;ARABIC LETTER TEH MARBUTA

16547 \DeclareTextCommand{\taa}{PU}{\86\052}% 062A;afi57418;ARABIC LETTER TEH

16548 \DeclareTextCommand{\thaa}{PU}{\86\053}% 062B;afi57419;ARABIC LETTER THEH

16549 \DeclareTextCommand{\jeem}{PU}{\86\054}% 062C;afi57420;ARABIC LETTER JEEM

16550 \DeclareTextCommand{\Haa}{PU}{\86\055}% 062D;afi57421;ARABIC LETTER HAH

16551 \DeclareTextCommand{\kha}{PU}{\86\056}% 062E;afi57422;ARABIC LETTER KHAH

16552 \DeclareTextCommand{\dal}{PU}{\86\057}% 062F;afi57423;ARABIC LETTER DAL

16553 \DeclareTextCommand{\dhal}{PU}{\86\060}% 0630;afi57424;ARABIC LETTER THAL

16554 \DeclareTextCommand{\ra}{PU}{\86\061}% 0631;afi57425;ARABIC LETTER REH

16555 \DeclareTextCommand{\zay}{PU}{\86\062}% 0632;afi57426;ARABIC LETTER ZAIN

16556 \DeclareTextCommand{\seen}{PU}{\86\063}% 0633;afi57427;ARABIC LETTER SEEN

16557 \DeclareTextCommand{\sheen}{PU}{\86\064}% 0634;afi57428;ARABIC LETTER SHEEN

16558 \DeclareTextCommand{\sad}{PU}{\86\065}% 0635;afi57429;ARABIC LETTER SAD

16559 \DeclareTextCommand{\dad}{PU}{\86\066}% 0636;afi57430;ARABIC LETTER DAD

16560 \DeclareTextCommand{\Ta}{PU}{\86\067}% 0637;afi57431;ARABIC LETTER TAH

16561 \DeclareTextCommand{\za}{PU}{\86\070}% 0638;afi57432;ARABIC LETTER ZAH

16562 \DeclareTextCommand{\ayn}{PU}{\86\071}% 0639;afi57433;ARABIC LETTER AIN

16563 \DeclareTextCommand{\ghayn}{PU}{\86\072}% 063A;afi57434;ARABIC LETTER GHAIN

16564 \DeclareTextCommand{\tatweel}{PU}{\86\100}% 0640;afi57440;ARABIC TATWHEEL

16565 \DeclareTextCommand{\fa}{PU}{\86\101}% 0641;afi57441;ARABIC LETTER FEH

16566 \DeclareTextCommand{\qaf}{PU}{\86\102}% 0642;afi57442;ARABIC LETTER QAF

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16573 \DeclareTextCommand{\alefmaqsura}{PU}{\86\111}% 0649;afi57449;ARABIC LETTER ALEF MAKSURA

16574 \DeclareTextCommand{\ya}{PU}{\86\112}% 064A;afi57450;ARABIC LETTER YEH

16575 \DeclareTextCommand{\nasb}{PU}{\86\113}% 064B;afi57451;ARABIC FATHATAN

16576 \DeclareTextCommand{\raff}{PU}{\86\114}% 064C;afi57452;ARABIC DAMMATAN

16577 \DeclareTextCommand{\jarr}{PU}{\86\115}% 064D;afi57453;ARABIC KASRATAN

16578 \DeclareTextCommand{\fatha}{PU}{\86\116}% 064E;afi57454;ARABIC FATHA

16579 \DeclareTextCommand{\damma}{PU}{\86\117}% 064F;afi57455;ARABIC DAMMA

16580 \DeclareTextCommand{\kasra}{PU}{\86\120}% 0650;afi57456;ARABIC KASRA

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