

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

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## 1 Documentation overview for `hyperref`

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

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

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

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

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

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

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

Source code documentation:

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

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

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

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### 3 File hyccheck.tex

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

```

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

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

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

```

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

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

```

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

`\HyC@checkPackage`

```

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

`\checkcommand` The macro `\checkcommand` parses the next tokens as a  $\LaTeX$  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  $\LaTeX$ 's definitions is parsed.

```

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

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

```

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

`\HyC@noValue`

```

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

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



```

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

```

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

```

90 \newtoks\HyC@Toks

```

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

```

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

```

`\HyC@nc@opt` This macro scans the first optional argument of a  $\LaTeX$  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  $\text{\LaTeX}$  processing.

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

```

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

```

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

```

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

```

`\Hy@AtEndOfPackage`

```

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

```

`\Hy@AtBeginDocumentHook`

```

384 \def\Hy@AtBeginDocumentHook{}

```

`\Hy@AtEndOfPackageHook`

```

385 \def\Hy@AtEndOfPackageHook{}

```

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

```

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

```

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

```

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

```

## 4.5 Switches

```

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

```

```

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

```

Defaults for the switches are now set.

```

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

```



```

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

```

## 5 Common help macros

\Hy@StepCount

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

\Hy@GlobalStepCount

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

```

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

```

### 5.1 Macros for recursions

\Hy@ReturnAfterElseFi    The commands \Hy@ReturnAfterElseFi and \Hy@ReturnAfterFi avoid a too deep  
 \Hy@ReturnAfterFi    \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 used directly, because they can be undefined if  
 \Hy@safe@activesfalse    babel is not loaded.

```

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

```

### 5.3 Coordinate transformations

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

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

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

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

Example (TeX):

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

`\hypercalsbp`

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

```

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

```

## 6 Dealing with PDF strings

The PDF string stuff done by Heiko Oberdiek.

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

### 6.1 Description of PDF strings

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

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

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

### 6.2 Definition of `\pdfstringdef`

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

Important: In  $\text{T}_{\text{E}}\text{X}$ '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  $\text{T}_{\text{E}}\text{X}$  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  $\text{T}_{\text{E}}\text{X}$  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

```

### Environments.

```
628 \def\begin#1{\csname#1\endcsname}%
629 \def\end#1{\csname end#1\endcsname}%
```

### Package color.

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

### Upper- and lowercase.

```
631 \def\MakeUppercase{\MakeUppercaseUnsupportedInPdfStrings}%
632 \def\MakeLowercase{\MakeLowercaseUnsupportedInPdfStrings}%
```

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

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

Disable `\cyr`, used in `russianb.ldf`.

```
644 \let\cyr\relax
```

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

```
645 \let\es@roman\@Roman
```

### Package german.

```
646 \let\glqq\textglqq
647 \let\grqq\textgrqq
648 \let\glq\textglq
649 \let\grq\textgrq
650 \let\flqq\textflqq
651 \let\frqq\textfrqq
652 \let\flq\textflq
653 \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}
```

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

### AMS classes.

```
655 \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.

```
656 \let\hspace\HyPsd@hspace
```

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

```
657 \let\label\@gobble
658 \let\index\@gobble
659 \let\glossary\@gobble
660 \let\href\HyPsd@href
661 \let\@mkboth\@gobbletwo
```

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

```
662 \let\ref\HyPsd@ref
663 \let\pageref\HyPsd@pageref
664 \let\nameref\HyPsd@nameref
665 \let\autoref\HyPsd@autoref
```

**Miscellaneous commands.**

```
666 \let\leavevmode\@empty
667 \let\mbox\@empty
```

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

```
668 \def\halign{\pdfstringdef\Warn\halign\@gobble}%
669 \let\ignorespaces\HyPsd@ignorespaces
670 \let\Hy@SectionAnchorHref\@gobble
```

**Patch for `cjk` bookmarks.**

```
671 \HyPsd@CJHook
```

**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`).

```
672 \Hy@pdfstringtrue
673 \pdfstringdefPreHook
```

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

```
674 \HyPsd@LetUnexpandableSpace\space
675 \HyPsd@LetUnexpandableSpace\%
676 \HyPsd@LetUnexpandableSpace~%
677 \HyPsd@LetUnexpandableSpace\nobreakspace
```



### Package xspace.

```
678 \ltx@ifundefined{@xspace}{%
679 \let\xspace\HyPsd@ITALCORR
680 }{%
681 \let\xspace\HyPsd@XSPACE
682 }%
683 \let\/\HyPsd@ITALCORR
684 \let\bgroup\/%
685 \let\egroup\/%
```

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

```
686 \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:

```
687 \def\@ifnextchar{\HyPsd@ifnextchar\@ifnextchar}%
688 \def\kernel@ifnextchar{\HyPsd@ifnextchar\kernel@ifnextchar}%
689 \def\new@ifnextchar{\HyPsd@ifnextchar\new@ifnextchar}%
690 \let\@protected@testopt\HyPsd@protected@testopt
```

Support for package 'xargs':

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

### 6.2.2 Expansion

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

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

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

**\edef** This version uses this standard form for expansion. It is stronger than L<sup>A</sup>T<sub>E</sub>X's \protected@edef. So the font encoding mechanism works and the glyph commands are converted to the correct tokens for PDF strings with the definitions of the PD1 encoding. Because the protecting mechanism of L<sup>A</sup>T<sub>E</sub>X doesn't work within an \edef, there are situations thinkable where code can break. For example, assignments and definitions aren't performed and so undefined command errors or argument parsing errors can occur. But this is only a compatibility problem with old

texts. Now there are possibilities to write code that gives correct PDF strings (see `\texorpdfstring`). In the most cases unexpandable commands and tokens (math shift, grouping characters) remains. They don't cause an error like with `\csname`. However a PDF reader isn't  $\TeX$ , 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).

```
692 \begingroup
693 \let\GenericError\@gobblefour
694 \let\GenericWarning\@gobbletwo
695 \let\GenericInfo\@gobbletwo
```

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

```
696 \ifx\nofrenchguillemets\@undefined
697 \else
698 \nofrenchguillemets
699 \fi
```

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

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

### 6.2.3 Postprocessing

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

```
709 \ifx#1\@empty
710 \else
```

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

- $\TeX$  does not accept a space as an undelimited argument, it cancels space tokens while looking for an undelimited argument. Therefore we must protect the spaces now.
- An argument can be a single token or a group of many tokens. And within curly braces tokens aren't find by  $\TeX$ 's argument scanning process. Third curly braces as grouping characters cannot be expanded further, so they don't vanish by the

string expansion above. So these characters with catcode 1 and 2 are removed in the following and replaced by an marker for the xspace support.

- $\TeX$  silently removes the outmost pair of braces of an argument. To prevent this on unwanted places, in the following the character | is appended to the string to make an outer brace to an inner one.

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

```

711 \HyPsd@ProtectSpaces#1%
712 \let\HyPsd@String\@empty
713 \expandafter\HyPsd@RemoveBraces\expandafter{#1|}%
714 \global\let#1\HyPsd@String

```

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

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

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

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

```

715 \let\HyPsd@SPACEOPTI\relax
716 {%
717 \let\HyPsd@String\@empty
718 \expandafter\HyPsd@CheckCatcodes#1\HyPsd@End
719 \global\let#1\HyPsd@String
720}%
721 \expandafter\HyPsd@RemoveMask\expandafter
722 |\expandafter\@empty#1\HyPsd@End#1%

```

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

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

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

```

723 \expandafter\HyPsd@Subst\expandafter{\HyPsd@GLYPHERR}{\relax}#1%
724 \let\HyPsd@String\@empty
725 \expandafter\HyPsd@GlyphProcess#1\relax\@empty
726 \global\let#1\HyPsd@String

```

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

```
727 \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.

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

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

```
740 \ifHy@unicode
741 \HyPsd@StringSubst{\)}{\80\051}#1%
742 \HyPsd@Subst){\80\051}#1%
743 \let\HyPsd@empty\relax
744 \expandafter\HyPsd@StringSubst\csname 80\051\endcsname
745 {\HyPsd@empty\80\051}#1%
746 \else
747 \HyPsd@StringSubst{\)}{\051}#1%
748 \HyPsd@Subst){\051}#1%
749 \let\HyPsd@empty\relax
750 \HyPsd@StringSubst{\051}\HyPsd@empty\string\)}#1%
751 \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`.

```

752 \expandafter\HyPsd@Subst\expandafter{\}\HyPsd@empty#1%
753 \ltx@ifundefined{@xspace}{%
754 }{%
755 \let\HyPsd@xspace\relax
756 \expandafter\HyPsd@Subst\expandafter
757 {\HyPsd@XSPACE}\HyPsd@xspace#1%
758 \let\HyPsd@xspace\HyPsd@doxspace
759 }%
760 \xdef#1{#1\HyPsd@empty}%

```

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

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

```

761 \HyPsd@Subst{---}\textemdash#1%
762 \HyPsd@Subst{--}\textendash#1%
763 % \HyPsd@Subst{fi}\textfi#1%
764 % \HyPsd@Subst{fl}\textfl#1%
765 \HyPsd@Subst{!'}\textexclamdown#1%
766 \HyPsd@Subst{?'}\textquestiondown#1%

```

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

```

767 \let\HyPsd@empty\@empty

```

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

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

```

768 \ifHy@unicode
769 \HyPsd@StringSubst{\textparenleft#1%
770 \HyPsd@Subst(\textparenleft#1%
771 \else
772 \HyPsd@StringSubst({\050}#1%
773 \HyPsd@Subst({\050}#1%
774 \HyPsd@StringSubst{\050}{\string\{ }#1%
775 \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.

```

776 \ifHy@unicode
777 \edef\HyPsd@SPACEOPTI{\80\040}%
778 \else

```

```

779 \let\HyPsd@SPACEOPTI\HyPsd@spaceopti
780 \fi
781 \xdef#1{#1\@empty}%
782 \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.

```

783 \endgroup
784 \begingroup
785 \ifHy@unicode
786 \HyPsd@ConvertToUnicode#1%

```

**Try conversion back to PDFDocEncoding.**

```

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

```

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

```

815 \pdfstringdefPostHook#1%
816 \endgroup
817 }

```

\Hy@pdfstringdef

```

818 \def\Hy@pdfstringdef#1#2{%
819 \pdfstringdef\Hy@gtemp{#2}%
820 \let#1\Hy@gtemp
821 }

```

## 6.3 Encodings

### 6.3.1 XeTeX

```
822 \edef\Hy@temp{\catcode0=\the\catcode0\relax}
823 \catcode\z@=12 %
824 \ifxetex
825   \expandafter\@firstofone
826 \else
827   \let\HyPsd@XeTeXBigCharstrue\@empty
828   \let\HyPsd@XeTeXBigCharsfalse\@empty
829   \expandafter\@gobble
830 \fi
831 {%
832   \newif\ifHyPsd@XeTeXBigChars
833   \def\HyPsd@XeTeXBigCharsfalse{%
834     \global\let\ifHyPsd@XeTeXBigChars\iffalse
835   }%
836   \def\HyPsd@XeTeXBigCharstrue{%
837     \global\let\ifHyPsd@XeTeXBigChars\iftrue
838   }%
839   \def\HyPsd@ToBigChars#1{%
840     \ifHyPsd@XeTeXBigChars
841       \EdefEscapeHex\HyPsd@UnescapedString{%
842         \expandafter\@gobbletwo\HyPsd@UnescapedString
843       }%
844       \begingroup
845         \toks@{%
846           \escapechar=92\relax
847           \let\x\HyPsd@ToBigChar
848           \expandafter\HyPsd@ToBigChar\HyPsd@UnescapedString
849           \relax\relax\relax\relax\relax\relax\relax
850         }%
851       \endgroup
852       \gdef\noexpand#1{\the\toks@}%
853     }%
854     \x
855   \fi
856 }%
857 \def\HyPsd@ToBigChar#1#2#3#4{%
858   \ifx\relax#1\relax
859     \let\x\relax
860   \else
861     \count@=#1#2#3#4\relax
862     \let\y\@empty
863     \lcode\z@=\count@
864     \ifnum\count@=40 % (
865       \let\y\@backslashchar
866     \else
867       \ifnum\count@=41 % )
868         \let\y\@backslashchar
869       \else
870         \ifnum\count@=92 % backslash
871           \let\y\@backslashchar
872         \else
873           \ifnum\count@=10 % newline
874             \edef\y##1{\string\n}%
875           \else
```

```

876         \ifnum\count@=13 % carriage return
877         \edef\y###1{\string\r}%
878         \fi
879     \fi
880 \fi
881 \fi
882 \fi
883 \lowercase{%
884     \toks@\expandafter{%
885         \the\expandafter\toks@
886         \y
887         ^^@%
888     }%
889 }%
890 \fi
891 \x
892 }%
893 }
894 \Hy@temp

```

### 6.3.2 Workaround for package linguex

```

895 \ifpackageloaded{linguex}{%
896     \let\HyLinguex@OrgB\b
897     \let\HyLinguex@OrgC\c
898     \let\HyLinguex@OrgD\d
899     \def\HyLinguex@Restore{%
900         \let\b\HyLinguex@OrgB
901         \let\c\HyLinguex@OrgC
902         \let\d\HyLinguex@OrgD
903     }%
904     \Hy@AtEndOfPackage{%
905         \pdfstringdefDisableCommands{%
906             \ltx@ifundefined{oldb}{-}{\let\b\oldb}%
907             \ltx@ifundefined{oldc}{-}{\let\c\oldc}%
908             \ltx@ifundefined{oldd}{-}{\let\d\oldd}%
909         }%
910     }%
911 }{%
912     \let\HyLinguex@Restore\relax
913 }%

```

### 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.

```

914 \ifundefined{T@PD1}{%
915     \input{pd1enc.def}%
916     \HyLinguex@Restore
917 }{}
918 \DeclareFontFamily{PD1}{pdf}{}
919 \DeclareFontShape{PD1}{pdf}{m}{n}{<-> cmr10 }{}
920 \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`.

```
921 \def\HyPsd@InitUnicode{%
922   \ifundefined{T@PU}{%
923     \input{puenc.def}%
924     \HyLinguex@Restore
925   }{}%
926   \DeclareFontFamily{PU}{pdf}{}%
927   \DeclareFontShape{PU}{pdf}{m}{n}{<-> cmr10 }{}%
928   \DeclareFontSubstitution{PU}{pdf}{m}{n}%
929   \let\HyPsd@InitUnicode\relax
930 }
```

## 6.4 Additional user commands

### 6.4.1 `\texorpdfstring`

`\texorpdfstring` While expanding the string in `\pdfstringdef` the switch `\ifHy@pdfstring` is set. This is used by the full expandable macro `\texorpdfstring`. It expects two arguments, the first contains the string that will be set and processed by T<sub>E</sub>X's stomach, the second contains the replacement for PDF strings.

```
931 \def\texorpdfstring{%
932   \ifHy@pdfstring
933     \expandafter\@secondoftwo
934   \else
935     \expandafter\@firstoftwo
936   \fi
937 }
```

### 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`.

```
938 \@ifundefined{pdfstringdefPreHook}{%
939   \let\pdfstringdefPreHook\@empty
940 }{}
941 \@ifundefined{pdfstringdefPostHook}{%
942   \let\pdfstringdefPostHook\@gobble
943 }{}
```

`\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`.

```
944 \def\pdfstringdefDisableCommands{%
945   \begingroup
946   \makeatletter
947   \HyPsd@DisableCommands
948 }
```

`\HyPsd@DisableCommands`

```
949 \long\def\HyPsd@DisableCommands#1{%
950   \toks0=\expandafter{\pdfstringdefPreHook}%
951   \toks1={#1}%
952   \xdef\pdfstringdefPreHook{\the\toks0 \the\toks1}%
953   \endgroup
954 }
```

`\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`.

```
955 \def\pdfstringdefWarn#1{%
956   \expandafter\noexpand\csname<>-string#1\endcsname
957 }
```

## 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.

```
958 \begingroup
959   \catcode0=12 %
960   \def\x{\endgroup
961     \def\HyPsd@ignorespaces{%
962       \romannumeral\expandafter'\expandafter^^@%
963       \romannumeral'^^@%
964     }%
965   }%
966 \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`.

```

967 \def\HyPsd@BabelPatch{%
968   \let\HyOrg@languageshorthands\languageshorthands
969   \let\languageshorthands\HyPsd@LanguageShorthands
970 }
971 \begingroup\expandafter\expandafter\expandafter\endgroup
972 \expandafter\ifx\csname pdf@strcmp\endcsname\relax
973   \let\HyPsd@langshort@system\@empty
974   \def\HyPsd@LanguageShorthands#1{%
975     \expandafter\ifx\csname HyPsd@langshort@#1\endcsname
976       \HyPsd@langshort@system
977     \expandafter\@gobble
978   \else
979     \expandafter\@firstofone
980   \fi
981   {%
982     \HyOrg@languageshorthands{#1}%
983   }%
984 }%
985 \else
986   \def\HyPsd@LanguageShorthands#1{%
987     \ifnum\pdf@strcmp{#1}{system}=\z@
988       \expandafter\@gobble
989     \else
990       \expandafter\@firstofone
991     \fi
992     {%
993       \HyOrg@languageshorthands{#1}%
994     }%
995   }%
996 \fi
997 \def\Hy@temp{%
998   \@ifpackageloaded{babel}{%
999     \@ifpackagelater{babel}{2008/03/16}{%
1000       \let\Hy@temp\@empty
1001     }{%
1002       \def\HyPsd@BabelPatch{%
1003         \let\HyOrg@languageshorthands\languageshorthands
1004       }%
1005     }%
1006   }{}%
1007 }
1008 \Hy@temp
1009 \expandafter\Hy@AtBeginDocument\expandafter{\Hy@temp}
1010 \newif\ifHy@next

```

Nothing to do for english.

```

1011 \ltx@ifundefined{danish@sh@"@sel}{-}{%
1012   \def\HyPsd@babel@danish{%
1013     \declare@shorthand{danish}{-}{-}%
1014     \declare@shorthand{danish}{-}{-}%
1015   }%
1016 }
1017 \ltx@ifundefined{dutch@sh@"@sel}{-}{%

```

```

1018 \def\HyPsd@babel@dutch{%
1019   \declare@shorthand{dutch}{"}{|}%
1020   \declare@shorthand{dutch}{"}~{-}%
1021 }%
1022 }
1023 \ltx@ifundefined{finnish@sh@}@sel}{|}%
1024 \def\HyPsd@babel@finnish{%
1025   \declare@shorthand{finnish}{"}{|}%
1026 }%
1027 }
1028 \ltx@ifundefined{french@sh@}@sel}{|}%
1029 \def\HyPsd@babel@frenchb{%
1030   \def\guill@spacing{ }%
1031 }%
1032 }
1033 \ltx@ifundefined{german@sh@}@sel}{|}%
1034 \def\HyPsd@babel@german{%
1035   \declare@shorthand{german}{"}{|}%
1036   \declare@shorthand{german}{"}{|}%
1037   \declare@shorthand{german}{"}~{-}%
1038 }%
1039 }
1040 \ltx@ifundefined{macedonian@sh@}@sel}{|}%
1041 \def\HyPsd@babel@macedonian{%
1042   \declare@shorthand{macedonian}{"}{|}%
1043   \declare@shorthand{macedonian}{"}~{-}%
1044 }%
1045 }{}
1046 \ltx@ifundefined{ngerman@sh@}@sel}{|}%
1047 \def\HyPsd@babel@ngerman{%
1048   \declare@shorthand{ngerman}{"}{|}%
1049   \declare@shorthand{ngerman}{"}~{-}%
1050 }%
1051 }
1052 \ltx@ifundefined{portuges@sh@}@sel}{|}%
1053 \def\HyPsd@babel@portuges{%
1054   \declare@shorthand{portuges}{"}{|}%
1055 }%
1056 }
1057 \ltx@ifundefined{russian@sh@}@sel}{|}%
1058 \def\HyPsd@babel@russian{%
1059   \declare@shorthand{russian}{"}{|}%
1060   \declare@shorthand{russian}{"}~{-}%
1061 }%
1062 }
1063 \ltx@ifundefined{slovene@sh@}@sel}{|}%
1064 \def\HyPsd@babel@slovene{%
1065   \declare@shorthand{slovene}{"}{|}%
1066 }%
1067 }

```

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

```

1068 \ltx@ifundefined{spanish@sh@}>@sel}{|}%
1069 \def\HyPsd@babel@spanish{%
1070   \declare@shorthand{spanish}{<<}{\guillemotleft}%
1071   \declare@shorthand{spanish}{>>}{\guillemotright}%
1072   \declare@shorthand{spanish}{"}=}{|}%
1073   \declare@shorthand{spanish}{"}~}{-}%

```

```

1074 \declare@shorthand{spanish}{!}{\textexclamdown}%
1075 \declare@shorthand{spanish}{?}{\textquestiondown}%
1076 }%
1077 }
1078 \ltx@ifundefined{swedish@sh@"@sel}{-}{%
1079 \def\HyPsd@babel@swedish{%
1080 \declare@shorthand{swedish}{"}{|}{}%
1081 \declare@shorthand{swedish}{~}{-}{}%
1082 }%
1083 }
1084 \ltx@ifundefined{ukrainian@sh@"@sel}{-}{%
1085 \def\HyPsd@babel@ukrainian{%
1086 \declare@shorthand{ukrainian}{"}{|}{}%
1087 \declare@shorthand{ukrainian}{~}{-}{}%
1088 }%
1089 }
1090 \ltx@ifundefined{usorbian@sh@"@sel}{-}{%
1091 \def\HyPsd@babel@usorbian{%
1092 \declare@shorthand{usorbian}{f}{f}{f}%
1093 \declare@shorthand{usorbian}{"}{|}{}%
1094 }%
1095 }
1096 \ltx@ifundefined{greek@sh@\string~@sel}{-}{%
1097 \let\HyPsd@GreekPatch\@empty
1098 }{%
1099 \def\HyPsd@GreekPatch{%
1100 \let\greeknumeral\HyPsd@greeknumeral
1101 \let\Greeknnumeral\HyPsd@Greeknnumeral
1102 }%
1103 }
1104 \def\HyPsd@greeknumeral#1{%
1105 \HyPsd@GreekNum\@firstoftwo{#1}%
1106 }
1107 \def\HyPsd@Greeknnumeral#1{%
1108 \HyPsd@GreekNum\@secondoftwo{#1}%
1109 }
1110 \def\HyPsd@GreekNum#1#2{%
1111 \ifHy@unicode
1112 \ifnum#2<\@ne
1113 \@arabic{#2}%
1114 \else
1115 \ifnum#2<1000000 %
1116 \HyPsd@@GreekNum#1{#2}%
1117 \else
1118 \@arabic{#2}%
1119 \fi
1120 \fi
1121 \else
1122 \@arabic{#2}%
1123 \fi
1124 }
1125 \def\HyPsd@@GreekNum#1#2{%
1126 \ifnum#2<\@m
1127 \ifnum#2<10 %
1128 \expandafter\HyPsd@GreekNumI
1129 \expandafter\@gobble\expandafter#1\number#2%
1130 \else

```

```

1131 \ifnum#2<100 %
1132 \expandafter\HyPsd@GreekNumII
1133 \expandafter\@gobble\expandafter#1\number#2%
1134 \else
1135 \expandafter\HyPsd@GreekNumIII
1136 \expandafter\@gobble\expandafter#1\number#2%
1137 \fi
1138 \fi
1139 \ifnum#2>\z@
1140 \textnumeralsigngreek
1141 \fi
1142 \else
1143 \ifnum#2<\@M
1144 \expandafter\HyPsd@GreekNumIV\expandafter#1\number#2%
1145 \else
1146 \ifnum#2<100000 %
1147 \expandafter\HyPsd@GreekNumV\expandafter#1\number#2%
1148 \else
1149 \expandafter\HyPsd@GreekNumVI\expandafter#1\number#2%
1150 \fi
1151 \fi
1152 \fi
1153 }
1154 \def\HyPsd@GreekNumI#1#2#3{%
1155 #1{%
1156 \ifnum#3>\z@
1157 \textnumeralsignlowergreek
1158 \fi
1159 }%
1160 \expandafter#2%
1161 \ifcase#3 %
1162 {}{}%
1163 \or\textalpha\textAlpha
1164 \or\textbeta\textBeta
1165 \or\textgamma\textGamma
1166 \or\textdelta\textDelta
1167 \or\textepsilon\textEpsilon
1168 \or\textstigmagreek\textStigmagreek
1169 \or\textzeta\textZeta
1170 \or\texteta\textEta
1171 \or\texttheta\textTheta
1172 \else
1173 {}{}%
1174 \fi
1175 }
1176 \def\HyPsd@GreekNumII#1#2#3#4{%
1177 #1{%
1178 \ifnum#3>\z@
1179 \textnumeralsignlowergreek
1180 \fi
1181 }%
1182 \expandafter#2%
1183 \ifcase#3 %
1184 {}{}%
1185 \or\textiota\textIota
1186 \or\textkappa\textKappa
1187 \or\textlambda\textLambda

```

```

1188 \or\textmu\textMu
1189 \or\textnu\textNu
1190 \or\textxi\textXi
1191 \or\textomicron\textOmicron
1192 \or\textpi\textPi
1193 \or\textkoppagreek\textKoppagreek
1194 \else
1195   {}{}%
1196 \fi
1197 \HyPsd@GreekNumI#1#2#4%
1198 }
1199 \def\HyPsd@GreekNumIII#1#2#3#4#5{%
1200   #1{%
1201     \ifnum#3>\z@
1202       \textnumeralsignlowergreek
1203     \fi
1204   }%
1205   \expandafter#2%
1206   \ifcase#3 %
1207     {}{}%
1208   \or\extrho\textRho
1209   \or\textsigma\textSigma
1210   \or\texttau\textTau
1211   \or\textupsilon\textUpsilon
1212   \or\textphi\textPhi
1213   \or\textchi\textChi
1214   \or\textpsi\textPsi
1215   \or\textomega\textOmega
1216   \or\textsampigreek\textSampigreek
1217   \else
1218     {}{}%
1219   \fi
1220   \HyPsd@GreekNumII#1#2#4#5%
1221 }
1222 \def\HyPsd@GreekNumIV#1#2#3#4#5{%
1223   \HyPsd@GreekNumI\@firstofone#1#2%
1224   \HyPsd@@GreekNum#1{#3#4#5}%
1225 }
1226 \def\HyPsd@GreekNumV#1#2#3#4#5#6{%
1227   \HyPsd@GreekNumII\@firstofone#1#2#3%
1228   \HyPsd@@GreekNum#1{#4#5#6}%
1229 }
1230 \def\HyPsd@GreekNumVI#1#2#3#4#5#6#7{%
1231   \HyPsd@GreekNumIII\@firstofone#1#2#3#4%
1232   \HyPsd@@GreekNum#1{#5#6#7}%
1233 }
1234 \def\HyPsd@SpanishPatch{%
1235   \ltx@ifundefined{es@save@dot}{%
1236     }{%
1237       \let.\es@save@dot
1238     }%
1239 }

```

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

```

1240 \def\HyPsd@RussianPatch{%
1241   \ltx@ifundefined{russian@sh@"@-@}{%

```

```

1242 }{%
1243   \@namedef{russian@sh@"@-@}{-}%
1244 }%
1245 }

```

### 6.5.3 CJK patch

```

1246 \RequirePackage{intcalc}[2007/09/27]

```

\HyPsd@CJKhook

```

1247 \def\HyPsd@CJKhook{%
1248   \ltx@ifpackageloaded{CJK}{%
1249     \let\CJK@kern\relax
1250     \let\CJKkern\relax
1251     \let\CJK@CJK\relax
1252     \ifHy@CJKbookmarks
1253       \HyPsd@CJKhook@bookmarks
1254     \fi
1255     \HyPsd@CJKhook@unicode
1256   }{}%
1257 }

```

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

```

1258 \begingroup
1259   \catcode"7F=\active
1260   \toks@{%
1261     \let\CJK@ignorespaces\empty
1262     \def\CJK@char#1{\@gobbletwo}%
1263     \let\CJK@charx\@gobblefour
1264     \let\CJK@punctchar\@gobblefour
1265     \def\CJK@punctcharx#1{\@gobblefour}%
1266     \catcode"7F=\active
1267     \def^^7f#1^^7f#2^^7f{%
1268       \string #1\HyPsd@DecimalToOctal{#2}%
1269     }%
1270     % ... ?
1271     \ifHy@unicode
1272       \def\Hy@cjkpu{\80}%
1273     \else
1274       \let\Hy@cjkpu\@empty
1275     \fi
1276     \HyPsd@CJKActiveChars
1277   }%
1278   \count@=127 %
1279   \@whilenum\count@<255 \do{%
1280     \advance\count@ by 1 %

```



```

1281 \lccode'\~=\count@
1282 \lowercase{%
1283 \toks@\expandafter{\the\toks@ ~}%
1284 }%
1285 }%
1286 \toks@\expandafter{\the\toks@ !}%
1287 \xdef\HyPsd@CJKhook@bookmarks{%
1288 \the\toks@
1289 }%
1290 \endgroup

```

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

```

1291 \def\HyPsd@CJKActiveChars#1{%
1292 \ifx#1!%
1293 \let\HyPsd@CJKActiveChars\relax
1294 \else
1295 \edef#1{\noexpand\Hy@cjku\string#1}%
1296 \fi
1297 \HyPsd@CJKActiveChars
1298 }

```

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

```

1299 \def\HyPsd@DecimalToOctal#1{%
1300 \ifcase #1 %
1301 \000\or \001\or \002\or \003\or \004\or \005\or \006\or \007%
1302 \or \010\or \011\or \012\or \013\or \014\or \015\or \016\or \017%
1303 \or \020\or \021\or \022\or \023\or \024\or \025\or \026\or \027%
1304 \or \030\or \031\or \032\or \033\or \034\or \035\or \036\or \037%
1305 \or \040\or \041\or \042\or \043\or \044\or \045\or \046\or \047%
1306 \or \050\or \051\or \052\or \053\or \054\or \055\or \056\or \057%
1307 \or 0\or 1\or 2\or 3\or 4\or 5\or 6\or 7%
1308 \or 8\or 9\or \072\or \073\or \074\or \075\or \076\or \077%
1309 \or @\or A\or B\or C\or D\or E\or F\or G%
1310 \or H\or I\or J\or K\or L\or M\or N\or O%
1311 \or P\or Q\or R\or S\or T\or U\or V\or W%
1312 \or X\or Y\or Z\or \133\or \134\or \135\or \136\or \137%
1313 \or \140\or a\or b\or c\or d\or e\or f\or g%
1314 \or h\or i\or j\or k\or l\or m\or n\or o%
1315 \or p\or q\or r\or s\or t\or u\or v\or w%
1316 \or x\or y\or z\or \173\or \174\or \175\or \176\or \177%
1317 \or \200\or \201\or \202\or \203\or \204\or \205\or \206\or \207%
1318 \or \210\or \211\or \212\or \213\or \214\or \215\or \216\or \217%
1319 \or \220\or \221\or \222\or \223\or \224\or \225\or \226\or \227%
1320 \or \230\or \231\or \232\or \233\or \234\or \235\or \236\or \237%
1321 \or \240\or \241\or \242\or \243\or \244\or \245\or \246\or \247%
1322 \or \250\or \251\or \252\or \253\or \254\or \255\or \256\or \257%
1323 \or \260\or \261\or \262\or \263\or \264\or \265\or \266\or \267%
1324 \or \270\or \271\or \272\or \273\or \274\or \275\or \276\or \277%
1325 \or \300\or \301\or \302\or \303\or \304\or \305\or \306\or \307%
1326 \or \310\or \311\or \312\or \313\or \314\or \315\or \316\or \317%
1327 \or \320\or \321\or \322\or \323\or \324\or \325\or \326\or \327%
1328 \or \330\or \331\or \332\or \333\or \334\or \335\or \336\or \337%
1329 \or \340\or \341\or \342\or \343\or \344\or \345\or \346\or \347%
1330 \or \350\or \351\or \352\or \353\or \354\or \355\or \356\or \357%
1331 \or \360\or \361\or \362\or \363\or \364\or \365\or \366\or \367%
1332 \or \370\or \371\or \372\or \373\or \374\or \375\or \376\or \377%

```

```

1333 \fi
1334 }

```

### 6.5.5 CJK unicode

\HyPsd@CJKhook@unicode

```

1335 \def\HyPsd@CJKhook@unicode{%
1336 \let\Unicode\HyPsd@CJK@Unicode
1337 \let\CJKnumber\HyPsd@CJKnumber
1338 \let\CJKdigits\HyPsd@CJKdigits
1339 }

```

\HyPsd@CJK@Unicode

```

1340 \def\HyPsd@CJK@Unicode#1#2{%
1341 \ifnum#1<256 %
1342 \HyPsd@DecimalToOctalFirst{#1}%
1343 \HyPsd@DecimalToOctalSecond{#2}%
1344 \else
1345 \933%
1346 \expandafter\expandafter\expandafter\HyPsd@HighA
1347 \intcalcDiv{#1}{4}!%
1348 \933%
1349 \ifcase\intcalcMod{#1}{4} %
1350 4\or 5\or 6\or 7%
1351 \fi
1352 \HyPsd@DecimalToOctalSecond{#2}%
1353 \fi
1354 }

1355 \def\HyPsd@HighA#1!{%
1356 \expandafter\expandafter\expandafter\HyPsd@HighB
1357 \IntCalcDiv#1!64!!%
1358 \expandafter\expandafter\expandafter\HyPsd@HighD
1359 \IntCalcMod#1!64!!%
1360 }
1361 \def\HyPsd@HighB#1!{%
1362 \expandafter\expandafter\expandafter\HyPsd@HighC
1363 \IntCalcDec#1!!%
1364 }
1365 \def\HyPsd@HighC#1!{%
1366 \IntCalcDiv#1!4!%
1367 \@backslashchar
1368 \IntCalcMod#1!4!%
1369 }
1370 \def\HyPsd@HighD#1!{%
1371 \ifcase\IntCalcDiv#1!8! %
1372 0\or 1\or 2\or 3\or 4\or 5\or 6\or 7%
1373 \fi
1374 \ifcase\IntCalcMod#1!8! %
1375 0\or 1\or 2\or 3\or 4\or 5\or 6\or 7%
1376 \fi
1377 }
1378 \def\HyPsd@DecimalToOctalFirst#1{%
1379 \9%
1380 \ifcase#1 %
1381 000\or 001\or 002\or 003\or 004\or 005\or 006\or 007%
1382 \or 010\or 011\or 012\or 013\or 014\or 015\or 016\or 017%

```

```

1383 \or 020\or 021\or 022\or 023\or 024\or 025\or 026\or 027%
1384 \or 030\or 031\or 032\or 033\or 034\or 035\or 036\or 037%
1385 \or 040\or 041\or 042\or 043\or 044\or 045\or 046\or 047%
1386 \or 050\or 051\or 052\or 053\or 054\or 055\or 056\or 057%
1387 \or 060\or 061\or 062\or 063\or 064\or 065\or 066\or 067%
1388 \or 070\or 071\or 072\or 073\or 074\or 075\or 076\or 077%
1389 \or 100\or 101\or 102\or 103\or 104\or 105\or 106\or 107%
1390 \or 120\or 111\or 112\or 113\or 114\or 115\or 116\or 117%
1391 \or 120\or 121\or 122\or 123\or 124\or 125\or 126\or 127%
1392 \or 130\or 131\or 132\or 133\or 134\or 135\or 136\or 137%
1393 \or 140\or 141\or 142\or 143\or 144\or 145\or 146\or 147%
1394 \or 150\or 151\or 152\or 153\or 154\or 155\or 156\or 157%
1395 \or 160\or 161\or 162\or 163\or 164\or 165\or 166\or 167%
1396 \or 170\or 171\or 172\or 173\or 174\or 175\or 176\or 177%
1397 \or 200\or 201\or 202\or 203\or 204\or 205\or 206\or 207%
1398 \or 210\or 211\or 212\or 213\or 214\or 215\or 216\or 217%
1399 \or 220\or 221\or 222\or 223\or 224\or 225\or 226\or 227%
1400 \or 230\or 231\or 232\or 233\or 234\or 235\or 236\or 237%
1401 \or 240\or 241\or 242\or 243\or 244\or 245\or 246\or 247%
1402 \or 250\or 251\or 252\or 253\or 254\or 255\or 256\or 257%
1403 \or 260\or 261\or 262\or 263\or 264\or 265\or 266\or 267%
1404 \or 270\or 271\or 272\or 273\or 274\or 275\or 276\or 277%
1405 \or 300\or 301\or 302\or 303\or 304\or 305\or 306\or 307%
1406 \or 310\or 311\or 312\or 313\or 314\or 315\or 316\or 317%
1407 \or 320\or 321\or 322\or 323\or 324\or 325\or 326\or 327%
1408 \or 330\or 331\or 332\or 333\or 334\or 335\or 336\or 337%
1409 \or 340\or 341\or 342\or 343\or 344\or 345\or 346\or 347%
1410 \or 350\or 351\or 352\or 353\or 354\or 355\or 356\or 357%
1411 \or 360\or 361\or 362\or 363\or 364\or 365\or 366\or 367%
1412 \or 370\or 371\or 372\or 373\or 374\or 375\or 376\or 377%
1413 \fi
1414 }
1415 \def\HyPsd@DecimalToOctalSecond#1{%
1416 \ifcase #1 %
1417 \000\or \001\or \002\or \003\or \004\or \005\or \006\or \007%
1418 \or \010\or \011\or \012\or \013\or \014\or \015\or \016\or \017%
1419 \or \020\or \021\or \022\or \023\or \024\or \025\or \026\or \027%
1420 \or \030\or \031\or \032\or \033\or \034\or \035\or \036\or \037%
1421 \or \040\or \041\or \042\or \043\or \044\or \045\or \046\or \047%
1422 \or \050\or \051\or \052\or \053\or \054\or \055\or \056\or \057%
1423 \or \060\or \061\or \062\or \063\or \064\or \065\or \066\or \067%
1424 \or \070\or \071\or \072\or \073\or \074\or \075\or \076\or \077%
1425 \or \100\or \101\or \102\or \103\or \104\or \105\or \106\or \107%
1426 \or \110\or \111\or \112\or \113\or \114\or \115\or \116\or \117%
1427 \or \120\or \121\or \122\or \123\or \124\or \125\or \126\or \127%
1428 \or \130\or \131\or \132\or \133\or \134\or \135\or \136\or \137%
1429 \or \140\or \141\or \142\or \143\or \144\or \145\or \146\or \147%
1430 \or \150\or \151\or \152\or \153\or \154\or \155\or \156\or \157%
1431 \or \160\or \161\or \162\or \163\or \164\or \165\or \166\or \167%
1432 \or \170\or \171\or \172\or \173\or \174\or \175\or \176\or \177%
1433 \or \200\or \201\or \202\or \203\or \204\or \205\or \206\or \207%
1434 \or \210\or \211\or \212\or \213\or \214\or \215\or \216\or \217%
1435 \or \220\or \221\or \222\or \223\or \224\or \225\or \226\or \227%
1436 \or \230\or \231\or \232\or \233\or \234\or \235\or \236\or \237%
1437 \or \240\or \241\or \242\or \243\or \244\or \245\or \246\or \247%
1438 \or \250\or \251\or \252\or \253\or \254\or \255\or \256\or \257%
1439 \or \260\or \261\or \262\or \263\or \264\or \265\or \266\or \267%

```

```

1440 \or \270\or \271\or \272\or \273\or \274\or \275\or \276\or \277%
1441 \or \300\or \301\or \302\or \303\or \304\or \305\or \306\or \307%
1442 \or \310\or \311\or \312\or \313\or \314\or \315\or \316\or \317%
1443 \or \320\or \321\or \322\or \323\or \324\or \325\or \326\or \327%
1444 \or \330\or \331\or \332\or \333\or \334\or \335\or \336\or \337%
1445 \or \340\or \341\or \342\or \343\or \344\or \345\or \346\or \347%
1446 \or \350\or \351\or \352\or \353\or \354\or \355\or \356\or \357%
1447 \or \360\or \361\or \362\or \363\or \364\or \365\or \366\or \367%
1448 \or \370\or \371\or \372\or \373\or \374\or \375\or \376\or \377%
1449 \fi
1450 }

1451 \def\HyPsd@CJKnumber#1{%
1452 \ifnum#1<\z@
1453 \CJK@minus
1454 \expandafter\HyPsd@@CJKnumber\expandafter{\number-\number#1}%
1455 \else
1456 \expandafter\HyPsd@@CJKnumber\expandafter{\number#1}%
1457 \fi
1458 }

1459 \def\HyPsd@@CJKnumber#1{%
1460 \ifcase#1 %
1461 \CJK@zero\or\CJK@one\or\CJK@two\or\CJK@three\or\CJK@four\or
1462 \CJK@five\or\CJK@six\or\CJK@seven\or\CJK@eight\or\CJK@nine\or
1463 \CJK@ten\or\CJK@ten\CJK@one\or\CJK@ten\CJK@two\or
1464 \CJK@ten\CJK@three\or\CJK@ten\CJK@four\or\CJK@ten\CJK@five\or
1465 \CJK@ten\CJK@six\or\CJK@ten\CJK@seven\or\CJK@ten\CJK@eight\or
1466 \CJK@ten\CJK@nine
1467 \else
1468 \ifnum#1<10000 %
1469 \HyPsd@CJKnumberFour#1!\@empty{20}%
1470 \@empty
1471 \else
1472 \ifnum#1<100000000 %
1473 \expandafter\expandafter\expandafter\HyPsd@CJKnumberFour
1474 \IntCalcDiv#1!10000!%
1475 !}{20}%
1476 \CJK@tenthousand
1477 \expandafter\expandafter\expandafter\HyPsd@CJKnumberFour
1478 \IntCalcMod#1!10000!%
1479 !\CJK@zero{10}%
1480 \@empty
1481 \else
1482 \expandafter\HyPsd@CJKnumberLarge
1483 \number\IntCalcDiv#1!100000000!\expandafter!%
1484 \number\IntCalcMod#1!100000000!!%
1485 \fi
1486 \fi
1487 \fi
1488 }

1489 \def\HyPsd@CJKnumberLarge#1!#2!{%
1490 \HyPsd@CJKnumberFour#1!}{20}%
1491 \CJK@hundredmillion
1492 \ifnum#2=\z@
1493 \else
1494 \expandafter\expandafter\expandafter\HyPsd@CJKnumberFour
1495 \IntCalcDiv#2!10000!%
1496 !\CJK@zero{10}%

```

```

1497 \CJK@tenthousand
1498 \expandafter\expandafter\expandafter\HyPsd@CJKnumberFour
1499 \IntCalcMod#2!10000!%
1500 !\CJK@zero{10}%
1501 \@empty
1502 \fi
1503 }
1504 \def\HyPsd@CJKnumberFour#1!#2#3{%
1505 \ifnum#1=\z@
1506 \expandafter\@gobble
1507 \else
1508 \ifnum#1<1000 %
1509 #2%
1510 \HyPsd@CJKnumberThree#1!#{#3}%
1511 \else
1512 \HyPsd@@CJKnumber{\IntCalcDiv#1!1000!}%
1513 \CJK@thousand
1514 \expandafter\expandafter\expandafter\HyPsd@CJKnumberThree
1515 \IntCalcMod#1!1000!%
1516 !\CJK@zero{10}%
1517 \fi
1518 \fi
1519 }
1520 \def\HyPsd@CJKnumberThree#1!#2#3{%
1521 \ifnum#1=\z@
1522 \else
1523 \ifnum#1<100 %
1524 #2%
1525 \HyPsd@CJKnumberTwo#1!#{#3}%
1526 \else
1527 \HyPsd@@CJKnumber{\IntCalcDiv#1!100!}%
1528 \CJK@hundred
1529 \expandafter\expandafter\expandafter\HyPsd@CJKnumberTwo
1530 \IntCalcMod#1!100!%
1531 !\CJK@zero{10}%
1532 \fi
1533 \fi
1534 }
1535 \def\HyPsd@CJKnumberTwo#1!#2#3{%
1536 \ifnum#1=\z@
1537 \else
1538 \ifnum#1<#3 %
1539 #2%
1540 \HyPsd@@CJKnumber{#1}%
1541 \else
1542 \HyPsd@@CJKnumber{\IntCalcDiv#1!10!}%
1543 \CJK@ten
1544 \ifnum\IntCalcMod#1!10!=\z@
1545 \else
1546 \HyPsd@@CJKnumber{\IntCalcMod#1!10!}%
1547 \fi
1548 \fi
1549 \fi
1550 }

1551 \def\HyPsd@CJKdigits#1{%
1552 \ifx*#1\relax
1553 \expandafter\HyPsd@@CJKdigits\expandafter\CJK@zero

```

```

1554 \else
1555   \HyPsd@@CJKdigits\CJK@null{#1}%
1556 \fi
1557 }
1558 \def\HyPsd@@CJKdigits#1#2{%
1559   \ifx\#2\%
1560   \else
1561     \HyPsd@@@CJKdigits#1#2\@nil
1562   \fi
1563 }%
1564 \def\HyPsd@@@CJKdigits#1#2#3\@nil{%
1565   \HyPsd@CJKdigit#1{#2}%
1566   \ifx\#3\%
1567     \expandafter\@gobble
1568   \else
1569     \expandafter\@firstofone
1570   \fi
1571   {#3}%
1572   \HyPsd@@@CJKdigits#1#3\@nil
1573 }%
1574 }
1575 \def\HyPsd@CJKdigit#1#2{%
1576   \ifcase#2 %
1577     #1\or
1578     \CJK@one\or\CJK@two\or\CJK@three\or\CJK@four\or
1579     \CJK@five\or\CJK@six\or\CJK@seven\or\CJK@eight\or\CJK@nine
1580   \fi
1581 }

```

### 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  $\TeX 2_{\epsilon}$  versions [1998/06/01] and [1998/12/01]. I expect that versions below [1995/12/01] don't work.

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

```

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

```

```

\fi
\csname\cf@encoding\string#1%
\expandafter\endcsname
\else
\noexpand#1%
\fi}
\gdef\TextSymbolUnavailable#1{%
\@latex@error{%
Command \protect#1 unavailable in encoding \cf@encoding%
}\@eha}
\def\@inmathwarn#1{%
\ifmmode
\@latex@warning{Command \protect#1 invalid in math mode}%
\fi}

1582 \def\HyPsd@inmathwarn#1#2{%
1583 \ifx#2\expandafter
1584 \expandafter\ifx\csname\cf@encoding\string#1\endcsname\relax
1585 \HyPsd@GLYPHERR
1586 \expandafter\@gobble\string#1%
1587 >%
1588 \expandafter\expandafter\expandafter\HyPsd@EndWithElse
1589 \else
1590 \expandafter\expandafter\expandafter\HyPsd@GobbleFiFi
1591 \fi
1592 \else
1593 \expandafter#2%
1594 \fi
1595 }
1596 \def\HyPsd@GobbleFiFi#1\fi#2\fi{}
1597 \def\HyPsd@EndWithElse#1\else\else{}

\HyPsd@add@accent

1598 \def\HyPsd@add@accent#1#2{%
1599 \HyPsd@GLYPHERR\expandafter\@gobble\string#1+\string#2>%
1600 #2%
1601 }%

```

### 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 be caught by undelimited arguments.
- And they work in number, dimension, and skip assignments.

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

```

1602 \def\HyPsd@LetUnexpandableSpace#1{%
1603 \expandafter\futurelet\expandafter#1\expandafter\@gobble\space\relax
1604 }

```

`\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.

```

1605 \HyPsd@LetUnexpandableSpace\HyPsd@UnexpandableSpace

```

### 6.5.8 Marker for commands

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

```
1606 \edef\HyPsd@XSPACE{\string#\string X}
1607 \edef\HyPsd@ITALCORR{\string#\string I}
1608 \edef\HyPsd@GLYPHERR{\string#\string G}
```

### 6.5.9 `\hspace fix`

`\HyPsd@hspace`

```
1609 \def\HyPsd@hspace#1{\HyPsd@@hspace#1*\END}
```

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

```
1610 \def\HyPsd@@hspace#1*#2\END{%
1611   \ifx\#2\%
1612     \HyPsd@hspacetest{#1}%
1613   \else
1614     \expandafter\HyPsd@hspacetest
1615   \fi
1616 }
```

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

```
1617 \def\HyPsd@hspacetest#1{\ifdim#1>\z@\space\fi}
```

### 6.5.10 Fix for AMS classes

```
1618 \ltx@ifundefined{tocsection}{%
1619   \let\HyPsd@AMSclassfix\relax
1620 }{%
1621   \def\HyPsd@AMSclassfix{%
1622     \let\tocpart\HyPsd@tocsection
1623     \let\tocchapter\HyPsd@tocsection
1624     \let\tocappendix\HyPsd@tocsection
1625     \let\tocsection\HyPsd@tocsection
1626     \let\tocsubsection\HyPsd@tocsection
1627     \let\tocsubsubsection\HyPsd@tocsection
1628     \let\tocparagraph\HyPsd@tocsection
1629   }%
1630   \def\HyPsd@tocsection#1#2#3{%
1631     \if @#2@ \else \if @#1@ \else #1 \fi #2. \fi
1632     #3%
1633   }%
1634 }
```

### 6.5.11 Reference commands

`\HyPsd@href`

```
1635 \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.

```
1636 \def\HyPsd@ref#1{\HyPsd@@ref#1*\END}%
```



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

```
1637 \def\HyPsd@@ref#1*#2\END{%
1638   \ifx\#2\%
1639     \HyPsd@@@ref{#1}%
1640   \else
1641     \expandafter\HyPsd@@@ref
1642   \fi
1643 }
```

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

```
1644 \def\HyPsd@@@ref#1{%
1645   \expandafter\ifx\csname r@#1\endcsname\relax
1646     ??%
1647   \else
1648     \expandafter\expandafter\expandafter
1649     \@car\csname r@#1\endcsname\@nil
1650   \fi
1651 }
```

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

```
1652 \def\HyPsd@pageref#1{\HyPsd@@pageref#1*\END}
```

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

```
1653 \def\HyPsd@@pageref#1*#2\END{%
1654   \ifx\#2\%
1655     \HyPsd@@@pageref{#1}%
1656   \else
1657     \expandafter\HyPsd@@@pageref
1658   \fi
1659 }
```

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

```
1660 \def\HyPsd@@@pageref#1{%
1661   \expandafter\ifx\csname r@#1\endcsname\relax
1662     ??%
1663   \else
1664     \expandafter\expandafter\expandafter\expandafter
1665     \expandafter\expandafter\expandafter\@car
1666     \expandafter\expandafter\expandafter\@gobble
1667     \csname r@#1\endcsname{}\@nil
1668   \fi
1669 }
```

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

```
1670 \def\HyPsd@nameref#1{\HyPsd@@nameref#1*\END}
```

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

```
1671 \def\HyPsd@@nameref#1*#2\END{%
1672   \ifx\#2\%
1673     \HyPsd@@@nameref{#1}%
1674   \else
1675     \expandafter\HyPsd@@@nameref
1676   \fi
1677 }
```

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

```
1678 \def\HyPsd@@@nameref#1{%
1679   \expandafter\ifx\csname r@#1\endcsname\relax
1680     ??%
1681   \else
1682     \expandafter\expandafter\expandafter\expandafter
1683     \expandafter\expandafter\expandafter\@car
1684     \expandafter\expandafter\expandafter\@gobbletwo
1685     \csname r@#1\endcsname\}\}\@nil
1686   \fi
1687 }
```

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

```
1688 \def\HyPsd@autoref#1{\HyPsd@@autoref#1*\END}
```

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

```
1689 \def\HyPsd@@autoref#1*#2\END{%
1690   \ifx\#2\%
1691     \HyPsd@@@autoref{#1}%
1692   \else
1693     \expandafter\HyPsd@@@autoref
1694   \fi
1695 }
```

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

```
1696 \def\HyPsd@@@autoref#1{%
1697   \expandafter\ifx\csname r@#1\endcsname\relax
1698     ??%
1699   \else
1700     \expandafter\expandafter\expandafter\HyPsd@autorefname
1701     \csname r@#1\endcsname\}\}\}\@nil
1702     \expandafter\expandafter\expandafter
1703     \@car\csname r@#1\endcsname\@nil
1704   \fi
1705 }
```

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

```
1706 \def\HyPsd@autorefname#1#2#3#4#5\@nil{%
1707   \ifx\#4\%
1708     \else
1709     \HyPsd@@autorefname#4.\@nil
1710   \fi
1711 }
```

`\HyPsd@@autorefname`

```
1712 \def\HyPsd@@autorefname#1.#2\@nil{%
1713   \ltx@ifundefined{#1autorefname}{%
1714     \ltx@ifundefined{#1name}{%
1715     }{%
1716     \csname#1name\endcsname\space
1717   }%
1718 }{%
1719   \csname#1autorefname\endcsname\space
1720 }%
1721 }
```

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

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

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

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

The difference between `\HyPsd@DefCommand` and `\HyPsd@LetCommand` is that the first one also cancels this argument, 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 unbalanced `\if...` tokens, the cases `\let\if...\iftrue` and `\let\if...\iffalse` are checked and ignored.

```

\HyPsd@DefCommand
\HyPsd@LetCommand
1722 \begingroup
1723 \def\x#1#2{%
1724 \endgroup
1725 \let#1\def
1726 \def\HyPsd@DefCommand##1##2##3{%
1727 #1%
1728 \expandafter\noexpand
1729 \csname\expandafter\@gobble\string##1\@empty\endcsname
1730 \@gobble
1731 }%
1732 \let#2\let
1733 \def\HyPsd@LetCommand##1{%
1734 \expandafter\ifx\csname##1\expandafter\endcsname
1735 \csname iftrue\endcsname
1736 \pdfstringdefWarn\let
1737 \expandafter\@gobble
1738 \else
1739 \expandafter\ifx\csname##1\expandafter\endcsname
1740 \csname iffalse\endcsname
1741 \pdfstringdefWarn\let
1742 \expandafter\expandafter\expandafter\@gobble
1743 \else
1744 #2%
1745 \expandafter\noexpand
1746 \csname##1\expandafter\expandafter\expandafter\endcsname

```

```

1747     \fi
1748     \fi
1749   }%
1750 }%
1751 \expandafter\x\csname <def>-command\expandafter\endcsname
1752     \csname <let>-command\endcsname
1753 \def\HyPsd@LetCommand#1{%
1754   \expandafter\expandafter\expandafter\HyPsd@@LetCommand
1755     \expandafter\expandafter\expandafter{%
1756     \expandafter\@gobble\string#1\@empty
1757   }%
1758 }

```

### 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).

```

1759 \def\HyPsd@ifnextchar#1{%
1760   \pdfstringdefWarn#1%
1761   \expandafter\@gobbletwo\@gobble
1762 }

```

### 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`.

```

1763 \def\HyPsd@protected@testopt#1{%
1764   \pdfstringdefWarn#1%
1765   \@gobbletwo
1766 }

```

## 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:

```

1767 \def\HyPsd@Warning#1{%
1768   \begingroup
1769     \def\space{ }%
1770     \Hy@Warning{#1}%
1771   \endgroup
1772 }

```

## 6.6.2 Protecting spaces

```

1773 \RequirePackage{etexcmds}[2007/09/09]
1774 \ifetex@unexpanded
1775   \expandafter\@secondoftwo
1776 \else
1777   \expandafter\@firstoftwo
1778 \fi
1779 {%

```

`\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`.

```

1780   \def\HyPsd@ProtectSpaces#1{%
1781     \iftrue
1782       \expandafter\HyPsd@@ProtectSpacesFi
1783       \expandafter|\expandafter\@empty#1| \HyPsd@End#1%
1784     \fi
1785   }%

```

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

```

1786   \def\HyPsd@@ProtectSpacesFi#1 #2\HyPsd@End#3\fi{%
1787     \fi
1788     \ifx\scrollmode#2\scrollmode
1789       \HyPsd@RemoveMask#1\HyPsd@End#3%
1790     \else
1791       \gdef#3{#1\HyPsd@UnexpandableSpace#2}%
1792       \expandafter\HyPsd@@ProtectSpacesFi#3\HyPsd@End#3%
1793     \fi
1794   }%

```

### 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.

```

1795   \def\HyPsd@RemoveMask|#1|\HyPsd@End#2{%
1796     \toks@ \expandafter{#1}%
1797     \xdef#2{\the\toks@}%
1798   }%

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

```

```

1816 \HyPsd@fi
1817 }%
1818 \def\HyPsd@RemoveMask|#1|\HyPsd@End#2{%
1819 \xdef#2{\etex@unexpanded\expandafter{#1}}%
1820 }%
1821 }

```

### 6.6.3 Remove grouping braces

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

```

1822 \def\HyPsd@RemoveBraces#1{%
1823 \ifx\scrollmode#1\scrollmode
1824 \else
1825 \HyPsd@@RemoveBracesFi#1\HyPsd@End{#1}%
1826 \fi
1827 }

```

`\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`.

```

1828 \def\HyPsd@@RemoveBracesFi#1#2\HyPsd@End#3\fi{%
1829 \fi
1830 \def\Hy@temp@A{#1#2}%
1831 \def\Hy@temp@B{#3}%
1832 \ifx\Hy@temp@A\Hy@temp@B
1833 \expandafter\def\expandafter\HyPsd@String\expandafter{%
1834 \HyPsd@String#1%
1835 }%
1836 \ifx\scrollmode#2\scrollmode
1837 \else
1838 \Hy@ReturnAfterFiFiEnd{%
1839 \HyPsd@RemoveBraces{#2}%
1840 }%
1841 \fi
1842 \else
1843 \def\Hy@temp@A{#1}%
1844 \HyPsd@AppendItalcrr\HyPsd@String
1845 \ifx\Hy@temp@A\@empty
1846 \Hy@ReturnAfterElseFiFiEnd{%
1847 \HyPsd@RemoveBraces{#2}%
1848 }%
1849 \else
1850 \HyPsd@ProtectSpaces\Hy@temp@A
1851 \HyPsd@AppendItalcrr\Hy@temp@A
1852 \Hy@ReturnAfterFiFiEnd{%
1853 \expandafter\HyPsd@RemoveBraces\expandafter
1854 {\Hy@temp@A#2}%
1855 }%
1856 \fi
1857 \fi

```

```

1858 \Hy@ReturnEnd
1859 }

```

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

```

1860 \def\HyPsd@AppendItalcrr#1{%
1861   \expandafter\HyPsd@@AppendItalcrr\expandafter{\/#1}%
1862 }
1863 \def\HyPsd@@AppendItalcrr#1#2{%
1864   \expandafter\def\expandafter#2\expandafter{#2#1}%
1865 }

```

#### 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).

```

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

```

```

1897     \HyPsd@String#1%
1898   }%
1899 \else
1900   \ifcat#1 % SPACE
1901     \expandafter\def\expandafter\HyPsd@String\expandafter{%
1902       \HyPsd@String\HyPsd@SPACEOPTI
1903     }%
1904 \else
1905   \ifcat$#1%
1906     \HyPsd@CatcodeWarning{math shift}%
1907 \else
1908   \ifcat&#1%
1909     \HyPsd@CatcodeWarning{alignment tab}%
1910 \else
1911   \ifcat^#1%
1912     \HyPsd@CatcodeWarning{superscript}%
1913 \else
1914   \ifcat_#1%
1915     \HyPsd@CatcodeWarning{subscript}%
1916 \else
1917   \expandafter\def\expandafter\HyPsd@String\expandafter{%
1918     \HyPsd@String#1%
1919   }%
1920 \fi
1921 \fi
1922 \fi
1923 \fi
1924 \fi
1925 \fi
1926 \fi
1927 \ifx\HyPsd@Rest\relax
1928   \ifx\scrollmode#2\scrollmode
1929 \else
1930   \Hy@ReturnAfterFiFiEnd{%
1931     \HyPsd@CheckCatcodes#2\HyPsd@End
1932   }%
1933 \fi
1934 \else
1935   \ifx\HyPsd@Rest\@empty
1936 \else
1937   \Hy@ReturnAfterFiFiEnd{%
1938     \expandafter\HyPsd@CheckCatcodes\HyPsd@Rest\HyPsd@End
1939   }%
1940 \fi
1941 \fi
1942 \Hy@ReturnEnd
1943 }

```

### Remove counts, dimens, skips.

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

```

1944 \def\HyPsd@AfterCountRemove#1\HyPsd@End{%
1945   \gdef\HyPsd@Rest{#1}%
1946 }

```

\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.

```

1947 \def\HyPsd@AfterDimenRemove#1\HyPsd@end{%
1948   \ifdim\ifx\HyPsd@String\@empty\z@\else\dimen@>1ex %
1949     \HyPsd@ReplaceSpaceWarning{\string\kern\space\the\dimen@}%
1950     \gdef\HyPsd@Rest{\HyPsd@UnexpandableSpace #1}%
1951   \else
1952     \ifdim\dimen@=\z@
1953     \else
1954       \HyPsd@RemoveSpaceWarning{\string\kern\space\the\dimen@}%
1955     \fi
1956     \gdef\HyPsd@Rest{#1}%
1957   \fi
1958 }

```

`\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).

```

1959 \def\HyPsd@AfterSkipRemove#1\HyPsd@end{%
1960   \ifdim\ifx\HyPsd@String\@empty\z@\else\skip@>1ex %
1961     \HyPsd@ReplaceSpaceWarning{\string\hskip\space\the\skip@}%
1962     \gdef\HyPsd@Rest{\HyPsd@UnexpandableSpace #1}%
1963   \else
1964     \ifdim\skip@=\z@
1965     \else
1966       \HyPsd@RemoveSpaceWarning{\string\kern\space\the\skip@}%
1967     \fi
1968     \gdef\HyPsd@Rest{#1}%
1969   \fi
1970 }

```

### Catcode warnings.

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

```

1971 \def\HyPsd@CatcodeWarning#1{%
1972   \HyPsd@Warning{%
1973     Token not allowed in a PDF string (%
1974     \ifHy@unicode
1975       Unicode%
1976     \else
1977       PDFDocEncoding%
1978     \fi
1979   ):%
1980   \MessageBreak removing ‘\HyPsd@RemoveCmdPrefix#1’%
1981 }%
1982 }
1983 \begingroup
1984   \catcode‘\|=0 %
1985   \catcode‘\|=12 %
1986   \gdef\HyPsd@RemoveCmdPrefix#1{%
1987     \expandafter\HyPsd@@RemoveCmdPrefix
1988     \string#1|@empty\<>-|@empty|@empty
1989   }%
1990   \gdef\HyPsd@@RemoveCmdPrefix#1\<>-#2|@empty#3|@empty{#1#2}%
1991 \endgroup

```

`\HyPsd@RemoveSpaceWarning`

```

1992 \def\HyPsd@RemoveSpaceWarning#1{%
1993   \HyPsd@Warning{%
1994     Token not allowed in a PDF string (%)
1995     \ifHy@unicode
1996       Unicode%
1997     \else
1998       PDFDocEncoding%
1999     \fi
2000   }:%
2001   \MessageBreak #1\MessageBreak
2002   removed%
2003 }%
2004 }

```

\HyPsd@ReplaceSpaceWarning

```

2005 \def\HyPsd@ReplaceSpaceWarning#1{%
2006   \HyPsd@Warning{%
2007     Token not allowed in a PDF string (%)
2008     \ifHy@unicode
2009       Unicode%
2010     \else
2011       PDFDocEncoding%
2012     \fi
2013   }:%
2014   \MessageBreak #1\MessageBreak
2015   replaced by space%
2016 }%
2017 }

```

### 6.6.5 Check for wrong glyphs

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

```

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

```

```

2042 Composite letter '@backslashchar#1+#2'\MessageBreak
2043 not defined in P\ifHy@unicode U\else D1\fi\space encoding,%
2044 \MessageBreak
2045 removing '@backslashchar#1'%
2046 }%
2047 \fi
2048 }

```

### 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`.

```

2049 \def\HyPsd@spaceopti#1{ % first space
2050 \ifx\HyPsd@spaceopti#1%
2051 \040%
2052 \else
2053 #1%
2054 \fi
2055 }%

```

### 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.

2056 \def\HyPsd@Subst#1#2#3{%
2057 \def\HyPsd@@ReplaceFi##1#1##2\END\fi{%
2058 \fi
2059 ##1%
2060 \ifx\scrollmode##2\scrollmode
2061 \else
2062 #2%
2063 \HyPsd@@ReplaceFi##2\END
2064 \fi
2065 }%
2066 \xdef#3{%
2067 \iftrue
2068 \expandafter\HyPsd@@ReplaceFi#3#1\END
2069 \fi
2070 }%
2071 }

```

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

```

2072 \def\HyPsd@StringSubst#1{%
2073 \expandafter\HyPsd@Subst\expandafter{\string#1}%
2074 }

```

`\HyPsd@EscapeTeX`

```

2075 \begingroup
2076 \lccode'!='\%%
2077 \lccode'\|='\%%

```

```

2078 \lccode'\(=\{\%
2079 \lccode'\)=\}%
2080 \lccode'0=\ltx@zero
2081 \lccode'1=\ltx@zero
2082 \lccode'3=\ltx@zero
2083 \lccode'4=\ltx@zero
2084 \lccode'5=\ltx@zero
2085 \lccode'7=\ltx@zero
2086 \lowercase{\endgroup
2087 \def\HyPsd@EscapeTeX#1{%
2088   \HyPsd@Subst!{|045}#1%
2089   \HyPsd@Subst({|173}#1%
2090   \HyPsd@Subst){|175}#1%
2091 }%
2092 }

```

### 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.

```

2093 \def\HyPsd@doxspace#1{%
2094   \ifx#1\relax\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                 \ifx#1/\else
2102                   \ifx#1-\else
2103                     \ifx#1'\else
2104                       \HyPsd@SPACEOPTI
2105                     \fi
2106                   \fi
2107                 \fi
2108               \fi
2109             \fi
2110           \fi
2111         \fi
2112       \fi
2113     \fi
2114   \fi
2115   #1%
2116 }%

```

### 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.

```

2117 \begingroup
2118 \catcode'\|=0 %
2119 \catcode'\|=12 %

```

`\HyPsd@ConvertToUnicode`

```

2120 |gdef|HyPsd@ConvertToUnicode#1{%
2121 |xdef#1{%
2122 |expandafter|HyPsd@DoConvert#1|@empty|@empty|@empty
2123 }%
2124 |ifx#1|@empty
2125 |else
2126 |xdef#1{%
2127 \376\377%
2128 #1%
2129 }%
2130 |fi
2131 }%

```

\HyPsd@DoConvert

```

2132 |gdef|HyPsd@DoConvert#1{%
2133 |ifx#1|@empty
2134 |else
2135 |Hy@ReturnAfterFi{%
2136 |ifx#1\%%
2137 \%%
2138 |expandafter|HyPsd@DoEscape
2139 |else
2140 |HyPsd@Char{#1}%
2141 |expandafter|HyPsd@DoConvert
2142 |fi
2143 }%
2144 |fi
2145 }%

```

\HyPsd@DoEscape

```

2146 |gdef|HyPsd@DoEscape#1{%
2147 |ifx#19%
2148 |expandafter|HyPsd@GetTwoBytes
2149 |else
2150 |Hy@ReturnAfterFi{%
2151 |ifx#18%
2152 00%
2153 |expandafter|HyPsd@GetTwoBytes
2154 |else
2155 #1%
2156 |expandafter|HyPsd@GetOneByte
2157 |fi
2158 }%
2159 |fi
2160 }%

```

\HyPsd@GetTwoBytes

```

2161 |gdef|HyPsd@GetTwoBytes#1\#2#3#4{%
2162 #1\#2#3#4%
2163 |HyPsd@DoConvert
2164 }%

```

\HyPsd@GetOneByte

```

2165 |gdef|HyPsd@GetOneByte#1#2{%
2166 #1#2%
2167 |HyPsd@DoConvert
2168 }%

```

2169 |endgroup

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

```
2170 \def\HyPsd@GetNextTwoTokens#1#2#3\END#4{%  
2171   \xdef#4{#4#1#2}%  
2172   \HyPsd@@ConvertToUnicode#3\END#4%  
2173 }
```

\HyPsd@Char

```
2174 \begingroup  
2175   \catcode0=9 %  
2176   \catcode'\^=7 %  
2177   \catcode'\^^=12 %  
2178   \def\x{^^^0000}%  
2179 \expandafter\endgroup  
2180 \ifx\x\@empty  
2181   \def\HyPsd@Char#1{%  
2182     \ifnum'#1<128 %  
2183       \@backslashchar 000#1%  
2184     \else  
2185       \ifnum'#1<65536 %  
2186         \expandafter\HyPsd@CharTwoByte\number'#1!%  
2187       \else  
2188         \expandafter\expandafter\expandafter\HyPsd@CharSurrogate  
2189         \intcalcSub{'#1}{65536}!%  
2190       \fi  
2191     \fi  
2192   }%  
2193 \def\HyPsd@CharTwoByte#1!{%  
2194   \expandafter\expandafter\expandafter\HyPsd@CharOctByte  
2195   \IntCalcDiv#1!256!!%  
2196   \expandafter\expandafter\expandafter\HyPsd@CharOctByte  
2197   \IntCalcMod#1!256!!%  
2198 }%  
2199 \def\HyPsd@CharOctByte#1!{%  
2200   \@backslashchar  
2201   \IntCalcDiv#1!64!%  
2202   \intcalcDiv{\IntCalcMod#1!64!}{8}%  
2203   \IntCalcMod#1!8!%  
2204 }%  
2205 \def\HyPsd@CharSurrogate#1!{%  
2206   \@backslashchar 33%  
2207   \IntCalcDiv#1!262144!%  
2208   \expandafter\expandafter\expandafter\HyPsd@CharOctByte  
2209   \intcalcDiv{\IntCalcMod#1!262144!}{1024}!%  
2210   \@backslashchar 33%  
2211   \expandafter\expandafter\expandafter\IntCalcAdd  
2212   \intcalcDiv{\IntCalcMod#1!1024!}{256}!4!%  
2213   \expandafter\expandafter\expandafter\HyPsd@CharOctByte  
2214   \IntCalcMod#1!256!!%  
2215 }%  
2216 \else  
2217   \def\HyPsd@Char#1{%  
2218     \@backslashchar 000#1%  
2219   }%  
2220 \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

2221 \begingroup\expandafter\expandafter\expandafter\endgroup
2222 \expandafter\ifx\csname numexpr\endcsname\relax
2223   \let\HyPsd@UTFviii\relax
2224 \else
2225   \begingroup
2226     \lccode'\~='^f4\relax
2227   \lowercase{\endgroup
2228     \def\HyPsd@UTFviii{%
2229       \let\UTFviii@two@octets\HyPsd@UTFviii@two
2230       \let\UTFviii@three@octets\HyPsd@UTFviii@three
2231       \let\UTFviii@four@octets\HyPsd@UTFviii@four
2232       \ifx~\HyPsd@UTFviii@ccxliv@undef
2233         \let~\HyPsd@UTFviii@ccxliv@def
2234       \fi
2235       \let\unichar\HyPsd@unichar
2236     }%
2237   }%
2238   \def\HyPsd@UTFviii@ccxliv@undef{\@inpenc@undefined@{utf8}}%
2239   \edef\HyPsd@UTFviii@ccxliv@def{%
2240     \noexpand\UTFviii@four@octets\string ^f4%
2241   }%

```

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.

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

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

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

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

$$(5)$$

```

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

```

```

2254 \number\dimexpr.125\dimexpr#3sp\relax\relax\expandafter\relax
2255 \number\dimexpr #4-8*#3\relax
2256 }%

```

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

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

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

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

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

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

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

$$(12)$$

```

2257 \def\HyPsd@UTFviii@three#1#2#3{%
2258 \expandafter\HyPsd@UTFviii@three
2259 \number\dimexpr.25\dimexpr'#1sp\expandafter\relax\expandafter| %
2260 \number'#1\expandafter| %
2261 \number\ifnum\dimexpr'#2-128\relax <32 0\else 1\fi\expandafter| %
2262 \number\dimexpr.25\dimexpr'#2sp\expandafter\relax\expandafter| %
2263 \number'#2\expandafter| %
2264 \number\dimexpr.125\dimexpr'#3sp\expandafter\relax\expandafter| %
2265 \number'#3 \@nil
2266 }%
2267 \def\HyPsd@UTFviii@four#1#2#3#4#5#6#7\@nil{%
2268 \expandafter\9%
2269 \number\dimexpr #1-56\expandafter\relax
2270 \number\dimexpr 2*(#2-4*#1)+#3\expandafter\relax
2271 \number\dimexpr #4 - 32 -\ifcase#3 0\else 8\fi\expandafter\relax
2272 \csname\number\dimexpr #5-4*#4\relax\expandafter\endcsname
2273 \number\dimexpr #6-16\expandafter\relax
2274 \number\dimexpr #7-8*#6\relax
2275 }%

```

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 wwzzzyy 110111yy yyxxxxxx
octal: 011 011 0ww 0ww zzz zyy 011 011 1yy 0yy xxx xxx

```

```

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

```



```

2290 \number\numexpr\ifodd#2 4+\fi
2291 \dimexpr.0625\dimexpr'#3sp-128sp\relax\relax\relax
2292 \933%
2293 \expandafter\HyPsd@@@UTFviii@four\number
2294 \numexpr'#3-16*\dimexpr.0625\dimexpr'#3sp| %
2295 }%
2296 \def\HyPsd@@@UTFviii@four#1|#2{%
2297 \number\numexpr4+\dimexpr.25\dimexpr#1sp\relax\relax\relax
2298 \csname\number\numexpr#1-4*\dimexpr.25\dimexpr#1sp\endcsname
2299 \number\dimexpr.125\dimexpr'#2sp-128sp\relax\relax
2300 \number\numexpr'#2-8*\dimexpr.125\dimexpr'#2sp\relax\relax\relax
2301 }%

```

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

```

2302 \def\HyPsd@unichar#1{%
2303 \ifHy@unicode
2304 \ifnum#1>"10FFFF %
2305 \HyPsd@UnicodeReplacementCharacter % illegal
2306 \else
2307 \ifnum#1>"FFFF %

```

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

```

2308 \expandafter\HyPsd@unichar\expandafter{%
2309 \number\numexpr 55296+%
2310 \dimexpr.0009765625\dimexpr\number#1sp-\p@
2311 \relax\relax\relax
2312 }%

```

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

```

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

```

```

2341 \def\HyPsd@unichar@first@byte#1{%
2342 \number\dimexpr.015625\dimexpr#1sp\relax\relax
2343 \expandafter\HyPsd@unichar@octtwo\expandafter{%
2344 \number
2345 \numexpr#1-64*\number\dimexpr.015625\dimexpr#1sp%
2346 \relax\relax\relax
2347 }%
2348 }%
2349 \def\HyPsd@unichar@second@byte#1{%
2350 \csname\number\dimexpr.015625\dimexpr#1sp\relax\relax\endcsname
2351 \expandafter\HyPsd@unichar@octtwo\expandafter{%
2352 \number
2353 \numexpr#1-64*\number\dimexpr.015625\dimexpr#1sp%
2354 \relax\relax\relax
2355 }%
2356 }%
2357 \def\HyPsd@unichar@octtwo#1{%
2358 \number\dimexpr.125\dimexpr#1sp\relax\relax
2359 \number\numexpr#1-8*\number\dimexpr.125\dimexpr#1sp%
2360 \relax\relax\relax
2361 }%
2362 \fi

```

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

```

2363 \def\HyPsd@utf@viii@undeferr#1#2#3#4#5#6{%
2364 \ifx\@gobble#1%
2365 \else
2366 [Please insert \textbackslash PrerenderUnicode%
2367 \textbraceleft#1\textbraceright\space
2368 into preamble]%
2369 \fi
2370 }%

```

## 7 Support of other packages

### 7.1 Class memoir

```

2371 \@ifclassloaded{memoir}{%
2372 \Hy@AtEndOfPackage{\RequirePackage{memhfixc}}}%
2373 }{}

```

### 7.2 Package subfigure

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

```

2374 \@ifpackageloaded{subfigure}{%
2375 \ltx@ifundefined{sub@label}{%
2376 \Hy@hypertextnamesfalse
2377 }{%
2378 \renewcommand*{\sub@label}[1]{%
2379 \@bsphack
2380 \subfig@oldlabel{#1}%
2381 \if@filesw
2382 \beginngroup
2383 \edef\@currentlabstr{%
2384 \expandafter\strip@prefix\meaning\@currentlabelname
2385 }%

```

```

2386 \protected@write\@auxout{}\{}%
2387 \string\newlabel{sub@#1}\{}%
2388 {\@nameuse{@@thesub\@capytype}}%
2389 {\thepage}%
2390 {\%
2391 \expandafter\strip@period\@currentlabstr
2392 \relax.\relax\@@@%
2393 }%
2394 {\@currentHref}%
2395 {\}%
2396 }%
2397 }%
2398 \endgroup
2399 \fi
2400 \@esphack
2401 }%
2402 \@ifpackagelater{subfigure}{2002/03/26}\{}%
2403 \providecommand*\@toclevel@subfigure{1}%
2404 \providecommand*\@toclevel@subtable{1}%
2405 }%
2406 }%
2407 \{}

```

### 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:

```

2408 \ltx@ifundefined{XR@addURL}\{}%
2409 \{}%

```

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.

```

2410 \def\xr@addURL#1{\xr@@dURL#1\{}%
2411 \def\xr@@dURL#1#2#3#4#5\{}%
2412 {\#1}\#2}%
2413 \if!#4!%
2414 \else
2415 {\#3}\#4}\xr@URL}%
2416 \fi
2417 }%
2418 }

2419 \def\Hy@true{true}
2420 \def\Hy@false{false}

```

Providing dummy definitions.

```

2421 \let\literalps@out\@gobble
2422 \newcommand\pdfbookmark[3]{}
2423 \def\Acrobatmenu#1#2{\leavevmode#2}
2424 \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

```
2425 \let\HyperRaiseLinkHook\@empty
2426 \def\HyperRaiseLinkDefault{\baselineskip}
```

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

```
2427 \newcount\Hy@SavedSpaceFactor
2428 \def\Hy@SaveSpaceFactor{%
2429   \global\Hy@SavedSpaceFactor=\ifhmode\spacefactor\else\z@\fi
2430 }
2431 \def\Hy@RestoreSpaceFactor{%
2432   \relax
2433   \ifhmode
2434     \ifnum\Hy@SavedSpaceFactor>\z@
2435       \spacefactor=\Hy@SavedSpaceFactor
2436     \fi
2437   \fi
2438 }
2439 \def\Hy@SaveSavedSpaceFactor{%
2440   \edef\Hy@RestoreSavedSpaceFactor{%
2441     \global\Hy@SavedSpaceFactor=\the\Hy@SavedSpaceFactor\relax
2442   }%
2443 }
2444 \def\Hy@raisedlink#1{%
2445   \ifvmode
2446     #1%
2447   \else
2448     \Hy@SaveSpaceFactor
2449     \penalty\@M
2450     \smash{%
2451       \begingroup
2452         \let\HyperRaiseLinkLength\@tempdima
2453         \setlength\HyperRaiseLinkLength\HyperRaiseLinkDefault
2454         \HyperRaiseLinkHook
2455         \expandafter\endgroup
2456         \expandafter\raise\the\HyperRaiseLinkLength\hbox{%
2457           \Hy@RestoreSpaceFactor
2458           #1%
2459           \Hy@SaveSpaceFactor
2460         }%
2461       }%
2462     \Hy@RestoreSpaceFactor
2463   \fi
2464 }
```

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

```
2465 \def\Hy@SaveLastskip{%
2466   \let\Hy@RestoreLastskip\relax
2467   \ifvmode
2468     \ifdim\lastskip=\z@
2469       \let\Hy@RestoreLastskip\nobreak
2470     \else
```

```

2471 \begingroup
2472 \skip@=-\lastskip
2473 \edef\x{%
2474 \endgroup
2475 \def\noexpand\Hy@RestoreLastskip{%
2476 \noexpand\ifvmode
2477 \noexpand\nobreak
2478 \vskip\the\skip@
2479 \vskip\the\lastskip\relax
2480 \noexpand\fi
2481 }%
2482 }%
2483 \x
2484 \fi
2485 \else
2486 \ifhmode
2487 \ifdim\lastskip=\z@
2488 \let\Hy@RestoreLastskip\nobreak
2489 \else
2490 \begingroup
2491 \skip@=-\lastskip
2492 \edef\x{%
2493 \endgroup
2494 \def\noexpand\Hy@RestoreLastskip{%
2495 \noexpand\ifhmode
2496 \noexpand\nobreak
2497 \hskip\the\skip@
2498 \hskip\the\lastskip\relax
2499 \noexpand\fi
2500 }%
2501 }%
2502 \x
2503 \fi
2504 \fi
2505 \fi
2506 }%

```

## 9 Options

```

2507 \SetupKeyvalOptions{%
2508 family=Hyp,%
2509 prefix=HyOpt%
2510 }

```

### 9.1 Help macros

\Hy@boolkey

```

2511 \def\Hy@boolkey{\@dblarg\Hy@@boolkey}
2512 \def\Hy@@boolkey[#1]#2#3{%
2513 \edef\Hy@tempa{#3}%
2514 \lowercase\expandafter{%
2515 \expandafter\def\expandafter\Hy@tempa\expandafter{\Hy@tempa}%
2516 }%
2517 \ifx\Hy@tempa\@empty
2518 \let\Hy@tempa\Hy@true
2519 \fi
2520 \ifx\Hy@tempa\Hy@true

```

```

2521 \else
2522 \ifx\Hy@tempa\Hy>false
2523 \else
2524 \let\Hy@tempa\relax
2525 \fi
2526 \fi
2527 \ifx\Hy@tempa\relax
2528 \Hy@WarnOptionValue{#3}{#1}{‘true’ or ‘false’}%
2529 \else
2530 \Hy@Info{Option ‘#1’ set ‘\Hy@tempa’}%
2531 \csname Hy@#2\Hy@tempa\endcsname
2532 \fi
2533 }

```

\Hy@WarnOptionValue

```

2534 \def\Hy@WarnOptionValue#1#2#3{%
2535 \Hy@Warning{%
2536 Unexpected value ‘#1’\MessageBreak
2537 of option ‘#2’ instead of\MessageBreak
2538 #3%
2539 }%
2540 }

```

\Hy@DisableOption

```

2541 \def\Hy@DisableOption#1{%
2542 \@ifundefined{KV@Hyp@#1@default}{%
2543 \define@key{Hyp}{#1}%
2544 }{%
2545 \define@key{Hyp}{#1}[]%
2546 }%
2547 {\Hy@WarnOptionDisabled{#1}}%
2548 }

```

\Hy@WarnOptionDisabled

```

2549 \def\Hy@WarnOptionDisabled#1{%
2550 \Hy@Warning{%
2551 Option ‘#1’ has already been used,\MessageBreak
2552 setting the option has no effect%
2553 }%
2554 }

```

\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.

```

2555 \def\Hy@CheckOptionValue#1#2#3{%
2556 \begingroup
2557 \edef\x{#1}%
2558 \@onelevel@sanitize\x
2559 \let\y=y%
2560 \def\do##1##2{%
2561 \def\z{##1}%
2562 \@onelevel@sanitize\z
2563 \ifx\x\z
2564 \let\y=n%
2565 \let\do\@gobbletwo
2566 \fi
2567 }%
2568 #3%

```

```

2569 \ifx\y y%
2570 \def\do##1##2{%
2571   * '##1'%
2572   \ifx\\##2\\\else\space(##2)\fi
2573   \MessageBreak
2574 }%
2575 \Hy@Warning{%
2576   Values of option '#2':\MessageBreak
2577   ##3%
2578   * An empty value disables the option.\MessageBreak
2579   Unknown value '\x'%
2580 }%
2581 \fi
2582 \endgroup
2583 }

```

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

```

2584 \def\Hy@DefNameKey#1{%
2585   \expandafter\Hy@@DefNameKey\csname @#1\endcsname{#1}%
2586 }

```

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

```

2587 \def\Hy@@DefNameKey#1#2#3{%
2588   \define@key{Hyp}{#2}{%
2589     \edef#1{##1}%
2590     \ifx#1\@empty
2591     \else
2592       \Hy@CheckOptionValue{##1}{#2}{#3}%
2593     \fi
2594   }%
2595   \let#1\@empty
2596 }

```

`\Hy@UseNameKey`

```

2597 \def\Hy@UseNameKey#1#2{%
2598   \ifx#2\@empty
2599   \else
2600     /#1/#2%
2601   \fi
2602 }

```

## 9.2 Defining the options

```

2603 \define@key{Hyp}{implicit}[true]{%
2604   \Hy@boolkey{implicit}{#1}%
2605 }
2606 \define@key{Hyp}{draft}[true]{%
2607   \Hy@boolkey{draft}{#1}%
2608 }
2609 \define@key{Hyp}{final}[true]{%
2610   \Hy@boolkey{final}{#1}%
2611 }

```

```

2612 \let\KV@Hyp@nolinks\KV@Hyp@draft
2613 \def\Hy@ObsoletePaperOption#1{%
2614   \Hy@WarningNoLine{%
2615     Option '#1' is no longer used%
2616   }%
2617   \define@key{Hyp}{#1}[true]{}%
2618 }
2619 \def\Hy@temp#1{%
2620   \define@key{Hyp}{#1}[true]{%
2621     \Hy@ObsoletePaperOption{#1}%
2622   }%
2623 }
2624 \Hy@temp{a4paper}
2625 \Hy@temp{a5paper}
2626 \Hy@temp{b5paper}
2627 \Hy@temp{letterpaper}
2628 \Hy@temp{legalpaper}
2629 \Hy@temp{executivepaper}

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

```



```

2669 }
2670 \define@key{Hyp}{typexml}[true]{%
2671   \Hy@boolkey{typexml}{#1}%
2672 }

```

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.

```

2673 \define@key{Hyp}{raiselinks}[true]{%
2674   \Hy@boolkey{raiselinks}{#1}%
2675 }

```

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

```

2676 \def\Hy@setbreaklinks#1{%
2677   \csname breaklinks#1\endcsname
2678 }

2679 \def\Hy@breaklinks@unsupported{%
2680   \ifx\Hy@setbreaklinks\@gobble
2681     \ifHy@breaklinks
2682       \Hy@WarningNoLine{%
2683         You have enabled option 'breaklinks'.\MessageBreak
2684         But driver '\Hy@driver.def' does not support this.\MessageBreak
2685         Expect trouble with the link areas of broken links%
2686       }%
2687     \fi
2688   \fi
2689 }

2690 \define@key{Hyp}{breaklinks}[true]{%
2691   \Hy@boolkey{breaklinks}{#1}%
2692   \let\Hy@setbreaklinks\@gobble
2693 }

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

```

Determines whether an automatic anchor is put on each page

```

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

```

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.

```

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

```

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

```

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

```

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

```

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

```

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

```

2709 \define@key{Hyp}{nesting}[true]{%
2710   \Hy@boolkey{nesting}{#1}%
2711 }

2712 \define@key{Hyp}{unicode}[true]{%
2713   \Hy@boolkey{unicode}{#1}%
2714   \ifHy@unicode
2715     \def\HyPsd@pdfencoding{unicode}%
2716     \HyPsd@LoadUnicode
2717   \else
2718     \def\HyPsd@pdfencoding{pdfdoc}%
2719   \fi
2720 }

2721 \def\HyPsd@LoadUnicode{%
2722   \@ifundefined{T@PU}{%
2723     \input{puenc.def}%
2724     \HyLinguex@Restore
2725   }{}%
2726   \DeclareFontFamily{PU}{pdf}{}%
2727   \DeclareFontShape{PU}{pdf}{m}{n}{<-> cmr10 }{}%
2728   \DeclareFontSubstitution{PU}{pdf}{m}{n}%
2729   \global\let\HyPsd@LoadUnicode\relax
2730 }

2731 \Hy@AtBeginDocument{%
2732   \ifx\HyPsd@LoadUnicode\relax
2733   \else
2734     \def\HyPsd@LoadUnicode{%
2735       \Hy@Error{%
2736         Unicode support for bookmarks is not available.\MessageBreak
2737         Activate unicode support by using one of the options\MessageBreak
2738         'unicode', 'pdfencoding=unicode', 'pdfencoding=auto'\MessageBreak
2739         in the preamble%
2740       }\@ehc
2741       \global\let\HyPsd@LoadUnicode\relax
2742       \global\Hy@unicodedefalse
2743       \global\let\Hy@unicodetrue\Hy@unicodedefalse
2744     }%
2745   \fi
2746 }

2747 \define@key{Hyp}{pdfencoding}{%
2748   \edef\HyPsd@temp{#1}%
2749   \ifx\HyPsd@temp\HyPsd@pdfencoding@pdfdoc
2750     \let\HyPsd@pdfencoding\HyPsd@temp
2751     \Hy@unicodedefalse
2752   \else
2753     \ifcase\ifx\HyPsd@temp\HyPsd@pdfencoding@unicode
2754       \z@
2755     \else
2756       \ifx\HyPsd@temp\HyPsd@pdfencoding@auto
2757         \z@
2758       \else
2759         \@ne
2760       \fi
2761     \fi
2762     \let\HyPsd@pdfencoding\HyPsd@temp
2763     \hypersetup{unicode}%
2764     \ifHy@unicode
2765       \def\HyPsd@pdfencoding{#1}%

```

```

2766 \ifx\HyPsd@pdfencoding\HyPsd@pdfencoding@auto
2767 \HyPsd@LoadStringEnc
2768 \fi
2769 \else
2770 \Hy@Warning{Cannot switch to unicode bookmarks}%
2771 \let\HyPsd@pdfencoding\HyPsd@pdfencoding@pdfdoc
2772 \fi
2773 \else
2774 \@onelevel@sanitize\HyPsd@temp
2775 \Hy@Warning{%
2776 Values of option 'pdfencoding':\MessageBreak
2777 'pdfdoc', 'unicode', 'auto'.\MessageBreak
2778 Ignoring unknown value '\HyPsd@temp'%
2779 }%
2780 \fi
2781 \fi
2782 }
2783 \def\HyPsd@pdfencoding@auto{auto}
2784 \def\HyPsd@pdfencoding@pdfdoc{pdfdoc}
2785 \def\HyPsd@pdfencoding@unicode{unicode}
2786 \let\HyPsd@pdfencoding\Hy@pdfencoding@pdfdoc
2787 \def\HyPsd@LoadStringEnc{%
2788 \RequirePackage{stringenc}[2009/12/15]%
2789 \let\HyPsd@LoadStringEnc\relax
2790 }
2791 \Hy@AtBeginDocument{%
2792 \@ifpackageloaded{stringenc}{%
2793 \let\HyPsd@LoadStringEnc\relax
2794 }{%
2795 \def\HyPsd@LoadStringEnc{%
2796 \Hy@WarningNoLine{%
2797 Missing package 'stringenc'. Use 'pdfencoding=auto'\MessageBreak
2798 in the preamble or load the package there%
2799 }%
2800 }%
2801 }%
2802 }
2803 \def\hypersetup{\kvsetkeys{Hyp}}
2804 \newif\ifHy@setpdfversion
2805 \define@key{Hyp}{pdfversion}{%
2806 \@ifundefined{Hy@pdfversion@#1}{%
2807 \PackageWarning{hyperref}{%
2808 Unsupported PDF version '#1'.\MessageBreak
2809 Valid values: 1.2 until 1.9%
2810 }%
2811 }{%
2812 \Hy@setpdfversiontrue
2813 \edef\Hy@pdfversion{\@nameuse{Hy@pdfversion@#1}}%
2814 }%
2815 }
2816 \@namedef{Hy@pdfversion@1.2}{2}%
2817 \@namedef{Hy@pdfversion@1.3}{3}%
2818 \@namedef{Hy@pdfversion@1.4}{4}%
2819 \@namedef{Hy@pdfversion@1.5}{5}%
2820 \@namedef{Hy@pdfversion@1.6}{6}%
2821 \@namedef{Hy@pdfversion@1.7}{7}%
2822 \@namedef{Hy@pdfversion@1.8}{8}%

```

```

2823 \@namedef{Hy@pdfversion@1.9}{9}%
2824 \def\Hy@pdfversion{2}

```

## 10 Options for different drivers

```

2825 \newif\ifHy@DviMode
2826 \let\Hy@DviErrMsg\ltx@empty
2827 \ifpdf
2828   \def\Hy@DviErrMsg{pdfTeX or LuaTeX is running in PDF mode}%
2829 \else
2830   \ifxetex
2831     \def\Hy@DviErrMsg{XeTeX is running}%
2832   \else
2833     \ifvtex
2834       \ifvtexdvi
2835         \Hy@DviModetrue
2836       \else
2837         \def\Hy@DviErrMsg{VTeX is running, but not in DVI mode}%
2838       \fi
2839     \else
2840       \Hy@DviModetrue
2841     \fi
2842   \fi
2843 \fi
2844 \def\HyOpt@CheckDvi#1{%
2845   \ifHy@DviMode
2846     \expandafter\ltx@firstofone
2847   \else
2848     \Hy@Error{%
2849       Wrong DVI mode driver option ‘#1’,\MessageBreak
2850       because \Hy@DviErrMsg
2851     }\@ehc
2852     \expandafter\ltx@gobble
2853   \fi
2854 }

2855 \DeclareVoidOption{tex4ht}{%
2856   \Hy@texhttrue
2857   \kvsetkeys{Hyp}{colorlinks=true}%
2858   \def\BeforeTeXIVht{\RequirePackage{color}}}%
2859 \def\Hy@driver{htex4ht}%
2860 \def\MaybeStopEarly{%
2861   \Hy@Message{Stopped early}%
2862   \Hy@AtBeginDocument{%
2863     \PDF@FinishDoc
2864     \gdef\PDF@FinishDoc{}%
2865   }%
2866   \endinput
2867 }%
2868 }

2869 \DeclareVoidOption{pdftex}{%
2870   \ifpdf
2871     \def\Hy@driver{hpdftex}%
2872   \else
2873     \Hy@Error{%
2874       Wrong driver option ‘pdftex’,\MessageBreak
2875       because pdfTeX in PDF mode is not detected%
2876     }\@ehc

```

```

2877 \fi
2878 }
2879 \DeclareVoidOption{nativepdf}{%
2880 \HyOpt@CheckDvi{nativepdf}{%
2881 \def\Hy@driver{hdvips}%
2882 }%
2883 }
2884 \DeclareVoidOption{dvipdfm}{%
2885 \HyOpt@CheckDvi{dvipdfm}{%
2886 \def\Hy@driver{hdvipdfm}%
2887 }%
2888 }
2889 \DeclareVoidOption{dvipdfmx}{%
2890 \HyOpt@CheckDvi{dvipdfmx}{%
2891 \def\Hy@driver{hdvipdfm}%
2892 }%
2893 }
2894 \define@key{Hyp}{dvipdfmx-outline-open}[true]{%
2895 \expandafter\ifx\csname if#1\expandafter\endcsname
2896 \csname iftrue\endcsname
2897 \chardef\SpecialDvipdfmxOutlineOpen\@ne
2898 \else
2899 \chardef\SpecialDvipdfmxOutlineOpen\z@
2900 \fi
2901 }
2902 \DeclareVoidOption{xetex}{%
2903 \ifxetex
2904 \def\Hy@driver{hxetex}%
2905 \else
2906 \Hy@Error{%
2907 Wrong driver option 'xetex',\MessageBreak
2908 because XeTeX is not detected%
2909 }\@ehc
2910 \fi
2911 }
2912 \DeclareVoidOption{pdfmark}{%
2913 \HyOpt@CheckDvi{pdfmark}{%
2914 \def\Hy@driver{hdvips}%
2915 }%
2916 }
2917 \DeclareVoidOption{dvips}{%
2918 \HyOpt@CheckDvi{dvips}{%
2919 \def\Hy@driver{hdvips}%
2920 }%
2921 }
2922 \DeclareVoidOption{hypertex}{%
2923 \HyOpt@CheckDvi{hypertex}{%
2924 \def\Hy@driver{hypertex}%
2925 }%
2926 }
2927 \let\Hy@MaybeStopNow\relax
2928 \DeclareVoidOption{vtex}{%
2929 \ifvtex
2930 \ifnum 0\ifnum\OpMode<1 1\fi \ifnum\OpMode>3 1\fi =0 %
2931 \def\Hy@driver{hvtex}%
2932 \else
2933 \ifnum\OpMode=10\relax

```

```

2934 \def\Hy@driver{hvtexhtm}%
2935 \def\MaybeStopEarly{%
2936   \Hy@Message{Stopped early}%
2937   \Hy@AtBeginDocument{%
2938     \PDF@FinishDoc
2939     \gdef\PDF@FinishDoc{}}%
2940   }%
2941   \endinput
2942 }%
2943 \else
2944   \Hy@Error{%
2945     Wrong driver option 'vtex',\MessageBreak
2946     because of wrong OpMode (\the\OpMode)%
2947   }\@ehc
2948   \fi
2949 \fi
2950 \else
2951   \Hy@Error{%
2952     Wrong driver option 'vtex',\MessageBreak
2953     because VTeX is not running%
2954   }\@ehc
2955   \fi
2956 }
2957 \DeclareVoidOption{vtexpdfmark}{%
2958   \ifvtex
2959     \ifnum 0\ifnum\OpMode<1 1\fi \ifnum\OpMode>3 1\fi =0 %
2960     \def\Hy@driver{hvtexmrk}%
2961   \else
2962     \Hy@Error{%
2963       Wrong driver option 'vtexpdfmark',\MessageBreak
2964       because of wrong OpMode (\the\OpMode)%
2965     }\@ehc
2966     \fi
2967   \else
2968     \Hy@Error{%
2969       Wrong driver option 'vtexpdfmark,\MessageBreak
2970       because VTeX is not running%
2971     }\@ehc
2972   \fi
2973 }
2974 \DeclareVoidOption{dviwindo}{%
2975   \HyOpt@CheckDvi{dviwindo}{%
2976     \def\Hy@driver{hdviwind}%
2977     \kvsetkeys{Hyp}{colorlinks}%
2978     \PassOptionsToPackage{dviwindo}{color}%
2979   }%
2980 }
2981 \DeclareVoidOption{dvipsone}{%
2982   \HyOpt@CheckDvi{dvipsone}{%
2983     \def\Hy@driver{hdvipson}%
2984   }%
2985 }
2986 \DeclareVoidOption{textures}{%
2987   \HyOpt@CheckDvi{textures}{%
2988     \def\Hy@driver{htexture}%
2989   }%
2990 }

```

```

2991 \DeclareVoidOption{latex2html}{%
2992   \HyOpt@CheckDvi{latex2html}{%
2993     \Hy@AtBeginDocument{\@latex2htmlX}%
2994   }%
2995 }

```

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

```

2996 \DeclareVoidOption{ps2pdf}{%
2997   \HyOpt@CheckDvi{ps2pdf}{%
2998     \def\Hy@driver{hdvips}%
2999   }%
3000 }

3001 \let\HyOpt@DriverFallback\ltx@empty
3002 \define@key{Hyp}{driverfallback}{%
3003   \ifHy@DviMode
3004     \def\HyOpt@DriverFallback{#1}%
3005     \Hy@Match\HyOpt@DriverFallback{%
3006       ~(|dvipdfm|dvipdfmx|dvips|dvipsone|dviwindo|hypertex|ps2pdf|
3007       latex2html|tex4ht)$%
3008     }{}%
3009     \let\HyOpt@DriverFallback\ltx@empty
3010   }%
3011 \fi
3012 }

```

## 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.

```

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

```

The automatic footnote linking can be disabled by option hyperfootnotes.

```

3016 \define@key{Hyp}{hyperfootnotes}[true]{%
3017   \Hy@boolkey[hyperfootnotes]{#1}%
3018 }

```

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

```

3019 \def\back@none{none}
3020 \def\back@section{section}
3021 \def\back@page{page}
3022 \def\back@slide{slide}
3023 \define@key{Hyp}{backref}[section]{%
3024   \lowercase{\def\Hy@tempa{#1}}%
3025   \ifx\Hy@tempa\@empty
3026     \let\Hy@tempa\back@section
3027   \fi
3028   \ifx\Hy@tempa\Hy@false
3029     \let\Hy@tempa\back@none
3030   \fi
3031   \ifx\Hy@tempa\back@slide
3032     \let\Hy@tempa\back@section
3033   \fi
3034   \ifx\Hy@tempa\back@page
3035     \PassOptionsToPackage{hyperpageref}{backref}%
3036     \Hy@backreftrue
3037   \else

```

```

3038 \ifx\Hy@tempa\back@section
3039 \PassOptionsToPackage{hyperref}{backref}%
3040 \Hy@backreftrue
3041 \else
3042 \ifx\Hy@tempa\back@none
3043 \Hy@backreffalse
3044 \else
3045 \Hy@WarnOptionValue{#1}{backref}{%
3046 'section', 'slide', 'page', 'none',\MessageBreak
3047 or 'false'}%
3048 \fi
3049 \fi
3050 \fi
3051 }
3052 \define@key{Hyp}{pagebackref}[true]{%
3053 \edef\Hy@tempa{#1}%
3054 \lowercase\expandafter{%
3055 \expandafter\def\expandafter\Hy@tempa\expandafter{\Hy@tempa}%
3056 }%
3057 \ifx\Hy@tempa\@empty
3058 \let\Hy@tempa\Hy>true
3059 \fi
3060 \ifx\Hy@tempa\Hy>true
3061 \PassOptionsToPackage{hyperpageref}{backref}%
3062 \Hy@backreftrue
3063 \else
3064 \ifx\Hy@tempa\Hy>false
3065 \Hy@backreffalse
3066 \else
3067 \Hy@WarnOptionValue{#1}{pagebackref}{'true' or 'false'}%
3068 \fi
3069 \fi
3070 }

```

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

```

3071 \define@key{Hyp}{hyperindex}[true]{%
3072 \Hy@boolkey{hyperindex}{#1}%
3073 }

```

Configuration of encap char.

```

3074 \define@key{Hyp}{encap}[|]{%
3075 \def\HyInd@EncapChar{#1}%
3076 }

```

## 12 Language options

The `\autoref` feature depends on the language.

```

3077 \def\HyLang@afrikaans{%
3078 \def\equationautorefname{Vergelyking}%
3079 \def\footnoteautorefname{Voetnota}%
3080 \def\itemautorefname{Item}%
3081 \def\figureautorefname{Figuur}%
3082 \def\tableautorefname{Tabel}%
3083 \def\partautorefname{Deel}%
3084 \def\appendixautorefname{Bylae}%
3085 \def\chapterautorefname{Hoofstuk}%

```



```

3086 \def\sectionautorefname{Afdeling}%
3087 \def\subsectionautorefname{Subafdeling}%
3088 \def\subsubsectionautorefname{Subsubafdeling}%
3089 \def\paragraphautorefname{Paragraaf}%
3090 \def\subparagraphautorefname{Subparagraaf}%
3091 \def\FancyVerbLineautorefname{Lyn}%
3092 \def\theoremautorefname{Teorema}%
3093 \def\pageautorefname{Bladsy}%
3094 }
3095 \def\HyLang@english{%
3096 \def\equationautorefname{Equation}%
3097 \def\footnoteautorefname{footnote}%
3098 \def\itemautorefname{item}%
3099 \def\figureautorefname{Figure}%
3100 \def\tableautorefname{Table}%
3101 \def\partautorefname{Part}%
3102 \def\appendixautorefname{Appendix}%
3103 \def\chapterautorefname{chapter}%
3104 \def\sectionautorefname{section}%
3105 \def\subsectionautorefname{subsection}%
3106 \def\subsubsectionautorefname{subsubsection}%
3107 \def\paragraphautorefname{paragraph}%
3108 \def\subparagraphautorefname{subparagraph}%
3109 \def\FancyVerbLineautorefname{line}%
3110 \def\theoremautorefname{Theorem}%
3111 \def\pageautorefname{page}%
3112 }
3113 \def\HyLang@french{%
3114 \def\equationautorefname{'Equation}%
3115 \def\footnoteautorefname{note}%
3116 \def\itemautorefname{item}%
3117 \def\figureautorefname{Figure}%
3118 \def\tableautorefname{Tableau}%
3119 \def\partautorefname{Partie}%
3120 \def\appendixautorefname{Appendice}%
3121 \def\chapterautorefname{chapitre}%
3122 \def\sectionautorefname{section}%
3123 \def\subsectionautorefname{sous-section}%
3124 \def\subsubsectionautorefname{sous-sous-section}%
3125 \def\paragraphautorefname{paragraphe}%
3126 \def\subparagraphautorefname{sous-paragraphe}%
3127 \def\FancyVerbLineautorefname{ligne}%
3128 \def\theoremautorefname{Th\'eor\'eme}%
3129 \def\pageautorefname{page}%
3130 }
3131 \def\HyLang@german{%
3132 \def\equationautorefname{Gleichung}%
3133 \def\footnoteautorefname{Fu\ss note}%
3134 \def\itemautorefname{Punkt}%
3135 \def\figureautorefname{Abbildung}%
3136 \def\tableautorefname{Tabelle}%
3137 \def\partautorefname{Teil}%
3138 \def\appendixautorefname{Anhang}%
3139 \def\chapterautorefname{Kapitel}%
3140 \def\sectionautorefname{Abschnitt}%
3141 \def\subsectionautorefname{Unterabschnitt}%
3142 \def\subsubsectionautorefname{Unterunterabschnitt}%

```

```

3143 \def\paragraphautorefname{Absatz}%
3144 \def\subparagraphautorefname{Unterabsatz}%
3145 \def\FancyVerbLineautorefname{Zeile}%
3146 \def\theoremautorefname{Theorem}%
3147 \def\pageautorefname{Seite}%
3148 }
3149 \def\HyLang@italian{%
3150 \def\equationautorefname{Equazione}%
3151 \def\footnoteautorefname{nota}%
3152 \def\itemautorefname{punto}%
3153 \def\figureautorefname{Figura}%
3154 \def\tableautorefname{Tabella}%
3155 \def\partautorefname{Parte}%
3156 \def\appendixautorefname{Appendice}%
3157 \def\chapterautorefname{Capitolo}%
3158 \def\sectionautorefname{sezione}%
3159 \def\subsectionautorefname{sottosezione}%
3160 \def\subsubsectionautorefname{sottosottosezione}%
3161 \def\paragraphautorefname{paragrafo}%
3162 \def\subparagraphautorefname{sottoparagrafo}%
3163 \def\FancyVerbLineautorefname{linea}%
3164 \def\theoremautorefname{Teorema}%
3165 \def\pageautorefname{Pag.\@}%
3166 }
3167 \def\HyLang@magyar{%
3168 \def\equationautorefname{Egyenlet}%
3169 \def\footnoteautorefname{[\'abjegyzet}%
3170 \def\itemautorefname{Elem}%
3171 \def\figureautorefname{\'Abra}%
3172 \def\tableautorefname{T\'abl\'azat}%
3173 \def\partautorefname{R\'esz}%
3174 \def\appendixautorefname{F\'uggel\'ek}%
3175 \def\chapterautorefname{fejezet}%
3176 \def\sectionautorefname{szakasz}%
3177 \def\subsectionautorefname{alszakasz}%
3178 \def\subsubsectionautorefname{alalszakasz}%
3179 \def\paragraphautorefname{bekezd\'es}%
3180 \def\subparagraphautorefname{albekezd\'es}%
3181 \def\FancyVerbLineautorefname{sor}%
3182 \def\theoremautorefname{T\'etel}%
3183 \def\pageautorefname{oldal}%
3184 }
3185 \def\HyLang@portuges{%
3186 \def\equationautorefname{Equa\c c\~ao}%
3187 \def\footnoteautorefname{Nota de rodap\'e}%
3188 \def\itemautorefname{Item}%
3189 \def\figureautorefname{Figura}%
3190 \def\tableautorefname{Tabela}%
3191 \def\partautorefname{Parte}%
3192 \def\appendixautorefname{Ap\^endice}%
3193 \def\chapterautorefname{Cap\'itulo}%
3194 \def\sectionautorefname{Se\c c\~ao}%
3195 \def\subsectionautorefname{Subse\c c\~ao}%
3196 \def\subsubsectionautorefname{Subsubse\c c\~ao}%
3197 \def\paragraphautorefname{par\'agrafo}%
3198 \def\subparagraphautorefname{subpar\'agrafo}%
3199 \def\FancyVerbLineautorefname{linha}%

```



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.

```
3224 \def\appendixautorefname{\cyr\cyrp\cyrr\cyri\cyrI.}%
3225 % \def\appendixautorefname{%
3226 % \cyr\cyrp\cyrr\cyri\cyrI\cyro\cyrzh\cyre\cyrn\cyri\cyre
3227 % }%
```

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.

```
3228 \def\subsectionautorefname{\cyr\cyrr\cyra\cyrz\cyrd.}%
3229 \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.

```
3230 \def\paragraphautorefname{\cyr\cyrp.}%
3231 \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.

```
3232 % \def\paragraphautorefname{\cyr\cyrp\cyru\cyrn\cyrk\cyrt}%
3233 % \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.

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

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

```
3235 % \def\NomFancyVerbLineautorefname{\cyr\cyrs\cyrt\cyrr\cyro\cyrk\cyra}%
3236 % \def\AccFancyVerbLineautorefname{\cyr\cyrs\cyrt\cyrr\cyro\cyrk\cyru}%
```

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

```
3237 % \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 ...

```
3238 \def\theoremautorefname{\cyr\cyrt\cyre\cyro\cyrr.}%
```

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

```
3239 % \def\Nomtheoremautorefname{\cyr\cyrt\cyre\cyro\cyrr\cyre\cyrm\cyra}%
3240 % \def\Acctheoremautorefname{\cyr\cyrt\cyre\cyro\cyrr\cyre\cyrm\cyru}%
```

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

```
3241 \def\pageautorefname{\cyr\cyrs.}%
3242 }
```

```
3243 \def\HyLang@spanish{%
3244 \def\equationautorefname{Ecuaci'on}%
3245 \def\footnoteautorefname{Nota a pie de p'agina}%
3246 \def\itemautorefname{Elemento}%
3247 \def\figureautorefname{Figura}%
3248 \def\tableautorefname{Tabla}%
3249 \def\partautorefname{Parte}%
```

```

3250 \def\appendixautorefname{Ap\'endice}%
3251 \def\chapterautorefname{Cap\'itulo}%
3252 \def\sectionautorefname{Secci\'on}%
3253 \def\subsectionautorefname{Subsecci\'on}%
3254 \def\subsubsectionautorefname{Subsubsecci\'on}%
3255 \def\paragraphautorefname{P\'arrafo}%
3256 \def\subparagraphautorefname{Subp\'arrafo}%
3257 \def\FancyVerbLineautorefname{L\'inea}%
3258 \def\theoremautorefname{Teorema}%
3259 \def\pageautorefname{P\'agina}%
3260 }
3261 \def\HyLang@vietnamese{%
3262 \def\equationautorefname{Ph\uhorn{}\ohorn{}ng tr\'inh}%
3263 \def\footnoteautorefname{Ch\'u th\'ich}%
3264 \def\itemautorefname{m\du{c}%
3265 \def\figureautorefname{H\'inh}%
3266 \def\tableautorefname{B\h{a}ng}%
3267 \def\partautorefname{Ph\'acircumflex{}n}%
3268 \def\appendixautorefname{Ph\du{l}\du{c}%
3269 \def\chapterautorefname{ch\uhorn{}\ohorn{}ng}%
3270 \def\sectionautorefname{m\du{c}%
3271 \def\subsectionautorefname{m\du{c}%
3272 \def\subsubsectionautorefname{m\du{c}%
3273 \def\paragraphautorefname{\dj{}o\da{n}%
3274 \def\subparagraphautorefname{\dj{}o\da{n}%
3275 \def\FancyVerbLineautorefname{d\'ong}%
3276 \def\theoremautorefname{DJ{}\di{nh l\'y}%
3277 \def\pageautorefname{Trang}%
3278 }

```

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

```

3279 \def\HyLang@addto#1#2{%
3280 #2%
3281 \@temptokena{#2}%
3282 \ifx#1\relax
3283 \let#1\@empty
3284 \fi
3285 \ifx#1\@undefined
3286 \edef#1{\the\@temptokena}%
3287 \else
3288 \toks@\expandafter{#1}%
3289 \edef#1{\the\toks@\the\@temptokena}%
3290 \fi
3291 \@temptokena{}\toks@\@temptokena
3292 }
3293 \def\HyLang@DeclareLang#1#2#3{%
3294 \@ifpackagewith{babel}{#1}{%
3295 \expandafter\HyLang@addto
3296 \csname extras#1\expandafter\endcsname
3297 \csname HyLang@#2\endcsname
3298 \begingroup
3299 \edef\x{\endgroup
3300 #3%
3301 }%
3302 \x
3303 \@namedef{HyLang@#1@done}{}%

```

```

3304 }{}%
3305 \begingroup
3306 \edef\x##1##2{%
3307   \noexpand\ifx##2\relax
3308     \errmessage{No definitions for language #2' found!}%
3309   \noexpand\fi
3310 \endgroup
3311 \noexpand\define@key{Hyp}{#1}[]{}%
3312 \noexpand\@ifundefined{HyLang@#1@done}{}%
3313 \noexpand\HyLang@addto{\noexpand##1}{\noexpand##2}%
3314 #3%
3315 \noexpand\@namedef{HyLang@#1@done}{}%
3316 }{}%
3317 }%
3318 }%
3319 \expandafter\x\csname extras#1\expandafter\endcsname
3320 \csname HyLang@#2\endcsname
3321 }
3322 \HyLang@DeclareLang{english}{english}{}
3323 \HyLang@DeclareLang{UKenglish}{english}{}
3324 \HyLang@DeclareLang{british}{english}{}
3325 \HyLang@DeclareLang{USenglish}{english}{}
3326 \HyLang@DeclareLang{american}{english}{}
3327 \HyLang@DeclareLang{german}{german}{}
3328 \HyLang@DeclareLang{austrian}{german}{}
3329 \HyLang@DeclareLang{ngerman}{german}{}
3330 \HyLang@DeclareLang{naustrian}{german}{}
3331 \HyLang@DeclareLang{russian}{russian}{\noexpand\hypersetup{unicode}}
3332 \HyLang@DeclareLang{brazil}{portuges}{}
3333 \HyLang@DeclareLang{brazilian}{portuges}{}
3334 \HyLang@DeclareLang{portuguese}{portuges}{}
3335 \HyLang@DeclareLang{spanish}{spanish}{}
3336 \HyLang@DeclareLang{afrikaans}{afrikaans}{}
3337 \HyLang@DeclareLang{french}{french}{}
3338 \HyLang@DeclareLang{frenchb}{french}{}
3339 \HyLang@DeclareLang{francais}{french}{}
3340 \HyLang@DeclareLang{acadian}{french}{}
3341 \HyLang@DeclareLang{canadien}{french}{}
3342 \HyLang@DeclareLang{italian}{italian}{}
3343 \HyLang@DeclareLang{magyar}{magyar}{}
3344 \HyLang@DeclareLang{hungarian}{magyar}{}

```

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

```

3345 \DeclareVoidOption{vietnamese}{%
3346   \HyLang@addto\extrasvietnamese\HyLang@vietnamese
3347   \Hy@AtEndOfPackage{%
3348     \@ifundefined{T@PU}{}{}%
3349     \input{puvnenc.def}%
3350   }%
3351 }%
3352 }
3353 \DeclareVoidOption{vietnam}{%
3354   \HyLang@addto\extravietnam\HyLang@vietnamese
3355   \Hy@AtEndOfPackage{%
3356     \@ifundefined{T@PU}{}{}%
3357     \input{puvnenc.def}%
3358   }%
3359 }%

```

```
3360 }
```

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

```
3361 \DeclareVoidOption{arabic}{}%
3362 \Hy@AtEndOfPackage{%
3363   \ifundefined{T@PU}{}%
3364     \input{puarenc.def}%
3365   }%
3366 }%
3367 }
```

## 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.

```
3368 \define@key{Hyp}{colorlinks}[true]{%
3369   \Hy@boolkey{colorlinks}{#1}%
3370 }
3371 \DeclareVoidOption{hidelinks}{%
3372   \Hy@colorlinksfalse
3373   \Hy@ocgcolorlinksfalse
3374   \Hy@frenchlinksfalse
3375   \def\Hy@colorlink##1{\begingroup}%
3376   \def\Hy@endcolorlink{\endgroup}%
3377   \def\@pdfborder{0 0 0}%
3378   \let\@pdfborderstyle\ltx@empty
3379 }
3380 \define@key{Hyp}{ocgcolorlinks}[true]{%
3381   \Hy@boolkey{ocgcolorlinks}{#1}%
3382 }
3383 \Hy@AtBeginDocument{%
3384   \begingroup
3385   \ifundefined{OBJ@OCG@view}{%
3386     \ifHy@ocgcolorlinks
3387       \Hy@Warning{%
3388         Driver does not support ‘ocgcolorlinks’,\MessageBreak
3389         using ‘colorlinks’ instead%
3390       }%
3391     \fi
3392   }{}%
3393   \endgroup
3394 }
3395 \define@key{Hyp}{frenchlinks}[true]{%
3396   \Hy@boolkey{frenchlinks}{#1}%
3397 }
```

## 14 Bookmarking

```
3398 \begingroup\expandafter\expandafter\expandafter\endgroup
3399 \expandafter\ifx\csname chapter\endcsname\relax
3400   \def\toclevel@part{0}%
3401 \else
3402   \def\toclevel@part{-1}%
3403 \fi
3404 \def\toclevel@chapter{0}
3405 \def\toclevel@section{1}
```

```

3406 \def\toclevel@subsection{2}
3407 \def\toclevel@subsubsection{3}
3408 \def\toclevel@paragraph{4}
3409 \def\toclevel@subparagraph{5}
3410 \def\toclevel@figure{0}
3411 \def\toclevel@table{0}
3412 \ifpackageloaded{listings}{%
3413   \providecommand*\theHlstlisting{\thelstlisting}%
3414   \providecommand*\toclevel@lstlisting{0}%
3415 }{}
3416 \ifpackageloaded{listing}{%
3417   \providecommand*\theHlisting{\thelisting}%
3418   \providecommand*\toclevel@listing{0}%
3419 }{}

3420 \define@key{Hyp}{bookmarks}[true]{%
3421   \Hy@boolkey{bookmarks}{#1}%
3422 }

3423 \define@key{Hyp}{bookmarksopen}[true]{%
3424   \Hy@boolkey{bookmarksopen}{#1}%
3425 }

```

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.

```

3426 \let\Hy@bookmarksdepth\c@tocdepth
3427 \define@key{Hyp}{bookmarksdepth}[]{}%
3428 \begingroup
3429   \edef\x{#1}%
3430   \ifx\x\empty
3431     \global\let\Hy@bookmarksdepth\c@tocdepth
3432   \else
3433     \ifundefined{toclevel@\x}{%
3434       \@onelevel@sanitize\x
3435       \edef\y{\expandafter\@car\x\@nil}%
3436       \ifcase 0\expandafter\ifx\y-1\fi
3437         \expandafter\ifnum\expandafter'\y>47 %
3438         \expandafter\ifnum\expandafter'\y<58 1\fi\fi\relax
3439       \Hy@Warning{Unknown document division name (\x)}%
3440     \else
3441       \setbox\z@=\hbox{%
3442         \count@=\x
3443         \xdef\Hy@bookmarksdepth{\the\count@}%
3444       }%
3445     \fi
3446   }{}%
3447   \setbox\z@=\hbox{%
3448     \count@=\csname toclevel@\x\endcsname
3449     \xdef\Hy@bookmarksdepth{\the\count@}%
3450   }%

```



```

3451 }%
3452 \fi
3453 \endgroup
3454 }

```

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

```

3455 \define@key{Hyp}{bookmarksopenlevel}{%
3456 \def\@bookmarksopenlevel{#1}%
3457 }
3458 \def\@bookmarksopenlevel{\maxdimen}
3459 % ‘bookmarkstype’ to specify which ‘toc’ file to mimic
3460 \define@key{Hyp}{bookmarkstype}{%
3461 \def\Hy@bookmarkstype{#1}%
3462 }
3463 \def\Hy@bookmarkstype{toc}

```

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

```

3464 \define@key{Hyp}{bookmarksnumbered}[true]{%
3465 \Hy@boolkey{bookmarksnumbered}{#1}%
3466 }

```

Option CJKbookmarks enables the patch for CJK bookmarks.

```

3467 \define@key{Hyp}{CJKbookmarks}[true]{%
3468 \Hy@boolkey{CJKbookmarks}{#1}%
3469 }

3470 \def\Hy@temp#1{%
3471 \expandafter\Hy@@temp\csname @#1color\endcsname{#1}%
3472 }
3473 \def\Hy@@temp#1#2#3{%
3474 \define@key{Hyp}{#2color}{%
3475 \HyColor@HyperrefColor{##1}#1%
3476 }%
3477 \def#1{#3}%
3478 }
3479 \Hy@temp{link}{red}
3480 \Hy@temp{anchor}{black}
3481 \Hy@temp{cite}{green}
3482 \Hy@temp{file}{cyan}
3483 \Hy@temp{url}{magenta}
3484 \Hy@temp{menu}{red}
3485 \Hy@temp{run}{\@filecolor}
3486 \define@key{Hyp}{pagecolor}{%
3487 \Hy@WarningPageColor
3488 }
3489 \def\Hy@WarningPageColor{%
3490 \Hy@WarningNoLine{Option ‘pagecolor’ is not available anymore}%
3491 \global\let\Hy@WarningPageColor\relax
3492 }
3493 \define@key{Hyp}{allcolors}{%
3494 \HyColor@HyperrefColor{#1}\@linkcolor
3495 \HyColor@HyperrefColor{#1}\@anchorcolor
3496 \HyColor@HyperrefColor{#1}\@citecolor
3497 \HyColor@HyperrefColor{#1}\@filecolor
3498 \HyColor@HyperrefColor{#1}\@urlcolor
3499 \HyColor@HyperrefColor{#1}\@menucolor
3500 \HyColor@HyperrefColor{#1}\@runcolor
3501 }

```

```

3502 \def\hyperbaseurl#1{\def\@baseurl{#1}}
3503 \define@key{Hyp}{baseurl}{\hyperbaseurl{#1}}
3504 \let\@baseurl\@empty
3505 \def\hyperlinkfileprefix#1{\def\Hy@linkfileprefix{#1}}
3506 \define@key{Hyp}{linkfileprefix}{\hyperlinkfileprefix{#1}}
3507 \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.

```

3508 \let\@pdfpagetransition\relax
3509 \define@key{Hyp}{pdfpagetransition}{%
3510   \def\@pdfpagetransition{#1}%
3511 }

```

`\@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.

```

3512 \let\@pdfpageduration\relax
3513 \define@key{Hyp}{pdfpageduration}{%
3514   \def\@pdfpageduration{#1}%
3515   \Hy@Match\@pdfpageduration{%
3516     ^([|0-9]+\.\?[0-9]*|0-9)*\.[0-9]+)$%
3517   }{ }{%
3518     \Hy@Warning{%
3519       Invalid value '\@pdfpageduration'\MessageBreak
3520       of option 'pdfpageduration'\MessageBreak
3521       is replaced by an empty value%
3522     }%
3523     \let\@pdfpageduration\ltx@empty
3524   }%
3525 }

```

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.

```

3526 \newif\ifHy@useHidKey
3527 \Hy@useHidKeyfalse
3528 \define@key{Hyp}{pdfpagehidden}[true]{%
3529   \Hy@boolkey{pdfpagehidden}{#1}%
3530   \ifHy@pdfpagehidden
3531     \global\Hy@useHidKeytrue
3532   \fi
3533 }

```

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).

```

3534 \def\Hy@ColorList{cite,file,link,menu,run,url}

```

```

3535 \@for\Hy@temp:=\Hy@ColorList\do{%
3536   \edef\Hy@temp{%
3537     \noexpand\define@key{Hyp}{\Hy@temp bordercolor}{%
3538       \noexpand\HyColor@HyperrefBorderColor
3539         {##1}%
3540       \expandafter\noexpand\csname @\Hy@temp bordercolor\endcsname
3541         {hyperref}%
3542       {\Hy@temp bordercolor}%
3543     }%
3544   }%
3545   \Hy@temp
3546 }
3547 \define@key{Hyp}{pagebordercolor}{%
3548   \Hy@WarningPageBorderColor
3549 }
3550 \def\Hy@WarningPageBorderColor{%
3551   \Hy@WarningNoLine{Option 'pagebordercolor' is not available anymore}%
3552   \global\let\Hy@WarningPageBorderColor\relax
3553 }
3554 \define@key{Hyp}{allbordercolors}{%
3555   \def\Hy@temp##1##2{%
3556     \HyColor@HyperrefBorderColor{#1}##1{hyperref}{##2bordercolor}%
3557   }%
3558   \Hy@temp\@citebordercolor{cite}%
3559   \Hy@temp\@filebordercolor{file}%
3560   \Hy@temp\@linkbordercolor{link}%
3561   \Hy@temp\@menubordercolor{menu}%
3562   \Hy@temp\@runbordercolor{run}%
3563   \Hy@temp\@urlbordercolor{url}%
3564 }
3565 \define@key{Hyp}{pdfhighlight}{\def\@pdfhighlight{#1}}
3566 \Hy@DefNameKey{pdfhighlight}{%
3567   \do{/I}{Invert}%
3568   \do{/N}{None}%
3569   \do{/O}{Outline}%
3570   \do{/P}{Push}%
3571 }
3572 \define@key{Hyp}{pdfborder}{%
3573   \let\Hy@temp\@pdfborder
3574   \def\@pdfborder{#1}%
3575   \Hy@Match\@pdfborder{%
3576     ^\HyPat@NonNegativeReal/ %
3577     \HyPat@NonNegativeReal/ %
3578     \HyPat@NonNegativeReal/%
3579     ( ?[\HyPat@NonNegativeReal/( \HyPat@NonNegativeReal/)*])?%%
3580   }{}{%
3581     \Hy@Warning{%
3582       Invalid value '\@pdfborder'\MessageBreak
3583       for option 'pdfborder'\MessageBreak
3584       Option setting is ignored%
3585     }%
3586     \let\@pdfborder\Hy@temp
3587   }%
3588 }
3589 \define@key{Hyp}{pdfborderstyle}{%
3590   \let\Hy@temp\@pdfborderstyle
3591   \def\@pdfborderstyle{#1}%

```

```

3592 \Hy@Match\@pdfborderstyle{%
3593   ^%
3594   ( */Type */Border%
3595   | */W +\HyPat@NonNegativeReal/%
3596   | */S */[SDBIU]%
3597   | */D *[\ *(\HyPat@NonNegativeReal/( \HyPat@NonNegativeReal/)?)]%
3598   )* *$%
3599 }{}{%
3600   \Hy@Warning{%
3601     Invalid value '\@pdfborderstyle'\MessageBreak
3602     for option 'pdfborderstyle'\MessageBreak
3603     Option setting is ignored%
3604   }%
3605   \let\@pdfborderstyle\Hy@temp
3606 }%
3607 }
3608 \def\Hy@setpdfborder{%
3609   \ifx\@pdfborder\@empty
3610   \else
3611     /Border[\@pdfborder]%
3612   \fi
3613   \ifx\@pdfborderstyle\@empty
3614   \else
3615     /BS<<\@pdfborderstyle>>%
3616   \fi
3617 }
3618 \Hy@DefNameKey{pdfpagemode}{%
3619   \do{UseNone}{}%
3620   \do{UseOutlines}{}%
3621   \do{UseThumbs}{}%
3622   \do{FullScreen}{}%
3623   \do{UseOC}{PDF 1.5}%
3624   \do{UseAttachments}{PDF 1.6}%
3625 }
3626 \Hy@DefNameKey{pdfnonfullscreenpagemode}{%
3627   \do{UseNone}{}%
3628   \do{UseOutlines}{}%
3629   \do{UseThumbs}{}%
3630   \do{FullScreen}{}%
3631   \do{UseOC}{PDF 1.5}%
3632   \do{UseAttachments}{PDF 1.6}%
3633 }
3634 \Hy@DefNameKey{pdfdirection}{%
3635   \do{L2R}{Left to right}%
3636   \do{R2L}{Right to left}%
3637 }
3638 \Hy@DefNameKey{pdfviewarea}{%
3639   \do{MediaBox}{}%
3640   \do{CropBox}{}%
3641   \do{BleedBox}{}%
3642   \do{TrimBox}{}%
3643   \do{ArtBox}{}%
3644 }
3645 \Hy@DefNameKey{pdfviewclip}{%
3646   \do{MediaBox}{}%
3647   \do{CropBox}{}%
3648   \do{BleedBox}{}%

```

```

3649 \do{TrimBox}{}%
3650 \do{ArtBox}{}%
3651 }
3652 \Hy@DefNameKey{pdfprintarea}{%
3653 \do{MediaBox}{}%
3654 \do{CropBox}{}%
3655 \do{BleedBox}{}%
3656 \do{TrimBox}{}%
3657 \do{ArtBox}{}%
3658 }
3659 \Hy@DefNameKey{pdfprintclip}{%
3660 \do{MediaBox}{}%
3661 \do{CropBox}{}%
3662 \do{BleedBox}{}%
3663 \do{TrimBox}{}%
3664 \do{ArtBox}{}%
3665 }
3666 \Hy@DefNameKey{pdfprintscaling}{%
3667 \do{AppDefault}{}%
3668 \do{None}{}%
3669 }
3670 \Hy@DefNameKey{pdfduplex}{%
3671 \do{Simplex}{}%
3672 \do{DuplexFlipShortEdge}{}%
3673 \do{DuplexFlipLongEdge}{}%
3674 }
3675 \Hy@DefNameKey{pdfpicktraybypdfsize}{%
3676 \do{true}{}%
3677 \do{false}{}%
3678 }
3679 \define@key{Hyp}{pdfprintpagerange}{%
3680 \def\@pdfprintpagerange{#1}%
3681 }
3682 \Hy@DefNameKey{pdfnumcopies}{%
3683 \do{2}{two copies}%
3684 \do{3}{three copies}%
3685 \do{4}{four copies}%
3686 \do{5}{five copies}%
3687 }
3688 \define@key{Hyp}{pdfusetitle}[true]{%
3689 \Hy@boolkey[pdfusetitle]{usetitle}{#1}%
3690 }
3691 \def\HyXeTeX@CheckUnicode{%
3692 \ifxetex
3693 \ifHy@unicode
3694 \else
3695 \Hy@WarningNoLine{%
3696 XeTeX driver only supports unicode.\MessageBreak
3697 Enabling option 'unicode'%
3698 }%
3699 \kvsetkeys{Hyp}{unicode}%
3700 \fi
3701 \else
3702 \let\HyXeTeX@CheckUnicode\relax
3703 \fi
3704 }
3705 \def\HyPsd@PrerenderUnicode#1{%

```

```

3706 \begingroup
3707 \expandafter\ifx\cscname PrerenderUnicode\endcsname\relax
3708 \else
3709 \sbox0{%
3710 \let\GenericInfo\@gobbletwo
3711 \let\GenericWarning\@gobbletwo
3712 \let\GenericError\@gobblefour
3713 \PrerenderUnicode{#1}%
3714 }%
3715 \fi
3716 \endgroup
3717 }
3718 \define@key{Hyp}{pdftitle}{%
3719 \HyXeTeX@CheckUnicode
3720 \HyPsd@XeTeXBigCharstrue
3721 \HyPsd@PrerenderUnicode{#1}%
3722 \pdfstringdef\@pdftitle{#1}%
3723 }
3724 \define@key{Hyp}{pdfauthor}{%
3725 \HyXeTeX@CheckUnicode
3726 \HyPsd@XeTeXBigCharstrue
3727 \HyPsd@PrerenderUnicode{#1}%
3728 \pdfstringdef\@pdfauthor{#1}%
3729 }
3730 \define@key{Hyp}{pdfproducer}{%
3731 \HyXeTeX@CheckUnicode
3732 \HyPsd@XeTeXBigCharstrue
3733 \HyPsd@PrerenderUnicode{#1}%
3734 \pdfstringdef\@pdfproducer{#1}%
3735 }
3736 \define@key{Hyp}{pdfcreator}{%
3737 \HyXeTeX@CheckUnicode
3738 \HyPsd@XeTeXBigCharstrue
3739 \HyPsd@PrerenderUnicode{#1}%
3740 \pdfstringdef\@pdfcreator{#1}%
3741 }
3742 \define@key{Hyp}{pdfcreationdate}{%
3743 \begingroup
3744 \Hy@unicodedefalse
3745 \pdfstringdef\@pdfcreationdate{#1}%
3746 \endgroup
3747 }
3748 \define@key{Hyp}{pdfmoddate}{%
3749 \begingroup
3750 \Hy@unicodedefalse
3751 \pdfstringdef\@pdfmoddate{#1}%
3752 \endgroup
3753 }
3754 \define@key{Hyp}{pdfsubject}{%
3755 \HyXeTeX@CheckUnicode
3756 \HyPsd@XeTeXBigCharstrue
3757 \HyPsd@PrerenderUnicode{#1}%
3758 \pdfstringdef\@pdfsubject{#1}%
3759 }
3760 \define@key{Hyp}{pdfkeywords}{%
3761 \HyXeTeX@CheckUnicode
3762 \HyPsd@XeTeXBigCharstrue

```

```

3763 \HyPsd@PrerenderUnicode{#1}%
3764 \pdfstringdef\@pdfkeywords{#1}%
3765 }
3766 \define@key{Hyp}{pdftrapped}{%
3767 \lowercase{\edef\Hy@temp{#1}}%
3768 \ifx\Hy@temp\HyInfo@trapped@true
3769 \def\@pdftrapped{True}%
3770 \else
3771 \ifx\Hy@temp\HyInfo@trapped@false
3772 \def\@pdftrapped{False}%
3773 \else
3774 \ifx\Hy@temp\HyInfo@trapped@unknown
3775 \def\@pdftrapped{Unknown}%
3776 \else
3777 \ifx\Hy@temp\@empty
3778 \else
3779 \Hy@Warning{%
3780 Unsupported value '#1'\MessageBreak
3781 for option 'pdftrapped'%
3782 }%
3783 \fi
3784 \def\@pdftrapped{}}%
3785 \fi
3786 \fi
3787 \fi
3788 }
3789 \def\HyInfo@trapped@true{true}
3790 \def\HyInfo@trapped@false{false}
3791 \def\HyInfo@trapped@unknown{unknown}
3792 \def\HyInfo@TrappedUnsupported{%
3793 \ifx\@pdftrapped\@empty
3794 \else
3795 \Hy@WarningNoLine{'pdftrapped' is not supported by this driver}%
3796 \gdef\HyInfo@TrappedUnsupported{}}%
3797 \fi
3798 }
3799 \define@key{Hyp}{pdfinfo}{%
3800 \kvsetkeys{pdfinfo}{#1}%
3801 }
3802 \def\Hy@temp#1{%
3803 \lowercase{\Hy@temp@A{#1}}{#1}%
3804 }
3805 \def\Hy@temp@A#1#2{%
3806 \define@key{pdfinfo}{#2}{%
3807 \hypersetup{pdf#1={##1}}%
3808 }%
3809 }
3810 \Hy@temp{Title}
3811 \Hy@temp{Author}
3812 \Hy@temp{Keywords}
3813 \Hy@temp{Subject}
3814 \Hy@temp{Creator}
3815 \Hy@temp{Producer}
3816 \Hy@temp{CreationDate}
3817 \Hy@temp{ModDate}
3818 \Hy@temp{Trapped}
3819 \newif\ifHyInfo@AddonUnsupported

```

```

3820 \kv@set@family@handler{pdfinfo}{%
3821   \HyInfo@AddonHandler{#1}{#2}%
3822 }
3823 \let\HyInfo@do\relax
3824 \def\HyInfo@AddonHandler#1#2{%
3825   \ifx\kv@value\relax
3826     \Hy@Warning{%
3827       Option 'pdfinfo': ignoring key '\kv@key' without value%
3828     }%
3829   \else
3830     \EdefEscapeName\HyInfo@KeyEscaped{\kv@key}%
3831     \EdefUnescapeName\HyInfo@Key{\HyInfo@KeyEscaped}%
3832     \expandafter\ifx\csname KV@pdfinfo@\HyInfo@Key\endcsname\relax
3833       \ifHyInfo@AddonUnsupported
3834         \Hy@Warning{%
3835           This driver does not support additional\MessageBreak
3836           information entries, therefore\MessageBreak
3837           '\kv@key' is ignored%
3838         }%
3839       \else
3840         \define@key{pdfinfo}{\HyInfo@Key}{%
3841           \HyXeTeX@CheckUnicode
3842           \HyPsd@XeTeXBigCharstrue
3843           \HyPsd@PrerenderUnicode{##1}%
3844           \pdfstringdef\HyInfo@Value{##1}%
3845           \expandafter\let\csname HyInfo@Value@\HyInfo@Key\endcsname
3846             \HyInfo@Value
3847         }%
3848         \edef\HyInfo@AddonList{%
3849           \HyInfo@AddonList
3850           \HyInfo@do{\HyInfo@Key}%
3851         }%
3852         \kv@parse@normalized{%
3853           \HyInfo@Key={#2}%
3854         }{%
3855           \kv@processor@default{pdfinfo}%
3856         }%
3857       \fi
3858     \else
3859       \kv@parse@normalized{%
3860         \HyInfo@Key={#2}%
3861       }{%
3862         \kv@processor@default{pdfinfo}%
3863       }%
3864     \fi
3865   \fi
3866 }
3867 \def\HyInfo@GenerateAddons{%
3868   \ifHyInfo@AddonUnsupported
3869     \def\HyInfo@Addons{}%
3870   \else
3871     \begingroup
3872     \toks@{}%
3873     \def\HyInfo@do##1{%
3874       \EdefEscapeName\HyInfo@Key{##1}%
3875       \edef\x{%
3876         \toks@{

```



```

3877         \the\toks@
3878         /\HyInfo@Key(\csname HyInfo@Value@##1\endcsname)%
3879     }%
3880 }%
3881 \x
3882 }%
3883 \HyInfo@AddonList
3884 \edef\x{\endgroup
3885     \def\noexpand\HyInfo@Addons{\the\toks@}%
3886 }%
3887 \x
3888 \fi
3889 }
3890 \def\HyInfo@AddonList{}

3891 \define@key{Hyp}{pdfview}{\calculate@pdfview#1 \}
3892 \define@key{Hyp}{pdfinkmargin}{\setpdfinkmargin{#1}}
3893 \let\setpdfinkmargin\@gobble
3894 \def\calculate@pdfview#1 #2\{\%
3895     \def\@pdfview{#1}%
3896     \ifx\#2\%
3897         \def\@pdfviewparams{-32768}%
3898     \else
3899         \def\@pdfviewparams{#2}%
3900     \fi
3901 }

3902 \begingroup\expandafter\expandafter\expandafter\endgroup
3903 \expandafter\ifx\csname numexpr\endcsname\relax
3904     \def\Hy@number#1{%
3905         \expandafter\@firstofone\expandafter{\number#1}%
3906     }%
3907 \else
3908     \def\Hy@number#1{%
3909         \the\numexpr#1\relax
3910     }%
3911 \fi

3912 \define@key{Hyp}{pdfstartpage}{%
3913     \ifx\#1\%
3914         \def\@pdfstartpage{}%
3915     \else
3916         \def\@pdfstartpage{\Hy@number{#1}}%
3917     \fi
3918 }%

3919 \define@key{Hyp}{pdfstartview}{%
3920     \ifx\#1\%
3921         \def\@pdfstartview{}%
3922     \else
3923         \hypercalcbpdef\@pdfstartview{/#1}%
3924     \fi
3925 }

3926 \def\HyPat@NonNegativeReal/{%
3927     \ *([0-9]+\.[0-9]*|[0-9]*\.[0-9]+) *%
3928 }

3929 \define@key{Hyp}{pdfremotestartview}{%
3930     \ifx\#1\%
3931         \def\@pdfremotestartview{/Fit}%
3932     \else
3933         \hypercalcbpdef\@pdfremotestartview{#1}%

```

```

3934 \edef\@pdfremotestartview{\@pdfremotestartview}%
3935 \Hy@Match\@pdfremotestartview{%
3936   ~(XYZ -?(null|\HyPat@NonNegativeReal/) %
3937     -?(null|\HyPat@NonNegativeReal/) %
3938     (null|\HyPat@NonNegativeReal/)|%
3939     Fit(|B|%
3940     (H|V|BH|BV) (null|\HyPat@NonNegativeReal/)|%
3941     R \HyPat@NonNegativeReal/ \HyPat@NonNegativeReal/ %
3942     \HyPat@NonNegativeReal/ \HyPat@NonNegativeReal/%
3943   )$%
3944 }~}%
3945 \Hy@Warning{%
3946   Invalid value '\@pdfremotestartview'\MessageBreak
3947   of 'pdfremotestartview'\MessageBreak
3948   is replaced by 'Fit'%
3949 }%
3950 \let\@pdfremotestartview\@empty
3951 }%
3952 \ifx\@pdfremotestartview\@empty
3953   \def\@pdfremotestartview{/Fit}%
3954 \else
3955   \edef\@pdfremotestartview{/ \@pdfremotestartview}%
3956 \fi
3957 \fi
3958 }
3959 \define@key{Hyp}{pdfpagescrop}{\edef\@pdfpagescrop{#1}}
3960 \define@key{Hyp}{pdftoolbar}[true]{%
3961   \Hy@boolkey[pdftoolbar]{toolbar}{#1}%
3962 }
3963 \define@key{Hyp}{pdfmenubar}[true]{%
3964   \Hy@boolkey[pdfmenubar]{menubar}{#1}%
3965 }
3966 \define@key{Hyp}{pdfwindowui}[true]{%
3967   \Hy@boolkey[pdfwindowui]{windowui}{#1}%
3968 }
3969 \define@key{Hyp}{pdffitwindow}[true]{%
3970   \Hy@boolkey[pdffitwindow]{fitwindow}{#1}%
3971 }
3972 \define@key{Hyp}{pdfcenterwindow}[true]{%
3973   \Hy@boolkey[pdfcenterwindow]{centerwindow}{#1}%
3974 }
3975 \define@key{Hyp}{pdfdisplaydoctitle}[true]{%
3976   \Hy@boolkey[pdfdisplaydoctitle]{displaydoctitle}{#1}%
3977 }
3978 \define@key{Hyp}{pdfa}[true]{%
3979   \Hy@boolkey[pdfa]{#1}%
3980 }
3981 \define@key{Hyp}{pdfnewwindow}[true]{%
3982   \def\Hy@temp{#1}%
3983   \ifx\Hy@temp\@empty
3984     \Hy@newwindowsetfalse
3985   \else
3986     \Hy@newwindowsettrue
3987     \Hy@boolkey[pdfnewwindow]{newwindow}{#1}%
3988   \fi
3989 }
3990 \def\Hy@SetNewWindow{%

```

```

3991 \ifHy@newwindowset
3992 /NewWindow %
3993 \ifHy@newwindow true\else false\fi
3994 \fi
3995 }
3996 \Hy@DefNameKey{pdfpagelayout}{%
3997 \do{SinglePage}{}%
3998 \do{OneColumn}{}%
3999 \do{TwoColumnLeft}{}%
4000 \do{TwoColumnRight}{}%
4001 \do{TwoPageLeft}{PDF 1.5}%
4002 \do{TwoPageRight}{PDF 1.5}%
4003 }
4004 \define@key{Hyp}{pdflang}{%
4005 \def\@pdflang{#1}%
4006 }
4007 \define@key{Hyp}{pdfpagelabels}[true]{%
4008 \Hy@boolkey[pdfpagelabels]{pagelabels}{#1}%
4009 }
4010 \define@key{Hyp}{pdfescapeform}[true]{%
4011 \Hy@boolkey[pdfescapeform]{escapeform}{#1}%
4012 }

```

Default values:

```

4013 \def\@linkbordercolor{1 0 0}
4014 \def\@urlbordercolor{0 1 1}
4015 \def\@menubordercolor{1 0 0}
4016 \def\@filebordercolor{0 .5 .5}
4017 \def\@runbordercolor{0 .7 .7}
4018 \def\@citebordercolor{0 1 0}
4019 \def\@pdfhighlight{/I}
4020 \def\@pdftitle{}
4021 \def\@pdfauthor{}
4022 \let\@pdfproducer\relax
4023 \def\@pdfcreator{LaTeX with hyperref package}
4024 \def\@pdfcreationdate{}
4025 \def\@pdfmoddate{}
4026 \def\@pdfsubject{}
4027 \def\@pdfkeywords{}
4028 \def\@pdftrapped{}
4029 \def\@pdfpagescrop{}
4030 \def\@pdfstartview{/Fit}
4031 \def\@pdfremotestartview{/Fit}
4032 \def\@pdfstartpage{1}
4033 \def\@pdfprintpagerange{}
4034 \def\@pdflang{}
4035 \let\PDF@SetupDoc\@empty
4036 \let\PDF@FinishDoc\@empty
4037 \let\phantomsection\@empty
4038 \let\special@paper\@empty
4039 \def\HyperDestNameFilter#1{#1}
4040 \Hy@AtBeginDocument{%
4041 \begingroup
4042 \edef\x{\@ifundefined{stockheight}\paperheight\stockheight}%
4043 \dimen@=\x\relax
4044 \ifdim\dimen@>\z@
4045 \else
4046 \dimen@=11in\relax

```

```

4047 \Hy@WarningNoLine{%
4048   Height of page (\expandafter\string\x) %
4049   is invalid (\the\x),\MessageBreak
4050   using 11in%
4051 }%
4052 \fi
4053 \dimen@=0.99626401\dimen@
4054 \xdef\Hy@pageheight{\strip@pt\dimen@}%
4055 \endgroup
4056 }
4057 \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.

```

4058 \let\hyper@normalise\ExecuteOptions
4059 \let\ExecuteOptions\hypersetup
4060 \Hy@RestoreCatcodes
4061 \InputIfFileExists{hyperref.cfg}{-}{-}
4062 \Hy@SetCatcodes
4063 \let\ExecuteOptions\hyper@normalise
4064 \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.

```

4065 \SetupKeyvalOptions{family=Hyp}
4066 \DeclareLocalOptions{%
4067   a4paper,a5paper,b5paper,letterpaper,legalpaper,executivepaper%
4068 }

```

Add option tex4ht if package tex4ht is loaded.

```

4069 \@ifpackageloaded{tex4ht}{-%
4070   \@ifpackagewith{hyperref}{tex4ht}{-}{-}%
4071   \PassOptionsToPackage{tex4ht}{hyperref}%
4072 }%
4073 }{}

4074 \let\ReadBookmarks\relax
4075 \ProcessKeyvalOptions{Hyp}

```

After processing options.

```

4076 \Hy@AtBeginDocument{%
4077   \ifHy@draft
4078     \let\hyper@@anchor\@gobble
4079     \gdef\hyper@link#1#2#3{#3}%
4080     \let\hyper@anchorstart\@gobble
4081     \let\hyper@anchorend\@empty
4082     \let\hyper@linkstart\@gobbletwo
4083     \let\hyper@linkend\@empty
4084     \def\hyper@linkurl#1#2{#1}%
4085     \def\hyper@linkfile#1#2#3{#1}%
4086     \def\hyper@link@{#1}#2#3{}%
4087     \def\Acrobatmenu#1#2{\leavevmode#2}%
4088     \let\PDF@SetupDoc\@empty
4089     \let\PDF@FinishDoc\@empty
4090     \let\@fifthoffive\@secondoftwo
4091     \let\@secondoffive\@secondoftwo
4092     \let\ReadBookmarks\relax
4093     \let\WriteBookmarks\relax

```

```

4094 \Hy@WarningNoLine{Draft mode on}%
4095 \fi
4096 \Hy@DisableOption{draft}%
4097 \Hy@DisableOption{nolinks}%
4098 \Hy@DisableOption{final}%
4099 }

```

## 15.1 PDF/A

```

4100 \Hy@DisableOption{pdfa}

4101 \ifHy@pdfa
4102 \kvsetkeys{Hyp}{pdfversion=1.4}%
4103 \def\Hy@Acrobatmenu#1#2{%
4104   \leavevmode
4105   \begingroup
4106     \edef\x{#1}%
4107     \@onelevel@sanitize\x
4108     \ifx\x\Hy@NextPage
4109       \let\y=Y%
4110     \else
4111       \ifx\x\Hy@PrevPage
4112         \let\y=Y%
4113       \else
4114         \ifx\x\Hy@FirstPage
4115           \let\y=Y%
4116         \else
4117           \ifx\x\Hy@LastPage
4118             \let\y=Y%
4119           \else
4120             \let\y=N%
4121           \fi
4122         \fi
4123       \fi
4124     \fi
4125   \expandafter\endgroup
4126   \ifx\y Y%
4127   \else
4128     \Hy@Error{%
4129       PDF/A: Named action ‘#1’ is not permitted%
4130     }\@ehc
4131     {#2}%
4132     \expandafter\@gobble
4133   \fi
4134 }%
4135 \def\Hy@temp#1{%
4136   \expandafter\def\csname Hy@#1\endcsname{#1}%
4137   \expandafter\@onelevel@sanitize\csname Hy@#1\endcsname
4138 }%
4139 \Hy@temp{NextPage}%
4140 \Hy@temp{PrevPage}%
4141 \Hy@temp{FirstPage}%
4142 \Hy@temp{LastPage}%
4143 \else
4144 \def\Hy@Acrobatmenu#1#2{\leavevmode}%
4145 \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.

```
4146 \Hy@nextfalse
4147 \ltx@ifundefined{spanish@sh@"@sel}{\Hy@nexttrue}
4148 \ltx@ifundefined{galician@sh@"@sel}{\Hy@nexttrue}
4149 \ltx@ifundefined{estonian@sh@"@sel}{\Hy@nexttrue}
4150 \ifHy@next
4151   \let\texttilde\~%
4152 \fi

4153 \def\Hy@wrapper@babel#1#2{%
4154   \begingroup
4155     \Hy@safe@activetrue
4156     \set@display@protect
4157     \edef\x{#2}%
4158     \@onelevel@sanitize\x
4159     \toks@{#1}%
4160     \edef\x{\endgroup\the\toks@{\x}}%
4161     \x
4162 }
4163 \def\Hy@WrapperDef#1{%
4164   \begingroup
4165     \escapechar=\m@ne
4166     \xdef\Hy@gtemp{%
4167       \expandafter\noexpand\csname HyWrap@string#1\endcsname
4168     }%
4169   \endgroup
4170   \edef#1{%
4171     \noexpand\Hy@wrapper@babel
4172     \expandafter\noexpand\Hy@gtemp
4173   }%
4174   \expandafter\def\Hy@gtemp
4175 }

4176 \ifHy@figures
4177   \Hy@Info{Hyper figures ON}%
4178 \else
4179   \Hy@Info{Hyper figures OFF}%
4180 \fi
4181 \ifHy@nesting
4182   \Hy@Info{Link nesting ON}%
4183 \else
4184   \Hy@Info{Link nesting OFF}%
4185 \fi
4186 \ifHy@hyperindex
4187   \Hy@Info{Hyper index ON}%
4188 \else
4189   \Hy@Info{Hyper index OFF}%
4190 \fi
4191 \ifHy@plainpages
4192   \Hy@Info{Plain pages ON}%
4193 \else
4194   \Hy@Info{Plain pages OFF}%
4195 \fi
4196 \ifHy@backref
4197   \Hy@Info{Backreferencing ON}%
4198 \else
```

```

4199 \Hy@Info{Backreferencing OFF}%
4200 \fi
4201 \ifHy@typexml
4202 \Hy@AtEndOfPackage{%
4203   \RequirePackage{color}%
4204   \RequirePackage{nameref}%
4205 }%
4206 \fi
4207 \Hy@DisableOption{typexml}
4208 \ifHy@implicit
4209 \Hy@InfoNoLine{Implicit mode ON; LaTeX internals redefined}%
4210 \else
4211 \Hy@InfoNoLine{Implicit mode OFF; no redefinition of LaTeX internals}%
4212 \def\MaybeStopEarly{%
4213   \Hy@Message{Stopped early}%
4214   \Hy@AtBeginDocument{%
4215     \PDF@FinishDoc
4216     \gdef\PDF@FinishDoc{}%
4217   }%
4218   \endinput
4219 }%
4220 \Hy@AtBeginDocument{%
4221   \let\autoref\ref
4222   \let\autopageref\pageref
4223   \ifx\@pdfpagemode\@empty
4224     \gdef\@pdfpagemode{UseNone}%
4225   \fi
4226   \global\Hy@backreffalse
4227 }%
4228 \Hy@AtEndOfPackage{%
4229   \global\let\ReadBookmarks\relax
4230   \global\let\WriteBookmarks\relax
4231 }%
4232 \fi
4233 \Hy@DisableOption{implicit}

```

### 15.2.1 Driver loading

```

4234 \Hy@AtEndOfPackage{%
4235   \@ifpackageloaded{tex4ht}{%
4236     \def\Hy@driver{htex4ht}%
4237     \Hy@texhttrue
4238   }{}%

```

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.

```

4239 \ifx\Hy@driver\@empty
4240 \else
4241 \def\Hy@temp{hpdfTeX}%
4242 \ifpdf
4243 \ifx\Hy@driver\Hy@temp
4244 \else
4245 \Hy@WarningNoLine{%
4246   Wrong driver ‘\Hy@driver.def’;\MessageBreak
4247   pdfTeX is running in PDF mode.\MessageBreak
4248   Forcing driver ‘\Hy@temp.def’%
4249 }%
4250 \let\Hy@driver\Hy@temp

```

```

4251 \fi
4252 \else
4253 \ifx\Hy@driver\Hy@temp
4254 \Hy@WarningNoLine{%
4255   Wrong driver ‘\Hy@driver.def’;\MessageBreak
4256   pdfTeX is not running in PDF mode.\MessageBreak
4257   Using default driver%
4258 }%
4259 \let\Hy@driver\@empty
4260 \fi
4261 \fi
4262 \fi
4263 \ifHy@texht
4264 \else
4265 \ifx\Hy@driver\@empty
4266 \else
4267 \def\Hy@temp{hxtex}%
4268 \ifxetex
4269 \ifx\Hy@driver\Hy@temp
4270 \else
4271 \Hy@WarningNoLine{%
4272   Wrong driver ‘\Hy@driver.def’;\MessageBreak
4273   XeTeX is running.\MessageBreak
4274   Forcing driver ‘\Hy@temp.def’ for XeTeX%
4275 }%
4276 \let\Hy@driver\Hy@temp
4277 \fi
4278 \fi
4279 \fi
4280 \fi
4281 \ifx\Hy@driver\@empty
4282 \else
4283 \def\Hy@temp{hvtexhtm}%
4284 \ifvtexhtml
4285 \ifx\Hy@driver\Hy@temp
4286 \else
4287 \Hy@WarningNoLine{%
4288   Wrong driver ‘\Hy@driver.def’;\MessageBreak
4289   VTeX is running in HTML mode.\MessageBreak
4290   Forcing driver ‘\Hy@temp.def’%
4291 }%
4292 \let\Hy@driver\Hy@temp
4293 \fi
4294 \else
4295 \ifx\Hy@driver\Hy@temp
4296 \Hy@WarningNoLine{%
4297   Wrong driver ‘\Hy@driver.def’;\MessageBreak
4298   VTeX is not running in HTML mode.\MessageBreak
4299   Using default driver%
4300 }%
4301 \let\Hy@driver\@empty
4302 \fi
4303 \fi
4304 \fi

```

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

```

4305 \def\HyOpt@DriverType{%
4306 \ifx\Hy@driver\@empty

```



```

4307 \def\HyOpt@DriverType{ (autodetected)}%
4308 \providecommand*{\Hy@defaultdriver}{hypertex}%
4309 \ifpdf
4310 \def\Hy@driver{hpdfTeX}%
4311 \else
4312 \ifxetex
4313 \def\Hy@driver{hxetex}%
4314 \else
4315 \ifvtexhtml
4316 \def\Hy@driver{hvtexhtm}%
4317 \def\MaybeStopEarly{%
4318 \Hy@Message{Stopped early}%
4319 \Hy@AtBeginDocument{%
4320 \PDF@FinishDoc
4321 \gdef\PDF@FinishDoc{}}%
4322 }%
4323 \endinput
4324 }%
4325 \else
4326 \ifvtexpdf
4327 \def\Hy@driver{hvtex}%
4328 \else
4329 \ifvtexps
4330 \def\Hy@driver{hvtex}%
4331 \else
4332 \ifx\HyOpt@DriverFallback\ltx@empty
4333 \let\Hy@driver\Hy@defaultdriver
4334 \def\HyOpt@DriverType{ (default)}%
4335 \else
4336 \begingroup
4337 \toks@{\expandafter{\HyOpt@DriverFallback}}%
4338 \edef\x{\endgroup
4339 \noexpand\kvsetkeys{Hyp}{\the\toks@}}%
4340 }%
4341 \x
4342 \ifx\Hy@driver\ltx@empty
4343 \let\Hy@driver\Hy@defaultdriver
4344 \def\HyOpt@DriverType{ (default)}%
4345 \else
4346 \def\HyOpt@DriverType{ (fallback)}%
4347 \fi
4348 \fi
4349 \fi
4350 \fi
4351 \fi
4352 \fi
4353 \fi
4354 \ifx\Hy@driver\Hy@defaultdriver
4355 \def\Hy@temp{hdvwind}%
4356 \ifx\Hy@temp\Hy@driver
4357 \kvsetkeys{Hyp}{colorlinks}%
4358 \PassOptionsToPackage{dviwindo}{color}%
4359 \fi
4360 \fi
4361 \fi
4362 \Hy@Message{Driver\HyOpt@DriverType: \Hy@driver}%
4363 \chardef\Hy@VersionChecked=0 %

```

```

4364 \input{\Hy@driver.def}%
4365 \ifcase\Hy@VersionChecked
4366   \Hy@VersionCheck{\Hy@driver.def}%
4367 \fi
4368 \let\@unprocessedoptions\relax
4369 \Hy@RestoreCatcodes
4370 \Hy@DisableOption{tex4ht}%
4371 \Hy@DisableOption{pdftex}%
4372 \Hy@DisableOption{nativepdf}%
4373 \Hy@DisableOption{dvipdfm}%
4374 \Hy@DisableOption{dvipdfmx}%
4375 \Hy@DisableOption{dvipdfmx-outline-open}%
4376 \Hy@DisableOption{pdfmark}%
4377 \Hy@DisableOption{dvips}%
4378 \Hy@DisableOption{hypertex}%
4379 \Hy@DisableOption{vtex}%
4380 \Hy@DisableOption{vtexpdfmark}%
4381 \Hy@DisableOption{dviwindo}%
4382 \Hy@DisableOption{dvipsone}%
4383 \Hy@DisableOption{textures}%
4384 \Hy@DisableOption{latex2html}%
4385 \Hy@DisableOption{ps2pdf}%
4386 \Hy@DisableOption{xetex}%
4387 \Hy@DisableOption{pdfversion}%
4388 }

```

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.

```

4389 \newif\ifHy@DvipdfmxOutlineOpen
4390 \ifxetex
4391   \ifdim\number\XeTeXversion\XeTeXrevision in<0.9995in %
4392   \else
4393     \chardef\SpecialDvipdfmxOutlineOpen\@ne
4394     \Hy@DvipdfmxOutlineOpentrue
4395   \fi
4396 \fi
4397 \begingroup\expandafter\expandafter\expandafter\endgroup
4398 \expandafter\ifx\csname SpecialDvipdfmxOutlineOpen\endcsname\relax
4399 \else
4400   \ifnum\SpecialDvipdfmxOutlineOpen>\z@
4401     \Hy@DvipdfmxOutlineOpentrue
4402   \fi
4403 \fi

```

### 15.2.2 Bookmarks

```

4404 \def\WriteBookmarks{0}
4405 \def\@bookmarkopenstatus#1{%
4406   \ifHy@bookmarksopen

```

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

```

4407   \ifnum#1<\expandafter\@firstofone\expandafter
4408     {\number\@bookmarksopenlevel} % explicit space
4409   \else
4410     -%
4411   \fi
4412 \else

```

```

4413 -%
4414 \fi
4415 }
4416 \ifHy@bookmarks
4417 \Hy@Info{Bookmarks ON}%
4418 \ifx\@pdfpagemode\@empty
4419 \def\@pdfpagemode{UseOutlines}%
4420 \fi
4421 \else
4422 \def\@bookmarkopenstatus#1{%
4423 \Hy@Info{Bookmarks OFF}%
4424 \Hy@AtEndOfPackage{%
4425 \global\let\ReadBookmarks\relax
4426 \global\let\WriteBookmarks\relax
4427 }%
4428 \ifx\@pdfpagemode\@empty
4429 \def\@pdfpagemode{UseNone}%
4430 \fi
4431 \fi
4432 \Hy@DisableOption{bookmarks}

    Add wrapper for setting standard catcodes (babel's shorthands).
4433 \def\Hy@CatcodeWrapper#1{%
4434 \def\Hy@endWrap{%
4435 \def\TMP@EnsureCode##1##2{%
4436 \edef\Hy@endWrap{%
4437 \Hy@endWrap
4438 \catcode##1\the\catcode##1\relax
4439 }%
4440 \catcode##1##2\relax
4441 }%
4442 \TMP@EnsureCode{10}{12}% ^^J
4443 \TMP@EnsureCode{33}{12}% !
4444 \TMP@EnsureCode{34}{12}% "
4445 \TMP@EnsureCode{36}{3}% $ (math)
4446 \TMP@EnsureCode{38}{4}% & (alignment)
4447 \TMP@EnsureCode{39}{12}% '
4448 \TMP@EnsureCode{40}{12}% (
4449 \TMP@EnsureCode{41}{12}% )
4450 \TMP@EnsureCode{42}{12}% *
4451 \TMP@EnsureCode{43}{12}% +
4452 \TMP@EnsureCode{44}{12}% ,
4453 \TMP@EnsureCode{45}{12}% -
4454 \TMP@EnsureCode{46}{12}% .
4455 \TMP@EnsureCode{47}{12}% /
4456 \TMP@EnsureCode{58}{12}% :
4457 \TMP@EnsureCode{59}{12}% ;
4458 \TMP@EnsureCode{60}{12}% <
4459 \TMP@EnsureCode{61}{12}% =
4460 \TMP@EnsureCode{62}{12}% >
4461 \TMP@EnsureCode{63}{12}% ?
4462 \TMP@EnsureCode{91}{12}% [
4463 \TMP@EnsureCode{93}{12}% ]
4464 \TMP@EnsureCode{94}{7}% ^ (superscript)
4465 \TMP@EnsureCode{95}{8}% _ (subscript)
4466 \TMP@EnsureCode{96}{12}% '
4467 \TMP@EnsureCode{124}{12}% |
4468 \TMP@EnsureCode{126}{13}% ~ (active)

```

```

4469 #1\relax
4470 \Hy@EndWrap
4471 }

```

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

```

4472 \Hy@AtBeginDocument{%
4473   \ifHy@ocgcolorlinks
4474     \kvsetkeys{Hyp}{colorlinks}%
4475     \ifHy@pdfa
4476       \Hy@Warning{%
4477         PDF/A: Optional Content Groups are prohibited,\MessageBreak
4478         using 'colorlinks' instead of 'ocgcolorlinks'%
4479       }%
4480     \Hy@ocgcolorlinksfalse
4481   \fi
4482 \fi
4483 \ifHy@ocgcolorlinks
4484 \else
4485   \Hy@DisableOption{ocgcolorlinks}%
4486 \fi
4487 \ifHy@colorlinks
4488   \def\@pdfborder{0 0 0}%
4489   \let\@pdfborderstyle\@empty
4490   \ifHy@typexml
4491   \else
4492     \Hy@CatcodeWrapper{%
4493       \RequirePackage{color}%
4494     }%
4495   \fi
4496   \def\Hy@colorlink#1{%
4497     \begingroup
4498     \HyColor@UseColor#1%
4499   }%
4500   \def\Hy@endcolorlink{\endgroup}%
4501   \Hy@Info{Link coloring ON}%
4502 \else
4503   \ifHy@frenchlinks
4504     \def\Hy@colorlink#1{\begingroup\fontshape{sc}\selectfont}%
4505     \def\Hy@endcolorlink{\endgroup}%
4506     \Hy@Info{French linking ON}%
4507   \else

```

for grouping consistency:

```

4508     \def\Hy@colorlink#1{\begingroup}%
4509     \def\Hy@endcolorlink{\endgroup}%
4510     \Hy@Info{Link coloring OFF}%
4511   \fi
4512 \fi
4513 \Hy@DisableOption{colorlinks}%
4514 \Hy@DisableOption{frenchlinks}%
4515 \ifHy@texht
4516   \long\def\@firstoffive#1#2#3#4#5{#1}%
4517   \long\def\@secondoffive#1#2#3#4#5{#2}%
4518   \long\def\@thirdoffive#1#2#3#4#5{#3}%
4519   \long\def\@fourthoffive#1#2#3#4#5{#4}%
4520   \long\def\@fifthoffive#1#2#3#4#5{#5}%
4521   \providecommand*\@safe@activestrue{}%
4522   \providecommand*\@safe@activesfalse{}%

```

```

4523 \def\T@ref#1{%
4524   \Hy@safe@activetrue
4525   \expandafter\@setref\csname r@#1\endcsname\@firstoffive{#1}%
4526   \Hy@safe@activesfalse
4527 }%
4528 \def\T@pageref#1{%
4529   \Hy@safe@activetrue
4530   \expandafter\@setref\csname r@#1\endcsname\@secondoffive{#1}%
4531   \Hy@safe@activesfalse
4532 }%
4533 \else
4534   \ifHy@typexml
4535   \else
4536     \Hy@CatcodeWrapper{%
4537       \RequirePackage{nameref}%
4538     }%
4539   \fi
4540 \fi
4541 \DeclareRobustCommand\ref{%
4542   \@ifstar\@refstar\T@ref
4543 }%
4544 \DeclareRobustCommand\pageref{%
4545   \@ifstar\@pagerefstar\T@pageref
4546 }%
4547 % \ifclassloaded{memoir}{%
4548 %   \ltx@ifundefined{@mem@titlerefno link}\ltx@secondoftwo{%
4549 %     \ltx@ifundefined{@mem@titleref}\ltx@secondoftwo\ltx@firstoftwo
4550 %   }%
4551 % } \ltx@secondoftwo
4552 % {%
4553 %   \DeclareRobustCommand*{\nameref}{%
4554 %     \@ifstar\@mem@titlerefno link\@mem@titleref
4555 %   }%
4556 % }{%
4557   \DeclareRobustCommand*{\nameref}{%
4558     \@ifstar\@namerefstar\T@nameref
4559   }%
4560 % }%
4561 }
4562 \Hy@AtBeginDocument{%
4563   \ifHy@texht
4564   \else
4565     \Hy@CatcodeWrapper\ReadBookmarks
4566   \fi
4567 }
4568 \ifHy@backref
4569   \RequirePackage{backref}%
4570 \else
4571   \let\Hy@backout\@gobble
4572 \fi
4573 \Hy@DisableOption{backref}
4574 \Hy@DisableOption{pagebackref}
4575 \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.

```

4576 \begingroup
4577   \endlinechar=-1 %
4578   \catcode'\^^A=14 %
4579   \catcode'\^^M\active
4580   \catcode'\%\active
4581   \catcode'\#\active
4582   \catcode'\_\active
4583   \catcode'\$\active
4584   \catcode'\&\active
4585   \gdef\hyper@normalise{^^A
4586     \begingroup
4587       \catcode'\^^M\active
4588       \def^^M{ }^^A
4589       \catcode'\%\active
4590       \let%\@percentchar
4591       \let%\@percentchar
4592       \catcode'\#\active
4593       \def#{\hyper@hash}^^A
4594       \def\#{\hyper@hash}^^A
4595       \@makeother\&^^A
4596       \edef&{\string&}^^A
4597       \edef\&{\string&}^^A
4598       \edef\textunderscore{\string_}^^A
4599       \let\_ \textunderscore
4600       \catcode'\_\active
4601       \let\_ \textunderscore
4602       \let~\hyper@tilde
4603       \let~\hyper@tilde
4604       \let\textasciitilde\hyper@tilde
4605       \let\\ \@backslashchar
4606       \edef$\string$}^^A
4607       \Hy@safe@activestrue
4608       \hyper@n@rmalise
4609     }^^A
4610     \catcode'\#=6 ^^A
4611     \gdef\Hy@ActiveCarriageReturn{^^M}^^A
4612     \gdef\hyper@n@rmalise#1#2{^^A
4613       \def\Hy@tempa{#2}^^A
4614       \ifx\Hy@tempa\Hy@ActiveCarriageReturn
4615         \Hy@ReturnAfterElseFi{^^A
4616           \hyper@@normalise{#1}^^A
4617         }^^A
4618       \else
4619         \Hy@ReturnAfterFi{^^A
4620           \hyper@@normalise{#1}{#2}^^A
4621         }^^A
4622       \fi
4623     }^^A
4624     \gdef\hyper@@normalise#1#2{^^A

```

```

4625 \edef\Hy@tempa{^^A
4626 \endgroup
4627 \noexpand#1{\Hy@RemovePercentCr#2%^^M\@nil}^^A
4628 }^^A
4629 \Hy@tempa
4630 }^^A
4631 \gdef\Hy@RemovePercentCr#1%^^M#2\@nil{^^A
4632 #1^^A
4633 \ifx\limits#2\limits
4634 \else
4635 \Hy@ReturnAfterFi{^^A
4636 \Hy@RemovePercentCr #2\@nil
4637 }^^A
4638 \fi
4639 }^^A
4640 \endgroup
4641 \providecommand*\hyper@chars{%
4642 \let\#\hyper@hash
4643 \let\%\@percentchar
4644 \Hy@safe@activetrue
4645 }

4646 \def\hyperlink#1#2{%
4647 \hyper@@link@{#1}{#2}%
4648 }

4649 \def\Hy@VerboseLinkStart#1#2{%
4650 \ifHy@verbose
4651 \begingroup
4652 \Hy@safe@activetrue
4653 \xdef\Hy@VerboseGlobalTemp{(#1) '#2'}%
4654 \Hy@Info{Reference \Hy@VerboseGlobalTemp}%
4655 \xdef\Hy@VerboseGlobalTemp{%
4656 \Hy@VerboseGlobalTemp, %
4657 line \the\inputlineno
4658 }%
4659 \endgroup
4660 \let\Hy@VerboseLinkInfo\Hy@VerboseGlobalTemp
4661 \@onelevel@sanitize\Hy@VerboseLinkInfo
4662 \fi
4663 }

4664 \def\Hy@VerboseLinkInfo{<VerboseLinkInfo>}
4665 \def\Hy@VerboseLinkStop{%
4666 \ifHy@verbose
4667 \begingroup
4668 \edef\x{\endgroup
4669 \write\m@ne{%
4670 Package 'hyperref' Info: %
4671 End of reference \Hy@VerboseLinkInfo.%
4672 }%
4673 }%
4674 \x
4675 \fi
4676 }

4677 \def\Hy@VerboseAnchor#1{%
4678 \ifHy@verbose
4679 \begingroup
4680 \Hy@safe@activetrue

```

```

4681 \Hy@Info{Anchor '\HyperDestNameFilter{#1}'}%
4682 \endgroup
4683 \fi
4684 }

4685 \def\Hy@AllowHyphens{%
4686 \relax
4687 \ifhmode
4688 \penalty\@M
4689 \hskip\z@skip
4690 \fi
4691 }

4692 \DeclareRobustCommand*\href{[1][]{%
4693 \begingroup
4694 \setkeys{href}{#1}%
4695 \@ifnextchar\bgroup\Hy@href{\hyper@normalise\href@}%
4696 }
4697 \def\Hy@href#{%
4698 \hyper@normalise\href@
4699 }
4700 \begingroup
4701 \catcode'\$=6 %
4702 \catcode'\#=12 %
4703 \gdef\href@\$1{\expandafter\href@split$1##\}%
4704 \gdef\href@split$1#\$2#\$3\\$4{%
4705 \hyper@@link{$1}{$2}{$3}{$4}%
4706 \endgroup
4707 }%
4708 \endgroup

```

Option ‘page’.

```

4709 \define@key{href}{page}{%
4710 \def\Hy@href@page{#1}%
4711 }
4712 \let\Hy@href@page\@empty
4713 \newcount\c@Hy@tempcnt
4714 \def\theHy@tempcnt{\the\c@Hy@tempcnt}
4715 \def\Hy@MakeRemoteAction{%
4716 \ifx\Hy@href@page\@empty
4717 \def\Hy@href@page{0}%
4718 \else
4719 \setcounter{Hy@tempcnt}{\Hy@href@page}%
4720 \ifnum\c@Hy@tempcnt<\@ne
4721 \Hy@Warning{%
4722 Invalid page number (\theHy@tempcnt)\MessageBreak
4723 for remote PDF file.\MessageBreak
4724 Using page 1%
4725 }%
4726 \def\Hy@href@page{0}%
4727 \else
4728 \global\advance\c@Hy@tempcnt\m@ne
4729 \edef\Hy@href@page{\theHy@tempcnt}%
4730 \fi
4731 \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.

```

4732 \ifx\Hy@href@nextactionraw\@empty

```



```

4733 \else
4734 \Hy@newwindowsettrue
4735 \Hy@newwindowtrue
4736 \fi
4737 }

```

Option ‘pdfremotestartview’.

```

4738 \define@key{href}{pdfremotestartview}{%
4739 \setkeys{Hyp}{pdfremotestartview={#1}}}%
4740 }

```

Option ‘pdfnewwindow’.

```

4741 \let\KV@href@pdfnewwindow\KV@Hyp@pdfnewwindow
4742 \let\KV@href@pdfnewwindow@default\KV@Hyp@pdfnewwindow@default

```

Option ‘ismap’.

```

4743 \newif\ifHy@href@ismap
4744 \define@key{href}{ismap}[true]{%
4745 \ltx@ifundefined{Hy@href@ismap#1}{%
4746 \Hy@Error{%
4747 Invalid value (#1) for key ‘ismap’.\MessageBreak
4748 Permitted values are ‘true’ or ‘false’.\MessageBreak
4749 Ignoring ‘ismap’%
4750 }\@ehc
4751 }{%
4752 \csname Hy@href@ismap#1\endcsname
4753 }%
4754 }

```

Option ‘nextactionraw’.

```

4755 \let\Hy@href@nextactionraw\@empty
4756 \define@key{href}{nextactionraw}{%
4757 \edef\Hy@href@nextactionraw{#1}%
4758 \ifx\Hy@href@nextactionraw\@empty
4759 \else
4760 \Hy@Match\Hy@href@nextactionraw{%
4761 ^(\HyPat@ObjRef/|<<.*[/S[/].+>>|}%
4762 \[( ?\HyPat@ObjRef/|<<.*[/S[/].+>>)+ ?)]$}%
4763 }{ }{%
4764 \Hy@Warning{Invalid value for ‘nextactionraw’:\MessageBreak
4765 \Hy@href@nextactionraw\MessageBreak
4766 The action is discarded%
4767 }%
4768 }%
4769 \ifx\Hy@href@nextactionraw\@empty
4770 \else
4771 \edef\Hy@href@nextactionraw{/Next \Hy@href@nextactionraw}%
4772 \fi
4773 \fi
4774 }
4775 \def\HyPat@ObjRef/{.+}

```

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

```

4776 \RequirePackage{url}
4777 \let\HyOrg@url\url
4778 \def\Hurl{\begingroup \Url}
4779 \DeclareRobustCommand*\nolinkurl{\hyper@normalise\nolinkurl@}
4780 \def\nolinkurl@#1{\Hurl{#1}}
4781 \DeclareRobustCommand*\url{\hyper@normalise\url@}
4782 \def\url@#1{\hyper@linkurl{\Hurl{#1}}{#1}}

```

```

4783 \DeclareRobustCommand*\hyperimage{\hyper@normalise\hyper@image}
4784 \providecommand\hyper@image[2]{#2}

4785 \def\hypertarget#1#2{%
4786   \ifHy@nesting
4787     \hyper@@anchor{#1}{#2}%
4788   \else
4789     \hyper@@anchor{#1}{\relax}#2%
4790   \fi
4791 }

```

`\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.

```

4792 \DeclareRobustCommand*\hyperref{%
4793   \@ifnextchar{\Hy@babelnormalise\label@hyperref}\@hyperref
4794 }
4795 \def\Hy@babelnormalise#1[#2]{%
4796   \begingroup
4797   \Hy@safe@activetrue
4798   \edef\Hy@tempa{%
4799     \endgroup
4800     \noexpand#1[#2]}%
4801   }%
4802   \Hy@tempa
4803 }
4804 \def\@hyperref{\hyper@normalise\@hyperref}
4805 \def\@hyperref#1#2#3{%
4806   \edef\ref@one{\ifx\#2\\\else#2.\fi#3}%
4807   \expandafter\tryhyper@link\ref@one\{#1}%
4808 }
4809 \def\tryhyper@link#1\#2{%
4810   \hyper@@link{#2}{#1}%
4811 }

4812 \def\hyperdef{\@ifnextchar{\label@hyperdef}\@hyperdef}
4813 \def\@hyperdef#1#2#3{%, category, name, text
4814   \ifx\#1\%
4815     \def\Hy@AnchorName{#2}%
4816   \else
4817     \def\Hy@AnchorName{#1.#2}%
4818   \fi
4819   \ifHy@nesting
4820     \expandafter\hyper@@anchor\expandafter{\Hy@AnchorName}{#3}%
4821   \else
4822     \expandafter\hyper@@anchor\expandafter{\Hy@AnchorName}{\relax}#3%
4823   \fi
4824 }

```

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

```

4825 \def\label@hyperref[#1]{%
4826   \expandafter\label@@hyperref\csname r@#1\endcsname{#1}%
4827 }%
4828 \def\label@@hyperref#1#2#3{%
4829   \ifx#1\relax

```

```

4830 \protect\G@refundefinedtrue
4831 \@latex@warning{%
4832   Hyper reference '#2' on page \thepage \space undefined%
4833 }%
4834 \hyper@@link@{??}{#3}%
4835 \else
4836 \hyper@@link@{\expandafter\@fifthoffive#1}%
4837 {\expandafter\@fourthoffive#1\@empty\@empty}{#3}%
4838 \fi
4839 }
4840 \def\label@hyperdef[#1]#2#3#4{% label name, category, name,
4841                               % anchor text
4842 \@bsphack
4843 \ifx\#2\%
4844 \def\Hy@AnchorName{#3}%
4845 \else
4846 \def\Hy@AnchorName{#2.#3}%
4847 \fi
4848 \if@filesw
4849 \protected@write\@auxout@{ {%
4850 \string\newlabel{#1}{#2}{#3}{\Hy@AnchorName}}}%
4851 }%
4852 \fi
4853 \@esphack
4854 \ifHy@nesting
4855 \expandafter\hyper@@anchor\expandafter{\Hy@AnchorName}{#4}%
4856 \else
4857 \expandafter\hyper@@anchor\expandafter{\Hy@AnchorName}{\relax}#4%
4858 \fi
4859 }

```

## 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.

```

4860 \def\hyper@@link@{\let\Hy@reserved@a\relax
4861 \@ifnextchar[{\hyper@link@}{\hyper@link@[link]}}%
4862 }
4863 \def\hyper@link@[#1]#2#3#4{%
4864 \begingroup
4865 \protected@edef\Hy@tempa{#2}%
4866 \Hy@safe@activestrue
4867 \edef\x{#3}%
4868 \ifx\Hy@tempa\@empty
4869 \toks0{\hyper@link{#1}}%
4870 \else
4871 \toks0{\expandafter\hyper@readexternallink#2\{#1}}%
4872 \fi
4873 \toks2{%
4874 \Hy@safe@activesfalse
4875 #4%
4876 }%
4877 \edef\Hy@tempa{\the\toks2}%
4878 \edef\x{\endgroup

```

```

4879 \ifx\Hy@tempa\@empty
4880 \noexpand\Hy@Warning{Suppressing empty link}%
4881 \else
4882 \the\toks0 {\x}{\the\toks2}%
4883 \fi
4884 }%
4885 \x
4886 }

```

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.

```

4887 \def\hyper@readexternallink#1\|#2#3#4{%
4888 \begingroup
4889 \let\relax
4890 \expandafter\endgroup
4891 \expandafter\@hyper@@readexternallink#1\#{#2}{#3}{#4}%
4892 }
4893 \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.

```

4894 \@hyper@readexternallink{#2}{#3}{#4}#1::\#{#1}%
4895 }

```

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

```

4896 \def\@pdftempwordfile{file}%
4897 \def\@pdftempwordrun{run}%
4898 \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:

```

4899 \ifx\#6\%
4900 \@hyper@linkfile file:#7\#{#3}{#2}{#7}%
4901 \else
4902 \ifx\#4\%
4903 \@hyper@linkfile file:#7\#{#3}{#2}{#7}%
4904 \else

```

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

```

4905 \def\@pdftempa{#4}%
4906 \ifx\@pdftempa\@pdftempwordfile
4907 \@hyper@linkfile#7\#{#3}{#2}{#7}%
4908 \else

```

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

```
4909 \ifx\@pdftempa\@pdftempwordrun
4910 \ifHy@pdfa
4911 \Hy@Error{%
4912 PDF/A: Launch action is prohibited%
4913 }\@ehc
4914 \begingroup
4915 \leavevmode
4916 #2%
4917 \endgroup
4918 \else
4919 \@hyper@launch#7\{\#3}\{\#2}%
4920 \fi
4921 \else
```

otherwise its a URL

```
4922 \hyper@linkurl{\#3}\{\#7\ifx\#2\\\else\hyper@hash#2\fi}%
4923 \fi
4924 \fi
4925 \fi
4926 \fi
4927 }
```

By default, turn run: into file:

```
4928 \def\@hyper@launch run:#1\#2#3{% filename, anchor text, linkname
4929 \hyper@linkurl{\#2}\{\#1}%
4930 \Hy@linkfileprefix
4931 #1%
4932 \ifx\#3\\\%
4933 \else
4934 \hyper@hash
4935 #3%
4936 \fi
4937 }%
4938 }
```

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

```
4939 \def\@hyper@linkfile file:#1\#2#3#4{%
4940 %file url,link string, name, original uri
4941 \filename@parse{\#1}%
4942 \ifx\filename@ext\relax
4943 \edef\filename@ext{\XR@ext}%
4944 \fi
4945 \def\use@file{\filename@area\filename@base.\filename@ext}%
4946 \Hy@IfStringEndsWith\filename@ext\XR@ext{%
4947 \hyper@linkfile{\#2}\{\use@file}\{\#3}%
4948 }{%
4949 \ifx\@baseurl\@empty
4950 \hyper@linkurl{\#2}\{\#4\ifx\#3\\\else\hyper@hash#3\fi}%
4951 }%
4952 \else
4953 \hyper@linkurl{\#2}\{\use@file\ifx\#3\\\else\hyper@hash#3\fi}%
4954 \fi
4955 }%
4956 }%
4957 }

4958 \def\Hy@IfStringEndsWith#1#2{%
```

```

4959 \begingroup
4960 \edef\x{#1}%
4961 \@onelevel@sanitize\x
4962 \edef\x{.\x$}%
4963 \edef\y{#2}%
4964 \@onelevel@sanitize\y
4965 \edef\y{.\y$}%
4966 \expandafter\def\expandafter\z\expandafter##\expandafter1\y##2\@nil{%
4967   \endgroup
4968   \ifx\relax##2\relax
4969     \expandafter\ltx@secondoftwo
4970   \else
4971     \expandafter\ltx@firstoftwo
4972   \fi
4973 }%
4974 \expandafter\expandafter\expandafter\z\expandafter\x\y\@nil
4975 }

4976 \def\Hy@StringLocalhost{localhost}
4977 \@onelevel@sanitize\Hy@StringLocalhost
4978 \def\Hy@CleanupFile#1{%
4979   \edef#1{#1}%
4980   \expandafter\Hy@@CleanupFile#1\hbox{//\hbox\@nil{#1}}%
4981 }
4982 \def\Hy@@CleanupFile#1//#2/#3\hbox#4\@nil#5{%
4983   \begingroup
4984   \toks@{\endgroup}%
4985   \def\x{#1}%
4986   \ifx\x\@empty
4987     \def\x{#2}%
4988   \ifx\x\@empty
4989     \toks@{\endgroup\def#5{/#3}}%
4990   \else
4991     \@onelevel@sanitize\x
4992     \ifx\x\Hy@StringLocalhost
4993       \toks@{\endgroup\def#5{/#3}}%
4994     \fi
4995   \fi
4996   \fi
4997   \the\toks@
4998 }

```

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.

```

4999 \long\def\hyper@@anchor#1#2{\@hyper@@anchor#1\relax#2\relax}
5000 \long\def\@hyper@@anchor#1\relax#2#3\relax{%
5001   \ifx\#1\%
5002     #2\Hy@Warning{Ignoring empty anchor}%
5003   \else
5004     \def\anchor@spot{#2#3}%
5005     \let\put@me@back\@empty
5006     \ifx\relax#2\relax
5007     \else

```

```

5008 \ifHy@nesting
5009 \else
5010 \ifcat a\noexpand#2\relax
5011 \else
5012 \ifcat 0\noexpand#2 \relax
5013 \else
5014 % \typeout{Anchor start is not alphanumeric %
5015 % on input line\the\inputlineno%
5016 % }%
5017 \let\anchor@spot\@empty
5018 \def\put@me@back{#2#3}%
5019 \fi
5020 \fi
5021 \fi
5022 \fi
5023 \ifHy@activeanchor
5024 \anchor@spot
5025 \else
5026 \hyper@anchor{#1}%
5027 \fi
5028 \expandafter\put@me@back
5029 \fi
5030 \let\anchor@spot\@empty
5031 }
5032 \def\anchor@spot{}

```

## 18 Compatibility with the *LT<sub>E</sub>X2html* package

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

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

```

5033 \let\htmladding\hyperimage
5034 \def\htmladdnormallink#1#2{\href{#2}{#1}}
5035 \def\htmladdnormallinkfoot#1#2{\href{#2}{#1}\footnote{#2}}
5036 \def\htmlref#1#2{% anchor text, label
5037 \label@hyperref[{#2}]{#1}%
5038 }

```

This is really too much. The *LT<sub>E</sub>X2html* package defines its own `\hyperref` command, with a different syntax. Was this always here? Its weird, anyway. We interpret it in the 'printed' way, since we are about fidelity to the page.

```

5039 \def\@latextohtmlX{%
5040 \let\hhyperref\hyperref
5041 \def\hyperref##1##2##3##4{% anchor text for HTML
5042 % text to print before label in print
5043 % label
5044 % post-label text in print
5045 ##2\ref{##4}##3%
5046 }%
5047 }

```

## 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.

```
5048 \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
5049 \def\HyField@NewFlag#1#2{%
5050 \lowercase{\HyField@NewOption{#2}}}%
5051 \lowercase{\HyField@NewBitsetFlag{#2}}{#2}{#1}%
5052 }
```

```
\HyField@NewFlagOnly
5053 \def\HyField@NewFlagOnly#1#2{%
5054 \lowercase{\HyField@NewBitsetFlag{#2}}{#2}{#1}%
5055 }
```

```
\HyField@NewOption #1: option name
5056 \def\HyField@NewOption#1{%
5057 \expandafter\newif\csname ifFld@#1\endcsname
5058 \define@key{Field}{#1}[true]{%
5059 \lowercase{\Field@boolkey{##1}}{#1}%
5060 }%
5061 }
```

\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
5062 \def\HyField@NewBitsetFlag#1#2#3#4{%
5063 \begingroup
5064 \count@=#4\relax
5065 \advance\count@\m@ne
5066 \def\x##1{%
5067 \endgroup
5068 \expandafter\def\csname HyField@#3@#1\endcsname{##1}%
5069 \expandafter\ifx\csname HyField@#3@##1\endcsname\relax
5070 \expandafter\edef\csname HyField@#3@##1\endcsname{%
5071 (\number#4) #2%
5072 }%
5073 \else
5074 \expandafter\edef\csname HyField@#3@##1\endcsname{%
```



```

5075     \csname HyField@#3@#1\endcsname
5076     /#2%
5077     }%
5078     \fi
5079     }%
5080 \expandafter\x\expandafter{\the\count@}%
5081 }

```

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

```

5082 \def\HyField@UseFlag#1#2{%
5083   \lowercase{\HyField@@UseFlag{#2}}{#1}%
5084 }

```

\HyField@@UseFlag

```

5085 \def\HyField@@UseFlag#1#2{%
5086   \bitsetSetValue{HyField@#2}{%
5087     \csname HyField@#2@#1\endcsname
5088   }{%
5089     \csname ifFld@#1\endcsname 1\else 0\fi
5090   }%
5091 }

```

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

```

5092 \def\HyField@SetFlag#1#2{%
5093   \lowercase{\HyField@@SetFlag{#2}}{#1}%
5094 }

```

\HyField@@SetFlag

```

5095 \def\HyField@@SetFlag#1#2{%
5096   \bitsetSetValue{HyField@#2}{%
5097     \csname HyField@#2@#1\endcsname
5098   }{1}%
5099 }

```

\HyField@PrintFlags

```

5100 \def\HyField@PrintFlags#1#2{%
5101   \ifHy@verbose
5102     \begingroup
5103     \let\Hy@temp\@empty
5104     \let\MessageBreak\relax
5105     \expandafter\@for\expandafter\x\expandafter:\expandafter=%
5106     \bitsetGetSetBitList{HyField@#1}\do{%
5107       \edef\Hy@temp{%
5108         \Hy@temp
5109         \csname HyField@#1@\x\endcsname\MessageBreak
5110       }%
5111       }%
5112   \edef\x{\endgroup
5113     \noexpand\Hy@Info{%
5114       Field flags: %
5115       \expandafter\ifx\@car#1\@nil S\else/\fi
5116       #1 %
5117       \bitsetGetDec{HyField@#1} %
5118       (0x\bitsetGetHex{HyField@#1}{32})\MessageBreak
5119     \Hy@temp
5120     for #2%

```

```

5121     }%
5122     }\x
5123   \fi
5124 }

```

### 19.1.1 Declarations of field flags

“Table 8.70 Field flags common to all field types”

```

5125 \HyField@NewFlag{Ff}{ReadOnly}{1}
5126 \HyField@NewFlag{Ff}{Required}{2}
5127 \HyField@NewFlag{Ff}{NoExport}{3}

```

“Table 8.75 Field flags specific to button fields”

```

5128 \HyField@NewFlag{Ff}{NoToggleToOff}{15}
5129 \HyField@NewFlag{Ff}{Radio}{16}
5130 \HyField@NewFlag{Ff}{Pushbutton}{17}
5131 \HyField@NewFlag{Ff}{RadiosInUnison}{26}

```

“Table 8.77 Field flags specific to text fields”

```

5132 \HyField@NewFlag{Ff}{Multiline}{13}
5133 \HyField@NewFlag{Ff}{Password}{14}
5134 \HyField@NewFlag{Ff}{FileSelect}{21}% PDF 1.4
5135 \HyField@NewFlag{Ff}{DoNotSpellCheck}{23}% PDF 1.4
5136 \HyField@NewFlag{Ff}{DoNotScroll}{24}% PDF 1.4
5137 \HyField@NewFlag{Ff}{Comb}{25}% PDF 1.4
5138 \HyField@NewFlag{Ff}{RichText}{26}% PDF 1.5

```

“Table 8.79 field flags specific to choice fields”

```

5139 \HyField@NewFlag{Ff}{Combo}{18}
5140 \HyField@NewFlag{Ff}{Edit}{19}
5141 \HyField@NewFlag{Ff}{Sort}{20}
5142 \HyField@NewFlag{Ff}{MultiSelect}{22}% PDF 1.4
5143 % \HyField@NewFlag{Ff}{DoNotSpellCheck}{23}% PDF 1.4
5144 \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.

```

5145 \newif\ifFld@popdown
5146 \define@key{Field}{popdown}[true]{%
5147   \lowercase{\Field@boolkey{#1}}{popdown}%
5148 }

```

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.

```

5149 \HyField@NewFlag{F}{Invisible}{1}
5150 \HyField@NewFlag{F}{Hidden}{2}% PDF 1.2
5151 \HyField@NewFlag{F}{Print}{3}% PDF 1.2
5152 \HyField@NewFlag{F}{NoZoom}{4}% PDF 1.2
5153 \HyField@NewFlag{F}{NoRotate}{5}% PDF 1.3
5154 \HyField@NewFlag{F}{NoView}{6}% PDF 1.3
5155 \HyField@NewFlag{F}{Locked}{8}% PDF 1.4
5156 \HyField@NewFlag{F}{ToggleNoView}{9}% PDF 1.5
5157 \HyField@NewFlag{F}{LockedContents}{10}% PDF 1.7

```

```

5158 \ifHy@pdfa
5159 \def\HyField@PDFAFldWarning#1#2{%
5160   \Hy@Warning{%
5161     PDF/A: Annotation flag '#1' must\MessageBreak
5162     be set to '#2'%
5163   }%
5164 }%
5165 \Fld@invisiblefalse
5166 \def\Fld@invisibletrue{%
5167   \HyField@PDFAFldWarning{invisible}{false}%
5168 }%
5169 \Fld@hiddenfalse
5170 \def\Fld@hiddentruetrue{%
5171   \HyField@PDFAFldWarning{hidden}{false}%
5172 }%
5173 \Fld@printtrue
5174 \def\Fld@printfalse{%
5175   \HyField@PDFAFldWarning{print}{true}%
5176 }%
5177 \Fld@nozoomtrue
5178 \def\Fld@nozoomfalse{%
5179   \HyField@PDFAFldWarning{nozoom}{true}%
5180 }%
5181 \Fld@norotatefalse
5182 \def\Fld@norotatefalse{%
5183   \HyField@PDFAFldWarning{norotate}{true}%
5184 }%
5185 \Fld@noviewfalse
5186 \def\Fld@noviewtrue{%
5187   \HyField@PDFAFldWarning{noview}{false}%
5188 }%
5189 \fi

```

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

```

5190 \HyField@NewFlag{Submit}{IncludeNoValueFields}{2}
5191 \HyField@NewFlagOnly{Submit}{ExportFormat}{3}
5192 \HyField@NewFlag{Submit}{GetMethod}{4}
5193 \HyField@NewFlag{Submit}{SubmitCoordinates}{5}
5194 \HyField@NewFlagOnly{Submit}{XFDF}{6}
5195 \HyField@NewFlag{Submit}{IncludeAppendSaves}{7}
5196 \HyField@NewFlag{Submit}{IncludeAnnotations}{8}
5197 \HyField@NewFlagOnly{Submit}{SubmitPDF}{9}
5198 \HyField@NewFlag{Submit}{CanonicalFormat}{10}
5199 \HyField@NewFlag{Submit}{ExclNonUserAnnots}{11}
5200 \HyField@NewFlag{Submit}{ExclFKey}{12}
5201 \HyField@NewFlag{Submit}{EmbedForm}{14}

5202 \define@key{Field}{export}{%
5203   \lowercase{\def\Hy@temp{#1}}%
5204   \@ifundefined{Fld@export@\Hy@temp}{%
5205     \@onelevel@sanitize\Hy@temp
5206     \Hy@Error{%
5207       Unknown export format '\Hy@temp'\MessageBreak
5208       Known formats are 'FDF', 'HTML', 'XFDF', and 'PDF'%
5209     }%
5210   }%
5211   \let\Fld@export\Hy@temp
5212 }%

```

```

5213 }
5214 \def\Fld@export{fdf}
5215 \@namedef{Fld@export@fdf}{0}%
5216 \@namedef{Fld@export@html}{1}%
5217 \@namedef{Fld@export@xfdf}{2}%
5218 \@namedef{Fld@export@pdf}{3}%

```

### 19.1.2 Set submit flags

\HyField@FlagsSubmit

```

5219 \def\HyField@FlagsSubmit{%
5220   \bitsetReset{HyField@Submit}%
5221   \ifcase\@nameuse{Fld@export@Fld@export} %
5222     % FDF
5223     \HyField@UseFlag{Submit}{IncludeNoValueFields}%
5224     \HyField@UseFlag{Submit}{SubmitCoordinates}%
5225     \HyField@UseFlag{Submit}{IncludeAppendSaves}%
5226     \HyField@UseFlag{Submit}{IncludeAnnotations}%
5227     \HyField@UseFlag{Submit}{CanonicalFormat}%
5228     \HyField@UseFlag{Submit}{ExclNonUserAnnots}%
5229     \HyField@UseFlag{Submit}{ExclFKey}%
5230     \HyField@UseFlag{Submit}{EmbedForm}%
5231   \or % HTML
5232     \HyField@SetFlag{Submit}{ExportFormat}%
5233     \HyField@UseFlag{Submit}{IncludeNoValueFields}%
5234     \HyField@UseFlag{Submit}{GetMethod}%
5235     \HyField@UseFlag{Submit}{SubmitCoordinates}%
5236     \HyField@UseFlag{Submit}{CanonicalFormat}%
5237   \or % XFDF
5238     \HyField@SetFlag{Submit}{XFDF}%
5239     \HyField@UseFlag{Submit}{IncludeNoValueFields}%
5240     \HyField@UseFlag{Submit}{SubmitCoordinates}%
5241     \HyField@UseFlag{Submit}{CanonicalFormat}%
5242   \or % PDF
5243     \HyField@SetFlag{Submit}{SubmitPDF}%
5244     \HyField@UseFlag{Submit}{GetMethod}%
5245   \fi
5246   \HyField@PrintFlags{Submit}{submit button field}%
5247   \bitsetIsEmpty{HyField@Submit}{%
5248     \def\Fld@submitflags{%
5249     }{%
5250       \edef\Fld@submitflags{/Flags \bitsetGetDec{HyField@Submit}}}%
5251   }%
5252 }

```

### 19.1.3 Set annot flags in fields

\HyField@FlagsAnnot

```

5253 \def\HyField@FlagsAnnot#1{%
5254   \bitsetReset{HyField@F}%
5255   \HyField@UseFlag{F}{Invisible}%
5256   \HyField@UseFlag{F}{Hidden}%
5257   \HyField@UseFlag{F}{Print}%
5258   \HyField@UseFlag{F}{NoZoom}%
5259   \HyField@UseFlag{F}{NoRotate}%
5260   \HyField@UseFlag{F}{NoView}%

```

```

5261 \HyField@UseFlag{F}{Locked}%
5262 \HyField@UseFlag{F}{ToggleNoView}%
5263 \HyField@UseFlag{F}{LockedContents}%
5264 \HyField@PrintFlags{F}{#1}%
5265 \bitsetIsEmpty{HyField@F}{%
5266   \def\Fld@annotflags{%
5267   }{%
5268   \edef\Fld@annotflags{/F \bitsetGetDec{HyField@F}}}%
5269 }%
5270 }

```

#### 19.1.4 Pushbutton field

\HyField@FlagsPushButton

```

5271 \def\HyField@FlagsPushButton{%
5272 \HyField@FlagsAnnot{push button field}%
5273 \bitsetReset{HyField@Ff}%
5274 \HyField@UseFlag{Ff}{ReadOnly}%
5275 \HyField@UseFlag{Ff}{Required}%
5276 \HyField@UseFlag{Ff}{NoExport}%
5277 \HyField@SetFlag{Ff}{PushButton}%
5278 \HyField@PrintFlags{Ff}{push button field}%
5279 \bitsetIsEmpty{HyField@Ff}{%
5280   \def\Fld@flags{%
5281   }{%
5282   \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}}%
5283 }%
5284 }

```

#### 19.1.5 Check box field

\HyField@FlagsCheckBox

```

5285 \def\HyField@FlagsCheckBox{%
5286 \HyField@FlagsAnnot{check box field}%
5287 \bitsetReset{HyField@Ff}%
5288 \HyField@UseFlag{Ff}{ReadOnly}%
5289 \HyField@UseFlag{Ff}{Required}%
5290 \HyField@UseFlag{Ff}{NoExport}%
5291 \HyField@PrintFlags{Ff}{check box field}%
5292 \bitsetIsEmpty{HyField@Ff}{%
5293   \def\Fld@flags{%
5294   }{%
5295   \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}}%
5296 }%
5297 }

```

#### 19.1.6 Radio button field

\HyField@FlagsRadioButton

```

5298 \def\HyField@FlagsRadioButton{%
5299 \HyField@FlagsAnnot{radio button field}%
5300 \bitsetReset{HyField@Ff}%
5301 \HyField@UseFlag{Ff}{ReadOnly}%
5302 \HyField@UseFlag{Ff}{Required}%
5303 \HyField@UseFlag{Ff}{NoExport}%
5304 \HyField@UseFlag{Ff}{NoToggleToOff}%

```

```

5305 \HyField@SetFlag{Ff}{Radio}%
5306 \HyField@UseFlag{Ff}{RadiosInUnison}%
5307 \HyField@PrintFlags{Ff}{radio button field}%
5308 \bitsetIsEmpty{HyField@Ff}{%
5309   \def\Fld@flags{%
5310   }{%
5311     \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
5312   }%
5313 }

```

### 19.1.7 Text fields

\HyField@FlagsText

```

5314 \def\HyField@FlagsText{%
5315   \HyField@FlagsAnnot{text field}%
5316   \bitsetReset{HyField@Ff}%
5317   \HyField@UseFlag{Ff}{ReadOnly}%
5318   \HyField@UseFlag{Ff}{Required}%
5319   \HyField@UseFlag{Ff}{NoExport}%
5320   \HyField@UseFlag{Ff}{Multiline}%
5321   \HyField@UseFlag{Ff}{Password}%
5322   \HyField@UseFlag{Ff}{FileSelect}%
5323   \HyField@UseFlag{Ff}{DoNotSpellCheck}%
5324   \HyField@UseFlag{Ff}{DoNotScroll}%
5325   \ifFld@comb
5326     \ifcase0\ifFld@multiline
5327       \else\ifFld@password
5328       \else\ifFld@fileselect
5329       \else 1\fi\fi\fi\relax
5330     \Hy@Error{%
5331       Field option ‘comb’ cannot used together with\MessageBreak
5332       ‘multiline’, ‘password’, or ‘fileselect’%
5333     }\@ehc
5334   \else
5335     \HyField@UseFlag{Ff}{Comb}%
5336   \fi
5337 \fi
5338 \HyField@UseFlag{Ff}{RichText}%
5339 \HyField@PrintFlags{Ff}{text field}%
5340 \bitsetIsEmpty{HyField@Ff}{%
5341   \def\Fld@flags{%
5342   }{%
5343     \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
5344   }%
5345 }

```

### 19.1.8 Choice fields

\HyField@FlagsChoice

```

5346 \def\HyField@FlagsChoice{%
5347   \HyField@FlagsAnnot{choice field}%
5348   \bitsetReset{HyField@Ff}%
5349   \HyField@UseFlag{Ff}{ReadOnly}%
5350   \HyField@UseFlag{Ff}{Required}%
5351   \HyField@UseFlag{Ff}{NoExport}%
5352   \HyField@UseFlag{Ff}{Combo}%

```

```

5353 \ifFld@combo
5354 \HyField@UseFlag{Ff}{Edit}%
5355 \fi
5356 \HyField@UseFlag{Ff}{Sort}%
5357 \HyField@UseFlag{Ff}{MultiSelect}%
5358 \ifFld@combo
5359 \ifFld@edit
5360 \HyField@UseFlag{Ff}{DoNotSpellCheck}%
5361 \fi
5362 \fi
5363 \HyField@UseFlag{Ff}{CommitOnSelChange}%
5364 \HyField@PrintFlags{Ff}{choice field}%
5365 \bitsetIsEmpty{HyField@Ff}{%
5366 \def\Fld@flags{%
5367 }{%
5368 \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}}%
5369 }%
5370 }

```

## 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.

```

5371 \def\HyField@PDFChoices#1{%
5372 \begingroup
5373 \gdef\Fld@choices{%
5374 \def\HyTmp@optlist{%
5375 \let\HyTmp@optitem\relax
5376 \count@=0 %
5377 \kv@parse{#1}{%
5378 \Hy@pdfstringdef\kv@key\kv@key
5379 \ifx\kv@value\relax
5380 \ifnum\Hy@pdfversion<3 % implementation note 122, PDF spec 1.7
5381 \xdef\Fld@choices{\Fld@choices[(\kv@key)(\kv@key)]}%
5382 \else
5383 \xdef\Fld@choices{\Fld@choices(\kv@key)}%
5384 \fi
5385 \else
5386 \Hy@pdfstringdef\kv@value\kv@value
5387 \xdef\Fld@choices{\Fld@choices[(\kv@value)(\kv@key)]}%
5388 \fi
5389 \edef\HyTmp@optlist{%
5390 \HyTmp@optlist
5391 \HyTmp@optitem{\the\count@}{\kv@key}0%
5392 }%
5393 \advance\count@ by 1 %
5394 \@gobbletwo
5395 }%
5396 \xdef\Fld@choices{/Opt[\Fld@choices]}%
5397 \ifFld@multiselect
5398 \HyField@@PDFChoices{DV}\Fld@default
5399 \HyField@@PDFChoices{V}\Fld@value
5400 \else
5401 \ifx\Fld@default\relax
5402 \else
5403 \pdfstringdef\Hy@gtemp\Fld@default

```

```

5404     \xdef\Fld@choices{\Fld@choices/DV(\Hy@gtemp)}%
5405     \fi
5406     \ifx\Fld@value\relax
5407     \else
5408     \pdfstringdef\Hy@gtemp\Fld@value
5409     \xdef\Fld@choices{\Fld@choices/V(\Hy@gtemp)}%
5410     \fi
5411     \fi
5412 \endgroup
5413 }

```

\HyField@@PDFChoices

```

5414 \def\HyField@@PDFChoices#1#2{%
5415   \ifx#2\relax
5416   \else
5417     \count@=0 %
5418     \def\HyTmp@optitem##1##2##3{%
5419       \def\HyTmp@key{##2}%
5420       \ifx\HyTmp@key\Hy@gtemp
5421         \expandafter\def\expandafter\HyTmp@optlist\expandafter{%
5422           \HyTmp@optlist
5423           \HyTmp@optitem{##1}{##2}1%
5424         }%
5425         \let\HyTmp@found=Y%
5426       \else
5427         \expandafter\def\expandafter\HyTmp@optlist\expandafter{%
5428           \HyTmp@optlist
5429           \HyTmp@optitem{##1}{##2}##3%
5430         }%
5431       \fi
5432     }%
5433     \expandafter\comma@parse\expandafter{#2}{%
5434       \pdfstringdef\Hy@gtemp\comma@entry
5435       \let\HyTmp@found=N %
5436       \expandafter\let\expandafter\HyTmp@optlist\expandafter\@empty
5437       \HyTmp@optlist
5438       \ifx\HyTmp@found Y%
5439         \advance\count@ by 1 %
5440       \else
5441         \@onelevel@sanitize\comma@entry
5442         \PackageWarning{hyperref}{%
5443           \string\ChoiceBox: Ignoring value '\comma@entry',%
5444           \MessageBreak
5445           it cannot be found in the choices%
5446         }%
5447       \fi
5448       \@gobble
5449     }%
5450     \def\HyTmp@optitem##1##2##3{%
5451       \ifnum##3=1 %
5452         (##2)%
5453       \fi
5454     }%
5455     \ifcase\count@
5456     \or
5457       \xdef\Fld@choices{\Fld@choices/#1\HyTmp@optlist}%
5458     \else

```



```

5459 \xdef\Fld@choices{\Fld@choices/#1[\HyTmp@optlist]]}%
5460 \ifx#1V%
5461 \def\HyTmp@optitem##1##2##3{%
5462 \ifnum##3=1 %
5463 \@firstofone{ ##1}%
5464 \fi
5465 }%
5466 \edef\HyTmp@optlist{\HyTmp@optlist}%
5467 \xdef\Fld@choices{%
5468 \Fld@choices
5469 /I[\expandafter\@firstofone\HyTmp@optlist]%
5470 }%
5471 \fi
5472 \fi
5473 \fi
5474 }

```

### 19.3 Forms

\HyField@SetKeys

```

5475 \def\HyField@SetKeys{%
5476 \kvsetkeys{Field}%
5477 }

5478 \newif\ifFld@checked
5479 \newif\ifFld@disabled
5480 \Fld@checkedfalse
5481 \Fld@disabledfalse
5482 \newcount\Fld@menulength
5483 \newdimen\Fld@Width
5484 \newdimen\Fld@charsize
5485 \Fld@charsize=10\p@
5486 \def\Fld@maxlen{0}
5487 \def\Fld@align{0}
5488 \def\Fld@color{0 0 0 rg}
5489 \def\Fld@bcolor{1 1 1}
5490 \def\Fld@bordercolor{1 0 0}
5491 \def\Fld@bordersep{1\p@}
5492 \def\Fld@borderwidth{1}
5493 \def\Fld@borderstyle{S}
5494 \def\Fld@cbsymbol{4}
5495 \def\Fld@radiosymbol{H}
5496 \def\Fld@rotation{0}
5497 \def\Form{\@ifnextchar{\@Form}{\@Form[]}}
5498 \def\endForm{\@endForm}
5499 \newif\ifForm@html
5500 \Form@htmlfalse
5501 \def\Form@boolkey#1#2{%
5502 \csname Form@#2\ifx\relax#1\relax true\else#1\fi\endcsname
5503 }
5504 \define@key{Form}{action}{%
5505 \hyper@normalise\Hy@DefFormAction{#1}%
5506 }
5507 \def\Hy@DefFormAction{\def\Form@action}
5508 \def\enc@html{html}
5509 \define@key{Form}{encoding}{%
5510 \def\Hy@tempa{#1}%

```

```

5511 \ifx\Hy@tempa\enc@@html
5512 \Form@htmltrue
5513 \def\Fld@export{html}%
5514 \else
5515 \Hy@Warning{%
5516   Form 'encoding' key with \MessageBreak
5517   unknown value '#1'%
5518 }%
5519 \Form@htmlfalse
5520 \fi
5521 }
5522 \define@key{Form}{method}{%
5523 \lowercase{\def\Hy@temp{#1}}%
5524 \@ifundefined{Form@method@\Hy@temp}{%
5525 \@onelevel@sanitize\Hy@temp
5526 \Hy@Error{%
5527   Unknown method '\Hy@temp'\MessageBreak
5528   Known values are 'post' and 'get'%
5529 } \@ehc
5530 }{%
5531 \let\Form@method\Hy@temp
5532 \ifcase\@nameuse{Form@method@\Hy@temp} %
5533 \Fld@getmethodfalse
5534 \else
5535 \Fld@getmethodtrue
5536 \fi
5537 }%
5538 }
5539 \def\Form@method{}
5540 \@namedef{Form@method@post}{0}
5541 \@namedef{Form@method@get}{1}

5542 \newif\ifHyField@NeedAppearances
5543 \def\HyField@NeedAppearancesfalse{%
5544 \global\let\ifHyField@NeedAppearances\iffalse
5545 }
5546 \def\HyField@NeedAppearancetrue{%
5547 \global\let\ifHyField@NeedAppearances\iftrue
5548 }
5549 \HyField@NeedAppearancetrue
5550 \define@key{Form}{NeedAppearances}[true]{%
5551 \edef\Hy@tempa{#1}%
5552 \ifx\Hy@tempa\Hy@true
5553 \HyField@NeedAppearancetrue
5554 \else
5555 \ifx\Hy@tempa\Hy@false
5556 \HyField@NeedAppearancesfalse
5557 \else
5558 \Hy@Error{%
5559   Unexpected value '\Hy@tempa'\MessageBreak
5560   of option 'NeedAppearances' instead of\MessageBreak
5561   'true' or 'false'%
5562 } \@ehc
5563 \fi
5564 \fi
5565 }
5566 \def\Field@boolkey#1#2{%
5567 \csname Fld@#2\ifx\relax#1\relax true\else#1\fi\endcsname

```

```

5568 }
5569 \ifHy@texht
5570 \newtoks\Field@toks
5571 \Field@toks={ }%
5572 \def\Field@addtoks#1#2{%
5573   \edef\@processme{\Field@toks{\the\Field@toks\space #1="#2"}}%
5574   \@processme
5575 }%
5576 \else
5577 \def\Hy@WarnHTMLFieldOption#1{%
5578   \Hy@Warning{%
5579     HTML field option '#1'\MessageBreak
5580     is ignored%
5581   }%
5582 }%
5583 \fi
5584 \def\Fld@checkequals#1=#2=#3\\{%
5585   \def\@currDisplay{#1}%
5586   \ifx\\#2\\%
5587     \def\@currValue{#1}%
5588   \else
5589     \def\@currValue{#2}%
5590   \fi
5591 }
5592 \define@key{Field}{loc}{%
5593   \def\Fld@loc{#1}%
5594 }
5595 \define@key{Field}{checked}[true]{%
5596   \lowercase{\Field@boolkey{#1}}{checked}%
5597 }
5598 \define@key{Field}{disabled}[true]{%
5599   \lowercase{\Field@boolkey{#1}}{disabled}%
5600 }
5601 \ifHy@texht
5602 \define@key{Field}{accesskey}{%
5603   \Field@addtoks{accesskey}{#1}%
5604 }%
5605 \define@key{Field}{tabkey}{%
5606   \Field@addtoks{tabkey}{#1}%
5607 }%
5608 \else
5609 \define@key{Field}{accesskey}{%
5610   \Hy@WarnHTMLFieldOption{accesskey}%
5611 }%
5612 \define@key{Field}{tabkey}{%
5613   \Hy@WarnHTMLFieldOption{tabkey}%
5614 }%
5615 \fi
5616 \define@key{Field}{name}{%
5617   \def\Fld@name{#1}%
5618 }
5619 \let\Fld@altname\relax
5620 \define@key{Field}{altname}{%
5621   \def\Fld@altname{#1}%
5622 }
5623 \let\Fld@mappingname\relax
5624 \define@key{Field}{mappingname}{%

```

```

5625 \def\Fld@mappingname{#1}%
5626 }
5627 \define@key{Field}{width}{%
5628 \def\Fld@width{#1}%
5629 \Field@Width#1\setbox0=\hbox{m}%
5630 }
5631 \define@key{Field}{maxlen}{%
5632 \def\Fld@maxlen{#1}%
5633 }
5634 \define@key{Field}{menulength}{%
5635 \Fld@menulength=#1\relax
5636 }
5637 \define@key{Field}{height}{%
5638 \def\Fld@height{#1}%
5639 }
5640 \define@key{Field}{charsize}{%
5641 \Fld@charsize#1%
5642 }
5643 \define@key{Field}{borderwidth}{%
5644 \def\Fld@borderwidth{#1}%
5645 }
5646 \define@key{Field}{borderstyle}{%
5647 \let\Hy@temp\Fld@borderstyle
5648 \def\Fld@borderstyle{#1}%
5649 \Hy@Match\Fld@borderstyle{%
5650 ~[SDBIU]$%
5651 }{}{%
5652 \Hy@Warning{%
5653 Invalid value '\@pdfborderstyle'\MessageBreak
5654 for option 'pdfborderstyle'. Valid values:\MessageBreak
5655 \space\space S (Solid), D (Dashed), B (Beveled),\MessageBreak
5656 \space\space I (Inset), U (Underline)\MessageBreak
5657 Option setting is ignored%
5658 }%
5659 \let\Fld@borderstyle\Hy@temp
5660 }%
5661 }
5662 \define@key{Field}{bordersep}{%
5663 \def\Fld@bordersep{#1}%
5664 }
5665 \define@key{Field}{default}{%
5666 \def\Fld@default{#1}%
5667 }
5668 \define@key{Field}{align}{%
5669 \def\Fld@align{#1}%
5670 }
5671 \define@key{Field}{value}{%
5672 \def\Fld@value{#1}%
5673 }
5674 \define@key{Field}{checkboxsymbol}{%
5675 \Fld@DingDef\Fld@cbsymbol{#1}%
5676 }
5677 \define@key{Field}{radiosymbol}{%
5678 \Fld@DingDef\Fld@radiosymbol{#1}%
5679 }
5680 \def\Fld@DingDef#1#2{%
5681 \def\Fld@temp{}}%

```

```

5682 \Fld@@DingDef#2\ding{}}\@nil
5683 \let#1\Fld@temp
5684 }
5685 \def\Fld@@DingDef#1\ding#2#3\@nil{%
5686 \expandafter\def\expandafter\Fld@temp\expandafter{%
5687 \Fld@temp
5688 #1%
5689 }%
5690 \ifx\#3\%
5691 \expandafter\@gobble
5692 \else
5693 \begingroup
5694 \lccode'0=#2\relax
5695 \lowercase{\endgroup
5696 \expandafter\def\expandafter\Fld@temp\expandafter{%
5697 \Fld@temp
5698 0%
5699 }%
5700 }%
5701 \expandafter\@firstofone
5702 \fi
5703 {%
5704 \Fld@@DingDef#3\@nil
5705 }%
5706 }

5707 \define@key{Field}{rotation}{%
5708 \def\Fld@rotation{#1}%
5709 }

5710 \define@key{Field}{backgroundcolor}{%
5711 \HyColor@FieldBColor{#1}\Fld@bcolor{hyperref}{backgroundcolor}%
5712 }
5713 \define@key{Field}{bordercolor}{%
5714 \HyColor@FieldBColor{#1}\Fld@bordercolor{hyperref}{bordercolor}%
5715 }
5716 \define@key{Field}{color}{%
5717 \HyColor@FieldColor{#1}\Fld@color{hyperref}{color}%
5718 }

5719 \def\Fld@onclick@code{}
5720 \def\Fld@format@code{}
5721 \def\Fld@validate@code{}
5722 \def\Fld@calculate@code{}
5723 \def\Fld@keystroke@code{}
5724 \def\Fld@onfocus@code{}
5725 \def\Fld@onblur@code{}
5726 \def\Fld@onmousedown@code{}
5727 \def\Fld@onmouseup@code{}
5728 \def\Fld@onenter@code{}
5729 \def\Fld@onexit@code{}
5730 \def\Hy@temp#1{%
5731 \expandafter\Hy@@temp\csname Fld@#1@code\endcsname{#1}%
5732 }
5733 \def\Hy@@temp#1#2{%
5734 \ifHy@pdfa
5735 \define@key{Field}{#2}{%
5736 \Hy@Error{%
5737 PDF/A: Additional action '#2' is prohibited%

```

```

5738     }\@ehc
5739   }%
5740 \else
5741   \define@key{Field}{#2}{%
5742     \def#1{##1}%
5743   }%
5744 \fi
5745 }
5746 \Hy@temp{keystroke}
5747 \Hy@temp{format}
5748 \Hy@temp{validate}
5749 \Hy@temp{calculate}
5750 \Hy@temp{onfocus}
5751 \Hy@temp{onblur}
5752 \Hy@temp{onenter}
5753 \Hy@temp{onexit}
5754 \ifHy@texht
5755   \def\Hy@temp#1{%
5756     \define@key{Field}{#1}{%
5757       \Field@addtoks{#1}{##1}%
5758     }%
5759   }%
5760 \else
5761   \def\Hy@temp#1{%
5762     \define@key{Field}{#1}{%
5763       \Hy@WarnHTMLFieldOption{#1}%
5764     }%
5765   }%
5766 \fi
5767 \Hy@temp{ondblclick}
5768 \Hy@temp{onmousedown}
5769 \Hy@temp{onmouseup}
5770 \Hy@temp{onmouseover}
5771 \Hy@temp{onmousemove}
5772 \Hy@temp{onmouseout}
5773 \Hy@temp{onkeydown}
5774 \Hy@temp{onkeyup}
5775 \Hy@temp{onselect}
5776 \Hy@temp{onchange}
5777 \Hy@temp{onkeypress}
5778 \ifHy@texht
5779   \define@key{Field}{onclick}{%
5780     \Field@addtoks{onclick}{#1}%
5781   }%
5782 \else
5783   \ifHy@pdfa
5784     \define@key{Field}{onclick}{%
5785       \Hy@Error{%
5786         PDF/A: Action ‘onclick’ is prohibited%
5787       }\@ehc
5788     }%
5789   \else
5790     \define@key{Field}{onclick}{%
5791       \def\Fld@onclick@code{#1}%
5792     }%
5793   \fi
5794 \fi

```

```

5795 \DeclareRobustCommand\TextField{%
5796   \ifnextchar[{\@TextField}{\@TextField[]}%
5797 }
5798 \DeclareRobustCommand\ChoiceMenu{%
5799   \ifnextchar[{\@ChoiceMenu}{\@ChoiceMenu[]}%
5800 }
5801 \DeclareRobustCommand\CheckBox{%
5802   \ifnextchar[{\@CheckBox}{\@CheckBox[]}%
5803 }
5804 \DeclareRobustCommand\PushButton{%
5805   \ifnextchar[{\@PushButton}{\@PushButton[]}%
5806 }
5807 \DeclareRobustCommand\Gauge{%
5808   \ifnextchar[{\@Gauge}{\@Gauge[]}%
5809 }
5810 \DeclareRobustCommand\Submit{%
5811   \ifnextchar[{\@Submit}{\@Submit[]}%
5812 }
5813 \DeclareRobustCommand\Reset{%
5814   \ifnextchar[{\@Reset}{\@Reset[]}%
5815 }
5816 \def\LayoutTextField#1#2{% label, field
5817   #1 #2%
5818 }
5819 \def\LayoutChoiceField#1#2{% label, field
5820   #1 #2%
5821 }
5822 \def\LayoutCheckField#1#2{% label, field
5823   #1 #2%
5824 }
5825 \def\LayoutPushButtonField#1{% button
5826   #1%
5827 }
5828 \def\MakeRadioField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
5829 \def\MakeCheckField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
5830 \def\MakeTextField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
5831 \def\MakeChoiceField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
5832 \def\MakeButtonField#1{%
5833   \sbox0{%
5834     \hskip\Fld@borderwidth bp#1\hskip\Fld@borderwidth bp%
5835   }%
5836   \@tempdima\ht0 %
5837   \advance\@tempdima by \Fld@borderwidth bp %
5838   \advance\@tempdima by \Fld@borderwidth bp %
5839   \ht0\@tempdima
5840   \@tempdima\dp0 %
5841   \advance\@tempdima by \Fld@borderwidth bp %
5842   \advance\@tempdima by \Fld@borderwidth bp %
5843   \dp0\@tempdima
5844   \box0\relax
5845 }
5846 \def\DefaultHeightofSubmit{14pt}
5847 \def\DefaultWidthofSubmit{2cm}
5848 \def\DefaultHeightofReset{14pt}
5849 \def\DefaultWidthofReset{2cm}
5850 \def\DefaultHeightofCheckBox{\baselineskip}
5851 \def\DefaultWidthofCheckBox{\baselineskip}

```

```

5852 \def\DefaultHeightofChoiceMenu{\baselineskip}
5853 \def\DefaultWidthofChoiceMenu{\baselineskip}
5854 \def\DefaultHeightofText{\baselineskip}
5855 \def\DefaultHeightofTextMultiline{4\baselineskip}
5856 \def\DefaultWidthofText{3cm}
5857 \def\DefaultOptionsofSubmit{print,name=Submit,noexport}
5858 \def\DefaultOptionsofReset{print,name=Reset,noexport}
5859 \def\DefaultOptionsofPushButton{print}
5860 \def\DefaultOptionsofCheckBox{print}
5861 \def\DefaultOptionsofText{print}

```

Default options for the types of \ChoiceMenu.

```

5862 \def\DefaultOptionsofListBox{print}
5863 \def\DefaultOptionsofComboBox{print,edit,sort}
5864 \def\DefaultOptionsofPopdownBox{print}
5865 \def\DefaultOptionsofRadio{print,notoggletooff}

```

## 20 Setup

```

5866 \ifHy@figures
5867 \Hy@Info{Hyper figures ON}%
5868 \else
5869 \Hy@Info{Hyper figures OFF}%
5870 \fi
5871 \ifHy@nesting
5872 \Hy@Info{Link nesting ON}%
5873 \else
5874 \Hy@Info{Link nesting OFF}%
5875 \fi
5876 \ifHy@hyperindex
5877 \Hy@Info{Hyper index ON}%
5878 \else
5879 \Hy@Info{Hyper index OFF}%
5880 \fi
5881 \ifHy@backref
5882 \Hy@Info{backreferencing ON}%
5883 \else
5884 \Hy@Info{backreferencing OFF}%
5885 \fi
5886 \ifHy@colorlinks
5887 \Hy@Info{Link coloring ON}%
5888 \else
5889 \Hy@Info{Link coloring OFF}%
5890 \fi
5891 \ifHy@ocgcolorlinks
5892 \Hy@Info{Link coloring with OCG ON}%
5893 \else
5894 \Hy@Info{Link coloring with OCG OFF}%
5895 \fi
5896 \ifHy@pdfa
5897 \Hy@Info{PDF/A mode ON}%
5898 \else
5899 \Hy@Info{PDF/A mode OFF}%
5900 \fi

```



## 21 Low-level utility macros

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

```
5901 \edef\hyper@hash{\string#}  
5902 \edef\hyper@tilde{\string~}  
5903 \edef\hyper@quote{\string"}
```

Support \label before \begin{document}.

```
5904 \def\@currentHref{Doc-Start}  
5905 \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.

```
5906 \Hy@AtBeginDocument{%  
5907   \Hy@pdfstringtrue  
5908   \PDF@SetupDoc  
5909   \let\PDF@SetupDoc\@empty  
5910   \Hy@DisableOption{pdfpagescrop}%  
5911   \Hy@DisableOption{pdfpagemode}%  
5912   \Hy@DisableOption{pdfnonfullscreenpagemode}%  
5913   \Hy@DisableOption{pdfdirection}%  
5914   \Hy@DisableOption{pdfviewarea}%  
5915   \Hy@DisableOption{pdfviewclip}%  
5916   \Hy@DisableOption{pdfprintarea}%  
5917   \Hy@DisableOption{pdfprintclip}%  
5918   \Hy@DisableOption{pdfprintscaling}%  
5919   \Hy@DisableOption{pdfduplex}%  
5920   \Hy@DisableOption{pdfpicktraybypdfsize}%  
5921   \Hy@DisableOption{pdfprintpagerange}%  
5922   \Hy@DisableOption{pdfnumcopies}%  
5923   \Hy@DisableOption{pdfstartview}%  
5924   \Hy@DisableOption{pdfstartpage}%  
5925   \Hy@DisableOption{pdftoolbar}%  
5926   \Hy@DisableOption{pdfmenubar}%  
5927   \Hy@DisableOption{pdfwindowui}%  
5928   \Hy@DisableOption{pdfitwindow}%  
5929   \Hy@DisableOption{pdfcenterwindow}%  
5930   \Hy@DisableOption{pdfdisplaydoctitle}%  
5931   \Hy@DisableOption{pdfpagelayout}%  
5932   \Hy@DisableOption{pdflang}%  
5933   \Hy@DisableOption{baseurl}%  
5934   \ifHy@texht\else\hyper@anchorstart{Doc-Start}\hyper@anchorend\fi  
5935   \Hy@pdfstringfalse  
5936 }
```

Ignore star from referencing macros:

```
5937 \LetLtxMacro\NoHy@OrgRef\ref  
5938 \DeclareRobustCommand*\ref{%  
5939   \@ifstar\NoHy@OrgRef\NoHy@OrgRef  
5940 }  
5941 \LetLtxMacro\NoHy@OrgPageRef\pageref  
5942 \DeclareRobustCommand*\pageref{%  
5943   \@ifstar\NoHy@OrgPageRef\NoHy@OrgPageRef  
5944 }
```

## 22 Localized nullifying of package

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

```
5945 \def\NoHyper{%
5946   \def\hyper@link@{##1}##2##3##4{##4}%
5947   \def\hyper@@anchor##1{%
5948     \global\let\hyper@livelink\hyper@link
5949     \gdef\hyper@link##1##2##3{##3}%
5950     \def\hyper@anchor##1{%
5951       \def\hyper@anchorstart##1{%
5952         \let\hyper@anchorend\@empty
5953         \def\hyper@linkstart##1##2{%
5954           \let\hyper@linkend\@empty
5955           \def\hyper@linkurl##1##2{##1}%
5956           \def\hyper@linkfile##1##2##3{##1}%
5957           \def\hyper@link@{##1}##2##3{%
5958             \let\Hy@backout\@gobble
5959         }
5960       \def\stop@hyper{%
5961         \def\hyper@link@{##1}##2##3##4{##4}%
5962         \let\Hy@backout\@gobble
5963         \def\hyper@@anchor##1{%
5964           \def\hyper@link##1##2##3{##3}%
5965           \def\hyper@anchor##1{%
5966             \def\hyper@anchorstart##1{%
5967               \let\hyper@anchorend\@empty
5968               \def\hyper@linkstart##1##2{%
5969                 \let\hyper@linkend\@empty
5970                 \def\hyper@linkurl##1##2{##1}%
5971                 \def\hyper@linkfile##1##2##3{##1}%
5972                 \def\hyper@link@{##1}##2##3{%
5973               }
5974             \def\endNoHyper{%
5975               \global\let\hyper@link\hyper@livelink
5976             }
5977           }
5978         }
5979       }
5980     }
5981   }
5982 }
5983 \end{package}
```

## 23 Package nohyperref

This package is introduced by Sebastian Rahtz.

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

Some low-level commands:

```
5978 \*nohyperref
5979 \RequirePackage{letltxmacro}[2008/06/13]
5980 \let\hyper@@anchor\@gobble
5981 \def\hyper@link##1##2##3{##3}%
5982 \let\hyper@anchorstart\@gobble
5983 \let\hyper@anchorend\@empty
5984 \let\hyper@linkstart\@gobbletwo
```

```

5985 \let\hyper@linkend\@empty
5986 \def\hyper@linkurl#1#2{#1}%
5987 \def\hyper@linkfile#1#2#3{#1}%
5988 \def\hyper@link@{#1}#2#3{}%
5989 \let\PDF@SetupDoc\@empty
5990 \let\PDF@FinishDoc\@empty
5991 \def\nohyperpage#1{#1}

```

Some top-level commands:

```

5992 \def\Acrobatmenu#1#2{\leavevmode#2}
5993 \let\pdfstringdefDisableCommands\@gobbletwo
5994 \let\texorpdfstring\@firstoftwo
5995 \let\pdfbookmark\@undefined
5996 \newcommand\pdfbookmark[3]{}{}
5997 \let\phantomsection\@empty
5998 \let\hypersetup\@gobble
5999 \let\hyperbaseurl\@gobble
6000 \newcommand*{\href}[3]{}{#3}
6001 \let\hyperdef\@gobbletwo
6002 \let\hyperlink\@gobble
6003 \let\hypertarget\@gobble
6004 \def\hyperref{%
6005   \ifnextchar[\@gobbleopt{\expandafter\@gobbletwo\@gobble}%
6006 }
6007 \long\def\@gobbleopt[#1]{}
6008 \let\hyperpage\@empty

```

Ignore star from referencing macros:

```

6009 \LetLtxMacro\NoHy@OrgRef\ref
6010 \DeclareRobustCommand*\ref{%
6011   \@ifstar\NoHy@OrgRef\NoHy@OrgRef
6012 }
6013 \LetLtxMacro\NoHy@OrgPageRef\pageref
6014 \DeclareRobustCommand*\pageref{%
6015   \@ifstar\NoHy@OrgPageRef\NoHy@OrgPageRef
6016 }
6017 \</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}

```

6018 \<*package>
6019 \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.

```

6020 \if@filesw
6021   \ifHy@typexml
6022     \immediate\closeout\@mainaux
6023     \immediate\openout\@mainaux\jobname.aux\relax
6024     \immediate\write\@auxout{<relaxxml>\relax}%
6025   \fi
6026   \immediate\write\@auxout{%
6027     \string\providecommand\string\HyperFirstAtBeginDocument{%

```

```

6028 \string\AtBeginDocument}^^J%
6029 \string\HyperFirstAtBeginDocument{%
6030 \string\ifx\string\hyper@anchor\string\@undefined^^J%
6031 \string\global\string\let\string\oldcontentsline\string\contentsline^^J%
6032 \string\gdef\string\contentsline%
6033 \string#1\string#2\string#3\string#4{%
6034 \string\oldcontentsline%
6035 {\string#1}{\string#2}{\string#3}}^^J%
6036 \string\global\string\let\string\oldnewlabel\string\newlabel^^J%
6037 \string\gdef\string\newlabel\string#1\string#2{%
6038 \string\newlabelxx{\string#1}\string#2}^^J%
6039 \string\gdef\string\newlabelxx%
6040 \string#1\string#2\string#3\string#4\string#5\string#6{%
6041 \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.

```

6042 \string\AtEndDocument{%
6043 \string\ifx\string\hyper@anchor\string\@undefined^^J%
6044 \string\let\string\contentsline\string\oldcontentsline^^J%
6045 \string\let\string\newlabel\string\oldnewlabel^^J%
6046 \string\fi%
6047 }^^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.

```

6048 \string\fi%
6049 }^^J%
6050 \string\global\string\let\string\hyper@last\relax^^J%
6051 \string\gdef\string\HyperFirstAtBeginDocument\string#1{\string#1}%
6052 }%
6053 \fi
6054 \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.

```

6055 \ifx\hyper@last\@undefined
6056 \def\@starttoc#1{%
6057 \begingroup
6058 \makeatletter
6059 \IfFileExists{\jobname.#1}{%
6060 \Hy@WarningNoLine{%
6061 old #1 file detected, not used; run LaTeX again%
6062 }%
6063 }{}%
6064 \if@filesw
6065 \expandafter\newwrite\csname tf@#1\endcsname
6066 \immediate\openout\csname tf@#1\endcsname \jobname.#1\relax
6067 \fi
6068 \@nobreakfalse
6069 \endgroup
6070 }%
6071 \def\newlabel#1#2{\@newl@bel r{#1}{#2}{-}{-}}%
6072 \fi
6073 }

```

## 25 Title strings

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

```

6074 \ifHy@usetitle
6075   \let\HyOrg@title\title
6076   \let\HyOrg@author\author
6077   \def\title{\@ifnextchar{\Hy@scanopttitle}{\Hy@scantitle}}%
6078   \def\Hy@scanopttitle[#1]{%
6079     \gdef\Hy@title{#1}%
6080     \HyOrg@title{#1}%
6081   }%
6082   \def\Hy@scantitle#1{%
6083     \gdef\Hy@title{#1}%
6084     \HyOrg@title{#1}%
6085   }%
6086   \def\author{\@ifnextchar{\Hy@scanoptauthor}{\Hy@scanauthor}}%
6087   \def\Hy@scanoptauthor[#1]{%
6088     \gdef\Hy@author{#1}%
6089     \HyOrg@author{#1}%
6090   }%
6091   \def\Hy@scanauthor#1{%
6092     \gdef\Hy@author{#1}%
6093     \HyOrg@author{#1}%
6094   }%

```

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.

```

6095 \begingroup
6096   \def\process@me#1\@nil#2{%
6097     \expandafter\let\expandafter\x\csname @#2\endcsname
6098     \edef\y{\expandafter\strip@prefix\meaning\x}%
6099     \def\c##1#1##2\@nil{%
6100       \ifx\\##1\\%
6101         \else
6102           \expandafter\gdef\csname Hy@#2\expandafter\endcsname
6103             \expandafter{x}%
6104         \fi
6105       }%
6106     \expandafter\c\y\relax#1\@nil
6107   }%
6108   \expandafter\process@me\string\@latex@\@nil{title}%
6109   \expandafter\process@me\string\@latex@\@nil{author}%
6110 \endgroup
6111 \fi
6112 \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.

```

6113 \def\Hy@UseMaketitleString#1{%

```

```

6114 \ltx@ifundefined{Hy@#1}{}{%
6115   \begingroup
6116   \let\Hy@saved@hook\pdfstringdefPreHook
6117   \pdfstringdefDisableCommands{%
6118     \expandafter\let\expandafter\\csname Hy@newline@#1\endcsname
6119     \let\newline\\%
6120   }%
6121   \expandafter\ifx\csname @pdf#1\endcsname\@empty
6122     \expandafter\pdfstringdef\csname @pdf#1\endcsname{%
6123       \csname Hy@#1\endcsname\@empty
6124     }%
6125   \fi
6126   \global\let\pdfstringdefPreHook\Hy@saved@hook
6127 \endgroup
6128 }%
6129 }
6130 \def\Hy@newline@title#1{ #1}
6131 \def\Hy@newline@author#1{, #1}
6132 \def\Hy@UseMaketitleInfos{%
6133   \Hy@UseMaketitleString{title}%
6134   \Hy@UseMaketitleString{author}%
6135 }

```

## 26 Page numbers

This stuff is done by Heiko Oberdiek.

## 27 Every page

```

6136 \RequirePackage{atbegshi}[2007/09/09]
6137 \def\Hy@EveryPageHook{}
6138 \def\Hy@EveryPageBoxHook{}
6139 \def\Hy@FirstPageHook{}
6140 \AtBeginShipout{%
6141   \Hy@EveryPageHook
6142   \ifx\Hy@EveryPageBoxHook\@empty
6143     \else
6144       \setbox\AtBeginShipoutBox=\vbox{%
6145         \offinterlineskip
6146         \Hy@EveryPageBoxHook
6147         \box\AtBeginShipoutBox
6148       }%
6149     \fi
6150 }
6151 \AtBeginShipoutFirst{%
6152   \Hy@FirstPageHook
6153 }
6154 \g@addto@macro\Hy@FirstPageHook{%
6155   \PDF@FinishDoc
6156   \gdef\PDF@FinishDoc{}%
6157 }

```

### 27.1 PDF /PageLabels

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

```

6158 \ifHy@pagelabels
6159 \begingroup\expandafter\expandafter\expandafter\endgroup
6160 \expandafter\ifx\csname thepage\endcsname\relax
6161 \Hy@pagelabelsfalse
6162 \Hy@WarningNoLine{%
6163   Option 'pdfpagelabels' is turned off\MessageBreak
6164   because \string\thepage\space is undefined%
6165 }%
6166 \csname fi\endcsname
6167 \csname iffalse\expandafter\endcsname
6168 \fi

```

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

```

6169 \def\thispdfpagelabel#1{%
6170   \gdef\HyPL@thisLabel{#1}%
6171 }%
6172 \global\let\HyPL@thisLabel\relax

```

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

```

6173 \def\HyPL@Labels{}%

```

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

```

6174 \newcount\Hy@abspage
6175 \Hy@abspage=0 %

```

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

```

6176 \def\HyPL@LastType{init}%
6177 \def\HyPL@LastNumber{0}%
6178 \def\HyPL@LastPrefix{}%

```

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

```

6179 \def\HyPL@arabic{D}%
6180 \def\HyPL@Roman{R}%
6181 \def\HyPL@roman{r}%
6182 \def\HyPL@Alph{A}%
6183 \def\HyPL@alph{a}%

6184 \def\HyPL@SlidesSetPage{}%
6185 \ltx@ifclassloaded{slides}{%
6186   \def\HyPL@SlidesSetPage{%
6187     \advance\c@page\ltx@one
6188     \ifnum\value{page}>\ltx@one
6189       \protected@edef\HyPL@SlidesOptionalPage{%
6190         \Hy@SlidesFormatOptionalPage{\thepage}%
6191       }%
6192     \else
6193       \def\HyPL@SlidesOptionalPage{}%
6194     \fi
6195     \advance\c@page-\ltx@one
6196   \def\HyPL@page{%
6197     \csname the\Hy@SlidesPage\endcsname
6198     \HyPL@SlidesOptionalPage
6199   }%
6200 }%
6201 }{}%

```

`\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.

```

6202 \def\HyPL@EveryPage{%
6203   \begingroup
6204   \ifx\HyPL@thisLabel\relax
6205     \let\HyPL@page\thepage
6206     \HyPL@SlidesSetPage
6207   \else
6208     \let\HyPL@page\HyPL@thisLabel
6209     \global\let\HyPL@thisLabel\relax
6210   \fi
6211   \let\HyPL@Type\relax
6212   \ifnum\the\c@page>0 %
6213     \ifx\HyPL@SlidesSetPage\ltx@empty
6214       \expandafter\HyPL@CheckThePage\HyPL@page\@nil
6215     \fi
6216   \fi
6217   \let\Hy@temp Y%
6218   \ifx\HyPL@Type\HyPL@LastType
6219   \else
6220     \let\Hy@temp N%
6221   \fi
6222   \ifx\HyPL@Type\relax
6223     \pdfstringdef\HyPL@Prefix{\HyPL@page}%
6224   \else
6225     \pdfstringdef\HyPL@Prefix\HyPL@Prefix
6226   \fi
6227   \ifx\HyPL@Prefix\HyPL@LastPrefix
6228   \else
6229     \let\Hy@temp N%
6230   \fi
6231   \if Y\Hy@temp
6232     \advance\c@page by -1 %
6233     \ifnum\HyPL@LastNumber=\the\c@page\relax
6234     \else
6235       \let\Hy@temp N%
6236     \fi
6237     \Hy@StepCount\c@page
6238   \fi
6239   \if N\Hy@temp
6240     \ifx\HyPL@Type\relax
6241       \HyPL@StorePageLabel{/P(\HyPL@Prefix)}%
6242     \else
6243       \HyPL@StorePageLabel{%
6244         \ifx\HyPL@Prefix\@empty
6245         \else
6246           /P(\HyPL@Prefix)%
6247         \fi
6248         /S/\csname HyPL\HyPL@Type\endcsname
6249         \ifnum\the\c@page=1 %
6250         \else
6251           \space/St \the\c@page
6252         \fi
6253       }%
6254     \fi
6255   \fi
6256   \xdef\HyPL@LastNumber{\the\c@page}%

```



```

6257 \global\let\HyPL@LastType\HyPL@Type
6258 \global\let\HyPL@LastPrefix\HyPL@Prefix
6259 \endgroup
6260 \Hy@GlobalStepCount\Hy@abspage
6261 }%

```

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

```

6262 \def\HyPL@CheckThePage#1\@nil{%
6263 \HyPL@@CheckThePage{#1}#1\csname\endcsname\c@page\@nil
6264 }%

```

`\HyPL@@CheckThePage` The first check is, is `\thepage` is defined such as in  $\text{\LaTeX}$ , e. g.: `\csname @arabic\endcsname\c@page`. In the current implementation the check fails, if there is another `\csname` before.

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

```

6265 \def\HyPL@@CheckThePage#1#2\csname#3\endcsname\c@page#4\@nil{%
6266 \def\Hy@tempa{#4}%
6267 \def\Hy@tempb{\csname\endcsname\c@page}%
6268 \ifx\Hy@tempa\Hy@tempb
6269 \expandafter\ifx\csname HyPL#3\endcsname\relax
6270 \else
6271 \def\HyPL@Type{#3}%
6272 \def\HyPL@Prefix{#2}%
6273 \fi
6274 \else
6275 \begingroup
6276 \let\Hy@next\endgroup
6277 \let\HyPL@found\@undefined
6278 \def\arabic{\HyPL@Format{arabic}}%
6279 \def\Roman{\HyPL@Format{Roman}}%
6280 \def\roman{\HyPL@Format{roman}}%
6281 \def\Alph{\HyPL@Format{Alph}}%
6282 \def\alph{\HyPL@Format{alph}}%
6283 \protected@edef\Hy@temp{#1}%
6284 \ifx\HyPL@found\relax
6285 \toks@{\expandafter{\Hy@temp}}%
6286 \edef\Hy@next{\endgroup
6287 \noexpand\HyPL@@CheckThePage\the\toks@
6288 \noexpand\HyPL@found\relax\noexpand\@nil
6289 }%
6290 \fi
6291 \Hy@next
6292 \fi
6293 }%

```

`\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`.

```

6294 \def\HyPL@Format#1#2{%
6295 \ifx\HyPL@found\@undefined
6296 \expandafter\ifx\csname c@#2\endcsname\c@page
6297 \expandafter\noexpand\csname HyPL@found\endcsname{#1}%
6298 \else
6299 \expandafter\noexpand\csname#1\endcsname{#2}%
6300 \fi

```

```

6301 \else
6302 \expandafter\noexpand\csname#1\endcsname{#2}%
6303 \fi
6304 }%

```

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

```

6305 \def\HyPL@@@CheckThePage#1\HyPL@found#2#3\@nil{%
6306 \def\Hy@tempa{#3}%
6307 \def\Hy@tempb{\HyPL@found\relax}%
6308 \ifx\Hy@tempa\Hy@tempb
6309 \def\HyPL@Type{#2}%
6310 \def\HyPL@Prefix{#1}%
6311 \fi
6312 }%

```

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

```

6313 \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`.

```

6314 \def\HyPL@Useless{0<</S/D>>}%
6315 \@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.

```

6316 \def\HyPL@SetPageLabels{%
6317 \@onelevel@sanitize\HyPL@Labels
6318 \ifx\HyPL@Labels\@empty
6319 \else
6320 \ifx\HyPL@Labels\HyPL@Useless
6321 \else
6322 \Hy@PutCatalog{/PageLabels<</Nums[\HyPL@Labels]>>}%
6323 \fi
6324 \fi
6325 }%

6326 \g@addto@macro\Hy@EveryPageHook{\HyPL@EveryPage}%
6327 \fi

```

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

```

6328 \Hy@DisableOption{pdfpagelabels}
6329 </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`

```

6330 <*pdfTeX>
6331 \pdf@ifdraftmode{%
6332 \let\Hy@PutCatalog\ltx@gobble
6333 }{%
6334 \let\Hy@PutCatalog\pdfcatalog
6335 }
6336 </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.

```

6337 < *vtex>
6338 \providecommand*{\XR@ext}{pdf}
6339 \edef\Hy@VTeXversion{%
6340   \ifx\VTeXversion\@undefined
6341     \z@
6342   \else
6343     \ifx\VTeXversion\relax
6344       \z@
6345     \else
6346       \VTeXversion
6347     \fi
6348   \fi
6349 }
6350 \begingroup
6351   \ifnum\Hy@VTeXversion<660 %
6352     \gdef\Hy@PutCatalog#1{%
6353       \Hy@WarningNoLine{%
6354         VTeX 6.59g or above required for pdfpagelabels%
6355       }%
6356     }%
6357   \else
6358     \gdef\Hy@PutCatalog#1{%
6359       \Hy@vt@PutCatalog#1/PageLabels<<>>\@nil
6360     }%
6361     \gdef\Hy@vt@PutCatalog#1/PageLabels<<#2>>#3\@nil{%
6362       \ifx\#2\%
6363         \else
6364           \immediate\special{!pdfpagelabels #2}%
6365         \fi
6366       }%
6367     \fi
6368 \endgroup
6369 < /vtex>

6370 < *pdftex | vtex>

```

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

```

6371 \ifHy@pagelabels
6372   \def\HyPL@StorePageLabel#1{%
6373     \toks@\expandafter{\HyPL@Labels}%
6374     \xdef\HyPL@Labels{%
6375       \the\toks@
6376       \the\Hy@abspage<<#1>>%
6377     }%
6378   }%

```

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.

```

6379 \RequirePackage{atveryend}[2009/12/07]%
6380 \AtVeryEndDocument{%
6381   \HyPL@SetPageLabels
6382 }%

```

```

6383 \fi
6384 </pdfTeX | vtex>

```

### 27.1.2 xetex

```

6385 <*xetex>
6386 \HyPsd@LoadUnicode
6387 \Hy@unicodetrue
6388 \ifx\HyPsd@pdfencoding\HyPsd@pdfencoding@unicode
6389 \else
6390 \let\HyPsd@pdfencoding\HyPsd@pdfencoding@auto
6391 \fi
6392 \HyPsd@LoadStringEncoding
6393 \define@key{Hyp}{unicode}[true]{%
6394 \Hy@boolkey{unicode}{#1}%
6395 \ifHy@unicode
6396 \else
6397 \Hy@Warning{%
6398 XeTeX driver only supports 'unicode=true'. Ignoring\MessageBreak
6399 option setting 'unicode=false'%
6400 }%
6401 \Hy@unicodetrue
6402 \fi
6403 }
6404 \define@key{Hyp}{pdfencoding}{%
6405 \edef\HyPsd@temp{#1}%
6406 \ifx\HyPsd@temp\HyPsd@pdfencoding@unicode
6407 \let\HyPsd@pdfencoding\HyPsd@temp
6408 \else
6409 \ifx\HyPsd@temp\HyPsd@pdfencoding@auto
6410 \let\HyPsd@pdfencoding\HyPsd@temp
6411 \else
6412 \Hy@Warning{%
6413 XeTeX driver only supports\MessageBreak
6414 'pdfencoding=unicode|auto'. Ignoring option\MessageBreak
6415 setting 'pdfencoding=\HyPsd@temp'%
6416 }%
6417 \fi
6418 \fi
6419 }
6420 \let\HyXeTeX@CheckUnicode\relax
6421 </xetex>

```

### 27.1.3 pdfmarkbase, dvipdfm, xetex

```

6422 <*pdfmarkbase>
6423 \begingroup
6424 \@ifundefined{headerps@out}{}{%
6425 \toks@\expandafter{\Hy@FirstPageHook}%
6426 \xdef\Hy@FirstPageHook{%
6427 \noexpand\headerps@out{%
6428 systemdict /pdfmark known%
6429 {%
6430 userdict /?pdfmark systemdict /exec get put%
6431 }{%
6432 userdict /?pdfmark systemdict /pop get put %
6433 userdict /pdfmark systemdict /cleartomark get put%
6434 }%

```

```

6435     ifelse%
6436     }%
6437     \the\toks@
6438     }%
6439     }%
6440 \endgroup
6441 \</pdfmarkbase>

```

\Hy@PutCatalog

```

6442 \<dvipdfm | xetex>\def\Hy@PutCatalog#1{\@pdfmark{docview << #1 >>}}
6443 \<*pdfmarkbase>
6444 \def\Hy@PutCatalog#1{%
6445   \pdfmark{pdfmark=/PUT,Raw={\string{Catalog\string} << #1 >>}}%
6446 }
6447 \</pdfmarkbase>

6448 \<*pdfmarkbase | dvipdfm | xetex>
6449 \ifHy@pagelabels

```

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

```

6450 \def\HyPL@StorePageLabel#1{%
6451   \if@filesw
6452     \begingroup
6453     \edef\Hy@tempa{\the\Hy@abspage<<#1>>}%
6454     \immediate\write\@mainaux{%
6455       \string\HyPL@Entry{\Hy@tempa}%
6456     }%
6457     \endgroup
6458   \fi
6459 }%

```

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.

```

6460 \Hy@AtBeginDocument{%
6461   \if@filesw
6462     \immediate\write\@mainaux{%
6463       \string\providecommand\string*\string\HyPL@Entry[1]{}%
6464     }%
6465   \fi
6466   \ifx\HyPL@Labels\@empty
6467     \Hy@WarningNoLine{Rerun to get /PageLabels entry}%
6468   \else
6469     \HyPL@SetPageLabels
6470   \fi
6471   \let\HyPL@Entry\@gobble
6472 }%

```

\HyPL@Entry

```

6473 \def\HyPL@Entry#1{%
6474   \expandafter\gdef\expandafter\HyPL@Labels\expandafter{%
6475     \HyPL@Labels
6476     #1%
6477   }%
6478 }%

6479 \fi
6480 \</pdfmarkbase | dvipdfm | xetex>

```

```

6481 <*package>
6482 \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

```

6483 \def\Hy@CounterExists#1{%
6484   \begingroup\expandafter\expandafter\expandafter\endgroup
6485   \expandafter\ifx\csname c@#1\endcsname\relax
6486     \expandafter\@gobble
6487   \else
6488     \begingroup\expandafter\expandafter\expandafter\endgroup
6489     \expandafter\ifx\csname the#1\endcsname\relax
6490       \expandafter\expandafter\expandafter\@gobble
6491     \else
6492       \expandafter\expandafter\expandafter\@firstofone
6493     \fi
6494   \fi
6495 }
6496 \Hy@CounterExists{section}{%
6497   \newcommand\theHequation{\theHsection.\arabic{equation}}}%
6498 }
6499 \Hy@CounterExists{part}{%
6500   \newcommand\theHpart{\arabic{part}}}%
6501 }
6502 \ltx@ifundefined{thechapter}{%
6503   \newcommand\theHsection   {\arabic{section}}}%
6504   \newcommand\theHfigure    {\arabic{figure}}}%
6505   \newcommand\theHtable     {\arabic{table}}}%
6506 }{%
6507   \newcommand\theHchapter   {\arabic{chapter}}}%
6508   \newcommand\theHfigure    {\theHchapter.\arabic{figure}}}%
6509   \newcommand\theHtable     {\theHchapter.\arabic{table}}}%
6510   \newcommand\theHsection   {\theHchapter.\arabic{section}}}%
6511 }
6512 \newcommand\theHsubsection  {\theHsection.\arabic{subsection}}
6513 \newcommand\theHsubsubsection{\theHsubsection.\arabic{subsubsection}}
6514 \newcommand\theHparagraph   {\theHsubsubsection.\arabic{paragraph}}
6515 \newcommand\theHsubparagraph{\theHparagraph.\arabic{subparagraph}}

```

```

6516 \newcommand\theHtheorem    {\theHsection.\arabic{theorem}}
6517 \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.

```

6518 \let\H@item\item
6519 \newcounter{Item}
6520 \def\theHItem{\arabic{Item}}
6521 \def\item{%
6522   \@hyper@itemfalse
6523   \if@nmbrlist\@hyper@itemtrue\fi
6524   \H@item
6525 }

6526 \newcommand\theHenumi    {\theHItem}
6527 \newcommand\theHenumii   {\theHItem}
6528 \newcommand\theHenumiii  {\theHItem}
6529 \newcommand\theHenumiv   {\theHItem}
6530 \newcommand\theHHfootnote {\arabic{Hfootnote}}
6531 \newcommand\theHmpfootnote{\arabic{mpfootnote}}
6532 \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.

```

6533 \let\H@refstepcounter\refstepcounter
6534 \edef\name@of@eq{equation}%
6535 \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.

```

6536 \newif\if@hyper@item
6537 \newif\if@skiphyperref
6538 \@hyper@itemfalse
6539 \@skiphyperreffalse
6540 \def\refstepcounter#1{%
6541   \ifHy@pdfstring
6542   \else
6543     \H@refstepcounter{#1}%
6544     \edef\This@name{#1}%
6545     \ifx\This@name\name@of@slide
6546     \else
6547       \if@skiphyperref
6548       \else
6549         \if@hyper@item
6550           \stepcounter{Item}%
6551           \hyper@refstepcounter{Item}%
6552           \@hyper@itemfalse
6553         \else
6554           \hyper@refstepcounter{#1}%
6555         \fi
6556       \fi
6557     \fi
6558   \fi
6559 }
6560 \let\Hy@saved@refstepcounter\refstepcounter

```

AMST<sub>EX</sub> processes all equations twice; we want to make sure that the hyper stuff is not executed twice, so we use the AMS `\ifmeasuring@`, initialized if AMS math is not used.

```
6561 \ifpackageloaded{amsmath}{\newif\ifmeasuring@\measuring@false}
```

`\hyper@refstepcounter`

```
6562 \def\hyper@refstepcounter#1{%
6563   \edef\This@name{#1}%
6564   \ifx\This@name\name@of@eq
6565     \ifundefined{theHequation}{%
6566       \make@stripped@name{\theequation}%
6567       \let\theHequation\newname
6568     }{}%
6569   \fi
6570   \ifundefined{theH#1}{%
6571     \expandafter\def\csname theH#1\endcsname{\arabic{#1}}%
6572   }{}%
6573   \hyper@makecurrent{#1}%
6574   \ifmeasuring@
6575   \else
6576     \Hy@raisedlink{%
6577       \hyper@anchorstart{\@currentHref}\hyper@anchorend
6578     }%
6579   \fi
6580 }
```

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`.

```
6581 \begingroup\expandafter\expandafter\expandafter\endgroup
6582 \expandafter\ifx\csname chapter\endcsname\relax
6583   \def\Hy@chapterstring{section}%
6584 \else
6585   \def\Hy@chapterstring{chapter}%
6586 \fi
6587 \def\Hy@appendixstring{appendix}
6588 \def\Hy@chapapp{\Hy@chapterstring}
6589 \ltx@ifundefined{appendix}{%
6590 }{%
6591   \let\HyOrg@appendix\appendix
6592   \def\appendix{%
6593     \ltx@ifundefined{chapter}%
6594     {\gdef\theHsection{\Alph{section}}}%
6595     {\gdef\theHchapter{\Alph{chapter}}}%
6596     \xdef\Hy@chapapp{\Hy@appendixstring}%
6597     \HyOrg@appendix
6598   }%
6599 }
```

`\Hy@Test@alph`

```
6600 \def\Hy@Test@alph#1{%
6601   \ifcase#1\or
6602     a\or b\or c\or d\or e\or f\or g\or h\or i\or j\or
6603     k\or l\or m\or n\or o\or p\or q\or r\or s\or t\or
```



```

6604   u\or v\or w\or x\or y\or z%
6605   \else
6606   \@ctrerr
6607   \fi
6608 }

```

\Hy@Test@Alph

```

6609 \def\Hy@Test@Alph#1{%
6610   \ifcase#1\or
6611   A\or B\or C\or D\or E\or F\or G\or H\or I\or J\or
6612   K\or L\or M\or N\or O\or P\or Q\or R\or S\or T\or
6613   U\or V\or W\or X\or Y\or Z%
6614   \else
6615   \@ctrerr
6616   \fi
6617 }

```

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

```

6618 \def\hyper@makecurrent#1{%
6619   \begingroup
6620   \edef\Hy@param{#1}%
6621   \ifx\Hy@param\Hy@chapterstring
6622     \let\Hy@param\Hy@chapapp
6623   \fi
6624   \ifHy@hypertextnames
6625     \let\@number\@firstofone
6626     \def\@fnsymbol##1{\fnsymbol\number##1}%
6627     \def\@arabic##1{\number##1}%
6628     \ifx\@alph\Hy@Test@alph
6629       \else
6630       \def\@alph{alph\number}%
6631     \fi
6632     \ifx\@Alph\Hy@Test@Alph
6633     \else
6634     \def\@Alph{Alph\number}%
6635     \fi
6636     \ifHy@naturalnames
6637     \let\textlatin\@firstofone
6638     \xdef\HyperGlobalCurrentHref{\csname the#1\endcsname}%
6639   \else
6640     \xdef\HyperGlobalCurrentHref{%
6641       \csname
6642         the%
6643         \expandafter\ifx\csname theH#1\endcsname\relax\else H\fi
6644         #1%
6645       \endcsname
6646     }%
6647   \fi
6648   \xdef\HyperGlobalCurrentHref{%
6649     \Hy@param.\expandafter\strip@prefix\meaning\HyperGlobalCurrentHref
6650   }%
6651   \else
6652     \Hy@GlobalStepCount\Hy@linkcounter
6653     \xdef\HyperGlobalCurrentHref{\Hy@param.\the\Hy@linkcounter}%
6654   \fi
6655 \endgroup

```

```

6656 \let\HyperLocalCurrentHref\HyperGlobalCurrentHref
6657 \ifHy@localanchorname
6658   \let\@currentHref\HyperLocalCurrentHref
6659 \else
6660   \global\let\@currentHref\HyperGlobalCurrentHref
6661 \fi
6662 }

```

`\Hy@MakeCurrentHref`

```

6663 \def\Hy@MakeCurrentHref#1{%
6664   \edef\HyperLocalCurrentHref{#1}%
6665   \@onelevel@sanitize\HyperLocalCurrentHref
6666   \global\let\HyperGlobalCurrentHref\HyperLocalCurrentHref
6667   \let\HyperLocalCurrentHref\HyperGlobalCurrentHref
6668   \ifHy@localanchorname
6669     \let\@currentHref\HyperLocalCurrentHref
6670   \else
6671     \global\let\@currentHref\HyperGlobalCurrentHref
6672   \fi
6673 }

```

`\Hy@MakeCurrentHrefAuto`

```

6674 \def\Hy@MakeCurrentHrefAuto#1{%
6675   \Hy@GlobalStepCount\Hy@linkcounter
6676   \Hy@MakeCurrentHref{#1.\the\Hy@linkcounter}%
6677 }

```

`\@currentHlabel` `\@currrentHlabel` is only defined for compatibility with package ‘hydvips’.

```

6678 \def\@currentHlabel{\@currentHref}

6679 \@ifpackageloaded{fancyvrb}{%
6680   \@ifpackagelater{fancyvrb}{1998/05/20}{-}{%
6681     \def\FV@StepLineNo{%
6682       \FV@SetLineNo
6683       \def\FV@StepLineNo{\H@refstepcounter{FancyVerbLine}}%
6684       \FV@SetLineNo
6685     }%
6686   }%
6687 }{}

```

## 29 Package lastpage support

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

`\lastpage@putlabel`

```

6688 \Hy@AtBeginDocument{%
6689   \@ifclassloaded{revtex4}{%
6690     \@namedef{ver@lastpage.sty}{1994/06/25}%
6691   }{}%

```

```

6692 \@ifpackageloaded{lastpage}{%
6693   \ifHy@pageanchor
6694   \else
6695     \Hy@WarningNoLine{%
6696       The \string\pageref{LastPage} link doesn't work\MessageBreak
6697       with disabled option 'pageanchor'%
6698     }%
6699   \fi
6700 \def\lastpage@putlabel{%
6701   \addtocounter{page}{-1}%
6702   \if@filesw
6703     \begingroup
6704       \let\@number\@firstofone
6705       \ifHy@pageanchor
6706         \ifHy@hypertextnames
6707           \ifHy@plainpages
6708             \def\Hy@temp{\arabic{page}}%
6709           \else
6710             \Hy@unicodefalse
6711             \pdfstringdef\Hy@temp{\thepage}%
6712           \fi
6713         \else
6714           \def\Hy@temp{\the\Hy@pagecounter}%
6715         \fi
6716       \fi
6717       \immediate\write\@auxout{%
6718         \string\newlabel
6719         {LastPage}{{}{\thepage}}{%
6720           \ifHy@pageanchor page.\Hy@temp\fi}}}%
6721     }%
6722   \endgroup
6723   \fi
6724   \addtocounter{page}{1}%
6725 }%
6726 \@ifclassloaded{revtex4}{%
6727   \begingroup
6728     \toks@\expandafter{\lastpage@putlabel}%
6729     \edef\x{\endgroup
6730       \def\noexpand\lastpage@putlabel{%
6731         \noexpand\stepcounter{page}%
6732         \the\toks@
6733         \noexpand\addtocounter{page}\noexpand\m@ne
6734       }%
6735     }%
6736     \x
6737   }{}%
6738 }{}%
6739 }
6740 \</package>
6741 \<*check>
6742 \checkpackage{lastpage}[1994/06/25]
6743 \checkcommand\def\lastpage@putlabel{%
6744   \addtocounter{page}{-1}%
6745   \immediate\write\@auxout{%
6746     \string\newlabel{LastPage}{{}{\thepage}}%
6747   }%
6748   \addtocounter{page}{1}%

```

```

6749 }
6750 </check>
6751 <*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.

```

6752 \def\hypergetref#1{\getrefbykeydefault{#1}{-}{??}}
6753 \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:

```

6754 \@ifpackageloaded{titlesec}{%
6755   \def\ttl@Hy@steplink#1{%
6756     \Hy@MakeCurrentHrefAuto{#1*}%
6757   \edef\ttl@Hy@saveanchor{%
6758     \noexpand\Hy@raisedlink{%
6759       \noexpand\hyper@anchorstart{\@currentHref}%
6760       \noexpand\hyper@anchorend
6761     \def\noexpand\ttl@Hy@SavedCurrentHref{\@currentHref}%
6762     \noexpand\ttl@Hy@PatchSaveWrite
6763   }%
6764   }%
6765 }%
6766 \def\ttl@Hy@PatchSaveWrite{%
6767   \begingroup
6768   \toks@{\expandafter{\ttl@savewrite}}%
6769   \edef\x{\endgroup
6770     \def\noexpand\ttl@savewrite{%
6771       \let\noexpand\@currentHref
6772       \noexpand\ttl@Hy@SavedCurrentHref
6773     \the\toks@
6774   }%
6775   }%
6776   \x
6777 }%
6778 \def\ttl@Hy@refstepcounter#1{%
6779   \let\ttl@b\Hy@raisedlink
6780   \def\Hy@raisedlink##1{%
6781     \def\ttl@Hy@saveanchor{\Hy@raisedlink{##1}}%
6782   }%
6783   \refstepcounter{#1}%
6784   \let\Hy@raisedlink\ttl@b
6785 }%
6786 }{}

```

Package titletoc support:

```

6787 \@ifpackageloaded{titletoc}{%
6788   \def\ttl@gobblecontents#1#2#3#4{\ignorespaces}%
6789 }{}

```

## 32 Package varioref support

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

```

6790 \def\Hy@varioref@undefined{{??}{??}{}}{}{}
6791 \@ifpackageloaded{varioref}{%
6792   \def\vref@pagenum#1#2{%
6793     \@ifundefined{r@#2}{%
6794       \expandafter\let\csname r@#2\endcsname\Hy@varioref@undefined
6795     }{}%
6796     \edef#1{\getpagerefnumber{#2}}%
6797   }%
6798 }{}

```

Package varioref redefines \refstepcounter, thus it needs fixing, if the package is loaded *after* hyperref.

```

6799 \def\Hy@varioref@refstepcounter#1{%
6800   \stepcounter{#1}%
6801   \protected@edef\@currentlabel{%
6802     \csname p@#1\expandafter\endcsname\csname the#1\endcsname
6803   }%
6804 }
6805 \AtBeginDocument{%
6806   \ifx\refstepcounter\Hy@varioref@refstepcounter
6807     \let\H@refstepcounter\refstepcounter
6808     \let\refstepcounter\Hy@saved@refstepcounter
6809   \fi
6810 }

```

## 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

```

6811 \@ifpackageloaded{longtable}{%
6812   \begingroup
6813     \def\y{\LT@array}%
6814     \@ifundefined{scr@LT@array}{%
6815       \@ifundefined{adl@LT@array}{\def\y{\adl@LT@array}}%
6816     }{\def\y{\scr@LT@array}}%
6817     \long\def\x\refstepcounter#1#2\@sharp#3#4\@nil{%
6818       \expandafter\endgroup
6819       \expandafter\def\y[##1]##2{%
6820         \H@refstepcounter{#1}%
6821         \hyper@makecurrent{table}%
6822         \let\Hy@LT@currentHref\@currentHref
6823         #2\@sharp###3###4%
6824       }%
6825     }%
6826     \expandafter\expandafter\expandafter\x\y{##1}{##2}\@nil

```

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

```

6827   \begingroup
6828     \def\x#1\ifvoid\LT@foot#2\fi#3\@nil{%

```

```

6829 \endgroup
6830 \def\LT@start{%
6831   #1%
6832   \ifvoid\LT@foot#2\fi
6833   \let\@currentHref\Hy@LT@currentHref
6834   \Hy@raisedlink{%
6835     \hyper@anchorstart{\@currentHref}\hyper@anchorend
6836   }%
6837   #3%
6838 }%
6839 }%
6840 \expandafter\x\LT@start\@nil
6841 }{}

```

## 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.

```

6842 \let\new@refstepcounter\refstepcounter
6843 \let\H@equation\equation
6844 \let\H@endequation\endequation

6845 \ifpackageloaded{amsmath}{%
6846   \long\def\Hy@temp{%
6847     \incr@eqnum
6848     \mathdisplay@push
6849     \st@rrfalse \global\@eqnswtrue
6850     \mathdisplay{equation}%
6851   }%
6852   \ifx\Hy@temp\equation
6853     \expandafter\ifx\csname if@fleqn\expandafter\endcsname
6854       \csname iftrue\endcsname
6855   \else
6856     \long\def\equation{%
6857       \mathdisplay@push
6858       \st@rrfalse \global\@eqnswtrue
6859       \mathdisplay{equation}%
6860       \incr@eqnum
6861     }%
6862   \fi
6863 \fi
6864 }{}%
6865 \def\equation{%
6866   \let\refstepcounter\H@refstepcounter
6867   \H@equation
6868   \@ifundefined{theHequation}{%
6869     \make@stripped@name{\theequation}%
6870     \let\theHequation\newname
6871   }{}%
6872   \hyper@makecurrent{equation}%
6873   \Hy@raisedlink{\hyper@anchorstart{\@currentHref}}%
6874   \let\refstepcounter\new@refstepcounter
6875 }%

```

```

6876 \def\endequation{\Hy@raisedlink{\hyper@anchorend}\H@endequation}%
6877 }

```

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.

```

6878 \newif\if@eqnstar
6879 \@eqnstarfalse
6880 \let\H@eqnarray\eqnarray
6881 \let\H@endeqnarray\endeqnarray
6882 \def\eqnarray{%
6883   \let\Hy@reserved@a\relax
6884   \def\@currentHref{}%
6885   \H@eqnarray
6886   \if@eqnstar
6887   \else
6888     \ifx\\ \@currentHref\\%
6889     \else
6890       \@ifundefined{theHequation}{%
6891         \make@stripped@name{\theequation}%
6892         \let\theHequation\newname
6893       }{}%
6894       \hyper@makecurrent{equation}%
6895       \hyper@anchorstart{\@currentHref}{ }\hyper@anchorend
6896     \fi
6897   \fi
6898 }
6899 \def\endeqnarray{%
6900   \H@endeqnarray
6901 }

```

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.

```

6902 \@namedef{eqnarray*}{%
6903   \def\@eqncr{\nonumber\@seqncr}\@eqnstartrue\eqnarray
6904 }
6905 \@namedef{endeqnarray*}{%
6906   \nonumber\endeqnarray\@eqnstarfalse
6907 }

```

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

```

6908 \ltx@ifundefined{subeqnarray}{}{%
6909   \let\H@subeqnarray\subeqnarray
6910   \let\H@endsubeqnarray\endsubeqnarray
6911   \def\subeqnarray{%
6912     \let\Hy@reserved@a\relax
6913     \H@subeqnarray
6914     \@ifundefined{theHequation}{%
6915       \make@stripped@name{\theequation}%
6916       \let\theHequation\newname
6917     }{}%
6918     \hyper@makecurrent{equation}%
6919     \hyper@anchorstart{\@currentHref}{ }\hyper@anchorend
6920   }%
6921   \def\endsubeqnarray{%
6922     \H@endsubeqnarray

```

```

6923 }%
6924 \newcommand\theHsubequation{\theHequation\alph{subequation}}%
6925 }

```

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

```

6926 \def\make@stripped@name#1{%
6927   \begingroup
6928   \escapechar\m@ne
6929   \global\let\newname\@empty
6930   \protected@edef\Hy@tempa{#1}%
6931   \edef\@tempb{%
6932     \noexpand\@tfor\noexpand\Hy@tempa:=%
6933     \expandafter\strip@prefix\meaning\Hy@tempa
6934   }%
6935   \@tempb\do{%
6936     \if{\Hy@tempa\else
6937       \if}\Hy@tempa\else
6938       \xdef\newname{\newname\Hy@tempa}%
6939     \fi
6940   }%
6941 }%
6942 \endgroup
6943 }

```

Support for amsmath's subequations:

```

6944 \begingroup\expandafter\expandafter\expandafter\endgroup
6945 \expandafter\ifx\csname subequations\endcsname\relax
6946 \else
6947   \let\HyOrg@subequations\subequations
6948   \def\subequations{%
6949     \stepcounter{equation}%
6950     \protected@edef\theHparentequation{%
6951       \ifundefined{theHequation}\theequation\theHequation
6952     }%
6953     \addtocounter{equation}{-1}%
6954     \HyOrg@subequations
6955     \def\theHequation{\theHparentequation\alph{equation}}%
6956     \ignorespaces
6957   }%
6958 \fi

```

Support for package amsthm (Daniel Müllner):

```

6959 \ifpackageloaded{amsthm}{%

```

Class amsbook uses a different definition of \@thm, where two lines are added (thanks to Dan Luecking for his analysis):

```

\let\thm@indent\indent % indent
\thm@headfont{\scshape}% heading font small caps

6960 \def\Hy@temp#1#2#3{%
6961   \ifhmode\unskip\unskip\par\fi
6962   \normalfont
6963   \trivlist
6964   \let\thmheadnl\relax
6965   \let\thm@swap\@gobble
6966   \let\thm@indent\indent % indent
6967   \thm@headfont{\scshape}% heading font small caps
6968   \thm@notefont{\fontseries\mddefault\upshape}%

```



```

6969 \thm@headpunct{.}% add period after heading
6970 \thm@headsep 5\p@ plus\p@ minus\p@\relax
6971 \thm@space@setup
6972 #1% style overrides
6973 \@topsep \thm@preskip % used by thm head
6974 \@topsepadd \thm@postskip % used by \@endparenv
6975 \def\@tempa{#2}\ifx\@empty\@tempa
6976 \def\@tempa{\@oparg{\@begintheorem{#3}{}}}%
6977 \else
6978 \refstepcounter{#2}%
6979 \def\@tempa{\@oparg{\@begintheorem{#3}{\csname the#2\endcsname}}}%
6980 \fi
6981 \@tempa
6982 }%
6983 \ifx\Hy@temp\@thm
6984 \def\@thm#1#2#3{%
6985 \ifhmode
6986 \unskip\unskip\par
6987 \fi
6988 \normalfont
6989 \trivlist
6990 \let\thmheadnl\relax
6991 \let\thm@swap\@gobble
6992 \let\thm@indent\indent % indent
6993 \thm@headfont{\scshape}% heading font small caps
6994 \thm@notefont{\fontseries\mddefault\upshape}%
6995 \thm@headpunct{.}% add period after heading
6996 \thm@headsep 5\p@ plus\p@ minus\p@\relax
6997 \thm@space@setup
6998 #1% style overrides
6999 \@topsep \thm@preskip % used by thm head
7000 \@topsepadd \thm@postskip % used by \@endparenv
7001 \def\@dth@counter{#2}%
7002 \ifx\@empty\@dth@counter
7003 \def\@tempa{%
7004 \@oparg{\@begintheorem{#3}{}}}%
7005 }%
7006 \else
7007 \H@refstepcounter{#2}%
7008 \hyper@makecurrent{#2}%
7009 \let\Hy@dth@currentHref\@currentHref
7010 \def\@tempa{%
7011 \@oparg{\@begintheorem{#3}{\csname the#2\endcsname}}}%
7012 }%
7013 \fi
7014 \@tempa
7015 }%
7016 \else
7017 \def\@thm#1#2#3{%
7018 \ifhmode
7019 \unskip\unskip\par
7020 \fi
7021 \normalfont
7022 \trivlist
7023 \let\thmheadnl\relax
7024 \let\thm@swap\@gobble
7025 \thm@notefont{\fontseries\mddefault\upshape}%

```

```

7026 \thm@headpunct{.}% add period after heading
7027 \thm@headsep 5\p@ plus\p@ minus\p@\relax
7028 \thm@space@setup
7029 #1% style overrides
7030 \@topsep \thm@preskip % used by thm head
7031 \@topsepadd \thm@postskip % used by \@endpary
7032 \def\dth@counter{#2}%
7033 \ifx\@empty\dth@counter
7034 \def\@tempa{%
7035 \oparg{\@begintheorem{#3}{}}}%
7036 }%
7037 \else
7038 \H@refstepcounter{#2}%
7039 \hyper@makecurrent{#2}%
7040 \let\Hy@dth@currentHref\@currentHref
7041 \def\@tempa{%
7042 \oparg{\@begintheorem{#3}{\csname the#2\endcsname}}}%
7043 }%
7044 \fi
7045 \@tempa
7046 }%
7047 \fi
7048 \dth@everypar={%
7049 \@minipagefalse
7050 \global\@newlistfalse
7051 \noparitemfalse
7052 \if@inlabel
7053 \global\@inlabelfalse
7054 \begingroup
7055 \setbox\z@\lastbox
7056 \ifvoid\z@
7057 \kern-\itemindent
7058 \fi
7059 \endgroup
7060 \ifx\@empty\dth@counter
7061 \else
7062 \Hy@raisedlink{%
7063 \hyper@anchorstart{%
7064 \ltx@ifundefined{Hy@dth@currentHref}%
7065 \@currentHref\Hy@dth@currentHref
7066 }\hyper@anchorend
7067 }%
7068 \fi
7069 \unhbox\@labels
7070 \fi
7071 \if@nobreak
7072 \@nobreakfalse \clubpenalty\@M
7073 \else
7074 \clubpenalty\@clubpenalty \everypar{}%
7075 \fi
7076 }%
7077 }{}

```

## 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.

```

7078 \ifpackageloaded{tabularx}{\Hy@hyperfootnotesfalse}{}
7079 \ifHy@hyperfootnotes
7080   \newcounter{Hfootnote}%
7081   \let\H@@footnotetext\@footnotetext
7082   \let\H@@footnotemark\@footnotemark
7083   \def\xfootnotenext[#1]{%
7084     \begingroup
7085       \csname c@\@mpfn\endcsname #1\relax
7086       \unrestored@protected@xdef\@thefnmark{\thempfn}%
7087     \endgroup
7088     \ifx\@footnotetext\@mpfootnotetext
7089       \expandafter\H@@mpfootnotetext
7090     \else
7091       \expandafter\H@@footnotetext
7092     \fi
7093   }%
7094   \def\@xfootnotemark[#1]{%
7095     \begingroup
7096       \c@footnote #1\relax
7097       \unrestored@protected@xdef\@thefnmark{\thefootnote}%
7098     \endgroup
7099     \H@@footnotemark
7100   }%
7101   \let\H@@mpfootnotetext\@mpfootnotetext
7102   \long\def\@mpfootnotetext#1{%
7103     \H@@mpfootnotetext{%
7104       \ifHy@nesting
7105         \expandafter\hyper@@anchor\expandafter{%
7106           \Hy@footnote@currentHref
7107         }{#1}%
7108       \else
7109         \Hy@raisedlink{%
7110           \expandafter\hyper@@anchor\expandafter{%
7111             \Hy@footnote@currentHref
7112           }{\relax}%
7113         }#1%
7114       \fi
7115     }%
7116   }%
7117   \long\def\@footnotetext#1{%
7118     \H@@footnotetext{%
7119       \ifHy@nesting
7120         \expandafter\hyper@@anchor\expandafter{%
7121           \Hy@footnote@currentHref
7122         }{#1}%
7123       \else
7124         \Hy@raisedlink{%
7125           \expandafter\hyper@@anchor\expandafter{%
7126             \Hy@footnote@currentHref
7127           }{\relax}%

```

```

7128 }%
7129 \let\@currentHref\Hy@footnote@currentHref
7130 \let\@currentlabelname\@empty
7131 #1%
7132 \fi
7133 }%
7134 }%

```

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.

```

7135 \def\@footnotemark{%
7136 \leavevmode
7137 \ifhmode\edef\@x@sf{\the\spacefactor}\nobreak\fi
7138 \stepcounter{Hfootnote}%
7139 \global\let\Hy@saved@currentHref\@currentHref
7140 \hyper@makecurrent{Hfootnote}%
7141 \global\let\Hy@footnote@currentHref\@currentHref
7142 \global\let\@currentHref\Hy@saved@currentHref
7143 \hyper@linkstart{link}{\Hy@footnote@currentHref}%
7144 \@makefnmark
7145 \hyper@linkend
7146 \ifhmode\spacefactor\@x@sf\fi
7147 \relax
7148 }%

```

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

```

7149 \@ifpackageloaded{longtable}{%
7150 \CheckCommand*\LT@p@ftntext}[1]{%
7151 \edef\@tempa{%
7152 \the\LT@p@ftn
7153 \noexpand\footnotetext[\the\c@footnote]%
7154 }%
7155 \global\LT@p@ftn\expandafter{\@tempa{#1}}%
7156 }%
7157 \long\def\LT@p@ftntext#1{%
7158 \edef\@tempa{%
7159 \the\LT@p@ftn
7160 \begingroup
7161 \noexpand\c@footnote=\the\c@footnote\relax
7162 \noexpand\protected@xdef\noexpand\@thefnmark{%
7163 \noexpand\thempfn
7164 }%
7165 \noexpand\Hy@LT@footnotetext{%
7166 \Hy@footnote@currentHref
7167 }%
7168 }%
7169 \global\LT@p@ftn\expandafter{%
7170 \@tempa{#1}%
7171 \endgroup
7172 }%
7173 }%
7174 \long\def\Hy@LT@footnotetext#1#2{%
7175 \H@@@footnotetext{%

```

```

7176 \ifHy@nesting
7177 \hyper@@anchor{#1}{#2}%
7178 \else
7179 \Hy@raisedlink{%
7180 \hyper@@anchor{#1}{\relax}%
7181 }%
7182 \def\@currentHref{#1}%
7183 \let\@currentlabelname\@empty
7184 #2%
7185 \fi
7186 }%
7187 }%
7188 }{}%

```

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

```

7189 \@ifpackageloaded{fancyvrb}{%
7190 \def\V@@footnotetext{%
7191 \insert\footins\bgroup
7192 \csname reset@font\endcsname
7193 \footnotesize
7194 \interlinepenalty\interfootnotelinepenalty
7195 \splittopskip\footnotesep
7196 \splitmaxdepth\dp\strutbox
7197 \floatingpenalty \@MM
7198 \hsize\columnwidth
7199 \@parboxrestore
7200 \edef\@currentlabel{\csname p@footnote\endcsname\@thefnmark}%
7201 \@makefnmark{}%
7202 \rule{\z@}{\footnotesep}%
7203 \bgroup
7204 \aftergroup\V@@@footnotetext
7205 \Hy@raisedlink{%
7206 \expandafter\hyper@@anchor\expandafter{%
7207 \Hy@footnote@currentHref
7208 }{\relax}%
7209 }%
7210 \let\@currentHref\Hy@footnote@currentHref
7211 \let\@currentlabelname\@empty
7212 \ignorespaces
7213 }%
7214 }{}%

```

KOMA-Script defines `\footref` that uses both `\ref` and `\@footnotemark` resulting in two links, one of them wrong.

```

7215 \def\Hy@temp#1{%
7216 \begingroup
7217 \unrestored@protected@xdef\@thefnmark{\ref{#1}}%
7218 \endgroup
7219 \@footnotemark
7220 }%
7221 \ifx\Hy@temp\footref
7222 \def\footref#1{%
7223 \begingroup
7224 \unrestored@protected@xdef\@thefnmark{\ref{#1}}%
7225 \endgroup
7226 \H@@@footnotemark
7227 }%
7228 \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.

```

7229 \let\HyOrg@maketitle\maketitle
7230 \def\maketitle{%
7231   \let\Hy@saved@footnotemark\@footnotemark
7232   \let\Hy@saved@footnotetext\@footnotetext
7233   \let\@footnotemark\H@@footnotemark
7234   \let\@footnotetext\H@@footnotetext
7235   \ifnextchar[\Hy@maketitle@optarg{% ]
7236     \HyOrg@maketitle
7237     \Hy@maketitle@end
7238   }%
7239 }%
7240 \def\Hy@maketitle@optarg[#1]{%
7241   \HyOrg@maketitle[#1]}%
7242   \Hy@maketitle@end
7243 }%
7244 \def\Hy@maketitle@end{%
7245   \ifx\@footnotemark\H@@footnotemark
7246     \let\@footnotemark\Hy@saved@footnotemark
7247     \fi
7248   \ifx\@footnotetext\H@@footnotetext
7249     \let\@footnotetext\Hy@saved@footnotetext
7250     \fi
7251 }%
```

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

```

7252 \def\realfootnote{%
7253   \ifnextchar[\@xfootnote{%
7254     \stepcounter{\@mpfn}%
7255     \protected@xdef\thefnmark{\thempfn}%
7256     \H@@footnotemark\H@@footnotetext
7257   }%
7258 }%

7259 \fi
7260 \Hy@DisableOption{hyperfootnotes}

7261 </package>
7262 <*check>
7263 \checklatex
7264 \checkcommand\def\@xfootnotenext[#1]{%
7265   \begingroup
7266     \csname c@\@mpfn\endcsname #1\relax
7267     \unrestored@protected@xdef\thefnmark{\thempfn}%
7268   \endgroup
7269   \@footnotetext
7270 }
7271 \checkcommand\def\@xfootnotemark[#1]{%
7272   \begingroup
7273     \c@footnote #1\relax
7274     \unrestored@protected@xdef\thefnmark{\thefootnote}%
7275   \endgroup
7276   \@footnotemark
7277 }
7278 \checkcommand\def\@footnotemark{%
7279   \leavevmode
7280   \ifhmode\edef\@x@sf{\the\spacefactor}\nobreak\fi
```

```

7281 \@makefnmark
7282 \ifhmode\spacefactor\@x@sf\fi
7283 \relax
7284 }
7285 </check>
7286 <*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.

```

7287 \def\caption{%
7288   \ifx\@captype\@undefined
7289     \@latex@error{\noexpand\caption outside float}\@ehd
7290     \expandafter\@gobble
7291   \else
7292     \H@refstepcounter\@captype
7293     \let\Hy@tempa\@caption
7294     \@ifundefined{float@caption}{%
7295       {%
7296         \expandafter\ifx\csname @float@c@\@captype\endcsname
7297           \float@caption
7298         \let\Hy@tempa\Hy@float@caption
7299       \fi
7300     }%
7301     \expandafter\@firstofone
7302   \fi
7303   {\@dblarg{\Hy@tempa\@captype}}}%
7304 }
7305 \long\def\@caption#1[#2]#3{%
7306   \expandafter\ifx\csname if@capstart\expandafter\endcsname
7307     \csname iftrue\endcsname
7308     \global\let\@currentHref\hc@currentHref
7309   \else
7310     \hyper@makecurrent{\@captype}%
7311   \fi
7312   \@ifundefined{NR@gettitle}{%
7313     \def\@currentlabelname{#2}%
7314   }{%
7315     \NR@gettitle{#2}%
7316   }%
7317   \par\addcontentsline{\csname ext@#1\endcsname}{#1}{%
7318     \protect\numberline{\csname the#1\endcsname}{\ignorespaces #2}%
7319   }%
7320   \begingroup
7321     \@parboxrestore
7322     \if@minipage
7323       \@setminipage
7324     \fi
7325     \normalsize
7326     \expandafter\ifx\csname if@capstart\expandafter\endcsname
7327       \csname iftrue\endcsname
7328       \global\@capstartfalse
7329       \@makecaption{\csname fnum@#1\endcsname}{\ignorespaces#3}%
7330     \else
7331       \@makecaption{\csname fnum@#1\endcsname}{%

```

```
7332 \ignorespaces
```

If we cannot have nesting, the anchor is empty.

```
7333 \ifHy@nesting
7334 \expandafter\hyper@@anchor\expandafter{\@currentHref}{#3}%
7335 \else
7336 \Hy@raisedlink{%
7337 \expandafter\hyper@@anchor\expandafter{%
7338 \@currentHref
7339 }{\relax}%
7340 }%
7341 #3%
7342 \fi
7343 }%
7344 \fi
7345 \par
7346 \endgroup
7347 }
```

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.

```
7348 \let\Hy@float@caption\@caption
7349 \ifpackageloaded{float}{%
7350 \def\Hy@float@caption{%
7351 \ifx\Hy@float@currentHref\@undefined
7352 \hyper@makecurrent{\@cuptype}%
7353 \global\let\Hy@float@currentHref\@currentHref
7354 \else
7355 \let\@currentHref\Hy@float@currentHref
7356 \fi
7357 \float@caption
7358 }%
7359 \let\HyOrg@float@makebox\float@makebox
7360 \renewcommand{\float@makebox}[1]{%
7361 \HyOrg@float@makebox{%
7362 #1\relax
7363 \ifx\Hy@float@currentHref\@undefined
7364 \else
7365 \expandafter\hyper@@anchor\expandafter{%
7366 \Hy@float@currentHref
7367 }{\relax}%
7368 \global\let\Hy@float@currentHref\@undefined
7369 \fi
7370 }%
7371 }%
7372 }-{}
7373 </package>
7374 <*check>
7375 \checklatex[1999/06/01 - 2000/06/01]
7376 \checkcommand\def\caption{%
7377 \ifx\@cuptype\@undefined
7378 \@latex@error{\noexpand\caption outside float}\@ehd
7379 \expandafter\@gobble
7380 \else
7381 \refstepcounter{\@cuptype
7382 \expandafter\@firstofone
7383 \fi
7384 {\@dblarg{\@caption\@cuptype}}}%

```



```

7385 }
7386 \checkcommand\long\def\@caption#1[#2]#3{%
7387   \par
7388   \addcontentsline{\csname ext@#1\endcsname}{#1}{%
7389     \protect\numberline{\csname the#1\endcsname}{\ignorespaces #2}%
7390   }%
7391   \begingroup
7392   \@parboxrestore
7393   \if@minipage
7394     \setminipage
7395   \fi
7396   \normalsize
7397   \@makecaption{\csname fnum@#1\endcsname}{\ignorespaces #3}\par
7398 \endgroup
7399 }
7400 \</check>
7401 \<*package>

```

## 37 Bibliographic references

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

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

```

7402 \def\hyper@natlinkstart#1{%
7403   \Hy@backout{#1}%
7404   \hyper@linkstart{cite}{cite.#1}%
7405   \def\hyper@nat@current{#1}%
7406 }
7407 \def\hyper@natlinkend{%
7408   \hyper@linkend
7409 }
7410 \def\hyper@natlinkbreak#1#2{%
7411   \hyper@linkend#1\hyper@linkstart{cite}{cite.#2}%
7412 }
7413 \def\hyper@natanchorstart#1{%
7414   \Hy@raisedlink{\hyper@anchorstart{cite.#1}}%
7415 }
7416 \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.

```

7417 \ltx@ifundefined{NAT@parse}{%
7418   \providecommand*\@extra@binfo{}%
7419   \providecommand*\@extra@b@citeb{}%
7420   \def\bibcite#1#2{%
7421     \@newl@bel{b}{#1\@extra@binfo}{%
7422       \hyper@link{cite}{cite.#1\@extra@b@citeb}{#2}%
7423     }%
7424   }%

```

```
7425 \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.”.

```
7426 \let\Hy@bibcite\bibcite
7427 \begingroup
7428 \ifundefined{bbl@cite@choice}{}%
7429 \g@addto@macro\bbl@cite@choice{%
7430 \let\bibcite\Hy@bibcite
7431 }%
7432 }%
7433 \endgroup
```

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

```
7434 \providecommand*{\@BIBLABEL}{\@biblabel}%
7435 \def\@bibitem[#1]#2{%
7436 \@skiphyperreftrue
7437 \H@item[%
7438 \ifx\Hy@raisedlink\@empty
7439 \hyper@anchorstart{cite.#2\@extra@b@citeb}%
7440 \@BIBLABEL{#1}%
7441 \hyper@anchorend
7442 \else
7443 \Hy@raisedlink{%
7444 \hyper@anchorstart{cite.#2\@extra@b@citeb}\hyper@anchorend
7445 }%
7446 \@BIBLABEL{#1}%
7447 \fi
7448 \hfill
7449 ]%
7450 \@skiphyperreffalse
7451 \if@filesw
7452 \begingroup
7453 \let\protect\noexpand
7454 \immediate\write\@auxout{%
7455 \string\bibcite{#2}{#1}%
7456 }%
7457 \endgroup
7458 \fi
7459 \ignorespaces
7460 }%
```

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

```
7461 \def\@bibitem#1{%
7462 \@skiphyperreftrue\H@item\@skiphyperreffalse
7463 \Hy@raisedlink{%
7464 \hyper@anchorstart{cite.#1\@extra@b@citeb}\relax\hyper@anchorend
7465 }%
7466 \if@filesw
7467 \begingroup
7468 \let\protect\noexpand
7469 \immediate\write\@auxout{%
7470 \string\bibcite{#1}{\the\value{\@listctr}}}%
7471 }%
7472 \endgroup
7473 \fi
7474 \ignorespaces
7475 }%
```

```

7476 }{}
7477 </package>
7478 <*check>
7479 \checklatex
7480 \checkcommand\def\@bibitem[#1]#2{%
7481   \item[\@biblabel{#1}\hfill]%
7482   \if@filesw
7483     {%
7484       \let\protect\noexpand
7485       \immediate\write\@auxout{%
7486         \string\bibcite{#2}{#1}%
7487       }%
7488     }%
7489   \fi
7490   \ignorespaces
7491 }
7492 \checkcommand\def\@bibitem#1{%
7493   \item
7494   \if@filesw
7495     \immediate\write\@auxout{%
7496       \string\bibcite{#1}{\the\value{\@listctr}}%
7497     }%
7498   \fi
7499   \ignorespaces
7500 }
7501 </check>
7502 <*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.

```

7503 \@ifclassloaded{revtex}{%
7504   \Hy@Info{*** compatibility with revtex **** }%
7505   \def\revtex@checking#1#2{%
7506     \expandafter\let\expandafter\T@temp\csname b@#1\endcsname
7507     \expandafter\def\csname b@#1\endcsname{#2}%
7508     \@SetMaxRnhefLabel{#1}%
7509     \expandafter\let\csname b@#1\endcsname\T@temp
7510   }%

```

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

```

7511 \@ifundefined{CITE}{\def\CITE{\@cite}}{}%
7512 \providecommand*{\@extra@b@citeb}{}%
7513 \def\CITE[#1]#2{%
7514   \let\@citea\@empty
7515   \leavevmode
7516   \unskip
7517   $^{}%
7518   \scriptstyle
7519   \CITE{%
7520     \@for\@citeb:=#2\do{%
7521       \@citea
7522       \def\@citea{,\penalty\@m\ }%
7523       \edef\@citeb{\expandafter\@firstofone\@citeb}%
7524       \if@filesw
7525         \immediate\write\@auxout{\string\citation{\@citeb}}%

```

```

7526 \fi
7527 \@ifundefined{b@\@citeb\extra@b@citeb}{%
7528 \mbox{\reset@font\bfseries ?}%
7529 \G@refundefinedtrue
7530 \@latex@warning{%
7531 Citation ‘\@citeb’ on page \thepage \space undefined%
7532 }%
7533 }{%
7534 {\csname b@\@citeb\@extra@b@citeb\endcsname}%
7535 }%
7536 }%
7537 }{#1}%
7538 }$%
7539 }%

```

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.

```

7540 \def\@citex[#1]#2{%
7541 \let\@citea\@empty
7542 \@cite{%
7543 \@for\@citeb:=#2\do{%
7544 \@citea
7545 \def\@citea{,\penalty\@m\ }%
7546 \edef\@citeb{\expandafter\@firstofone\@citeb}%
7547 \if@filesw
7548 \immediate\write\@auxout{\string\citation{\@citeb}}%
7549 \fi
7550 \@ifundefined{b@\@citeb\@extra@b@citeb}{%
7551 \mbox{\reset@font\bfseries ?}%
7552 \G@refundefinedtrue
7553 \@latex@warning{%
7554 Citation ‘\@citeb’ on page \thepage \space undefined%
7555 }%
7556 }{%
7557 \hbox{\csname b@\@citeb\@extra@b@citeb\endcsname}%
7558 }%
7559 }%
7560 }{#1}%
7561 }%
7562 }{}

```

### 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.

```

7563 \@ifpackageloaded{harvard}{%
7564 \Hy@AtBeginDocument{%
7565 \Hy@Info{*** compatibility with harvard **** }%
7566 \Hy@raiselinksfalse
7567 \def\harvardcite#1#2#3#4{%
7568 \global\@namedef{HAR@fn@#1}{\hyper@link[cite]{\cite.#1}{#2}}%
7569 \global\@namedef{HAR@an@#1}{\hyper@link[cite]{\cite.#1}{#3}}%
7570 \global\@namedef{HAR@yr@#1}{\hyper@link[cite]{\cite.#1}{#4}}%

```

```

7571 \global\@namedef{HAR@df@#1}{\csname HAR@fn@#1\endcsname}%
7572 }%
7573 \def\HAR@citetoaux#1{%
7574 \if@filesw\immediate\write\@auxout{\string\citation{#1}}\fi%
7575 \ifHy@backref
7576 \ifx\@empty\@currentlabel
7577 \else
7578 \@bsphack
7579 \if@filesw
7580 \protected@write\@auxout{}{%
7581 \string\@writefile{brf}{%
7582 \string\backcite{#1}{%
7583 {\thepage}{\@currentlabel}{\@currentHref}%
7584 }%
7585 }%
7586 }%
7587 \fi
7588 \@esphack
7589 \fi
7590 \fi
7591 }%
7592 \def\harvarditem{%
7593 \@ifnextchar[{\@harvarditem}{\@harvarditem[\null]}%
7594 }%
7595 \def\@harvarditem[#1]#2#3#4#5\par{%
7596 \item[]%
7597 \hyper@anchorstart{cite.#4}\relax\hyper@anchorend
7598 \if@filesw
7599 \begingroup
7600 \def\protect##1{\string ##1\space}%
7601 \ifthenelse{\equal{#1}{\null}}{%
7602 {\def\next{{#4}{#2}{#2}{#3}}}%
7603 {\def\next{{#4}{#2}{#1}{#3}}}%
7604 \immediate\write\@auxout{\string\harvardcite\codeof\next}%
7605 \endgroup
7606 \fi
7607 \protect\hspace*{-\labelwidth}%
7608 \protect\hspace*{-\labelsep}%
7609 \ignorespaces
7610 #5%
7611 \ifHy@backref
7612 \newblock
7613 \backref{\csname br@#4\endcsname}%
7614 \fi
7615 \par
7616 }%

```

\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:

```

7617 \long\def\HAR@checkcitations#1#2#3#4{%
7618 \def\HAR@tempa{\hyper@@link[cite]{\cite.#1}{#2}}%
7619 \expandafter\ifx\csname HAR@fn@#1\endcsname\HAR@tempa
7620 \def\HAR@tempa{\hyper@@link[cite]{\cite.#1}{#3}}%
7621 \expandafter\ifx\csname HAR@an@#1\endcsname\HAR@tempa
7622 \def\HAR@tempa{\hyper@@link[cite]{\cite.#1}{#4}}%
7623 \expandafter\ifx\csname HAR@yr@#1\endcsname\HAR@tempa

```

```

7624     \else
7625     \@tempswatrue
7626     \fi
7627     \else
7628     \@tempswatrue
7629     \fi
7630     \else
7631     \@tempswatrue
7632     \fi
7633   }%
7634 }%

7635 }{}

```

## 37.2 Package chicago

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

```

7636 \@ifpackageloaded{chicago}{%

```

`\citeN`

```

7637 \def\citeN{%
7638   \def\@citesep{-1000}%
7639   \def\@cite##1##2{##1}%
7640   \def\citeauthoryear##1##2##3{##1 (##3\@cite@opt)}%
7641   \@citedata@opt
7642 }%

```

`\shortciteN`

```

7643 \def\shortciteN{%
7644   \def\@citesep{-1000}%
7645   \def\@cite##1##2{##1}%
7646   \def\citeauthoryear##1##2##3{##2 (##3\@cite@opt)}%
7647   \@citedata@opt
7648 }%

```

`\@citedata@opt`

```

7649 \def\@citedata@opt{%
7650   \let\@cite@opt\@empty
7651   \ifnextchar [{%
7652     \@tempswatrue
7653     \@citedatax@opt
7654   }{%
7655     \@tempswafalse
7656     \@citedatax[]%
7657   }%
7658 }%

```

`\@citedatax@opt`

```

7659 \def\@citedatax@opt[#1]{%
7660   \def\@cite@opt{, #1}%
7661   \@citedatax[{#1}]%
7662 }%

7663 }{}

```

## 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.

```

7664 \ltx@ifclassloaded{slides}{%
7665   \def\Hy@SlidesFormatOptionalPage#1{(#1)}%
7666   \def\Hy@PageAnchorSlidesPlain{%
7667     \hyper@@anchor{%
7668       page.\the\c@slide.\the\c@overlay.\the\c@note.\the\c@page
7669     }%
7670   }%
7671   \def\Hy@PageAnchorSlide{%
7672     \advance\c@page\ltx@one
7673     \ifnum\c@page>\ltx@one
7674       \ltx@ifundefined{theHpage}{%
7675         \protected@edef\Hy@TheSlideOptionalPage{%
7676           \Hy@SlidesFormatOptionalPage{\thepage}%
7677         }%
7678       }{%
7679         \protected@edef\Hy@TheSlideOptionalPage{%
7680           \Hy@SlidesFormatOptionalPage{\theHpage}%
7681         }%
7682       }%
7683     \else
7684       \def\Hy@TheSlideOptionalPage{}%
7685     \fi
7686     \advance\c@page-\ltx@one
7687     \pdfstringdef\@the@H@page{%
7688       \csname
7689         the%
7690         \ltx@ifundefined{theH\Hy@SlidesPage}{-}{H}%
7691         \Hy@SlidesPage
7692       \endcsname
7693     \Hy@TheSlideOptionalPage
7694   }%
7695   \ltx@gobblethree
7696 }%
7697 \def\Hy@SlidesPage{slide}%
7698 \g@addto@macro\slide{%
7699   \def\Hy@SlidesPage{slide}%
7700 }%
7701 \g@addto@macro\overlay{%
7702   \def\Hy@SlidesPage{overlay}%
7703 }%
7704 \g@addto@macro\note{%
7705   \def\Hy@SlidesPage{note}%
7706 }%
7707 }{%
7708   \def\Hy@PageAnchorSlidesPlain{}%
7709   \def\Hy@PageAnchorSlide{}%
7710 }
7711 \def\Hy@EveryPageAnchor{%
7712   \Hy@DistillerDestFix

```

```

7713 \ifHy@pageanchor
7714 \ifHy@hypertextnames
7715 \ifHy@plainpages
7716 \def\Hy@TempPageAnchor{\hyper@@anchor{page.\the\c@page}}%
7717 \Hy@PageAnchorSlidesPlain
7718 \else
7719 \begingroup
7720 \let\@number\@firstofone
7721 \Hy@unicodedefalse
7722 \Hy@PageAnchorSlide
7723 \pdfstringdef\@the@H@page{\thepage}%
7724 \endgroup
7725 \EdefUnescapeString\@the@H@page{\@the@H@page}%
7726 \def\Hy@TempPageAnchor{\hyper@@anchor{page.\@the@H@page}}%
7727 \fi
7728 \else
7729 \Hy@GlobalStepCount\Hy@pagecounter
7730 \def\Hy@TempPageAnchor{%
7731 \hyper@@anchor{page.\the\Hy@pagecounter}%
7732 }%
7733 \fi
7734 \vbox to 0pt{%
7735 \kern\voffset
7736 \kern\topmargin
7737 \kern-1bp\relax
7738 \hbox to 0pt{%
7739 \kern\hoffset
7740 \kern\ifodd\value{page}%
7741 \oddsidemargin
7742 \else
7743 \evensidemargin
7744 \fi
7745 \kern-1bp\relax
7746 \Hy@TempPageAnchor\relax
7747 \hss
7748 }%
7749 \vss
7750 }%
7751 \fi
7752 }
7753 \g@addto@macro\Hy@EveryPageBoxHook{%
7754 \Hy@EveryPageAnchor
7755 }

```

## 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.

```

7756 \def\addcontentsline#1#2#3{% toc extension, type, tag
7757 \begingroup
7758 \let\label\@gobble
7759 \ifx\@currentHref\@empty
7760 \Hy@Warning{%
7761 No destination for bookmark of \string\addcontentsline,%
7762 \MessageBreak destination is added%

```



```

7763 }%
7764 \phantomsection
7765 \fi
7766 \expandafter\ifx\csname toplevel@#2\endcsname\relax
7767 \begingroup
7768 \def\Hy@tempa{#1}%
7769 \ifx\Hy@tempa\Hy@bookmarkstype
7770 \Hy@WarningNoLine{%
7771     bookmark level for unknown #2 defaults to 0%
7772 }%
7773 \else
7774 \Hy@Info{bookmark level for unknown #2 defaults to 0}%
7775 \fi
7776 \endgroup
7777 \expandafter\gdef\csname toplevel@#2\endcsname{0}%
7778 \fi
7779 \edef\Hy@toclevel{\csname toplevel@#2\endcsname}%
7780 \Hy@writebookmark{\csname the#2\endcsname}%
7781 {#3}%
7782 {\@currentHref}%
7783 {\Hy@toclevel}%
7784 {#1}%
7785 \ifHy@verbose
7786 \begingroup
7787 \def\Hy@tempa{#3}%
7788 \@onelevel@sanitize\Hy@tempa
7789 \let\temp@online\on@line
7790 \let\on@line\@empty
7791 \Hy@Info{%
7792     bookmark\temp@online:\MessageBreak
7793     thecounter {\csname the#2\endcsname}\MessageBreak
7794     text {\Hy@tempa}\MessageBreak
7795     reference {\@currentHref}\MessageBreak
7796     toplevel {\Hy@toclevel}\MessageBreak
7797     type {#1}%
7798 }%
7799 \endgroup
7800 \fi
7801 \addtocontents{#1}{%
7802     \protect\contentsline{#2}{#3}{\thepage}{\@currentHref}%
7803 }%
7804 \endgroup
7805 }
7806 \def\contentsline#1#2#3#4{%
7807     \ifx\#4\%
7808         \csname l@#1\endcsname{#2}{#3}%
7809     \else
7810         \ifcase\Hy@linktoc % none
7811             \csname l@#1\endcsname{#2}{#3}%
7812         \or % section
7813             \csname l@#1\endcsname{%
7814                 \hyper@linkstart{link}{#4}{#2}\hyper@linkend
7815             }{#3}%
7816         \or % page
7817             \csname l@#1\endcsname{#2}{#3}%
7818             \hyper@linkstart{link}{#4}{#3}\hyper@linkend
7819         }%

```

```

7820 \else % all
7821 \csname l@#1\endcsname{%
7822 \hyper@linkstart{link}{#4}{#2}\hyper@linkend
7823 }{%
7824 \hyper@linkstart{link}{#4}{#3}\hyper@linkend
7825 }%
7826 \fi
7827 \fi
7828 }

7829 </package>
7830 <*check>
7831 \checklatex
7832 \checkcommand\def\addcontentsline#1#2#3{%
7833 \addtocontents{#1}{\protect\contentsline{#2}{#3}{\thepage}}%
7834 }
7835 \checkcommand\def\contentsline#1{\csname l@#1\endcsname}
7836 </check>
7837 <*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.

```

7838 \let\H@definecounter\@definecounter
7839 \def\@definecounter#1{%
7840 \H@definecounter{#1}%
7841 \expandafter\def\csname theH#1\endcsname{\arabic{#1}}%
7842 }

```

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.

```

7843 \let\H@newctr\@newctr
7844 \def\@newctr#1[#2]{%
7845 \H@newctr#1[{#2}]%
7846 \expandafter\def\csname theH#1\endcsname{%
7847 \csname the\@ifundefined{theH#2}{H}{H}#2\endcsname.\arabic{#1}%
7848 }%
7849 }

```

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

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

Version 6.77p uses a patch by Ross Moore.

```

7850 \ifpackageloaded{amsmath}{%
7851 \def\Hy@make@anchor{%
7852 \Hy@MakeCurrentHrefAuto{AMS}%
7853 \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
7854 }%
7855 \def\Hy@make@df@tag@@#1{%
7856 \gdef\df@tag{%

```

```

7857 \maketag@@@{\Hy@make@anchor#1}%
7858 \def\@currentlabel{#1}%
7859 }%
7860 }%
7861 \def\Hy@make@df@tag@@@#1{%
7862 \gdef\df@tag{%
7863 \tagform@{\Hy@make@anchor#1}%
7864 \toks@\xp{\p@equation{#1}}%
7865 \edef\@currentlabel{\the\toks@}%
7866 }%
7867 }%
7868 \let\HyOrg@make@df@tag@@\make@df@tag@@
7869 \let\HyOrg@make@df@tag@@@ \make@df@tag@@@
7870 \let\make@df@tag@@\Hy@make@df@tag@@
7871 \let\make@df@tag@@@ \Hy@make@df@tag@@@
7872 }{}

```

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

```

7873 \ifpackagewith{hyperref}{pdfTeX}{%
7874 \let\H@seteqlabel\@seteqlabel
7875 \def\@seteqlabel#1{%
7876 \H@seteqlabel{#1}%
7877 \xdef\@currentHref{AMS.\the\Hy@linkcounter}%
7878 \Hy@raisedlink{%
7879 \hyper@anchorstart{\@currentHref}\hyper@anchorend
7880 }%
7881 }%
7882 }{}

```

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.

```

7883 \let\HyOrg@addtoreset\@addtoreset
7884 \def\@addtoreset#1#2{%
7885 \HyOrg@addtoreset{#1}{#2}%
7886 \expandafter\xdef\csname theH#1\endcsname{%
7887 \expandafter\noexpand
7888 \csname the\@ifundefined{theH#2}{H#2\endcsname
7889 .\noexpand\the\noexpand\value{#1}%
7890 }%
7891 }

```

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

```

7892 \</package>

```

```

7893 <*check>
7894 \checkpackage{amsmath}[1999/12/14 - 2000/06/06]
7895 \checkcommand\newcommand{\numberwithin}[3][\arabic]{%
7896   \ifundefined{c@#2}{\@nocounterr{#2}}{%
7897     \ifundefined{c@#3}{\@nocnterr{#3}}{%
7898       \addtoreset{#2}{#3}%
7899       \exp\xdef\csname the#2\endcsname{%
7900         \exp\@nx\csname the#3\endcsname .\@nx#1{#2}%
7901       }%
7902     }%
7903   }%
7904 }%
7905 </check>
7906 <*package>
7907 \ifpackageloaded{amsmath}{%
7908   \ifpackagelater{amsmath}{1999/12/14}{%
7909     \renewcommand*{\numberwithin}[3][\arabic]{%
7910       \ifundefined{c@#2}{\@nocounterr{#2}}{%
7911         \ifundefined{c@#3}{\@nocnterr{#3}}{%
7912           \HyOrg@addtoreset{#2}{#3}%
7913           \exp\xdef\csname the#2\endcsname{%
7914             \exp\@nx\csname the#3\endcsname .\@nx#1{#2}%
7915           }%
7916           \exp\xdef\csname theH#2\endcsname{%
7917             \exp\@nx
7918             \csname the\ifundefined{theH#3}{H#3\endcsname
7919             .\@nx#1{#2}%
7920           }%
7921         }%
7922       }%
7923     }%
7924   }{%
7925     \Hy@WarningNoLine{%
7926       \string\numberwithin\space of package ‘amsmath’ %
7927       only fixed\MessageBreak
7928       for version 2000/06/06 v2.12 or newer%
7929     }%
7930   }%
7931 }{}

```

## 42 Included figures

Simply intercept the low level graphics package macro.

```

7932 \ifHy@figures
7933   \let\Hy@Gin@setfile\Gin@setfile
7934   \def\Gin@setfile#1#2#3{%
7935     \hyperimage{#3}{\Hy@Gin@setfile{#1}{#2}{#3}}%
7936   }%
7937 \fi
7938 \Hy@DisableOption{hyperfigures}

```

## 43 hyperindex entries

Internal command names are prefixed with \HyInd@.

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

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

```

7939 \ifHy@hyperindex
7940 \def\HyInd@ParenLeft{()%
7941 \def\HyInd@ParenRight{)%
7942 \def\hyperindexformat#1#2{%
7943 \let\HyOrg@hyperpage\hyperpage
7944 \let\hyperpage\@firstofone
7945 #1{\HyOrg@hyperpage{#2}}%
7946 \let\hyperpage\HyOrg@hyperpage
7947 }%
7948 \Hy@nextfalse
7949 \@ifpackageloaded{multind}{\Hy@nexttrue}{}%
7950 \@ifpackageloaded{index}{\Hy@nexttrue}{}%
7951 \@ifpackageloaded{amsmidx}{\Hy@nexttrue}{}%
7952 \begingroup
7953 \lccode'\|=\expandafter'\HyInd@EncapChar\relax
7954 \lccode'\|/'\|'\relax
7955 \lowercase{\endgroup
7956 \ifHy@next
7957 \let\HyInd@org@wrindex\@wrindex
7958 \def\@wrindex#1#2{\HyInd@@wrindex{#1}#2||}%
7959 \def\HyInd@@wrindex#1#2|#3|#4\|{%
7960 \ifx\|#3\|
7961 \HyInd@org@wrindex{#1}{#2|hyperpage}%
7962 \else
7963 \HyInd@@@wrindex{#1}{#2}#3\|
7964 \fi
7965 }%
7966 \def\HyInd@@@wrindex#1#2#3#4\|{%
7967 \def\Hy@temp@A{#3}%
7968 \ifcase0\ifx\Hy@temp@A\HyInd@ParenLeft 1\fi
7969 \ifx\Hy@temp@A\HyInd@ParenRight 1\fi
7970 \relax
7971 \HyInd@org@wrindex{#1}{%
7972 #2|hyperindexformat{/#3#4}%
7973 }%
7974 \else
7975 \ifx\|#4\|
7976 \ifx\Hy@temp@A\HyInd@ParenRight
7977 \HyInd@org@wrindex{#1}{#2|#3}%
7978 \else
7979 \HyInd@org@wrindex{#1}{#2|#3hyperpage}%
7980 \fi
7981 \else
7982 \HyInd@org@wrindex{#1}{%
7983 #2|#3hyperindexformat{/#4}%
7984 }%
7985 \fi
7986 \fi
7987 }%

```

```

7988 \else
7989 \def\@wrindex#1{\@@wrindex#1||\}%
7990 \def\@@wrindex#1|#2|#3\{\{%
7991 \if@filesw
7992 \ifx\|#2\}%
7993 \protected@write\@indexfile{}\{%
7994 \string\indexentry{#1|hyperpage}\thepage}%
7995 }%
7996 \else
7997 \HyInd@@@wrindex{#1}#2\}%
7998 \fi
7999 \fi
8000 \endgroup
8001 \@esphack
8002 }%
8003 \def\HyInd@@@wrindex#1#2#3\{\{%
8004 \def\Hy@temp@A{#2}%
8005 \ifcase0\ifx\Hy@temp@A\HyInd@ParenLeft 1\fi
8006 \ifx\Hy@temp@A\HyInd@ParenRight 1\fi
8007 \relax
8008 \protected@write\@indexfile{}\{%
8009 \string\indexentry{%
8010 #1|hyperindexformat{/#2#3}%
8011 }\thepage}%
8012 }%
8013 \else
8014 \ifx\|#3\}%
8015 \ifx\Hy@temp@A\HyInd@ParenRight
8016 \protected@write\@indexfile{}\{%
8017 \string\indexentry{#1|#2}\thepage}%
8018 }%
8019 \else
8020 \protected@write\@indexfile{}\{%
8021 \string\indexentry{#1|#2hyperpage}\thepage}%
8022 }%
8023 \fi
8024 \else
8025 \protected@write\@indexfile{}\{%
8026 \string\indexentry{%
8027 #1|#2hyperindexformat{/#3}%
8028 }\thepage}%
8029 }%
8030 \fi
8031 \fi
8032 }%
8033 \fi
8034 }%
8035 \fi
8036 \Hy@DisableOption{hyperindex}
8037 \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.

```
8038 \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.

```

8039 \def\hyperpage#1{%
8040   \HyInd@hyperpage#1\nohyperpage{}\@nil
8041 }
8042 \def\HyInd@hyperpage#1\nohyperpage#2#3\@nil{%
8043   \HyInd@@hyperpage{#1}%
8044   #2%
8045   \def\Hy@temp{#3}%
8046   \ifx\Hy@temp\@empty
8047   \else
8048     \Hy@ReturnAfterFi{%
8049       \HyInd@hyperpage#3\@nil
8050     }%
8051   \fi
8052 }
8053 \def\HyInd@@hyperpage#1{\@hyperpage#1---\}
8054 \def\@hyperpage#1--#2--#3\{%
8055   \ifx\#2\%
8056     \@commahyperpage{#1}%
8057   \else
8058     \HyInd@pagelink{#1}--\HyInd@pagelink{#2}%
8059   \fi
8060 }
8061 \def\@commahyperpage#1{\@commahyperpage#1, ,\}
8062 \def\@commahyperpage#1, #2,#3\{%
8063   \ifx\#2\%
8064     \HyInd@pagelink{#1}%
8065   \else
8066     \HyInd@pagelink{#1}, \HyInd@pagelink{#2}%
8067   \fi
8068 }

```

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

```

8069 \def\HyInd@pagelink#1{%
8070   \begingroup
8071   \toks@={}%
8072   \HyInd@removespaces#1 \@nil
8073   \endgroup
8074 }
8075 \def\HyInd@removespaces#1 #2\@nil{%
8076   \toks@=\expandafter{\the\toks@#1}%
8077   \ifx\#2\%
8078     \edef\x{\the\toks@}%
8079     \ifx\x\@empty
8080     \else
8081       \hyperlink{page.\the\toks@}{\the\toks@}%
8082     \fi
8083   \else
8084     \Hy@ReturnAfterFi{%
8085       \HyInd@removespaces#2\@nil
8086     }%
8087   \fi
8088 }

```

## 44 Compatibility with foiltex

```

8089 \@ifclassloaded{foils}{%

```

```

8090 \providecommand*\ext@table{lot}%
8091 \providecommand*\ext@figure{lof}%
8092 }{}

```

## 45 Compatibility with seminar slide package

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

```

8093 \ifclassloaded{seminar}{%
8094   \Hy@seminarslidestrue\newcommand\theHslide{\arabic{slide}}}%
8095 }{%
8096   \Hy@seminarslidesfalse
8097 }
8098 \ifpackageloaded{slidesec}{%
8099   \newcommand\theHslidesection {\arabic{slidesection}}%
8100   \newcommand\theHslidesubsection{%
8101     \theHslidesection.\arabic{slidesubsection}%
8102   }%
8103   \def\slide@heading[#1]#2{%
8104     \H@refstepcounter{slidesection}%
8105     \@addtoreset{slidesubsection}{slidesection}%
8106     \addtocontents{los}{%
8107       \protect\l@slide{\the\c@slidesection}{\ignorespaces#1}%
8108       {\@SCTR}{slideheading.\theslidesection}%
8109     }%
8110     \def\Hy@tempa{#2}%
8111     \ifx\Hy@tempa\@empty
8112     \else
8113       {%
8114         \edef\@currentlabel{%
8115           \csname p@slidesection\endcsname\theslidesection
8116         }%
8117         \makeslideheading{#2}%
8118       }%
8119     \fi
8120     \gdef\theslideheading{#1}%
8121     \gdef\theslidesubheading{}%
8122     \ifHy@bookmarksnumbered
8123       \def\Hy@slidetitle{\theslidesection\space #1}%
8124     \else
8125       \def\Hy@slidetitle{#1}%
8126     \fi
8127     \ifHy@hypertextnames
8128       \ifHy@naturalnames
8129         \hyper@@anchor{slideheading.\theslidesection}{\relax}%
8130         \Hy@writebookmark
8131           {\theslidesection}%
8132           {\Hy@slidetitle}%
8133           {slideheading.\theslidesection}%
8134           {1}%
8135           {toc}%
8136       \else
8137         \hyper@@anchor{slideheading.\theHslidesection}{\relax}%
8138         \Hy@writebookmark
8139           {\theslidesection}%
8140           {\Hy@slidetitle}%
8141           {slideheading.\theHslidesection}%

```



```

8142         {1}%
8143         {toc}%
8144     \fi
8145 \else
8146     \Hy@GlobalStepCount\Hy@linkcounter
8147     \hyper@@anchor{slideheading.\the\Hy@linkcounter}{\relax}%
8148     \Hy@writebookmark
8149         {\theslidesubsection}%
8150         {\Hy@slidetitle}%
8151         {slideheading.\the\Hy@linkcounter}%
8152         {1}%
8153         {toc}%
8154 \fi
8155 }%
8156 \def\slide@subheading[#1]#2{%
8157     \H@refstepcounter{slidesubsection}%
8158     \addtocontents{los}{%
8159         \protect\l@subslide{\the\c@slidesubsection}{\ignorespaces#1}%
8160         {\@SCTR}{slideheading.\theslidesubsection}%
8161     }%
8162     \def\Hy@tempa{#2}%
8163     \ifx\Hy@tempa\@empty
8164     \else
8165         {%
8166             \edef\@currentlabel{%
8167                 \csname p@slidesubsection\endcsname\theslidesubsection
8168             }%
8169             \makeslide@subheading{#2}%
8170         }%
8171     \fi
8172     \gdef\theslide@subheading{#1}%
8173     \ifHy@bookmarksnumbered
8174         \def\Hy@slidetitle{\theslidesubsection\space #1}%
8175     \else
8176         \def\Hy@slidetitle{#1}%
8177     \fi
8178     \ifHy@hypertexnames
8179     \ifHy@naturalnames
8180         \hyper@@anchor{slideheading.\theslidesubsection}{\relax}%
8181         \Hy@writebookmark
8182             {\theslidesubsection}%
8183             {\Hy@slidetitle}%
8184             {slideheading.\theslidesubsection}%
8185             {2}%
8186             {toc}%
8187     \else
8188         \hyper@@anchor{slideheading.\theHslidesubsection}{\relax}%
8189         \Hy@writebookmark
8190             {\theslidesubsection}%
8191             {\Hy@slidetitle}%
8192             {slideheading.\theHslidesubsection}%
8193             {2}%
8194             {toc}%
8195     \fi
8196 \else
8197     \Hy@GlobalStepCount\Hy@linkcounter
8198     \hyper@@anchor{slideheading.\the\Hy@linkcounter}{\relax}%

```

```

8199 \Hy@writebookmark
8200 {\theslidesubsection}%
8201 {\Hy@slidetitle}%
8202 {slideheading.\the\Hy@linkcounter}%
8203 {1}%
8204 {toc}%
8205 \fi
8206 }%
8207 \providecommand*{\listslidenam}{List of Slides}%
8208 \def\listofslides{%
8209 \section*{%
8210 \listslidenam
8211 \@mkboth{%
8212 \expandafter\MakeUppercase\listslidenam
8213 }{%
8214 \expandafter\MakeUppercase\listslidenam
8215 }%
8216 }%
8217 \def\l@slide##1##2##3##4{%
8218 \slide@undottedcline{%
8219 \slidenumberline{##3}{\hyperlink{##4}{##2}}}%
8220 }{%
8221 }%
8222 \let\l@subslide\l@slide
8223 \@startlos
8224 }%
8225 \def\slide@contents{%
8226 \def\l@slide##1##2##3##4{%
8227 \slide@ccline{\slidenumberline{##3}{\hyperlink{##4}{##2}}}{##3}%
8228 }%
8229 \let\l@subslide\@gobblefour
8230 \@startlos
8231 }%
8232 \def\Slide@contents{%
8233 \def\l@slide##1##2##3##4{%
8234 \ifcase\lslide@flag
8235 \message{##1 ** \the\c@slidesection}%
8236 \ifnum##1>\c@slidesection
8237 \def\lslide@flag{1}%
8238 {%
8239 \large
8240 \slide@ccline{%
8241 \slidenumberline{$\Rightarrow\bullet$}%
8242 {\hyperlink{##4}{##2}}}%
8243 }{##3}%
8244 }%
8245 \else
8246 {%
8247 \large
8248 \slide@ccline{%
8249 \slidenumberline{$\surd\;\bullet$}%
8250 {\hyperlink{##4}{##2}}}%
8251 }{##3}%
8252 }%
8253 \fi
8254 \or
8255 \def\lslide@flag{2}%

```

```

8256      {%
8257        \large
8258        \slide@cline{%
8259          \slidenumberline{$\bullet$}%
8260          {\hyperlink{##4}{##2}}%
8261        }{##3}%
8262      }%
8263    \or
8264    {%
8265      \large
8266      \slide@cline{%
8267        \slidenumberline{$\bullet$}%
8268        {\hyperlink{##4}{##2}}%
8269      }{##3}%
8270    }%
8271    \fi
8272  }%
8273  \def\l@subslide##1##2##3##4{%
8274    \ifnum\lslide@flag=1 %
8275      \@undottedtocline{2}{3.8em}{3.2em}{\hyperlink{##4}{##2}}{}%
8276    \fi
8277  }%
8278  \def\lslide@flag{0}%
8279  \@startlos
8280 }%
8281 }{}

```

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.)

```

8282 \ifHy@texht
8283   \expandafter\endinput
8284 \fi
8285 \let\real@setref\@setref
8286 \def\@setref#1#2#3{% csname, extract group, refname
8287   \ifx#1\relax
8288     \protect\G@refundefinedtrue
8289     \nfss@text{\reset@font\bfseries ??}%
8290     \@latex@warning{%
8291       Reference ‘#3’ on page \thepage \space undefined%
8292     }%
8293   \else
8294     \expandafter\Hy@setref@link#1\@empty\@empty\@nil{#2}%
8295   \fi
8296 }

```

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

```

8297 \def\Hy@setref@link#1#2#3#4#5#6\@nil#7{%
8298   \begingroup
8299   \toks0={\hyper@@link{#5}{#4}}%
8300   \toks1=\expandafter{#7{#1}{#2}{#3}{#4}{#5}}%
8301   \edef\x{\endgroup
8302     \the\toks0 {\the\toks1 }%
8303   }%
8304   \x
8305 }
8306 \def\@pagesetref#1#2#3{% csname, extract macro, ref

```

```

8307 \ifx#1\relax
8308 \protect\G@refundefinedtrue
8309 \nfss@text{\reset@font\bfseries ??}%
8310 \@latex@warning{%
8311   Reference '#3' on page \thepage \space undefined%
8312 }%
8313 \else
8314 \protect\hyper@@link
8315 {\expandafter\@fifthoffive#1}%
8316 {page.\expandafter\@secondoffive#1}%
8317 {\expandafter\@secondoffive#1}%
8318 \fi
8319 }

8320 </package>
8321 <*check>
8322 \checklatex
8323 \checkcommand\def\@setref#1#2#3{%
8324 \ifx#1\relax
8325 \protect\G@refundefinedtrue
8326 \nfss@text{\reset@font\bfseries ??}%
8327 \@latex@warning{%
8328   Reference '#3' on page \thepage\space undefined%
8329 }%
8330 \else
8331 \expandafter#2#1\null
8332 \fi
8333 }
8334 </check>
8335 <*package>

```

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

```

8336 \def\HyRef@StarSetRef#1{%
8337 \begingroup
8338 \Hy@safe@activetrue
8339 \edef\x{#1}%
8340 \@onelevel@sanitize\x
8341 \edef\x{\endgroup
8342 \noexpand\HyRef@@StarSetRef
8343 \expandafter\noexpand\csname r@\x\endcsname{\x}%
8344 }%
8345 \x
8346 }

8347 \def\HyRef@@StarSetRef#1#2#3{%
8348 \ifx#1\@undefined
8349 \let#1\relax
8350 \fi
8351 \real@setref#1#3{#2}%
8352 }

8353 \def\@refstar#1{%
8354 \HyRef@StarSetRef{#1}\@firstoffive
8355 }

8356 \def\@pagerefstar#1{%
8357 \HyRef@StarSetRef{#1}\@secondoffive
8358 }

8359 \def\@namerefstar#1{%
8360 \HyRef@StarSetRef{#1}\@thirdoffive

```

```

8361 }
8362 \Hy@AtBeginDocument{%
8363   \ifpackageloaded{varioref}{%
8364     \def\@Refstar#1{%
8365       \HyRef@StarSetRef{#1}\HyRef@MakeUppercaseFirstOfFive
8366     }%
8367     \def\HyRef@MakeUppercaseFirstOfFive#1#2#3#4#5{%
8368       \MakeUppercase#1%
8369     }%
8370     \DeclareRobustCommand*\@Ref{#1}{%
8371       \ifstar\@Refstar\HyRef@Ref
8372     }%
8373     \def\HyRef@Ref#1{%
8374       \hyperref[{#1}]{\Ref*{#1}}%
8375     }%
8376     \def\Vr@f#1{%
8377       \leavevmode\unskip\vref@space
8378       \hyperref[{#1}]{%
8379         \Ref*{#1}%
8380         \let\vref@space\nobreakspace
8381         \@vpageref[\unskip]{#1}%
8382       }%
8383     }%
8384     \def\vr@f#1{%
8385       \leavevmode\unskip\vref@space
8386       \begingroup
8387         \let\T@pageref\@pagerefstar
8388         \hyperref[{#1}]{%
8389           \ref*{#1}%
8390           \vpageref[\unskip]{#1}%
8391         }%
8392       \endgroup
8393     }%
8394   }{}%
8395 }
8396 \DeclareRobustCommand*\@autopageref{#1}{%
8397   \ifstar{%
8398     \HyRef@autopagerefname\pageref*%
8399   }\HyRef@autopageref
8400 }
8401 \def\HyRef@autopageref#1{%
8402   \hyperref[{#1}]{\HyRef@autopagerefname\pageref*{#1}}%
8403 }
8404 \def\HyRef@autopagerefname{%
8405   \ltx@ifundefined{pageautorefname}{%
8406     \ltx@ifundefined{pagename}{%
8407       \Hy@Warning{No autoref name for 'page'}%
8408     }{%
8409       \pagename\nobreakspace
8410     }%
8411   }{%
8412     \pageautorefname\nobreakspace
8413   }%
8414 }
8415 \DeclareRobustCommand*\@autoref{#1}{%
8416   \ifstar{\HyRef@autoref\@gobbletwo}{\HyRef@autoref\hyper@@link}%
8417 }

```

```

8418 \def\HyRef@autoref#1#2{%
8419   \begingroup
8420   \Hy@safe@activetrue
8421   \expandafter\HyRef@autosetref\csname r@#2\endcsname{#2}{#1}%
8422 \endgroup
8423 }
8424 \def\HyRef@autosetref#1#2#3{% link command, csname, refname
8425   \HyRef@ShowKeysRef{#2}%
8426   \ifcase 0\ifx#1\relax 1\fi\ifx#1\Hy@varioref@undefined 1\fi\relax
8427   \edef\HyRef@thisref{%
8428     \expandafter\@fourthoffive#1\@empty\@empty\@empty
8429   }%
8430   \expandafter\HyRef@testreftype\HyRef@thisref.\.%
8431   \Hy@safe@activesfalse
8432   #3{%
8433     \expandafter\@fifthoffive#1\@empty\@empty\@empty
8434   }{%
8435     \expandafter\@fourthoffive#1\@empty\@empty\@empty
8436   }{%
8437     \HyRef@currentHtag
8438     \expandafter\@firstoffive#1\@empty\@empty\@empty
8439     \null
8440   }%
8441 \else
8442   \protect\G@refundefinedtrue
8443   \nfss@text{\reset@font\bfseries ??}%
8444   \@latex@warning{%
8445     Reference ‘#2’ on page \thepage\space undefined%
8446   }%
8447 \fi
8448 }
8449 \def\HyRef@testreftype#1.#2\.%
8450 \ltx@ifundefined{#1autorefname}{%
8451   \ltx@ifundefined{#1name}{%
8452     \HyRef@StripStar#1\*\@nil{#1}%
8453     \ltx@ifundefined{\HyRef@name autorefname}{%
8454       \ltx@ifundefined{\HyRef@name name}{%
8455         \def\HyRef@currentHtag{}%
8456         \Hy@Warning{No autoref name for ‘#1’}%
8457       }{%
8458         \edef\HyRef@currentHtag{%
8459           \expandafter\noexpand\csname\HyRef@name name\endcsname
8460           \noexpand~%
8461         }%
8462       }%
8463     }{%
8464       \edef\HyRef@currentHtag{%
8465         \expandafter\noexpand
8466         \csname\HyRef@name autorefname\endcsname
8467         \noexpand~%
8468       }%
8469     }%
8470   }{%
8471     \edef\HyRef@currentHtag{%
8472       \expandafter\noexpand\csname#1name\endcsname
8473       \noexpand~%
8474     }%

```

```

8475 }%
8476 }{%
8477 \edef\HyRef@currentHtag{%
8478 \expandafter\noexpand\csname#1autorefname\endcsname
8479 \noexpand~%
8480 }%
8481 }%
8482 }
8483 \def\HyRef@StripStar#1*\#2\@nil#3{%
8484 \def\HyRef@name{#2}%
8485 \ifx\HyRef@name\HyRef@CaseStar
8486 \def\HyRef@name{#1}%
8487 \else
8488 \def\HyRef@name{#3}%
8489 \fi
8490 }
8491 \def\HyRef@CaseStar{*\\}
8492 \def\HyRef@currentHtag{

```

Support for package showkeys.

\HyRef@ShowKeysRef

```

8493 \let\HyRef@ShowKeysRef\@gobble
8494 \def\HyRef@ShowKeysInit{%
8495 \begingroup\expandafter\expandafter\expandafter\endgroup
8496 \expandafter\ifx\csname SK@@label\endcsname\relax
8497 \else
8498 \ifx\SK@ref\@empty
8499 \else
8500 \def\HyRef@ShowKeysRef{%
8501 \SK@\SK@@ref
8502 }%
8503 \fi
8504 \fi
8505 }
8506 \ifpackageloaded{showkeys}{%
8507 \HyRef@ShowKeysInit
8508 }{%
8509 \Hy@AtBeginDocument{%
8510 \ifpackageloaded{showkeys}{%
8511 \HyRef@ShowKeysInit
8512 }{}%
8513 }%
8514 }

```

Defaults for the names that \autoref uses.

```

8515 \providecommand*\AMSautorefname{\equationautorefname}
8516 \providecommand*\Hfootnoteautorefname{\footnoteautorefname}
8517 \providecommand*\Itemautorefname{\itemautorefname}
8518 \providecommand*\itemautorefname{item}
8519 \providecommand*\equationautorefname{Equation}
8520 \providecommand*\footnoteautorefname{footnote}
8521 \providecommand*\itemautorefname{item}
8522 \providecommand*\figureautorefname{Figure}
8523 \providecommand*\tableautorefname{Table}
8524 \providecommand*\partautorefname{Part}
8525 \providecommand*\appendixautorefname{Appendix}
8526 \providecommand*\chapterautorefname{chapter}

```

```

8527 \providecommand*\sectionautorefname{section}
8528 \providecommand*\subsectionautorefname{subsection}
8529 \providecommand*\subsubsectionautorefname{subsubsection}
8530 \providecommand*\paragraphautorefname{paragraph}
8531 \providecommand*\subparagraphautorefname{subparagraph}
8532 \providecommand*\FancyVerbLineautorefname{line}
8533 \providecommand*\theoremautorefname{Theorem}
8534 \providecommand*\pageautorefname{page}
8535 </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`.

```

8536 <*pdfTEX | dvipdfm | xetex | vtex | pdfmarkbase | dviwindo>
8537 \begingroup\expandafter\expandafter\expandafter\endgroup
8538 \expandafter\ifx\csname pdf@escapestring\endcsname\relax
8539 \begingroup
8540 \catcode'\=0 %
8541 \@makeother\%
8542 |@firstofone{|endgroup
8543 |def|Hy@pstringdef#1#2{%
8544 |begingroup
8545 |edef~{|string~}%
8546 |xdef|Hy@gtemp{#2}%
8547 |endgroup
8548 |let#1|Hy@gtemp
8549 |@onelevel@sanitize#1%
8550 |edef#1{|expandafter|Hy@ExchangeBackslash#1\|@nil}%
8551 |edef#1{|expandafter|Hy@ExchangeLeftParenthesis#1(|@nil}%
8552 |edef#1{|expandafter|Hy@ExchangeRightParenthesis#1)|@nil}%
8553 }%
8554 |def|Hy@ExchangeBackslash#1\#2|@nil{%
8555 #1%
8556 |ifx|\#2|\%%
8557 |else
8558 \\\%
8559 |Hy@ReturnAfterFi{%
8560 |Hy@ExchangeBackslash#2|@nil
8561 }%
8562 |fi
8563 }%
8564 }%
8565 \def\Hy@ExchangeLeftParenthesis#1(#2\@nil{%
8566 #1%
8567 \ifx\#2\%%
8568 \else
8569 \@backslashchar(%
8570 \Hy@ReturnAfterFi{%

```



```

8571 \Hy@ExchangeLeftParenthesis#2\@nil
8572 }%
8573 \fi
8574 }%
8575 \def\Hy@ExchangeRightParenthesis#1)#2\@nil{%
8576 #1%
8577 \ifx\#2\%
8578 \else
8579 \@backslashchar)%
8580 \Hy@ReturnAfterFi{%
8581 \Hy@ExchangeRightParenthesis#2\@nil
8582 }%
8583 \fi
8584 }%
8585 \else
8586 \def\Hy@pstringdef#1#2{%
8587 \begingroup
8588 \edef~{\string~}%
8589 \xdef\Hy@gtemp{\pdf@escapestring{#2}}%
8590 \endgroup
8591 \let#1\Hy@gtemp
8592 }%
8593 \fi
8594 </pdfTeX | dvipdfm | xetex | vtex | pdfmarkbase | dviwindo>

```

## 46.2 pdfTeX

```

8595 <*pdfTeX>
8596 \providecommand*{\XR@ext}{pdf}
8597 \Hy@setbreaklinks{true}
8598 \def\HyPat@ObjRef{%
8599 [0-9]*[1-9][0-9]* 0 R%
8600 }

```

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

Set PDF version if requested by option pdfversion.

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

```

8601 \let\Hy@pdfminorversion\relax
8602 \begingroup\expandafter\expandafter\expandafter\endgroup
8603 \expandafter\ifx\csname pdfminorversion\endcsname\relax
8604 \begingroup\expandafter\expandafter\expandafter\endgroup
8605 \expandafter\ifx\csname pdfoptionpdfminorversion\endcsname\relax
8606 \else
8607 \def\Hy@pdfminorversion{\pdfoptionpdfminorversion}%
8608 \fi
8609 \else
8610 \def\Hy@pdfminorversion{\pdfminorversion}%
8611 \fi
8612 \@ifundefined{Hy@pdfminorversion}{%
8613 \PackageInfo{hyperref}{%
8614 PDF version is not set, because pdfTeX is too old (<1.10a)%
8615 }%
8616 }{%

```

```

8617 \ifHy@ocgcolorlinks
8618 \ifnum\Hy@pdfminorversion<5 %
8619 \kvsetkeys{Hyp}{pdfversion=1.5}%
8620 \fi
8621 \fi
8622 \ifHy@setpdfversion
8623 \ifnum\Hy@pdfminorversion=\Hy@pdfversion\relax
8624 \else
8625 \Hy@pdfminorversion=\Hy@pdfversion\relax
8626 \fi
8627 \PackageInfo{hyperref}{%
8628 \expandafter\string\Hy@pdfminorversion
8629 :=\number\Hy@pdfversion\space
8630 }%
8631 \fi
8632 \edef\Hy@pdfversion{\number\Hy@pdfminorversion}%
8633 }
8634 \Hy@DisableOption{pdfversion}%

8635 \ifHy@ocgcolorlinks
8636 \pdf@ifdraftmode{}{%
8637 \immediate\pdfobj{%
8638 <<%
8639 /Type/OCG%
8640 /Name(View)%
8641 /Usage<<%
8642 /Print<<%
8643 /PrintState/OFF%
8644 >>%
8645 /View<<%
8646 /ViewState/ON%
8647 >>%
8648 >>%
8649 >>%
8650 }%
8651 \edef\OBJ@OCG@view{\the\pdflastobj\space 0 R}%
8652 \immediate\pdfobj{%
8653 <<%
8654 /Type/OCG%
8655 /Name(Print)%
8656 /Usage<<%
8657 /Print<<%
8658 /PrintState/ON%
8659 >>%
8660 /View<<%
8661 /ViewState/OFF%
8662 >>%
8663 >>%
8664 >>%
8665 }%
8666 \edef\OBJ@OCG@print{\the\pdflastobj\space 0 R}%
8667 \immediate\pdfobj{%
8668 [%
8669 \OBJ@OCG@view\space\OBJ@OCG@print
8670 ]%
8671 }%
8672 \edef\OBJ@OCGs{\the\pdflastobj\space 0 R}%
8673 \pdfcatalog{%

```

```

8674 /OCProperties<<%
8675 /OCGs \OBJ@OCGs
8676 /D<<%
8677 /OFF[\OBJ@OCG@print]%
8678 /AS[%
8679 <<%
8680 /Event/View%
8681 /OCGs \OBJ@OCGs
8682 /Category[/View]%
8683 >>%
8684 <<%
8685 /Event/Print%
8686 /OCGs \OBJ@OCGs
8687 /Category[/Print]%
8688 >>%
8689 <<%
8690 /Event/Export%
8691 /OCGs \OBJ@OCGs
8692 /Category[/Print]%
8693 >>%
8694 ]%
8695 >>%
8696 >>%
8697 }%
8698 \beginngroup
8699 \edef\x{\endgroup
8700 \pdfpageresources{%
8701 /Properties<<%
8702 /OCView \OBJ@OCG@view
8703 /OCPrint \OBJ@OCG@print
8704 >>%
8705 }%
8706 }%
8707 \x
8708 }%
8709 \Hy@AtBeginDocument{%
8710 \def\Hy@colorlink#1{%
8711 \beginngroup
8712 \ifHy@ocgcolorlinks
8713 \def\Hy@ocgcolor{#1}%
8714 \setbox0=\hbox\bgroup\color@beginngroup
8715 \else
8716 \HyColor@UseColor#1%
8717 \fi
8718 }%
8719 \def\Hy@endcolorlink{%
8720 \ifHy@ocgcolorlinks
8721 \color@endgroup\egroup
8722 \mbox{%
8723 \pdfliteral page{/OC/OCPrint BDC}%
8724 \rlap{\copy0}%
8725 \pdfliteral page{EMC/OC/OCView BDC}%
8726 \beginngroup
8727 \expandafter\HyColor@UseColor\Hy@ocgcolor
8728 \box0 %
8729 \endgroup
8730 \pdfliteral page{EMC}%

```

```

8731     }%
8732     \fi
8733     \endgroup
8734 }%
8735 }%
8736 \else
8737   \Hy@DisableOption{ocgcolorlinks}%
8738 \fi

```

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

```

8739 \def\setpdfinkmargin#1{\pdfinkmargin#1}
8740 \ifx\pdfstartlink\@undefined% less than version 14
8741   \let\pdfstartlink\pdfannotlink
8742   \let\pdfinkmargin\@tempdima
8743   \let\pdfxform\pdfform
8744   \let\pdflastxform\pdflastform
8745   \let\pdfrefxform\pdfrefform
8746 \else
8747   \pdfinkmargin1pt %
8748 \fi

```

First set up the default linking

```

8749 \providecommand*\@pdfview{XYZ}

```

First define the anchors:

```

8750 \Hy@WrapperDef\new@pdfink#1{%
8751   \ifhmode
8752     \@savsf\spacefactor
8753   \fi
8754   \Hy@SaveLastskip
8755   \Hy@VerboseAnchor{#1}%
8756   \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
8757   \Hy@DestName\Hy@pstringDest\@pdfview
8758   \Hy@RestoreLastskip
8759   \ifhmode
8760     \spacefactor\@savsf
8761   \fi
8762 }
8763 \let\pdf@endanchor\@empty

```

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

```

8764 \def\Hy@DestName#1#2{%
8765   \pdfdest name{#1}#2\relax
8766 }

```

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.

```

8767 \providecommand*\@pdfborder{0 0 1}
8768 \providecommand*\@pdfborderstyle{}
8769 \def\Hy@undefinedname{UNDEFINED}
8770 \def\find@pdfink#1#2{%
8771   \leavevmode
8772   \protected@edef\Hy@testname{#2}%
8773   \ifx\Hy@testname\@empty
8774     \Hy@Warning{%

```

```

8775     Empty destination name,\MessageBreak
8776     using '\Hy@undefinedname'%
8777 }%
8778 \let\Hy@testname\Hy@undefinedname
8779 \else
8780 \Hy@pstringdef\Hy@testname{%
8781   \expandafter\HyperDestNameFilter\expandafter{\Hy@testname}%
8782 }%
8783 \fi
8784 \Hy@StartlinkName{%
8785   \ifHy@pdfa /F 4\fi
8786   \Hy@setpdfborder
8787   \ifx\@pdfhighlight\@empty
8788   \else
8789     /H\@pdfhighlight
8790   \fi
8791   \ifx\CurrentBorderColor\relax
8792   \else
8793     /C[\CurrentBorderColor]%
8794   \fi
8795 } \Hy@testname
8796 \expandafter\Hy@colorlink\csname @#1color\endcsname
8797 }
8798 \def\Hy@StartlinkName#1#2{%
8799   \pdfstartlink attr{#1}goto name{#2}\relax
8800 }
8801 \def\close@pdfink{%
8802   \Hy@endcolorlink
8803   \Hy@VerboseLinkStop
8804   \pdfendlink
8805 }
8806 \def\hyper@anchor#1{%
8807   \new@pdfink{#1}\anchor@spot\pdf@endanchor
8808 }
8809 \def\hyper@anchorstart#1{%
8810   \new@pdfink{#1}%
8811   \Hy@activeanchortrue
8812 }
8813 \def\hyper@anchorend{%
8814   \pdf@endanchor
8815   \Hy@activeanchorfalse
8816 }
8817 \def\hyper@linkstart#1#2{%
8818   \Hy@VerboseLinkStart{#1}{#2}%
8819   \ltx@ifundefined{@#1bordercolor}{%
8820     \let\CurrentBorderColor\relax
8821   }{%
8822     \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
8823   }%
8824   \find@pdfink{#1}{#2}%
8825 }
8826 \def\hyper@linkend{\close@pdfink}
8827 \def\hyper@link#1#2#3{%
8828   \Hy@VerboseLinkStart{#1}{#2}%
8829   \ltx@ifundefined{@#1bordercolor}{%
8830     \let\CurrentBorderColor\relax
8831   }{%

```

```

8832 \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
8833 }%
8834 \find@pdfink{#1}{#2}#3%
8835 \close@pdfink
8836 }
8837 \let\CurrentBorderColor\@linkbordercolor
8838 \def\hyper@linkurl#1#2{%
8839 \begingroup
8840 \Hy@pstringdef\Hy@pstringURI{#2}%
8841 \hyper@chars
8842 \leavevmode
8843 \pdfstartlink
8844 attr{%
8845 \Hy@setpdfborder
8846 \ifx\@pdfhighlight\@empty
8847 \else
8848 /H\@pdfhighlight
8849 \fi
8850 \ifx\@urlbordercolor\relax
8851 \else
8852 /C[\@urlbordercolor]%
8853 \fi
8854 }%
8855 user{%
8856 /Subtype/Link%
8857 \ifHy@pdfa /F 4\fi
8858 /A<<%
8859 /Type/Action%
8860 /S/URI%
8861 /URI(\Hy@pstringURI)%
8862 \ifHy@href@ismap
8863 /IsMap true%
8864 \fi
8865 \Hy@href@nextactionraw
8866 >>%
8867 }%
8868 \relax
8869 \Hy@colorlink\@urlcolor#1%
8870 \close@pdfink
8871 \endgroup
8872 }
8873 \def\hyper@linkfile#1#2#3{% anchor text, filename, linkname
8874 \begingroup
8875 \def\Hy@pstringF{#2}%
8876 \Hy@CleanupFile\Hy@pstringF
8877 \Hy@pstringdef\Hy@pstringF\Hy@pstringF
8878 \Hy@pstringdef\Hy@pstringD{#3}%
8879 \Hy@MakeRemoteAction
8880 \leavevmode
8881 \pdfstartlink
8882 attr{%
8883 \Hy@setpdfborder
8884 \ifx\@pdfhighlight\@empty
8885 \else
8886 /H\@pdfhighlight
8887 \fi
8888 \ifx\@filebordercolor\relax

```

```

8889      \else
8890        /C[\@filebordercolor]%
8891      \fi
8892    }%
8893    user {%
8894      /Subtype/Link%
8895      \ifHy@pdfa /F 4\fi
8896      /A<<%
8897      /F(\Hy@pstringF)%
8898      /S/GoToR%
8899      \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}

```

```

8900      \ifx\#3\%
8901        /D[\Hy@href@page\@pdfremotestartview]%
8902      \else
8903        /D(\Hy@pstringD)%
8904      \fi
8905      \Hy@href@nextactionraw
8906    >>%
8907  }%
8908  \relax
8909  \Hy@colorlink\@filecolor#1%
8910  \close@pdflink
8911 \endgroup
8912 }
8913 \def\@hyper@launch run:#1\#2#3{% filename, anchor text linkname
8914 \begingroup
8915   \Hy@pstringdef\Hy@pstringF{#1}%
8916   \Hy@pstringdef\Hy@pstringP{#3}%
8917   \leavevmode
8918   \pdfstartlink
8919   attr{%
8920     \Hy@setpdfborder
8921     \ifx\@pdfhighlight\@empty
8922     \else
8923       /H\@pdfhighlight
8924     \fi
8925     \ifx\@runbordercolor\relax
8926     \else
8927       /C[\@runbordercolor]%
8928     \fi
8929   }%
8930   user {%
8931     /Subtype/Link%
8932     \ifHy@pdfa /F 4\fi
8933     /A<<%
8934     /F(\Hy@pstringF)%

```

```

8935      /S/Launch%
8936      \Hy@SetNewWindow
8937      \ifx\|#3\|%
8938      \else
8939      /Win<</P(\Hy@pstringP)/F(\Hy@pstringF)>>%
8940      \fi
8941      \Hy@href@nextactionraw
8942      >>%
8943      }%
8944      \relax
8945      \Hy@colorlink\@runcolor#2%
8946      \close@pdfink
8947      \endgroup
8948  }

```

\@pdfproducer

```

8949 \ifx\@pdfproducer\relax
8950 \begingroup\expandafter\expandafter\expandafter\endgroup
8951 \expandafter\ifx\csname luatexversion\endcsname\relax
8952 \def\@pdfproducer{pdfTeX}%
8953 \ifx\eTeXversion\@undefined
8954 \else
8955 \ifx\eTeXversion\relax
8956 \else
8957 \ifnum\eTeXversion>0 %
8958 \def\@pdfproducer{pdfTeX}%
8959 \fi
8960 \fi
8961 \fi
8962 \ifx\pdfTeXversion\@undefined
8963 \else
8964 \ifnum\pdfTeXversion<100 %
8965 \edef\@pdfproducer{%
8966 \@pdfproducer
8967 \the\pdfTeXversion.\pdfTeXrevision
8968 }%
8969 \else
8970 \ifnum\pdfTeXversion<130 %
8971 \edef\@pdfproducer{%
8972 \@pdfproducer-%
8973 \expandafter\@car\the\pdfTeXversion\@empty\@nil.%
8974 \expandafter\@cdr\the\pdfTeXversion\@empty\@nil
8975 \pdfTeXrevision
8976 }%
8977 \else
8978 \ifnum\pdfTeXversion<140 %
8979 \else
8980 \def\@pdfproducer{pdfTeX}%
8981 \fi
8982 \edef\@pdfproducer{%
8983 \@pdfproducer-%
8984 \expandafter\@car\the\pdfTeXversion\@empty\@nil.%
8985 \expandafter\@cdr\the\pdfTeXversion\@empty\@nil.%
8986 \pdfTeXrevision
8987 }%
8988 \fi
8989 \fi

```



```

8990 \fi
8991 \else
8992 \begingroup
8993 \count@=\luatexversion
8994 \divide\count@ by 100 %
8995 \edef\x{\the\count@}%
8996 \count@=-\x\relax
8997 \multiply\count@ by 100 %
8998 \advance\count@ by \luatexversion
8999 \edef\x{\endgroup
9000 \def\noexpand\@pdfproducer{%
9001 LuaTeX-\x.\the\count@.\luatexrevision
9002 }%
9003 }%
9004 \x
9005 \fi
9006 \fi

```

\PDF@SetupDox

```

9007 \def\PDF@SetupDoc{%
9008 \ifx\@pdfpagescrop\@empty
9009 \else
9010 \edef\process@me{%
9011 \pdfpagesattr={%
9012 /CropBox[\@pdfpagescrop]%
9013 \expandafter\ifx\expandafter\\\the\pdfpagesattr\\%
9014 \else
9015 ^^J\the\pdfpagesattr
9016 \fi
9017 }%
9018 }%
9019 \process@me
9020 \fi
9021 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
9022 \pdfcatalog{%
9023 /PageMode/\@pdfpagemode
9024 \ifx\@baseurl\@empty
9025 \else
9026 /URI<</Base(\Hy@pstringB)>>%
9027 \fi
9028 }%
9029 \ifx\@pdfstartpage\@empty
9030 \else
9031 \ifx\@pdfstartview\@empty
9032 \else
9033 openaction goto page\@pdfstartpage{\@pdfstartview}%
9034 \fi
9035 \fi
9036 \edef\Hy@temp{%
9037 \ifHy@toolbar\else /HideToolbar true\fi
9038 \ifHy@menubar\else /HideMenubar true\fi
9039 \ifHy>windowui\else /HideWindowUI true\fi
9040 \ifHy@fitwindow /FitWindow true\fi
9041 \ifHy@centerwindow /CenterWindow true\fi
9042 \ifHy@displaydoctitle /DisplayDocTitle true\fi
9043 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
9044 \Hy@UseNameKey{Direction}\@pdfdirection

```

```

9045 \Hy@UseNameKey{ViewArea}\@pdfviewarea
9046 \Hy@UseNameKey{ViewClip}\@pdfviewclip
9047 \Hy@UseNameKey{PrintArea}\@pdfprintarea
9048 \Hy@UseNameKey{PrintClip}\@pdfprintclip
9049 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
9050 \Hy@UseNameKey{Duplex}\@pdfduplex
9051 \ifx\@pdfpicktraybypdfsize\@empty
9052 \else
9053   /PickTrayByPDFSize \@pdfpicktraybypdfsize
9054 \fi
9055 \ifx\@pdfprintpagerange\@empty
9056 \else
9057   /PrintPageRange[\@pdfprintpagerange]%
9058 \fi
9059 \ifx\@pdfnumcopies\@empty
9060 \else
9061   /NumCopies \@pdfnumcopies
9062 \fi
9063 }%
9064 \pdfcatalog{%
9065   \ifx\Hy@temp\@empty
9066   \else
9067     /ViewerPreferences<<\Hy@temp>>%
9068   \fi
9069   \Hy@UseNameKey{PageLayout}\@pdfpagelayout
9070   \ifx\@pdflang\@empty
9071   \else
9072     /Lang(\@pdflang)%
9073   \fi
9074 }%
9075 }

```

\PDF@FinishDoc

```

9076 \def\PDF@FinishDoc{%
9077   \pdf@ifdraftmode{}{%
9078     \Hy@UseMaketitleInfos
9079     \HyInfo@GenerateAddons
9080     \pdfinfo{%
9081       /Author(\@pdfauthor)%
9082       /Title(\@pdftitle)%
9083       /Subject(\@pdfsubject)%
9084       /Creator(\@pdfcreator)%
9085       \ifx\@pdfcreationdate\@empty
9086       \else
9087         /CreationDate(\@pdfcreationdate)%
9088       \fi
9089       \ifx\@pdfmoddate\@empty
9090       \else
9091         /ModDate(\@pdfmoddate)%
9092       \fi
9093       \ifx\@pdfproducer\relax
9094       \else
9095         /Producer(\@pdfproducer)%
9096       \fi
9097       /Keywords(\@pdfkeywords)%
9098       \ifx\@pdftrapped\@empty
9099       \else

```

```

9100      /Trapped/\@pdftrapped
9101      \fi
9102      \HyInfo@Addons
9103    }%
9104  }%
9105  \Hy@DisableOption{pdfauthor}%
9106  \Hy@DisableOption{pdftitle}%
9107  \Hy@DisableOption{pdfsubject}%
9108  \Hy@DisableOption{pdfcreator}%
9109  \Hy@DisableOption{pdfcreationdate}%
9110  \Hy@DisableOption{pdfmoddate}%
9111  \Hy@DisableOption{pdfproducer}%
9112  \Hy@DisableOption{pdfkeywords}%
9113  \Hy@DisableOption{pdftrapped}%
9114  \Hy@DisableOption{pdfinfo}%
9115 }

```

`\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`.

```

9116 \def\hyper@pagetransition{%
9117   \ifx\@pdfpagetransition\relax
9118   \else
9119     \expandafter\Hy@RemoveTransPageAttr
9120     \the\pdfpageattr^^J/Trans{>>\END
9121     \ifx\@pdfpagetransition\@empty
9122     \else
9123       \edef\@processme{%
9124         \global\pdfpageattr{%
9125           \the\pdfpageattr
9126             ^^J/Trans << /S /\@pdfpagetransition\space >>%
9127         }%
9128       }%
9129       \@processme
9130     \fi
9131   \fi
9132 }

```

`\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.

```

9133 \gdef\Hy@RemoveTransPageAttr#1^^J/Trans#2#3>>#4\END{%
9134   \ifx\#2\%
9135     \global\pdfpageattr{#1}%
9136   \else
9137     \Hy@RemoveTransPageAttr#1#4\END
9138   \fi
9139 }

```

`\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`.

```

9140 \def\hyper@pageduration{%
9141   \ifx\@pdfpageduration\relax
9142   \else
9143     \expandafter

```

```

9144 \Hy@RemoveDurPageAttr\the\pdfpageattr^^J/Dur{} \END
9145 \ifx\@pdfpageduration\@empty
9146 \else
9147 \edef\@processme{%
9148 \global\pdfpageattr{%
9149 \the\pdfpageattr
9150 ^^J/Dur \@pdfpageduration\space
9151 }%
9152 }%
9153 \@processme
9154 \fi
9155 \fi
9156 }

```

`\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.

```

9157 \gdef\Hy@RemoveDurPageAttr#1^^J/Dur#2#3 #4\END{%
9158 \ifx\#2\%
9159 \global\pdfpageattr{#1}%
9160 \else
9161 \Hy@RemoveDurPageAttr#1#4\END
9162 \fi
9163 }

```

`\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).

```

9164 \def\hyper@pagehidden{%
9165 \ifHy@useHidKey
9166 \expandafter
9167 \Hy@RemoveHidPageAttr\the\pdfpageattr^^J/Hid{} \END
9168 \ifHy@pdfpagehidden
9169 \edef\@processme{%
9170 \global\pdfpageattr{%
9171 \the\pdfpageattr
9172 ^^J/Hid true % SPACE
9173 }%
9174 }%
9175 \@processme
9176 \fi
9177 \fi
9178 }

```

`\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.

```

9179 \gdef\Hy@RemoveHidPageAttr#1^^J/Hid#2#3 #4\END{%
9180 \ifx\#2\%
9181 \global\pdfpageattr{#1}%
9182 \else
9183 \Hy@RemoveHidPageAttr#1#4\END
9184 \fi
9185 }

```

```

9186 \pdf@ifdraftmode{}\{%
9187 \g@addto@macro\Hy@EveryPageHook{%
9188   \hyper@pagetransition
9189   \hyper@pageduration
9190   \hyper@pagehidden
9191 }%
9192 }

```

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

```

9193 </pdfTeX>
9194 <*pdfTeX | xetex>
9195 \Hy@AtBeginDocument{%
9196   \ifHy@setpagesize
9197     \expandafter\@firstofone
9198   \else
9199     \expandafter\@gobble
9200   \fi
9201 }%
9202 \ifclassloaded{seminar}\{%
9203 <*pdfTeX>
9204   \setlength{\pdfhorigin}{1truein}%
9205   \setlength{\pdfvorigin}{1truein}%
9206 </pdfTeX>
9207   \ifportrait
9208     \ifdim\paperwidth=\z@
9209     \else
9210       \setlength{\pdfpagewidth}{\strip@pt\paperwidth truept}%
9211     \fi
9212     \ifdim\paperheight=\z@
9213     \else
9214       \setlength{\pdfpageheight}{\strip@pt\paperheight truept}%
9215     \fi
9216   \else
9217     \ifdim\paperheight=\z@
9218     \else
9219       \setlength{\pdfpagewidth}{\strip@pt\paperheight truept}%
9220     \fi
9221     \ifdim\paperwidth=\z@
9222     \else
9223       \setlength{\pdfpageheight}{\strip@pt\paperwidth truept}%
9224     \fi
9225   \fi
9226 }{%
9227   \ifdim\stockwidth>\z@
9228   \setlength{\pdfpagewidth}{\paperwidth}%
9229   \fi
9230   \ifdim\paperheight>\z@
9231   \setlength{\pdfpageheight}{\paperheight}%
9232   \fi
9233 }{%
9234   \ifdim\stockwidth>\z@
9235   \setlength{\pdfpagewidth}{\stockwidth}%
9236   \fi
9237   \ifdim\stockheight>\z@
9238   \setlength{\pdfpageheight}{\stockheight}%
9239   \fi
9240 }

```

```

9241 }%
9242 }%
9243 }%
9244 \Hy@DisableOption{setpagesize}%
9245 }
9246 </pdfTeX | xetex>
9247 <*pdfTeX>
9248 \def\Acrobatmenu#1#2{%
9249 \Hy@Acrobatmenu{#1}{#2}{%
9250 \pdfstartlink
9251 attr{%
9252 \Hy@setpdfborder
9253 \ifx\@pdfhighlight\@empty
9254 \else
9255 /H\@pdfhighlight
9256 \fi
9257 \ifx\@menubordercolor\relax
9258 \else
9259 /C[\@menubordercolor]%
9260 \fi
9261 }%
9262 user{%
9263 /Subtype/Link%
9264 \ifHy@pdfa /F 4\fi
9265 /A<<%
9266 /S/Named%
9267 /N/#1%
9268 \Hy@href@nextactionraw
9269 >>%
9270 }%
9271 \relax
9272 \Hy@colorlink\@menucolor#2%
9273 \close@pdflink
9274 }%
9275 }

```

#### 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.

```

9276 \def\Hy@FixNotFirstPage{%
9277 \gdef\Hy@FixNotFirstPage{%
9278 \setbox\AtBeginShipoutBox=\hbox{%
9279 \copy\AtBeginShipoutBox
9280 }%
9281 }%
9282 }
9283 \AtBeginShipout{\Hy@FixNotFirstPage}
9284 </pdfTeX>

```

## 46.3 hypertext

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

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

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

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

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

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

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

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

```
9285 \*hypertext)
9286 \providecommand*{\XR@ext}{dvi}
9287 \def\PDF@FinishDoc{}
9288 \def\PDF@SetupDoc{%
9289   \ifx\@baseurl\@empty
9290     \else
9291       \special{html:<base href="\@baseurl">}%
9292     \fi
9293 }
9294 \Hy@WrapperDef\hyper@anchor#1{%
9295   \Hy@SaveLastskip
9296   \Hy@VerboseAnchor{#1}%
9297   \begingroup
9298     \let\protect=\string
9299     \hyper@chars
9300     \special{html:<a name=%
9301       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
9302   \endgroup
9303   \Hy@activeanchortrue
9304   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
9305   \special{html:</a>}%
9306   \Hy@activeanchorfalse
9307   \Hy@RestoreLastskip
9308 }
9309 \Hy@WrapperDef\hyper@anchorstart#1{%
```

```

9310 \Hy@SaveLastskip
9311 \Hy@VerboseAnchor{#1}%
9312 \begingroup
9313 \hyper@chars
9314 \special{html:<a name=%
9315 \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
9316 \endgroup
9317 \Hy@activeanchortrue
9318 }
9319 \def\hyper@anchorend{%
9320 \special{html:</a>}%
9321 \Hy@activeanchorfalse
9322 \Hy@RestoreLastskip
9323 }
9324 \def\@urltype{url}
9325 \def\hyper@linkstart#1#2{%
9326 \Hy@VerboseLinkStart{#1}{#2}%
9327 \expandafter\Hy@colorlink\csname @#1color\endcsname
9328 \def\Hy@tempa{#1}%
9329 \ifx\Hy@tempa\@urltype
9330 \special{html:<a href=\hyper@quote#2\hyper@quote>}%
9331 \else
9332 \begingroup
9333 \hyper@chars
9334 \special{html:<a href=%
9335 \hyper@quote\# \HyperDestNameFilter{#2}\hyper@quote>}%
9336 \endgroup
9337 \fi
9338 }
9339 \def\hyper@linkend{%
9340 \special{html:</a>}%
9341 \Hy@endcolorlink
9342 }
9343 \def\hyper@linkfile#1#2#3{%
9344 \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\#3\\\else\##3\fi}%
9345 }
9346 \def\hyper@linkurl#1#2{%

```

If we want to raise up the final link `\special`, we need to get its height; ask me why  $\text{\LaTeX}$  constructs make this totally foul up, and make us revert to basic  $\text{\TeX}$ . I do not know.

```

9347 \leavevmode
9348 \ifHy@raiselinks
9349 \Hy@SaveSpaceFactor
9350 \Hy@SaveSavedSpaceFactor
9351 \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
9352 \Hy@RestoreSavedSpaceFactor
9353 \@linkdim\dp\@tempboxa
9354 \lower\@linkdim\hbox{%
9355 \hyper@chars
9356 \special{html:<a href=\hyper@quote#2\hyper@quote>}%
9357 }%
9358 \Hy@colorlink\@urlcolor
9359 \Hy@RestoreSpaceFactor
9360 #1%
9361 \Hy@SaveSpaceFactor
9362 \@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).

```

9363 \advance\@linkdim by -6.5\p@
9364 \raise\@linkdim\hbox{\special{html:</a>}}}%
9365 \Hy@endcolorlink
9366 \Hy@RestoreSpaceFactor
9367 \else
9368 \begingroup
9369 \hyper@chars
9370 \special{html:<a href=\hyper@quote#2\hyper@quote>}%
9371 \Hy@colorlink\@urlcolor#1%
9372 \special{html:</a>}}}%
9373 \Hy@endcolorlink
9374 \endgroup
9375 \fi
9376 }

```

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

```

9377 \def\hyper@link#1#2#3{%
9378 \Hy@VerboseLinkStart{#1}{#2}%
9379 \hyper@linkurl{#3}{\# \Hy@DestNameFilter{#2}}}%
9380 }

9381 \def\hyper@image#1#2{%
9382 \begingroup
9383 \hyper@chars
9384 \special{html:<img src=\hyper@quote#1\hyper@quote>}%
9385 \endgroup
9386 }
9387 \end{hypertex}
9388 \end{dviwindo}

```

## 46.4 dviwindo

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

This was more or less blindly copied from the hypertex cfg. For dviwindo, L<sup>A</sup>T<sub>E</sub>X must specify the size of the active area for links. For some hooks this information is available but for some, the start and end of the link are specified separately in which case a fixed size area of 10000000sp wide by \baselineskip high is used.

```

9389 \providecommand*\XR@ext{-dvi}
9390 \providecommand*\wwwbrowser{c:\string\netscape\string\netscape}
9391 \Hy@WrapperDef\hyper@anchor#1{%
9392 \Hy@SaveLastskip
9393 \Hy@VerboseAnchor{#1}%
9394 \begingroup
9395 \let\protect=\string
9396 \special{mark: #1}%
9397 \endgroup
9398 \Hy@activeanchortrue
9399 \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
9400 \Hy@activeanchorfalse

```

```

9401 \Hy@RestoreLastskip
9402 }
9403 \Hy@WrapperDef\hyper@anchorstart#1{%
9404 \Hy@SaveLastskip
9405 \Hy@VerboseAnchor{#1}%
9406 \special{mark: #1}%
9407 \Hy@activeanchortrue
9408 }
9409 \def\hyper@anchorend{%
9410 \Hy@activeanchorfalse
9411 \Hy@RestoreLastskip
9412 }
9413 \def\hyper@linkstart#1#2{%
9414 \Hy@VerboseLinkStart{#1}{#2}%
9415 \expandafter\Hy@colorlink\csname @#1color\endcsname
9416 \special{button: %
9417 10000000 %
9418 \number\baselineskip\space
9419 #2%
9420 }%
9421 }
9422 \def\hyper@linkend{%
9423 \Hy@endcolorlink
9424 }
9425 \def\hyper@link#1#2#3{%
9426 \Hy@VerboseLinkStart{#1}{#2}%
9427 \leavevmode
9428 \ifHy@raiselinks
9429 \Hy@SaveSpaceFactor
9430 \Hy@SaveSavedSpaceFactor
9431 \sbox\@tempboxa{\Hy@RestoreSpaceFactor#3}%
9432 \Hy@RestoreSavedSpaceFactor
9433 \@linkdim\dp\@tempboxa
9434 \lower\@linkdim\hbox{%
9435 \special{button: %
9436 \number\wd\@tempboxa\space
9437 \number\ht\@tempboxa\space
9438 #2%
9439 }%
9440 \expandafter\Hy@colorlink\csname @#1color\endcsname
9441 \Hy@RestoreSpaceFactor
9442 #3%
9443 \Hy@SaveSpaceFactor
9444 \Hy@endcolorlink
9445 }%
9446 \@linkdim\ht\@tempboxa
9447 \advance\@linkdim by -6.5\p@
9448 \raise\@linkdim\hbox{}%
9449 \Hy@RestoreSpaceFactor
9450 \else
9451 \special{button: %
9452 \number\wd\@tempboxa\space
9453 \number\ht\@tempboxa\space
9454 #2%
9455 }%
9456 \expandafter\Hy@colorlink\csname @#1color\endcsname
9457 #3%

```

```

9458 \Hy@endcolorlink
9459 \fi
9460 }
9461 \def\hyper@linkurl#1#2{%
9462 \begingroup
9463 \hyper@chars
9464 \leavevmode
9465 \ifHy@raiselinks
9466 \Hy@SaveSpaceFactor
9467 \Hy@SaveSavedSpaceFactor
9468 \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
9469 \Hy@RestoreSavedSpaceFactor
9470 \@linkdim\dp\@tempboxa
9471 \lower\@linkdim\hbox{%
9472 \special{button: %
9473 \number\wd\@tempboxa\space
9474 \number\ht\@tempboxa\space
9475 launch: \wwwbrowser\space
9476 #2%
9477 }%
9478 \Hy@colorlink\@urlcolor
9479 \Hy@RestoreSpaceFactor
9480 #1%
9481 \Hy@SaveSpaceFactor
9482 \Hy@endcolorlink
9483 }%
9484 \@linkdim\ht\@tempboxa
9485 \advance\@linkdim by -6.5\p@
9486 \raise\@linkdim\hbox{}%
9487 \Hy@RestoreSpaceFactor
9488 \else
9489 \special{button: %
9490 \number\wd\@tempboxa\space
9491 \number\ht\@tempboxa\space
9492 launch: \wwwbrowser\space
9493 #2%
9494 }%
9495 \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
9496 \fi
9497 \endgroup
9498 }
9499 \def\hyper@linkfile#1#2#3{%
9500 \begingroup
9501 \hyper@chars
9502 \leavevmode
9503 \ifHy@raiselinks
9504 \Hy@SaveSpaceFactor
9505 \Hy@SaveSavedSpaceFactor
9506 \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
9507 \Hy@RestoreSavedSpaceFactor
9508 \@linkdim\dp\@tempboxa
9509 \lower\@linkdim\hbox{%
9510 \special{button: %
9511 \number\wd\@tempboxa\space
9512 \number\ht\@tempboxa\space
9513 #3,%
9514 file: #2%

```

```

9515     }%
9516     \Hy@colorlink\@filecolor
9517     \Hy@RestoreSpaceFactor
9518     #1%
9519     \Hy@SaveSpaceFactor
9520     \Hy@endcolorlink
9521 }%
9522 \@linkdim\ht\@tempboxa
9523 \advance\@linkdim by -6.5\p@
9524 \raise\@linkdim\hbox{}%
9525 \Hy@RestoreSpaceFactor
9526 \else
9527 \special{button: %
9528 \number\wd\@tempboxa\space
9529 \number\ht\@tempboxa\space
9530 #3,%
9531 file: #2%
9532 }%
9533 \Hy@colorlink\@filecolor#1\Hy@endcolorlink
9534 \fi
9535 \endgroup
9536 }
9537 \ifx\@pdfproducer\relax
9538 \def\@pdfproducer{dviwindo + Distiller}%
9539 \fi
9540 \HyInfo@AddonUnsupportedtrue
9541 \def\PDF@FinishDoc{%
9542 \Hy@UseMaketitleInfos
9543 \HyInfo@TrappedUnsupported
9544 \special{PDF: Keywords \@pdfkeywords}%
9545 \special{PDF: Title \@pdftitle}%
9546 \special{PDF: Creator \@pdfcreator}%
9547 \ifx\@pdfcreationdate\@empty
9548 \else
9549 \special{PDF: CreationDate \@pdfcreationdate}%
9550 \fi
9551 \ifx\@pdfmoddate\@empty
9552 \else
9553 \special{PDF: ModDate \@pdfmoddate}%
9554 \fi
9555 \special{PDF: Author \@pdfauthor}%
9556 \ifx\@pdfproducer\relax
9557 \else
9558 \special{PDF: Producer \@pdfproducer}%
9559 \fi
9560 \special{PDF: Subject \@pdfsubject}%
9561 \Hy@DisableOption{pdfauthor}%
9562 \Hy@DisableOption{pdftitle}%
9563 \Hy@DisableOption{pdfsubject}%
9564 \Hy@DisableOption{pdfcreator}%
9565 \Hy@DisableOption{pdfcreationdate}%
9566 \Hy@DisableOption{pdfmoddate}%
9567 \Hy@DisableOption{pdfproducer}%
9568 \Hy@DisableOption{pdfkeywords}%
9569 \Hy@DisableOption{pdftrapped}%
9570 \Hy@DisableOption{pdfinfo}%
9571 }

```

```

9572 \def\PDF@SetupDoc{%
9573   \ifx\@baseurl\@empty
9574   \else
9575     \special{PDF: Base \@baseurl}%
9576   \fi
9577   \ifx\@pdfpagescrop\@empty\else
9578     \special{PDF: BBox \@pdfpagescrop}%
9579   \fi
9580   \def\Hy@temp{%
9581     \ifx\@pdfstartpage\@empty
9582     \else
9583       \ifx\@pdfstartview\@empty
9584       \else
9585         \edef\Hy@temp{%
9586           ,Page=\@pdfstartpage
9587           ,View=\@pdfstartview
9588         }%
9589       \fi
9590     \fi
9591     \edef\Hy@temp{%
9592       \noexpand\pdfmark{%
9593         pdfmark=/DOCVIEW,%
9594         PageMode=/\@pdfpagemode
9595       }\Hy@temp
9596     }%
9597   }%
9598   \Hy@temp
9599   \ifx\@pdfpagescrop\@empty
9600   \else
9601     \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
9602   \fi
9603   \edef\Hy@temp{%
9604     \ifHy@toolbar\else /HideToolbar true\fi
9605     \ifHy@menubar\else /HideMenubar true\fi
9606     \ifHy>windowui\else /HideWindowUI true\fi
9607     \ifHy@fitwindow /FitWindow true\fi
9608     \ifHy@centerwindow /CenterWindow true\fi
9609     \ifHy@displaydoctitle /DisplayDocTitle true\fi
9610     \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
9611     \Hy@UseNameKey{Direction}\@pdfdirection
9612     \Hy@UseNameKey{ViewArea}\@pdfviewarea
9613     \Hy@UseNameKey{ViewClip}\@pdfviewclip
9614     \Hy@UseNameKey{PrintArea}\@pdfprintarea
9615     \Hy@UseNameKey{PrintClip}\@pdfprintclip
9616     \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
9617     \Hy@UseNameKey{Duplex}\@pdfduplex
9618     \ifx\@pdfpicktraybypdfsize\@empty
9619     \else
9620       /PickTrayByPDFSize \@pdfpicktraybypdfsize
9621     \fi
9622     \ifx\@pdfprintpagerange\@empty
9623     \else
9624       /PrintPageRange[\@pdfprintpagerange]%
9625     \fi
9626     \ifx\@pdfnumcopies\@empty
9627     \else
9628       /NumCopies \@pdfnumcopies

```

```

9629 \fi
9630 }%
9631 \pdfmark{pdfmark=/PUT,%
9632   Raw={%
9633     \string{Catalog\string}<<%
9634     \ifx\Hy@temp\@empty
9635     \else
9636       /ViewerPreferences<<\Hy@temp>>%
9637     \fi
9638     \Hy@UseNameKey{PageLayout}\@pdfpagelayout
9639     \ifx\@pdflang\@empty
9640     \else
9641       /Lang(\@pdflang)%
9642     \fi
9643   >>%
9644 }%
9645 }%
9646 }
9647 </dviwindo>
9648 <*dvipdfm | xetex>

```

## 46.5 dvipdfm/xetex dvi to PDF converter

Provided by Mark Wicks (mwicks@kettering.edu)

```

9649 \providecommand*{\XR@ext}{pdf}
9650 \Hy@setbreaklinks{true}
9651 \def\HyPat@ObjRef{%
9652   @[- ]+%
9653 }
9654 \newsavebox{\pdfm@box}
9655 \def\@pdfm@mark#1{\special{pdf:#1}}
9656 \Hy@WrapperDef\@pdfm@dest#1{%
9657   \Hy@SaveLastskip
9658   \Hy@VerboseAnchor{#1}%
9659   \begingroup
9660     \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
9661     \def\x{XYZ}%
9662     \ifx\x\@pdfview
9663       \def\x{XYZ @xpos @ypos null}%
9664     \else
9665       \def\x{FitH}%
9666       \ifx\x\@pdfview
9667         \def\x{FitH @ypos}%
9668       \else
9669         \def\x{FitBH}%
9670         \ifx\x\@pdfview
9671           \def\x{FitBH @ypos}%
9672         \else
9673           \def\x{FitV}%
9674           \ifx\x\@pdfview
9675             \def\x{FitV @xpos}%
9676           \else
9677             \def\x{FitBV}%
9678             \ifx\x\@pdfview
9679               \def\x{FitBV @xpos}%
9680             \else
9681               \def\x{Fit}%

```

```

9682         \ifx\x\@pdfview
9683         \let\x\@pdfview
9684     \else
9685         \def\x{FitB}%
9686         \ifx\x\@pdfview
9687         \let\x\@pdfview
9688     \else
9689         \def\x{FitR}%
9690         \ifx\x\@pdfview
9691         \Hy@Warning{'pdfview=FitR' is not supported}%
9692         \def\x{XYZ @xpos @ypos null}%
9693     \else
9694         \@onelevel@sanitize\@pdfview
9695         \Hy@Warning{%
9696             Unknown value '\@pdfview' for pdfview%
9697         }%
9698         \def\x{XYZ @xpos @ypos null}%
9699     \fi
9700 \fi
9701 \fi
9702 \fi
9703 \fi
9704 \fi
9705 \fi
9706 \fi
9707 \@pdfm@mark{dest (\Hy@pstringDest) [@thispage /\x]}%
9708 \endgroup
9709 \Hy@RestoreLastskip
9710 }
9711 \providecommand*\@pdfview{XYZ}
9712 \providecommand*\@pdfborder{0 0 1}
9713 \providecommand*\@pdfborderstyle{}
9714 \def\hyper@anchor#1{%
9715     \@pdfm@dest{#1}%
9716 }
9717 \def\hyper@anchorstart#1{%
9718     \Hy@activeanchortrue
9719     \@pdfm@dest{#1}%
9720 }
9721 \def\hyper@anchorend{%
9722     \Hy@activeanchorfalse
9723 }
9724 \newcounter{Hy@AnnotLevel}
9725 \ifHy@ocgcolorlinks
9726     \def\OBJ@OCG@view{@OCG@view}%
9727     \@pdfm@mark{%
9728         obj \OBJ@OCG@view <<%
9729         /Type/OCG%
9730         /Name(View)%
9731         /Usage<<%
9732         /Print<<%
9733         /PrintState/OFF%
9734         >>%
9735         /View<<%
9736         /ViewState/ON%
9737         >>%
9738         >>%

```

```

9739   >>%
9740 }%
9741 \@pdfm@mark{close \OBJ@OCG@view}%
9742 \def\OBJ@OCG@print{@OCG@print}%
9743 \@pdfm@mark{%
9744   obj \OBJ@OCG@print <<%
9745     /Type/OCG%
9746     /Name(Print)%
9747     /Usage<<%
9748     /Print<<%
9749     /PrintState/ON%
9750     >>%
9751     /View<<%
9752     /ViewState/OFF%
9753     >>%
9754   >>%
9755   >>%
9756 }%
9757 \@pdfm@mark{close \OBJ@OCG@print}%
9758 \def\OBJ@OCGs{@OCGs}%
9759 \@pdfm@mark{%
9760   obj \OBJ@OCGs [%
9761     \OBJ@OCG@view\space\OBJ@OCG@print
9762   ]%
9763 }%
9764 \@pdfm@mark{close \OBJ@OCGs}%
9765 \@pdfm@mark{%
9766   put @catalog <<%
9767     /OCProperties<<%
9768     /OCGs \OBJ@OCGs
9769     /D<<%
9770     /OFF[\OBJ@OCG@print]%
9771     /AS[%
9772       <<%
9773         /Event/View%
9774         /OCGs \OBJ@OCGs
9775         /Category[/View]%
9776       >>%
9777       <<%
9778         /Event/Print%
9779         /OCGs \OBJ@OCGs
9780         /Category[/Print]%
9781       >>%
9782       <<%
9783         /Event/Export%
9784         /OCGs \OBJ@OCGs
9785         /Category[/Print]%
9786       >>%
9787     ]%
9788     >>%
9789   >>%
9790   >>%
9791 }%
9792 \AtBeginShipout{%
9793   \setbox\AtBeginShipoutBox=\hbox{%
9794     \copy\AtBeginShipoutBox
9795     \@pdfm@mark{%

```



```

9796     put @resources <<%
9797         /Properties<<%
9798         /OCView \OBJ@OCG@view
9799         /OCPrint \OBJ@OCG@print
9800     >>%
9801 >>%
9802 }%
9803 }%
9804 }%
9805 \Hy@AtBeginDocument{%
9806     \def\Hy@colorlink#1{%
9807         \begingroup
9808         \ifHy@ocgcolorlinks
9809             \def\Hy@ocgcolor{#1}%
9810             \setbox0=\hbox\bgroup\color@begingroup
9811         \else
9812             \HyColor@UseColor#1%
9813         \fi
9814     }%
9815     \def\Hy@endcolorlink{%
9816         \ifHy@ocgcolorlinks
9817             \color@endgroup\egroup
9818             \mbox{%
9819                 \@pdfm@mark{content /OC/OCPrint BDC}%
9820                 \rlap{\copy0}%
9821                 \@pdfm@mark{content EMC/OC/OCView BDC}%
9822                 \begingroup
9823                 \expandafter\HyColor@UseColor\Hy@ocgcolor
9824                 \box0 %
9825                 \endgroup
9826                 \@pdfm@mark{content EMC}%
9827             }%
9828         \fi
9829     \endgroup
9830 }%
9831 }%
9832 \else
9833     \Hy@DisableOption{ocgcolorlinks}%
9834 \fi
9835 \def\Hy@BeginAnnot#1{%
9836     \stepcounter{Hy@AnnotLevel}%
9837     \ifnum\value{Hy@AnnotLevel}=\@ne
9838         #1%
9839     \fi
9840 }
9841 \def\Hy@endAnnot{%
9842     \ifnum\value{Hy@AnnotLevel}=\@ne
9843         \Hy@endcolorlink
9844         \@pdfm@mark{eann}%
9845     \fi
9846     \addtocounter{Hy@AnnotLevel}\m@ne
9847 }
9848 \def\Hy@undefinedname{UNDEFINED}
9849 \def\hyper@linkstart#1#2{%
9850     \Hy@VerboseLinkStart{#1}{#2}%
9851     \Hy@BeginAnnot{%
9852         \protected@edef\Hy@testname{#2}%

```

```

9853 \ifx\Hy@testname\@empty
9854   \Hy@Warning{%
9855     Empty destination name,\MessageBreak
9856     using '\Hy@undefinedname'%
9857   }%
9858   \let\Hy@testname\Hy@undefinedname
9859 \else
9860   \Hy@pstringdef\Hy@testname{%
9861     \expandafter\HyperDestNameFilter\expandafter{%
9862       \Hy@testname
9863     }%
9864   }%
9865 \fi
9866 \@pdfm@mark{%
9867   bann<<%
9868   /Type/Annot%
9869   /Subtype/Link%
9870   \ifHy@pdfa /F 4\fi
9871   \Hy@setpdfborder
9872   \expandafter\ifx\csname @#1bordercolor\endcsname\relax
9873   \else
9874     /C[\csname @#1bordercolor\endcsname]%
9875   \fi
9876   /A<<%
9877   /S/GoTo%
9878   /D(\Hy@testname)%
9879   \Hy@href@nextactionraw
9880   >>%
9881   >>%
9882   }%
9883   \expandafter\Hy@colorlink\csname @#1color\endcsname
9884   }%
9885 }
9886 \def\hyper@linkend{\Hy@EndAnnot}%
9887 \def\hyper@link#1#2#3{%
9888   \hyper@linkstart{#1}{#2}#3\hyper@linkend
9889 }
9890 \def\hyper@linkfile#1#2#3{%
9891   \leavevmode
9892   \Hy@BeginAnnot{%
9893     \def\Hy@pstringF{#2}%
9894     \Hy@CleanupFile\Hy@pstringF
9895     \Hy@pstringdef\Hy@pstringF\Hy@pstringF
9896     \Hy@pstringdef\Hy@pstringD{#3}%
9897     \Hy@MakeRemoteAction
9898     \@pdfm@mark{%
9899       bann<<%
9900       /Type/Annot%
9901       /Subtype/Link%
9902       \ifHy@pdfa /F 4\fi
9903       \Hy@setpdfborder
9904       \ifx\@filebordercolor\relax
9905       \else
9906         /C[\@filebordercolor]%
9907       \fi
9908       /A<<%
9909       /S/GoToR%

```

```

9910      /F(\Hy@pstringF)%
9911      /D%
9912      \ifx\|#3\|%
9913      [\Hy@href@page\@pdfremotestartview]%
9914      \else
9915      (\Hy@pstringD)%
9916      \fi
9917      \Hy@SetNewWindow
9918      \Hy@href@nextactionraw
9919      >>%
9920      >>%
9921      }%
9922      \Hy@colorlink\@filecolor
9923      }%
9924      #1%
9925      \Hy@EndAnnot
9926  }
9927  \def\hyper@linkurl#1#2{%
9928    \leavevmode
9929    \Hy@BeginAnnot{%
9930      \Hy@pstringdef\Hy@pstringURI{#2}%
9931      \@pdfm@mark{%
9932        bann<<%
9933        /Type/Annot%
9934        /Subtype/Link%
9935        \ifHy@pdfa /F 4\fi
9936        \Hy@setpdfborder
9937        \ifx\@urlbordercolor\relax
9938        \else
9939        /C[\@urlbordercolor]%
9940        \fi
9941        /A<<%
9942        /S/URI%
9943        /URI(\Hy@pstringURI)%
9944        \ifHy@href@ismap
9945        /IsMap true%
9946        \fi
9947        \Hy@href@nextactionraw
9948        >>%
9949        >>%
9950        }%
9951        \Hy@colorlink\@urlcolor
9952        }%
9953        #1%
9954        \Hy@EndAnnot
9955    }
9956    \def\Acrobatmenu#1#2{%
9957      \Hy@Acrobatmenu{#1}{#2}{%
9958        \Hy@BeginAnnot{%
9959          \@pdfm@mark{%
9960            bann<<%
9961            /Type/Annot%
9962            /Subtype/Link%
9963            \ifHy@pdfa /F 4\fi
9964            /A<<%
9965            /S/Named%
9966            /N/#1%

```

```

9967      \Hy@href@nextactionraw
9968      >>%
9969      \Hy@setpdfborder
9970      \ifx\@menubordercolor\relax
9971      \relax
9972      /C[\@menubordercolor]%
9973      \fi
9974      >>%
9975      }%
9976      \Hy@colorlink\@menucolor
9977      }%
9978      #2%
9979      \Hy@EndAnnot
9980      }%
9981  }
9982  \ifx\@pdfproducer\relax
9983  \def\@pdfproducer{dvipdfm}%

```

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

```

9984  \begingroup\expandafter\expandafter\expandafter\endgroup
9985  \expandafter\ifx\csname XeTeXversion\endcsname\relax
9986  \else
9987  \edef\@pdfproducer{XeTeX \the\XeTeXversion\XeTeXrevision}%
9988  \fi
9989  \fi
9990  \def\PDF@FinishDoc{%
9991  \Hy@UseMaketitleInfos
9992  \HyInfo@GenerateAddons
9993  \@pdfm@mark{%
9994  docinfo<<%
9995  /Title(\@pdftitle)%
9996  /Subject(\@pdfsubject)%
9997  /Creator(\@pdfcreator)%
9998  \ifx\@pdfcreationdate\@empty
9999  \else
10000  /CreationDate(\@pdfcreationdate)%
10001  \fi
10002  \ifx\@pdfmoddate\@empty
10003  \else
10004  /ModDate(\@pdfmoddate)%
10005  \fi
10006  /Author(\@pdfauthor)%
10007  \ifx\@pdfproducer\relax
10008  \else
10009  /Producer(\@pdfproducer)%
10010  \fi
10011  /Keywords(\@pdfkeywords)%
10012  \ifx\@pdftrapped\@empty
10013  \else
10014  /Trapped/\@pdftrapped
10015  \fi
10016  \HyInfo@Addons
10017  >>%
10018  }%
10019  \Hy@DisableOption{pdfauthor}%
10020  \Hy@DisableOption{pdftitle}%
10021  \Hy@DisableOption{pdfsubject}%
10022  \Hy@DisableOption{pdfcreator}%

```

```

10023 \Hy@DisableOption{pdfcreationdate}%
10024 \Hy@DisableOption{pdfmoddate}%
10025 \Hy@DisableOption{pdfproducer}%
10026 \Hy@DisableOption{pdfkeywords}%
10027 \Hy@DisableOption{pdftrapped}%
10028 \Hy@DisableOption{pdfinfo}%
10029 }

10030 \def\PDF@SetupDoc{%
10031 \edef\Hy@temp{%
10032 \ifHy@toolbar\else /HideToolbar true\fi
10033 \ifHy@menubar\else /HideMenubar true\fi
10034 \ifHy>windowui\else /HideWindowUI true\fi
10035 \ifHy@fitwindow /FitWindow true\fi
10036 \ifHy@centerwindow /CenterWindow true\fi
10037 \ifHy@displaydoctitle /DisplayDocTitle true\fi
10038 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
10039 \Hy@UseNameKey{Direction}\@pdfdirection
10040 \Hy@UseNameKey{ViewArea}\@pdfviewarea
10041 \Hy@UseNameKey{ViewClip}\@pdfviewclip
10042 \Hy@UseNameKey{PrintArea}\@pdfprintarea
10043 \Hy@UseNameKey{PrintClip}\@pdfprintclip
10044 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
10045 \Hy@UseNameKey{Duplex}\@pdfduplex
10046 \ifx\@pdfpicktraybypdfsize\@empty
10047 \else
10048 /PickTrayByPDFSize \@pdfpicktraybypdfsize
10049 \fi
10050 \ifx\@pdfprintpagerange\@empty
10051 \else
10052 /PrintPageRange\@pdfprintpagerange}%
10053 \fi
10054 \ifx\@pdfnumcopies\@empty
10055 \else
10056 /NumCopies \@pdfnumcopies
10057 \fi
10058 }%
10059 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
10060 \@pdfm@mark{%
10061 docview<<%
10062 \ifx\@pdfstartpage\@empty
10063 \else
10064 \ifx\@pdfstartview\@empty
10065 \else
10066 /OpenAction[@page\@pdfstartpage\@pdfstartview]%
10067 \fi
10068 \fi
10069 \ifx\@baseurl\@empty
10070 \else
10071 /URI<</Base(\Hy@pstringB)>>%
10072 \fi
10073 /PageMode/\@pdfpagemode
10074 \ifx\Hy@temp\@empty
10075 \else
10076 /ViewerPreferences<<\Hy@temp>>%
10077 \fi
10078 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
10079 \ifx\@pdflang\@empty

```

```

10080     \else
10081       /Lang(\@pdflang)%
10082     \fi
10083   >>%
10084 }%
10085 \ifx\@pdfpagescrop\@empty
10086 \else
10087   \@pdfm@mark{put @pages <</CropBox[\@pdfpagescrop]>>}%
10088 \fi
10089 }
10090 </dvipdfm | xetex>

```

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

```

10091 <*dvipdfm>
10092 \AtBeginShipoutFirst{%
10093   \ifHy@setpagesize
10094     \begingroup
10095       \ifundefined{stockwidth}{%
10096         \ifdim\paperwidth>\z@
10097           \ifdim\paperheight>\z@
10098             \special{papersize=\the\paperwidth,\the\paperheight}%
10099           \fi
10100         \fi
10101       }{%
10102         \ifdim\stockwidth>\z@
10103           \ifdim\stockheight>\z@
10104             \special{papersize=\the\stockwidth,\the\stockheight}%
10105           \fi
10106         \fi
10107       }%
10108     \endgroup
10109   \fi
10110   \Hy@DisableOption{setpagesize}%
10111 }
10112 </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.

```

10113 <*vtexhtml>
10114 \providecommand*{\XR@ext}{htm}
10115 \RequirePackage{vtexhtml}
10116 \newif\if@Localurl
10117 \def\PDF@FinishDoc{}
10118 \def\PDF@SetupDoc{%
10119   \ifx\@baseurl\@empty
10120     \else
10121       \special{!direct <base href="\@baseurl">}%
10122     \fi
10123 }
10124 \def\@urltype{url}
10125 \def\hyper@link#1#2#3{%
10126   \Hy@VerboseLinkStart{#1}{#2}%
10127   \leavevmode
10128   \special{!direct <a href=%

```

```

10129 \hyper@quote\hyper@hash\HyperDestNameFilter{#2}\hyper@quote>}%
10130 #3%
10131 \special{!direct </a>}%
10132 }
10133 \def\hyper@linkurl#1#2{%
10134 \begingroup
10135 \hyper@chars
10136 \leavevmode
10137 \MathBSuppress=1\relax
10138 \special{!direct <a href=%
10139 \hyper@quote\HyperDestNameFilter{#2}\hyper@quote>}%
10140 #1%
10141 \MathBSuppress=0\relax
10142 \special{!direct </a>}}%
10143 \endgroup
10144 }
10145 \def\hyper@linkfile#1#2#3{%
10146 \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\\else\\##3\fi}%
10147 }
10148 \def\hyper@linkstart#1#2{%
10149 \Hy@VerboseLinkStart{#1}{#2}%
10150 \def\Hy@tempa{#1}\ifx\Hy@tempa\@urltype
10151 \@Localurltrue
10152 \special{!direct <a href=\hyper@quote#2\hyper@quote>}%
10153 \else
10154 \@Localurlfalse
10155 \begingroup
10156 \hyper@chars
10157 \special{!aref \HyperDestNameFilter{#2}}%
10158 \endgroup
10159 \fi
10160 }
10161 \def\hyper@linkend{%
10162 \if@Localurl
10163 \special{!endaref}%
10164 \else
10165 \special{!direct </a>}%
10166 \fi
10167 }
10168 \Hy@WrapperDef\hyper@anchorstart#1{%
10169 \Hy@SaveLastskip
10170 \Hy@VerboseAnchor{#1}%
10171 \begingroup
10172 \hyper@chars
10173 \special{!aname #1}%
10174 \special{!direct <a name=%
10175 \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
10176 \endgroup
10177 \Hy@activeanchortrue
10178 }
10179 \def\hyper@anchorend{%
10180 \special{!direct </a>}}%
10181 \Hy@activeanchorfalse
10182 \Hy@RestoreLastskip
10183 }
10184 \Hy@WrapperDef\hyper@anchor#1{%
10185 \Hy@SaveLastskip

```

```

10186 \Hy@VerboseAnchor{#1}%
10187 \begingroup
10188 \let\protect=\string
10189 \hyper@chars
10190 \leavevmode
10191 \special{!aname #1}%
10192 \special{!direct <a name=%
10193     \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
10194 \endgroup
10195 \Hy@activeanchortrue
10196 \bgroup\anchor@spot\egroup
10197 \special{!direct </a>}%
10198 \Hy@activeanchorfalse
10199 \Hy@RestoreLastskip
10200 }
10201 \def\@Form[#1]{%
10202 \Hy@Message{Sorry, TeXpider does not yet support FORMs}%
10203 }
10204 \def\@endForm{}
10205 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
10206 \Hy@Message{Sorry, TeXpider does not yet support FORM gauges}%
10207 }
10208 \def\@TextField[#1]#2{% parameters, label
10209 \Hy@Message{Sorry, TeXpider does not yet support FORM text fields}%
10210 }
10211 \def\@CheckBox[#1]#2{% parameters, label
10212 \Hy@Message{Sorry, TeXpider does not yet support FORM checkboxes}%
10213 }
10214 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
10215 \Hy@Message{Sorry, TeXpider does not yet support FORM choice menus}%
10216 }
10217 \def\@PushButton[#1]#2{% parameters, label
10218 \Hy@Message{Sorry, TeXpider does not yet support FORM pushbuttons}%
10219 }
10220 \def\@Reset[#1]#2{%
10221 \Hy@Message{Sorry, TeXpider does not yet support FORMs}%
10222 }
10223 \def\@Submit[#1]#2{%
10224 \Hy@Message{Sorry, TeXpider does not yet support FORMs}%
10225 }
10226 </vtexhtml>
10227 <*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.

```

10228 \ifx\mediaheight\@undefined
10229 \else
10230 \ifx\mediaheight\relax
10231 \else
10232 \ifHy@setpagesize
10233 \providecommand*\VTeXInitMediaSize{%
10234 \ltx@ifUndefined{stockwidth}{%
10235 \ifdim\paperheight>0pt %
10236 \setlength\mediaheight\paperheight
10237 \fi
10238 \ifdim\paperheight>0pt %

```



```

10239         \setlength\mediawidth\paperwidth
10240     \fi
10241 }{%
10242     \ifdim\stockheight>0pt %
10243         \setlength\mediaheight\stockheight
10244     \fi
10245     \ifdim\stockwidth>0pt %
10246         \setlength\mediawidth\stockwidth
10247     \fi
10248 }%
10249 }%
10250 \Hy@AtBeginDocument{\VTeXInitMediaSize}%
10251 \fi
10252 \Hy@DisableOption{setpagesize}%
10253 \fi
10254 \fi

```

Older versions of VTeX require xyz in lower case.

```

10255 \providecommand*\@pdfview{xyz}
10256 \providecommand*\@pdfborder{0 0 1}
10257 \providecommand*\@pdfborderstyle{}
10258 \let\CurrentBorderColor\@linkbordercolor
10259 \Hy@WrapperDef\hyper@anchor#1{%
10260     \Hy@SaveLastskip
10261     \Hy@VerboseAnchor{#1}%
10262     \begingroup
10263         \let\protect=\string
10264         \hyper@chars
10265         \special{!aname \HyperDestNameFilter{#1};\@pdfview}%
10266     \endgroup
10267     \Hy@activeanchortrue
10268     \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
10269     \Hy@activeanchorfalse
10270     \Hy@RestoreLastskip
10271 }
10272 \Hy@WrapperDef\hyper@anchorstart#1{%
10273     \Hy@SaveLastskip
10274     \Hy@VerboseAnchor{#1}%
10275     \begingroup
10276         \hyper@chars
10277         \special{!aname \HyperDestNameFilter{#1};\@pdfview}%
10278     \endgroup
10279     \Hy@activeanchortrue
10280 }
10281 \def\hyper@anchorend{%
10282     \Hy@activeanchorfalse
10283     \Hy@RestoreLastskip
10284 }
10285 \def\@urltype{url}
10286 \def\Hy@undefinedname{UNDEFINED}
10287 \def\hyper@linkstart#1#2{%
10288     \Hy@VerboseLinkStart{#1}{#2}%
10289     \Hy@pstringdef\Hy@pstringURI{#2}%
10290     \expandafter\Hy@colorlink\csname @#1color\endcsname
10291     \ltx@ifundefined{@#1bordercolor}{%
10292         \let\CurrentBorderColor\relax
10293     }{%
10294         \edef\CurrentBorderColor{%

```

```

10295 \csname @#1bordercolor\endcsname
10296 }%
10297 }%
10298 \def\Hy@tempa{#1}%
10299 \ifx\Hy@tempa\@uratype
10300 \special{!%
10301   aref <u=/Type/Action/S/URI/URI(\Hy@pstringURI)%
10302   \ifHy@href@ismap
10303     /IsMap true%
10304   \fi
10305   \Hy@href@nextactionraw
10306   >,%
10307   a=<%
10308   \ifHy@pdfa /F 4\fi
10309   \Hy@setpdfborder
10310   \ifx\CurrentBorderColor\relax
10311   \else
10312     /C [\CurrentBorderColor]%
10313   \fi
10314   >%
10315 }%
10316 \else
10317 \protected@edef\Hy@testname{#2}%
10318 \ifx\Hy@testname\@empty
10319 \Hy@Warning{%
10320   Empty destination name,\MessageBreak
10321   using '\Hy@undefinedname'%
10322 }%
10323 \let\Hy@testname\Hy@undefinedname
10324 \fi
10325 \special{!%
10326   aref \expandafter\HyperDestNameFilter
10327   \expandafter{\Hy@testname};%
10328   a=<%
10329   \ifHy@pdfa /F 4\fi
10330   \Hy@setpdfborder
10331   \ifx\CurrentBorderColor\relax
10332   \else
10333     /C [\CurrentBorderColor]%
10334   \fi
10335   >%
10336 }%
10337 \fi
10338 }
10339 \def\hyper@linkend{%
10340 \special{!endaref}%
10341 \Hy@endcolorlink
10342 }
10343 \def\hyper@linkfile#1#2#3{%
10344 \leavevmode
10345 \def\Hy@pstringF{#2}%
10346 \Hy@CleanupFile\Hy@pstringF
10347 \special{!%
10348   aref <%
10349   \ifnum\Hy@VTeXversion>753 \ifHy@newwindow n\fi\fi
10350   f=\Hy@pstringF>#3;%
10351   a=<%

```

```

10352 \ifHy@pdfa /F 4\fi
10353 \Hy@setpdfborder
10354 \ifx\@filebordercolor\relax
10355 \else
10356 /C [\@filebordercolor]%
10357 \fi
10358 >%
10359 }%
10360 \Hy@colorlink\@filecolor#1\Hy@endcolorlink
10361 \special{!endaref}%
10362 }
10363 \def\hyper@linkurl#1#2{%
10364 \begingroup
10365 \Hy@pstringdef\Hy@pstringURI{#2}%
10366 \hyper@chars
10367 \leavevmode
10368 \special{!%
10369 aref <u=/Type/Action/S/URI/URI(\Hy@pstringURI)%
10370 \ifHy@href@ismap
10371 /IsMap true%
10372 \fi
10373 \Hy@href@nextactionraw
10374 >,%
10375 a=<%
10376 \ifHy@pdfa /F 4\fi
10377 \Hy@setpdfborder
10378 \ifx\@urlbordercolor\relax
10379 \else
10380 /C [\@urlbordercolor]%
10381 \fi
10382 >%
10383 }%
10384 \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
10385 \special{!endaref}%
10386 \endgroup
10387 }
10388 \def\hyper@link#1#2#3{%
10389 \Hy@VerboseLinkStart{#1}{#2}%
10390 \ltx@ifundefined{@#1bordercolor}{%
10391 \let\CurrentBorderColor\relax
10392 }{%
10393 \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
10394 }%
10395 \leavevmode
10396 \protected@edef\Hy@testname{#2}%
10397 \ifx\Hy@testname\@empty
10398 \Hy@Warning{%
10399 Empty destination name,\MessageBreak
10400 using '\Hy@undefinedname'%
10401 }%
10402 \let\Hy@testname\Hy@undefinedname
10403 \fi
10404 \special{!%
10405 aref \expandafter\HyperDestNameFilter
10406 \expandafter{\Hy@testname};%
10407 a=<%
10408 \ifHy@pdfa /F 4\fi

```

```

10409 \Hy@setpdfborder
10410 \ifx\CurrentBorderColor\relax
10411 \else
10412 /C [\CurrentBorderColor]%
10413 \fi
10414 >%
10415 }%
10416 \expandafter
10417 \Hy@colorlink\csmame @#1color\endcsname#3\Hy@endcolorlink
10418 \special{!endaref}%
10419 }
10420 \def\hyper@image#1#2{%
10421 \hyper@linkurl{#2}{#1}%
10422 }
10423 \def\@hyper@launch run:#1\#2#3{%
10424 \Hy@pstringdef\Hy@pstringF{#1}%
10425 \Hy@pstringdef\Hy@pstringP{#3}%
10426 \leavevmode
10427 \special{!aref %
10428 <u=%
10429 /Type/Action%
10430 /S/Launch%
10431 /F(\Hy@pstringF)%
10432 \Hy@SetNewWindow
10433 \ifx\#3\%
10434 \else
10435 /Win<</F(\Hy@pstringF)/P(\Hy@pstringP)>>%
10436 \fi
10437 \Hy@href@nextactionraw
10438 >,%
10439 a=<%
10440 \ifHy@pdfa /F 4\fi
10441 \Hy@setpdfborder
10442 \ifx\@runbordercolor\relax
10443 \else
10444 /C[\@runbordercolor]%
10445 \fi
10446 >%
10447 }%
10448 \Hy@colorlink\@runcolor#2\Hy@endcolorlink
10449 \special{!endaref}%
10450 }
10451 \def\Acrobatmenu#1#2{%
10452 \Hy@Acrobatmenu{#1}{#2}{%
10453 \special{!%
10454 aref <u=/S /Named /N /#1>,%
10455 a=<%
10456 \ifHy@pdfa /F 4\fi
10457 \Hy@setpdfborder
10458 \ifx\@menubordercolor\relax
10459 \else
10460 /C[\@menubordercolor]%
10461 \fi
10462 >%
10463 }%
10464 \Hy@colorlink\@menucolor#2\Hy@endcolorlink
10465 \special{!endaref}%

```

```
10466 }%
10467 }
```

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

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

Please never use  $\text{\ifundefined\TeXversion}\{..\}\{..\}$  globally.

```
10468 \ifnum\Hy@TeXversion<702 %
10469 \else
10470 \def\hyper@pagetransition{%
10471 \ifx\@pdfpagetransition\relax
10472 \else
10473 \ifx\@pdfpagetransition\@empty
```

Standard incantation.

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

```
10474 \else
10475 \hvtex@parse@trans\@pdfpagetransition
10476 \fi
10477 \fi
10478 }%
```

I have to write an “honest” parser to convert raw PDF code into  $\text{\TeX}$   $\text{\special}$ .  
(AVK)

Syntax of  $\text{\TeX}$   $\text{\special}\{!trans <transition\_effect>\}$ :

```
<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:

```
10479 \def\hvtex@trans@effect@Blinds{\def\hvtex@trans@code{B}}%
10480 \def\hvtex@trans@effect@Box{\def\hvtex@trans@code{X}}%
10481 \def\hvtex@trans@effect@Dissolve{\def\hvtex@trans@code{D}}%
10482 \def\hvtex@trans@effect@Glitter{\def\hvtex@trans@code{G}}%
10483 \def\hvtex@trans@effect@Split{\def\hvtex@trans@code{S}}%
10484 \def\hvtex@trans@effect@Wipe{\def\hvtex@trans@code{W}}%
10485 \def\hvtex@trans@effect@R{\def\hvtex@trans@code{R}}%
```

Optional parameters:

```
10486 \def\hvtex@par@dimension{/Dm}%
10487 \def\hvtex@par@direction{/Di}%
10488 \def\hvtex@par@duration{/D}%
10489 \def\hvtex@par@motion{/M}%
```

Tokenizer:

```
10490 \def\hvtex@gettoken{%
10491 \expandafter\hvtex@gettoken@\hvtex@buffer\@nil
10492 }%
```

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

```
10493 \def\hvtex@gettoken@#1 #2\@nil{%
10494 \edef\hvtex@token{#1}%
10495 \edef\hvtex@buffer{#2}%
10496 }%
10497 \def\hvtex@parse@trans#1{%
```

Initializing code:

```
10498 \let\hvtex@trans@code\@empty
10499 \let\hvtex@param@dimension\@empty
10500 \let\hvtex@param@direction\@empty
10501 \let\hvtex@param@duration\@empty
10502 \let\hvtex@param@motion\@empty
10503 \edef\hvtex@buffer{#1\space}%
```

First token is the PDF transition name without escape.

```
10504 \hvtex@gettoken
10505 \ifx\hvtex@token\@empty
```

Leading space(s)?

```
10506 \ifx\hvtex@buffer\@empty
```

The buffer is empty, nothing to do.

```
10507 \else
10508 \hvtex@gettoken
10509 \fi
10510 \fi
10511 \csname hvtex@trans@effect@\hvtex@token\endcsname
```

Now is time to parse optional parameters.

```
10512 \hvtex@trans@params
10513 }%
```

Reentrant macro to parse optional parameters.

```
10514 \def\hvtex@trans@params{%
10515 \ifx\hvtex@buffer\@empty
10516 \else
10517 \hvtex@gettoken
10518 \let\hvtex@trans@par\hvtex@token
10519 \ifx\hvtex@buffer\@empty
10520 \else
10521 \hvtex@gettoken
10522 \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.

```
10523 \let\hvtex@param@duration\hvtex@token
10524 \else \ifx\hvtex@trans@par\hvtex@par@motion
```

/M can be either /I or /O

```
10525 \expandafter\edef\expandafter\hvtex@param@motion
10526 \expandafter{\expandafter\@gobble\hvtex@token}%
10527 \else \ifx\hvtex@trans@par\hvtex@par@dimension
```

/Dm can be either /H or /V

```
10528 \expandafter\edef\expandafter\hvtex@param@dimension
10529 \expandafter{\expandafter\@gobble\hvtex@token}%
10530 \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).

```
10531 \let\hvtex@param@direction\hvtex@token
```

```

10532     \fi\fi\fi\fi
10533     \fi
10534     \fi
10535     \ifx\hvtex@buffer\@empty
10536         \let\next\hvtex@produce@trans
10537     \else
10538         \let\next\hvtex@trans@params
10539     \fi
10540     \next
10541 }%

```

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

```

10542 \def\hvtex@produce@trans{%
10543     \let\vtex@trans@special\@empty
10544     \if S\hvtex@trans@code
10545         \edef\vtex@trans@special{\hvtex@trans@code
10546             \hvtex@param@dimension\hvtex@param@motion}%
10547     \else\if B\hvtex@trans@code
10548         \edef\vtex@trans@special{%
10549             \hvtex@trans@code\hvtex@param@dimension
10550         }%
10551     \else\if X\hvtex@trans@code
10552         \edef\vtex@trans@special{%
10553             \hvtex@trans@code\hvtex@param@motion
10554         }%
10555     \else\if W\hvtex@trans@code
10556         \edef\vtex@trans@special{%
10557             \hvtex@trans@code\hvtex@param@direction
10558         }%
10559     \else\if D\hvtex@trans@code
10560         \let\vtex@trans@special\hvtex@trans@code
10561     \else\if R\hvtex@trans@code
10562         \let\vtex@trans@special\hvtex@trans@code
10563     \else\if G\hvtex@trans@code
10564         \edef\vtex@trans@special{%
10565             \hvtex@trans@code\hvtex@param@direction
10566         }%
10567     \fi\fi\fi\fi\fi\fi
10568     \ifx\vtex@trans@special\@empty
10569     \else
10570         \ifx\hvtex@param@duration\@empty
10571         \else
10572             \setlength{\dimen@}{\hvtex@param@duration\p@}%

```

I'm not guilty of possible overflow.

```

10573     \multiply\dimen@\@m
10574     \edef\vtex@trans@special{%
10575         \vtex@trans@special,\strip@pt\dimen@
10576     }%
10577     \fi

```

And all the mess is just for this.

```

10578     \special{!trans \vtex@trans@special}%
10579     \fi
10580 }%

10581 \def\hyper@pageduration{%
10582     \ifx\@pdfpageduration\relax

```

```

10583 \else
10584 \ifx\@pdfpageduration\@empty
10585 \special{!duration-}%
10586 \else
10587 \special{!duration \@pdfpageduration}%
10588 \fi
10589 \fi
10590 }%
10591 \def\hyper@pagehidden{%
10592 \ifHy@useHidKey
10593 \special{!hidden\ifHy@pdfpagehidden +\else -\fi}%
10594 \fi
10595 }%
10596 \g@addto@macro\Hy@EveryPageBoxHook{%
10597 \hyper@pagetransition
10598 \hyper@pageduration
10599 \hyper@pagehidden
10600 }%
10601 \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

```

10602 \ifx\@pdfproducer\relax
10603 \def\@pdfproducer{VTeX}%
10604 \ifnum\Hy@VTeXversion>\z@
10605 \count@\VTeXversion
10606 \divide\count@ 100 %
10607 \edef\@pdfproducer{\@pdfproducer\space v\the\count@}%
10608 \multiply\count@ -100 %
10609 \advance\count@\VTeXversion
10610 \edef\@pdfproducer{%
10611 \@pdfproducer
10612 .\ifnum\count@<10 0\fi\the\count@
10613 \ifx\VTeXOS\@undefined\else
10614 \ifnum\VTeXOS>0 %
10615 \ifnum\VTeXOS<6 %
10616 \space(
10617 \ifcase\VTeXOS
10618 \or Windows\or Linux\or OS/2\or MacOS\or MacOS/X%
10619 \fi
10620 )%
10621 \fi
10622 \fi
10623 \fi
10624 ,\space
10625 \ifnum\OpMode=\@ne PDF\else PS\fi
10626 \space backend%
10627 \ifx\gexmode\@undefined\else
10628 \ifnum\gexmode>\z@\space with GeX\fi
10629 \fi

```



```

10630 }%
10631 \fi
10632 \fi

```

Current !pdfinfo key syntax:

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

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

```

10633 \def\PDF@SetupDoc{%
10634 \ifx\@pdfpagescrop\@empty
10635 \else
10636 \special{!pdfinfo b=<\@pdfpagescrop>}%
10637 \fi
10638 \ifx\@pdfstartpage\@empty
10639 \else
10640 \ifx\@pdfstartview\@empty
10641 \else
10642 \special{!onopen Page\@pdfstartpage}%
10643 \fi
10644 \fi
10645 \special{!pdfinfo p=</\@pdfpagemode>}%
10646 \ifx\@baseurl\@empty
10647 \else
10648 \special{!pdfinfo u=<<</Base (\@baseurl)>>>}%
10649 \fi
10650 \special{!pdfinfo v=<<<%
10651 \ifHy@toolbar\else /HideToolbar true\fi
10652 \ifHy@menubar\else /HideMenubar true\fi
10653 \ifHy>windowui\else /HideWindowUI true\fi
10654 \ifHy@fitwindow /FitWindow true\fi
10655 \ifHy@centerwindow /CenterWindow true\fi
10656 \ifHy@displaydoctitle /DisplayDocTitle true\fi
10657 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
10658 \Hy@UseNameKey{Direction}\@pdfdirection
10659 \Hy@UseNameKey{ViewArea}\@pdfviewarea
10660 \Hy@UseNameKey{ViewClip}\@pdfviewclip
10661 \Hy@UseNameKey{PrintArea}\@pdfprintarea
10662 \Hy@UseNameKey{PrintClip}\@pdfprintclip
10663 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
10664 \Hy@UseNameKey{Duplex}\@pdfduplex
10665 \ifx\@pdfpicktraybypdfsize\@empty
10666 \else
10667 /PickTrayByPDFSize \@pdfpicktraybypdfsize
10668 \fi
10669 \ifx\@pdfprintpagerange\@empty
10670 \else
10671 /PrintPageRange[\@pdfprintpagerange]%

```

```

10672 \fi
10673 \ifx\@pdfnumcopies\@empty
10674 \else
10675 /NumCopies \@pdfnumcopies
10676 \fi
10677 >>>}%
10678 \ifx\@pdfpagelayout\@empty
10679 \else
10680 \special{!pdfinfo l=</\@pdfpagelayout\space>}%
10681 \fi
10682 }%
10683 \HyInfo@AddonUnsupportedtrue
10684 \def\PDF@FinishDoc{%
10685 \Hy@UseMaketitleInfos
10686 \HyInfo@TrappedUnsupported
10687 \special{!pdfinfo a=<\@pdfauthor>}%
10688 \special{!pdfinfo t=<\@pdftitle>}%
10689 \special{!pdfinfo s=<\@pdfsubject>}%
10690 \special{!pdfinfo c=<\@pdfcreator>}%
10691 \ifx\@pdfproducer\relax
10692 \else
10693 \special{!pdfinfo r=<\@pdfproducer>}%
10694 \fi
10695 \special{!pdfinfo k=<\@pdfkeywords>}%
10696 \Hy@DisableOption{pdfauthor}%
10697 \Hy@DisableOption{pdftitle}%
10698 \Hy@DisableOption{pdfsubject}%
10699 \Hy@DisableOption{pdfcreator}%
10700 \Hy@DisableOption{pdfcreationdate}%
10701 \Hy@DisableOption{pdfmoddate}%
10702 \Hy@DisableOption{pdfproducer}%
10703 \Hy@DisableOption{pdfkeywords}%
10704 \Hy@DisableOption{pdftrapped}%
10705 \Hy@DisableOption{pdfinfo}%
10706 }
10707 </vtx>

```

## 46.7 Fix for Adobe bug number 466320

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

```

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

```

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

```

10708 <dviwindo>\def\literalps@out#1{\special{ps:#1}}%
10709 <package>\providecommand*\Hy@DistillerDestFix{-}
10710 <*pdfmark | dviwindo>
10711 \def\Hy@DistillerDestFix{%
10712 \begingroup
10713 \let\x\literalps@out

```

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

```

10714 \ifnum \@ifundefined{OpMode}{0}{%
10715     \@ifundefined{gexmode}{0}{%
10716         \ifnum\gexmode>0 \OpMode\else 0\fi
10717     }>1 %
10718     \def\x###1{%
10719         \immediate\special{!=###1}%
10720     }%
10721 \fi
10722 \x{%
10723     /product where{%
10724         pop %
10725         product(Distiller)search{%
10726             pop pop pop %
10727             version(.)search{%
10728                 exch pop exch pop%
10729                 (3011)eq{%
10730                     gsave %
10731                     newpath 0 0 moveto closepath clip%
10732                     /Courier findfont 10 scalefont setfont %
10733                     72 72 moveto(.)show %
10734                     grestore%
10735                 }if%
10736             }{pop}ifelse%
10737         }{pop}ifelse%
10738     }if%
10739 }%
10740 \endgroup
10741 }
10742 </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

```

10743 <*pdfmark>
10744 \Hy@breaklinks@unsupported
10745 \def\HyPat@ObjRef{%
10746     \{[~{]}+\}%
10747 }
10748 \Hy@WrapperDef\hyper@anchor#1{%
10749     \Hy@SaveLastskip
10750     \Hy@VerboseAnchor{#1}%
10751     \begingroup
10752     \pdfmark[\anchor@spot]{%
10753         pdfmark=/DEST,%
10754         linktype=anchor,%

```

```

10755     View=/\@pdfview \@pdfviewparams,%
10756     DestAnchor={#1}%
10757 }%
10758 \endgroup
10759 \Hy@RestoreLastskip
10760 }
10761 \ltx@ifundefined{hyper@anchorstart}{\endinput}
10762 \Hy@WrapperDef\hyper@anchorstart#1{%
10763   \Hy@SaveLastskip
10764   \Hy@VerboseAnchor{#1}%
10765   \literalps@out{H.S}%
10766   \Hy@AllowHyphens
10767   \xdef\hyper@currentanchor{#1}%
10768   \Hy@activeanchortrue
10769 }
10770 \def\hyper@anchorend{%
10771   \literalps@out{\strip@pt@and@otherjunk\baselineskip\space H.A}%
10772   \pdfmark{%
10773     pdfmark=/DEST,%
10774     linktype=anchor,%
10775     View=/\@pdfview \@pdfviewparams,%
10776     DestAnchor=\hyper@currentanchor,%
10777   }%
10778   \Hy@activeanchorfalse
10779   \Hy@RestoreLastskip
10780 }
10781 \def\hyper@linkstart#1#2{%
10782   \Hy@VerboseLinkStart{#1}{#2}%
10783   \ifHy@breaklinks
10784   \else
10785     \leavevmode
10786     \ifmmode
10787       \def\Hy@LinkMath{$}%
10788     \else
10789       \def\Hy@LinkMath{}%
10790     \fi
10791     \Hy@SaveSpaceFactor
10792     \hbox\bgroup
10793     \Hy@RestoreSpaceFactor
10794     \Hy@LinkMath
10795   \fi
10796   \expandafter\Hy@colorlink\csname @#1color\endcsname
10797   \literalps@out{H.S}%
10798   \Hy@AllowHyphens
10799   \xdef\hyper@currentanchor{#2}%
10800   \gdef\hyper@currentlinktype{#1}%
10801 }
10802 \def\hyper@linkend{%
10803   \literalps@out{\strip@pt@and@otherjunk\baselineskip\space H.L}%
10804   \ltx@ifundefined{@\hyper@currentlinktype bordercolor}{%
10805     \let\Hy@tempcolor\relax
10806   }{%
10807     \edef\Hy@tempcolor{%
10808       \csname @\hyper@currentlinktype bordercolor\endcsname
10809     }%
10810   }%
10811   \pdfmark{%

```

```

10812 pdfmark=/ANN,%
10813 linktype=link,%
10814 Subtype=/Link,%
10815 PDFAMFlags=4,%
10816 Dest=\hyper@currentanchor,%
10817 AcroHighlight=\@pdfhighlight,%
10818 Border=\@pdfborder,%
10819 BorderStyle=\@pdfborderstyle,%
10820 Color=\Hy@tempcolor,%
10821 Raw=H.B%
10822 }%
10823 \Hy@endcolorlink
10824 \ifHy@breaklinks
10825 \else
10826 \Hy@LinkMath
10827 \Hy@SaveSpaceFactor
10828 \egroup
10829 \Hy@RestoreSpaceFactor
10830 \fi
10831 }

```

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.

```

10832 \begingroup
10833 \catcode'P=12 %
10834 \catcode'T=12 %
10835 \lowercase{\endgroup
10836 \gdef\rem@ptetc#1.#2PT#3!{#1\ifnum#2>\z@.#2\fi}%
10837 }
10838 \def\strip@pt@and@otherjunk#1{\expandafter\rem@ptetc\the#1!}

```

`\hyper@pagetransition`

```

10839 \def\hyper@pagetransition{%
10840 \ifx\@pdfpagetransition\relax
10841 \else
10842 \ifx\@pdfpagetransition\@empty
10843 % 1. Does an old entry have to be deleted?
10844 % 2. If 1=yes, how to delete?
10845 \else
10846 \pdfmark{%
10847 pdfmark=/PUT,%
10848 Raw={%
10849 \string{ThisPage\string}%
10850 <</Trans << /S /\@pdfpagetransition\space >> >>%
10851 }%
10852 }%
10853 \fi
10854 \fi
10855 }

```

`\hyper@pageduration`

```

10856 \def\hyper@pageduration{%
10857 \ifx\@pdfpageduration\relax
10858 \else
10859 \ifx\@pdfpageduration\@empty
10860 % 1. Does an old entry have to be deleted?

```

```

10861 % 2. If 1=yes, how to delete?
10862 \else
10863 \pdfmark{%
10864 pdfmark=/PUT,%
10865 Raw={%
10866 \string{ThisPage\string}%
10867 <</Dur \@pdfpageduration>>%
10868 }%
10869 }%
10870 \fi
10871 \fi
10872 }

```

\hyper@pagehidden

```

10873 \def\hyper@pagehidden{%
10874 \ifHy@useHidKey
10875 \pdfmark{%
10876 pdfmark=/PUT,%
10877 Raw={%
10878 \string{ThisPage\string}%
10879 <</Hid \ifHy@pdfpagehidden true\else false\fi>>%
10880 }%
10881 }%
10882 \fi
10883 }

10884 \g@addto@macro\Hy@EveryPageBoxHook{%
10885 \hyper@pagetransition
10886 \hyper@pageduration
10887 \hyper@pagehidden
10888 }

10889 \def\hyper@image#1#2{%
10890 \hyper@linkurl{#2}{#1}%
10891 }

10892 \def\Hy@undefinedname{UNDEFINED}
10893 \def\hyper@link#1#2#3{%
10894 \Hy@VerboseLinkStart{#1}{#2}%
10895 \ltx@ifundefined{@#1bordercolor}{%
10896 \let\Hy@tempcolor\relax
10897 }{%
10898 \edef\Hy@tempcolor{\csname @#1bordercolor\endcsname}%
10899 }%
10900 \begingroup
10901 \protected@edef\Hy@testname{#2}%
10902 \ifx\Hy@testname\@empty
10903 \Hy@Warning{%
10904 Empty destination name,\MessageBreak
10905 using '\Hy@undefinedname'%
10906 }%
10907 \let\Hy@testname\Hy@undefinedname
10908 \fi
10909 \pdfmark[{#3}]{%
10910 Color=\Hy@tempcolor,%
10911 linktype={#1},%
10912 AcroHighlight=\@pdfhighlight,%
10913 Border=\@pdfborder,%
10914 BorderStyle=\@pdfborderstyle,%

```

```

10915     pdfmark=/ANN,%
10916     Subtype=/Link,%
10917     PDFAFlags=4,%
10918     Dest=\Hy@testname
10919 }%
10920 \endgroup
10921 }
10922 \newtoks\pdf@docset
10923 \def\PDF@FinishDoc{%
10924   \Hy@UseMaketitleInfos
10925   \HyInfo@GenerateAddons
10926   \let\Hy@temp\@empty
10927   \ifx\@pdfcreationdate\@empty
10928   \else
10929     \def\Hy@temp{CreationDate=\@pdfcreationdate,}%
10930   \fi
10931   \ifx\@pdfmoddate\@empty
10932   \else
10933     \expandafter\def\expandafter\Hy@temp\expandafter{%
10934       \Hy@temp
10935       ModDate=\@pdfmoddate,%
10936     }%
10937   \fi
10938   \ifx\@pdfproducer\relax
10939   \else
10940     \expandafter\def\expandafter\Hy@temp\expandafter{%
10941       \Hy@temp
10942       Producer=\@pdfproducer,%
10943     }%
10944   \fi
10945   \expandafter
10946   \pdfmark\expandafter{%
10947     \Hy@temp
10948     pdfmark=/DOCINFO,%
10949     Title=\@pdftitle,%
10950     Subject=\@pdfsubject,%
10951     Creator=\@pdfcreator,%
10952     Author=\@pdfauthor,%
10953     Keywords=\@pdfkeywords,%
10954     Trapped=\@pdftrapped
10955   }%
10956   \ifx\HyInfo@Addons\@empty
10957   \else
10958     \pdfmark{%
10959       pdfmark=/DOCINFO,%
10960       Raw={\HyInfo@Addons}%
10961     }%
10962   \fi
10963   \Hy@DisableOption{pdfauthor}%
10964   \Hy@DisableOption{pdftitle}%
10965   \Hy@DisableOption{pdfsubject}%
10966   \Hy@DisableOption{pdfcreator}%
10967   \Hy@DisableOption{pdfcreationdate}%
10968   \Hy@DisableOption{pdfmoddate}%
10969   \Hy@DisableOption{pdfproducer}%
10970   \Hy@DisableOption{pdfkeywords}%
10971   \Hy@DisableOption{pdftrapped}%

```

```

10972 \Hy@DisableOption{pdfinfo}%
10973 }
10974 \def\PDF@SetupDoc{%
10975 \def\Hy@temp{%
10976 \ifx\@pdfstartpage\@empty
10977 \else
10978 \ifx\@pdfstartview\@empty
10979 \else
10980 \edef\Hy@temp{%
10981 ,Page=\@pdfstartpage
10982 ,View=\@pdfstartview
10983 }%
10984 \fi
10985 \fi
10986 \edef\Hy@temp{%
10987 \noexpand\pdfmark{%
10988 pdfmark=/DOCVIEW,%
10989 PageMode=/\@pdfpagemode
10990 \Hy@temp
10991 }%
10992 }%
10993 \Hy@temp
10994 \ifx\@pdfpagescrop\@empty
10995 \else
10996 \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
10997 \fi
10998 \edef\Hy@temp{%
10999 \ifHy@toolbar\else /HideToolbar true\fi
11000 \ifHy@menubar\else /HideMenubar true\fi
11001 \ifHy>windowui\else /HideWindowUI true\fi
11002 \ifHy@fitwindow /FitWindow true\fi
11003 \ifHy@centerwindow /CenterWindow true\fi
11004 \ifHy@displaydoctitle /DisplayDocTitle true\fi
11005 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
11006 \Hy@UseNameKey{Direction}\@pdfdirection
11007 \Hy@UseNameKey{ViewArea}\@pdfviewarea
11008 \Hy@UseNameKey{ViewClip}\@pdfviewclip
11009 \Hy@UseNameKey{PrintArea}\@pdfprintarea
11010 \Hy@UseNameKey{PrintClip}\@pdfprintclip
11011 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
11012 \Hy@UseNameKey{Duplex}\@pdfduplex
11013 \ifx\@pdfpicktraybypdfsize\@empty
11014 \else
11015 /PickTrayByPDFSize \@pdfpicktraybypdfsize
11016 \fi
11017 \ifx\@pdfprintpagerange\@empty
11018 \else
11019 /PrintPageRange[\@pdfprintpagerange]%
11020 \fi
11021 \ifx\@pdfnumcopies\@empty
11022 \else
11023 /NumCopies \@pdfnumcopies
11024 \fi
11025 }%
11026 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
11027 \pdfmark{%
11028 pdfmark=/PUT,%

```



```

11029 Raw={%
11030   \string{Catalog\string}<<%
11031   \ifx\Hy@temp\@empty
11032   \else
11033     /ViewerPreferences<<\Hy@temp>>%
11034   \fi
11035   \Hy@UseNameKey{PageLayout}\@pdfpagelayout
11036   \ifx\@pdflang\@empty
11037   \else
11038     /Lang(\@pdflang)%
11039   \fi
11040   \ifx\@baseurl\@empty
11041   \else
11042     /URI<</Base(\Hy@pstringB)>>%
11043   \fi
11044   >>%
11045 }%
11046 }%
11047 }
11048 </pdfmark>
11049 <*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.

```

11050 \newif\ifHy@pdfmarkerror
11051 \def\pdfmark{\@ifnextchar{\pdfmark@}{\pdfmark@[]}}
11052 \def\pdfmark@[#1]#2{%
11053   \Hy@pdfmarkerrorfalse
11054   \edef\@processme{\noexpand\pdf@toks={\the\pdf@defaulttoks}}%
11055   \@processme
11056   \let\pdf@type\relax
11057   \kvsetkeys{PDF}{#2}%
11058   \ifHy@pdfmarkerror
11059   \else
11060     \ifx\pdf@type\relax
11061       \Hy@WarningNoLine{no pdfmark type specified in #2!!}%
11062       \ifx\#1\%
11063       \else
11064         \pdf@rect{#1}%
11065       \fi
11066     \else
11067       \ifx\#1\%
11068         \literalps@out{%
11069           [\the\pdf@toks\space\pdf@type\space pdfmark%
11070         ]}%
11071       \else
11072         \ltx@ifundefined{@pdf@linktype color}{%
11073           \Hy@colorlink\@linkcolor
11074         }{%
11075           \expandafter\Hy@colorlink
11076             \csname @pdf@linktype color\endcsname
11077         }%
11078         \pdf@rect{#1}%
11079         \literalps@out{%

```

```

11080      [\the\pdf@toks\space\pdf@type\space pdfmark%
11081      }%
11082      \Hy@endcolorlink
11083      \fi
11084      \fi
11085      \fi
11086  }

```

The complicated bit is working out the right enclosing rectangle of some piece of  $\text{\TeX}$  text, needed by the `/Rect` key. This solution originates with Toby Thain ([toby@netspace.net.au](mailto:toby@netspace.net.au)).

For the case `breaklinks` is enabled, I have added two hooks, the first one for package `setouterhbox`, it provides a hopefully better method without setting the text twice.

```
\usepackage[hyperref]{setouterhbox}
```

With the second hook, also you can set the text twice, e.g.:

```

\long\def\Hy@setouterhbox#1#2{\long\def\my@temp{#2}}
\def\Hy@breaklinksunhbox#1{\my@temp}

```

```

11087 \newsavebox{\pdf@box}
11088 \providecommand*{\Hy@setouterhbox}{\sbox}
11089 \providecommand*{\Hy@breaklinksunhbox}{\unhbox}
11090 \def\Hy@DEST{/DEST}
11091 \def\pdf@rect#1{%
11092   \begingroup
11093   \chardef\x=1 %
11094   \def\Hy@temp{#1}%
11095   \ifx\Hy@temp\ltx@empty
11096     \chardef\x=0 %
11097   \else
11098     \def\y{\anchor@spot}%
11099     \ifx\Hy@temp\y
11100       \def\y{\relax}%
11101     \ifx\anchor@spot\y
11102       \chardef\x=0 %
11103     \fi
11104   \fi
11105   \fi
11106   \expandafter\endgroup
11107   \ifcase\x
11108     \literalps@out{H.S}%
11109     \literalps@out{H.R}%
11110   \else
11111     \leavevmode
11112     \Hy@SaveSpaceFactor
11113     \ifmmode
11114       \def\Hy@LinkMath{$}%
11115     \else
11116       \def\Hy@LinkMath{}%
11117     \fi
11118     \ifHy@breaklinks
11119       \Hy@setouterhbox\pdf@box{%
11120         \Hy@RestoreSpaceFactor
11121         \Hy@LinkMath
11122         \Hy@AllowHyphens#1%
11123         \Hy@LinkMath
11124         \Hy@SaveSpaceFactor
11125       }%

```

```

11126 \else
11127 \sbox\pdf@box{%
11128 \Hy@RestoreSpaceFactor
11129 \Hy@LinkMath
11130 #1%
11131 \Hy@LinkMath
11132 \Hy@SaveSpaceFactor
11133 }%
11134 \fi
11135 \dimen@\ht\pdf@box
11136 \ifdim\dp\pdf@box=\z@
11137 \literalps@out{H.S}%
11138 \else
11139 \lower\dp\pdf@box\hbox{\literalps@out{H.S}}%
11140 \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...).

```

11141 \ifHy@breaklinks
11142 \expandafter\Hy@breaklinksunhbox
11143 \else
11144 \expandafter\box
11145 \fi
11146 \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

11147 \ifdim\dimen@=\z@
11148 \literalps@out{H.R}%
11149 \else
11150 \raise\dimen@\hbox{\literalps@out{H.R}}%
11151 \fi
11152 \Hy@RestoreSpaceFactor
11153 \fi
11154 \ifx\pdf@type\Hy@DEST
11155 \else
11156 \pdf@addtoksx{H.B}%
11157 \fi
11158 }

```

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.

```

11159 \newtoks\pdf@toks
11160 \newtoks\pdf@defaulttoks
11161 \pdf@defaulttoks={}%
11162 \def\pdf@addtoks#1#2{%
11163 \edef\@processme{\pdf@toks{\the\pdf@toks/#2 #1}}%
11164 \@processme
11165 }
11166 \def\pdf@addtoksx#1{%
11167 \edef\@processme{\pdf@toks{\the\pdf@toks\space #1}}%
11168 \@processme
11169 }
11170 \def\PDFdefaults#1{%
11171 \pdf@defaulttoks={#1}%
11172 }

```

This is the list of allowed keys. See the Acrobat manual for an explanation.

```
11173 % what is the type of pdfmark?
11174 \define@key{PDF}{pdfmark}{\def\pdf@type{#1}}
11175 % what is the link type?
11176 \define@key{PDF}{linktype}{\def\pdf@linktype{#1}}
11177 \def\pdf@linktype{link}
11178 % parameter is a stream of PDF
11179 \define@key{PDF}{Raw}{\pdf@addtoks{#1}}
11180 % parameter is a name
11181 \define@key{PDF}{Action}{\pdf@addtoks{#1}{Action}}
11182 % parameter is a array
11183 \define@key{PDF}{Border}{%
11184   \edef\Hy@temp{#1}%
11185   \ifx\Hy@temp\@empty
11186     \else
11187       \pdf@addtoks{[#1]\Hy@BorderArrayPatch}{Border}% hash-ok
11188     \fi
11189 }
11190 \let\Hy@BorderArrayPatch\@empty
11191 % parameter is a dictionary
11192 \define@key{PDF}{BorderStyle}{%
11193   \edef\Hy@temp{#1}%
11194   \ifx\Hy@temp\@empty
11195     \else
11196       \pdf@addtoks{<<#1>>}{BS}%
11197     \fi
11198 }
11199 % parameter is a array
11200 \define@key{PDF}{Color}{%
11201   \ifx\relax#1\relax
11202     \else
11203       \pdf@addtoks{[#1]}{Color}% hash-ok
11204     \fi
11205 }
11206 % parameter is a string
11207 \define@key{PDF}{Contents}{\pdf@addtoks{(#1)}{Contents}}
11208 % parameter is a integer
11209 \define@key{PDF}{Count}{\pdf@addtoks{#1}{Count}}
11210 % parameter is a array
11211 \define@key{PDF}{CropBox}{\pdf@addtoks{[#1]}{CropBox}}% hash-ok
11212 % parameter is a string
11213 \define@key{PDF}{DOSFile}{\pdf@addtoks{(#1)}{DOSFile}}
11214 % parameter is a string or file
11215 \define@key{PDF}{DataSource}{\pdf@addtoks{(#1)}{DataSource}}
11216 % parameter is a destination
11217 \define@key{PDF}{Dest}{%
11218   \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
11219   \ifx\Hy@pstringDest\@empty
11220     \Hy@pdfmarkerrortrue
11221     \Hy@Warning{Destination with empty name ignored}%
11222   \else
11223     \pdf@addtoks{(\Hy@pstringDest) cvn}{Dest}%
11224   \fi
11225 }
11226 \define@key{PDF}{DestAnchor}{%
11227   \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
11228   \ifx\Hy@pstringDest\@empty
```

```

11229 \Hy@pdfmarkerrortrue
11230 \Hy@Warning{Destination with empty name ignored}%
11231 \else
11232 \pdf@addtoks{(\Hy@pstringDest) cvn}{Dest}%
11233 \fi
11234 }
11235 % parameter is a string
11236 \define@key{PDF}{Dir}{\pdf@addtoks{(#1)}{Dir}}
11237 % parameter is a string
11238 \define@key{PDF}{File}{\pdf@addtoks{(#1)}{File}}
11239 % parameter is a int
11240 \define@key{PDF}{Flags}{\pdf@addtoks{#1}{Flags}}
11241 \define@key{PDF}{PDFAFlags}{%
11242 \ifHy@pdfa
11243 \pdf@addtoks{#1}{F}%
11244 \fi
11245 }
11246 % parameter is a name
11247 \define@key{PDF}{AcroHighlight}{%
11248 \begingroup
11249 \edef\x{#1}%
11250 \expandafter\endgroup\ifx\x@empty
11251 \else
11252 \pdf@addtoks{#1}{H}%
11253 \fi
11254 }
11255 % parameter is a string
11256 \define@key{PDF}{ID}{\pdf@addtoks{[#1]}{ID}}% hash-ok
11257 % parameter is a string
11258 \define@key{PDF}{MacFile}{\pdf@addtoks{(#1)}{MacFile}}
11259 % parameter is a string
11260 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
11261 % parameter is a string
11262 \define@key{PDF}{Op}{\pdf@addtoks{(#1)}{Op}}
11263 % parameter is a Boolean
11264 \define@key{PDF}{Open}{\pdf@addtoks{#1}{Open}}
11265 % parameter is a integer or name
11266 \define@key{PDF}{Page}{\pdf@addtoks{#1}{Page}}
11267 % parameter is a name
11268 \define@key{PDF}{PageMode}{\pdf@addtoks{#1}{PageMode}}
11269 % parameter is a string
11270 \define@key{PDF}{Params}{\pdf@addtoks{(#1)}{Params}}
11271 % parameter is a array
11272 \define@key{PDF}{Rect}{\pdf@addtoks{[#1]}{Rect}}% hash-ok
11273 % parameter is a integer
11274 \define@key{PDF}{SrcPg}{\pdf@addtoks{#1}{SrcPg}}
11275 % parameter is a name
11276 \define@key{PDF}{Subtype}{\pdf@addtoks{#1}{Subtype}}
11277 % parameter is a string
11278 \define@key{PDF}{Title}{\pdf@addtoks{(#1)}{Title}}
11279 % parameter is a string
11280 \define@key{PDF}{Unix}{\pdf@addtoks{(#1)}{Unix}}
11281 % parameter is a string
11282 \define@key{PDF}{UnixFile}{\pdf@addtoks{(#1)}{UnixFile}}
11283 % parameter is an array
11284 \define@key{PDF}{View}{\pdf@addtoks{[#1]}{View}}% hash-ok
11285 % parameter is a string

```

```
11286 \define@key{PDF}{WinFile}{\pdf@addtoks{(#1)}{WinFile}}
```

These are the keys used in the DOCINFO section.

```
11287 \define@key{PDF}{Author}{\pdf@addtoks{(#1)}{Author}}
11288 \define@key{PDF}{Creator}{\pdf@addtoks{(#1)}{Creator}}
11289 \define@key{PDF}{CreationDate}{\pdf@addtoks{(#1)}{CreationDate}}
11290 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
11291 \define@key{PDF}{Producer}{\pdf@addtoks{(#1)}{Producer}}
11292 \define@key{PDF}{Subject}{\pdf@addtoks{(#1)}{Subject}}
11293 \define@key{PDF}{Keywords}{\pdf@addtoks{(#1)}{Keywords}}
11294 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
11295 \define@key{PDF}{Base}{\pdf@addtoks{(#1)}{Base}}
11296 \define@key{PDF}{URI}{\pdf@addtoks{(#1)}{URI}}
11297 \define@key{PDF}{Trapped}{%
11298   \edef\Hy@temp{#1}%
11299   \ifx\Hy@temp\@empty
11300     \else
11301       \pdf@addtoks{/#1}{Trapped}%
11302     \fi
11303 }
11304
11305 </pdfmarkbase>
11306 <*pdfmark>
11307 \def\Acrobatmenu#1#2{%
11308   \Hy@Acrobatmenu{#1}{#2}{%
11309     \pdfmark[{#2}]{%
11310       linktype=menu,%
11311       pdfmark=/ANN,%
11312       AcroHighlight=\@pdfhighlight,%
11313       Border=\@pdfborder,%
11314       BorderStyle=\@pdfborderstyle,%
11315       Action={<< /Subtype /Named /N /#1 >>},%
11316       Subtype=/Link,%
11317       PDFAFlags=4%
11318     }%
11319   }%
11320 }
```

And now for some useful examples:

```
11321 \def\PDFNextPage{\@ifnextchar{\PDFNextPage@}{\PDFNextPage@[]}}
11322 \def\PDFNextPage@[#1]#2{%
11323   \pdfmark[{#2}]{%
11324     #1,%
11325     Border=\@pdfborder,%
11326     BorderStyle=\@pdfborderstyle,%
11327     Color=.2 .1 .5,%
11328     pdfmark=/ANN,%
11329     Subtype=/Link,%
11330     PDFAFlags=4,%
11331     Page=/Next%
11332   }%
11333 }
11334 \def\PDFPreviousPage{%
11335   \@ifnextchar{\PDFPreviousPage@}{\PDFPreviousPage@[]}%
11336 }
11337 \def\PDFPreviousPage@[#1]#2{%
11338   \pdfmark[{#2}]{%
11339     #1,%
```

```

11340   Border=\@pdfborder,%
11341   BorderStyle=\@pdfborderstyle,%
11342   Color=.4 .4 .1,%
11343   pdfmark=/ANN,%
11344   Subtype=/Link,%
11345   PDFAFlags=4,%
11346   Page=/Prev%
11347 }%
11348 }
11349 \def\PDFOpen#1{%
11350   \pdfmark{#1,pdfmark=/DOCVIEW}%
11351 }

```

This will only work if you use Distiller 2.1 or higher.

```

11352 \def\hyper@linkurl#1#2{%
11353   \begingroup
11354   \Hy@pstringdef\Hy@pstringURI{#2}%
11355   \hyper@chars
11356   \leavevmode
11357   \pdfmark[{#1}]{%
11358     pdfmark=/ANN,%
11359     linktype=url,%
11360     AcroHighlight=\@pdfhighlight,%
11361     Border=\@pdfborder,%
11362     BorderStyle=\@pdfborderstyle,%
11363     Color=\@urlbordercolor,%
11364     Action={<<%
11365       /Subtype/URI%
11366       /URI(\Hy@pstringURI)%
11367       \ifHy@href@ismap
11368       /IsMap true%
11369     }%
11370     >>},%
11371     Subtype=/Link,%
11372     PDFAFlags=4%
11373   }%
11374   \endgroup
11375 }
11376 \def\hyper@linkfile#1#2#3{%
11377   \begingroup
11378   \def\Hy@pstringF{#2}%
11379   \Hy@CleanupFile\Hy@pstringF
11380   \Hy@pstringdef\Hy@pstringF\Hy@pstringF
11381   \Hy@pstringdef\Hy@pstringD{#3}%
11382   \Hy@MakeRemoteAction
11383   \leavevmode
11384   \pdfmark[{#1}]{%
11385     pdfmark=/ANN,%
11386     Subtype=/Link,%
11387     PDFAFlags=4,%
11388     AcroHighlight=\@pdfhighlight,%
11389     Border=\@pdfborder,%
11390     BorderStyle=\@pdfborderstyle,%
11391     linktype=file,%
11392     Color=\@filebordercolor,%
11393     Action={%
11394       <<%
11395       /S/GoToR%

```

```

11396      \Hy@SetNewWindow
11397      /F(\Hy@pstringF)%
11398      /D%
11399      \ifx\#3\%
11400      [\Hy@href@page\@pdfremotestartview]%
11401      \else
11402      (\Hy@pstringD)cvn%
11403      \fi
11404      \Hy@href@nextactionraw
11405      >>%
11406      }%
11407      }%
11408      \endgroup
11409 }
11410 \def\@hyper@launch run:#1\#2#3{%
11411   \begingroup
11412   \Hy@pstringdef\Hy@pstringF{#1}%
11413   \Hy@pstringdef\Hy@pstringP{#3}%
11414   \leavevmode
11415   \pdfmark[{#2}]{%
11416     pdfmark=/ANN,%
11417     Subtype=/Link,%
11418     PDFAFlags=4,%
11419     AcroHighlight=\@pdfhighlight,%
11420     Border=\@pdfborder,%
11421     BorderStyle=\@pdfborderstyle,%
11422     linktype=run,%
11423     Color=\@runbordercolor,%
11424     Action={%
11425       <<%
11426       /S/Launch%
11427       \Hy@SetNewWindow
11428       /F(\Hy@pstringF)%
11429       \ifx\#3\%
11430       \else
11431       /Win<</P(\Hy@pstringP)/F(\Hy@pstringF)>>%
11432       \fi
11433       \Hy@href@nextactionraw
11434       >>%
11435       }%
11436       }%
11437     \endgroup
11438   }
11439 }</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.

```

11440 (*dvips)
11441 \providecommand*\XR@ext}{pdf}
11442 \def\Hy@raisedlink{}
11443 \def\literalps@out#1{\special{ps:SDict begin #1 end}}%

```



```

11444 \def\headerps@out#1{\special{! #1}}%
11445 \input{pdfmark.def}%
11446 \ifx\@pdfproducer\relax
11447 \def\@pdfproducer{dvips + Distiller}%
11448 \fi
11449 \providecommand*\@pdfborder{0 0 1}
11450 \providecommand*\@pdfborderstyle{}
11451 \providecommand*\@pdfview{XYZ}
11452 \providecommand*\@pdfviewparams{ H.V}
11453 \def\Hy@BorderArrayPatch{BorderArrayPatch}
11454 \g@addto@macro\Hy@FirstPageHook{%
11455 \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.

```

11456 /DvipsToPDF{72.27 mul Resolution div} def%
11457 /PDFToDvips{72.27 div Resolution mul} def%
11458 /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.

```

11459 /BorderArrayPatch{%
11460 [exch{%
11461 dup dup type/integertype eq exch type/realtype eq or%
11462 {BPToDvips}if%
11463 }forall]%
11464 }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.

```

11465 /HyperBorder {1 PDFToDvips} def%
11466 /H.V {pdf@hoff pdf@voff null} def%
11467 /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

```

11468 /H.S {%
11469 currentpoint %
11470 HyperBorder add /pdf@lly exch def %
11471 dup DvipsToPDF 72 add /pdf@hoff exch def %
11472 HyperBorder sub /pdf@llx exch def%
11473 } def%

```

The calculation of upper left  $y$  is done without raising the point in  $\text{\TeX}$ , by simply adding on the current  $\backslash$ 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

```

11474 /H.L {%
11475 2 sub dup%
11476 /HyperBasePt exch def %
11477 PDFToDvips /HyperBaseDvips exch def %
11478 currentpoint %
11479 HyperBaseDvips sub /pdf@ury exch def%
11480 /pdf@urx exch def%
11481 } def%
11482 /H.A {%
11483 H.L %
11484 % | /pdf@voff| = the distance from the top of the page to a point
11485 % | \baselineskip| above the current point in PDF coordinates
11486 currentpoint exch pop %
11487 vsize 72 sub exch DvipsToPDF %
11488 HyperBasePt sub % baseline skip
11489 sub /pdf@voff exch def%
11490 } def%
11491 /H.R {%
11492 currentpoint %
11493 HyperBorder sub /pdf@ury exch def %
11494 HyperBorder add /pdf@urx exch def %
11495 % | /pdf@voff| = the distance from the top of the page to the current point, in
11496 % PDF coordinates
11497 currentpoint exch pop vsize 72 sub %
11498 exch DvipsToPDF sub /pdf@voff exch def%
11499 } def%
11500 }%
11501 }
11502 \AtBeginShipoutFirst{%
11503 \ifHy@setpagesize
11504 \begingroup
11505 \@ifundefined{stockwidth}{%
11506 \ifdim\paperwidth>\z@
11507 \ifdim\paperheight>\z@
11508 \special{papersize=\the\paperwidth,\the\paperheight}%
11509 \fi
11510 \fi
11511 }{%
11512 \ifdim\stockwidth>\z@
11513 \ifdim\stockheight>\z@
11514 \special{papersize=\the\stockwidth,\the\stockheight}%
11515 \fi
11516 \fi
11517 }%
11518 \endgroup
11519 \fi
11520 \Hy@DisableOption{setpagesize}%
11521 }
11522 </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.

```

11523 <*vtexpdfmark>
11524 \providecommand*\XR@ext}{pdf}
11525 \def\Hy@raisedlink{}
11526 \def\literalps@out#1{\special{pS:#1}}%
11527 \def\headerps@out#1{\immediate\special{pS:#1}}%
11528 \input{pdfmark.def}%
11529 \ifx\@pdfproducer\relax
11530   \ifnum\OpMode=\@ne
11531     \def\@pdfproducer{VTeX}%
11532   \else
11533     \def\@pdfproducer{VTeX + Distiller}%
11534   \fi
11535 \fi
11536 \providecommand*\@pdfborder{0 0 1}
11537 \providecommand*\@pdfborderstyle{}
11538 \providecommand*\@pdfview{XYZ}
11539 \providecommand*\@pdfviewparams{ H.V}

11540 \g@addto@macro\Hy@FirstPageHook{%
11541   \headerps@out{%
11542     /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.

```

11543   /HyperBorder {1} def%
11544   /H.V {pdf@hoff pdf@voff null} def%
11545   /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:  $\text{pdf@lly} = Y_c - \text{HyperBorder}$ ,  $\text{pdf@hoff} = X_c + 72$ ,  $\text{pdf@llx} = X_c - \text{HyperBorder}$

```

11546   /H.S {%
11547     currentpoint %
11548     HyperBorder sub%
11549     /pdf@lly exch def %
11550     dup 72 add /pdf@hoff exch def %
11551     HyperBorder sub%
11552     /pdf@llx exch def%
11553   } def%

```

The  $x$  and  $y$  coordinates of the current point, minus the `\baselineskip`:  $\text{pdf@ury} = Y_c + \text{HyperBasePt} + \text{HyperBorder}$ ,  $\text{pdf@urx} = X_c + \text{HyperBorder}$

```

11554   /H.L {%
11555     2 sub%
11556     /HyperBasePt exch def %
11557     currentpoint %
11558     HyperBasePt add HyperBorder add%
11559     /pdf@ury exch def %
11560     HyperBorder add%
11561     /pdf@urx exch def%
11562   } def%
11563   /H.A {%
11564     H.L %
11565     currentpoint exch pop %
11566     vsize 72 sub exch %

```

```

11567   HyperBasePt add add%
11568   /pdf@voff exch def%
11569   } def%

pdf@ury =  $Y_c$  + HyperBorder, pdf@urx =  $X_c$  + HyperBorder
11570   /H.R {%
11571     currentpoint %
11572     HyperBorder add%
11573     /pdf@ury exch def %
11574     HyperBorder add%
11575     /pdf@urx exch def %
11576     currentpoint exch pop vsize 72 sub add%
11577     /pdf@voff exch def%
11578   } def%
11579 }%
11580 }
11581 </vtxpdfmark>

```

## 46.11 Textures

```

11582 <*textures>
11583 \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.

```

11584 \begingroup
11585   \obeylines %
11586   \gdef\Hy@ps@CR{\noexpand
11587   }%
11588 \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`.

```

11589 \def\literalps@out#1{%
11590   \special{postscript 0 0 transform}%
11591   \special{rawpostscript itransform moveto\Hy@ps@CR #1}%
11592 }%
11593 %

```

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.

```

11594 \def\headerps@out#1{%
11595   \special{%

```

```

11596   prepostscript TeXdict begin\Hy@ps@CR
11597     #1\Hy@ps@CR
11598   end%
11599 }%
11600 }%
11601 %

```

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.

```

11602 \g@addto@macro\Hy@FirstPageHook{%
11603   \headerps@out{%
11604     /betterpdfmark {%
11605       systemdict begin %
11606         dup /BP eq%
11607         {cleartomark gsave nulldevice []}%
11608         {dup /EP eq%
11609           {cleartomark cleartomark grestore}%
11610           {cleartomark}%
11611         }ifelse%
11612       }ifelse %
11613     end%
11614   }def\Hy@ps@CR
11615   ___pdfmark___ not{/pdfmark /betterpdfmark load def}if%
11616 }% end of \headerps@out
11617 }% end of \AtBeginShipoutFirst
11618 %
11619 \input{pdfmark.def}%
11620 %
11621 \ifx\@pdfproducer\relax
11622   \def\@pdfproducer{Textures + Distiller}%
11623 \fi
11624 \providecommand*\@pdfborder{0 0 1}
11625 \providecommand*\@pdfborderstyle{}
11626 \providecommand*\@pdfview{XYZ}
11627 \providecommand*\@pdfviewparams{ H.V}
11628 %

```

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  $\TeX$ .

```

11629 \Hy@AtBeginDocument{%
11630   \headerps@out{%

```

Textures lives in normal points, I think. So conversion from one coordinate system to another involves doing nothing.

```

11631   /vsize {\Hy@pageheight} def%
11632   /DvipsToPDF {} def%
11633   /PDFToDvips {} def%
11634   /BPTToDvips {} def%
11635   /HyperBorder { 1 PDFToDvips } def\Hy@ps@CR
11636   /H.V {pdf@hoff pdf@voff null} def\Hy@ps@CR
11637   /H.B {/Rect[pdf@llx pdf@lly pdf@urx pdf@ury]} def\Hy@ps@CR
11638   /H.S {}%
11639   currentpoint %
11640   HyperBorder add /pdf@lly exch def %
11641   dup DvipsToPDF 72 add /pdf@hoff exch def %

```

```

11642   HyperBorder sub /pdf@llx exch def%
11643   } def\Hy@ps@CR
11644   /H.L {%
11645     2 sub %
11646     PDFToDvips /HyperBase exch def %
11647     currentpoint %
11648     HyperBase sub /pdf@ury exch def%
11649     /pdf@urx exch def%
11650   } def\Hy@ps@CR
11651   /H.A {%
11652     H.L %
11653     currentpoint exch pop %
11654     vsize 72 sub exch DvipsToPDF %
11655     HyperBase sub % baseline skip
11656     sub /pdf@voff exch def%
11657   } def\Hy@ps@CR
11658   /H.R {%
11659     currentpoint %
11660     HyperBorder sub /pdf@ury exch def %
11661     HyperBorder add /pdf@urx exch def %
11662     currentpoint exch pop vsize 72 sub %
11663     exch DvipsToPDF sub /pdf@voff exch def%
11664   } def\Hy@ps@CR
11665   }%
11666 }

11667 \Hy@AtBeginDocument{%
11668   \ifHy@colorlinks
11669     \headerps@out{/PDFBorder{/Border [0 0 0]}def}%
11670   \fi
11671 }

```

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.

```

11672 \expandafter\let\expandafter\keepPDF@SetupDoc
11673   \csname PDF@SetupDoc\endcsname
11674 \def\PDF@SetupDoc{%
11675   \ifx\@baseurl\@empty
11676   \else
11677     \special{html:<base href="\@baseurl">}%
11678   \fi
11679   \keepPDF@SetupDoc
11680 }

11681 \Hy@WrapperDef\hyper@anchor#1{%
11682   \Hy@SaveLastskip
11683   \Hy@VerboseAnchor{#1}%
11684   \begingroup
11685     \let\protect=\string
11686     \special{html:<a name=%
11687       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
11688   \endgroup
11689   \Hy@activeanchortrue
11690   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
11691   \special{html:</a>}%
11692   \Hy@activeanchorfalse
11693   \Hy@RestoreLastskip
11694 }
11695 \Hy@WrapperDef\hyper@anchorstart#1{%

```

```

11696 \Hy@SaveLastskip
11697 \Hy@VerboseAnchor{#1}%
11698 \begingroup
11699 \hyper@chars
11700 \special{html:<a name=%
11701 \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
11702 \endgroup
11703 \Hy@activeanchortrue
11704 }
11705 \def\hyper@anchorend{%
11706 \special{html:</a>}%
11707 \Hy@activeanchorfalse
11708 \Hy@RestoreLastskip
11709 }
11710 \def\@urltype{url}
11711 \def\hyper@linkstart#1#2{%
11712 \Hy@VerboseLinkStart{#1}{#2}%
11713 \expandafter\Hy@colorlink\csname @#1color\endcsname
11714 \def\Hy@tempa{#1}%
11715 \ifx\Hy@tempa\@urltype
11716 \special{html:<a href=\hyper@quote#2\hyper@quote>}%
11717 \else
11718 \begingroup
11719 \hyper@chars
11720 \special{%
11721 html:<a href=%
11722 \hyper@quote\#\HyperDestNameFilter{#2}\hyper@quote>%
11723 }%
11724 \endgroup
11725 \fi
11726 }
11727 \def\hyper@linkend{%
11728 \special{html:</a>}%
11729 \Hy@endcolorlink
11730 }
11731 \def\hyper@linkfile#1#2#3{%
11732 \hyper@linkurl{#1}{%
11733 \Hy@linkfileprefix#2\ifx\\#3\\\else\##3\fi
11734 }%
11735 }
11736 \def\hyper@linkurl#1#2{%
11737 \leavevmode
11738 \ifHy@raiselinks
11739 \Hy@SaveSpaceFactor
11740 \Hy@SaveSavedSpaceFactor
11741 \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
11742 \Hy@RestoreSavedSpaceFactor
11743 \@linkdim\dp\@tempboxa
11744 \lower\@linkdim\hbox{%
11745 \hyper@chars
11746 \special{html:<a href=\hyper@quote#2\hyper@quote>}%
11747 }%
11748 \Hy@colorlink\@urlcolor
11749 \Hy@RestoreSpaceFactor
11750 #1%
11751 \Hy@SaveSpaceFactor
11752 \@linkdim\ht\@tempboxa

```

```

11753 \advance\@linkdim by -6.5\p@
11754 \raise\@linkdim\hbox{\special{html:</a>}}%
11755 \Hy@endcolorlink
11756 \Hy@RestoreSpaceFactor
11757 \else
11758 \begingroup
11759 \hyper@chars
11760 \special{html:<a href=\hyper@quote#2\hyper@quote>}%
11761 \Hy@colorlink\@urlcolor#1%
11762 \special{html:</a>}%
11763 \Hy@endcolorlink
11764 \endgroup
11765 \fi
11766 }

```

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

```

11767 \def\hyper@link#1#2#3{%
11768 \Hy@VerboseLinkStart{#1}{#2}%
11769 \hyper@linkurl{#3}{\# \Hy@DestNameFilter{#2}}%
11770 }
11771 \def\hyper@image#1#2{%
11772 \begingroup
11773 \hyper@chars
11774 \special{html:<img src=\hyper@quote#1\hyper@quote>}%
11775 \endgroup
11776 }
11777 </textures>

```

## 46.12 dvipsone

```

11778 % \subsection{dvipsone driver}
11779 % Over-ride the default setup macro in pdfmark driver to use Y\&Y
11780 % |\special| commands.
11781 <*dvipsone>
11782 \providecommand*{\XR@ext}{pdf}
11783 \def\Hy@raisedlink{}
11784 \providecommand*\@pdfborder{0 0 1}
11785 \providecommand*\@pdfborderstyle{}
11786 \def\literalps@out#1{\special{ps:#1}}%
11787 \def\headerps@out#1{\special{headertext=#1}}%
11788 \input{pdfmark.def}%
11789 \ifx\@pdfproducer\relax
11790 \def\@pdfproducer{dvipsone + Distiller}%
11791 \fi
11792 \HyInfo@AddonUnsupportedtrue
11793 \def\PDF@FinishDoc{%
11794 \Hy@UseMaketitleInfos
11795 \HyInfo@TrappedUnsupported
11796 \special{PDF: Keywords \@pdfkeywords}%
11797 \special{PDF: Title \@pdftitle}%
11798 \special{PDF: Creator \@pdfcreator}%
11799 \ifx\@pdfcreationdate\@empty
11800 \else
11801 \special{PDF: CreationDate \@pdfcreationdate}%
11802 \fi
11803 \ifx\@pdfmoddate\@empty
11804 \else
11805 \special{PDF: ModDate \@pdfmoddate}%

```



```

11806 \fi
11807 \special{PDF: Author \@pdfauthor}%
11808 \ifx\@pdfproducer\relax
11809 \else
11810 \special{PDF: Producer \@pdfproducer}%
11811 \fi
11812 \special{PDF: Subject \@pdfsubject}%
11813 \Hy@DisableOption{pdfauthor}%
11814 \Hy@DisableOption{pdftitle}%
11815 \Hy@DisableOption{pdfsubject}%
11816 \Hy@DisableOption{pdfcreator}%
11817 \Hy@DisableOption{pdfcreationdate}%
11818 \Hy@DisableOption{pdfmoddate}%
11819 \Hy@DisableOption{pdfproducer}%
11820 \Hy@DisableOption{pdfkeywords}%
11821 \Hy@DisableOption{pdftrapped}%
11822 \Hy@DisableOption{pdfinfo}%
11823 }
11824 \def\PDF@SetupDoc{%
11825 \def\Hy@temp{}%
11826 \ifx\@pdfstartpage\@empty
11827 \else
11828 \ifx\@pdfstartview\@empty
11829 \else
11830 \edef\Hy@temp{%
11831 ,Page=\@pdfstartpage
11832 ,View=\@pdfstartview
11833 }%
11834 \fi
11835 \fi
11836 \edef\Hy@temp{%
11837 \noexpand\pdfmark{%
11838 pdfmark=/DOCVIEW,%
11839 PageMode=/\@pdfpagemode
11840 \Hy@temp
11841 }%
11842 }%
11843 \Hy@temp
11844 \ifx\@pdfpagescrop\@empty
11845 \else
11846 \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
11847 \fi
11848 \edef\Hy@temp{%
11849 \ifHy@toolbar\else /HideToolbar true\fi
11850 \ifHy@menubar\else /HideMenubar true\fi
11851 \ifHy>windowui\else /HideWindowUI true\fi
11852 \ifHy@fitwindow /FitWindow true\fi
11853 \ifHy@centerwindow /CenterWindow true\fi
11854 \ifHy@displaydoctitle /DisplayDocTitle true\fi
11855 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
11856 \Hy@UseNameKey{Direction}\@pdfdirection
11857 \Hy@UseNameKey{ViewArea}\@pdfviewarea
11858 \Hy@UseNameKey{ViewClip}\@pdfviewclip
11859 \Hy@UseNameKey{PrintArea}\@pdfprintarea
11860 \Hy@UseNameKey{PrintClip}\@pdfprintclip
11861 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
11862 \Hy@UseNameKey{Duplex}\@pdfduplex

```

```

11863 \ifx\@pdfpicktraybypdfsize\@empty
11864 \else
11865   /PickTrayByPDFSize \@pdfpicktraybypdfsize
11866 \fi
11867 \ifx\@pdfprintpagerange\@empty
11868 \else
11869   /PrintPageRange[\@pdfprintpagerange]%
11870 \fi
11871 \ifx\@pdfnumcopies\@empty
11872 \else
11873   /NumCopies \@pdfnumcopies
11874 \fi
11875 }%
11876 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
11877 \pdfmark{%
11878   pdfmark=/PUT,%
11879   Raw={%
11880     \string{Catalog\string}<<%
11881     \ifx\Hy@temp\@empty
11882     \else
11883       /ViewerPreferences<<\Hy@temp>>%
11884     \fi
11885     \Hy@UseNameKey{PageLayout}\@pdfpagelayout
11886     \ifx\@pdflang\@empty
11887     \else
11888       /Lang(\@pdflang)%
11889     \fi
11890     \ifx\@baseurl\@empty
11891     \else
11892       /URI<</Base(\Hy@pstringB)>>%
11893     \fi
11894     >>%
11895   }%
11896 }%
11897 }
11898 \providecommand*\@pdfview{XYZ}
11899 \providecommand*\@pdfviewparams{ %
11900   gsave revscl currentpoint grestore %
11901   72 add exch pop null exch null%
11902 }
11903 \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  $\TeX$ .

```

11904 \g@addto@macro\Hy@FirstPageHook{%
11905   \headerps@out{%

```

dvipsone lives in scaled points; does this mean 65536 or 65781?

```

11906   /DvipsToPDF { 65781 div } def%
11907   /PDFToDvips { 65781 mul } def%
11908   /BPTToDvips{65781 mul}def%
11909   /HyperBorder { 1 PDFToDvips } def%
11910   /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.

```

11911 /BorderArrayPatch{%
11912   [exch{%
11913     dup dup type/integertype eq exch type/realtype eq or%
11914     {BPToDvips}if%
11915   }forall]%
11916 }def%
11917 /H.S {%
11918   currentpoint %
11919   HyperBorder add /pdf@lly exch def %
11920   dup DvipsToPDF 72 add /pdf@hoff exch def %
11921   HyperBorder sub /pdf@llx exch def%
11922 } def%
11923 /H.L {%
11924   2 sub %
11925   PDFToDvips /HyperBase exch def %
11926   currentpoint %
11927   HyperBase sub /pdf@ury exch def%
11928   /pdf@urx exch def%
11929 } def%
11930 /H.A {%
11931   H.L %
11932   currentpoint exch pop %
11933   HyperBase sub % baseline skip
11934   DvipsToPDF /pdf@voff exch def%
11935 } def%
11936 /H.R {%
11937   currentpoint %
11938   HyperBorder sub /pdf@ury exch def %
11939   HyperBorder add /pdf@urx exch def %
11940   currentpoint exch pop DvipsToPDF /pdf@voff exch def%
11941 } def%
11942 }%
11943 }
11944 (/dvipsone)

```

## 46.13 TeX4ht

```

11945 <*tex4ht>
11946 \providecommand*{\XR@ext}{html}
11947 \def\Hy@raisedlink{}
11948 \@ifpackageloaded{tex4ht}{%
11949   \Hy@InfoNoLine{tex4ht is already loaded}%
11950 }{%
11951   \RequirePackage[hTeX4ht]{tex4ht}%
11952 }
11953 \hyperlinkfileprefix{}
11954 \def\PDF@FinishDoc{}
11955 \def\PDF@SetupDoc{%
11956   \ifx\@baseurl\@empty
11957   \else
11958     \special{t4ht=<base href="\@baseurl">}%
11959   \fi
11960 }
11961 \Hy@WrapperDef\hyper@anchor#1{%
11962   \Hy@SaveLastskip
11963   \Hy@VerboseAnchor{#1}%
11964   \begingroup

```

```

11965 \let\protect=\string
11966 \special{t4ht=<a name=%
11967 \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
11968 \endgroup
11969 \Hy@activeanchortrue
11970 \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
11971 \special{t4ht=</a>}%
11972 \Hy@activeanchorfalse
11973 \Hy@RestoreLastskip
11974 }
11975 \Hy@WrapperDef\hyper@anchorstart#1{%
11976 \Hy@SaveLastskip
11977 \Hy@VerboseAnchor{#1}%
11978 \begingroup
11979 \hyper@chars\special{t4ht=<a name=%
11980 \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
11981 \endgroup
11982 \Hy@activeanchortrue
11983 }
11984 \def\hyper@anchorend{%
11985 \special{t4ht=</a>}%
11986 \Hy@activeanchorfalse
11987 \Hy@RestoreLastskip
11988 }
11989 \def\@urlltype{url}
11990 \def\hyper@linkstart#1#2{%
11991 \Hy@VerboseLinkStart{#1}{#2}%
11992 \expandafter\Hy@colorlink\csname @#1color\endcsname
11993 \def\Hy@tempa{#1}%
11994 \ifx\Hy@tempa\@urlltype
11995 \special{t4ht=<a href=\hyper@quote#2\hyper@quote>}%
11996 \else
11997 \begingroup
11998 \hyper@chars
11999 \special{t4ht=<a href=%
12000 \hyper@quote\#1\HyperDestNameFilter{#2}\hyper@quote>}%
12001 \endgroup
12002 \fi
12003 }
12004 \def\hyper@linkend{%
12005 \special{t4ht=</a>}%
12006 \Hy@endcolorlink
12007 }
12008 \def\hyper@linkfile#1#2#3{%
12009 \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\else\##3\fi}%
12010 }
12011 \def\hyper@linkurl#1#2{%
12012 \leavevmode
12013 \ifHy@raiselinks
12014 \Hy@SaveSpaceFactor
12015 \Hy@SaveSavedSpaceFactor
12016 \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
12017 \Hy@RestoreSavedSpaceFactor
12018 \@linkdim\dp\@tempboxa
12019 \lower\@linkdim\hbox{%
12020 \begingroup
12021 \hyper@chars

```

```

12022 \special{%
12023 t4ht=<a href=\hyper@quote#2\hyper@quote>%
12024 }%
12025 \endgroup
12026 }%
12027 \Hy@colorlink\@urlcolor
12028 \Hy@RestoreSpaceFactor
12029 #1%
12030 \Hy@SaveSpaceFactor
12031 \Hy@endcolorlink
12032 \@linkdim\ht\@tempboxa
12033 \advance\@linkdim by -6.5\p@
12034 \raise\@linkdim\hbox{\special{t4ht=</a>}}%
12035 \Hy@RestoreSpaceFactor
12036 \else
12037 \begingroup
12038 \hyper@chars
12039 \special{t4ht=<a href=\hyper@quote#2\hyper@quote>}%
12040 \Hy@colorlink\@urlcolor#1\Hy@endcolorlink
12041 \special{t4ht=</a>}%
12042 \endgroup
12043 \fi
12044 }

```

Poor implementation of \hyper@link without considering #1.

```

12045 \def\hyper@link#1#2#3{%
12046 \Hy@VerboseLinkStart{#1}{#2}%
12047 \hyper@linkurl{#3}{\#\HyperDestNameFilter{#2}}%
12048 }
12049 \def\hyper@image#1#2{%
12050 \begingroup
12051 \hyper@chars
12052 \special{t4ht=<img src=\hyper@quote#1\hyper@quote>}%
12053 \endgroup
12054 }
12055 \let\autoref\ref
12056 \ifx \rEfLiNK \UnDef
12057 \def\rEfLiNK #1#2{#2}%
12058 \fi
12059 \def\backref#1{}

```

Fix for tex4ht.

```

12060 \AtBeginDocument{%
12061 \expandafter\let\expandafter\Hy@OrgMakeLabel\csname Make:Label\endcsname
12062 \expandafter\def\csname Make:Label\endcsname#1#2{%
12063 \ifhmode
12064 \Hy@SaveSpaceFactor
12065 \else
12066 \global\Hy@SavedSpaceFactor=1000 %
12067 \fi
12068 \Hy@OrgMakeLabel{#1}{#2}%
12069 \Hy@RestoreSpaceFactor
12070 #2%
12071 \Hy@SaveSpaceFactor
12072 }%
12073 \Hy@RestoreSpaceFactor
12074 }%
12075 }
12076 </tex4ht>

```

```

12077 <*tex4htcfg>
12078 \IfFileExists{\jobname.cfg}{\endinput}{}
12079 \Preamble{html}
12080 \begin{document}%
12081 \EndPreamble
12082 \def\TeX{\TeX}
12083 \def\OMEGA{\Omega}
12084 \def\LaTeX{\LaTeX}
12085 \def\LaTeXe{\LaTeX2e}
12086 \def\TeXe{\TeX}
12087 \def\MF{Metafont}
12088 \def\MP{MetaPost}
12089 </tex4htcfg>

```

## 47 Driver-specific form support

### 47.1 pdfmarks

```

12090 <*pdfmark>
12091 \long\def\@Form[#1]{%
12092 \g@addto@macro\Hy@FirstPageHook{%
12093 \headerps@out{%
12094 [%
12095 /_objdef{pdfDocEncoding}%
12096 /type/dict%
12097 /OBJ pdfmark%
12098 [%
12099 {pdfDocEncoding}%
12100 <<%
12101 /Type/Encoding%
12102 /Differences[%
12103 24/breve/caron/circumflex/dotaccent/hungarumlaut/ogonek/ring%
12104 /tilde %
12105 39/quotesingle %
12106 96/grave %
12107 128/bullet/dagger/daggerdbl/ellipsis/emdash/endash/florin%
12108 /fraction/guilsinglleft/guilsinglright/minus/perthousand%
12109 /quotedblbase/quotedblleft/quotedblright/quoteleft%
12110 /quoteright/quotesinglbase/trademark/fi/fl/Lslash/OE/Scaron%
12111 /Ydieresis/Zcaron/dotlessi/lslash/oe/scaron/zcaron %
12112 164/currency %
12113 166/brokenbar %
12114 168/dieresis/copyright/ordfeminine %
12115 172/logicalnot/.notdef/registered/macron/degree/plusminus%
12116 /twosuperior/threesuperior/acute/mu %
12117 183/periodcentered/cedilla/onesuperior/ordmasculine %
12118 188/onequarter/onehalf/threequarters %
12119 192/Agrave/Aacute/Acircumflex/Atilde/Adieresis/Aring/AE%
12120 /Ccedilla/Egrave/Eacute/Ecircumflex/Edieresis/Igrave%
12121 /Iacute/Icircumflex/Idieresis/Eth/Ntilde/Ograve/Oacute%
12122 /Ocircumflex/Otilde/Odieresis/multiply/Oslash/Ugrave%
12123 /Uacute/Ucircumflex/Udieresis/Yacute/Thorn/germandbls%
12124 /agrave/aacute/acircumflex/atilde/adieresis/aring/ae%
12125 /ccedilla/egrave/eacute/ecircumflex/edieresis/igrave%
12126 /iacute/icircumflex/idieresis/eth/ntilde/ograde/oacute%
12127 /ocircumflex/otilde/odieresis/divide/oslash/ugrave/uacute%
12128 /ucircumflex/udieresis/yacute/thorn/ydieresis%
12129 ]%

```

```

12130 >>%
12131 /PUT pdfmark%
12132 [%
12133   /__objdef{ZaDb}%
12134   /type/dict%
12135 /OBJ pdfmark%
12136 [%
12137   {ZaDb}%
12138 <<%
12139   /Type/Font%
12140   /Subtype/Type1%
12141   /Name/ZaDb%
12142   /BaseFont/ZapfDingbats%
12143 >>%
12144 /PUT pdfmark%
12145 [%
12146   /__objdef{Helv}%
12147   /type/dict%
12148 /OBJ pdfmark%
12149 [%
12150   {Helv}%
12151 <<%
12152   /Type/Font%
12153   /Subtype/Type1%
12154   /Name/Helv%
12155   /BaseFont/Helvetica%
12156   /Encoding{pdfDocEncoding}%
12157 >>%
12158 /PUT pdfmark%
12159 [%
12160   /__objdef{aform}%
12161   /type/dict%
12162 /OBJ pdfmark%
12163 [%
12164   /__objdef{afields}%
12165   /type/array%
12166 /OBJ pdfmark%
12167 {%
12168   [%
12169     /BBox[0 0 100 100]%
12170     /__objdef{Check}%
12171 /BP pdfmark %
12172 1 0 0 setrgbcolor%
12173 /ZapfDingbats 80 selectfont %
12174 20 20 moveto%
12175 (4)show%
12176 [/EP pdfmark%
12177 [%
12178   /BBox[0 0 100 100]%
12179   /__objdef{Cross}%
12180 /BP pdfmark %
12181 1 0 0 setrgbcolor%
12182 /ZapfDingbats 80 selectfont %
12183 20 20 moveto%
12184 (8)show%
12185 [/EP pdfmark%
12186 [%

```

```

12187 /BBox[0 0 250 100]%
12188 /_objdef{Submit}%
12189 /BP pdfmark %
12190 0.6 setgray %
12191 0 0 250 100 rectfill %
12192 1 setgray %
12193 2 2 moveto %
12194 2 98 lineto %
12195 248 98 lineto %
12196 246 96 lineto %
12197 4 96 lineto %
12198 4 4 lineto %
12199 fill %
12200 0.34 setgray %
12201 248 98 moveto %
12202 248 2 lineto %
12203 2 2 lineto %
12204 4 4 lineto %
12205 246 4 lineto %
12206 246 96 lineto %
12207 fill%
12208 /Helvetica 76 selectfont %
12209 0 setgray %
12210 8 22.5 moveto%
12211 (Submit)show%
12212 [/EP pdfmark%
12213 [%
12214 /BBox[0 0 250 100]%
12215 /_objdef{SubmitP}%
12216 /BP pdfmark %
12217 0.6 setgray %
12218 0 0 250 100 rectfill %
12219 0.34 setgray %
12220 2 2 moveto %
12221 2 98 lineto %
12222 248 98 lineto %
12223 246 96 lineto %
12224 4 96 lineto %
12225 4 4 lineto %
12226 fill %
12227 1 setgray %
12228 248 98 moveto %
12229 248 2 lineto %
12230 2 2 lineto %
12231 4 4 lineto %
12232 246 4 lineto %
12233 246 96 lineto %
12234 fill%
12235 /Helvetica 76 selectfont %
12236 0 setgray %
12237 10 20.5 moveto%
12238 (Submit)show%
12239 [/EP pdfmark%
12240 } ?pdfmark%
12241 [%
12242 {aform}%
12243 <<%

```



```

12244 /Fields{afields}%
12245 /DR<<%
12246 /Font<<%
12247 /ZaDb{ZaDb}%
12248 /Helv{Helv}%
12249 >>%
12250 >>%
12251 /DA(/Helv 10 Tf 0 g)%
12252 /CO{corder}%
12253 \ifHy@pdfa
12254 \else
12255 \ifHyField@NeedAppearances
12256 /NeedAppearances true%
12257 \fi
12258 \fi
12259 >>%
12260 /PUT pdfmark%
12261 [%
12262 {Catalog}%
12263 <<%
12264 /AcroForm{aform}%
12265 >>%
12266 /PUT pdfmark%
12267 [%
12268 /__objdef{corder}%
12269 /type/array%
12270 /OBJ pdfmark% dps
12271 }]%
12272 \kvsetkeys{Form}{#1}%
12273 }
12274 \def\@endForm{}
12275 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
12276 \Hy\Message{Sorry, pdfmark drivers do not support FORM gauges}%
12277 }
12278 \def\@TextField[#1]#2{% parameters, label
12279 \def\Fld@name{#2}%
12280 \def\Fld@default{}%
12281 \let\Fld@value\@empty
12282 \def\Fld@width{\DefaultWidthofText}%
12283 \def\Fld@height{%
12284 \ifFld@multiline
12285 \DefaultHeightofTextMultiline
12286 \else
12287 \DefaultHeightofText
12288 \fi
12289 }%
12290 \begingroup
12291 \expandafter\HyField@SetKeys\expandafter{%
12292 \DefaultOptionsofText,#1%
12293 }%
12294 \HyField@FlagsText
12295 \ifFld@hidden\def\Fld@width{1sp}\fi
12296 \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
12297 \LayoutTextField{#2}{%
12298 \Hy@escapeform\PDFForm@Text
12299 \pdfmark[\MakeTextField{\Fld@width}{\Fld@height}]{%
12300 pdfmark=/ANN,Raw={\PDFForm@Text}%

```

```

12301 }%
12302 }%
12303 \endgroup
12304 }
12305 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
12306 \def\Fld@name{#2}%
12307 \let\Fld@default\relax
12308 \let\Fld@value\relax
12309 \def\Fld@width{\DefaultWidthofChoiceMenu}%
12310 \def\Fld@height{\DefaultHeightofChoiceMenu}%
12311 \begingroup
12312 \Fld@menulength=0 %
12313 \@tempdima\z@
12314 \@for\@curropt:=#3\do{%
12315 \expandafter\Fld@checkequals\@curropt==\%
12316 \Hy@StepCount\Fld@menulength
12317 \settowidth{\@tempdimb}{\@currDisplay}%
12318 \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
12319 }%
12320 \advance\@tempdima by 15\p@
12321 \begingroup
12322 \HyField@SetKeys{#1}%
12323 \edef\x{\endgroup
12324 \noexpand\expandafter
12325 \noexpand\HyField@SetKeys
12326 \noexpand\expandafter{%
12327 \expandafter\noexpand\csname DefaultOptionsof%
12328 \ifFld@radio
12329 Radio%
12330 \else
12331 \ifFld@combo
12332 \ifFld@popdown
12333 PopdownBox%
12334 \else
12335 ComboBox%
12336 \fi
12337 \else
12338 ListBox%
12339 \fi
12340 \fi
12341 \endcsname
12342 }%
12343 }\x
12344 \HyField@SetKeys{#1}%
12345 \ifFld@hidden\def\Fld@width{1sp}\fi
12346 \ifx\Fld@value\relax
12347 \let\Fld@value\Fld@default
12348 \fi
12349 \LayoutChoiceField{#2}{%
12350 \ifFld@radio
12351 \HyField@FlagsRadioButton
12352 \@@Radio{#3}%
12353 \else
12354 \begingroup
12355 \HyField@FlagsChoice
12356 \ifdim\Fld@width<\@tempdima
12357 \ifdim\@tempdima<1cm\@tempdima1cm\fi

```

```

12358         \edef\Fld@width{\the\@tempdima}%
12359     \fi
12360     \ifFld@combo
12361     \else
12362         \@tempdima=\the\Fld@menulength\Fld@charsize
12363         \advance\@tempdima by \Fld@borderwidth bp %
12364         \advance\@tempdima by \Fld@borderwidth bp %
12365         \edef\Fld@height{\the\@tempdima}%
12366     \fi
12367     \@@ListBox{#3}%
12368 \endgroup
12369 \fi
12370 }%
12371 \endgroup
12372 }
12373 \def\@@Radio#1{%
12374     \Fld@listcount=0 %
12375     \EdefEscapeName\Fld@default{\Fld@default}%
12376     \@for\@curropt:=#1\do{%
12377         \expandafter\Fld@checkequals\@curropt==\%
12378         \EdefEscapeName\@currValue{\@currValue}%
12379         \Hy@StepCount\Fld@listcount
12380         \@currDisplay\space
12381         \Hy@escapeform\PDFForm@Radio
12382         \pdfmark[\MakeRadioField{\Fld@width}{\Fld@height}]{%
12383             pdfmark=/ANN,%
12384             Raw={%
12385                 \PDFForm@Radio /AP <</N <</\@currValue\space {Check}>> >>%
12386             }%
12387         } % deliberate space between radio buttons
12388     }%
12389 }
12390 \newcount\Fld@listcount
12391 \def\@@ListBox#1{%
12392     \HyField@PDFChoices{#1}%
12393     \Hy@escapeform\PDFForm@List
12394     \pdfmark[\MakeChoiceField{\Fld@width}{\Fld@height}]{%
12395         pdfmark=/ANN,Raw={\PDFForm@List}%
12396     }%
12397 }
12398 \def\@PushButton[#1]#2{% parameters, label
12399     \def\Fld@name{#2}%
12400     \begingroup
12401         \expandafter\HyField@SetKeys\expandafter{%
12402             \DefaultOptionsofPushButton,#1%
12403         }%
12404         \ifHy@pdfa
12405             \Hy@Error{%
12406                 PDF/A: Push button with JavaScript is prohibited%
12407             }\@ehc
12408             \LayoutPushButtonField{%
12409                 \leavevmode
12410                 \MakeButtonField{#2}%
12411             }%
12412         \else
12413             \HyField@FlagsPushButton
12414             \ifFld@hidden\def\Fld@width{1sp}\fi

```

```

12415 \LayoutPushButtonField{%
12416 \leavevmode
12417 \Hy@escapeform\PDFForm@Push
12418 \pdfmark[\MakeButtonField{#2}]{%
12419 pdfmark=/ANN,Raw={\PDFForm@Push}%
12420 }%
12421 }%
12422 \fi
12423 \endgroup
12424 }
12425 \def\@Submit[#1]#2{%
12426 \def\Fld@width{\DefaultWidthofSubmit}%
12427 \def\Fld@height{\DefaultHeightofSubmit}%
12428 \begingroup
12429 \expandafter\HyField@SetKeys\expandafter{%
12430 \DefaultOptionsofSubmit,#1%
12431 }%
12432 \HyField@FlagsPushButton
12433 \HyField@FlagsSubmit
12434 \ifFld@hidden\def\Fld@width{1sp}\fi
12435 \Hy@escapeform\PDFForm@Submit
12436 \pdfmark[\MakeButtonField{#2}]{%
12437 pdfmark=/ANN,%
12438 Raw={\PDFForm@Submit /AP << /N {Submit} /D {SubmitP} >>}%
12439 }%
12440 \endgroup
12441 }
12442 \def\@Reset[#1]#2{%
12443 \def\Fld@width{\DefaultWidthofReset}%
12444 \def\Fld@height{\DefaultHeightofReset}%
12445 \begingroup
12446 \expandafter\HyField@SetKeys\expandafter{%
12447 \DefaultOptionsofReset,#1%
12448 }%
12449 \leavevmode
12450 \ifHy@pdfa
12451 \Hy@Error{%
12452 PDF/A: Reset action is prohibited%
12453 }\@ehc
12454 \MakeButtonField{#2}%
12455 \else
12456 \HyField@FlagsPushButton
12457 \ifFld@hidden\def\Fld@width{1sp}\fi
12458 \Hy@escapeform\PDFForm@Reset
12459 \pdfmark[\MakeButtonField{#2}]{%
12460 pdfmark=/ANN,Raw={\PDFForm@Reset}%
12461 }%
12462 \fi
12463 \endgroup
12464 }%
12465 \def\@CheckBox[#1]#2{% parameters, label
12466 \def\Fld@name{#2}%
12467 \def\Fld@default{0}%
12468 \begingroup
12469 \def\Fld@width{\DefaultWidthofCheckBox}%
12470 \def\Fld@height{\DefaultHeightofCheckBox}%
12471 \expandafter\HyField@SetKeys\expandafter{%

```

```

12472 \DefaultOptionsofCheckBox,#1%
12473 }%
12474 \HyField@FlagsCheckBox
12475 \ifFld@hidden\def\Fld@width{1sp}\fi
12476 \LayoutCheckField{#2}{%
12477 \Hy@escapeform\PDFForm@Check
12478 \pdfmark[\MakeCheckField{\Fld@width}{\Fld@height}]{%
12479 pdfmark=/ANN,Raw={\PDFForm@Check}%
12480 }%
12481 }%
12482 \endgroup
12483 }
12484 \pdfmark

```

## 47.2 HyperTeX

```

12485 \hypertex
12486 \def\@Form[#1]{\Hy@Message{Sorry, HyperTeX does not support FORMs}}
12487 \def\@endForm{}
12488 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
12489 \Hy@Message{Sorry, HyperTeX does not support FORM gauges}%
12490 }
12491 \def\@TextField[#1]#2{% parameters, label
12492 \Hy@Message{Sorry, HyperTeX does not support FORM text fields}%
12493 }
12494 \def\@CheckBox[#1]#2{% parameters, label
12495 \Hy@Message{Sorry, HyperTeX does not support FORM checkboxes}%
12496 }
12497 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
12498 \Hy@Message{Sorry, HyperTeX does not support FORM choice menus}%
12499 }
12500 \def\@PushButton[#1]#2{% parameters, label
12501 \Hy@Message{Sorry, HyperTeX does not support FORM pushbuttons}%
12502 }
12503 \def\@Reset[#1]#2{\Hy@Message{Sorry, HyperTeX does not support FORMs}}
12504 \def\@Submit[#1]#2{\Hy@Message{Sorry, HyperTeX does not support FORMs}}
12505 \hypertex

```

## 47.3 TeX4ht

```

12506 \tex4ht
12507 \def\@Form[#1]{%
12508 \kvsetkeys{Form}{#1}%
12509 \HCode{<form action="\Form@action" method="\Form@method">}%
12510 }
12511 \def\@endForm{\HCode{</form>}}
12512 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
12513 \Hy@Message{Sorry, TeX4ht does not support gauges}%
12514 }
12515 \def\@TextField[#1]#2{% parameters, label
12516 \let\Hy@reserved@a\@empty
12517 \def\Fld@name{#2}%
12518 \def\Fld@default{}%
12519 \bgroup
12520 \Field@toks={}%
12521 \kvsetkeys{Field}{#1}%
12522 \HCode{<label for="\Fld@name">#2</label>}%
12523 \ifFld@password
12524 \@@PasswordField

```

```

12525 \else
12526 \@@TextField
12527 \fi
12528 \egroup
12529 }
12530 \def\@@PasswordField{%
12531 \HCode{%
12532 <input type="password" %
12533 id="\Fld@name" %
12534 name="\Fld@name" %
12535 \ifFld@hidden type="hidden" \fi
12536 value="\Fld@default" %
12537 \the\Field@toks
12538 >%
12539 }%
12540 }
12541 \def\@@TextField{%
12542 \ifFld@multiline
12543 \HCode{<textarea %
12544 \ifFld@readonly readonly \fi
12545 id="\Fld@name" %
12546 name="\Fld@name" %
12547 \ifFld@hidden type="hidden" \fi
12548 \the\Field@toks>%
12549 }%
12550 \Fld@default
12551 \HCode{</textarea>}%
12552 \else
12553 \HCode{<input type="text" %
12554 \ifFld@readonly readonly \fi
12555 id="\Fld@name" %
12556 name="\Fld@name" %
12557 \ifFld@hidden type="hidden" \fi
12558 value="\Fld@default" %
12559 \the\Field@toks>%
12560 }%
12561 \fi
12562 }
12563 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
12564 \def\Fld@name{#2}%
12565 \def\Fld@default{#3}%
12566 \let\Hy@reserved@a\relax
12567 \begingroup
12568 \expandafter\Fld@findlength#3\\%
12569 \Field@toks={ }%
12570 \kvsetkeys{Field}{#1}%
12571 #2%
12572 \ifFld@radio
12573 \expandafter\@@Radio#3\\%
12574 \else
12575 \expandafter\@@Menu#3\\%
12576 \fi
12577 \endgroup
12578 }
12579 \def\Fld@findlength#1\\{%
12580 \Fld@menulength=0 %
12581 \@for\@curropt:=#1\do{\Hy@StepCount\Fld@menulength}%

```

```

12582 }
12583 \def\@@Menu#1\{\%
12584 \HCode{<select size="\the\Fld@menulength" %
12585   name="\Fld@name" %
12586   \the\Field@toks>%
12587 }%
12588 \@for\@curropt:=#1\do{%
12589   \expandafter\Fld@checkequals\@curropt==\%
12590   \HCode{<option %
12591     \ifx\@curropt\Fld@default selected \fi
12592     value="\@currValue">\@currDisplay</option>%
12593   }%
12594 }%
12595 \HCode{</select>}%
12596 }
12597 \def\@@Radio#1\{\%
12598 \@for\@curropt:=#1\do{%
12599   \expandafter\Fld@checkequals\@curropt==\%
12600   \HCode{<input type="radio" %
12601     \ifx\@curropt\Fld@default checked \fi
12602     name="\Fld@name" %
12603     value="\@currValue" %
12604     \the\Field@toks>%
12605   }%
12606   \@currDisplay
12607 }%
12608 }
12609 \def\@PushButton[#1]#2{% parameters, label
12610 \def\Fld@name{#2}%
12611 \bgroup
12612 \Field@toks={ }%
12613 \kvsetkeys{Field}{#1}%
12614 \HCode{<input type="button" %
12615   name="\Fld@name" %
12616   value="#2" %
12617   \the\Field@toks>%
12618 }%
12619 \HCode{</button>}%
12620 \egroup
12621 }
12622 \def\@Submit[#1]#2{%
12623 \HCode{<button type="submit">#2</button>}%
12624 }
12625 \def\@Reset[#1]#2{%
12626 \HCode{<button type="reset">#2</button>}%
12627 }
12628 \def\@CheckBox[#1]#2{% parameters, label
12629 \let\Hy@reserved@a\@empty
12630 \def\Fld@name{#2}%
12631 \def\Fld@default{0}%
12632 \bgroup
12633 \Field@toks={ }%
12634 \kvsetkeys{Field}{#1}%
12635 \HCode{<input type="checkbox" %
12636   \ifFld@checked checked \fi
12637   \ifFld@disabled disabled \fi
12638   \ifFld@readonly readonly \fi

```

```

12639     name="\Fld@name" %
12640     \ifFld@hidden type="hidden" \fi
12641     value="\Fld@default" %
12642     \the\Fld@toks>%
12643     #2%
12644   }%
12645 \egroup
12646 }
12647 </tex4ht>

```

## 47.4 pdfTeX

```

12648 <*pdfTeX>
12649 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
12650 \Hy@Message{Sorry, pdfTeX does not support FORM gauges}%
12651 }
12652 \def\MakeFieldObject#1#2{\sbox0{#1}%
12653 \immediate\pdfxform0 %
12654 \expandafter\edef\csname #2Object\endcsname{%
12655 \the\pdfastxform\space 0 R%
12656 }%
12657 % \hbox to 0pt{\hskip-\maxdimen{\pdfrefxform \the\pdfastxform}}}%
12658 }%
12659 \def\HyField@afields{}
12660 \begingroup\expandafter\expandafter\expandafter\endgroup
12661 \expandafter\ifx\csname pdfastlink\endcsname\relax
12662 \let\HyField@AddToFields\relax
12663 \PackageInfo{hyperref}{%
12664   You need pdfTeX 1.40.0 for setting the /Fields entry.%
12665   \MessageBreak
12666   Adobe Reader/Acrobat accepts an empty /Field array,%
12667   \MessageBreak
12668   but other PDF viewers might complain%
12669 }%
12670 \else
12671 \def\HyField@AuxAddToFields#1{%
12672 \def\HyField@AfterAuxOpen{\Hy@AtBeginDocument}%
12673 \Hy@AtBeginDocument{%
12674   \if@filesw
12675     \immediate\write\@mainaux{%
12676       \string\providecommand\string\HyField@AuxAddToFields[1]{}%
12677     }%
12678   \fi
12679   \let\HyField@AfterAuxOpen\@firstofone
12680   \def\HyField@AuxAddToFields#1{%
12681     \xdef\HyField@afields{%
12682       \ifx\HyField@afields\@empty
12683       \else
12684         \HyField@afields
12685       \space
12686     }%
12687     #1 0 R%
12688   }%
12689 }%
12690 }%
12691 \def\HyField@AddToFields{%
12692 \expandafter\HyField@@AddToFields\expandafter{%
12693   \the\pdfastlink

```



```

12694 }%
12695 }%
12696 \def\HyField@@AddToFields#1{%
12697 \HyField@AfterAuxOpen{%
12698 \if@filesw
12699 \write\@mainaux{%
12700 \string\HyField@AuxAddToFields{#1}%
12701 }%
12702 \fi
12703 }%
12704 }%
12705 \fi
12706 \def\@Form[#1]{%
12707 \ifundefined{textcolor}{\let\textcolor\@gobble}{}%
12708 \kvsetkeys{Form}{#1}%
12709 \pdf@ifdraftmode{}{%
12710 \Hy@FormObjects
12711 \ifnum\pdfTeXversion>13 %
12712 \pdfrefobj\OBJ@pdfdocencoding
12713 \pdfrefobj\OBJ@ZaDb
12714 \pdfrefobj\OBJ@Helv
12715 \fi
12716 \AtVeryEndDocument{%
12717 \immediate\pdfobj{%
12718 <<%
12719 /Fields[\HyField@afields]%
12720 /DR<<%
12721 /Font<<%
12722 /ZaDb \OBJ@ZaDb\space 0 R%
12723 /Helv \OBJ@Helv\space 0 R%
12724 >>%
12725 >>%
12726 /DA(/Helv 10 Tf 0 g)%
12727 \ifHy@pdfa
12728 \else
12729 \ifHyField@NeedAppearances
12730 /NeedAppearances true%
12731 \fi
12732 \fi
12733 >>%
12734 }%
12735 \edef\OBJ@acroform{\the\pdfastobj}%
12736 \pdfcatalog{/AcroForm \OBJ@acroform\space 0 R}%
12737 }%
12738 }%
12739 \MakeFieldObject{%

Same as \ding{123} of package pifont.
12740 \begingroup
12741 \fontfamily{pzd}%
12742 \fontencoding{U}%
12743 \fontseries{m}%
12744 \fontshape{n}%
12745 \selectfont
12746 \char123 %
12747 \endgroup
12748 }{Ding}%
12749 \MakeFieldObject{%

```

```

12750 \fbox{\textcolor{yellow}{\textsf{Submit}}}%
12751 }{Submit}%
12752 \MakeFieldObject{%
12753 \fbox{\textcolor{yellow}{\textsf{SubmitP}}}%
12754 }{SubmitP}%
12755 }
12756 \def\@endForm{}
12757 \def\@TextField[#1]#2{% parameters, label
12758 \def\Fld@name{#2}%
12759 \def\Fld@default{}%
12760 \let\Fld@value\@empty
12761 \def\Fld@width{\DefaultWidthofText}%
12762 \def\Fld@height{%
12763 \ifFld@multiline
12764 \DefaultHeightofTextMultiline
12765 \else
12766 \DefaultHeightofText
12767 \fi
12768 }%
12769 \begingroup
12770 \expandafter\HyField@SetKeys\expandafter{%
12771 \DefaultOptionsofText,#1%
12772 }%
12773 \PDFForm@Name
12774 \HyField@FlagsText
12775 \ifFld@hidden\def\Fld@width{1sp}\fi
12776 \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
12777 \LayoutTextField{#2}{%
12778 \Hy@escapeform\PDFForm@Text
12779 \pdfstartlink user {\PDFForm@Text}\relax
12780 \MakeTextField{\Fld@width}{\Fld@height}\pdfendlink
12781 \HyField@AddToFields
12782 }%
12783 \endgroup
12784 }
12785 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
12786 \def\Fld@name{#2}%
12787 \let\Fld@default\relax
12788 \let\Fld@value\relax
12789 \def\Fld@width{\DefaultWidthofChoiceMenu}%
12790 \def\Fld@height{\DefaultHeightofChoiceMenu}%
12791 \begingroup
12792 \Fld@menulength=0 %
12793 \@tempdima\z@
12794 \@for\@curropt:=#3\do{%
12795 \expandafter\Fld@checkequals\@curropt==\%
12796 \Hy@StepCount\Fld@menulength
12797 \settowidth{\@tempdimb}{\@currDisplay}%
12798 \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
12799 }%
12800 \advance\@tempdima by 15\p@
12801 \begingroup
12802 \HyField@SetKeys{#1}%
12803 \edef\x{\endgroup
12804 \noexpand\expandafter
12805 \noexpand\HyField@SetKeys
12806 \noexpand\expandafter{%

```

```

12807 \expandafter\noexpand\csname DefaultOptionsof%
12808 \ifFld@radio
12809 Radio%
12810 \else
12811 \ifFld@combo
12812 \ifFld@popdown
12813 PopdownBox%
12814 \else
12815 ComboBox%
12816 \fi
12817 \else
12818 ListBox%
12819 \fi
12820 \fi
12821 \endcsname
12822 }%
12823 }\x
12824 \HyField@SetKeys{#1}%
12825 \PDFForm@Name
12826 \ifFld@hidden\def\Fld@width{1sp}\fi
12827 \ifx\Fld@value\relax
12828 \let\Fld@value\Fld@default
12829 \fi
12830 \LayoutChoiceField{#2}{%
12831 \ifFld@radio
12832 \HyField@FlagsRadioButton
12833 \@@Radio{#3}%
12834 \else
12835 \begingroup
12836 \HyField@FlagsChoice
12837 \ifdim\Fld@width<\@tempdima
12838 \ifdim\@tempdima<1cm\@tempdima1cm\fi
12839 \edef\Fld@width{\the\@tempdima}%
12840 \fi
12841 \ifFld@combo
12842 \else
12843 \@tempdima=\the\Fld@menulength\Fld@charsize
12844 \advance\@tempdima by \Fld@borderwidth bp %
12845 \advance\@tempdima by \Fld@borderwidth bp %
12846 \edef\Fld@height{\the\@tempdima}%
12847 \fi
12848 \@@ListBox{#3}%
12849 \endgroup
12850 \fi
12851 }%
12852 \endgroup
12853 }
12854 \def\@@Radio#1{%
12855 \Fld@listcount=0 %
12856 \EdefEscapeName\Fld@default{\Fld@default}%
12857 \@for\@curropt:=#1\do{%
12858 \expandafter\Fld@checkequals\@curropt==\%
12859 \EdefEscapeName\@currValue{\@currValue}%
12860 \Hy@StepCount\Fld@listcount
12861 \@currDisplay\space
12862 \leavevmode
12863 \Hy@escapeform\PDFForm@Radio

```

```

12864 \pdfstartlink user {%
12865 \PDFForm@Radio
12866 /AP<<%
12867 /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.

```

12868 /\@currValue\space \DingObject
12869 >>%
12870 >>%
12871 }%
12872 \relax
12873 \MakeRadioField{\Fld@width}{\Fld@height}\pdfendlink
12874 \ifnum\Fld@listcount=1 %
12875 \HyField@AddToFields
12876 \fi
12877 \space % deliberate space between radio buttons
12878 }%
12879 }
12880 \newcount\Fld@listcount
12881 \def\@@ListBox#1{%
12882 \HyField@PDFChoices{#1}%
12883 \leavevmode
12884 \Hy@escapeform\PDFForm@List
12885 \pdfstartlink user {\PDFForm@List}\relax
12886 \MakeChoiceField{\Fld@width}{\Fld@height}%
12887 \pdfendlink
12888 \HyField@AddToFields
12889 }
12890 \def\@PushButton[#1]#2{% parameters, label
12891 \def\Fld@name{#2}%
12892 \begingroup
12893 \expandafter\HyField@SetKeys\expandafter{%
12894 \DefaultOptionsofPushButton,#1%
12895 }%
12896 \PDFForm@Name
12897 \ifHy@pdfa
12898 \Hy@Error{%
12899 PDF/A: Push button with JavaScript is prohibited%
12900 }\@ehc
12901 \LayoutPushButtonField{%
12902 \leavevmode
12903 \MakeButtonField{#2}%
12904 }%
12905 \else
12906 \HyField@FlagsPushButton
12907 \ifFld@hidden\def\Fld@width{1sp}\fi
12908 \LayoutPushButtonField{%
12909 \leavevmode
12910 \Hy@escapeform\PDFForm@Push
12911 \pdfstartlink user {\PDFForm@Push}\relax
12912 \MakeButtonField{#2}%
12913 \pdfendlink
12914 \HyField@AddToFields
12915 }%
12916 \fi
12917 \endgroup

```

```

12918 }
12919 \def\@Submit[#1]#2{%
12920   \def\Fld@width{\DefaultWidthofSubmit}%
12921   \def\Fld@height{\DefaultHeightofSubmit}%
12922   \begingroup
12923     \expandafter\HyField@SetKeys\expandafter{%
12924       \DefaultOptionsofSubmit,#1%
12925     }%
12926     \HyField@FlagsPushButton
12927     \HyField@FlagsSubmit
12928     \ifFld@hidden\def\Fld@width{1sp}\fi
12929     \leavevmode
12930     \Hy@escapeform\PDFForm@Submit
12931     \pdfstartlink user {%
12932       \PDFForm@Submit
12933       /AP<</N \SubmitObject/D \SubmitPObject>>%
12934     }%
12935     \relax
12936     \MakeButtonField{#2}%
12937     \pdfendlink
12938     \HyField@AddToFields
12939   \endgroup
12940 }
12941 \def\@Reset[#1]#2{%
12942   \def\Fld@width{\DefaultWidthofReset}%
12943   \def\Fld@height{\DefaultHeightofReset}%
12944   \begingroup
12945     \expandafter\HyField@SetKeys\expandafter{%
12946       \DefaultOptionsofReset,#1%
12947     }%
12948     \leavevmode
12949     \ifHy@pdfa
12950       \Hy@Error{%
12951         PDF/A: Reset action is prohibited%
12952       }\@ehc
12953       \MakeButtonField{#2}%
12954     \else
12955       \HyField@FlagsPushButton
12956       \ifFld@hidden\def\Fld@width{1sp}\fi
12957       \Hy@escapeform\PDFForm@Reset
12958       \pdfstartlink user {\PDFForm@Reset}\relax
12959       \MakeButtonField{#2}%
12960       \pdfendlink
12961       \HyField@AddToFields
12962     \fi
12963   \endgroup
12964 }
12965 \def\@CheckBox[#1]#2{% parameters, label
12966   \def\Fld@name{#2}%
12967   \def\Fld@default{0}%
12968   \begingroup
12969     \def\Fld@width{\DefaultWidthofCheckBox}%
12970     \def\Fld@height{\DefaultHeightofCheckBox}%
12971     \expandafter\HyField@SetKeys\expandafter{%
12972       \DefaultOptionsofCheckBox,#1%
12973     }%
12974     \PDFForm@Name

```

```

12975 \HyField@FlagsCheckBox
12976 \ifFld@hidden\def\Fld@width{1sp}\fi
12977 \LayoutCheckField{#2}{%
12978 \Hy@escapeform\PDFForm@Check
12979 \pdfstartlink user {\PDFForm@Check}\relax
12980 \MakeCheckField{\Fld@width}{\Fld@height}%
12981 \pdfendlink
12982 \HyField@AddToFields
12983 }%
12984 \endgroup
12985 }
12986 \def\Hy@FormObjects{%
12987 \pdfobj {%
12988 <<%
12989 /Type/Encoding%
12990 /Differences[%
12991 24/breve/caron/circumflex/dotaccent/hungarumlaut/ogonek%
12992 /ring/tilde %
12993 39/quotesingle %
12994 96/grave %
12995 128/bullet/dagger/daggerdbl/ellipsis/emdash/endash/florin%
12996 /fraction/guilsinglleft/guilsinglright/minus/perthousand%
12997 /quotedblbase/quotedblleft/quotedblright/quoteleft%
12998 /quoteright/quotesinglbase/trademark/fi/fl/Lslash/OE%
12999 /Scaron/Ydieresis/Zcaron/dotlessi/lslash/oe/scaron/zcaron %
13000 164/currency %
13001 166/brokenbar %
13002 168/dieresis/copyright/ordfeminine %
13003 172/logicalnot/.notdef/registered/macron/degree/plusminus%
13004 /twosuperior/threesuperior/acute/mu %
13005 183/periodcentered/cedilla/onesuperior/ordmasculine %
13006 188/onequarter/onehalf/threequarters %
13007 192/Agrave/Aacute/Acircumflex/Atilde/Adieresis/Aring/AE%
13008 /Ccedilla/Egrave/Eacute/Ecircumflex/Edieresis/Igrave%
13009 /Iacute/Icircumflex/Idieresis/Eth/Ntilde/Ograve/Oacute%
13010 /Ocircumflex/Otilde/Odieresis/multiply/Oslash/Ugrave%
13011 /Uacute/Ucircumflex/Udieresis/Yacute/Thorn/germandbls%
13012 /agrave/aacute/acircumflex/atilde/adieresis/aring/ae%
13013 /ccedilla/egrave/eacute/ecircumflex/edieresis/igrave%
13014 /iacute/icircumflex/idieresis/eth/ntilde/ograde/oacute%
13015 /ocircumflex/otilde/odieresis/divide/oslash/ugrave%
13016 /uacute/ucircumflex/udieresis/yacute/thorn/ydieresis%
13017 ]%
13018 >>%
13019 }%
13020 \xdef\OBJ@pdfdocencoding{\the\pdflastobj}%
13021 \pdfobj{%
13022 <<%
13023 /Type/Font%
13024 /Subtype/Type1%
13025 /Name/ZaDb%
13026 /BaseFont/ZapfDingbats%
13027 >>%
13028 }%
13029 \xdef\OBJ@ZaDb{\the\pdflastobj}%
13030 \pdfobj{%
13031 <<%

```

```

13032 /Type/Font%
13033 /Subtype/Type1%
13034 /Name/Helv%
13035 /BaseFont/Helvetica%
13036 /Encoding \OBJ@pdfdocencoding\space 0 R%
13037 >>%
13038 }%
13039 \xdef\OBJ@Helv{\the\pdfastobj}%
13040 \global\let\Hy@FormObjects\relax
13041 }
13042 </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.

```

13043 < *dvipdfm | xetex>

```

\@Gauge

```

13044 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
13045 \Hy@Message{Sorry, dvipdfm/XeTeX does not support FORM gauges}%
13046 }

```

\@Form

```

13047 \def\@Form[#1]{%
13048 \@ifundefined{textcolor}{\let\textcolor\@gobble}{}}%
13049 \kvsetkeys{Form}{#1}%
13050 \Hy@FormObjects
13051 \@pdfm@mark{obj @afields []}%
13052 \@pdfm@mark{obj @corder []}%
13053 \@pdfm@mark{%
13054 obj @aform <<%
13055 /Fields @afields%
13056 /DR<<%
13057 /Font<<%
13058 /ZaDb @OBJZaDb%
13059 /Helv @OBJHelv%
13060 >>%
13061 >>%
13062 /DA(/Helv 10 Tf 0 g)%
13063 /CO @corder%
13064 \ifHy@pdfa
13065 \else
13066 \ifHyField@NeedAppearances
13067 /NeedAppearances true%
13068 \fi
13069 \fi
13070 >>%
13071 }%
13072 \@pdfm@mark{put @catalog <</AcroForm @aform>>}%
13073 }

```

\@endForm

```

13074 \def\@endForm{}

```

\dvipdfm@setdim \dvipdfm@setdim sets dimensions for ann using \pdfm@box.

```

13075 \def\dvipdfm@setdim{%

```

```

13076 height \the\ht\pdfm@box\space
13077 width \the\wd\pdfm@box\space
13078 depth \the\dp\pdfm@box\space
13079 }

```

\HyField@AnnotCount

```

13080 \newcount\HyField@AnnotCount
13081 \HyField@AnnotCount=\z@

```

\HyField@AdvanceAnnotCount

```

13082 \def\HyField@AdvanceAnnotCount{%
13083 \global\advance\HyField@AnnotCount\@ne
13084 }

```

\HyField@TheAnnotCount

```

13085 \def\HyField@TheAnnotCount{%
13086 \the\HyField@AnnotCount
13087 }

```

\@TextField

```

13088 \def\@TextField[#1]#2{% parameters, label
13089 \def\Fld@name{#2}%
13090 \def\Fld@default{}%
13091 \let\Fld@value\@empty
13092 \def\Fld@width{\DefaultWidthofText}%
13093 \def\Fld@height{%
13094 \ifFld@multiline
13095 \DefaultHeightofTextMultiline
13096 \else
13097 \DefaultHeightofText
13098 \fi
13099 }%
13100 \begingroup
13101 \expandafter\HyField@SetKeys\expandafter{%
13102 \DefaultOptionsofText,#1%
13103 }%
13104 \PDFForm@Name
13105 \HyField@FlagsText
13106 \ifFld@hidden\def\Fld@width{1sp}\fi
13107 \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
13108 \setbox\pdfm@box=\hbox{%
13109 \MakeTextField{\Fld@width}{\Fld@height}%
13110 }%
13111 \HyField@AdvanceAnnotCount
13112 \LayoutTextField{#2}{%
13113 \Hy@escapeform\PDFForm@Text
13114 \@pdfm@mark{%
13115 ann @text\HyField@TheAnnotCount\space
13116 \dvipdfm@setdim << \PDFForm@Text >>%
13117 }%
13118 }%
13119 \unhbox\pdfm@box
13120 \@pdfm@mark{put @afields @text\HyField@TheAnnotCount}%
13121 % record in @afields array
13122 \endgroup
13123 }

```



\@ChoiceMenu

```

13124 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
13125 \def\Fld@name{#2}%
13126 \let\Fld@default\relax
13127 \let\Fld@value\relax
13128 \def\Fld@width{\DefaultWidthofChoiceMenu}%
13129 \def\Fld@height{\DefaultHeightofChoiceMenu}%
13130 \begingroup
13131 \Fld@menulength=0 %
13132 \@tempdima\z@
13133 \@for\@curropt:=#3\do{%
13134 \expandafter\Fld@checkequals\@curropt==\%
13135 \Hy@StepCount\Fld@menulength
13136 \settowidth{\@tempdimb}{\@currDisplay}%
13137 \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
13138 }%
13139 \advance\@tempdima by 15\p@
13140 \begingroup
13141 \HyField@SetKeys{#1}%
13142 \edef\x{\endgroup
13143 \noexpand\expandafter
13144 \noexpand\HyField@SetKeys
13145 \noexpand\expandafter{%
13146 \expandafter\noexpand\csname DefaultOptionsof%
13147 \ifFld@radio
13148 Radio%
13149 \else
13150 \ifFld@combo
13151 \ifFld@popdown
13152 PopdownBox%
13153 \else
13154 ComboBox%
13155 \fi
13156 \else
13157 ListBox%
13158 \fi
13159 \fi
13160 \endcsname
13161 }%
13162 }\x
13163 \HyField@SetKeys{#1}%
13164 \PDFForm@Name
13165 \ifFld@hidden\def\Fld@width{1sp}\fi
13166 \ifx\Fld@value\relax
13167 \let\Fld@value\Fld@default
13168 \fi
13169 \LayoutChoiceField{#2}{%
13170 \ifFld@radio
13171 \HyField@FlagsRadioButton
13172 \@@Radio{#3}%
13173 \else
13174 \begingroup
13175 \HyField@FlagsChoice
13176 \ifdim\Fld@width<\@tempdima
13177 \ifdim\@tempdima<1cm\@tempdima1cm\fi
13178 \edef\Fld@width{\the\@tempdima}%
13179 \fi

```

```

13180     \ifFld@combo
13181     \else
13182     \@tempdima=\the\Fld@menulength\Fld@charsize
13183     \advance\@tempdima by \Fld@borderwidth bp %
13184     \advance\@tempdima by \Fld@borderwidth bp %
13185     \edef\Fld@height{\the\@tempdima}%
13186     \fi
13187     \@@Listbox{#3}%
13188     \endgroup
13189     \fi
13190   }%
13191 \endgroup
13192 }

```

\@@Radio

```

13193 \def\@@Radio#1{%
13194   \Fld@listcount=0 %
13195   \EdefEscapeName\Fld@default{\Fld@default}%
13196   \setbox\pdfm@box=\hbox{%
13197     \MakeRadioField{\Fld@width}{\Fld@height}%
13198   }%
13199   \@for\@curropt:=#1\do{%
13200     \expandafter\Fld@checkequals\@curropt==\%
13201     \EdefEscapeName\@currValue{\@currValue}%
13202     \Hy@StepCount\Fld@listcount
13203     \@currDisplay\space
13204     \leavevmode
13205     \Hy@escapeform\PDFForm@Radio
13206     \ifnum\Fld@listcount=1 %
13207       \HyField@AdvanceAnnotCount
13208     \fi
13209     \@pdfm@mark{%
13210       ann %
13211       \ifnum\Fld@listcount=1 %
13212         @radio\HyField@TheAnnotCount%
13213       \space
13214     \fi
13215     \dvi pdfm@setdim
13216     <<%
13217     \PDFForm@Radio
13218     /AP<</N<</\@currValue /null>>>>%
13219     >>%
13220   }%
13221   \unhcopy\pdfm@box\space% deliberate space between radio buttons
13222   \ifnum\Fld@listcount=1 %
13223     \@pdfm@mark{%
13224       put @afields @radio\HyField@TheAnnotCount
13225     }%
13226   \fi
13227 }%
13228 }

```

\Fld@listcount

```

13229 \newcount\Fld@listcount

```

\@@Listbox

```

13230 \def\@@Listbox#1{%

```

```

13231 \HyField@PDFChoices{#1}%
13232 \setbox\pdfm@box=\hbox{%
13233   \MakeChoiceField{\Fld@width}{\Fld@height}%
13234 }%
13235 \leavevmode
13236 \Hy@escapeform\PDFForm@List
13237 \HyField@AdvanceAnnotCount
13238 \@pdfm@mark{%
13239   ann @list\HyField@TheAnnotCount\space
13240   \dvipdfm@setdim
13241   <<\PDFForm@List>>%
13242 }%
13243 \unhbox\pdfm@box
13244 \@pdfm@mark{put @afields @list\HyField@TheAnnotCount}%
13245 }

```

\@PushButton

```

13246 \def\@PushButton[#1]#2{% parameters, label
13247   \def\Fld@name{#2}%
13248   \begingroup
13249     \expandafter\HyField@SetKeys\expandafter{%
13250       \DefaultOptionsofPushButton,#1%
13251     }%
13252     \PDFForm@Name
13253     \ifHy@pdfa
13254       \Hy@Error{%
13255         PDF/A: Push button with JavaScript is prohibited%
13256       }\@ehc
13257       \LayoutPushButtonField{%
13258         \leavevmode
13259         \MakeButtonField{#2}%
13260       }%
13261     \else
13262       \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
13263       \HyField@FlagsPushButton
13264       \ifFld@hidden\def\Fld@width{1sp}\fi
13265       \HyField@AdvanceAnnotCount
13266       \LayoutPushButtonField{%
13267         \leavevmode
13268         \Hy@escapeform\PDFForm@Push
13269         \@pdfm@mark{%
13270           ann @push\HyField@TheAnnotCount\space
13271           \dvipdfm@setdim
13272           <<\PDFForm@Push>>%
13273         }%
13274       }%
13275       \unhbox\pdfm@box
13276       \@pdfm@mark{put @afields @push\HyField@TheAnnotCount}%
13277     \fi
13278   \endgroup
13279 }

```

\@Submit

```

13280 \def\@Submit[#1]#2{%
13281   \def\Fld@width{\DefaultWidthofSubmit}%
13282   \def\Fld@height{\DefaultHeightofSubmit}%
13283   \begingroup

```

```

13284 \expandafter\HyField@SetKeys\expandafter{%
13285   \DefaultOptionsofSubmit,#1%
13286 }%
13287 \HyField@FlagsPushButton
13288 \HyField@FlagsSubmit
13289 \ifFld@hidden\def\Fld@width{1sp}\fi
13290 \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
13291 \leavevmode
13292 \Hy@escapeform\PDFForm@Submit
13293 \HyField@AdvanceAnnotCount
13294 \@pdfm@mark{%
13295   ann @submit\HyField@TheAnnotCount\space
13296   \dvipdfm@setdim
13297   <<\PDFForm@Submit>>%
13298 }%
13299 \unhbox\pdfm@box%
13300 \@pdfm@mark{put @afields @submit\HyField@TheAnnotCount}%
13301 \endgroup
13302 }

```

\@Reset

```

13303 \def\@Reset[#1]#2{%
13304   \def\Fld@width{\DefaultWidthofReset}%
13305   \def\Fld@height{\DefaultHeightofReset}%
13306   \begingroup
13307     \expandafter\HyField@SetKeys\expandafter{%
13308       \DefaultOptionsofReset,#1%
13309     }%
13310     \leavevmode
13311     \ifHy@pdfa
13312       \Hy@Error{%
13313         PDF/A: Reset action is prohibited%
13314       }\@ehc
13315       \MakeButtonField{#2}%
13316     \else
13317       \HyField@FlagsPushButton
13318       \ifFld@hidden\def\Fld@width{1sp}\fi
13319       \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
13320       \Hy@escapeform\PDFForm@Reset
13321       \HyField@AdvanceAnnotCount
13322       \@pdfm@mark{%
13323         ann @reset\HyField@TheAnnotCount\space
13324         \dvipdfm@setdim
13325         <<\PDFForm@Reset>>%
13326       }%
13327       \unhbox\pdfm@box
13328       \@pdfm@mark{put @afields @reset\HyField@TheAnnotCount}%
13329     \fi
13330   \endgroup
13331 }

```

\@CheckBox

```

13332 \def\@CheckBox[#1]#2{% parameters, label
13333   \def\Fld@name{#2}%
13334   \def\Fld@default{0}%
13335   \begingroup
13336   \def\Fld@width{\DefaultWidthofCheckBox}%

```

```

13337 \def\Fld@height{\DefaultHeightofCheckBox}%
13338 \expandafter\HyField@SetKeys\expandafter{%
13339 \DefaultOptionsofCheckBox,#1%
13340 }%
13341 \PDFForm@Name
13342 \HyField@FlagsCheckBox
13343 \ifFld@hidden\def\Fld@width{1sp}\fi
13344 \setbox\pdfm@box=\hbox{%
13345 \MakeCheckField{\Fld@width}{\Fld@height}%
13346 }%
13347 \HyField@AdvanceAnnotCount
13348 \LayoutCheckField{#2}{%
13349 \Hy@escapeform\PDFForm@Check
13350 \@pdfm@mark{%
13351 ann @check\HyField@TheAnnotCount\space
13352 \dvipdfm@setdim
13353 <<\PDFForm@Check>>%
13354 }%
13355 \unhbox\pdfm@box
13356 \@pdfm@mark{put @afields @check\HyField@TheAnnotCount}%
13357 }%
13358 \endgroup
13359 }

13360 \def\Hy@FormObjects{%
13361 \@pdfm@mark{obj @OBJpdfdocencoding%
13362 <<%
13363 /Type/Encoding%
13364 /Differences%
13365 24/breve/caron/circumflex/dotaccent/hungarumlaut/ogonek/ring/tilde %
13366 39/quotesingle %
13367 96/grave %
13368 128/bullet/dagger/daggerdbl/ellipsis/emdash/endash/florin%
13369 /fraction/guilsinglleft/guilsinglright/minus/perthousand%
13370 /quotedblbase/quotedblleft/quotedblright/quoteleft/quoteright%
13371 /quotesinglbase/trademark/fi/fl/Lslash/OE/Scaron/Ydieresis%
13372 /Zcaron/dotlessi/lslash/oe/scaron/zcaron %
13373 164/currency %
13374 166/brokenbar %
13375 168/dieresis/copyright/ordfeminine %
13376 172/logicalnot/.notdef/registered/macron/degree/plusminus%
13377 /twosuperior/threesuperior/acute/mu %
13378 183/periodcentered/cedilla/onesuperior/ordmasculine %
13379 188/onequarter/onehalf/threequarters %
13380 192/Agrave/Aacute/Acircumflex/Atilde/Adieresis/Aring/AE%
13381 /Ccedilla/Egrave/Eacute/Ecircumflex/Edieresis/Igrave/Iacute%
13382 /Icircumflex/Idieresis/Eth/Ntilde/Ograve/Oacute/Ocircumflex%
13383 /Otilde/Odieresis/multiply/Oslash/Ugrave/Uacute/Ucircumflex%
13384 /Udieresis/Yacute/Thorn/germandbls/agrave/aacute/acircumflex%
13385 /atilde/adieresis/aring/ae/ccedilla/egrave/eacute%
13386 /ecircumflex/edieresis/igrave/iacute/icircumflex/idieresis%
13387 /eth/ntilde/ograve/oacute/ocircumflex/otilde/odieresis%
13388 /divide/oslash/ugrave/uacute/ucircumflex/udieresis/yacute%
13389 /thorn/ydieresis%
13390 ]%
13391 >>%
13392 }%
13393 \@pdfm@mark{obj @OBJZaDb%

```

```

13394 <<%
13395 /Type/Font%
13396 /Subtype/Type1%
13397 /Name/ZaDb%
13398 /BaseFont/ZapfDingbats%
13399 >>%
13400 }%
13401 \@pdfm@mark{obj @OBJHelv%
13402 <<%
13403 /Type/Font%
13404 /Subtype/Type1%
13405 /Name/Helv%
13406 /BaseFont/Helvetica%
13407 /Encoding @OBJpdfdocencoding%
13408 >>%
13409 }%
13410 \global\let\Hy@FormObjects\relax
13411 }
13412 </dvipdfm | xetex>

```

## 47.6 Common forms part

```

13413 < *pdfform>

```

\Hy@escapestring

```

13414 \begingroup\expandafter\expandafter\expandafter\endgroup
13415 \expandafter\ifx\csname pdfescapestring\endcsname\relax
13416 \let\Hy@escapestring\@firstofone
13417 \def\Hy@escapeform#1{%
13418 \ifHy@escapeform
13419 \def\Hy@escapestring##1{%
13420 \noexpand\Hy@escapestring{\noexpand##1}%
13421 }%
13422 \edef\Hy@temp{#1}%
13423 \expandafter\Hy@@escapeform\Hy@temp\Hy@escapestring{ }\@nil
13424 \def\Hy@escapestring##1{%
13425 \@ifundefined{Hy@esc@\string##1}{%
13426 ##1%
13427 \ThisShouldNotHappen
13428 }{%
13429 \csname Hy@esc@\string##1\endcsname
13430 }%
13431 }%
13432 \else
13433 \let\Hy@escapestring\@firstofone
13434 \fi
13435 }%
13436 \def\Hy@@escapeform#1\Hy@escapestring#2#3\@nil{%
13437 \ifx\#3\%
13438 \else
13439 \expandafter
13440 \Hy@pstringdef\csname Hy@esc@\string#2\endcsname{#2}%
13441 \Hy@ReturnAfterFi{%
13442 \Hy@@escapeform#3\@nil
13443 }%
13444 \fi
13445 }%

```

```

13446 \else
13447   \def\Hy@escapeform#1{%
13448     \ifHy@escapeform
13449       \let\Hy@escapestring\pdfescapestring
13450     \else
13451       \let\Hy@escapestring\@firstofone
13452     \fi
13453   }%
13454   \Hy@escapeform{}%
13455 \fi

```

#### \PDFForm@Name

```

13456 \def\PDFForm@Name{%
13457   \PDFForm@@Name\Fld@name
13458   \ifx\Fld@altname\relax
13459   \else
13460     \PDFForm@@Name\Fld@altname
13461   \fi
13462   \ifx\Fld@mappingname\relax
13463   \else
13464     \PDFForm@@Name\Fld@mappingname
13465   \fi
13466 }

```

#### \PDFForm@@Name

```

13467 \def\PDFForm@@Name#1{%
13468   \begingroup
13469   \ifnum\Hy@pdfversion<5 % implementation note 117, PDF spec 1.7
13470     \ifHy@unicode
13471       \Hy@unicodedefalse
13472     \fi
13473   \fi
13474   \HyPsd@XeTeXBigCharstrue
13475   \pdfstringdef\Hy@gtemp#1%
13476 \endgroup
13477 \let#1\Hy@gtemp
13478 }

```

#### \Fld@additionalactions

```

13479 \def\Fld@@additionalactions{%
K input (keystroke) format
13480   \ifx\Fld@keystroke@code\@empty
13481   \else
13482     /K<</S/JavaScript/JS(\Hy@escapestring{\Fld@keystroke@code})>>%
13483   \fi
F display format
13484   \ifx\Fld@format@code\@empty
13485   \else
13486     /F<</S/JavaScript/JS(\Hy@escapestring{\Fld@format@code})>>%
13487   \fi
V validation
13488   \ifx\Fld@validate@code\@empty
13489   \else
13490     /V<</S/JavaScript/JS(\Hy@escapestring{\Fld@validate@code})>>%
13491   \fi

```

## C calculation

```
13492 \ifx\Fld@calculate@code\@empty
13493 \else
13494 /C<</S/JavaScript/JS(\Hy@escapestring{\Fld@calculate@code})>>%
13495 \fi
```

## Fo receiving the input focus

```
13496 \ifx\Fld@onfocus@code\@empty
13497 \else
13498 /Fo<</S/JavaScript/JS(\Hy@escapestring{\Fld@onfocus@code})>>%
13499 \fi
```

## Bl loosing the input focus (blurred)

```
13500 \ifx\Fld@onblur@code\@empty
13501 \else
13502 /Bl<</S/JavaScript/JS(\Hy@escapestring{\Fld@onblur@code})>>%
13503 \fi
```

## D pressing the mouse button (down)

```
13504 \ifx\Fld@onmousedown@code\@empty
13505 \else
13506 /D<</S/JavaScript/JS(\Hy@escapestring{\Fld@onmousedown@code})>>%
13507 \fi
```

## U releasing the mouse button (up)

```
13508 \ifx\Fld@onmouseup@code\@empty
13509 \else
13510 /U<</S/JavaScript/JS(\Hy@escapestring{\Fld@onmouseup@code})>>%
13511 \fi
```

## E cursor enters the annotation's active area.

```
13512 \ifx\Fld@onenter@code\@empty
13513 \else
13514 /E<</S/JavaScript/JS(\Hy@escapestring{\Fld@onenter@code})>>%
13515 \fi
```

## X cursor exits the annotation's active area.

```
13516 \ifx\Fld@onexit@code\@empty
13517 \else
13518 /X<</S/JavaScript/JS(\Hy@escapestring{\Fld@onexit@code})>>%
13519 \fi
13520 }
13521 \def\Fld@additionalactions{%
13522 \if\Fld@@additionalactions-%
13523 \else
13524 \ifHy@pdfa
13525 \else
13526 /AA<<\Fld@@additionalactions>>%
13527 \fi
13528 \fi
13529 }
```

## \Fld@annotnames

```
13530 \def\Fld@annotnames{%
13531 /T(\Fld@name)%
13532 \ifx\Fld@altname\relax
13533 \else
13534 /TU(\Fld@altname)%
13535 \fi
```



```

13536 \ifx\Fld@mappingname\relax
13537 \else
13538 /TM(\Fld@mappingname)%
13539 \fi
13540 }

```

#### \PDFForm@Check

```

13541 \def\PDFForm@Check{%
13542 /Subtype/Widget%
13543 \Fld@annotflags
13544 \Fld@annotnames
13545 /FT/Btn%
13546 \Fld@flags
13547 /Q \Fld@align
13548 /BS<</W \Fld@borderwidth /S/\Fld@borderstyle>>%
13549 /MK<<%
13550 \ifnum\Fld@rotation=\z@
13551 \else
13552 /R \Fld@rotation
13553 \fi
13554 \ifx\Fld@bordercolor\relax
13555 \else
13556 /BC[\Fld@bordercolor]%
13557 \fi
13558 \ifx\Fld@bcolor\relax
13559 \else
13560 /BG[\Fld@bcolor]%
13561 \fi
13562 /CA(\Hy@escapestring{\Fld@cbsymbol})%
13563 >>%
13564 /DA(/ZaDb \strip@pt\Fld@charsize\space Tf%
13565 \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
13566 /H/P%
13567 \ifFld@checked /V/Yes\else /V/Off\fi
13568 \Fld@additionalactions
13569 }

```

#### \PDFForm@Push

```

13570 \ifHy@pdfa
13571 \else
13572 \def\PDFForm@Push{%
13573 /Subtype/Widget%
13574 \Fld@annotflags
13575 \Fld@annotnames
13576 /FT/Btn%
13577 \Fld@flags
13578 /H/P%
13579 /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
13580 \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
13581 \ifx\Fld@bordercolor\relax\else 1\fi
13582 \space
13583 \else
13584 /MK<<%
13585 \ifnum\Fld@rotation=\z@
13586 \else
13587 /R \Fld@rotation
13588 \fi

```

```

13589     \ifx\Fld@bordercolor\relax
13590     \else
13591     /BC[\Fld@bordercolor]%
13592     \fi
13593     >>%
13594     \fi
13595     /A<</S/JavaScript/JS(\Hy@escapestring{\Fld@onclick@code})>>%
13596     \Fld@additionalactions
13597   }%
13598 \fi

```

#### \PDFForm@List

```

13599 \def\PDFForm@List{%
13600 /Subtype/Widget%
13601 \Fld@annotflags
13602 \Fld@annotnames
13603 /FT/Ch%
13604 \Fld@flags
13605 /Q \Fld@align
13606 /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
13607 \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
13608     \ifx\Fld@bordercolor\relax\else 1\fi
13609     \ifx\Fld@bcolor\relax \else 1\fi
13610     \space
13611 \else
13612 /MK<<%
13613     \ifnum\Fld@rotation=\z@
13614     \else
13615     /R \Fld@rotation
13616     \fi
13617     \ifx\Fld@bordercolor\relax
13618     \else
13619     /BC[\Fld@bordercolor]%
13620     \fi
13621     \ifx\Fld@bcolor\relax
13622     \else
13623     /BG[\Fld@bcolor]%
13624     \fi
13625     >>%
13626 \fi
13627 /DA(/Helv \strip@pt\Fld@charsize\space Tf%
13628     \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
13629 \Fld@choices
13630 \Fld@additionalactions
13631 }

```

#### \PDFForm@Radio

```

13632 \def\PDFForm@Radio{%
13633 /Subtype/Widget%
13634 \Fld@annotflags
13635 \Fld@annotnames
13636 /FT/Btn%
13637 \Fld@flags
13638 /H/P%
13639 /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
13640 /MK<<%
13641     \ifnum\Fld@rotation=\z@

```

```

13642 \else
13643 /R \Fld@rotation
13644 \fi
13645 \ifx\Fld@bordercolor\relax
13646 \else
13647 /BC[\Fld@bordercolor]%
13648 \fi
13649 \ifx\Fld@bcolor\relax
13650 \else
13651 /BG[\Fld@bcolor]%
13652 \fi
13653 /CA(\Fld@radiosymbol)%
13654 >>%
13655 /DA(/ZaDb \strip@pt\Fld@charsize\space Tf%
13656 \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
13657 \ifx\@currValue\Fld@default
13658 /V/\Fld@default
13659 /DV/\Fld@default
13660 \else
13661 /V/Off%
13662 /DV/Off%
13663 \fi
13664 \Fld@additionalactions
13665 }

```

#### \PDFForm@Text

```

13666 \def\PDFForm@Text{%
13667 /Subtype/Widget%
13668 \Fld@annotflags
13669 \Fld@annotnames
13670 /FT/Tx%
13671 \Fld@flags
13672 /Q \Fld@align
13673 /BS<</W \Fld@borderwidth\space /S /\Fld@borderstyle>>%
13674 \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
13675 \ifx\Fld@bordercolor\relax\else 1\fi
13676 \ifx\Fld@bcolor\relax \else 1\fi
13677 \space
13678 \else
13679 /MK<<%
13680 \ifnum\Fld@rotation=\z@
13681 \else
13682 /R \Fld@rotation
13683 \fi
13684 \ifx\Fld@bordercolor\relax
13685 \else
13686 /BC[\Fld@bordercolor]%
13687 \fi
13688 \ifx\Fld@bcolor\relax
13689 \else
13690 /BG[\Fld@bcolor]%
13691 \fi
13692 >>%
13693 \fi
13694 /DA(/Helv \strip@pt\Fld@charsize\space Tf%
13695 \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
13696 /DV(\Hy@escapestring{\Fld@default})%

```

```

13697 /V(\Hy@escapestring{\Fld@value})%
13698 \Fld@additionalactions
13699 \ifnum\Fld@maxlen>\z@/MaxLen \Fld@maxlen \fi
13700 }

```

\PDFForm@Submit

```

13701 \def\PDFForm@Submit{%
13702 /Subtype/Widget%
13703 \Fld@annotflags
13704 \Fld@annotnames
13705 /FT/Btn%
13706 \Fld@flags
13707 /H/P%
13708 /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
13709 \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
13710     \ifx\Fld@bordercolor\relax\else 1\fi
13711     \space
13712 \else
13713 /MK<<%
13714     \ifnum\Fld@rotation=\z@
13715     \else
13716     /R \Fld@rotation
13717     \fi
13718     \ifx\Fld@bordercolor\relax
13719     \else
13720     /BC[\Fld@bordercolor]%
13721     \fi
13722 >>%
13723 \fi
13724 /A<<%
13725 /S/SubmitForm%
13726 /F<<%
13727     /FS/URL%
13728     /F(\Hy@escapestring{\Form@action})%
13729 >>%
13730 \Fld@submitflags
13731 >>%
13732 \Fld@additionalactions
13733 }

```

\PDFForm@Reset

```

13734 \ifHy@pdfa
13735 \else
13736 \def\PDFForm@Reset{%
13737 /Subtype/Widget%
13738 \Fld@annotflags
13739 \Fld@annotnames
13740 /FT/Btn%
13741 \Fld@flags
13742 /H/P%
13743 /DA(/Helv \strip@pt\Fld@charsize\space Tf 0 0 1 rg)%
13744 \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
13745     \ifx\Fld@bordercolor\relax\else 1\fi
13746     \space
13747 \else
13748 /MK<<%
13749     \ifnum\Fld@rotation=\z@

```

```

13750      \else
13751        /R \Fld@rotation
13752      \fi
13753      \ifx\Fld@bordercolor\relax
13754      \else
13755        /BC[\Fld@bordercolor]%
13756      \fi
13757 %      /CA (Clear)
13758 %      /AC (Done)
13759      >>%
13760      \fi
13761      /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
13762      /A<</S/ResetForm>>%
13763      \Fld@additionalactions
13764    }%
13765  \fi

13766 </pdfform>
13767 <*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  $\LaTeX$  macros.

To write out the current section title, and its rationalized number, we have to intercept the `\@sect` command, which is rather dangerous. But how else to see the 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`

```

13768 \def\phantomsection{%
13769   \Hy@MakeCurrentHrefAuto{section*}%
13770   \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
13771 }
13772 </package>

```

### 48.1 Bookmarks

```
13773 <*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  $\varepsilon\text{-}\TeX$ , the order of the `\BOOKMARK` commands written to the `\@outlinefile` could appear wrong, because of mis-feature of  $\varepsilon\text{-}\TeX$ 's implementation (that it processes the shipped out lines left-to-right, instead of the order in which they appear in the document). The wrong order will appear when the file contains two bookmarks on the same line typeset right-to-left.

To work around this problem, the `bookmark@seq@number` counter is used to write the bookmark's sequential number into a comment in the `\@outlinefile`, which could be used to post-process it to achieve the proper ordering of `\BOOKMARK` commands in that file.

```

13774 \def\Hy@writebookmark#1#2#3#4#5{%
13775   % section number, text, label, level, file

```

```

13776 \ifx\WriteBookmarks\relax%
13777 \else
13778 \ifnum#4>\Hy@bookmarksdepth\relax
13779 \else
13780 \@@writetorep{#1}{#2}{#3}{#4}{#5}%
13781 \fi
13782 \fi
13783 }
13784 \def\Hy@currentbookmarklevel{0}
13785 \def\Hy@numberline#1{#1 }
13786 \def\@@writetorep#1#2#3#4#5{%
13787 \begingroup
13788 \edef\Hy@tempa{#5}%
13789 \ifx\Hy@tempa\Hy@bookmarkstype
13790 \edef\Hy@level{#4}%
13791 \ifx\Hy@levelcheck Y%
13792 \@tempcnta\Hy@level\relax
13793 \advance\@tempcnta by -1 %
13794 \ifnum\Hy@currentbookmarklevel<\@tempcnta
13795 \advance\@tempcnta by -\Hy@currentbookmarklevel\relax
13796 \advance\@tempcnta by 1 %
13797 \Hy@Warning{%
13798 Difference (\the\@tempcnta) between bookmark levels is %
13799 greater \MessageBreak than one, level fixed%
13800 }%
13801 \@tempcnta\Hy@currentbookmarklevel
13802 \advance\@tempcnta by 1 %
13803 \edef\Hy@level{\the\@tempcnta}%
13804 \fi
13805 \else
13806 \global\let\Hy@levelcheck Y%
13807 \fi
13808 \global\let\Hy@currentbookmarklevel\Hy@level
13809 \@tempcnta\Hy@level\relax
13810 \expandafter\xdef\csname Parent\Hy@level\endcsname{#3}%
13811 \advance\@tempcnta by -1 %
13812 \edef\Hy@tempa{#3}%
13813 \edef\Hy@tempb{\csname Parent\the\@tempcnta\endcsname}%
13814 \ifx\Hy@tempa\Hy@tempb
13815 \Hy@Warning{%
13816 The anchor of a bookmark and its parent's must not%
13817 \MessageBreak be the same. Added a new anchor%
13818 }%
13819 \phantomsection
13820 \fi
13821 \ifHy@bookmarksnumbered
13822 \let\numberline\Hy@numberline
13823 \let\booknumberline\Hy@numberline
13824 \let\partnumberline\Hy@numberline
13825 \let\chapternumberline\Hy@numberline
13826 \else
13827 \let\numberline\@gobble
13828 \let\booknumberline\@gobble
13829 \let\partnumberline\@gobble
13830 \let\chapternumberline\@gobble
13831 \fi
13832 \HyPsd@XeTeXBigCharstrue

```

```

13833 \pdfstringdef\Hy@tempa{#2}%
13834 \HyPsd@SanitizeForOutFile\Hy@tempa
13835 \if@filesw
13836 \stepcounter{bookmark@seq@number}%
13837 \ifundefined{@outlinefile}{%
13838 }{%
13839 \protected@write\@outlinefile{}{%
13840 \protect\BOOKMARK
13841 [\Hy@level][\@bookmarkopenstatus{\Hy@level}]{#3}%
13842 {\Hy@tempa}\Hy@tempb}%
13843 \@percentchar\space\thebookmark@seq@number
13844 }%
13845 }%
13846 \fi
13847 \fi
13848 \endgroup
13849 }
13850 \newcounter{bookmark@seq@number}

13851 \begingroup
13852 \lccode'('= '{%
13853 \lccode')='}%
13854 \lccode'1=\z@
13855 \lccode'2=\z@
13856 \lccode'3=\z@
13857 \lccode'5=\z@
13858 \lccode'7=\z@
13859 \lccode'\#=\z@
13860 \lccode'\='=\z@
13861 \lccode'\{=\z@
13862 \lccode'\}=\z@
13863 \lowercase{%
13864 \endgroup
13865 \def\HyPsd@SanitizeForOutFile#1{%
13866 \@onelevel@sanitize\Hy@tempa
13867 \escapechar'\%
13868 \edef\Hy@tempa{%
13869 \expandafter\HyPsd@SanitizeOut@BraceLeft\Hy@tempa\@nil
13870 }%
13871 \edef\Hy@tempa{%
13872 \expandafter\HyPsd@SanitizeOut@BraceRight\Hy@tempa\@nil
13873 }%
13874 }%
13875 \def\HyPsd@SanitizeOut@BraceLeft#1(#2\@nil{%
13876 #1%
13877 \ifx\#2\%
13878 \expandafter\ltx@gobble
13879 \else
13880 \expandafter\ltx@firstofone
13881 \fi
13882 {%
13883 \string\173%
13884 \HyPsd@SanitizeOut@BraceLeft#2\@nil
13885 }%
13886 }%
13887 \def\HyPsd@SanitizeOut@BraceRight#1)#2\@nil{%
13888 #1%
13889 \ifx\#2\%

```

```

13890 \expandafter\ltx@gobble
13891 \else
13892 \expandafter\ltx@firstofone
13893 \fi
13894 {%
13895 \string\175%
13896 \HyPsd@SanitizeOut@BraceRight#2\@nil
13897 }%
13898 }%
13899 }

```

In the call of `\BOOKMARK` the braces around `#4` are omitted, because it is not likely, that the level number contains `]`.

```

13900 \newcommand{\currentpdfbookmark}{%
13901 \pdfbookmark[\Hy@currentbookmarklevel]%
13902 }
13903 \newcommand{\subpdfbookmark}{%
13904 \@tempcnta\Hy@currentbookmarklevel
13905 \Hy@StepCount\@tempcnta
13906 \expandafter\pdfbookmark\expandafter[\the\@tempcnta]%
13907 }
13908 \newcommand{\belowpdfbookmark}[2]{%
13909 \@tempcnta\Hy@currentbookmarklevel
13910 \Hy@StepCount\@tempcnta
13911 \expandafter\pdfbookmark\expandafter[\the\@tempcnta]{#1}{#2}%
13912 \advance\@tempcnta by -1 %
13913 \xdef\Hy@currentbookmarklevel{\the\@tempcnta}%
13914 }

```

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.

```

13915 \renewcommand\pdfbookmark[3][0]{%
13916 \Hy@writebookmark}{#2}{#3.#1}{#1}{toc}%
13917 \hyper@anchorstart{#3.#1}\hyper@anchorend
13918 }
13919 \def\BOOKMARK{%
13920 \@ifnextchar[{\@BOOKMARK}{\@@BOOKMARK[1][-]}%
13921 }
13922 \def\@BOOKMARK[#1]{%
13923 \@ifnextchar[{\@@BOOKMARK[{#1}]}{\@@BOOKMARK[{#1}][-]}%
13924 }

```

The macros for calculating structure of outlines are derived from those by Petr Olsak used in the `texinfo` macros.

#### 48.1.1 Rerun warning

`\Hy@OutlineRerunCheck`

```

13925 \RequirePackage{rerunfilecheck}[2009/12/10]
13926 \def\Hy@OutlineRerunCheck{%
13927 \RerunFileCheck{\jobname.out}{%
13928 \immediate\closeout\@outlinefile
13929 }{%
13930 Rerun to get outlines right\MessageBreak
13931 or use package ‘bookmark’%
13932 }%
13933 }

```



## 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.

```
13934 \*vtex\
```

```
13935 \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.

```
13936 \begingroup
13937 \catcode'\'=12 %
13938 \ifnum\Hy@VTeXversion<650 %
13939 \catcode'\=12 %
13940 \gdef\hv@pdf@char#1#2#3{%
13941 \char
13942 \ifcase'#1#2#3 %
13943 "00\or"01\or"02\or"03\or"04\or"05\or"06\or"07%
13944 \or"08\or"09\or"0A\or"0B\or"0C\or"0D\or"0E\or"0F%
13945 \or"10\or"11\or"12\or"13\or"14\or"15\or"16\or"17%
13946 \or"18\or"19\or"1A\or"1B\or"1C\or"1D\or"1E\or"1F%
13947 \or"20\or"21\or"22\or"23\or"24\or"25\or"26\or"27%
13948 \or"28\or"29\or"2A\or"2B\or"2C\or"2D\or"2E\or"2F%
13949 \or"30\or"31\or"32\or"33\or"34\or"35\or"36\or"37%
13950 \or"38\or"39\or"3A\or"3B\or"3C\or"3D\or"3E\or"3F%
13951 \or"40\or"41\or"42\or"43\or"44\or"45\or"46\or"47%
13952 \or"48\or"49\or"4A\or"4B\or"4C\or"4D\or"4E\or"4F%
13953 \or"50\or"51\or"52\or"53\or"54\or"55\or"56\or"57%
13954 \or"58\or"59\or"5A\or"5B\or"5C\or"5D\or"5E\or"5F%
13955 \or"60\or"61\or"62\or"63\or"64\or"65\or"66\or"67%
13956 \or"68\or"69\or"6A\or"6B\or"6C\or"6D\or"6E\or"6F%
13957 \or"70\or"71\or"72\or"73\or"74\or"75\or"76\or"77%
13958 \or"78\or"79\or"7A\or"7B\or"7C\or"7D\or"7E\or"7F%
13959 \or"80\or"81\or"82\or"83\or"84\or"85\or"86\or"87%
13960 \or"88\or"89\or"8A\or"8B\or"8C\or"8D\or"8E\or"8F%
13961 \or"90\or"91\or"92\or"93\or"94\or"95\or"96\or"97%
13962 \or"98\or"99\or"9A\or"9B\or"9C\or"9D\or"9E\or"9F%
13963 \or"A0\or"A1\or"A2\or"A3\or"A4\or"A5\or"A6\or"A7%
13964 \or"A8\or"A9\or"AA\or"AB\or"AC\or"AD\or"AE\or"AF%
13965 \or"B0\or"B1\or"B2\or"B3\or"B4\or"B5\or"B6\or"B7%
13966 \or"B8\or"B9\or"BA\or"BB\or"BC\or"BD\or"BE\or"BF%
13967 \or"C0\or"C1\or"C2\or"C3\or"C4\or"C5\or"C6\or"C7%
13968 \or"C8\or"C9\or"CA\or"CB\or"CC\or"CD\or"CE\or"CF%
13969 \or"D0\or"D1\or"D2\or"D3\or"D4\or"D5\or"D6\or"D7%
13970 \or"D8\or"D9\or"DA\or"DB\or"DC\or"DD\or"DE\or"DF%
13971 \or"E0\or"E1\or"E2\or"E3\or"E4\or"E5\or"E6\or"E7%
13972 \or"E8\or"E9\or"EA\or"EB\or"EC\or"ED\or"EE\or"EF%
13973 \or"F0\or"F1\or"F2\or"F3\or"F4\or"F5\or"F6\or"F7%
13974 \or"F8\or"F9\or"FA\or"FB\or"FC\or"FD\or"FE\or"FF%
13975 \fi
13976 }%
13977 \else
13978 \gdef\hv@pdf@char{\char'}%
13979 \fi
13980 \endgroup
```

\@@BOOKMARK

```

13981 \def\@@BOOKMARK[#1][#2]#3#4#5{%
13982   \expandafter\edef\csname @count@#3\endcsname{%
13983     \the\@serial@counter
13984   }%
13985   \edef\@mycount{\the\@serial@counter}%
13986   \Hy@StepCount\@serial@counter
13987   \edef\@parcount{%
13988     \expandafter\ifx\csname @count@#5\endcsname\relax
13989       0%
13990     \else
13991       \csname @count@#5\endcsname
13992     \fi
13993   }%
13994   \immediate\special{%
13995     !outline \HyperDestNameFilter{#3};p=\@parcount,i=\@mycount,%
13996     s=\ifx#2-c\else o\fi,t=#4%
13997   }%
13998 }%

```

\ReadBookmarks

```

13999 \def\ReadBookmarks{%
14000   \begingroup
14001   \def\0{\hv@pdf@char 0}%
14002   \def\1{\hv@pdf@char 1}%
14003   \def\2{\hv@pdf@char 2}%
14004   \def\3{\hv@pdf@char 3}%
14005   \def\({}%
14006   \def\)}%
14007   \def\do##1{%
14008     \ifnum\catcode'##1=\active
14009       \@makeother##1%
14010     \else
14011       \ifnum\catcode'##1=6 %
14012         \@makeother##1%
14013       \fi
14014     \fi
14015   }%
14016   \dospecials
14017   \Hy@safe@activetrue
14018   \InputIfFileExists{\jobname.out}{\}{}%
14019   \endgroup
14020   \ifx\WriteBookmarks\relax
14021   \else
14022     \if@filesw
14023       \newwrite\@outlinefile
14024       \Hy@OutlineRerunCheck
14025       \immediate\openout\@outlinefile=\jobname.out\relax
14026       \ifHy@typexml
14027         \immediate\write\@outlinefile{<relaxxml>\relax}%
14028       \fi
14029     \fi
14030   \fi
14031 }

14032 </vtex>
14033 <!*vtex>

```

```

14034 \def\ReadBookmarks{%
14035   \pdf@ifdraftmode{ }{%
14036     \begingroup
14037     \def\do##1{%
14038       \ifnum\catcode'##1=\active
14039         \@makeother##1%
14040       \else
14041         \ifnum\catcode'##1=6 %
14042           \@makeother##1%
14043         \fi
14044       \fi
14045     }%
14046     \dospecials
14047     \Hy@safe@activestrue
14048     \escapechar='\%
14049     \def\@@BOOKMARK[##1][##2]##3##4##5{%
14050       \calc@bm@number{##5}%
14051     }%
14052     \InputIfFileExists{\jobname.out}{ }{%
14053       \ifx\WriteBookmarks\relax
14054         \global\let\WriteBookmarks\relax
14055       \fi
14056       \def\@@BOOKMARK[##1][##2]##3##4##5{%
14057         \def\Hy@temp{##4}%
14058       }%
14059       \Hy@pstringdef\Hy@pstringName{\HyperDestNameFilter{##3}}%
14060       \Hy@OutlineName{ }\Hy@pstringName{%
14061         ##2\check@bm@number{##3}%
14062       }{%
14063         \expandafter\strip@prefix\meaning\Hy@temp
14064       }%
14065     }%
14066     \pdfmark{%
14067       pdfmark=/OUT,%
14068       Count={##2\check@bm@number{##3}},%
14069       Dest={##3},%
14070       Title=\expandafter\strip@prefix\meaning\Hy@temp
14071     }%
14072   }%
14073 }%
14074 \def\vipdfm|xetex{
14075   \Hy@pstringdef\Hy@pstringName{\HyperDestNameFilter{##3}}%
14076   \@pdfm@mark{%
14077     outline \ifHy@DvipdfmxOutlineOpen
14078       [%
14079       \ifnum##21>\z@
14080       \else
14081         -%
14082       \fi
14083     ] %
14084     \fi
14085     ##1<<%
14086     /Title(\expandafter\strip@prefix\meaning\Hy@temp)%
14087     /A<<%
14088     /S/GoTo%
14089     /D(\Hy@pstringName)%
14090     >>%

```

```

14091      >>%
14092    }%
14093  </dvipdfm | xetex>
14094    }%
14095    \begingroup
14096      \def\WriteBookmarks{0}%
14097      \InputIfFileExists{\jobname.out}{-}{-}%
14098    \endgroup
14099    %{\escapechar\m@ne\InputIfFileExists{\jobname.out}{-}{-}}%
14100  \endgroup
14101 }%
14102 \ifx\WriteBookmarks\relax
14103 \else
14104   \if@filesw
14105     \newwrite\@outlinefile
14106     \Hy@OutlineRerunCheck
14107     \immediate\openout\@outlinefile=\jobname.out\relax
14108     \ifHy@typexml
14109       \immediate\write\@outlinefile{<relaxxml>\relax}%
14110     \fi
14111   \fi
14112 \fi
14113 }
14114 <*pdfTex>
14115 \def\Hy@OutlineName#1#2#3#4{%
14116   \pdfoutline goto name{#2}count#3{#4}%
14117 }
14118 </pdfTex>
14119 \def\check@bm@number#1{%
14120   \expandafter\ifx\csname B_#1\endcsname\relax
14121     0%
14122   \else
14123     \csname B_#1\endcsname
14124   \fi
14125 }
14126 \def\calc@bm@number#1{%
14127   \@tempcnta=\check@bm@number{#1}\relax
14128   \advance\@tempcnta by 1 %
14129   \expandafter\xdef\csname B_#1\endcsname{\the\@tempcnta}%
14130 }
14131 </!vtex>
14132 \ifHy@implicit
14133 \else
14134   \expandafter\endinput
14135 \fi
14136 </outlines>
14137 <*outlines | hypertex>
14138 \newlength\Hy@SectionHShift
14139 \def\Hy@SectionAnchorHref#1{%
14140   \ifx\protect\@typeset@protect
14141     \Hy@@@SectionAnchor{#1}%
14142   \fi
14143 }
14144 \DeclareRobustCommand*\Hy@@@SectionAnchor}[1]{%
14145   \leavevmode
14146   \hbox to 0pt{%

```

```

14147 \kern-\Hy@SectionHShift
14148 \Hy@raisedlink{%
14149   \hyper@anchorstart{#1}\hyper@anchorend
14150 }%
14151 \hss
14152 }%
14153 }
14154 \let\H@old@ssect\@ssect
14155 \def\@ssect#1#2#3#4#5{%
14156   \Hy@MakeCurrentHrefAuto{section*}%
14157   \setlength{\Hy@SectionHShift}{#1}%
14158   \begingroup
14159     \toks@{\H@old@ssect{#1}{#2}{#3}{#4}}%
14160     \toks\tw\expandafter{%
14161       \expandafter\Hy@SectionAnchorHref\expandafter{\@currentHref}%
14162       #5%
14163     }%
14164   \edef\x{\endgroup
14165     \the\toks@\the\toks\tw}%
14166   }\x
14167 }
14168 \let\H@old@schapter\@schapter
14169 \def\@schapter#1{%
14170   \begingroup
14171     \let\@mkboth\@gobbletwo
14172     \Hy@MakeCurrentHrefAuto{\Hy@chapapp*}%
14173     \Hy@raisedlink{%
14174       \hyper@anchorstart{\@currentHref}\hyper@anchorend
14175     }%
14176   \endgroup
14177   \H@old@schapter{#1}%
14178 }

```

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:

```

14179 \ltx@ifundefined{@chapter}{}{%
14180   \let\Hy@org@chapter\@chapter
14181   \def\@chapter{%
14182     \def\Hy@next{%
14183       \Hy@MakeCurrentHrefAuto{\Hy@chapapp*}%
14184       \Hy@raisedlink{%
14185         \hyper@anchorstart{\@currentHref}\hyper@anchorend
14186       }%
14187     }%
14188     \ifnum\c@secnumdepth>\m@ne
14189       \ltx@ifundefined{if@mainmatter}%
14190       \iftrue{\csname if@mainmatter\endcsname}%
14191       \let\Hy@next\relax
14192     \fi
14193     \fi
14194     \Hy@next
14195     \Hy@org@chapter
14196   }%
14197 }
14198 \let\H@old@part\@part
14199 \begingroup\expandafter\expandafter\expandafter\endgroup

```

```

14200 \expandafter\ifx\csname chapter\endcsname\relax
14201   \let\Hy@secnum@part\z@
14202 \else
14203   \let\Hy@secnum@part\m@ne
14204 \fi
14205 \def\@part{%
14206   \ifnum\Hy@secnum@part>\c@secnumdepth
14207     \phantomsection
14208   \fi
14209   \H@old@part
14210 }

14211 \let\H@old@spart\@spart
14212 \def\@spart#1{%
14213   \Hy@MakeCurrentHrefAuto{part*}%
14214   \Hy@raisedlink{%
14215     \hyper@anchorstart{\@currentHref}\hyper@anchorend
14216   }%
14217   \H@old@spart{#1}%
14218 }

14219 \let\H@old@sect\@sect
14220 \def\@sect#1#2#3#4#5#6[#7]#8{%
14221   \ifnum #2>\c@secnumdepth
14222     \expandafter\@firstoftwo
14223   \else
14224     \expandafter\@secondoftwo
14225   \fi
14226   {%
14227     \Hy@MakeCurrentHrefAuto{section*}%
14228     \setlength{\Hy@SectionHShift}{#3}%
14229     \begingroup
14230     \toks@{\H@old@sect{#1}{#2}{#3}{#4}{#5}{#6}[{#7}]}%
14231     \toks\tw@\expandafter{%
14232       \expandafter\Hy@SectionAnchorHref\expandafter{\@currentHref}%
14233       #8%
14234     }%
14235     \edef\x{\endgroup
14236       \the\toks@{\the\toks\tw@}}%
14237   }\x
14238 }{%
14239   \H@old@sect{#1}{#2}{#3}{#4}{#5}{#6}[{#7}]{#8}%
14240 }%
14241 }

14242 </outlines | hypertex>
14243 <*outlines>

14244 \expandafter\def\csname Parent-4\endcsname{}
14245 \expandafter\def\csname Parent-3\endcsname{}
14246 \expandafter\def\csname Parent-2\endcsname{}
14247 \expandafter\def\csname Parent-1\endcsname{}
14248 \expandafter\def\csname Parent0\endcsname{}
14249 \expandafter\def\csname Parent1\endcsname{}
14250 \expandafter\def\csname Parent2\endcsname{}
14251 \expandafter\def\csname Parent3\endcsname{}
14252 \expandafter\def\csname Parent4\endcsname{}

14253 </outlines>

```

## 49 Compatibility with koma-script classes

14254 (\*outlines | hypertex)

Hard-wire in an unpleasant over-ride of komascript ‘scrbook’ class for Tobias Isenberg (Tobias.Isenberg@gmx.de). With version 6.71b the hack is also applied to ‘scrreprt’ class and is removed for koma-script versions since 2001/01/01, because Markus Kohm supports hyperref in komascript.

```
14255 \def\Hy@tempa{%
14256   \def\@addchap{##1}##2{%
14257     \typeout{##2}%
14258     \if@twoside
14259       \@mkboth{##1}{}%
14260     \else
14261       \@mkboth{}{##1}%
14262     \fi
14263     \addtocontents{lof}{\protect\addvspace{10\p@}}%
14264     \addtocontents{lot}{\protect\addvspace{10\p@}}%
14265     \Hy@MakeCurrentHrefAuto{\Hy@chapapp*}%
14266     \Hy@raisedlink{%
14267       \hyper@anchorstart{\@currentHref}\hyper@anchorend
14268     }%
14269     \if@twocolumn
14270       \@topnewpage[\@makeschapterhead{##2}]%
14271     \else
14272       \@makeschapterhead{##2}%
14273       \@afterheading
14274     \fi
14275     \addcontentsline{toc}{chapter}{##1}%
14276   }%
14277 }
14278 \@ifclassloaded{scrbook}{%
14279   \@ifclasslater{scrbook}{2001/01/01}{%
14280     \let\Hy@tempa\@empty
14281   }{}%
14282 }{%
14283   \@ifclassloaded{scrreprt}{%
14284     \@ifclasslater{scrreprt}{2001/01/01}{%
14285       \let\Hy@tempa\@empty
14286     }{}%
14287   }{%
14288     \let\Hy@tempa\@empty
14289   }%
14290 }%
14291 \Hy@tempa
14292 (/outlines | hypertex)
```

## 50 Encoding definition files for encodings of PDF strings

This was contributed by Heiko Oberdiek.

### 50.1 PD1 encoding

```
14293 (*pd1enc)
14294 \DeclareFontEncoding{PD1}{}{}
```

Accents

```
14295 \DeclareTextAccent{'}{PD1}{\textasciigrave}
```

```

14296 \DeclareTextAccent{'}{PD1}{\textacute}
14297 \DeclareTextAccent{~}{PD1}{\textasciicircum}
14298 \DeclareTextAccent{~}{PD1}{\texttilde}
14299 \DeclareTextAccent{"}{PD1}{\textasciidieresis}
14300 \DeclareTextAccent{r}{PD1}{\textring}
14301 \DeclareTextAccent{v}{PD1}{\textasciicaron}
14302 \DeclareTextAccent{.}{PD1}{\textdotaccent}
14303 \DeclareTextAccent{c}{PD1}{\textcedilla}
14304 \DeclareTextAccent{=}{PD1}{\textasciimacron}
14305 \DeclareTextAccent{b}{PD1}{\textmacronbelow}
14306 \DeclareTextAccent{d}{PD1}{\textdotbelow}
14307 \DeclareTextCompositeCommand{'}{PD1}{\@empty}{\textasciigrave}
14308 \DeclareTextCompositeCommand{'}{PD1}{\@empty}{\textacute}
14309 \DeclareTextCompositeCommand{~}{PD1}{\@empty}{\textasciicircum}
14310 \DeclareTextCompositeCommand{~}{PD1}{\@empty}{\texttilde}
14311 \DeclareTextCompositeCommand{"}{PD1}{\@empty}{\textasciidieresis}
14312 \DeclareTextCompositeCommand{r}{PD1}{\@empty}{\textring}
14313 \DeclareTextCompositeCommand{v}{PD1}{\@empty}{\textasciicaron}
14314 \DeclareTextCompositeCommand{.}{PD1}{\@empty}{\textdotaccent}
14315 \DeclareTextCompositeCommand{c}{PD1}{\@empty}{\textcedilla}
14316 \DeclareTextCompositeCommand{=}{PD1}{\@empty}{\textasciimacron}
14317 \DeclareTextCompositeCommand{b}{PD1}{\@empty}{\textmacronbelow}
14318 \DeclareTextCompositeCommand{d}{PD1}{\@empty}{\textdotbelow}
14319 \DeclareTextCompositeCommand{'}{PD1}{\ }{\textasciigrave}
14320 \DeclareTextCompositeCommand{'}{PD1}{\ }{\textacute}
14321 \DeclareTextCompositeCommand{~}{PD1}{\ }{\textasciicircum}
14322 \DeclareTextCompositeCommand{~}{PD1}{\ }{\texttilde}
14323 \DeclareTextCompositeCommand{"}{PD1}{\ }{\textasciidieresis}
14324 \DeclareTextCompositeCommand{r}{PD1}{\ }{\textring}
14325 \DeclareTextCompositeCommand{v}{PD1}{\ }{\textasciicaron}
14326 \DeclareTextCompositeCommand{.}{PD1}{\ }{\textdotaccent}
14327 \DeclareTextCompositeCommand{c}{PD1}{\ }{\textcedilla}
14328 \DeclareTextCompositeCommand{=}{PD1}{\ }{\textasciimacron}
14329 \DeclareTextCompositeCommand{b}{PD1}{\ }{\textmacronbelow}
14330 \DeclareTextCompositeCommand{d}{PD1}{\ }{\textdotbelow}
14331 \DeclareTextCommand{k}{PD1}[1]{\TextSymbolUnavailable{k{#1}}#1}
14332 \DeclareTextCommand{t}{PD1}[1]{\TextSymbolUnavailable{t{#1}}#1}
14333 \DeclareTextCommand{\newtie}{PD1}[1]{%
14334 \TextSymbolUnavailable{\newtie{#1}}#1%
14335 }

```

Special white space escape characters not for use in bookmarks but for other PDF strings.

```

14336 % U+0009 (CHARACTER TABULATION)
14337 \DeclareTextCommand{\textHT}{PD1}{\011}% U+0009
14338 % U+000A (LINE FEED)
14339 \DeclareTextCommand{\textLF}{PD1}{\012}% U+000A
14340 % U+000D (CARRIAGE RETURN)
14341 \DeclareTextCommand{\textCR}{PD1}{\015}% U+000D

```

Accent glyph names

```

14342 % U+02D8 BREVE; breve
14343 \DeclareTextCommand{\textasciibreve}{PD1}{\030}% U+02D8
14344 % U+02C7 CARON; caron
14345 \DeclareTextCommand{\textasciicaron}{PD1}{\031}% U+02C7
14346 % U+02C6 MODIFIER LETTER CIRCUMFLEX ACCENT; circumflex
14347 \DeclareTextCommand{\textcircumflex}{PD1}{\032}% U+02C6
14348 % U+02D9 DOT ABOVE; dotaccent
14349 \DeclareTextCommand{\textdotaccent}{PD1}{\033}% U+02D9
14350 % U+02DD DOUBLE ACUTE ACCENT; hungarumlaut

```



14351 \DeclareTextCommand{\texthungarumlaut}{PD1}{\034}% U+02DD  
14352 % U+02DB OGONEK; ogonek  
14353 \DeclareTextCommand{\textogonek}{PD1}{\035}% U+02DB  
14354 % U+02DA RING ABOVE; ring  
14355 \DeclareTextCommand{\textring}{PD1}{\036}% U+02DA  
14356 % U+02DC SMALL TILDE; ilde, \*tilde  
14357 \DeclareTextCommand{\texttilde}{PD1}{\037}% U+02DC  
  
\040: U+0020 SPACE; \*space, spacehackarabic  
\041: U+0021 EXCLAMATION MARK; exclam  
14358 % U+0022 QUOTATION MARK; quotedbl  
14359 \DeclareTextCommand{\textquotedbl}{PD1}{\string"}% \042 U+0022  
14360 % U+0023 NUMBER SIGN; numbersign  
14361 \DeclareTextCommand{\textnumbersign}{PD1}{\043}% U+0023  
14362 % U+0024 DOLLAR SIGN; dollar  
14363 \DeclareTextCommand{\textdollar}{PD1}{\044}% U+0024  
14364 % U+0025 PERCENT SIGN; percent  
14365 \DeclareTextCommand{\textpercent}{PD1}{\045}% U+0025  
14366 % U+0026 AMPERSAND; ampersand  
14367 \DeclareTextCommand{\textampersand}{PD1}{\046}% U+0026  
  
\047: U+0027 APOSTROPHE; quotesingle  
  
  
14368 % U+0028 LEFT PARENTHESIS; parenleft  
14369 \DeclareTextCommand{\textparenleft}{PD1}{\string\{}% \050 U+0028  
14370 % U+0029 RIGHT PARENTHESIS; parenright  
14371 \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  
14372 % U+002E FULL STOP; period  
14373 \DeclareTextCommand{\textdotbelow}{PD1}{\string\cdot}% \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  
14374 % U+003C LESS-THAN SIGN; less  
14375 \DeclareTextCommand{\textless}{PD1}{\string<}% \074 U+003C  
  
\075: U+003D EQUALS SIGN; equal  
14376 % U+003E GREATER-THAN SIGN; greater  
14377 \DeclareTextCommand{\textgreater}{PD1}{\string>}% \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  
14378 % U+005C REVERSE SOLIDUS; backslash  
14379 \DeclareTextCommand{\textbackslash}{PD1}{\134}% U+005C  
  
\135: U+005D RIGHT SQUARE BRACKET; bracketright  
14380 % U+005E CIRCUMFLEX ACCENT; asciicircum  
14381 \DeclareTextCommand{\textasciicircum}{PD1}{\136}% U+005E

14382 % U+005F LOW LINE; underscore  
 14383 \DeclareTextCommand{\textunderscore}{PD1}{\137}% U+005F  
 14384 \DeclareTextCommand{\textmacronbelow}{PD1}{\137}% U+005F  
 14385 % U+0060 GRAVE ACCENT; grave  
 14386 \DeclareTextCommand{\textasciigrave}{PD1}{\140}% U+0060  
 \141: U+0061 LATIN SMALL LETTER A; a  
 ...  
 \150: U+0068 LATIN SMALL LETTER H; h  
 14387 % U+0069 LATIN SMALL LETTER I; i  
 14388 \DeclareTextCompositeCommand{\.}{PD1}{i}{i}% \151 U+0069  
 \152: U+006A LATIN SMALL LETTER J; j  
 ...  
 \172: U+007A LATIN SMALL LETTER Z; z  
 14389 % U+007B LEFT CURLY BRACKET; braceleft  
 14390 \DeclareTextCommand{\textbraceleft}{PD1}{\173}% U+007B  
 14391 % U+007C VERTICAL LINE; \*bar, verticalbar  
 14392 \DeclareTextCommand{\textbar}{PD1}{|}% U+007C  
 14393 % U+007D RIGHT CURLY BRACKET; braceright  
 14394 \DeclareTextCommand{\textbraceright}{PD1}{\175}% U+007D  
 14395 % U+007E TILDE; asciitilde  
 14396 \DeclareTextCommand{\textasciitilde}{PD1}{\176}% U+007E  
 Slot \177 (0x7F) is undefined in PDFDocEncoding.  
 14397 % U+2022 BULLET; bullet  
 14398 \DeclareTextCommand{\textbullet}{PD1}{\200}% U+2022  
 14399 % U+2020 DAGGER; dagger  
 14400 \DeclareTextCommand{\textdagger}{PD1}{\201}% U+2020  
 14401 % U+2021 DOUBLE DAGGER; daggerdbl  
 14402 \DeclareTextCommand{\textdaggerdbl}{PD1}{\202}% U+2021  
 14403 % U+2026 HORIZONTAL ELLIPSIS; ellipsis  
 14404 \DeclareTextCommand{\textellipsis}{PD1}{\203}% U+2026  
 14405 % U+2014 EM DASH; emdash  
 14406 \DeclareTextCommand{\textemdash}{PD1}{\204}% U+2014  
 14407 % U+2013 EN DASH; endash  
 14408 \DeclareTextCommand{\textendash}{PD1}{\205}% U+2013  
 14409 % U+0192 LATIN SMALL LETTER F WITH HOOK; florin  
 14410 \DeclareTextCommand{\textflorin}{PD1}{\206}% U+0192  
 14411 % U+2044 FRACTION SLASH; fraction  
 14412 \DeclareTextCommand{\textfractionsolidus}{PD1}{\207}% U+2044  
 14413 % U+2039 SINGLE LEFT-POINTING ANGLE QUOTATION MARK; guil-  
 singleft  
 14414 \DeclareTextCommand{\guilsingleft}{PD1}{\210}% U+2039  
 14415 % U+203A SINGLE RIGHT-POINTING ANGLE QUOTATION MARK; guils-  
 singright  
 14416 \DeclareTextCommand{\guilsingright}{PD1}{\211}% U+203A  
 14417 % U+2212 MINUS SIGN; minus  
 14418 \DeclareTextCommand{\textminus}{PD1}{\212}% U+2212  
 14419 % U+2030 PER MILLE SIGN; perthousand  
 14420 \DeclareTextCommand{\textperthousand}{PD1}{\213}% U+2030  
 14421 % U+201E DOUBLE LOW-9 QUOTATION MARK; quotedblbase  
 14422 \DeclareTextCommand{\quotedblbase}{PD1}{\214}% U+201E  
 14423 % U+201C LEFT DOUBLE QUOTATION MARK; quotedblleft  
 14424 \DeclareTextCommand{\textquotedblleft}{PD1}{\215}% U+201C  
 14425 % U+201D RIGHT DOUBLE QUOTATION MARK; quotedblright  
 14426 \DeclareTextCommand{\textquotedblright}{PD1}{\216}% U+201D  
 14427 % U+2018 LEFT SINGLE QUOTATION MARK; quoteleft  
 14428 \DeclareTextCommand{\textquoteleft}{PD1}{\217}% U+2018

14429 % U+2019 RIGHT SINGLE QUOTATION MARK; quoteright  
 14430 \DeclareTextCommand{\textquoteright}{PD1}{\220}% U+2019  
 14431 % U+201A SINGLE LOW-9 QUOTATION MARK; quotesinglbase  
 14432 \DeclareTextCommand{\quotesinglbase}{PD1}{\221}% U+201A  
 14433 % U+2122 TRADE MARK SIGN; trademark  
 14434 \DeclareTextCommand{\texttrademark}{PD1}{\222}% U+2122  
 14435 % U+FB01 LATIN SMALL LIGATURE FI; fi  
 14436 \DeclareTextCommand{\textfi}{PD1}{\223}% U+FB01  
 14437 % U+FB02 LATIN SMALL LIGATURE FL; fl  
 14438 \DeclareTextCommand{\textfl}{PD1}{\224}% U+FB02  
 14439 % U+0141 LATIN CAPITAL LETTER L WITH STROKE; Lslash  
 14440 \DeclareTextCommand{\L}{PD1}{\225}% U+0141  
 14441 % U+0152 LATIN CAPITAL LIGATURE OE; OE  
 14442 \DeclareTextCommand{\OE}{PD1}{\226}% U+0152  
 14443 % U+0160 LATIN CAPITAL LETTER S WITH CARON; Scaron  
 14444 \DeclareTextCompositeCommand{\v}{PD1}{S}{\227}% U+0160  
 14445 % U+0178 LATIN CAPITAL LETTER Y WITH DIAERESIS; Ydieresis  
 14446 \DeclareTextCompositeCommand{\Y}{PD1}{Y}{\230}% U+0178  
 14447 \DeclareTextCommand{\IJ}{PD1}{\230}  
 14448 % U+017D LATIN CAPITAL LETTER Z WITH CARON; Zcaron  
 14449 \DeclareTextCompositeCommand{\v}{PD1}{Z}{\231}% U+017D  
 14450 % U+0131 LATIN SMALL LETTER DOTLESS I; dotlessi  
 14451 \DeclareTextCommand{\i}{PD1}{\232}% U+0131  
 14452 % U+0142 LATIN SMALL LETTER L WITH STROKE; lslash  
 14453 \DeclareTextCommand{\l}{PD1}{\233}% U+0142  
 14454 % U+0153 LATIN SMALL LIGATURE OE; oe  
 14455 \DeclareTextCommand{\oe}{PD1}{\234}% U+0153  
 14456 % U+0161 LATIN SMALL LETTER S WITH CARON; scaron  
 14457 \DeclareTextCompositeCommand{\v}{PD1}{s}{\235}% U+0161  
 14458 % U+017E LATIN SMALL LETTER Z WITH CARON; zcaron  
 14459 \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.  
 14460 % U+20AC EURO SIGN; \*Euro, euro  
 14461 \DeclareTextCommand{\texteuro}{PD1}{\240}% U+20AC  
 14462 % U+00A1 INVERTED EXCLAMATION MARK; exclamdown  
 14463 \DeclareTextCommand{\textexclamdown}{PD1}{\241}% U+00A1  
 14464 % U+00A2 CENT SIGN; cent  
 14465 \DeclareTextCommand{\textcent}{PD1}{\242}% U+00A2  
 14466 % U+00A3 POUND SIGN; sterling  
 14467 \DeclareTextCommand{\textsterling}{PD1}{\243}% U+00A3  
 14468 % U+00A4 CURRENCY SIGN; currency  
 14469 \DeclareTextCommand{\textcurrency}{PD1}{\244}% U+00A4  
 14470 % U+00A5 YEN SIGN; yen  
 14471 \DeclareTextCommand{\textyen}{PD1}{\245}% U+00A5  
 14472 % U+00A6 BROKEN BAR; brokenbar  
 14473 \DeclareTextCommand{\textbrokenbar}{PD1}{\246}% U+00A6  
 14474 % U+00A7 SECTION SIGN; section  
 14475 \DeclareTextCommand{\textsection}{PD1}{\247}% U+00A7  
 14476 % U+00A8 DIAERESIS; dieresis  
 14477 \DeclareTextCommand{\textasciidieresis}{PD1}{\250}% U+00A8  
 14478 % U+00A9 COPYRIGHT SIGN; copyright  
 14479 \DeclareTextCommand{\textcopyright}{PD1}{\251}% U+00A9  
 14480 % U+00AA FEMININE ORDINAL INDICATOR; ordfeminine  
 14481 \DeclareTextCommand{\textordfeminine}{PD1}{\252}% U+00AA  
 14482 % U+00AB LEFT-POINTING DOUBLE ANGLE QUOTATION MARK; guille-  
 motleft

14483 \DeclareTextCommand{\guillemotleft}{PD1}{\253}% U+00AB  
14484 % U+00AC NOT SIGN; logicalnot  
14485 \DeclareTextCommand{\textlogicalnot}{PD1}{\254}% U+00AC  
14486 \DeclareTextCommand{\textlnot}{PD1}{\254}% logical not  
No glyph \255 in PDFDocEncoding.  
14487 % U+00AE REGISTERED SIGN; registered  
14488 \DeclareTextCommand{\textregistered}{PD1}{\256}% U+00AE  
14489 % U+00AF MACRON; \*macron, overscore  
14490 \DeclareTextCommand{\textasciimacron}{PD1}{\257}% U+00AF  
14491 % U+00B0 DEGREE SIGN; degree  
14492 \DeclareTextCommand{\textdegree}{PD1}{\260}% U+00B0  
14493 % U+00B1 PLUS-MINUS SIGN; plusminus  
14494 \DeclareTextCommand{\textplusminus}{PD1}{\261}% U+00B1  
14495 % U+00B2 SUPERSCRIFT TWO; twosuperior  
14496 \DeclareTextCommand{\texttwosuperior}{PD1}{\262}% U+00B2  
14497 % U+00B3 SUPERSCRIFT THREE; threesuperior  
14498 \DeclareTextCommand{\textthreesuperior}{PD1}{\263}% U+00B3  
14499 % U+00B4 ACUTE ACCENT; acute  
14500 \DeclareTextCommand{\textacute}{PD1}{\264}% U+00B4  
14501 % U+00B5 MICRO SIGN; mu, mu1  
14502 \DeclareTextCommand{\textmu}{PD1}{\265}% U+00B5  
14503 % U+00B6 PILCROW SIGN; paragraph  
14504 \DeclareTextCommand{\textparagraph}{PD1}{\266}% U+00B6  
14505 % U+00B7 MIDDLE DOT; middot, \*periodcentered  
14506 \DeclareTextCommand{\textperiodcentered}{PD1}{\267}% U+00B7  
14507 % U+00B8 CEDILLA; cedilla  
14508 \DeclareTextCommand{\textcedilla}{PD1}{\270}% U+00B8  
14509 % U+00B9 SUPERSCRIFT ONE; onesuperior  
14510 \DeclareTextCommand{\textonesuperior}{PD1}{\271}% U+00B9  
14511 % U+00BA MASCULINE ORDINAL INDICATOR; ordmasculine  
14512 \DeclareTextCommand{\textordmasculine}{PD1}{\272}% U+00BA  
14513 % U+00BB RIGHT-POINTING DOUBLE ANGLE QUOTATION MARK; guillemotright  
14514 \DeclareTextCommand{\guillemotright}{PD1}{\273}% U+00BB  
14515 % U+00BC VULGAR FRACTION ONE QUARTER; onequarter  
14516 \DeclareTextCommand{\textonequarter}{PD1}{\274}% U+00BC  
14517 % U+00BD VULGAR FRACTION ONE HALF; onehalf  
14518 \DeclareTextCommand{\textonehalf}{PD1}{\275}% U+00BD  
14519 % U+00BE VULGAR FRACTION THREE QUARTERS; threequarters  
14520 \DeclareTextCommand{\textthreequarters}{PD1}{\276}% U+00BE  
14521 % U+00BF INVERTED QUESTION MARK; questiondown  
14522 \DeclareTextCommand{\textquestiondown}{PD1}{\277}% U+00BF  
14523 % U+00C0 LATIN CAPITAL LETTER A WITH GRAVE; Agrave  
14524 \DeclareTextCompositeCommand{\`}{PD1}{A}{\300}% U+00C0  
14525 % U+00C1 LATIN CAPITAL LETTER A WITH ACUTE; Aacute  
14526 \DeclareTextCompositeCommand{\'}{PD1}{A}{\301}% U+00C1  
14527 % U+00C2 LATIN CAPITAL LETTER A WITH CIRCUMFLEX; Acircumflex  
14528 \DeclareTextCompositeCommand{\^}{PD1}{A}{\302}% U+00C2  
14529 % U+00C3 LATIN CAPITAL LETTER A WITH TILDE; Atilde  
14530 \DeclareTextCompositeCommand{\~}{PD1}{A}{\303}% U+00C3  
14531 % U+00C4 LATIN CAPITAL LETTER A WITH DIAERESIS; Adieresis  
14532 \DeclareTextCompositeCommand{\"}{PD1}{A}{\304}% U+00C4  
14533 % U+00C5 LATIN CAPITAL LETTER A WITH RING ABOVE; Aring  
14534 \DeclareTextCompositeCommand{\r}{PD1}{A}{\305}% U+00C5  
14535 % U+00C6 LATIN CAPITAL LETTER AE; AE  
14536 \DeclareTextCommand{\AE}{PD1}{\306}% U+00C6  
14537 % U+00C7 LATIN CAPITAL LETTER C WITH CEDILLA; Ccedilla

14538 \DeclareTextCompositeCommand{\c}{PD1}{C}{\307}% U+00C7  
14539 % U+00C8 LATIN CAPITAL LETTER E WITH GRAVE; Egrave  
14540 \DeclareTextCompositeCommand{\`}{PD1}{E}{\310}% U+00C8  
14541 % U+00C9 LATIN CAPITAL LETTER E WITH ACUTE; Eacute  
14542 \DeclareTextCompositeCommand{\'}{PD1}{E}{\311}% U+00C9  
14543 % U+00CA LATIN CAPITAL LETTER E WITH CIRCUMFLEX; Ecircumflex  
14544 \DeclareTextCompositeCommand{\^}{PD1}{E}{\312}% U+00CA  
14545 % U+00CB LATIN CAPITAL LETTER E WITH DIAERESIS; Edieresis  
14546 \DeclareTextCompositeCommand{\"}{PD1}{E}{\313}% U+00CB  
14547 % U+00CC LATIN CAPITAL LETTER I WITH GRAVE; Igrave  
14548 \DeclareTextCompositeCommand{\`}{PD1}{I}{\314}% U+00CC  
14549 % U+00CD LATIN CAPITAL LETTER I WITH ACUTE; Iacute  
14550 \DeclareTextCompositeCommand{\'}{PD1}{I}{\315}% U+00CD  
14551 % U+00CE LATIN CAPITAL LETTER I WITH CIRCUMFLEX; Icircumflex  
14552 \DeclareTextCompositeCommand{\^}{PD1}{I}{\316}% U+00CE  
14553 % U+00CF LATIN CAPITAL LETTER I WITH DIAERESIS; Idieresis  
14554 \DeclareTextCompositeCommand{\"}{PD1}{I}{\317}% U+00CF  
14555 % U+00D0 LATIN CAPITAL LETTER ETH; Eth  
14556 \DeclareTextCommand{\DH}{PD1}{\320}% U+00D0  
14557 \DeclareTextCommand{\DJ}{PD1}{\320}% U+00D0  
14558 % U+00D1 LATIN CAPITAL LETTER N WITH TILDE; Ntilde  
14559 \DeclareTextCompositeCommand{\~}{PD1}{N}{\321}% U+00D1  
14560 % U+00D2 LATIN CAPITAL LETTER O WITH GRAVE; Ograve  
14561 \DeclareTextCompositeCommand{\`}{PD1}{O}{\322}% U+00D2  
14562 % U+00D3 LATIN CAPITAL LETTER O WITH ACUTE; Oacute  
14563 \DeclareTextCompositeCommand{\'}{PD1}{O}{\323}% U+00D3  
14564 % U+00D4 LATIN CAPITAL LETTER O WITH CIRCUMFLEX; Ocircumflex  
14565 \DeclareTextCompositeCommand{\^}{PD1}{O}{\324}% U+00D4  
14566 % U+00D5 LATIN CAPITAL LETTER O WITH TILDE; Otilde  
14567 \DeclareTextCompositeCommand{\~}{PD1}{O}{\325}% U+00D5  
14568 % U+00D6 LATIN CAPITAL LETTER O WITH DIAERESIS; Odieresis  
14569 \DeclareTextCompositeCommand{\"}{PD1}{O}{\326}% U+00D6  
14570 % U+00D7 MULTIPLICATION SIGN; multiply  
14571 \DeclareTextCommand{\textmultiply}{PD1}{\327}% U+00D7  
14572 % U+00D8 LATIN CAPITAL LETTER O WITH STROKE; Oslash  
14573 \DeclareTextCommand{\O}{PD1}{\330}% U+00D8  
14574 % U+00D9 LATIN CAPITAL LETTER U WITH GRAVE; Ugrave  
14575 \DeclareTextCompositeCommand{\`}{PD1}{U}{\331}% U+00D9  
14576 % U+00DA LATIN CAPITAL LETTER U WITH ACUTE; Uacute  
14577 \DeclareTextCompositeCommand{\'}{PD1}{U}{\332}% U+00DA  
14578 % U+00DB LATIN CAPITAL LETTER U WITH CIRCUMFLEX; Ucircumflex  
14579 \DeclareTextCompositeCommand{\^}{PD1}{U}{\333}% U+00DB  
14580 % U+00DC LATIN CAPITAL LETTER U WITH DIAERESIS; Udieresis  
14581 \DeclareTextCompositeCommand{\"}{PD1}{U}{\334}% U+00DC  
14582 % U+00DD LATIN CAPITAL LETTER Y WITH ACUTE; Yacute  
14583 \DeclareTextCompositeCommand{\'}{PD1}{Y}{\335}% U+00DD  
14584 % U+00DE LATIN CAPITAL LETTER THORN; Thorn  
14585 \DeclareTextCommand{\TH}{PD1}{\336}% U+00DE  
14586 % U+00DF LATIN SMALL LETTER SHARP S; germandbls  
14587 \DeclareTextCommand{\ss}{PD1}{\337}% U+00DF  
14588 % U+00E0 LATIN SMALL LETTER A WITH GRAVE; agrave  
14589 \DeclareTextCompositeCommand{\`}{PD1}{a}{\340}% U+00E0  
14590 % U+00E1 LATIN SMALL LETTER A WITH ACUTE; aacute  
14591 \DeclareTextCompositeCommand{\'}{PD1}{a}{\341}% U+00E1  
14592 % U+00E2 LATIN SMALL LETTER A WITH CIRCUMFLEX; acircumflex  
14593 \DeclareTextCompositeCommand{\^}{PD1}{a}{\342}% U+00E2  
14594 % U+00E3 LATIN SMALL LETTER A WITH TILDE; atilde

14595 \DeclareTextCompositeCommand{\~}{PD1}{a}{\343}% U+00E3  
14596 % U+00E4 LATIN SMALL LETTER A WITH DIAERESIS; adieresis  
14597 \DeclareTextCompositeCommand{\"}{PD1}{a}{\344}% U+00E4  
14598 % U+00E5 LATIN SMALL LETTER A WITH RING ABOVE; aring  
14599 \DeclareTextCompositeCommand{\r}{PD1}{a}{\345}% U+00E5  
14600 % U+00E6 LATIN SMALL LETTER AE; ae  
14601 \DeclareTextCommand{\ae}{PD1}{\346}% U+00E6  
14602 % U+00E7 LATIN SMALL LETTER C WITH CEDILLA; ccedilla  
14603 \DeclareTextCompositeCommand{\c}{PD1}{c}{\347}% U+00E7  
14604 % U+00E8 LATIN SMALL LETTER E WITH GRAVE; egrave  
14605 \DeclareTextCompositeCommand{\`}{PD1}{e}{\350}% U+00E8  
14606 % U+00E9 LATIN SMALL LETTER E WITH ACUTE; eacute  
14607 \DeclareTextCompositeCommand{\'}{PD1}{e}{\351}% U+00E9  
14608 % U+00EA LATIN SMALL LETTER E WITH CIRCUMFLEX; ecircumflex  
14609 \DeclareTextCompositeCommand{\^}{PD1}{e}{\352}% U+00EA  
14610 % U+00EB LATIN SMALL LETTER E WITH DIAERESIS; edieresis  
14611 \DeclareTextCompositeCommand{\"}{PD1}{e}{\353}% U+00EB  
14612 % U+00EC LATIN SMALL LETTER I WITH GRAVE; igrave  
14613 \DeclareTextCompositeCommand{\`}{PD1}{i}{\354}% U+00EC  
14614 \DeclareTextCompositeCommand{\'}{PD1}{i}{\354}% U+00EC  
14615 % U+00ED LATIN SMALL LETTER I WITH ACUTE; iacute  
14616 \DeclareTextCompositeCommand{\`}{PD1}{i}{\355}% U+00ED  
14617 \DeclareTextCompositeCommand{\'}{PD1}{i}{\355}% U+00ED  
14618 % U+00EE LATIN SMALL LETTER I WITH CIRCUMFLEX; icircumflex  
14619 \DeclareTextCompositeCommand{\^}{PD1}{i}{\356}% U+00EE  
14620 \DeclareTextCompositeCommand{\^}{PD1}{i}{\356}% U+00EE  
14621 % U+00EF LATIN SMALL LETTER I WITH DIAERESIS; idieresis  
14622 \DeclareTextCompositeCommand{\"}{PD1}{i}{\357}% U+00EF  
14623 \DeclareTextCompositeCommand{\"}{PD1}{i}{\357}% U+00EF  
14624 % U+00F0 LATIN SMALL LETTER ETH; eth  
14625 \DeclareTextCommand{\dh}{PD1}{\360}% U+00F0  
14626 % U+00F1 LATIN SMALL LETTER N WITH TILDE; ntilde  
14627 \DeclareTextCompositeCommand{\~}{PD1}{n}{\361}% U+00F1  
14628 % U+00F2 LATIN SMALL LETTER O WITH GRAVE; ograve  
14629 \DeclareTextCompositeCommand{\`}{PD1}{o}{\362}% U+00F2  
14630 % U+00F3 LATIN SMALL LETTER O WITH ACUTE; oacute  
14631 \DeclareTextCompositeCommand{\'}{PD1}{o}{\363}% U+00F3  
14632 % U+00F4 LATIN SMALL LETTER O WITH CIRCUMFLEX; ocircumflex  
14633 \DeclareTextCompositeCommand{\^}{PD1}{o}{\364}% U+00F4  
14634 % U+00F5 LATIN SMALL LETTER O WITH TILDE; otilde  
14635 \DeclareTextCompositeCommand{\~}{PD1}{o}{\365}% U+00F5  
14636 % U+00F6 LATIN SMALL LETTER O WITH DIAERESIS; odieresis  
14637 \DeclareTextCompositeCommand{\"}{PD1}{o}{\366}% U+00F6  
14638 % U+00F7 DIVISION SIGN; divide  
14639 \DeclareTextCommand{\textdivide}{PD1}{\367}% U+00F7  
14640 % U+00F8 LATIN SMALL LETTER O WITH STROKE; oslash  
14641 \DeclareTextCommand{\o}{PD1}{\370}% U+00F8  
14642 % U+00F9 LATIN SMALL LETTER U WITH GRAVE; ugrave  
14643 \DeclareTextCompositeCommand{\`}{PD1}{u}{\371}% U+00F9  
14644 % U+00FA LATIN SMALL LETTER U WITH ACUTE; uacute  
14645 \DeclareTextCompositeCommand{\'}{PD1}{u}{\372}% U+00FA  
14646 % U+00FB LATIN SMALL LETTER U WITH CIRCUMFLEX; ucircumflex  
14647 \DeclareTextCompositeCommand{\^}{PD1}{u}{\373}% U+00FB  
14648 % U+00FC LATIN SMALL LETTER U WITH DIAERESIS; udieresis  
14649 \DeclareTextCompositeCommand{\"}{PD1}{u}{\374}% U+00FC  
14650 % U+00FD LATIN SMALL LETTER Y WITH ACUTE; yacute  
14651 \DeclareTextCompositeCommand{\'}{PD1}{y}{\375}% U+00FD

```

14652 % U+00FE LATIN SMALL LETTER THORN; thorn
14653 \DeclareTextCommand{\th}{PD1}{\376}% U+00FE
14654 % U+00FF LATIN SMALL LETTER Y WITH DIAERESIS; ydieresis
14655 \DeclareTextCompositeCommand{"}{PD1}{y}{\377}% U+00FF
14656 \DeclareTextCommand{\ij}{PD1}{\377}% U+00FF

```

Glyphs that consist of several characters.

```

14657 \DeclareTextCommand{\SS}{PD1}{SS}
14658 \DeclareTextCommand{\textcelsius}{PD1}{\textdegree C}

```

Aliases (german.sty)

```

14659 \DeclareTextCommand{\textglqq}{PD1}{\quotedblbase}
14660 \DeclareTextCommand{\textgrqq}{PD1}{\textquotedblleft}
14661 \DeclareTextCommand{\textglq}{PD1}{\quotesinglbase}
14662 \DeclareTextCommand{\textgrq}{PD1}{\textquoteleft}
14663 \DeclareTextCommand{\textflqq}{PD1}{\guillemotleft}
14664 \DeclareTextCommand{\textfrqq}{PD1}{\guillemotright}
14665 \DeclareTextCommand{\textflq}{PD1}{\guilsinglleft}
14666 \DeclareTextCommand{\textfrq}{PD1}{\guilsinglright}

```

Aliases (math names)

```

14667 \DeclareTextCommand{\textneg}{PD1}{\textlogicalnot}
14668 \DeclareTextCommand{\texttimes}{PD1}{\textmultiply}
14669 \DeclareTextCommand{\textdiv}{PD1}{\textdivide}
14670 \DeclareTextCommand{\textpm}{PD1}{\textplusminus}
14671 \DeclareTextCommand{\textcdot}{PD1}{\textperiodcentered}
14672 \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).

```

14673 \DeclareTextCompositeCommand{\k}{PD1}{a}{a}% aogonek
14674 \DeclareTextCompositeCommand{\'}{PD1}{c}{c}% cacute
14675 \DeclareTextCompositeCommand{\k}{PD1}{e}{e}% eogonek
14676 \DeclareTextCompositeCommand{\'}{PD1}{n}{n}% nacute
14677 \DeclareTextCompositeCommand{\'}{PD1}{s}{s}% sacute
14678 \DeclareTextCompositeCommand{\'}{PD1}{z}{z}% zacute
14679 \DeclareTextCompositeCommand{\.}{PD1}{z}{z}% zdot
14680 \DeclareTextCompositeCommand{\k}{PD1}{A}{A}% Aogonek
14681 \DeclareTextCompositeCommand{\'}{PD1}{C}{C}% Cacute
14682 \DeclareTextCompositeCommand{\k}{PD1}{E}{E}% Eogonek
14683 \DeclareTextCompositeCommand{\'}{PD1}{N}{N}% Nacute
14684 \DeclareTextCompositeCommand{\'}{PD1}{S}{S}% Sacute
14685 \DeclareTextCompositeCommand{\'}{PD1}{Z}{Z}% Zacute
14686 \DeclareTextCompositeCommand{\.}{PD1}{Z}{Z}% Zdot
14687 </pdlenc>

```

## 50.2 PU encoding

```

14688 <*puenc>
14689 \DeclareFontEncoding{PU}{-}{-}

```

### 50.2.1 NFSS2 accents

```

14690 % U+0300 COMBINING GRAVE ACCENT; gravecmb, *gravecomb
14691 \DeclareTextCommand{\'}{PU}[1]{\#1\83\000}% U+0300
14692 % U+0301 COMBINING ACUTE ACCENT; acutecmb, *acutecomb
14693 \DeclareTextCommand{\'}{PU}[1]{\#1\83\001}% U+0301
14694 % U+0302 COMBINING CIRCUMFLEX ACCENT; circumflexcmb
14695 \DeclareTextCommand{\^}{PU}[1]{\#1\83\002}% U+0302
14696 % U+0303 COMBINING TILDE; tildecmb, *tildecmb

```

14697 \DeclareTextCommand{\~}{PU}[1]{#1\83\003}% U+0303  
 14698 % U+0304 COMBINING MACRON; macroncmb  
 14699 \DeclareTextCommand{\=}{PU}[1]{#1\83\004}% U+0304  
 14700 % U+0306 COMBINING BREVE; brevecmb  
 14701 \DeclareTextCommand{\u}{PU}[1]{#1\83\006}% U+0306  
 14702 \DeclareTextCommand{\U}{PU}[1]{#1\83\006}% U+0306  
 14703 % U+0307 COMBINING DOT ABOVE; dotaccentcmb  
 14704 \DeclareTextCommand{\.}{PU}[1]{#1\83\007}% U+0307  
 14705 % U+0308 COMBINING DIAERESIS; dieresiscmb  
 14706 \DeclareTextCommand{\"}{PU}[1]{#1\83\010}% U+0308  
 14707 % U+030A COMBINING RING ABOVE; ringcmb  
 14708 \DeclareTextCommand{\r}{PU}[1]{#1\83\012}% U+030A  
 14709 % U+030B COMBINING DOUBLE ACUTE ACCENT; hungarumlautcmb  
 14710 \DeclareTextCommand{\H}{PU}[1]{#1\83\013}% U+030B  
 14711 % U+030C COMBINING CARON; caroncmb  
 14712 \DeclareTextCommand{\v}{PU}[1]{#1\83\014}% U+030C  
 14713 % U+030F COMBINING DOUBLE GRAVE ACCENT; dblgravecmb  
 14714 \DeclareTextCommand{\G}{PU}[1]{#1\83\017}% U+030F  
 14715 \DeclareTextCommand{\C}{PU}[1]{#1\83\017}% U+030F  
 14716 % U+0311 COMBINING INVERTED BREVE; breveinvertedcmb  
 14717 \DeclareTextCommand{\newtie}{PU}[1]{#1\83\021}% U+0311  
 14718 % U+0323 COMBINING DOT BELOW; dotbelowcmb, \*dotbelowcomb  
 14719 \DeclareTextCommand{\d}{PU}[1]{#1\83\043}% U+0323  
 14720 % U+0331 COMBINING MACRON BELOW; macronbelowcmb  
 14721 \DeclareTextCommand{\b}{PU}[1]{#1\83\061}% U+0331  
 14722 % U+0327 COMBINING CEDILLA; cedillacmb  
 14723 \DeclareTextCommand{\c}{PU}[1]{#1\83\047}% U+0327  
 14724 % U+0328 COMBINING OGONEK; ogonekcmb  
 14725 \DeclareTextCommand{\k}{PU}[1]{#1\83\050}% U+0328  
 14726 % U+0361 COMBINING DOUBLE INVERTED BREVE; breveinverteddoublecmb  
 14727 \DeclareTextCommand{\t}{PU}[1]{#1\83\141}% U+0361  
 14728 % U+20DD COMBINING ENCLOSING CIRCLE  
 14729 \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.

14730 \DeclareTextCompositeCommand{\'}{PU}{\@empty}{\textasciigrave}  
 14731 \DeclareTextCompositeCommand{\'}{PU}{\@empty}{\textacute}  
 14732 \DeclareTextCompositeCommand{\^}{PU}{\@empty}{\textasciicircum}  
 14733 \DeclareTextCompositeCommand{\~}{PU}{\@empty}{\texttilde}  
 14734 \DeclareTextCompositeCommand{\"}{PU}{\@empty}{\textasciidieresis}  
 14735 \DeclareTextCompositeCommand{\r}{PU}{\@empty}{\textring}  
 14736 \DeclareTextCompositeCommand{\v}{PU}{\@empty}{\textasciicaron}  
 14737 \DeclareTextCompositeCommand{\.}{PU}{\@empty}{\textdotaccent}  
 14738 \DeclareTextCompositeCommand{\c}{PU}{\@empty}{\textcedilla}  
 14739 \DeclareTextCompositeCommand{\u}{PU}{\@empty}{\textasciibreve}  
 14740 \DeclareTextCompositeCommand{\G}{PU}{\@empty}{\textdoublegrave}  
 14741 \DeclareTextCompositeCommand{\=}{PU}{\@empty}{\textasciimacron}  
 14742 \DeclareTextCompositeCommand{\H}{PU}{\@empty}{\texthungarumlaut}  
 14743 \DeclareTextCompositeCommand{\k}{PU}{\@empty}{\textogonek}  
 14744 \DeclareTextCompositeCommand{\b}{PU}{\@empty}{\textmacronbelow}  
 14745 \DeclareTextCompositeCommand{\d}{PU}{\@empty}{\textdotbelow}  
 14746 \DeclareTextCompositeCommand{\t}{PU}{\@empty}{\texttie}  
 14747 \DeclareTextCompositeCommand{\newtie}{PU}{\@empty}{\textnewtie}  
 14748 \DeclareTextCompositeCommand{\textcircled}{PU}{\@empty}{\textbigcircle}  
 14749 \DeclareTextCompositeCommand{\'}{PU}{\ }{\textasciigrave}  
 14750 \DeclareTextCompositeCommand{\'}{PU}{\ }{\textacute}  
 14751 \DeclareTextCompositeCommand{\^}{PU}{\ }{\textasciicircum}



```

14752 \DeclareTextCompositeCommand{\~}{PU}{\ }{\texttilde}
14753 \DeclareTextCompositeCommand{\"}{PU}{\ }{\textasciidieresis}
14754 \DeclareTextCompositeCommand{\r}{PU}{\ }{\textstring}
14755 \DeclareTextCompositeCommand{\v}{PU}{\ }{\textasciicaron}
14756 \DeclareTextCompositeCommand{\.}{PU}{\ }{\textdotaccent}
14757 \DeclareTextCompositeCommand{\c}{PU}{\ }{\textcedilla}
14758 \DeclareTextCompositeCommand{\u}{PU}{\ }{\textasciibreve}
14759 \DeclareTextCompositeCommand{\G}{PU}{\ }{\textdoublegrave}
14760 \DeclareTextCompositeCommand{\=}{PU}{\ }{\textasciimacron}
14761 \DeclareTextCompositeCommand{\H}{PU}{\ }{\texthungarumlaut}
14762 \DeclareTextCompositeCommand{\k}{PU}{\ }{\textogonek}
14763 \DeclareTextCompositeCommand{\b}{PU}{\ }{\textmacronbelow}
14764 \DeclareTextCompositeCommand{\d}{PU}{\ }{\textdotbelow}
14765 \DeclareTextCompositeCommand{\t}{PU}{\ }{\texttie}
14766 \DeclareTextCompositeCommand{\newtie}{PU}{\ }{\textnewtie}
14767 \DeclareTextCompositeCommand{\textcircled}{PU}{\ }{\textbigcircle}

```

Accents for capitals (see encoding TS1)

```

14768 \DeclareTextCommand{\capitalcedilla}{PU}[1]{\c{#1}}
14769 \DeclareTextCommand{\capitalogonek}{PU}[1]{\k{#1}}
14770 \DeclareTextCommand{\capitalgrave}{PU}[1]{\`{#1}}
14771 \DeclareTextCommand{\capitalacute}{PU}[1]{\'{#1}}
14772 \DeclareTextCommand{\capitalcircumflex}{PU}[1]{\^{#1}}
14773 \DeclareTextCommand{\capitaltilde}{PU}[1]{\~{#1}}
14774 \DeclareTextCommand{\capitaldieresis}{PU}[1]{\\"{#1}}
14775 \DeclareTextCommand{\capitalhungarumlaut}{PU}[1]{\H{#1}}
14776 \DeclareTextCommand{\capitalring}{PU}[1]{\r{#1}}
14777 \DeclareTextCommand{\capitalcaron}{PU}[1]{\v{#1}}
14778 \DeclareTextCommand{\capitalbreve}{PU}[1]{\u{#1}}
14779 \DeclareTextCommand{\capitalmacron}{PU}[1]{\={#1}}
14780 \DeclareTextCommand{\capitaldotaccent}{PU}[1]{\.{#1}}
14781 \DeclareTextCommand{\capitaltie}{PU}[1]{\t{#1}}
14782 \DeclareTextCommand{\capitalnewtie}{PU}[1]{\newtie{#1}}

```

## 50.2.2 Basic Latin: U+0000 to U+007F

Special white space escape characters.

```

14783 % U+0009 (CHARACTER TABULATION)
14784 \DeclareTextCommand{\textHT}{PU}{\80\011}% U+0009
14785 % U+000A (LINE FEED)
14786 \DeclareTextCommand{\textLF}{PU}{\80\012}% U+000A
14787 % U+000D (CARRIAGE RETURN)
14788 \DeclareTextCommand{\textCR}{PU}{\80\015}% U+000D

\80\040: U+0020 SPACE; space, spacehackarabic
\80\041: U+0021 EXCLAMATION MARK; exclam

14789 % U+0022 QUOTATION MARK; quotedbl
14790 \DeclareTextCommand{\textquotedbl}{PU}{\string"}% \80\042 U+0022
14791 % U+0023 NUMBER SIGN; numbersign
14792 \DeclareTextCommand{\textnumbersign}{PU}{\80\043}% U+0023
14793 % U+0024 DOLLAR SIGN; dollar
14794 \DeclareTextCommand{\textdollar}{PU}{\80\044}% U+0024
14795 % U+0025 PERCENT SIGN; percent
14796 \DeclareTextCommand{\textpercent}{PU}{\80\045}% U+0025
14797 % U+0026 AMPERSAND; ampersand
14798 \DeclareTextCommand{\textampersand}{PU}{\80\046}% U+0026
14799 % U+0027 APOSTROPHE; quotesingle
14800 \DeclareTextCommand{\textquotesingle}{PU}{\80\047}% U+0027
14801 % U+0028 LEFT PARENTHESIS; parenleft

```

14802 \DeclareTextCommand{\textparenleft}{PU}{\80\050}% U+0028  
 14803 % U+0029 RIGHT PARENTHESIS; parenright  
 14804 \DeclareTextCommand{\textparenright}{PU}{\80\051}% U+0029  
 14805 % U+002A ASTERISK; asterisk  
 14806 \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  
 14807 % U+003C LESS-THAN SIGN; less  
 14808 \DeclareTextCommand{\textless}{PU}{<}% \80\074 U+003C  
 \80\075: U+003D EQUALS SIGN; equal  
 14809 % U+003E GREATER-THAN SIGN; greater  
 14810 \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  
 14811 % U+005C REVERSE SOLIDUS; backslash  
 14812 \DeclareTextCommand{\textbackslash}{PU}{\80\134}% U+005C  
 \80\135: U+005D RIGHT SQUARE BRACKET; bracketright  
 14813 % U+005E CIRCUMFLEX ACCENT; asciicircum  
 14814 \DeclareTextCommand{\textasciicircum}{PU}{\80\136}% U+005E  
 14815 % U+005F LOW LINE; underscore  
 14816 \DeclareTextCommand{\textunderscore}{PU}{\80\137}% U+005F  
 14817 % U+0060 GRAVE ACCENT; grave  
 14818 \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  
 14819 % U+0069 LATIN SMALL LETTER I; i  
 14820 \DeclareTextCompositeCommand{\.}{PU}{i}{i}% \80\151 U+0069  
 14821 \DeclareTextCompositeCommand{\.}{PU}{i}{i}% \80\151 U+0069  
 \80\152: U+006A LATIN SMALL LETTER J; j  
 ...  
 \80\172: U+007A LATIN SMALL LETTER Z; z  
 14822 % U+007B LEFT CURLY BRACKET; braceleft  
 14823 \DeclareTextCommand{\textbraceleft}{PU}{\80\173}% U+007B  
 14824 % U+007C VERTICAL LINE; \*bar, verticalbar  
 14825 \DeclareTextCommand{\textbar}{PU}{|}% \80\174 U+007C  
 14826 % U+007D RIGHT CURLY BRACKET; braceright  
 14827 \DeclareTextCommand{\textbraceright}{PU}{\80\175}% U+007D  
 14828 % U+007E TILDE; asciitilde  
 14829 \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  
14830 % U+00A1 INVERTED EXCLAMATION MARK; exclamdown  
14831 \DeclareTextCommand{\textexclamdown}{PU}{\80\241}% U+00A1  
14832 % U+00A2 CENT SIGN; cent  
14833 \DeclareTextCommand{\textcent}{PU}{\80\242}% U+00A2  
14834 % U+00A3 POUND SIGN; sterling  
14835 \DeclareTextCommand{\textsterling}{PU}{\80\243}% U+00A3  
14836 % U+00A4 CURRENCY SIGN; currency  
14837 \DeclareTextCommand{\textcurrency}{PU}{\80\244}% U+00A4  
14838 % U+00A5 YEN SIGN; yen  
14839 \DeclareTextCommand{\textyen}{PU}{\80\245}% U+00A5  
14840 % U+00A6 BROKEN BAR; brokenbar  
14841 \DeclareTextCommand{\textbrokenbar}{PU}{\80\246}% U+00A6  
14842 % U+00A7 SECTION SIGN; section  
14843 \DeclareTextCommand{\textsection}{PU}{\80\247}% U+00A7  
14844 % U+00A8 DIAERESIS; dieresis  
14845 \DeclareTextCommand{\textasciidieresis}{PU}{\80\250}% U+00A8  
14846 % U+00A9 COPYRIGHT SIGN; copyright  
14847 \DeclareTextCommand{\textcopyright}{PU}{\80\251}% U+00A9  
14848 % U+00AA FEMININE ORDINAL INDICATOR; ordfeminine  
14849 \DeclareTextCommand{\textordfeminine}{PU}{\80\252}% U+00AA  
14850 % U+00AB LEFT-POINTING DOUBLE ANGLE QUOTATION MARK; guillemotleft  
14851 \DeclareTextCommand{\guillemotleft}{PU}{\80\253}% U+00AB  
14852 % U+00AC NOT SIGN; logicalnot  
14853 \DeclareTextCommand{\textlogicalnot}{PU}{\80\254}% U+00AC  
14854 \DeclareTextCommand{\textlnot}{PU}{\80\254}% U+00AC  
\\80\255: U+00AD SOFT HYPHEN; sfthyphen, softthyphen  
14855 % U+00AE REGISTERED SIGN; registered  
14856 \DeclareTextCommand{\textregistered}{PU}{\80\256}% U+00AE  
14857 % U+00AF MACRON; \*macron, overscore  
14858 \DeclareTextCommand{\textasciimacron}{PU}{\80\257}% U+00AF  
14859 % U+00B0 DEGREE SIGN; degree  
14860 \DeclareTextCommand{\textdegree}{PU}{\80\260}% U+00B0  
14861 % U+00B1 PLUS-MINUS SIGN; plusminus  
14862 \DeclareTextCommand{\textplusminus}{PU}{\80\261}% U+00B1  
14863 % U+00B2 SUPERScript TWO; twosuperior  
14864 \DeclareTextCommand{\texttwosuperior}{PU}{\80\262}% U+00B2  
14865 % U+00B3 SUPERScript THREE; threesuperior  
14866 \DeclareTextCommand{\textthreesuperior}{PU}{\80\263}% U+00B3  
14867 % U+00B4 ACUTE ACCENT; acute  
14868 \DeclareTextCommand{\textacute}{PU}{\80\264}% U+00B4  
14869 \DeclareTextCommand{\textasciiacute}{PU}{\80\264}% U+00B4  
14870 % U+00B5 MICRO SIGN; mu, mul  
14871 \DeclareTextCommand{\textmu}{PU}{\80\265}% U+00B5  
14872 % U+00B6 PILCROW SIGN; paragraph  
14873 \DeclareTextCommand{\textparagraph}{PU}{\80\266}% U+00B6  
14874 % U+00B7 MIDDLE DOT; middot, \*periodcentered  
14875 \DeclareTextCommand{\textperiodcentered}{PU}{\80\267}% U+00B7  
14876 % U+00B8 CEDILLA; cedilla  
14877 \DeclareTextCommand{\textcedilla}{PU}{\80\270}% U+00B8  
14878 % U+00B9 SUPERScript ONE; onesuperior  
14879 \DeclareTextCommand{\textonesuperior}{PU}{\80\271}% U+00B9  
14880 % U+00BA MASCULINE ORDINAL INDICATOR; ordmasculine  
14881 \DeclareTextCommand{\textordmasculine}{PU}{\80\272}% U+00BA

14882 % U+00BB RIGHT-POINTING DOUBLE ANGLE QUOTATION MARK; guillemotright  
 14883 \DeclareTextCommand{\guillemotright}{PU}{\80\273}% U+00BB  
 14884 % U+00BC VULGAR FRACTION ONE QUARTER; onequarter  
 14885 \DeclareTextCommand{\textonequarter}{PU}{\80\274}% U+00BC  
 14886 % U+00BD VULGAR FRACTION ONE HALF; onehalf  
 14887 \DeclareTextCommand{\textonehalf}{PU}{\80\275}% U+00BD  
 14888 % U+00BE VULGAR FRACTION THREE QUARTERS; threequarters  
 14889 \DeclareTextCommand{\textthreequarters}{PU}{\80\276}% U+00BE  
 14890 % U+00BF INVERTED QUESTION MARK; questiondown  
 14891 \DeclareTextCommand{\textquestiondown}{PU}{\80\277}% U+00BF  
 14892 % U+00C0 LATIN CAPITAL LETTER A WITH GRAVE; Agrave  
 14893 \DeclareTextCompositeCommand{\`}{PU}{A}{\80\300}% U+00C0  
 14894 % U+00C1 LATIN CAPITAL LETTER A WITH ACUTE; Aacute  
 14895 \DeclareTextCompositeCommand{\'}{PU}{A}{\80\301}% U+00C1  
 14896 % U+00C2 LATIN CAPITAL LETTER A WITH CIRCUMFLEX; Acircumflex  
 14897 \DeclareTextCompositeCommand{\^}{PU}{A}{\80\302}% U+00C2  
 14898 % U+00C3 LATIN CAPITAL LETTER A WITH TILDE; Atilde  
 14899 \DeclareTextCompositeCommand{\~}{PU}{A}{\80\303}% U+00C3  
 14900 % U+00C4 LATIN CAPITAL LETTER A WITH DIAERESIS; Adieresis  
 14901 \DeclareTextCompositeCommand{\"}{PU}{A}{\80\304}% U+00C4  
 14902 % U+00C5 LATIN CAPITAL LETTER A WITH RING ABOVE; Aring  
 14903 \DeclareTextCompositeCommand{\r}{PU}{A}{\80\305}% U+00C5  
 14904 % U+00C6 LATIN CAPITAL LETTER AE; AE  
 14905 \DeclareTextCommand{\AE}{PU}{\80\306}% U+00C6  
 14906 % U+00C7 LATIN CAPITAL LETTER C WITH CEDILLA; Ccedilla  
 14907 \DeclareTextCompositeCommand{\c}{PU}{C}{\80\307}% U+00C7  
 14908 % U+00C8 LATIN CAPITAL LETTER E WITH GRAVE; Egrave  
 14909 \DeclareTextCompositeCommand{\`}{PU}{E}{\80\310}% U+00C8  
 14910 % U+00C9 LATIN CAPITAL LETTER E WITH ACUTE; Eacute  
 14911 \DeclareTextCompositeCommand{\'}{PU}{E}{\80\311}% U+00C9  
 14912 % U+00CA LATIN CAPITAL LETTER E WITH CIRCUMFLEX; Ecircumflex  
 14913 \DeclareTextCompositeCommand{\^}{PU}{E}{\80\312}% U+00CA  
 14914 % U+00CB LATIN CAPITAL LETTER E WITH DIAERESIS; Edieresis  
 14915 \DeclareTextCompositeCommand{\"}{PU}{E}{\80\313}% U+00CB  
 14916 % U+00CC LATIN CAPITAL LETTER I WITH GRAVE; Igrave  
 14917 \DeclareTextCompositeCommand{\`}{PU}{I}{\80\314}% U+00CC  
 14918 % U+00CD LATIN CAPITAL LETTER I WITH ACUTE; Iacute  
 14919 \DeclareTextCompositeCommand{\'}{PU}{I}{\80\315}% U+00CD  
 14920 % U+00CE LATIN CAPITAL LETTER I WITH CIRCUMFLEX; Icircumflex  
 14921 \DeclareTextCompositeCommand{\^}{PU}{I}{\80\316}% U+00CE  
 14922 % U+00CF LATIN CAPITAL LETTER I WITH DIAERESIS; Idieresis  
 14923 \DeclareTextCompositeCommand{\"}{PU}{I}{\80\317}% U+00CF  
 14924 % U+00D0 LATIN CAPITAL LETTER ETH; Eth  
 14925 \DeclareTextCommand{\DH}{PU}{\80\320}% U+00D0  
 14926 % U+00D1 LATIN CAPITAL LETTER N WITH TILDE; Ntilde  
 14927 \DeclareTextCompositeCommand{\~}{PU}{N}{\80\321}% U+00D1  
 14928 % U+00D2 LATIN CAPITAL LETTER O WITH GRAVE; Ograve  
 14929 \DeclareTextCompositeCommand{\`}{PU}{O}{\80\322}% U+00D2  
 14930 % U+00D3 LATIN CAPITAL LETTER O WITH ACUTE; Oacute  
 14931 \DeclareTextCompositeCommand{\'}{PU}{O}{\80\323}% U+00D3  
 14932 % U+00D4 LATIN CAPITAL LETTER O WITH CIRCUMFLEX; Ocircumflex  
 14933 \DeclareTextCompositeCommand{\^}{PU}{O}{\80\324}% U+00D4  
 14934 % U+00D5 LATIN CAPITAL LETTER O WITH TILDE; Otilde  
 14935 \DeclareTextCompositeCommand{\~}{PU}{O}{\80\325}% U+00D5  
 14936 % U+00D6 LATIN CAPITAL LETTER O WITH DIAERESIS; Odieresis  
 14937 \DeclareTextCompositeCommand{\"}{PU}{O}{\80\326}% U+00D6

14938 % U+00D7 MULTIPLICATION SIGN; multiply  
 14939 \DeclareTextCommand{\textmultiply}{PU}{\80\327}% U+00D7  
 14940 % U+00D8 LATIN CAPITAL LETTER O WITH STROKE; Oslash  
 14941 \DeclareTextCommand{\O}{PU}{\80\330}% U+00D8  
 14942 % U+00D9 LATIN CAPITAL LETTER U WITH GRAVE; Ugrave  
 14943 \DeclareTextCompositeCommand{\`}{PU}{U}{\80\331}% U+00D9  
 14944 % U+00DA LATIN CAPITAL LETTER U WITH ACUTE; Uacute  
 14945 \DeclareTextCompositeCommand{\'}{PU}{U}{\80\332}% U+00DA  
 14946 % U+00DB LATIN CAPITAL LETTER U WITH CIRCUMFLEX; Ucircumflex  
 14947 \DeclareTextCompositeCommand{\^}{PU}{U}{\80\333}% U+00DB  
 14948 % U+00DC LATIN CAPITAL LETTER U WITH DIAERESIS; Udieresis  
 14949 \DeclareTextCompositeCommand{\"}{PU}{U}{\80\334}% U+00DC  
 14950 % U+00DD LATIN CAPITAL LETTER Y WITH ACUTE; Yacute  
 14951 \DeclareTextCompositeCommand{\'}{PU}{Y}{\80\335}% U+00DD  
 14952 % U+00DE LATIN CAPITAL LETTER THORN; Thorn  
 14953 \DeclareTextCommand{\TH}{PU}{\80\336}% U+00DE  
 14954 % U+00DF LATIN SMALL LETTER SHARP S; germandbls  
 14955 \DeclareTextCommand{\ss}{PU}{\80\337}% U+00DF  
 14956 % U+00E0 LATIN SMALL LETTER A WITH GRAVE; agrave  
 14957 \DeclareTextCompositeCommand{\`}{PU}{a}{\80\340}% U+00E0  
 14958 % U+00E1 LATIN SMALL LETTER A WITH ACUTE; aacute  
 14959 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\341}% U+00E1  
 14960 % U+00E2 LATIN SMALL LETTER A WITH CIRCUMFLEX; acircumflex  
 14961 \DeclareTextCompositeCommand{\^}{PU}{a}{\80\342}% U+00E2  
 14962 % U+00E3 LATIN SMALL LETTER A WITH TILDE; atilde  
 14963 \DeclareTextCompositeCommand{\~}{PU}{a}{\80\343}% U+00E3  
 14964 % U+00E4 LATIN SMALL LETTER A WITH DIAERESIS; adieresis  
 14965 \DeclareTextCompositeCommand{\"}{PU}{a}{\80\344}% U+00E4  
 14966 % U+00E5 LATIN SMALL LETTER A WITH RING ABOVE; aring  
 14967 \DeclareTextCompositeCommand{\r}{PU}{a}{\80\345}% U+00E5  
 14968 % U+00E6 LATIN SMALL LETTER AE; ae  
 14969 \DeclareTextCommand{\ae}{PU}{\80\346}% U+00E6  
 14970 % U+00E7 LATIN SMALL LETTER C WITH CEDILLA; ccedilla  
 14971 \DeclareTextCompositeCommand{\c}{PU}{c}{\80\347}% U+00E7  
 14972 % U+00E8 LATIN SMALL LETTER E WITH GRAVE; egrave  
 14973 \DeclareTextCompositeCommand{\`}{PU}{e}{\80\350}% U+00E8  
 14974 % U+00E9 LATIN SMALL LETTER E WITH ACUTE; eacute  
 14975 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\351}% U+00E9  
 14976 % U+00EA LATIN SMALL LETTER E WITH CIRCUMFLEX; ecircumflex  
 14977 \DeclareTextCompositeCommand{\^}{PU}{e}{\80\352}% U+00EA  
 14978 % U+00EB LATIN SMALL LETTER E WITH DIAERESIS; edieresis  
 14979 \DeclareTextCompositeCommand{\"}{PU}{e}{\80\353}% U+00EB  
 14980 % U+00EC LATIN SMALL LETTER I WITH GRAVE; igrave  
 14981 \DeclareTextCompositeCommand{\`}{PU}{i}{\80\354}% U+00EC  
 14982 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\354}% U+00EC  
 14983 % U+00ED LATIN SMALL LETTER I WITH ACUTE; iacute  
 14984 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\355}% U+00ED  
 14985 \DeclareTextCompositeCommand{\~}{PU}{i}{\80\355}% U+00ED  
 14986 % U+00EE LATIN SMALL LETTER I WITH CIRCUMFLEX; icircumflex  
 14987 \DeclareTextCompositeCommand{\^}{PU}{i}{\80\356}% U+00EE  
 14988 \DeclareTextCompositeCommand{\^}{PU}{i}{\80\356}% U+00EE  
 14989 % U+00EF LATIN SMALL LETTER I WITH DIAERESIS; idieresis  
 14990 \DeclareTextCompositeCommand{\"}{PU}{i}{\80\357}% U+00EF  
 14991 \DeclareTextCompositeCommand{\"}{PU}{i}{\80\357}% U+00EF  
 14992 % U+00F0 LATIN SMALL LETTER ETH; eth  
 14993 \DeclareTextCommand{\dh}{PU}{\80\360}% U+00F0  
 14994 % U+00F1 LATIN SMALL LETTER N WITH TILDE; ntilde

14995 \DeclareTextCompositeCommand{\~}{PU}{n}{\80\361}% U+00F1  
 14996 % U+00F2 LATIN SMALL LETTER O WITH GRAVE; ograve  
 14997 \DeclareTextCompositeCommand{\`}{PU}{o}{\80\362}% U+00F2  
 14998 % U+00F3 LATIN SMALL LETTER O WITH ACUTE; oacute  
 14999 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\363}% U+00F3  
 15000 % U+00F4 LATIN SMALL LETTER O WITH CIRCUMFLEX; ocircumflex  
 15001 \DeclareTextCompositeCommand{\^}{PU}{o}{\80\364}% U+00F4  
 15002 % U+00F5 LATIN SMALL LETTER O WITH TILDE; otilde  
 15003 \DeclareTextCompositeCommand{\~}{PU}{o}{\80\365}% U+00F5  
 15004 % U+00F6 LATIN SMALL LETTER O WITH DIAERESIS; odieresis  
 15005 \DeclareTextCompositeCommand{\"}{PU}{o}{\80\366}% U+00F6  
 15006 % U+00F7 DIVISION SIGN; divide  
 15007 \DeclareTextCommand{\textdivide}{PU}{\80\367}% U+00F7  
 15008 % U+00F8 LATIN SMALL LETTER O WITH STROKE; oslash  
 15009 \DeclareTextCommand{\o}{PU}{\80\370}% U+00F8  
 15010 % U+00F9 LATIN SMALL LETTER U WITH GRAVE; ugrave  
 15011 \DeclareTextCompositeCommand{\`}{PU}{u}{\80\371}% U+00F9  
 15012 % U+00FA LATIN SMALL LETTER U WITH ACUTE; uacute  
 15013 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\372}% U+00FA  
 15014 % U+00FB LATIN SMALL LETTER U WITH CIRCUMFLEX; ucircumflex  
 15015 \DeclareTextCompositeCommand{\^}{PU}{u}{\80\373}% U+00FB  
 15016 % U+00FC LATIN SMALL LETTER U WITH DIAERESIS; udieresis  
 15017 \DeclareTextCompositeCommand{\"}{PU}{u}{\80\374}% U+00FC  
 15018 % U+00FD LATIN SMALL LETTER Y WITH ACUTE; yacute  
 15019 \DeclareTextCompositeCommand{\'}{PU}{y}{\80\375}% U+00FD  
 15020 % U+00FE LATIN SMALL LETTER THORN; thorn  
 15021 \DeclareTextCommand{\th}{PU}{\80\376}% U+00FE  
 15022 % U+00FF LATIN SMALL LETTER Y WITH DIAERESIS; ydieresis  
 15023 \DeclareTextCompositeCommand{\"}{PU}{y}{\80\377}% U+00FF

## 50.2.4 Latin Extended-A: U+0080 to U+017F

15024 % U+0100 LATIN CAPITAL LETTER A WITH MACRON; Amacron  
 15025 \DeclareTextCompositeCommand{\=}{PU}{A}{\81\000}% U+0100  
 15026 % U+0101 LATIN SMALL LETTER A WITH MACRON; amacron  
 15027 \DeclareTextCompositeCommand{\=}{PU}{a}{\81\001}% U+0101  
 15028 % U+0102 LATIN CAPITAL LETTER A WITH BREVE; Abreve  
 15029 \DeclareTextCompositeCommand{\u}{PU}{A}{\81\002}% U+0102  
 15030 % U+0103 LATIN SMALL LETTER A WITH BREVE; abreve  
 15031 \DeclareTextCompositeCommand{\u}{PU}{a}{\81\003}% U+0103  
 15032 % U+0104 LATIN CAPITAL LETTER A WITH OGONEK; Aogonek  
 15033 \DeclareTextCompositeCommand{\k}{PU}{A}{\81\004}% U+0104  
 15034 % U+0105 LATIN SMALL LETTER A WITH OGONEK; aogonek  
 15035 \DeclareTextCompositeCommand{\k}{PU}{a}{\81\005}% U+0105  
 15036 % U+0106 LATIN CAPITAL LETTER C WITH ACUTE; Cacute  
 15037 \DeclareTextCompositeCommand{\'}{PU}{C}{\81\006}% U+0106  
 15038 % U+0107 LATIN SMALL LETTER C WITH ACUTE; cacute  
 15039 \DeclareTextCompositeCommand{\'}{PU}{c}{\81\007}% U+0107  
 15040 % U+0108 LATIN CAPITAL LETTER C WITH CIRCUMFLEX; Ccircumflex  
 15041 \DeclareTextCompositeCommand{\^}{PU}{C}{\81\010}% U+0108  
 15042 % U+0109 LATIN SMALL LETTER C WITH CIRCUMFLEX; ccircumflex  
 15043 \DeclareTextCompositeCommand{\^}{PU}{c}{\81\011}% U+0109  
 15044 % U+010A LATIN CAPITAL LETTER C WITH DOT ABOVE; Cdot, Cdotaccent  
 15045 \DeclareTextCompositeCommand{\.}{PU}{C}{\81\012}% U+010A  
 15046 % U+010B LATIN SMALL LETTER C WITH DOT ABOVE; cdot, cdotaccent  
 15047 \DeclareTextCompositeCommand{\.}{PU}{c}{\81\013}% U+010B  
 15048 % U+010C LATIN CAPITAL LETTER C WITH CARON; Ccaron

15049 \DeclareTextCompositeCommand{\v}{PU}{C}{\81\014}% U+010C  
15050 % U+010D LATIN SMALL LETTER C WITH CARON; ccaron  
15051 \DeclareTextCompositeCommand{\v}{PU}{c}{\81\015}% U+010D  
15052 % U+010E LATIN CAPITAL LETTER D WITH CARON; Dcaron  
15053 \DeclareTextCompositeCommand{\v}{PU}{D}{\81\016}% U+010E  
15054 % U+010F LATIN SMALL LETTER D WITH CARON; dcaron  
15055 \DeclareTextCompositeCommand{\v}{PU}{d}{\81\017}% U+010F  
15056 % U+0110 LATIN CAPITAL LETTER D WITH STROKE; Dcroat, Dslash  
15057 \DeclareTextCommand{\DJ}{PU}{\81\020}% U+0110  
15058 % U+0111 LATIN SMALL LETTER D WITH STROKE; dcroat, dmacron  
15059 \DeclareTextCommand{\dj}{PU}{\81\021}% U+0111  
15060 % U+0112 LATIN CAPITAL LETTER E WITH MACRON; Emacron  
15061 \DeclareTextCompositeCommand{\=}{PU}{E}{\81\022}% U+0112  
15062 % U+0113 LATIN SMALL LETTER E WITH MACRON; emacron  
15063 \DeclareTextCompositeCommand{\=}{PU}{e}{\81\023}% U+0113  
15064 % U+0114 LATIN CAPITAL LETTER E WITH BREVE; Ebreve  
15065 \DeclareTextCompositeCommand{\u}{PU}{E}{\81\024}% U+0114  
15066 % U+0115 LATIN SMALL LETTER E WITH BREVE; ebreve  
15067 \DeclareTextCompositeCommand{\u}{PU}{e}{\81\025}% U+0115  
15068 % U+0116 LATIN CAPITAL LETTER E WITH DOT ABOVE; Edot, Edotaccent  
15069 \DeclareTextCompositeCommand{\.}{PU}{E}{\81\026}% U+0116  
15070 % U+0117 LATIN SMALL LETTER E WITH DOT ABOVE; edot, edotaccent  
15071 \DeclareTextCompositeCommand{\.}{PU}{e}{\81\027}% U+0117  
15072 % U+0118 LATIN CAPITAL LETTER E WITH OGONEK; Eogonek  
15073 \DeclareTextCompositeCommand{\k}{PU}{E}{\81\030}% U+0118  
15074 % U+0119 LATIN SMALL LETTER E WITH OGONEK; eogonek  
15075 \DeclareTextCompositeCommand{\k}{PU}{e}{\81\031}% U+0119  
15076 % U+011A LATIN CAPITAL LETTER E WITH CARON; Ecaron  
15077 \DeclareTextCompositeCommand{\v}{PU}{E}{\81\032}% U+011A  
15078 % U+011B LATIN SMALL LETTER E WITH CARON; ecaron  
15079 \DeclareTextCompositeCommand{\v}{PU}{e}{\81\033}% U+011B  
15080 % U+011C LATIN CAPITAL LETTER G WITH CIRCUMFLEX; Gcircumflex  
15081 \DeclareTextCompositeCommand{\^}{PU}{G}{\81\034}% U+011C  
15082 % U+011D LATIN SMALL LETTER G WITH CIRCUMFLEX; gcircumflex  
15083 \DeclareTextCompositeCommand{\^}{PU}{g}{\81\035}% U+011D  
15084 % U+011E LATIN CAPITAL LETTER G WITH BREVE; Gbreve  
15085 \DeclareTextCompositeCommand{\u}{PU}{G}{\81\036}% U+011E  
15086 % U+011F LATIN SMALL LETTER G WITH BREVE; gbreve  
15087 \DeclareTextCompositeCommand{\u}{PU}{g}{\81\037}% U+011F  
15088 % U+0120 LATIN CAPITAL LETTER G WITH DOT ABOVE; Gdot, Gdotaccent  
15089 \DeclareTextCompositeCommand{\.}{PU}{G}{\81\040}% U+0120  
15090 % U+0121 LATIN SMALL LETTER G WITH DOT ABOVE; gdot, gdotaccent  
15091 \DeclareTextCompositeCommand{\.}{PU}{g}{\81\041}% U+0121  
15092 % U+0122 LATIN CAPITAL LETTER G WITH CEDILLA; Gcedilla, Gcommaaccent  
15093 \DeclareTextCompositeCommand{\c}{PU}{G}{\81\042}% U+0122  
15094 % U+0123 LATIN SMALL LETTER G WITH CEDILLA; gcedilla, gcommaaccent  
15095 \DeclareTextCompositeCommand{\c}{PU}{g}{\81\043}% U+0123  
15096 % U+0124 LATIN CAPITAL LETTER H WITH CIRCUMFLEX; Hcircumflex  
15097 \DeclareTextCompositeCommand{\^}{PU}{H}{\81\044}% U+0124  
15098 % U+0125 LATIN SMALL LETTER H WITH CIRCUMFLEX; hcircumflex  
15099 \DeclareTextCompositeCommand{\^}{PU}{h}{\81\045}% U+0125  
15100 % U+0126 LATIN CAPITAL LETTER H WITH STROKE; Hbar  
15101 \DeclareTextCommand{\textHslash}{PU}{\81\046}% U+0126  
15102 % U+0127 LATIN SMALL LETTER H WITH STROKE; hbar  
15103 \DeclareTextCommand{\texthslash}{PU}{\81\047}% U+0127  
15104 % U+0128 LATIN CAPITAL LETTER I WITH TILDE; Itilde

15105 \DeclareTextCompositeCommand{\~}{PU}{i}{\81\050}% U+0128  
15106 % U+0129 LATIN SMALL LETTER I WITH TILDE; itilde  
15107 \DeclareTextCompositeCommand{\~}{PU}{i}{\81\051}% U+0129  
15108 \DeclareTextCompositeCommand{\~}{PU}{i}{\81\051}% U+0129  
15109 % U+012A LATIN CAPITAL LETTER I WITH MACRON; Imacron  
15110 \DeclareTextCompositeCommand{\=}{PU}{I}{\81\052}% U+012A  
15111 % U+012B LATIN SMALL LETTER I WITH MACRON; imacron  
15112 \DeclareTextCompositeCommand{\=}{PU}{i}{\81\053}% U+012B  
15113 \DeclareTextCompositeCommand{\=}{PU}{i}{\81\053}% U+012B  
15114 % U+012C LATIN CAPITAL LETTER I WITH BREVE; Ibreve  
15115 \DeclareTextCompositeCommand{\u}{PU}{I}{\81\054}% U+012C  
15116 % U+012D LATIN SMALL LETTER I WITH BREVE; ibreve  
15117 \DeclareTextCompositeCommand{\u}{PU}{i}{\81\055}% U+012D  
15118 \DeclareTextCompositeCommand{\u}{PU}{i}{\81\055}% U+012D  
15119 % U+012E LATIN CAPITAL LETTER I WITH OGONEK; Iogonek  
15120 \DeclareTextCompositeCommand{\k}{PU}{I}{\81\056}% U+012E  
15121 % U+012F LATIN SMALL LETTER I WITH OGONEK; iogonek  
15122 \DeclareTextCompositeCommand{\k}{PU}{i}{\81\057}% U+012F  
15123 \DeclareTextCompositeCommand{\k}{PU}{i}{\81\057}% U+012F  
15124 % U+0130 LATIN CAPITAL LETTER I WITH DOT ABOVE; Idot, Idotaccent  
15125 \DeclareTextCompositeCommand{\.}{PU}{I}{\81\060}% U+0130  
15126 % U+0131 LATIN SMALL LETTER DOTLESS I; dotlessi  
15127 \DeclareTextCommand{\i}{PU}{\81\061}% U+0131  
15128 % U+0132 LATIN CAPITAL LIGATURE IJ; IJ  
15129 \DeclareTextCommand{\IJ}{PU}{\81\062}% U+0132  
15130 % U+0133 LATIN SMALL LIGATURE IJ; ij  
15131 \DeclareTextCommand{\ij}{PU}{\81\063}% U+0133  
15132 % U+0134 LATIN CAPITAL LETTER J WITH CIRCUMFLEX; Jcircumflex  
15133 \DeclareTextCompositeCommand{\^}{PU}{J}{\81\064}% U+0134  
15134 % U+0135 LATIN SMALL LETTER J WITH CIRCUMFLEX; jcircumflex  
15135 \DeclareTextCompositeCommand{\^}{PU}{j}{\81\065}% U+0135  
15136 \DeclareTextCompositeCommand{\^}{PU}{j}{\81\065}% U+0135  
15137 % U+0136 LATIN CAPITAL LETTER K WITH CEDILLA; Kcedilla, Kcommaac-  
cent  
15138 \DeclareTextCompositeCommand{\c}{PU}{K}{\81\066}% U+0136  
15139 % U+0137 LATIN SMALL LETTER K WITH CEDILLA; kcedilla, kcommaaccent  
15140 \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`.

15141 % U+0138 LATIN SMALL LETTER KRA; kgreenlandic  
15142 \DeclareTextCommand{\textkra}{PU}{\81\070}% U+0138  
15143 % U+0139 LATIN CAPITAL LETTER L WITH ACUTE; Lacute  
15144 \DeclareTextCompositeCommand{\'}{PU}{L}{\81\071}% U+0139  
15145 % U+013A LATIN SMALL LETTER L WITH ACUTE; lacute  
15146 \DeclareTextCompositeCommand{\'}{PU}{l}{\81\072}% U+013A  
15147 % U+013B LATIN CAPITAL LETTER L WITH CEDILLA; Lcedilla, Lcommaac-  
cent  
15148 \DeclareTextCompositeCommand{\c}{PU}{L}{\81\073}% U+013B  
15149 % U+013C LATIN SMALL LETTER L WITH CEDILLA; lcedilla, lcommaaccent  
15150 \DeclareTextCompositeCommand{\c}{PU}{l}{\81\074}% U+013C  
15151 % U+013D LATIN CAPITAL LETTER L WITH CARON; Lcaron  
15152 \DeclareTextCompositeCommand{\v}{PU}{L}{\81\075}% U+013D  
15153 % U+013E LATIN SMALL LETTER L WITH CARON; lcaron  
15154 \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.

15155 % U+013F LATIN CAPITAL LETTER L WITH MIDDLE DOT; Ldot, Ldotaccent  
15156 \DeclareTextCompositeCommand{\.}{PU}{L}{\81\077}% U+013F  
15157 % U+0140 LATIN SMALL LETTER L WITH MIDDLE DOT; ldot, ldotaccent  
15158 \DeclareTextCompositeCommand{\.}{PU}{l}{\81\100}% U+0140  
15159 % U+0141 LATIN CAPITAL LETTER L WITH STROKE; Lslash  
15160 \DeclareTextCommand{\L}{PU}{\81\101}% U+0141  
15161 % U+0142 LATIN SMALL LETTER L WITH STROKE; lslash  
15162 \DeclareTextCommand{\l}{PU}{\81\102}% U+0142  
15163 % U+0143 LATIN CAPITAL LETTER N WITH ACUTE; Nacute  
15164 \DeclareTextCompositeCommand{\' }{PU}{N}{\81\103}% U+0143  
15165 % U+0144 LATIN SMALL LETTER N WITH ACUTE; nacute  
15166 \DeclareTextCompositeCommand{\' }{PU}{n}{\81\104}% U+0144  
15167 % U+0145 LATIN CAPITAL LETTER N WITH CEDILLA; Ncedilla, Ncommaaccent  
15168 \DeclareTextCompositeCommand{\c}{PU}{N}{\81\105}% U+0145  
15169 % U+0146 LATIN SMALL LETTER N WITH CEDILLA; ncedilla, ncommaaccent  
15170 \DeclareTextCompositeCommand{\c}{PU}{n}{\81\106}% U+0146  
15171 % U+0147 LATIN CAPITAL LETTER N WITH CARON; Ncaron  
15172 \DeclareTextCompositeCommand{\v}{PU}{N}{\81\107}% U+0147  
15173 % U+0148 LATIN SMALL LETTER N WITH CARON; ncaron  
15174 \DeclareTextCompositeCommand{\v}{PU}{n}{\81\110}% U+0148  
15175 % U+0149 LATIN SMALL LETTER N PRECEDED BY APOSTROPHE; napostrophe, quoterightn  
15176 \DeclareTextCommand{\textnapostrophe}{PU}{\81\111}% U+0149  
15177 % U+014A LATIN CAPITAL LETTER ENG; Eng  
15178 \DeclareTextCommand{\NG}{PU}{\81\112}% U+014A  
15179 % U+014B LATIN SMALL LETTER ENG; eng  
15180 \DeclareTextCommand{\ng}{PU}{\81\113}% U+014B  
15181 % U+014C LATIN CAPITAL LETTER O WITH MACRON; Omacron  
15182 \DeclareTextCompositeCommand{\=}{PU}{O}{\81\114}% U+014C  
15183 % U+014D LATIN SMALL LETTER O WITH MACRON; omacron  
15184 \DeclareTextCompositeCommand{\=}{PU}{o}{\81\115}% U+014D  
15185 % U+014E LATIN CAPITAL LETTER O WITH BREVE; Obreve  
15186 \DeclareTextCompositeCommand{\u}{PU}{O}{\81\116}% U+014E  
15187 % U+014F LATIN SMALL LETTER O WITH BREVE; obreve  
15188 \DeclareTextCompositeCommand{\u}{PU}{o}{\81\117}% U+014F  
15189 % U+0150 LATIN CAPITAL LETTER O WITH DOUBLE ACUTE; Odblacut  
15190 \DeclareTextCompositeCommand{\H}{PU}{O}{\81\120}% U+0150  
15191 % U+0151 LATIN SMALL LETTER O WITH DOUBLE ACUTE; odblacut, ohungarumlaut  
15192 \DeclareTextCompositeCommand{\H}{PU}{o}{\81\121}% U+0151  
15193 % U+0152 LATIN CAPITAL LIGATURE OE; OE  
15194 \DeclareTextCommand{\OE}{PU}{\81\122}% U+0152  
15195 % U+0153 LATIN SMALL LIGATURE OE; oe  
15196 \DeclareTextCommand{\oe}{PU}{\81\123}% U+0153  
15197 % U+0154 LATIN CAPITAL LETTER R WITH ACUTE; Racute  
15198 \DeclareTextCompositeCommand{\' }{PU}{R}{\81\124}% U+0154  
15199 % U+0155 LATIN SMALL LETTER R WITH ACUTE; racute  
15200 \DeclareTextCompositeCommand{\' }{PU}{r}{\81\125}% U+0155  
15201 % U+0156 LATIN CAPITAL LETTER R WITH CEDILLA; Rcedilla, Rcommaaccent  
15202 \DeclareTextCompositeCommand{\c}{PU}{R}{\81\126}% U+0156  
15203 % U+0157 LATIN SMALL LETTER R WITH CEDILLA; rcedilla, rcommaaccent  
15204 \DeclareTextCompositeCommand{\c}{PU}{r}{\81\127}% U+0157

15205 % U+0158 LATIN CAPITAL LETTER R WITH CARON; Rcaron  
15206 \DeclareTextCompositeCommand{\v}{PU}{R}{\81\130}% U+0158  
15207 % U+0159 LATIN SMALL LETTER R WITH CARON; rcaron  
15208 \DeclareTextCompositeCommand{\v}{PU}{r}{\81\131}% U+0159  
15209 % U+015A LATIN CAPITAL LETTER S WITH ACUTE; Sacute  
15210 \DeclareTextCompositeCommand{\'}{PU}{S}{\81\132}% U+015A  
15211 % U+015B LATIN SMALL LETTER S WITH ACUTE; sacute  
15212 \DeclareTextCompositeCommand{\'}{PU}{s}{\81\133}% U+015B  
15213 % U+015C LATIN CAPITAL LETTER S WITH CIRCUMFLEX; Scircumflex  
15214 \DeclareTextCompositeCommand{\^}{PU}{S}{\81\134}% U+015C  
15215 % U+015D LATIN SMALL LETTER S WITH CIRCUMFLEX; scircumflex  
15216 \DeclareTextCompositeCommand{\^}{PU}{s}{\81\135}% U+015D  
15217 % U+015E LATIN CAPITAL LETTER S WITH CEDILLA; Scedilla  
15218 \DeclareTextCompositeCommand{\c}{PU}{S}{\81\136}% U+015E  
15219 % U+015F LATIN SMALL LETTER S WITH CEDILLA; scedilla  
15220 \DeclareTextCompositeCommand{\c}{PU}{s}{\81\137}% U+015F  
15221 % U+0160 LATIN CAPITAL LETTER S WITH CARON; Scaron  
15222 \DeclareTextCompositeCommand{\v}{PU}{S}{\81\140}% U+0160  
15223 % U+0161 LATIN SMALL LETTER S WITH CARON; scaron  
15224 \DeclareTextCompositeCommand{\v}{PU}{s}{\81\141}% U+0161  
15225 % U+0162 LATIN CAPITAL LETTER T WITH CEDILLA; Tcedilla, Tcommaac-  
cent  
15226 \DeclareTextCompositeCommand{\c}{PU}{T}{\81\142}% U+0162  
15227 % U+0163 LATIN SMALL LETTER T WITH CEDILLA; tcedilla, tcommaaccent  
15228 \DeclareTextCompositeCommand{\c}{PU}{t}{\81\143}% U+0163  
15229 % U+0164 LATIN CAPITAL LETTER T WITH CARON; Tcaron  
15230 \DeclareTextCompositeCommand{\v}{PU}{T}{\81\144}% U+0164  
15231 % U+0165 LATIN SMALL LETTER T WITH CARON; tcaron  
15232 \DeclareTextCompositeCommand{\v}{PU}{t}{\81\145}% U+0165  
15233 % U+0166 LATIN CAPITAL LETTER T WITH STROKE; Tbar  
15234 \DeclareTextCommand{\textTslash}{PU}{\81\146}% U+0166  
15235 % U+0167 LATIN SMALL LETTER T WITH STROKE; tbar  
15236 \DeclareTextCommand{\texttslash}{PU}{\81\147}% U+0167  
15237 % U+0168 LATIN CAPITAL LETTER U WITH TILDE; Utilde  
15238 \DeclareTextCompositeCommand{\~}{PU}{U}{\81\150}% U+0168  
15239 % U+0169 LATIN SMALL LETTER U WITH TILDE; utilde  
15240 \DeclareTextCompositeCommand{\~}{PU}{u}{\81\151}% U+0169  
15241 % U+016A LATIN CAPITAL LETTER U WITH MACRON; Umacron  
15242 \DeclareTextCompositeCommand{\=}{PU}{U}{\81\152}% U+016A  
15243 % U+016B LATIN SMALL LETTER U WITH MACRON; umacron  
15244 \DeclareTextCompositeCommand{\=}{PU}{u}{\81\153}% U+016B  
15245 % U+016C LATIN CAPITAL LETTER U WITH BREVE; Ubreve  
15246 \DeclareTextCompositeCommand{\u}{PU}{U}{\81\154}% U+016C  
15247 % U+016D LATIN SMALL LETTER U WITH BREVE; ubreve  
15248 \DeclareTextCompositeCommand{\u}{PU}{u}{\81\155}% U+016D  
15249 % U+016E LATIN CAPITAL LETTER U WITH RING ABOVE; Uring  
15250 \DeclareTextCompositeCommand{\r}{PU}{U}{\81\156}% U+016E  
15251 % U+016F LATIN SMALL LETTER U WITH RING ABOVE; uring  
15252 \DeclareTextCompositeCommand{\r}{PU}{u}{\81\157}% U+016F  
15253 % U+0170 LATIN CAPITAL LETTER U WITH DOUBLE ACUTE; Udbla-  
cute, Uhungarumlaut  
15254 \DeclareTextCompositeCommand{\H}{PU}{U}{\81\160}% U+0170  
15255 % U+0171 LATIN SMALL LETTER U WITH DOUBLE ACUTE; udblacute, uhun-  
garumlaut  
15256 \DeclareTextCompositeCommand{\H}{PU}{u}{\81\161}% U+0171  
15257 % U+0172 LATIN CAPITAL LETTER U WITH OGONEK; Uogonek  
15258 \DeclareTextCompositeCommand{\k}{PU}{U}{\81\162}% U+0172

15259 % U+0173 LATIN SMALL LETTER U WITH OGONEK; uogonek  
 15260 \DeclareTextCompositeCommand{\k}{PU}{u}{\81\163}% U+0173  
 15261 % U+0174 LATIN CAPITAL LETTER W WITH CIRCUMFLEX; Wcircumflex  
 15262 \DeclareTextCompositeCommand{\^}{PU}{W}{\81\164}% U+0174  
 15263 % U+0175 LATIN SMALL LETTER W WITH CIRCUMFLEX; wcircumflex  
 15264 \DeclareTextCompositeCommand{\^}{PU}{w}{\81\165}% U+0175  
 15265 % U+0176 LATIN CAPITAL LETTER Y WITH CIRCUMFLEX; Ycircumflex  
 15266 \DeclareTextCompositeCommand{\^}{PU}{Y}{\81\166}% U+0176  
 15267 % U+0177 LATIN SMALL LETTER Y WITH CIRCUMFLEX; ycircumflex  
 15268 \DeclareTextCompositeCommand{\^}{PU}{y}{\81\167}% U+0177  
 15269 % U+0178 LATIN CAPITAL LETTER Y WITH DIAERESIS; Ydieresis  
 15270 \DeclareTextCompositeCommand{"}{PU}{Y}{\81\170}% U+0178  
 15271 % U+0179 LATIN CAPITAL LETTER Z WITH ACUTE; Zacute  
 15272 \DeclareTextCompositeCommand{'}{PU}{Z}{\81\171}% U+0179  
 15273 % U+017A LATIN SMALL LETTER Z WITH ACUTE; zacute  
 15274 \DeclareTextCompositeCommand{'}{PU}{z}{\81\172}% U+017A  
 15275 % U+017B LATIN CAPITAL LETTER Z WITH DOT ABOVE; Zdot, Zdotaccent  
 15276 \DeclareTextCompositeCommand{.}{PU}{Z}{\81\173}% U+017B  
 15277 % U+017C LATIN SMALL LETTER Z WITH DOT ABOVE; zdot, zdotaccent  
 15278 \DeclareTextCompositeCommand{.}{PU}{z}{\81\174}% U+017C  
 15279 % U+017D LATIN CAPITAL LETTER Z WITH CARON; Zcaron  
 15280 \DeclareTextCompositeCommand{\v}{PU}{Z}{\81\175}% U+017D  
 15281 % U+017E LATIN SMALL LETTER Z WITH CARON; zcaron  
 15282 \DeclareTextCompositeCommand{\v}{PU}{z}{\81\176}% U+017E  
 15283 % U+017F LATIN SMALL LETTER LONG S; longs, slong  
 15284 \DeclareTextCommand{\textlongS}{PU}{\81\177}% U+017F

## 50.2.5 Latin Extended-B: U+0180 to U+024F

15285 % U+0192 LATIN SMALL LETTER F WITH HOOK; florin  
 15286 \DeclareTextCommand{\textflorin}{PU}{\81\222}% U+0192  
 15287 % U+01CD LATIN CAPITAL LETTER A WITH CARON; Acaron  
 15288 \DeclareTextCompositeCommand{\v}{PU}{A}{\81\315}% U+01CD  
 15289 % U+01CE LATIN SMALL LETTER A WITH CARON; acaron  
 15290 \DeclareTextCompositeCommand{\v}{PU}{a}{\81\316}% U+01CE  
 15291 % U+01CF LATIN CAPITAL LETTER I WITH CARON; Icaron  
 15292 \DeclareTextCompositeCommand{\v}{PU}{I}{\81\317}% U+01CF  
 15293 % U+01D0 LATIN SMALL LETTER I WITH CARON; icaron  
 15294 \DeclareTextCompositeCommand{\v}{PU}{i}{\81\320}% U+01D0  
 15295 \DeclareTextCompositeCommand{\v}{PU}{i}{\81\320}% U+01D0  
 15296 % U+01D1 LATIN CAPITAL LETTER O WITH CARON; Ocaron  
 15297 \DeclareTextCompositeCommand{\v}{PU}{O}{\81\321}% U+01D1  
 15298 % U+01D2 LATIN SMALL LETTER O WITH CARON; ocaron  
 15299 \DeclareTextCompositeCommand{\v}{PU}{o}{\81\322}% U+01D2  
 15300 % U+01D3 LATIN CAPITAL LETTER U WITH CARON; Ucaron  
 15301 \DeclareTextCompositeCommand{\v}{PU}{U}{\81\323}% U+01D3  
 15302 % U+01D4 LATIN SMALL LETTER U WITH CARON; ucaron  
 15303 \DeclareTextCompositeCommand{\v}{PU}{u}{\81\324}% U+01D4  
 15304 % U+01E4 LATIN CAPITAL LETTER G WITH STROKE; Gstroke  
 15305 \DeclareTextCommand{\textGslash}{PU}{\81\344}% U+01E4  
 15306 % U+01E5 LATIN SMALL LETTER G WITH STROKE; gstroke  
 15307 \DeclareTextCommand{\textgslash}{PU}{\81\345}% U+01E5  
 15308 % U+01E6 LATIN CAPITAL LETTER G WITH CARON; Gcaron  
 15309 \DeclareTextCompositeCommand{\v}{PU}{G}{\81\346}% U+01E6  
 15310 % U+01E7 LATIN SMALL LETTER G WITH CARON; gcaron  
 15311 \DeclareTextCompositeCommand{\v}{PU}{g}{\81\347}% U+01E7  
 15312 % U+01E8 LATIN CAPITAL LETTER K WITH CARON; Kcaron  
 15313 \DeclareTextCompositeCommand{\v}{PU}{K}{\81\350}% U+01E8

15314 % U+01E9 LATIN SMALL LETTER K WITH CARON; kcaron  
 15315 \DeclareTextCompositeCommand{\v}{PU}{k}{\81\351}% U+01E9  
 15316 % U+01EA LATIN CAPITAL LETTER O WITH OGONEK; Oogonek  
 15317 \DeclareTextCompositeCommand{\k}{PU}{O}{\81\352}% U+01EA  
 15318 % U+01EB LATIN SMALL LETTER O WITH OGONEK; oogonek  
 15319 \DeclareTextCompositeCommand{\k}{PU}{o}{\81\353}% U+01EB  
 15320 % U+01F0 LATIN SMALL LETTER J WITH CARON; jcaron  
 15321 \DeclareTextCompositeCommand{\v}{PU}{j}{\81\360}% U+01F0  
 15322 \DeclareTextCompositeCommand{\v}{PU}{j}{\81\360}% U+01F0  
 15323 % U+01F4 LATIN CAPITAL LETTER G WITH ACUTE; Gacute  
 15324 \DeclareTextCompositeCommand{\'}{PU}{G}{\81\364}% U+01F4  
 15325 % U+01F5 LATIN SMALL LETTER G WITH ACUTE; gacute  
 15326 \DeclareTextCompositeCommand{\'}{PU}{g}{\81\365}% U+01F5  
 15327 % U+01F8 LATIN CAPITAL LETTER N WITH GRAVE  
 15328 \DeclareTextCompositeCommand{\'}{PU}{N}{\81\370}% U+01F8  
 15329 % U+01F9 LATIN SMALL LETTER N WITH GRAVE  
 15330 \DeclareTextCompositeCommand{\'}{PU}{n}{\81\371}% U+01F9  
 15331 % U+01FC LATIN CAPITAL LETTER AE WITH ACUTE; AEacute  
 15332 \DeclareTextCompositeCommand{\'}{PU}{AE}{\81\374}% U+01FC  
 15333 % U+01FD LATIN SMALL LETTER AE WITH ACUTE; aeacute  
 15334 \DeclareTextCompositeCommand{\'}{PU}{ae}{\81\375}% U+01FD  
 15335 % U+01FE LATIN CAPITAL LETTER O WITH STROKE AND ACUTE; \*Oslasha-  
 cute, Ostrokeacut  
 15336 \DeclareTextCompositeCommand{\'}{PU}{O}{\81\376}% U+01FE  
 15337 % U+01FF LATIN SMALL LETTER O WITH STROKE AND ACUTE; \*oslasha-  
 cute, ostrokeacute  
 15338 \DeclareTextCompositeCommand{\'}{PU}{o}{\81\377}% U+01FF  
 15339 % U+0200 LATIN CAPITAL LETTER A WITH DOUBLE GRAVE; Adblgrave  
 15340 \DeclareTextCompositeCommand{\G}{PU}{A}{\82\000}% U+0200  
 15341 % U+0201 LATIN SMALL LETTER A WITH DOUBLE GRAVE; adblgrave  
 15342 \DeclareTextCompositeCommand{\G}{PU}{a}{\82\001}% U+0201  
 15343 % U+0204 LATIN CAPITAL LETTER E WITH DOUBLE GRAVE; Edblgrave  
 15344 \DeclareTextCompositeCommand{\G}{PU}{E}{\82\004}% U+0204  
 15345 % U+0205 LATIN SMALL LETTER E WITH DOUBLE GRAVE; edblgrave  
 15346 \DeclareTextCompositeCommand{\G}{PU}{e}{\82\005}% U+0205  
 15347 % U+0208 LATIN CAPITAL LETTER I WITH DOUBLE GRAVE; Idblgrave  
 15348 \DeclareTextCompositeCommand{\G}{PU}{I}{\82\010}% U+0208  
 15349 % U+0209 LATIN SMALL LETTER I WITH DOUBLE GRAVE; idblgrave  
 15350 \DeclareTextCompositeCommand{\G}{PU}{i}{\82\011}% U+0209  
 15351 \DeclareTextCompositeCommand{\G}{PU}{i}{\82\011}% U+0209  
 15352 % U+020C LATIN CAPITAL LETTER O WITH DOUBLE GRAVE; Odblgrave  
 15353 \DeclareTextCompositeCommand{\G}{PU}{O}{\82\014}% U+020C  
 15354 % U+020D LATIN SMALL LETTER O WITH DOUBLE GRAVE; odblgrave  
 15355 \DeclareTextCompositeCommand{\G}{PU}{o}{\82\015}% U+020D  
 15356 % U+0210 LATIN CAPITAL LETTER R WITH DOUBLE GRAVE; Rdblgrave  
 15357 \DeclareTextCompositeCommand{\G}{PU}{R}{\82\020}% U+0210  
 15358 % U+0211 LATIN SMALL LETTER R WITH DOUBLE GRAVE; rdblgrave  
 15359 \DeclareTextCompositeCommand{\G}{PU}{r}{\82\021}% U+0211  
 15360 % U+0214 LATIN CAPITAL LETTER U WITH DOUBLE GRAVE; Udblgrave  
 15361 \DeclareTextCompositeCommand{\G}{PU}{U}{\82\024}% U+0214  
 15362 % U+0215 LATIN SMALL LETTER U WITH DOUBLE GRAVE; udblgrave  
 15363 \DeclareTextCompositeCommand{\G}{PU}{u}{\82\025}% U+0215  
 15364 % U+021E LATIN CAPITAL LETTER H WITH CARON  
 15365 \DeclareTextCompositeCommand{\v}{PU}{H}{\82\036}% U+021E  
 15366 % U+021F LATIN SMALL LETTER H WITH CARON  
 15367 \DeclareTextCompositeCommand{\v}{PU}{h}{\82\037}% U+021F  
 15368 % U+0226 LATIN CAPITAL LETTER A WITH DOT ABOVE

15369 \DeclareTextCompositeCommand{\.}{PU}{A}{\82\046}% U+0226  
 15370 % U+0227 LATIN SMALL LETTER A WITH DOT ABOVE  
 15371 \DeclareTextCompositeCommand{\.}{PU}{a}{\82\047}% U+0227  
 15372 % U+0228 LATIN CAPITAL LETTER E WITH CEDILLA  
 15373 \DeclareTextCompositeCommand{\c}{PU}{E}{\82\050}% U+0228  
 15374 % U+0229 LATIN SMALL LETTER E WITH CEDILLA  
 15375 \DeclareTextCompositeCommand{\c}{PU}{e}{\82\051}% U+0229  
 15376 % U+022E LATIN CAPITAL LETTER O WITH DOT ABOVE  
 15377 \DeclareTextCompositeCommand{\.}{PU}{O}{\82\056}% U+022E  
 15378 % U+022F LATIN SMALL LETTER O WITH DOT ABOVE  
 15379 \DeclareTextCompositeCommand{\.}{PU}{o}{\82\057}% U+022F  
 15380 % U+0232 LATIN CAPITAL LETTER Y WITH MACRON  
 15381 \DeclareTextCompositeCommand{\=}{PU}{Y}{\82\062}% U+0232  
 15382 % U+0233 LATIN SMALL LETTER Y WITH MACRON  
 15383 \DeclareTextCompositeCommand{\=}{PU}{y}{\82\063}% U+0233  
 15384 % U+0237 LATIN SMALL LETTER DOTLESS J  
 15385 \DeclareTextCommand{\j}{PU}{\82\067}% U+0237

## 50.2.6 Spacing Modifier Letters: U+02B0 to U+02FF

15386 % U+02C7 CARON; caron  
 15387 \DeclareTextCommand{\textasciicaron}{PU}{\82\307}% U+02C7  
 15388 % U+02D8 BREVE; breve  
 15389 \DeclareTextCommand{\textasciibreve}{PU}{\82\330}% U+02D8  
 15390 % U+02D9 DOT ABOVE; dotaccent  
 15391 \DeclareTextCommand{\textdotaccent}{PU}{\82\331}% U+02D9  
 15392 % U+02DA RING ABOVE; ring  
 15393 \DeclareTextCommand{\textring}{PU}{\82\332}% U+02DA  
 15394 % U+02DB OGONEK; ogonek  
 15395 \DeclareTextCommand{\textogonek}{PU}{\82\333}% U+02DB  
 15396 % U+02DC SMALL TILDE; ilde, \*tilde  
 15397 \DeclareTextCommand{\texttilde}{PU}{\82\334}% U+02DC  
 15398 % U+02DD DOUBLE ACUTE ACCENT; hungarumlaut  
 15399 \DeclareTextCommand{\texthungarumlaut}{PU}{\82\335}% U+02DD  
 15400 \DeclareTextCommand{\textacutedbl}{PU}{\texthungarumlaut}% U+02DD  
 15401 % U+02F5 MODIFIER LETTER MIDDLE DOUBLE GRAVE ACCENT  
 15402 \DeclareTextCommand{\textgravedbl}{PU}{\82\365}% U+02F5  
 15403 % U+02F7 MODIFIER LETTER LOW TILDE  
 15404 \DeclareTextCommand{\texttildelow}{PU}{\82\367}% U+02F7

## 50.2.7 Combining Diacritical Marks: U+0300 to U+036F

15405 % U+030F COMBINING DOUBLE GRAVE ACCENT; dblgravecmb  
 15406 \DeclareTextCommand{\textdoublegrave}{PU}{\83\017}% U+030F  
 15407 % U+0311 COMBINING INVERTED BREVE; breveinvertedcmb  
 15408 \DeclareTextCommand{\textnewtie}{PU}{\83\021}% U+0311  
 15409 % U+0323 COMBINING DOT BELOW; dotbelowcmb, \*dotbelowcomb  
 15410 \DeclareTextCommand{\textdotbelow}{PU}{\83\043}% U+0323  
 15411 % U+0331 COMBINING MACRON BELOW; macronbelowcmb  
 15412 \DeclareTextCommand{\textmacronbelow}{PU}{\83\061}% U+0331  
 15413 % U+0361 COMBINING DOUBLE INVERTED BREVE; breveinverteddoublecmb  
 15414 \DeclareTextCommand{\texttie}{PU}{\83\141}% U+0361

## 50.2.8 Greek and Coptic: U+0370 to U+03FF

15415 % U+0374 GREEK NUMERAL SIGN; numeralsigngreek  
 15416 \DeclareTextCommand{\textnumeralsigngreek}{PU}{\83\164}% U+0374  
 15417 % U+0375 GREEK LOWER NUMERAL SIGN; numeralsignlowergreek  
 15418 \DeclareTextCommand{\textnumeralsignlowergreek}{PU}{\83\165}% U+0375  
 15419 % U+0386 GREEK CAPITAL LETTER ALPHA WITH TONOS; Alphanos

15420 \DeclareTextCompositeCommand{'}{PU}{\textAlpha}{\83\206}% U+0386  
15421 % U+0388 GREEK CAPITAL LETTER EPSILON WITH TONOS; Epsilontonos  
15422 \DeclareTextCompositeCommand{'}{PU}{\textEpsilon}{\83\210}% U+0388  
15423 % U+0389 GREEK CAPITAL LETTER ETA WITH TONOS; Etatonos  
15424 \DeclareTextCompositeCommand{'}{PU}{\textEta}{\83\211}% U+0389  
15425 % U+038A GREEK CAPITAL LETTER IOTA WITH TONOS; Iotatonos  
15426 \DeclareTextCompositeCommand{'}{PU}{\textIota}{\83\212}% U+038A  
15427 % U+038C GREEK CAPITAL LETTER OMICRON WITH TONOS; Omi-  
crintonos  
15428 \DeclareTextCompositeCommand{'}{PU}{\textOmicron}{\83\214}% U+038C  
15429 % U+038E GREEK CAPITAL LETTER UPSILON WITH TONOS; Upsilonontonos  
15430 \DeclareTextCompositeCommand{'}{PU}{\textUpsilon}{\83\216}% U+038E  
15431 % U+038F GREEK CAPITAL LETTER OMEGA WITH TONOS; Omegatonos  
15432 \DeclareTextCompositeCommand{'}{PU}{\textOmega}{\83\217}% U+038F  
15433 % U+0390 GREEK SMALL LETTER IOTA WITH DIALYTIKA AND TONOS; io-  
tadiesisistonos  
15434 \DeclareTextCompositeCommand{'}{PU}{\textIotadiesis}{\83\220}% U+0390  
15435 % U+0391 GREEK CAPITAL LETTER ALPHA; Alpha  
15436 \DeclareTextCommand{\textAlpha}{PU}{\83\221}% U+0391  
15437 % U+0392 GREEK CAPITAL LETTER BETA; Beta  
15438 \DeclareTextCommand{\textBeta}{PU}{\83\222}% U+0392  
15439 % U+0393 GREEK CAPITAL LETTER GAMMA; Gamma  
15440 \DeclareTextCommand{\textGamma}{PU}{\83\223}% U+0393  
15441 % U+0394 GREEK CAPITAL LETTER DELTA; Deltagreek, \*Delta  
15442 \DeclareTextCommand{\textDelta}{PU}{\83\224}% U+0394  
15443 % U+0395 GREEK CAPITAL LETTER EPSILON; Epsilon  
15444 \DeclareTextCommand{\textEpsilon}{PU}{\83\225}% U+0395  
15445 % U+0396 GREEK CAPITAL LETTER ZETA; Zeta  
15446 \DeclareTextCommand{\textZeta}{PU}{\83\226}% U+0396  
15447 % U+0397 GREEK CAPITAL LETTER ETA; Eta  
15448 \DeclareTextCommand{\textEta}{PU}{\83\227}% U+0397  
15449 % U+0398 GREEK CAPITAL LETTER THETA; Theta  
15450 \DeclareTextCommand{\textTheta}{PU}{\83\230}% U+0398  
15451 % U+0399 GREEK CAPITAL LETTER IOTA; Iota  
15452 \DeclareTextCommand{\textIota}{PU}{\83\231}% U+0399  
15453 % U+039A GREEK CAPITAL LETTER KAPPA; Kappa  
15454 \DeclareTextCommand{\textKappa}{PU}{\83\232}% U+039A  
15455 % U+039B GREEK CAPITAL LETTER LAMDA; Lambda  
15456 \DeclareTextCommand{\textLambda}{PU}{\83\233}% U+039B  
15457 % U+039C GREEK CAPITAL LETTER MU; Mu  
15458 \DeclareTextCommand{\textMu}{PU}{\83\234}% U+039C  
15459 % U+039D GREEK CAPITAL LETTER NU; Nu  
15460 \DeclareTextCommand{\textNu}{PU}{\83\235}% U+039D  
15461 % U+039E GREEK CAPITAL LETTER XI; Xi  
15462 \DeclareTextCommand{\textXi}{PU}{\83\236}% U+039E  
15463 % U+039F GREEK CAPITAL LETTER OMICRON; Omicron  
15464 \DeclareTextCommand{\textOmicron}{PU}{\83\237}% U+039F  
15465 % U+03A0 GREEK CAPITAL LETTER PI; Pi  
15466 \DeclareTextCommand{\textPi}{PU}{\83\240}% U+03A0  
15467 % U+03A1 GREEK CAPITAL LETTER RHO; Rho  
15468 \DeclareTextCommand{\textRho}{PU}{\83\241}% U+03A1  
15469 % U+03A3 GREEK CAPITAL LETTER SIGMA; Sigma  
15470 \DeclareTextCommand{\textSigma}{PU}{\83\243}% U+03A3  
15471 % U+03A4 GREEK CAPITAL LETTER TAU; Tau  
15472 \DeclareTextCommand{\textTau}{PU}{\83\244}% U+03A4  
15473 % U+03A5 GREEK CAPITAL LETTER UPSILON; Upsilon  
15474 \DeclareTextCommand{\textUpsilon}{PU}{\83\245}% U+03A5

15475 % U+03A6 GREEK CAPITAL LETTER PHI; Phi  
 15476 \DeclareTextCommand{\textPhi}{PU}{\83\246}% U+03A6  
 15477 % U+03A7 GREEK CAPITAL LETTER CHI; Chi  
 15478 \DeclareTextCommand{\textChi}{PU}{\83\247}% U+03A7  
 15479 % U+03A8 GREEK CAPITAL LETTER PSI; Psi  
 15480 \DeclareTextCommand{\textPsi}{PU}{\83\250}% U+03A8  
 15481 % U+03A9 GREEK CAPITAL LETTER OMEGA; Omegagreek, \*Omega  
 15482 \DeclareTextCommand{\textOmega}{PU}{\83\251}% U+03A9  
 15483 % U+03AA GREEK CAPITAL LETTER IOTA WITH DIALYTIKA; Iotadieresis  
 15484 \DeclareTextCommand{\textIotadieresis}{PU}{\83\252}% U+03AA  
 15485 \DeclareTextCompositeCommand{"}{PU}{\textIota}{\83\252}% U+03AA  
 15486 % U+03AB GREEK CAPITAL LETTER UPSILON WITH DIALYTIKA; Up-  
 silondieresis  
 15487 \DeclareTextCompositeCommand{"}{PU}{\textUpsilon}{\83\253}% U+03AB  
 15488 % U+03AC GREEK SMALL LETTER ALPHA WITH TONOS; alphanos  
 15489 \DeclareTextCompositeCommand{'}{PU}{\textalpha}{\83\254}% U+03AC  
 15490 % U+03AD GREEK SMALL LETTER EPSILON WITH TONOS; epsilonos  
 15491 \DeclareTextCompositeCommand{'}{PU}{\textepsilon}{\83\255}% U+03AD  
 15492 % U+03AE GREEK SMALL LETTER ETA WITH TONOS; etanos  
 15493 \DeclareTextCompositeCommand{'}{PU}{\texteta}{\83\256}% U+03AE  
 15494 % U+03AF GREEK SMALL LETTER IOTA WITH TONOS; iotanos  
 15495 \DeclareTextCompositeCommand{'}{PU}{\textiota}{\83\257}% U+03AF  
 15496 % U+03B0 GREEK SMALL LETTER UPSILON WITH DIALYTIKA AND TONOS; up-  
 silondieresis  
 15497 \DeclareTextCompositeCommand{"}{PU}{\textupsilon}{\83\260}% U+03B0  
 15498 % U+03B1 GREEK SMALL LETTER ALPHA; alpha  
 15499 \DeclareTextCommand{\textalpha}{PU}{\83\261}% U+03B1  
 15500 % U+03B2 GREEK SMALL LETTER BETA; beta  
 15501 \DeclareTextCommand{\textbeta}{PU}{\83\262}% U+03B2  
 15502 % U+03B3 GREEK SMALL LETTER GAMMA; gamma  
 15503 \DeclareTextCommand{\textgamma}{PU}{\83\263}% U+03B3  
 15504 % U+03B4 GREEK SMALL LETTER DELTA; delta  
 15505 \DeclareTextCommand{\textdelta}{PU}{\83\264}% U+03B4  
 15506 % U+03B5 GREEK SMALL LETTER EPSILON; epsilon  
 15507 \DeclareTextCommand{\textepsilon}{PU}{\83\265}% U+03B5  
 15508 % U+03B6 GREEK SMALL LETTER ZETA; zeta  
 15509 \DeclareTextCommand{\textzeta}{PU}{\83\266}% U+03B6  
 15510 % U+03B7 GREEK SMALL LETTER ETA; eta  
 15511 \DeclareTextCommand{\texteta}{PU}{\83\267}% U+03B7  
 15512 % U+03B8 GREEK SMALL LETTER THETA; theta  
 15513 \DeclareTextCommand{\texttheta}{PU}{\83\270}% U+03B8  
 15514 % U+03B9 GREEK SMALL LETTER IOTA; iota  
 15515 \DeclareTextCommand{\textiota}{PU}{\83\271}% U+03B9  
 15516 % U+03BA GREEK SMALL LETTER KAPPA; kappa  
 15517 \DeclareTextCommand{\textkappa}{PU}{\83\272}% U+03BA  
 15518 % U+03BB GREEK SMALL LETTER LAMDA; lambda  
 15519 \DeclareTextCommand{\textlambda}{PU}{\83\273}% U+03BB  
 15520 % U+03BC GREEK SMALL LETTER MU; mugreek, \*mu  
 15521 \DeclareTextCommand{\textmugreek}{PU}{\83\274}% U+03BC  
 15522 % U+03BD GREEK SMALL LETTER NU; nu  
 15523 \DeclareTextCommand{\textnu}{PU}{\83\275}% U+03BD  
 15524 % U+03BE GREEK SMALL LETTER XI; xi  
 15525 \DeclareTextCommand{\textxi}{PU}{\83\276}% U+03BE  
 15526 % U+03BF GREEK SMALL LETTER OMICRON; omicron  
 15527 \DeclareTextCommand{\textomicron}{PU}{\83\277}% U+03BF  
 15528 % U+03C0 GREEK SMALL LETTER PI; pi  
 15529 \DeclareTextCommand{\textpi}{PU}{\83\300}% U+03C0

15530 % U+03C1 GREEK SMALL LETTER RHO; rho  
 15531 \DeclareTextCommand{\textrho}{PU}{\83\301}% U+03C1  
 15532 % U+03C2 GREEK SMALL LETTER FINAL SIGMA; \*sigma1, sigmafinal  
 15533 \DeclareTextCommand{\textvarsigma}{PU}{\83\302}% U+03C2  
 15534 % U+03C3 GREEK SMALL LETTER SIGMA; sigma  
 15535 \DeclareTextCommand{\textsigma}{PU}{\83\303}% U+03C3  
 15536 % U+03C4 GREEK SMALL LETTER TAU; tau  
 15537 \DeclareTextCommand{\texttau}{PU}{\83\304}% U+03C4  
 15538 % U+03C5 GREEK SMALL LETTER UPSILON; upsilon  
 15539 \DeclareTextCommand{\textupsilon}{PU}{\83\305}% U+03C5  
 15540 % U+03C6 GREEK SMALL LETTER PHI; phi  
 15541 \DeclareTextCommand{\textphi}{PU}{\83\306}% U+03C6  
 15542 % U+03C7 GREEK SMALL LETTER CHI; chi  
 15543 \DeclareTextCommand{\textchi}{PU}{\83\307}% U+03C7  
 15544 % U+03C8 GREEK SMALL LETTER PSI; psi  
 15545 \DeclareTextCommand{\textpsi}{PU}{\83\310}% U+03C8  
 15546 % U+03C9 GREEK SMALL LETTER OMEGA; omega  
 15547 \DeclareTextCommand{\textomega}{PU}{\83\311}% U+03C9  
 15548 % U+03CA GREEK SMALL LETTER IOTA WITH DIALYTIKA; iodadieresis  
 15549 \DeclareTextCompositeCommand{"}{PU}{\textiota}{\83\312}% U+03CA  
 15550 % U+03CB GREEK SMALL LETTER UPSILON WITH DIALYTIKA; up-  
 silondieresis  
 15551 \DeclareTextCompositeCommand{"}{PU}{\textupsilon}{\83\313}% U+03CB  
 15552 % U+03CC GREEK SMALL LETTER OMICRON WITH TONOS; omicrontonos  
 15553 \DeclareTextCompositeCommand{'}{PU}{\textomicron}{\83\314}% U+03CC  
 15554 % U+03CD GREEK SMALL LETTER UPSILON WITH TONOS; upsilontonos  
 15555 \DeclareTextCommand{\textupsilonacute}{PU}{\83\315}% U+03CD  
 15556 \DeclareTextCompositeCommand{'}{PU}{\textupsilon}{\83\315}% U+03CD  
 15557 % U+03CE GREEK SMALL LETTER OMEGA WITH TONOS; omegatonos  
 15558 \DeclareTextCompositeCommand{'}{PU}{\textomega}{\83\316}% U+03CE  
 15559 % U+03DA GREEK LETTER STIGMA; Stigmagreek  
 15560 \DeclareTextCommand{\textStigmagreek}{PU}{\83\332}% U+03DA  
 15561 % U+03DB GREEK SMALL LETTER STIGMA  
 15562 \DeclareTextCommand{\textstigmagreek}{PU}{\83\333}% U+03DB  
 15563 % U+03DC GREEK LETTER DIGAMMA; Digammagreek  
 15564 \DeclareTextCommand{\textDigammagreek}{PU}{\83\334}% U+03DC  
 15565 % U+03DD GREEK SMALL LETTER DIGAMMA  
 15566 \DeclareTextCommand{\textdigammagreek}{PU}{\83\335}% U+03DD  
 15567 % U+03DE GREEK LETTER KOPPA; Koppagreek  
 15568 \DeclareTextCommand{\textKoppagreek}{PU}{\83\336}% U+03DE  
 15569 % U+03DF GREEK SMALL LETTER KOPPA  
 15570 \DeclareTextCommand{\textkoppagreek}{PU}{\83\337}% U+03DF  
 15571 % U+03E0 GREEK LETTER SAMPI; Sampigreek  
 15572 \DeclareTextCommand{\textSampigreek}{PU}{\83\340}% U+03E0  
 15573 % U+03E1 GREEK SMALL LETTER SAMPI  
 15574 \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.

15575 % U+0400 CYRILLIC CAPITAL LETTER IE WITH GRAVE  
 15576 \DeclareTextCompositeCommand{'}{PU}{\CYRE}{\84\000}% U+0400  
 15577 % U+0401 CYRILLIC CAPITAL LETTER IO; Iocyrillic, \*afii10023  
 15578 \DeclareTextCommand{\CYRYO}{PU}{\84\001}% U+0401  
 15579 \DeclareTextCompositeCommand{"}{PU}{\CYRE}{\84\001}% ???  
 15580 % U+0402 CYRILLIC CAPITAL LETTER DJE; Djecyrillic, \*afii10051  
 15581 \DeclareTextCommand{\CYRDJE}{PU}{\84\002}% U+0402



15582 % U+0403 CYRILLIC CAPITAL LETTER GJE; Gjecyrillic, \*afii10052  
 15583 \DeclareTextCompositeCommand{\'}{PU}{\CYRG}{\84\003}% U+0403  
 15584 % U+0404 CYRILLIC CAPITAL LETTER UKRAINIAN IE; Ecyrillic, \*afii10053  
 15585 \DeclareTextCommand{\CYRIE}{PU}{\84\004}% U+0404  
 15586 % U+0405 CYRILLIC CAPITAL LETTER DZE; Dzecyrillic, \*afii10054  
 15587 \DeclareTextCommand{\CYRDZE}{PU}{\84\005}% U+0405  
 15588 % U+0406 CYRILLIC CAPITAL LETTER BYELORUSSIAN-UKRAINIAN I; Icyrillic, \*afii10055  
 15589 \DeclareTextCommand{\CYRII}{PU}{\84\006}% U+0406  
 15590 % U+0407 CYRILLIC CAPITAL LETTER YI; Yicyrillic, \*afii10056  
 15591 \DeclareTextCommand{\CYRYI}{PU}{\84\007}% U+0407  
 15592 \DeclareTextCompositeCommand{\"}{PU}{\CYRII}{\84\007}% U+0407  
 15593 % U+0408 CYRILLIC CAPITAL LETTER JE; Jecyrillic, \*afii10057  
 15594 \DeclareTextCommand{\CYRJE}{PU}{\84\010}% U+0408  
 15595 % U+0409 CYRILLIC CAPITAL LETTER LJE; Ljecyrillic, \*afii10058  
 15596 \DeclareTextCommand{\CYRLJE}{PU}{\84\011}% U+0409  
 15597 % U+040A CYRILLIC CAPITAL LETTER NJE; Njecyrillic, \*afii10059  
 15598 \DeclareTextCommand{\CYRNJE}{PU}{\84\012}% U+040A  
 15599 % U+040B CYRILLIC CAPITAL LETTER TSHE; Tshecyrillic, \*afii10060  
 15600 \DeclareTextCommand{\CYRTSHE}{PU}{\84\013}% U+040B  
 15601 % U+040C CYRILLIC CAPITAL LETTER KJE; Kjecyrillic, \*afii10061  
 15602 \DeclareTextCompositeCommand{\'}{PU}{\CYRK}{\84\014}% U+040C  
 15603 % U+040D CYRILLIC CAPITAL LETTER I WITH GRAVE  
 15604 \DeclareTextCompositeCommand{\`}{PU}{\CYRI}{\84\015}% U+040D  
 15605 % U+040E CYRILLIC CAPITAL LETTER SHORT U; Ushortcyrillic, \*afii10062  
 15606 \DeclareTextCommand{\CYRUSHRT}{PU}{\84\016}% U+040E  
 15607 \DeclareTextCompositeCommand{\U}{PU}{\CYRU}{\84\016}% U+040E  
 15608 % U+040F CYRILLIC CAPITAL LETTER DZHE; Dzhecyrillic, \*afii10145  
 15609 \DeclareTextCommand{\CYRDZHE}{PU}{\84\017}% U+040F  
 15610 % U+0410 CYRILLIC CAPITAL LETTER A; Acyrillic, \*afii10017  
 15611 \DeclareTextCommand{\CYRA}{PU}{\84\020}% U+0410  
 15612 % U+0411 CYRILLIC CAPITAL LETTER BE; Becyrillic, \*afii10018  
 15613 \DeclareTextCommand{\CYRB}{PU}{\84\021}% U+0411  
 15614 % U+0412 CYRILLIC CAPITAL LETTER VE; Vecyrillic, \*afii10019  
 15615 \DeclareTextCommand{\CYRV}{PU}{\84\022}% U+0412  
 15616 % U+0413 CYRILLIC CAPITAL LETTER GHE; Gecyrillic, \*afii10020  
 15617 \DeclareTextCommand{\CYRG}{PU}{\84\023}% U+0413  
 15618 % U+0414 CYRILLIC CAPITAL LETTER DE; Decyrillic, \*afii10021  
 15619 \DeclareTextCommand{\CYRD}{PU}{\84\024}% U+0414  
 15620 % U+0415 CYRILLIC CAPITAL LETTER IE; Iecyrillic, \*afii10022  
 15621 \DeclareTextCommand{\CYRE}{PU}{\84\025}% U+0415  
 15622 % U+0416 CYRILLIC CAPITAL LETTER ZHE; Zhecyrillic, \*afii10024  
 15623 \DeclareTextCommand{\CYRZH}{PU}{\84\026}% U+0416  
 15624 % U+0417 CYRILLIC CAPITAL LETTER ZE; Zecyrillic, \*afii10025  
 15625 \DeclareTextCommand{\CYRZ}{PU}{\84\027}% U+0417  
 15626 % U+0418 CYRILLIC CAPITAL LETTER I; Iicyrillic, \*afii10026  
 15627 \DeclareTextCommand{\CYRI}{PU}{\84\030}% U+0418  
 15628 % U+0419 CYRILLIC CAPITAL LETTER SHORT I; Iishortcyrillic, \*afii10027  
 15629 \DeclareTextCommand{\CYRISHRT}{PU}{\84\031}% U+0419  
 15630 \DeclareTextCompositeCommand{\U}{PU}{\CYRI}{\84\031}% U+0419  
 15631 % U+041A CYRILLIC CAPITAL LETTER KA; Kacyrillic, \*afii10028  
 15632 \DeclareTextCommand{\CYRK}{PU}{\84\032}% U+041A  
 15633 % U+041B CYRILLIC CAPITAL LETTER EL; Elcyrillic, \*afii10029  
 15634 \DeclareTextCommand{\CYRL}{PU}{\84\033}% U+041B  
 15635 % U+041C CYRILLIC CAPITAL LETTER EM; Emcyrillic, \*afii10030  
 15636 \DeclareTextCommand{\CYRM}{PU}{\84\034}% U+041C  
 15637 % U+041D CYRILLIC CAPITAL LETTER EN; Encyrillic, \*afii10031

15638 \DeclareTextCommand{\CYRN}{PU}{\84\035}% U+041D  
15639 % U+041E CYRILLIC CAPITAL LETTER O; Ocyrillic, \*afii10032  
15640 \DeclareTextCommand{\CYRO}{PU}{\84\036}% U+041E  
15641 % U+041F CYRILLIC CAPITAL LETTER PE; Pecyrillic, \*afii10033  
15642 \DeclareTextCommand{\CYRP}{PU}{\84\037}% U+041F  
15643 % U+0420 CYRILLIC CAPITAL LETTER ER; Ercyrillic, \*afii10034  
15644 \DeclareTextCommand{\CYRR}{PU}{\84\040}% U+0420  
15645 % U+0421 CYRILLIC CAPITAL LETTER ES; Escyrillic, \*afii10035  
15646 \DeclareTextCommand{\CYRS}{PU}{\84\041}% U+0421  
15647 % U+0422 CYRILLIC CAPITAL LETTER TE; Tecyrillic, \*afii10036  
15648 \DeclareTextCommand{\CYRT}{PU}{\84\042}% U+0422  
15649 % U+0423 CYRILLIC CAPITAL LETTER U; Ucyrillic, \*afii10037  
15650 \DeclareTextCommand{\CYRU}{PU}{\84\043}% U+0423  
15651 % U+0424 CYRILLIC CAPITAL LETTER EF; Efcyrillic, \*afii10038  
15652 \DeclareTextCommand{\CYRF}{PU}{\84\044}% U+0424  
15653 % U+0425 CYRILLIC CAPITAL LETTER HA; Khacyrillic, \*afii10039  
15654 \DeclareTextCommand{\CYRH}{PU}{\84\045}% U+0425  
15655 % U+0426 CYRILLIC CAPITAL LETTER TSE; Tsecyrillic, \*afii10040  
15656 \DeclareTextCommand{\CYRC}{PU}{\84\046}% U+0426  
15657 % U+0427 CYRILLIC CAPITAL LETTER CHE; Checyrillic, \*afii10041  
15658 \DeclareTextCommand{\CYRCH}{PU}{\84\047}% U+0427  
15659 % U+0428 CYRILLIC CAPITAL LETTER SHA; Shacyrillic, \*afii10042  
15660 \DeclareTextCommand{\CYRSH}{PU}{\84\050}% U+0428  
15661 % U+0429 CYRILLIC CAPITAL LETTER SHCHA; Shchacyrillic, \*afii10043  
15662 \DeclareTextCommand{\CYRSHCH}{PU}{\84\051}% U+0429  
15663 % U+042A CYRILLIC CAPITAL LETTER HARD SIGN; Hardsigncyrillic, \*afii10044  
15664 \DeclareTextCommand{\CYRHRDSN}{PU}{\84\052}% U+042A  
15665 % U+042B CYRILLIC CAPITAL LETTER YERU; Yericyrillic, \*afii10045  
15666 \DeclareTextCommand{\CYRERY}{PU}{\84\053}% U+042B  
15667 % U+042C CYRILLIC CAPITAL LETTER SOFT SIGN; Softsigncyrillic, \*afii10046  
15668 \DeclareTextCommand{\CYRSFTSN}{PU}{\84\054}% U+042C  
15669 % U+042D CYRILLIC CAPITAL LETTER E; Ereversedcyrillic, \*afii10047  
15670 \DeclareTextCommand{\CYREREV}{PU}{\84\055}% U+042D  
15671 % U+042E CYRILLIC CAPITAL LETTER YU; IUcyrillic, \*afii10048  
15672 \DeclareTextCommand{\CYRYU}{PU}{\84\056}% U+042E  
15673 % U+042F CYRILLIC CAPITAL LETTER YA; IAcyrillic, \*afii10049  
15674 \DeclareTextCommand{\CYRYA}{PU}{\84\057}% U+042F  
15675 % U+0430 CYRILLIC SMALL LETTER A; acyrillic, \*afii10065  
15676 \DeclareTextCommand{\cyra}{PU}{\84\060}% U+0430  
15677 % U+0431 CYRILLIC SMALL LETTER BE; \*afii10066, becyrillic  
15678 \DeclareTextCommand{\cyrb}{PU}{\84\061}% U+0431  
15679 % U+0432 CYRILLIC SMALL LETTER VE; \*afii10067, vecyrillic  
15680 \DeclareTextCommand{\cyrv}{PU}{\84\062}% U+0432  
15681 % U+0433 CYRILLIC SMALL LETTER GHE; \*afii10068, gecyrillic  
15682 \DeclareTextCommand{\cyrg}{PU}{\84\063}% U+0433  
15683 % U+0434 CYRILLIC SMALL LETTER DE; \*afii10069, decyrillic  
15684 \DeclareTextCommand{\cyrd}{PU}{\84\064}% U+0434  
15685 % U+0435 CYRILLIC SMALL LETTER IE; \*afii10070, iecyrillic  
15686 \DeclareTextCommand{\cyre}{PU}{\84\065}% U+0435  
15687 % U+0436 CYRILLIC SMALL LETTER ZHE; \*afii10072, zhecyrillic  
15688 \DeclareTextCommand{\cyrz}{PU}{\84\066}% U+0436  
15689 % U+0437 CYRILLIC SMALL LETTER ZE; \*afii10073, zecyrillic  
15690 \DeclareTextCommand{\cyrz}{PU}{\84\067}% U+0437  
15691 % U+0438 CYRILLIC SMALL LETTER I; \*afii10074, iicyrillic  
15692 \DeclareTextCommand{\cyri}{PU}{\84\070}% U+0438  
15693 % U+0439 CYRILLIC SMALL LETTER SHORT I; \*afii10075, iishortcyrillic  
15694 \DeclareTextCommand{\cyrishrt}{PU}{\84\071}% U+0439

15695 \DeclareTextCompositeCommand{\U}{PU}{\cyri}{\84\071}% U+0439  
15696 % U+043A CYRILLIC SMALL LETTER KA; \*afii10076, kacyrillic  
15697 \DeclareTextCommand{\cyrk}{PU}{\84\072}% U+043A  
15698 % U+043B CYRILLIC SMALL LETTER EL; \*afii10077, elcyrillic  
15699 \DeclareTextCommand{\cyrI}{PU}{\84\073}% U+043B  
15700 % U+043C CYRILLIC SMALL LETTER EM; \*afii10078, emcyrillic  
15701 \DeclareTextCommand{\cyrm}{PU}{\84\074}% U+043C  
15702 % U+043D CYRILLIC SMALL LETTER EN; \*afii10079, encyrillic  
15703 \DeclareTextCommand{\cyrn}{PU}{\84\075}% U+043D  
15704 % U+043E CYRILLIC SMALL LETTER O; \*afii10080, ocyrillic  
15705 \DeclareTextCommand{\cyro}{PU}{\84\076}% U+043E  
15706 % U+043F CYRILLIC SMALL LETTER PE; \*afii10081, pecyrillic  
15707 \DeclareTextCommand{\cyrp}{PU}{\84\077}% U+043F  
15708 % U+0440 CYRILLIC SMALL LETTER ER; \*afii10082, ercyrillic  
15709 \DeclareTextCommand{\cyrr}{PU}{\84\100}% U+0440  
15710 % U+0441 CYRILLIC SMALL LETTER ES; \*afii10083, escyrillic  
15711 \DeclareTextCommand{\cyrS}{PU}{\84\101}% U+0441  
15712 % U+0442 CYRILLIC SMALL LETTER TE; \*afii10084, tecyrillic  
15713 \DeclareTextCommand{\cyrt}{PU}{\84\102}% U+0442  
15714 % U+0443 CYRILLIC SMALL LETTER U; \*afii10085, ucyrillic  
15715 \DeclareTextCommand{\cyrU}{PU}{\84\103}% U+0443  
15716 % U+0444 CYRILLIC SMALL LETTER EF; \*afii10086, efcyrillic  
15717 \DeclareTextCommand{\cyrf}{PU}{\84\104}% U+0444  
15718 % U+0445 CYRILLIC SMALL LETTER HA; \*afii10087, khacyrillic  
15719 \DeclareTextCommand{\cyrh}{PU}{\84\105}% U+0445  
15720 % U+0446 CYRILLIC SMALL LETTER TSE; \*afii10088, tsecyrillic  
15721 \DeclareTextCommand{\cyrc}{PU}{\84\106}% U+0446  
15722 % U+0447 CYRILLIC SMALL LETTER CHE; \*afii10089, checyrillic  
15723 \DeclareTextCommand{\cyrch}{PU}{\84\107}% U+0447  
15724 % U+0448 CYRILLIC SMALL LETTER SHA; \*afii10090, shacyrillic  
15725 \DeclareTextCommand{\cyrsh}{PU}{\84\110}% U+0448  
15726 % U+0449 CYRILLIC SMALL LETTER SHCHA; \*afii10091, shchacyrillic  
15727 \DeclareTextCommand{\cyrshch}{PU}{\84\111}% U+0449  
15728 % U+044A CYRILLIC SMALL LETTER HARD SIGN; \*afii10092, hardsigncyrillic  
15729 \DeclareTextCommand{\cyhrdsn}{PU}{\84\112}% U+044A  
15730 % U+044B CYRILLIC SMALL LETTER YERU; \*afii10093, yericyrillic  
15731 \DeclareTextCommand{\cyrery}{PU}{\84\113}% U+044B  
15732 % U+044C CYRILLIC SMALL LETTER SOFT SIGN; \*afii10094, softsigncyrillic  
15733 \DeclareTextCommand{\cyrSftsn}{PU}{\84\114}% U+044C  
15734 % U+044D CYRILLIC SMALL LETTER E; \*afii10095, ereversedcyrillic  
15735 \DeclareTextCommand{\cyrerev}{PU}{\84\115}% U+044D  
15736 % U+044E CYRILLIC SMALL LETTER YU; \*afii10096, iucyrillic  
15737 \DeclareTextCommand{\cyrYU}{PU}{\84\116}% U+044E  
15738 % U+044F CYRILLIC SMALL LETTER YA; \*afii10097, iacyrillic  
15739 \DeclareTextCommand{\cyrya}{PU}{\84\117}% U+044F  
15740 % U+0450 CYRILLIC SMALL LETTER IE WITH GRAVE  
15741 \DeclareTextCompositeCommand{\'}{PU}{\cyre}{\84\120}% U+0450  
15742 % U+0451 CYRILLIC SMALL LETTER IO; \*afii10071, iocyrillic  
15743 \DeclareTextCommand{\cyryo}{PU}{\84\121}% U+0451  
15744 \DeclareTextCompositeCommand{\"}{PU}{\cyre}{\84\121}% U+0451  
15745 % U+0452 CYRILLIC SMALL LETTER DJE; \*afii10099, djecyrillic  
15746 \DeclareTextCommand{\cyrdje}{PU}{\84\122}% U+0452  
15747 % U+0453 CYRILLIC SMALL LETTER GJE; \*afii10100, gjecyrillic  
15748 \DeclareTextCompositeCommand{\`}{PU}{\cyrG}{\84\123}% U+0453  
15749 % U+0454 CYRILLIC SMALL LETTER UKRAINIAN IE; \*afii10101, ecyrillic  
15750 \DeclareTextCommand{\cyrie}{PU}{\84\124}% U+0454  
15751 % U+0455 CYRILLIC SMALL LETTER DZE; \*afii10102, dzecyrillic

15752 \DeclareTextCommand{\cyrdze}{PU}{\84\125}% U+0455  
15753 % U+0456 CYRILLIC SMALL LETTER BYELORUSSIAN-UKRAINIAN I; \*afii10103, icyril-  
lic  
15754 \DeclareTextCommand{\cyrii}{PU}{\84\126}% U+0456  
15755 % U+0457 CYRILLIC SMALL LETTER YI; \*afii10104, yicyrillic  
15756 \DeclareTextCommand{\cyryi}{PU}{\84\127}% U+0457  
15757 \DeclareTextCompositeCommand{"}{PU}{\cyrii}{\84\127}% U+0457  
15758 % U+0458 CYRILLIC SMALL LETTER JE; \*afii10105, jecyrillic  
15759 \DeclareTextCommand{\cyrje}{PU}{\84\130}% U+0458  
15760 % U+0459 CYRILLIC SMALL LETTER LJE; \*afii10106, ljecyrillic  
15761 \DeclareTextCommand{\cyrlje}{PU}{\84\131}% U+0459  
15762 % U+045A CYRILLIC SMALL LETTER NJE; \*afii10107, njecyrillic  
15763 \DeclareTextCommand{\cyrnje}{PU}{\84\132}% U+045A  
15764 % U+045B CYRILLIC SMALL LETTER TSHE; \*afii10108, tshecyrillic  
15765 \DeclareTextCommand{\cyrtshe}{PU}{\84\133}% U+045B  
15766 % U+045C CYRILLIC SMALL LETTER KJE; \*afii10109, kjecyrillic  
15767 \DeclareTextCompositeCommand{\'}{PU}{\cyrk}{\84\134}% U+045C  
15768 % U+045D CYRILLIC SMALL LETTER I WITH GRAVE  
15769 \DeclareTextCompositeCommand{\`}{PU}{\cyri}{\84\135}% U+045D  
15770 % U+045E CYRILLIC SMALL LETTER SHORT U; \*afii10110, ushortcyrillic  
15771 \DeclareTextCommand{\cyrushrt}{PU}{\84\136}% U+045E  
15772 \DeclareTextCompositeCommand{\U}{PU}{\curu}{\84\136}% U+045E  
15773 % U+045F CYRILLIC SMALL LETTER DZHE; \*afii10193, dzhecyrillic  
15774 \DeclareTextCommand{\cyrdzhe}{PU}{\84\137}% U+045F  
15775 % U+0460 CYRILLIC CAPITAL LETTER OMEGA; Omegacyrillic  
15776 \DeclareTextCommand{\CYROMEGA}{PU}{\84\140}% U+0460  
15777 % U+0461 CYRILLIC SMALL LETTER OMEGA; omegacyrillic  
15778 \DeclareTextCommand{\cyromega}{PU}{\84\141}% U+0461  
15779 % U+0462 CYRILLIC CAPITAL LETTER YAT; Yatcyrillic, \*afii10146  
15780 \DeclareTextCommand{\CYRYAT}{PU}{\84\142}% U+0462  
15781 % U+0463 CYRILLIC SMALL LETTER YAT; \*afii10194, yatcyrillic  
15782 \DeclareTextCommand{\cyryat}{PU}{\84\143}% U+0463  
15783 % U+0464 CYRILLIC CAPITAL LETTER IOTIFIED E; Eiotifiedcyrillic  
15784 \DeclareTextCommand{\CYRIOTE}{PU}{\84\144}% U+0464  
15785 % U+0465 CYRILLIC SMALL LETTER IOTIFIED E; eiotifiedcyrillic  
15786 \DeclareTextCommand{\cyriote}{PU}{\84\145}% U+0465  
15787 % U+0466 CYRILLIC CAPITAL LETTER LITTLE YUS; Yuslittlecyrillic  
15788 \DeclareTextCommand{\CYRLYUS}{PU}{\84\146}% U+0466  
15789 % U+0467 CYRILLIC SMALL LETTER LITTLE YUS; yuslittlecyrillic  
15790 \DeclareTextCommand{\cyrlyus}{PU}{\84\147}% U+0467  
15791 % U+0468 CYRILLIC CAPITAL LETTER IOTIFIED LITTLE YUS; Yuslittleio-  
tifiedcyrillic  
15792 \DeclareTextCommand{\CYRIOTLYUS}{PU}{\84\150}% U+0468  
15793 % U+0469 CYRILLIC SMALL LETTER IOTIFIED LITTLE YUS; yuslittleioti-  
fiedcyrillic  
15794 \DeclareTextCommand{\cyriotlyus}{PU}{\84\151}% U+0469  
15795 % U+046A CYRILLIC CAPITAL LETTER BIG YUS; Yusbigcyrillic  
15796 \DeclareTextCommand{\CYRBYUS}{PU}{\84\152}% U+046A  
15797 % U+046B CYRILLIC SMALL LETTER BIG YUS; yusbigcyrillic  
15798 \DeclareTextCommand{\cyrbyus}{PU}{\84\153}% U+046B  
15799 % U+046C CYRILLIC CAPITAL LETTER IOTIFIED BIG YUS; Yusbigiotified-  
cyrillic  
15800 \DeclareTextCommand{\CYRIOTBYUS}{PU}{\84\154}% U+046C  
15801 % U+046D CYRILLIC SMALL LETTER IOTIFIED BIG YUS; yusbigiotifiedcyril-  
lic  
15802 \DeclareTextCommand{\cyriotbyus}{PU}{\84\155}% U+046D  
15803 % U+046E CYRILLIC CAPITAL LETTER KSI; Ksicyrillic

15804 \DeclareTextCommand{\CYRKSI}{PU}{\84\156}% U+046E  
 15805 % U+046F CYRILLIC SMALL LETTER KSI; kscyrillic  
 15806 \DeclareTextCommand{\cyrksi}{PU}{\84\157}% U+046F  
 15807 % U+0470 CYRILLIC CAPITAL LETTER PSI; Psicyrillic  
 15808 \DeclareTextCommand{\CYRPSI}{PU}{\84\160}% U+0470  
 15809 % U+0471 CYRILLIC SMALL LETTER PSI; psicyrillic  
 15810 \DeclareTextCommand{\cyrpsi}{PU}{\84\161}% U+0471  
 15811 % U+0472 CYRILLIC CAPITAL LETTER FITA; Fitacyrillic, \*afii10147  
 15812 \DeclareTextCommand{\CYRFITA}{PU}{\84\162}% U+0472  
 15813 % U+0473 CYRILLIC SMALL LETTER FITA; \*afii10195, fitacyrillic  
 15814 \DeclareTextCommand{\cyrfita}{PU}{\84\163}% U+0473  
 15815 % U+0474 CYRILLIC CAPITAL LETTER IZHITSA; Izhitsacyrillic, \*afii10148  
 15816 \DeclareTextCommand{\CYRIZH}{PU}{\84\164}% U+0474  
 15817 % U+0475 CYRILLIC SMALL LETTER IZHITSA; \*afii10196, izhitsacyrillic  
 15818 \DeclareTextCommand{\cyrizh}{PU}{\84\165}% U+0475  
 15819 % U+0476 CYRILLIC CAPITAL LETTER IZHITSA WITH DOUBLE GRAVE AC-  
 CENT; Izhitsadblgravecyrillic  
 15820 \DeclareTextCompositeCommand{\C}{PU}{\CYRIZH}{\84\166}% U+0476  
 15821 % U+0477 CYRILLIC SMALL LETTER IZHITSA WITH DOUBLE GRAVE AC-  
 CENT; izhitsadblgravecyrillic  
 15822 \DeclareTextCompositeCommand{\C}{PU}{\cyrizh}{\84\167}% U+0477  
 15823 % U+0478 CYRILLIC CAPITAL LETTER UK; Ukcyrillic  
 15824 \DeclareTextCommand{\CYRUK}{PU}{\84\170}% U+0478  
 15825 % U+0479 CYRILLIC SMALL LETTER UK; ukcyrillic  
 15826 \DeclareTextCommand{\cyruk}{PU}{\84\171}% U+0479  
 15827 % U+047A CYRILLIC CAPITAL LETTER ROUND OMEGA; Omegaroundcyril-  
 lic  
 15828 \DeclareTextCommand{\CYROMEGARND}{PU}{\84\172}% U+047A  
 15829 % U+047B CYRILLIC SMALL LETTER ROUND OMEGA; omegaroundcyrillic  
 15830 \DeclareTextCommand{\cyromegarnd}{PU}{\84\173}% U+047B  
 15831 % U+047C CYRILLIC CAPITAL LETTER OMEGA WITH TITLO; Omegatitlo-  
 cyrillic  
 15832 \DeclareTextCommand{\CYROMEGATITLO}{PU}{\84\174}% U+047C  
 15833 % U+047D CYRILLIC SMALL LETTER OMEGA WITH TITLO; omegatitlo-  
 cyrillic  
 15834 \DeclareTextCommand{\cyromegatitlo}{PU}{\84\175}% U+047D  
 15835 % U+047E CYRILLIC CAPITAL LETTER OT; Otcyrillic  
 15836 \DeclareTextCommand{\CYROT}{PU}{\84\176}% U+047E  
 15837 % U+047F CYRILLIC SMALL LETTER OT; otcyrillic  
 15838 \DeclareTextCommand{\cyrot}{PU}{\84\177}% U+047F  
 15839 % U+0480 CYRILLIC CAPITAL LETTER KOPPA; Koppacyrillic  
 15840 \DeclareTextCommand{\CYRKOPPA}{PU}{\84\200}% U+0480  
 15841 % U+0481 CYRILLIC SMALL LETTER KOPPA; koppacyrillic  
 15842 \DeclareTextCommand{\cyrkoppa}{PU}{\84\201}% U+0481  
 15843 % U+0482 CYRILLIC THOUSANDS SIGN; thousandcyrillic  
 15844 \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

15845 % U+048A CYRILLIC CAPITAL LETTER SHORT I WITH TAIL  
 15846 \DeclareTextCommand{\CYRISHRTDSC}{PU}{\84\212}% U+048A  
 15847 % U+048B CYRILLIC SMALL LETTER SHORT I WITH TAIL  
 15848 \DeclareTextCommand{\cyrishrtdsc}{PU}{\84\213}% U+048B  
 15849 % U+048C CYRILLIC CAPITAL LETTER SEMISOFT SIGN  
 15850 \DeclareTextCommand{\CYRSEMISFTSN}{PU}{\84\214}% U+048C  
 15851 % U+048D CYRILLIC SMALL LETTER SEMISOFT SIGN  
 15852 \DeclareTextCommand{\cyrsemisftsn}{PU}{\84\215}% U+048D  
 15853 % U+048E CYRILLIC CAPITAL LETTER ER WITH TICK  
 15854 \DeclareTextCommand{\CYRRTICK}{PU}{\84\216}% U+048E  
 15855 % U+048F CYRILLIC SMALL LETTER ER WITH TICK  
 15856 \DeclareTextCommand{\cyrrtick}{PU}{\84\217}% U+048F  
 15857 % U+0490 CYRILLIC CAPITAL LETTER GHE WITH UPTURN; Gheupturn-  
 cyrillic, \*afii10050  
 15858 \DeclareTextCommand{\CYRGUP}{PU}{\84\220}% U+0490  
 15859 % U+0491 CYRILLIC SMALL LETTER GHE WITH UPTURN; \*afii10098, ghe-  
 upturncyrillic  
 15860 \DeclareTextCommand{\cyrgup}{PU}{\84\221}% U+0491  
 15861 % U+0492 CYRILLIC CAPITAL LETTER GHE WITH STROKE; Ghestroke-  
 cyrillic  
 15862 \DeclareTextCommand{\CYRGHCRS}{PU}{\84\222}% U+0492  
 15863 % U+0493 CYRILLIC SMALL LETTER GHE WITH STROKE; ghestrokecyrillic  
 15864 \DeclareTextCommand{\cyrghcrs}{PU}{\84\223}% U+0493  
 15865 % U+0494 CYRILLIC CAPITAL LETTER GHE WITH MIDDLE HOOK; Ghemid-  
 dlehookcyrillic  
 15866 \DeclareTextCommand{\CYRGHK}{PU}{\84\224}% U+0494  
 15867 % U+0495 CYRILLIC SMALL LETTER GHE WITH MIDDLE HOOK; ghemid-  
 dlehookcyrillic  
 15868 \DeclareTextCommand{\cyrghk}{PU}{\84\225}% U+0495  
 15869 % U+0496 CYRILLIC CAPITAL LETTER ZHE WITH DESCENDER; Zhedescen-  
 dercyrillic  
 15870 \DeclareTextCommand{\CYRZHDSC}{PU}{\84\226}% U+0496  
 15871 % U+0497 CYRILLIC SMALL LETTER ZHE WITH DESCENDER; zhedescen-  
 dercyrillic  
 15872 \DeclareTextCommand{\cyrzhdsc}{PU}{\84\227}% U+0497  
 15873 % U+0498 CYRILLIC CAPITAL LETTER ZE WITH DESCENDER; Zedescen-  
 dercyrillic  
 15874 \DeclareTextCommand{\CYRZDSC}{PU}{\84\230}% U+0498  
 15875 \DeclareTextCompositeCommand{\c}{PU}{\CYRZ}{\84\230}% U+0498  
 15876 % U+0499 CYRILLIC SMALL LETTER ZE WITH DESCENDER; zedescender-  
 cyrillic  
 15877 \DeclareTextCommand{\cyrzdesc}{PU}{\84\231}% U+0499  
 15878 \DeclareTextCompositeCommand{\c}{PU}{\cyrz}{\84\231}% U+0499  
 15879 % U+049A CYRILLIC CAPITAL LETTER KA WITH DESCENDER; Kadescen-  
 dercyrillic  
 15880 \DeclareTextCommand{\CYRKDSC}{PU}{\84\232}% U+049A  
 15881 % U+049B CYRILLIC SMALL LETTER KA WITH DESCENDER; kadescender-  
 cyrillic  
 15882 \DeclareTextCommand{\cyrkdsc}{PU}{\84\233}% U+049B  
 15883 % U+049C CYRILLIC CAPITAL LETTER KA WITH VERTICAL STROKE; Kaver-  
 ticalstrokecyrillic  
 15884 \DeclareTextCommand{\CYRKVCRS}{PU}{\84\234}% U+049C  
 15885 % U+049D CYRILLIC SMALL LETTER KA WITH VERTICAL STROKE; kaver-  
 ticalstrokecyrillic  
 15886 \DeclareTextCommand{\cyrkvcrs}{PU}{\84\235}% U+049D  
 15887 % U+049E CYRILLIC CAPITAL LETTER KA WITH STROKE; Kastrokecyrillic  
 15888 \DeclareTextCommand{\CYRKHCRS}{PU}{\84\236}% U+049E

15889 % U+049F CYRILLIC SMALL LETTER KA WITH STROKE; kastrokecyrillic  
 15890 \DeclareTextCommand{\cyrkhcrs}{PU}{\84\237}% U+049F  
 15891 % U+04A0 CYRILLIC CAPITAL LETTER BASHKIR KA; Kabashkircyrillic  
 15892 \DeclareTextCommand{\CYRKBEAK}{PU}{\84\240}% U+04A0  
 15893 % U+04A1 CYRILLIC SMALL LETTER BASHKIR KA; kabashkircyrillic  
 15894 \DeclareTextCommand{\cyrkbeak}{PU}{\84\241}% U+04A1  
 15895 % U+04A2 CYRILLIC CAPITAL LETTER EN WITH DESCENDER; Endescen-  
 dercyrillic  
 15896 \DeclareTextCommand{\CYRNDSC}{PU}{\84\242}% U+04A2  
 15897 % U+04A3 CYRILLIC SMALL LETTER EN WITH DESCENDER; endescender-  
 cyrillic  
 15898 \DeclareTextCommand{\cyrndsc}{PU}{\84\243}% U+04A3  
 15899 % U+04A4 CYRILLIC CAPITAL LIGATURE EN GHE; Enghecyrillic  
 15900 \DeclareTextCommand{\CYRNG}{PU}{\84\244}% U+04A4  
 15901 % U+04A5 CYRILLIC SMALL LIGATURE EN GHE; enghecyrillic  
 15902 \DeclareTextCommand{\cyrng}{PU}{\84\245}% U+04A5  
 15903 % U+04A6 CYRILLIC CAPITAL LETTER PE WITH MIDDLE HOOK; Pemid-  
 dlehookcyrillic  
 15904 \DeclareTextCommand{\CYRPHK}{PU}{\84\246}% U+04A6  
 15905 % U+04A7 CYRILLIC SMALL LETTER PE WITH MIDDLE HOOK; pemiddle-  
 hookcyrillic  
 15906 \DeclareTextCommand{\cyrphk}{PU}{\84\247}% U+04A7  
 15907 % U+04A8 CYRILLIC CAPITAL LETTER ABKHASIAN HA; Haabkhasiancyril-  
 lic  
 15908 \DeclareTextCommand{\CYRABHHA}{PU}{\84\250}% U+04A8  
 15909 % U+04A9 CYRILLIC SMALL LETTER ABKHASIAN HA; haabkhasiancyrillic  
 15910 \DeclareTextCommand{\cyrabhha}{PU}{\84\251}% U+04A9  
 15911 % U+04AA CYRILLIC CAPITAL LETTER ES WITH DESCENDER; Esdescen-  
 dercyrillic  
 15912 \DeclareTextCommand{\CYRSDSC}{PU}{\84\252}% U+04AA  
 15913 \DeclareTextCompositeCommand{\CYRSDSC}{PU}{\CYRS}{\84\252}% U+04AA  
 15914 % U+04AB CYRILLIC SMALL LETTER ES WITH DESCENDER; esdescender-  
 cyrillic  
 15915 \DeclareTextCommand{\cyrsdsc}{PU}{\84\253}% U+04AB  
 15916 \DeclareTextCompositeCommand{\k}{PU}{\cyr}{\84\253}% U+04AB  
 15917 % U+04AC CYRILLIC CAPITAL LETTER TE WITH DESCENDER; Tedescen-  
 dercyrillic  
 15918 \DeclareTextCommand{\CYRTDSC}{PU}{\84\254}% U+04AC  
 15919 % U+04AD CYRILLIC SMALL LETTER TE WITH DESCENDER; tedescender-  
 cyrillic  
 15920 \DeclareTextCommand{\cyrtdsc}{PU}{\84\255}% U+04AD  
 15921 % U+04AE CYRILLIC CAPITAL LETTER STRAIGHT U; Ustraightcyrillic  
 15922 \DeclareTextCommand{\CYRY}{PU}{\84\256}% U+04AE  
 15923 % U+04AF CYRILLIC SMALL LETTER STRAIGHT U; ustraightcyrillic  
 15924 \DeclareTextCommand{\cyr}{PU}{\84\257}% U+04AF  
 15925 % U+04B0 CYRILLIC CAPITAL LETTER STRAIGHT U WITH STROKE; Us-  
 traightstrokecyrillic  
 15926 \DeclareTextCommand{\CYRYHCRS}{PU}{\84\260}% U+04B0  
 15927 % U+04B1 CYRILLIC SMALL LETTER STRAIGHT U WITH STROKE; us-  
 traightstrokecyrillic  
 15928 \DeclareTextCommand{\cyrhcrs}{PU}{\84\261}% U+04B1  
 15929 % U+04B2 CYRILLIC CAPITAL LETTER HA WITH DESCENDER; Hadescen-  
 dercyrillic  
 15930 \DeclareTextCommand{\CYRHDSC}{PU}{\84\262}% U+04B2  
 15931 % U+04B3 CYRILLIC SMALL LETTER HA WITH DESCENDER; hadescender-  
 cyrillic  
 15932 \DeclareTextCommand{\cyrhdsc}{PU}{\84\263}% U+04B3

15933 % U+04B4 CYRILLIC CAPITAL LIGATURE TE TSE; Tetsecyrillic  
15934 \DeclareTextCommand{\CYRTETSE}{PU}{\84\264}% U+04B4  
15935 % U+04B5 CYRILLIC SMALL LIGATURE TE TSE; tetsecyrillic  
15936 \DeclareTextCommand{\cyrtetse}{PU}{\84\265}% U+04B5  
15937 % U+04B6 CYRILLIC CAPITAL LETTER CHE WITH DESCENDER; Chedescendercyrillic  
15938 \DeclareTextCommand{\CYRCHRDSC}{PU}{\84\266}% U+04B6  
15939 % U+04B7 CYRILLIC SMALL LETTER CHE WITH DESCENDER; chedescendercyrillic  
15940 \DeclareTextCommand{\cyrchrdsc}{PU}{\84\267}% U+04B7  
15941 % U+04B8 CYRILLIC CAPITAL LETTER CHE WITH VERTICAL STROKE; Chev-  
verticalstrokecyrillic  
15942 \DeclareTextCommand{\CYRCHVCRS}{PU}{\84\270}% U+04B8  
15943 % U+04B9 CYRILLIC SMALL LETTER CHE WITH VERTICAL STROKE; chev-  
verticalstrokecyrillic  
15944 \DeclareTextCommand{\cyrchvcrs}{PU}{\84\271}% U+04B9  
15945 % U+04BA CYRILLIC CAPITAL LETTER SHHA; Shhacyrillic  
15946 \DeclareTextCommand{\CYRSHHA}{PU}{\84\272}% U+04BA  
15947 % U+04BB CYRILLIC SMALL LETTER SHHA; shhacyrillic  
15948 \DeclareTextCommand{\cyrshha}{PU}{\84\273}% U+04BB  
15949 % U+04BC CYRILLIC CAPITAL LETTER ABKHASIAN CHE; Cheabkhasian-  
cyrillic  
15950 \DeclareTextCommand{\CYRABHCH}{PU}{\84\274}% U+04BC  
15951 % U+04BD CYRILLIC SMALL LETTER ABKHASIAN CHE; cheabkhasiancyril-  
lic  
15952 \DeclareTextCommand{\cyrabhch}{PU}{\84\275}% U+04BD  
15953 % U+04BE CYRILLIC CAPITAL LETTER ABKHASIAN CHE WITH DESCEN-  
DER; Chedescenderabkhasiancyrillic  
15954 \DeclareTextCommand{\CYRABHCHDSC}{PU}{\84\276}% U+04BE  
15955 \DeclareTextCompositeCommand{\k}{PU}{\CYRABHCH}{\84\276}% U+04BE  
15956 % U+04BF CYRILLIC SMALL LETTER ABKHASIAN CHE WITH DESCEN-  
DER; chedescenderabkhasiancyrillic  
15957 \DeclareTextCommand{\cyrabhchdsc}{PU}{\84\277}% U+04BF  
15958 \DeclareTextCompositeCommand{\k}{PU}{\cyrabhch}{\84\277}% U+04BF  
15959 % U+04C0 CYRILLIC LETTER PALOCHKA; palochkacyrillic  
15960 \DeclareTextCommand{\CYRpalochka}{PU}{\84\300}% U+04C0  
15961 % U+04C1 CYRILLIC CAPITAL LETTER ZHE WITH BREVE; Zhebrevecyrillic  
15962 \DeclareTextCompositeCommand{\U}{PU}{\CYRZH}{\84\301}% U+04C1  
15963 % U+04C2 CYRILLIC SMALL LETTER ZHE WITH BREVE; zhebrevecyrillic  
15964 \DeclareTextCompositeCommand{\U}{PU}{\cyrzh}{\84\302}% U+04C2  
15965 % U+04C3 CYRILLIC CAPITAL LETTER KA WITH HOOK; Kahookcyrillic  
15966 \DeclareTextCommand{\CYRKHK}{PU}{\84\303}% U+04C3  
15967 % U+04C4 CYRILLIC SMALL LETTER KA WITH HOOK; kahookcyrillic  
15968 \DeclareTextCommand{\cyrkhk}{PU}{\84\304}% U+04C4  
15969 % U+04C5 CYRILLIC CAPITAL LETTER EL WITH TAIL  
15970 \DeclareTextCommand{\CYRLDSC}{PU}{\84\305}% U+04C5  
15971 % U+04C6 CYRILLIC SMALL LETTER EL WITH TAIL  
15972 \DeclareTextCommand{\cyrldsc}{PU}{\84\306}% U+04C6  
15973 % U+04C7 CYRILLIC CAPITAL LETTER EN WITH HOOK; Enhookcyrillic  
15974 \DeclareTextCommand{\CYRNHK}{PU}{\84\307}% U+04C7  
15975 % U+04C8 CYRILLIC SMALL LETTER EN WITH HOOK; enhookcyrillic  
15976 \DeclareTextCommand{\cyrnhk}{PU}{\84\310}% U+04C8  
15977 % U+04CB CYRILLIC CAPITAL LETTER KHAKASSIAN CHE; Chekhakassian-  
cyrillic  
15978 \DeclareTextCommand{\CYRCHLDSC}{PU}{\84\313}% U+04CB  
15979 % U+04CC CYRILLIC SMALL LETTER KHAKASSIAN CHE; chekhakassian-  
cyrillic



15980 \DeclareTextCommand{\cyrchldsc}{PU}{\84\314}% U+04CC  
 15981 % U+04CD CYRILLIC CAPITAL LETTER EM WITH TAIL  
 15982 \DeclareTextCommand{\CYRMDSC}{PU}{\84\315}% U+04CD  
 15983 % U+04CE CYRILLIC SMALL LETTER EM WITH TAIL  
 15984 \DeclareTextCommand{\cyrmdsc}{PU}{\84\316}% U+04CE  
 \84\317: U+04CF CYRILLIC SMALL LETTER PALOCHKA  
 15985 % U+04D0 CYRILLIC CAPITAL LETTER A WITH BREVE; Abrevacyrillic  
 15986 \DeclareTextCompositeCommand{\U}{PU}{\CYRA}{\84\320}% U+04D0  
 15987 % U+04D1 CYRILLIC SMALL LETTER A WITH BREVE; abrevacyrillic  
 15988 \DeclareTextCompositeCommand{\U}{PU}{\cyra}{\84\321}% U+04D1  
 15989 % U+04D2 CYRILLIC CAPITAL LETTER A WITH DIAERESIS; Adieresiscyrillic  
 15990 \DeclareTextCompositeCommand{\U}{PU}{\CYRA}{\84\322}% U+04D2  
 15991 % U+04D3 CYRILLIC SMALL LETTER A WITH DIAERESIS; adieresiscyrillic  
 15992 \DeclareTextCompositeCommand{\U}{PU}{\cyra}{\84\323}% U+04D3  
 15993 % U+04D4 CYRILLIC CAPITAL LIGATURE A IE; Aiecyrillic  
 15994 \DeclareTextCommand{\CYRAE}{PU}{\84\324}% U+04D4  
 15995 % U+04D5 CYRILLIC SMALL LIGATURE A IE; aiecyrillic  
 15996 \DeclareTextCommand{\cyrae}{PU}{\84\325}% U+04D5  
 15997 % U+04D6 CYRILLIC CAPITAL LETTER IE WITH BREVE; Iebrevacyrillic  
 15998 \DeclareTextCompositeCommand{\U}{PU}{\CYRE}{\84\326}% U+04D6  
 15999 % U+04D7 CYRILLIC SMALL LETTER IE WITH BREVE; iebrevacyrillic  
 16000 \DeclareTextCompositeCommand{\U}{PU}{\cyre}{\84\327}% U+04D7  
 16001 % U+04D8 CYRILLIC CAPITAL LETTER SCHWA; Schwacyrillic  
 16002 \DeclareTextCommand{\CYRSCHWA}{PU}{\84\330}% U+04D8  
 16003 % U+04D9 CYRILLIC SMALL LETTER SCHWA; \*afii10846, schwacyrillic  
 16004 \DeclareTextCommand{\cyrschwa}{PU}{\84\331}% U+04D9  
 16005 % U+04DA CYRILLIC CAPITAL LETTER SCHWA WITH DIAERESIS; Schwadiere-  
 16006 \DeclareTextCompositeCommand{\U}{PU}{\CYRSCHWA}{\84\332}% U+04DA  
 16007 % U+04DB CYRILLIC SMALL LETTER SCHWA WITH DIAERESIS; schwadiere-  
 16008 \DeclareTextCompositeCommand{\U}{PU}{\cyrschwa}{\84\333}% U+04DB  
 16009 % U+04DC CYRILLIC CAPITAL LETTER ZHE WITH DIAERESIS; Zhediere-  
 16010 \DeclareTextCompositeCommand{\U}{PU}{\CYRZH}{\84\334}% U+04DC  
 16011 % U+04DD CYRILLIC SMALL LETTER ZHE WITH DIAERESIS; zhedieres-  
 16012 \DeclareTextCompositeCommand{\U}{PU}{\cyrzh}{\84\335}% U+04DD  
 16013 % U+04DE CYRILLIC CAPITAL LETTER ZE WITH DIAERESIS; Zedieres-  
 16014 \DeclareTextCompositeCommand{\U}{PU}{\CYRZ}{\84\336}% U+04DE  
 16015 % U+04DF CYRILLIC SMALL LETTER ZE WITH DIAERESIS; zedieres-  
 16016 \DeclareTextCompositeCommand{\U}{PU}{\cyrz}{\84\337}% U+04DF  
 16017 % U+04E0 CYRILLIC CAPITAL LETTER ABKHASIAN DZE; Dzeabkhasian-  
 16018 \DeclareTextCommand{\CYRABHDZE}{PU}{\84\340}% U+04E0  
 16019 % U+04E1 CYRILLIC SMALL LETTER ABKHASIAN DZE; dzeabkhasiancyrillic  
 16020 \DeclareTextCommand{\cyrabhdze}{PU}{\84\341}% U+04E1  
 16021 % U+04E2 CYRILLIC CAPITAL LETTER I WITH MACRON; Imacroncyrillic  
 16022 \DeclareTextCompositeCommand{\U}{PU}{\CYRI}{\84\342}% U+04E2  
 16023 % U+04E3 CYRILLIC SMALL LETTER I WITH MACRON; imacroncyrillic  
 16024 \DeclareTextCompositeCommand{\U}{PU}{\cyri}{\84\343}% U+04E3  
 16025 % U+04E4 CYRILLIC CAPITAL LETTER I WITH DIAERESIS; Idieresiscyrillic  
 16026 \DeclareTextCompositeCommand{\U}{PU}{\CYRI}{\84\344}% U+04E4  
 16027 % U+04E5 CYRILLIC SMALL LETTER I WITH DIAERESIS; idieresiscyrillic  
 16028 \DeclareTextCompositeCommand{\U}{PU}{\cyri}{\84\345}% U+04E5

16029 % U+04E6 CYRILLIC CAPITAL LETTER O WITH DIAERESIS; Odieresiscyrillic  
 16030 \DeclareTextCompositeCommand{"}{PU}{\CYRO}{\84\346}% U+04E6  
 16031 % U+04E7 CYRILLIC SMALL LETTER O WITH DIAERESIS; odieresiscyrillic  
 16032 \DeclareTextCompositeCommand{"}{PU}{\cyro}{\84\347}% U+04E7  
 16033 % U+04E8 CYRILLIC CAPITAL LETTER BARRED O; Obarredcyrillic  
 16034 \DeclareTextCommand{\CYROTLD}{PU}{\84\350}% U+04E8  
 16035 % U+04E9 CYRILLIC SMALL LETTER BARRED O; obarredcyrillic  
 16036 \DeclareTextCommand{\cyrotld}{PU}{\84\351}% U+04E9  
 16037 % U+04EA CYRILLIC CAPITAL LETTER BARRED O WITH DIAERESIS; Obarreddieresiscyrillic  
 16038 \DeclareTextCompositeCommand{"}{PU}{\CYROTLD}{\84\352}% U+04EA  
 16039 % U+04EB CYRILLIC SMALL LETTER BARRED O WITH DIAERESIS; obarreddieresiscyrillic  
 16040 \DeclareTextCompositeCommand{"}{PU}{\cyrotld}{\84\353}% U+04EB  
 16041 % U+04EC CYRILLIC CAPITAL LETTER E WITH DIAERESIS  
 16042 \DeclareTextCompositeCommand{"}{PU}{\CYREREV}{\84\354}% U+04EC  
 16043 % U+04ED CYRILLIC SMALL LETTER E WITH DIAERESIS  
 16044 \DeclareTextCompositeCommand{"}{PU}{\cyreref}{\84\355}% U+04ED  
 16045 % U+04EE CYRILLIC CAPITAL LETTER U WITH MACRON; Umacroncyrillic  
 16046 \DeclareTextCompositeCommand{=}{PU}{\CYRU}{\84\356}% U+04EE  
 16047 % U+04EF CYRILLIC SMALL LETTER U WITH MACRON; umacroncyrillic  
 16048 \DeclareTextCompositeCommand{=}{PU}{\cyru}{\84\357}% U+04EF  
 16049 % U+04F0 CYRILLIC CAPITAL LETTER U WITH DIAERESIS; Udieresiscyrillic  
 16050 \DeclareTextCompositeCommand{"}{PU}{\CYRU}{\84\360}% U+04F0  
 16051 % U+04F1 CYRILLIC SMALL LETTER U WITH DIAERESIS; udieresiscyrillic  
 16052 \DeclareTextCompositeCommand{"}{PU}{\cyru}{\84\361}% U+04F1  
 16053 % U+04F2 CYRILLIC CAPITAL LETTER U WITH DOUBLE ACUTE; Uhungarumlautcyrillic  
 16054 \DeclareTextCompositeCommand{H}{PU}{\CYRU}{\84\362}% U+04F2  
 16055 % U+04F3 CYRILLIC SMALL LETTER U WITH DOUBLE ACUTE; uhungarumlautcyrillic  
 16056 \DeclareTextCompositeCommand{H}{PU}{\cyru}{\84\363}% U+04F3  
 16057 % U+04F4 CYRILLIC CAPITAL LETTER CHE WITH DIAERESIS; Chedieresiscyrillic  
 16058 \DeclareTextCompositeCommand{"}{PU}{\CYRCH}{\84\364}% U+04F4  
 16059 % U+04F5 CYRILLIC SMALL LETTER CHE WITH DIAERESIS; chedieresiscyrillic  
 16060 \DeclareTextCompositeCommand{"}{PU}{\cyrch}{\84\365}% U+04F5  
 16061 % U+04F6 CYRILLIC CAPITAL LETTER GHE WITH DESCENDER  
 16062 \DeclareTextCommand{\CYRGDSC}{PU}{\84\366}% U+04F6  
 16063 % U+04F7 CYRILLIC SMALL LETTER GHE WITH DESCENDER  
 16064 \DeclareTextCommand{\cyrgdsc}{PU}{\84\367}% U+04F7  
 16065 % U+04F8 CYRILLIC CAPITAL LETTER YERU WITH DIAERESIS; Yerudieresiscyrillic  
 16066 \DeclareTextCompositeCommand{"}{PU}{\CYRERY}{\84\370}% U+04F8  
 16067 % U+04F9 CYRILLIC SMALL LETTER YERU WITH DIAERESIS; yerudieresiscyrillic  
 16068 \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  
 16069 % U+04FC CYRILLIC CAPITAL LETTER HA WITH HOOK  
 16070 \DeclareTextCommand{\CYRHHK}{PU}{\84\374}% U+04FC  
 16071 % U+04FD CYRILLIC SMALL LETTER HA WITH HOOK  
 16072 \DeclareTextCommand{\cyrhk}{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

16073 % U+0E3F THAI CURRENCY SYMBOL BAHT; bahtthai  
 16074 \DeclareTextCommand{\textbaht}{PU}{\9016\077}% U+0E3F

### 50.2.11 Latin Extended Additional: U+1E00 to U+1EFF

16075 % U+1E02 LATIN CAPITAL LETTER B WITH DOT ABOVE; Bdotaccent  
 16076 \DeclareTextCompositeCommand{\.}{PU}{B}{\9036\002}% U+1E02  
 16077 % U+1E03 LATIN SMALL LETTER B WITH DOT ABOVE; bdotaccent  
 16078 \DeclareTextCompositeCommand{\.}{PU}{b}{\9036\003}% U+1E03  
 16079 % U+1E06 LATIN CAPITAL LETTER B WITH LINE BELOW; Blinebelow  
 16080 \DeclareTextCompositeCommand{\b}{PU}{B}{\9036\006}% U+1E06  
 16081 % U+1E07 LATIN SMALL LETTER B WITH LINE BELOW; blinebelow  
 16082 \DeclareTextCompositeCommand{\b}{PU}{b}{\9036\007}% U+1E07  
 16083 % U+1E0A LATIN CAPITAL LETTER D WITH DOT ABOVE; Ddotaccent  
 16084 \DeclareTextCompositeCommand{\.}{PU}{D}{\9036\012}% U+1E0A  
 16085 % U+1E0B LATIN SMALL LETTER D WITH DOT ABOVE; ddotaccent  
 16086 \DeclareTextCompositeCommand{\.}{PU}{d}{\9036\013}% U+1E0B  
 16087 % U+1E0E LATIN CAPITAL LETTER D WITH LINE BELOW; Dlinebelow  
 16088 \DeclareTextCompositeCommand{\b}{PU}{D}{\9036\016}% U+1E0E  
 16089 % U+1E0F LATIN SMALL LETTER D WITH LINE BELOW; dlinebelow  
 16090 \DeclareTextCompositeCommand{\b}{PU}{d}{\9036\017}% U+1E0F  
 16091 % U+1E10 LATIN CAPITAL LETTER D WITH CEDILLA; Dcedilla  
 16092 \DeclareTextCompositeCommand{\c}{PU}{D}{\9036\020}% U+1E10  
 16093 % U+1E11 LATIN SMALL LETTER D WITH CEDILLA; dcedilla  
 16094 \DeclareTextCompositeCommand{\c}{PU}{d}{\9036\021}% U+1E11  
 16095 % U+1E1E LATIN CAPITAL LETTER F WITH DOT ABOVE; Fdotaccent  
 16096 \DeclareTextCompositeCommand{\.}{PU}{F}{\9036\036}% U+1E1E  
 16097 % U+1E1F LATIN SMALL LETTER F WITH DOT ABOVE; fdotaccent  
 16098 \DeclareTextCompositeCommand{\.}{PU}{f}{\9036\037}% U+1E1F  
 16099 % U+1E20 LATIN CAPITAL LETTER G WITH MACRON; Gmacron  
 16100 \DeclareTextCompositeCommand{\=}{PU}{G}{\9036\040}% U+1E20  
 16101 % U+1E21 LATIN SMALL LETTER G WITH MACRON; gmacron  
 16102 \DeclareTextCompositeCommand{\=}{PU}{g}{\9036\041}% U+1E21  
 16103 % U+1E22 LATIN CAPITAL LETTER H WITH DOT ABOVE; Hdotaccent  
 16104 \DeclareTextCompositeCommand{\.}{PU}{H}{\9036\042}% U+1E22  
 16105 % U+1E23 LATIN SMALL LETTER H WITH DOT ABOVE; hdotaccent  
 16106 \DeclareTextCompositeCommand{\.}{PU}{h}{\9036\043}% U+1E23  
 16107 % U+1E26 LATIN CAPITAL LETTER H WITH DIAERESIS; Hdieresis  
 16108 \DeclareTextCompositeCommand{\"}{PU}{H}{\9036\046}% U+1E26  
 16109 % U+1E27 LATIN SMALL LETTER H WITH DIAERESIS; hdieresis  
 16110 \DeclareTextCompositeCommand{\"}{PU}{h}{\9036\047}% U+1E27  
 16111 % U+1E28 LATIN CAPITAL LETTER H WITH CEDILLA; Hcedilla  
 16112 \DeclareTextCompositeCommand{\c}{PU}{H}{\9036\050}% U+1E28  
 16113 % U+1E29 LATIN SMALL LETTER H WITH CEDILLA; hcedilla  
 16114 \DeclareTextCompositeCommand{\c}{PU}{h}{\9036\051}% U+1E29  
 16115 % U+1E30 LATIN CAPITAL LETTER K WITH ACUTE; Kacute  
 16116 \DeclareTextCompositeCommand{\'}{PU}{K}{\9036\060}% U+1E30  
 16117 % U+1E31 LATIN SMALL LETTER K WITH ACUTE; kacute  
 16118 \DeclareTextCompositeCommand{\'}{PU}{k}{\9036\061}% U+1E31  
 16119 % U+1E34 LATIN CAPITAL LETTER K WITH LINE BELOW; Klinebelow  
 16120 \DeclareTextCompositeCommand{\b}{PU}{K}{\9036\064}% U+1E34  
 16121 % U+1E35 LATIN SMALL LETTER K WITH LINE BELOW; klinebelow  
 16122 \DeclareTextCompositeCommand{\b}{PU}{k}{\9036\065}% U+1E35

16123 % U+1E3A LATIN CAPITAL LETTER L WITH LINE BELOW; Llinebelow  
16124 \DeclareTextCompositeCommand{\b}{PU}{L}{\9036\072}% U+1E3A  
16125 % U+1E3B LATIN SMALL LETTER L WITH LINE BELOW; llinebelow  
16126 \DeclareTextCompositeCommand{\b}{PU}{l}{\9036\073}% U+1E3B  
16127 % U+1E3E LATIN CAPITAL LETTER M WITH ACUTE; Macute  
16128 \DeclareTextCompositeCommand{\'}{PU}{M}{\9036\076}% U+1E3E  
16129 % U+1E3F LATIN SMALL LETTER M WITH ACUTE; macute  
16130 \DeclareTextCompositeCommand{\'}{PU}{m}{\9036\077}% U+1E3F  
16131 % U+1E40 LATIN CAPITAL LETTER M WITH DOT ABOVE; Mdotaccent  
16132 \DeclareTextCompositeCommand{\.}{PU}{M}{\9036\100}% U+1E40  
16133 % U+1E41 LATIN SMALL LETTER M WITH DOT ABOVE; mdotaccent  
16134 \DeclareTextCompositeCommand{\.}{PU}{m}{\9036\101}% U+1E41  
16135 % U+1E44 LATIN CAPITAL LETTER N WITH DOT ABOVE; Ndotaccent  
16136 \DeclareTextCompositeCommand{\.}{PU}{N}{\9036\104}% U+1E44  
16137 % U+1E45 LATIN SMALL LETTER N WITH DOT ABOVE; ndotaccent  
16138 \DeclareTextCompositeCommand{\.}{PU}{n}{\9036\105}% U+1E45  
16139 % U+1E48 LATIN CAPITAL LETTER N WITH LINE BELOW; Nlinebelow  
16140 \DeclareTextCompositeCommand{\b}{PU}{N}{\9036\110}% U+1E48  
16141 % U+1E49 LATIN SMALL LETTER N WITH LINE BELOW; nlinebelow  
16142 \DeclareTextCompositeCommand{\b}{PU}{n}{\9036\111}% U+1E49  
16143 % U+1E54 LATIN CAPITAL LETTER P WITH ACUTE; Pacute  
16144 \DeclareTextCompositeCommand{\'}{PU}{P}{\9036\124}% U+1E54  
16145 % U+1E55 LATIN SMALL LETTER P WITH ACUTE; pacute  
16146 \DeclareTextCompositeCommand{\'}{PU}{p}{\9036\125}% U+1E55  
16147 % U+1E56 LATIN CAPITAL LETTER P WITH DOT ABOVE; Pdotaccent  
16148 \DeclareTextCompositeCommand{\.}{PU}{P}{\9036\126}% U+1E56  
16149 % U+1E57 LATIN SMALL LETTER P WITH DOT ABOVE; pdotaccent  
16150 \DeclareTextCompositeCommand{\.}{PU}{p}{\9036\127}% U+1E57  
16151 % U+1E58 LATIN CAPITAL LETTER R WITH DOT ABOVE; Rdotaccent  
16152 \DeclareTextCompositeCommand{\.}{PU}{R}{\9036\130}% U+1E58  
16153 % U+1E59 LATIN SMALL LETTER R WITH DOT ABOVE; rdotaccent  
16154 \DeclareTextCompositeCommand{\.}{PU}{r}{\9036\131}% U+1E59  
16155 % U+1E5E LATIN CAPITAL LETTER R WITH LINE BELOW; Rlinebelow  
16156 \DeclareTextCompositeCommand{\b}{PU}{R}{\9036\136}% U+1E5E  
16157 % U+1E5F LATIN SMALL LETTER R WITH LINE BELOW; rlinebelow  
16158 \DeclareTextCompositeCommand{\b}{PU}{r}{\9036\137}% U+1E5F  
16159 % U+1E60 LATIN CAPITAL LETTER S WITH DOT ABOVE; Sdotaccent  
16160 \DeclareTextCompositeCommand{\.}{PU}{S}{\9036\140}% U+1E60  
16161 % U+1E61 LATIN SMALL LETTER S WITH DOT ABOVE; sdotaccent  
16162 \DeclareTextCompositeCommand{\.}{PU}{s}{\9036\141}% U+1E61  
16163 % U+1E6E LATIN CAPITAL LETTER T WITH LINE BELOW; Tlinebelow  
16164 \DeclareTextCompositeCommand{\b}{PU}{T}{\9036\156}% U+1E6E  
16165 % U+1E6F LATIN SMALL LETTER T WITH LINE BELOW; tlinebelow  
16166 \DeclareTextCompositeCommand{\b}{PU}{t}{\9036\157}% U+1E6F  
16167 % U+1E7C LATIN CAPITAL LETTER V WITH TILDE; Vtilde  
16168 \DeclareTextCompositeCommand{\~}{PU}{V}{\9036\174}% U+1E7C  
16169 % U+1E7D LATIN SMALL LETTER V WITH TILDE; vtilde  
16170 \DeclareTextCompositeCommand{\~}{PU}{v}{\9036\175}% U+1E7D  
16171 % U+1E80 LATIN CAPITAL LETTER W WITH GRAVE; Wgrave  
16172 \DeclareTextCompositeCommand{\'}{PU}{W}{\9036\200}% U+1E80  
16173 % U+1E81 LATIN SMALL LETTER W WITH GRAVE; wgrave  
16174 \DeclareTextCompositeCommand{\'}{PU}{w}{\9036\201}% U+1E81  
16175 % U+1E82 LATIN CAPITAL LETTER W WITH ACUTE; Wacute  
16176 \DeclareTextCompositeCommand{\'}{PU}{W}{\9036\202}% U+1E82  
16177 % U+1E83 LATIN SMALL LETTER W WITH ACUTE; wacute  
16178 \DeclareTextCompositeCommand{\'}{PU}{w}{\9036\203}% U+1E83  
16179 % U+1E84 LATIN CAPITAL LETTER W WITH DIAERESIS; Wdieresis

16180 \DeclareTextCompositeCommand{"}{PU}{W}{\9036\204}% U+1E84  
16181 % U+1E85 LATIN SMALL LETTER W WITH DIAERESIS; wdieresis  
16182 \DeclareTextCompositeCommand{"}{PU}{w}{\9036\205}% U+1E85  
16183 % U+1E86 LATIN CAPITAL LETTER W WITH DOT ABOVE; Wdotaccent  
16184 \DeclareTextCompositeCommand{.}{PU}{W}{\9036\206}% U+1E86  
16185 % U+1E87 LATIN SMALL LETTER W WITH DOT ABOVE; wdotaccent  
16186 \DeclareTextCompositeCommand{.}{PU}{w}{\9036\207}% U+1E87  
16187 % U+1E8A LATIN CAPITAL LETTER X WITH DOT ABOVE; Xdotaccent  
16188 \DeclareTextCompositeCommand{.}{PU}{X}{\9036\212}% U+1E8A  
16189 % U+1E8B LATIN SMALL LETTER X WITH DOT ABOVE; xdotaccent  
16190 \DeclareTextCompositeCommand{.}{PU}{x}{\9036\213}% U+1E8B  
16191 % U+1E8C LATIN CAPITAL LETTER X WITH DIAERESIS; Xdieresis  
16192 \DeclareTextCompositeCommand{"}{PU}{X}{\9036\214}% U+1E8C  
16193 % U+1E8D LATIN SMALL LETTER X WITH DIAERESIS; xdieresis  
16194 \DeclareTextCompositeCommand{"}{PU}{x}{\9036\215}% U+1E8D  
16195 % U+1E8E LATIN CAPITAL LETTER Y WITH DOT ABOVE; Ydotaccent  
16196 \DeclareTextCompositeCommand{.}{PU}{Y}{\9036\216}% U+1E8E  
16197 % U+1E8F LATIN SMALL LETTER Y WITH DOT ABOVE; ydotaccent  
16198 \DeclareTextCompositeCommand{.}{PU}{y}{\9036\217}% U+1E8F  
16199 % U+1E90 LATIN CAPITAL LETTER Z WITH CIRCUMFLEX; Zcircumflex  
16200 \DeclareTextCompositeCommand{^}{PU}{Z}{\9036\220}% U+1E90  
16201 % U+1E91 LATIN SMALL LETTER Z WITH CIRCUMFLEX; zcircumflex  
16202 \DeclareTextCompositeCommand{^}{PU}{z}{\9036\221}% U+1E91  
16203 % U+1E94 LATIN CAPITAL LETTER Z WITH LINE BELOW; Zlinebelow  
16204 \DeclareTextCompositeCommand{\b}{PU}{Z}{\9036\224}% U+1E94  
16205 % U+1E95 LATIN SMALL LETTER Z WITH LINE BELOW; zlinebelow  
16206 \DeclareTextCompositeCommand{\b}{PU}{z}{\9036\225}% U+1E95  
16207 % U+1E96 LATIN SMALL LETTER H WITH LINE BELOW; hlinebelow  
16208 \DeclareTextCompositeCommand{\b}{PU}{h}{\9036\226}% U+1E96  
16209 % U+1E97 LATIN SMALL LETTER T WITH DIAERESIS; tdieresis  
16210 \DeclareTextCompositeCommand{"}{PU}{t}{\9036\227}% U+1E97  
16211 % U+1E98 LATIN SMALL LETTER W WITH RING ABOVE; wring  
16212 \DeclareTextCompositeCommand{\r}{PU}{w}{\9036\230}% U+1E98  
16213 % U+1E99 LATIN SMALL LETTER Y WITH RING ABOVE; yring  
16214 \DeclareTextCompositeCommand{\r}{PU}{y}{\9036\231}% U+1E99  
16215 % U+1E9B LATIN SMALL LETTER LONG S WITH DOT ABOVE; slongdotac-  
cent  
16216 \DeclareTextCompositeCommand{.}{PU}{\textlongs}{\9036\233}% U+1E9B  
16217 % U+1EBC LATIN CAPITAL LETTER E WITH TILDE; Etilde  
16218 \DeclareTextCompositeCommand{\~}{PU}{E}{\9036\274}% U+1EBC  
16219 % U+1EBD LATIN SMALL LETTER E WITH TILDE; etilde  
16220 \DeclareTextCompositeCommand{\~}{PU}{e}{\9036\275}% U+1EBD  
16221 % U+1EF2 LATIN CAPITAL LETTER Y WITH GRAVE; Ygrave  
16222 \DeclareTextCompositeCommand{`}{PU}{Y}{\9036\362}% U+1EF2  
16223 % U+1EF3 LATIN SMALL LETTER Y WITH GRAVE; ygrave  
16224 \DeclareTextCompositeCommand{`}{PU}{y}{\9036\363}% U+1EF3  
16225 % U+1EF8 LATIN CAPITAL LETTER Y WITH TILDE; Ytilde  
16226 \DeclareTextCompositeCommand{\~}{PU}{Y}{\9036\370}% U+1EF8  
16227 % U+1EF9 LATIN SMALL LETTER Y WITH TILDE; ytilde  
16228 \DeclareTextCompositeCommand{\~}{PU}{y}{\9036\371}% U+1EF9

## 50.2.12 General Punctuation: U+2000 to U+206F

16229 % U+200C ZERO WIDTH NON-JOINER; \*afi61664, zerowidthnonjoiner  
16230 \DeclareTextCommand{\textcompwordmark}{PU}{\9040\014}% U+200C  
16231 % U+2013 EN DASH; endash  
16232 \DeclareTextCommand{\textendash}{PU}{\9040\023}% U+2013  
16233 % U+2014 EM DASH; emdash

16234 \DeclareTextCommand{\textemdash}{PU}{\9040\024}% U+2014  
 16235 % U+2016 DOUBLE VERTICAL LINE; dblverticalbar  
 16236 \DeclareTextCommand{\textbardbl}{PU}{\9040\026}% U+2016  
 16237 % U+2018 LEFT SINGLE QUOTATION MARK; quoteleft  
 16238 \DeclareTextCommand{\textquoteleft}{PU}{\9040\030}% U+2018  
 16239 % U+2019 RIGHT SINGLE QUOTATION MARK; quoteright  
 16240 \DeclareTextCommand{\textquoteright}{PU}{\9040\031}% U+2019  
 16241 % U+201A SINGLE LOW-9 QUOTATION MARK; quotesinglbase  
 16242 \DeclareTextCommand{\quotesinglbase}{PU}{\9040\032}% U+201A  
 16243 % U+201C LEFT DOUBLE QUOTATION MARK; quotedblleft  
 16244 \DeclareTextCommand{\textquotedblleft}{PU}{\9040\034}% U+201C  
 16245 % U+201D RIGHT DOUBLE QUOTATION MARK; quotedblright  
 16246 \DeclareTextCommand{\textquotedblright}{PU}{\9040\035}% U+201D  
 16247 % U+201E DOUBLE LOW-9 QUOTATION MARK; quotedblbase  
 16248 \DeclareTextCommand{\quotedblbase}{PU}{\9040\036}% U+201E  
 16249 % U+2020 DAGGER; dagger  
 16250 \DeclareTextCommand{\textdagger}{PU}{\9040\040}% U+2020  
 16251 % U+2021 DOUBLE DAGGER; daggerdbl  
 16252 \DeclareTextCommand{\textdaggerdbl}{PU}{\9040\041}% U+2021  
 16253 % U+2022 BULLET; bullet  
 16254 \DeclareTextCommand{\textbullet}{PU}{\9040\042}% U+2022  
 16255 % U+2026 HORIZONTAL ELLIPSIS; ellipsis  
 16256 \DeclareTextCommand{\textellipsis}{PU}{\9040\046}% U+2026  
 16257 % U+2030 PER MILLE SIGN; perthousand  
 16258 \DeclareTextCommand{\textperthousand}{PU}{\9040\060}% U+2030  
 16259 % U+2031 PER TEN THOUSAND SIGN  
 16260 \DeclareTextCommand{\textpertenthousand}{PU}{\9040\061}% U+2031  
 16261 % U+2039 SINGLE LEFT-POINTING ANGLE QUOTATION MARK; guil-  
 singlleft  
 16262 \DeclareTextCommand{\guilsinglleft}{PU}{\9040\071}% U+2039  
 16263 % U+203A SINGLE RIGHT-POINTING ANGLE QUOTATION MARK; guil-  
 singlright  
 16264 \DeclareTextCommand{\guilsinglright}{PU}{\9040\072}% U+203A  
 16265 % U+203B REFERENCE MARK; referencemark  
 16266 \DeclareTextCommand{\textreferencemark}{PU}{\9040\073}% U+203B  
 16267 % U+203D INTERROBANG  
 16268 \DeclareTextCommand{\textinterrobang}{PU}{\9040\075}% U+203D  
 16269 % U+2044 FRACTION SLASH; fraction  
 16270 \DeclareTextCommand{\textfractionsolidus}{PU}{\9040\104}% U+2044  
 16271 % U+2045 LEFT SQUARE BRACKET WITH QUILL  
 16272 \DeclareTextCommand{\textlquill}{PU}{\9040\105}% U+2045  
 16273 % U+2046 RIGHT SQUARE BRACKET WITH QUILL  
 16274 \DeclareTextCommand{\textrquill}{PU}{\9040\106}% U+2046  
 16275 % U+2052 COMMERCIAL MINUS SIGN  
 16276 \DeclareTextCommand{\textdiscount}{PU}{\9040\122}% U+2052

### 50.2.13 Superscripts and Subscripts: U+2070 to U+209F

16277 % U+2070 SUPERSCRIPT ZERO; zerosuperior  
 16278 \DeclareTextCommand{\textzerosuperior}{PU}{\9040\160}% U+2070  
 16279 % U+2074 SUPERSCRIPT FOUR; foursuperior  
 16280 \DeclareTextCommand{\textfoursuperior}{PU}{\9040\164}% U+2074  
 16281 % U+2075 SUPERSCRIPT FIVE; fivesuperior  
 16282 \DeclareTextCommand{\textfivesuperior}{PU}{\9040\165}% U+2075  
 16283 % U+2076 SUPERSCRIPT SIX; sixsuperior  
 16284 \DeclareTextCommand{\textsixsuperior}{PU}{\9040\166}% U+2076  
 16285 % U+2077 SUPERSCRIPT SEVEN; sevensuperior  
 16286 \DeclareTextCommand{\textsevensuperior}{PU}{\9040\167}% U+2077

16287 % U+2078 SUPERSCRIPT EIGHT; eightsuperior  
 16288 \DeclareTextCommand{\texteightsuperior}{PU}{\9040\170}% U+2078  
 16289 % U+2079 SUPERSCRIPT NINE; ninesuperior  
 16290 \DeclareTextCommand{\textninesuperior}{PU}{\9040\171}% U+2079  
 16291 % U+207A SUPERSCRIPT PLUS SIGN; plussuperior  
 16292 \DeclareTextCommand{\textplussuperior}{PU}{\9040\172}% U+207A  
 16293 % U+207B SUPERSCRIPT MINUS  
 16294 \DeclareTextCommand{\textminussuperior}{PU}{\9040\173}  
 16295 % U+207C SUPERSCRIPT EQUALS SIGN; equalsuperior  
 16296 \DeclareTextCommand{\textequalsuperior}{PU}{\9040\174}  
 16297 % U+207D SUPERSCRIPT LEFT PARENTHESIS; parenleftsuperior  
 16298 \DeclareTextCommand{\textparenleftsuperior}{PU}{\9040\175}  
 16299 % U+207E SUPERSCRIPT RIGHT PARENTHESIS; parenrightsuperior  
 16300 \DeclareTextCommand{\textparenrightsuperior}{PU}{\9040\176}  
 16301 % U+207F SUPERSCRIPT LATIN SMALL LETTER N; nsuperior  
 16302 \DeclareTextCommand{\textnsuperior}{PU}{\9040\177}  
 16303 % U+2080 SUBSCRIPT ZERO; zeroinferior  
 16304 \DeclareTextCommand{\textzeroinferior}{PU}{\9040\200}% U+2080  
 16305 % U+2081 SUBSCRIPT ONE; oneinferior  
 16306 \DeclareTextCommand{\textoneinferior}{PU}{\9040\201}% U+2081  
 16307 % U+2082 SUBSCRIPT TWO; twoinferior  
 16308 \DeclareTextCommand{\texttwoinferior}{PU}{\9040\202}% U+2082  
 16309 % U+2083 SUBSCRIPT THREE; threeinferior  
 16310 \DeclareTextCommand{\textthreeinferior}{PU}{\9040\203}% U+2083  
 16311 % U+2084 SUBSCRIPT FOUR; fourinferior  
 16312 \DeclareTextCommand{\textfourinferior}{PU}{\9040\204}% U+2084  
 16313 % U+2085 SUBSCRIPT FIVE; fiveinferior  
 16314 \DeclareTextCommand{\textfiveinferior}{PU}{\9040\205}% U+2085  
 16315 % U+2086 SUBSCRIPT SIX; sixinferior  
 16316 \DeclareTextCommand{\textsixinferior}{PU}{\9040\206}% U+2086  
 16317 % U+2087 SUBSCRIPT SEVEN; seveninferior  
 16318 \DeclareTextCommand{\textseveninferior}{PU}{\9040\207}% U+2087  
 16319 % U+2088 SUBSCRIPT EIGHT; eightinferior  
 16320 \DeclareTextCommand{\texteightinferior}{PU}{\9040\210}% U+2088  
 16321 % U+2089 SUBSCRIPT NINE; nineinferior  
 16322 \DeclareTextCommand{\textnineinferior}{PU}{\9040\211}% U+2089  
 16323 % U+208D SUBSCRIPT LEFT PARENTHESIS; parenleftinferior  
 16324 \DeclareTextCommand{\textparenleftinferior}{PU}{\9040\215}% U+208D  
 16325 % U+208E SUBSCRIPT RIGHT PARENTHESIS; parenrightinferior  
 16326 \DeclareTextCommand{\textparenrightinferior}{PU}{\9040\216}% U+208E

#### 50.2.14 Currency Symbols: U+20A0 to U+20CF

16327 % U+20A1 COLON SIGN; \*colonmonetary, colonsign  
 16328 \DeclareTextCommand{\textcolonmonetary}{PU}{\9040\241}% U+20A1  
 16329 % U+20A4 LIRA SIGN; afii08941, \*lira  
 16330 \DeclareTextCommand{\textlira}{PU}{\9040\244}% U+20A4  
 16331 % U+20A6 NAIRA SIGN  
 16332 \DeclareTextCommand{\textnaira}{PU}{\9040\246}% U+20A6  
 16333 % U+20A7 PESETA SIGN; peseta  
 16334 \DeclareTextCommand{\textpeseta}{PU}{\9040\247}% U+20A7  
 16335 % U+20A9 WON SIGN; won  
 16336 \DeclareTextCommand{\textwon}{PU}{\9040\251}% U+20A9  
 16337 % U+20AB DONG SIGN; dong  
 16338 \DeclareTextCommand{\textdong}{PU}{\9040\253}% U+20AB  
 16339 % U+20AC EURO SIGN; \*Euro, euro  
 16340 \DeclareTextCommand{\texteuro}{PU}{\9040\254}% U+20AC  
 16341 % U+20B1 PESO SIGN

16342 \DeclareTextCommand{\textpeso}{PU}{\9040\261}% U+20B1  
 16343 % U+20B2 GUARANI SIGN  
 16344 \DeclareTextCommand{\textguarani}{PU}{\9040\262}% U+20B2

### 50.2.15 Letterlike Symbols: U+2100 to U+214F

16345 % U+2103 DEGREE CELSIUS; centigrade  
 16346 \DeclareTextCommand{\textcelsius}{PU}{\9041\003}% U+2103  
 16347 % U+2116 NUMERO SIGN; \*afi61352, numero  
 16348 \DeclareTextCommand{\textnumero}{PU}{\9041\026}% U+2116  
 16349 % U+2117 SOUND RECORDING COPYRIGHT  
 16350 \DeclareTextCommand{\textcircledP}{PU}{\9041\027}% U+2117  
 16351 % U+211E PRESCRIPTION TAKE; prescription  
 16352 \DeclareTextCommand{\textrecipe}{PU}{\9041\036}% U+211E  
 16353 % U+2120 SERVICE MARK  
 16354 \DeclareTextCommand{\textservicemark}{PU}{\9041\040}% U+2120  
 16355 % U+2122 TRADE MARK SIGN; trademark  
 16356 \DeclareTextCommand{\texttrademark}{PU}{\9041\042}% U+2122  
 16357 % U+2126 OHM SIGN; Ohm, Omega  
 16358 \DeclareTextCommand{\textohm}{PU}{\9041\046}% U+2126  
 16359 % U+2127 INVERTED OHM SIGN  
 16360 \DeclareTextCommand{\textmho}{PU}{\9041\047}% U+2127  
 16361 % U+212B ANGSTROM SIGN; angstrom  
 16362 \DeclareTextCommand{\textangstrom}{PU}{\9041\053}% U+212B  
 16363 % U+212E ESTIMATED SYMBOL; estimated  
 16364 \DeclareTextCommand{\textestimated}{PU}{\9041\056}% U+212E  
 16365 % U+2135 ALEF SYMBOL; aleph  
 16366 \DeclareTextCommand{\textaleph}{PU}{\9041\065}% U+2135

### 50.2.16 Arrows: U+2190 to U+21FF

16367 % U+2190 LEFTWARDS ARROW; arrowleft  
 16368 \DeclareTextCommand{\textleftarrow}{PU}{\9041\220}% U+2190  
 16369 % U+2191 UPWARDS ARROW; arrowup  
 16370 \DeclareTextCommand{\textuparrow}{PU}{\9041\221}% U+2191  
 16371 % U+2192 RIGHTWARDS ARROW; arrowright  
 16372 \DeclareTextCommand{\textrightarrow}{PU}{\9041\222}% U+2192  
 16373 % U+2193 DOWNWARDS ARROW; arrowdown  
 16374 \DeclareTextCommand{\textdownarrow}{PU}{\9041\223}% U+2193

### 50.2.17 Mathematical Operators: U+2200 to U+22FF

16375 % U+2212 MINUS SIGN; minus  
 16376 \DeclareTextCommand{\textminus}{PU}{\9042\022}% U+2212  
 16377 % U+221A SQUARE ROOT; radical  
 16378 \DeclareTextCommand{\textsurd}{PU}{\9042\032}% U+221A

### 50.2.18 Miscellaneous Technical: U+2300 to U+23FF

16379 % U+2329 LEFT-POINTING ANGLE BRACKET; angleleft  
 16380 \DeclareTextCommand{\textlangle}{PU}{\9043\051}% U+2329  
 16381 % U+232A RIGHT-POINTING ANGLE BRACKET; angleright  
 16382 \DeclareTextCommand{\textrangle}{PU}{\9043\052}% U+232A

### 50.2.19 Control Pictures: U+2400 to U+243F

16383 % U+2422 BLANK SYMBOL  
 16384 \DeclareTextCommand{\textblank}{PU}{\9044\042}% U+2422  
 16385 % U+2423 OPEN BOX; blank  
 16386 \DeclareTextCommand{\textvisiblespace}{PU}{\9044\043}% U+2423

### 50.2.20 Enclosed Alphanumerics: U+2460 to U+24FF



16387 % U+2460 CIRCLED DIGIT ONE; onecircle  
 16388 \DeclareTextCompositeCommand{\textcircled}{PU}{1}{\9044\140}% U+2460  
 16389 % U+2461 CIRCLED DIGIT TWO; twocircle  
 16390 \DeclareTextCompositeCommand{\textcircled}{PU}{2}{\9044\141}% U+2461  
 16391 % U+2462 CIRCLED DIGIT THREE; threecircle  
 16392 \DeclareTextCompositeCommand{\textcircled}{PU}{3}{\9044\142}% U+2462  
 16393 % U+2463 CIRCLED DIGIT FOUR; fourcircle  
 16394 \DeclareTextCompositeCommand{\textcircled}{PU}{4}{\9044\143}% U+2463  
 16395 % U+2464 CIRCLED DIGIT FIVE; fivecircle  
 16396 \DeclareTextCompositeCommand{\textcircled}{PU}{5}{\9044\144}% U+2464  
 16397 % U+2465 CIRCLED DIGIT SIX; sixcircle  
 16398 \DeclareTextCompositeCommand{\textcircled}{PU}{6}{\9044\145}% U+2465  
 16399 % U+2466 CIRCLED DIGIT SEVEN; sevenscircle  
 16400 \DeclareTextCompositeCommand{\textcircled}{PU}{7}{\9044\146}% U+2466  
 16401 % U+2467 CIRCLED DIGIT EIGHT; eightcircle  
 16402 \DeclareTextCompositeCommand{\textcircled}{PU}{8}{\9044\147}% U+2467  
 16403 % U+2468 CIRCLED DIGIT NINE; ninecircle  
 16404 \DeclareTextCompositeCommand{\textcircled}{PU}{9}{\9044\150}% U+2468  
 16405 % U+2469 CIRCLED NUMBER TEN; tencircle  
 16406 \DeclareTextCompositeCommand{\textcircled}{PU}{10}{\9044\151}% U+2469  
 16407 % U+246A CIRCLED NUMBER ELEVEN; elevencircle  
 16408 \DeclareTextCompositeCommand{\textcircled}{PU}{11}{\9044\152}% U+246A  
 16409 % U+246B CIRCLED NUMBER TWELVE; twelvecircle  
 16410 \DeclareTextCompositeCommand{\textcircled}{PU}{12}{\9044\153}% U+246B  
 16411 % U+246C CIRCLED NUMBER THIRTEEN; thirteencircle  
 16412 \DeclareTextCompositeCommand{\textcircled}{PU}{13}{\9044\154}% U+246C  
 16413 % U+246D CIRCLED NUMBER FOURTEEN; fourteencircle  
 16414 \DeclareTextCompositeCommand{\textcircled}{PU}{14}{\9044\155}% U+246D  
 16415 % U+246E CIRCLED NUMBER FIFTEEN; fifteencircle  
 16416 \DeclareTextCompositeCommand{\textcircled}{PU}{15}{\9044\156}% U+246E  
 16417 % U+246F CIRCLED NUMBER SIXTEEN; sixteencircle  
 16418 \DeclareTextCompositeCommand{\textcircled}{PU}{16}{\9044\157}% U+246F  
 16419 % U+2470 CIRCLED NUMBER SEVENTEEN; seventeencircle  
 16420 \DeclareTextCompositeCommand{\textcircled}{PU}{17}{\9044\160}% U+2470  
 16421 % U+2471 CIRCLED NUMBER EIGHTEEN; eighteencircle  
 16422 \DeclareTextCompositeCommand{\textcircled}{PU}{18}{\9044\161}% U+2471  
 16423 % U+2472 CIRCLED NUMBER NINETEEN; nineteencircle  
 16424 \DeclareTextCompositeCommand{\textcircled}{PU}{19}{\9044\162}% U+2472  
 16425 % U+2473 CIRCLED NUMBER TWENTY; twentycircle  
 16426 \DeclareTextCompositeCommand{\textcircled}{PU}{20}{\9044\163}% U+2473  
 16427 % U+24B6 CIRCLED LATIN CAPITAL LETTER A; Acircle  
 16428 \DeclareTextCompositeCommand{\textcircled}{PU}{A}{\9044\266}% U+24B6  
 16429 % U+24B7 CIRCLED LATIN CAPITAL LETTER B; Bcircle  
 16430 \DeclareTextCompositeCommand{\textcircled}{PU}{B}{\9044\267}% U+24B7  
 16431 % U+24B8 CIRCLED LATIN CAPITAL LETTER C; Ccircle  
 16432 \DeclareTextCompositeCommand{\textcircled}{PU}{C}{\9044\270}% U+24B8  
 16433 % U+24B9 CIRCLED LATIN CAPITAL LETTER D; Dcircle  
 16434 \DeclareTextCompositeCommand{\textcircled}{PU}{D}{\9044\271}% U+24B9  
 16435 % U+24BA CIRCLED LATIN CAPITAL LETTER E; Ecircle  
 16436 \DeclareTextCompositeCommand{\textcircled}{PU}{E}{\9044\272}% U+24BA  
 16437 % U+24BB CIRCLED LATIN CAPITAL LETTER F; Fcircle  
 16438 \DeclareTextCompositeCommand{\textcircled}{PU}{F}{\9044\273}% U+24BB  
 16439 % U+24BC CIRCLED LATIN CAPITAL LETTER G; Gcircle  
 16440 \DeclareTextCompositeCommand{\textcircled}{PU}{G}{\9044\274}% U+24BC  
 16441 % U+24BD CIRCLED LATIN CAPITAL LETTER H; Hcircle  
 16442 \DeclareTextCompositeCommand{\textcircled}{PU}{H}{\9044\275}% U+24BD  
 16443 % U+24BE CIRCLED LATIN CAPITAL LETTER I; Icircle

16444 \DeclareTextCompositeCommand{\textcircled}{PU}{I}{\9044\276}% U+24BE  
 16445 % U+24BF CIRCLED LATIN CAPITAL LETTER J; Jcircle  
 16446 \DeclareTextCompositeCommand{\textcircled}{PU}{J}{\9044\277}% U+24BF  
 16447 % U+24C0 CIRCLED LATIN CAPITAL LETTER K; Kcircle  
 16448 \DeclareTextCompositeCommand{\textcircled}{PU}{K}{\9044\300}% U+24C0  
 16449 % U+24C1 CIRCLED LATIN CAPITAL LETTER L; Lcircle  
 16450 \DeclareTextCompositeCommand{\textcircled}{PU}{L}{\9044\301}% U+24C1  
 16451 % U+24C2 CIRCLED LATIN CAPITAL LETTER M; Mcircle  
 16452 \DeclareTextCompositeCommand{\textcircled}{PU}{M}{\9044\302}% U+24C2  
 16453 % U+24C3 CIRCLED LATIN CAPITAL LETTER N; Ncircle  
 16454 \DeclareTextCompositeCommand{\textcircled}{PU}{N}{\9044\303}% U+24C3  
 16455 % U+24C4 CIRCLED LATIN CAPITAL LETTER O; Ocircle  
 16456 \DeclareTextCompositeCommand{\textcircled}{PU}{O}{\9044\304}% U+24C4  
 16457 % U+24C5 CIRCLED LATIN CAPITAL LETTER P; Pcircle  
 16458 \DeclareTextCompositeCommand{\textcircled}{PU}{P}{\9044\305}% U+24C5  
 16459 % U+24C6 CIRCLED LATIN CAPITAL LETTER Q; Qcircle  
 16460 \DeclareTextCompositeCommand{\textcircled}{PU}{Q}{\9044\306}% U+24C6  
 16461 % U+24C7 CIRCLED LATIN CAPITAL LETTER R; Rcircle  
 16462 \DeclareTextCompositeCommand{\textcircled}{PU}{R}{\9044\307}% U+24C7  
 16463 % U+24C8 CIRCLED LATIN CAPITAL LETTER S; Scircle  
 16464 \DeclareTextCompositeCommand{\textcircled}{PU}{S}{\9044\310}% U+24C8  
 16465 % U+24C9 CIRCLED LATIN CAPITAL LETTER T; Tcircle  
 16466 \DeclareTextCompositeCommand{\textcircled}{PU}{T}{\9044\311}% U+24C9  
 16467 % U+24CA CIRCLED LATIN CAPITAL LETTER U; Ucircle  
 16468 \DeclareTextCompositeCommand{\textcircled}{PU}{U}{\9044\312}% U+24CA  
 16469 % U+24CB CIRCLED LATIN CAPITAL LETTER V; Vcircle  
 16470 \DeclareTextCompositeCommand{\textcircled}{PU}{V}{\9044\313}% U+24CB  
 16471 % U+24CC CIRCLED LATIN CAPITAL LETTER W; Wcircle  
 16472 \DeclareTextCompositeCommand{\textcircled}{PU}{W}{\9044\314}% U+24CC  
 16473 % U+24CD CIRCLED LATIN CAPITAL LETTER X; Xcircle  
 16474 \DeclareTextCompositeCommand{\textcircled}{PU}{X}{\9044\315}% U+24CD  
 16475 % U+24CE CIRCLED LATIN CAPITAL LETTER Y; Ycircle  
 16476 \DeclareTextCompositeCommand{\textcircled}{PU}{Y}{\9044\316}% U+24CE  
 16477 % U+24CF CIRCLED LATIN CAPITAL LETTER Z; Zcircle  
 16478 \DeclareTextCompositeCommand{\textcircled}{PU}{Z}{\9044\317}% U+24CF  
 16479 % U+24D0 CIRCLED LATIN SMALL LETTER A; acircle  
 16480 \DeclareTextCompositeCommand{\textcircled}{PU}{a}{\9044\320}% U+24D0  
 16481 % U+24D1 CIRCLED LATIN SMALL LETTER B; bcircle  
 16482 \DeclareTextCompositeCommand{\textcircled}{PU}{b}{\9044\321}% U+24D1  
 16483 % U+24D2 CIRCLED LATIN SMALL LETTER C; ccircle  
 16484 \DeclareTextCompositeCommand{\textcircled}{PU}{c}{\9044\322}% U+24D2  
 16485 % U+24D3 CIRCLED LATIN SMALL LETTER D; dcircle  
 16486 \DeclareTextCompositeCommand{\textcircled}{PU}{d}{\9044\323}% U+24D3  
 16487 % U+24D4 CIRCLED LATIN SMALL LETTER E; ecircle  
 16488 \DeclareTextCompositeCommand{\textcircled}{PU}{e}{\9044\324}% U+24D4  
 16489 % U+24D5 CIRCLED LATIN SMALL LETTER F; fcircle  
 16490 \DeclareTextCompositeCommand{\textcircled}{PU}{f}{\9044\325}% U+24D5  
 16491 % U+24D6 CIRCLED LATIN SMALL LETTER G; gcircle  
 16492 \DeclareTextCompositeCommand{\textcircled}{PU}{g}{\9044\326}% U+24D6  
 16493 % U+24D7 CIRCLED LATIN SMALL LETTER H; hcircle  
 16494 \DeclareTextCompositeCommand{\textcircled}{PU}{h}{\9044\327}% U+24D7  
 16495 % U+24D8 CIRCLED LATIN SMALL LETTER I; icircle  
 16496 \DeclareTextCompositeCommand{\textcircled}{PU}{i}{\9044\330}% U+24D8  
 16497 % U+24D9 CIRCLED LATIN SMALL LETTER J; jcircle  
 16498 \DeclareTextCompositeCommand{\textcircled}{PU}{j}{\9044\331}% U+24D9  
 16499 % U+24DA CIRCLED LATIN SMALL LETTER K; kcircle  
 16500 \DeclareTextCompositeCommand{\textcircled}{PU}{k}{\9044\332}% U+24DA

16501 % U+24DB CIRCLED LATIN SMALL LETTER L; lcircle  
 16502 \DeclareTextCompositeCommand{\textcircled}{PU}{l}{\9044\333}% U+24DB  
 16503 % U+24DC CIRCLED LATIN SMALL LETTER M; mcircle  
 16504 \DeclareTextCompositeCommand{\textcircled}{PU}{m}{\9044\334}% U+24DC  
 16505 % U+24DD CIRCLED LATIN SMALL LETTER N; ncircle  
 16506 \DeclareTextCompositeCommand{\textcircled}{PU}{n}{\9044\335}% U+24DD  
 16507 % U+24DE CIRCLED LATIN SMALL LETTER O; ocircle  
 16508 \DeclareTextCompositeCommand{\textcircled}{PU}{o}{\9044\336}% U+24DE  
 16509 % U+24DF CIRCLED LATIN SMALL LETTER P; pcircle  
 16510 \DeclareTextCompositeCommand{\textcircled}{PU}{p}{\9044\337}% U+24DF  
 16511 % U+24E0 CIRCLED LATIN SMALL LETTER Q; qcircle  
 16512 \DeclareTextCompositeCommand{\textcircled}{PU}{q}{\9044\340}% U+24E0  
 16513 % U+24E1 CIRCLED LATIN SMALL LETTER R; rcircle  
 16514 \DeclareTextCompositeCommand{\textcircled}{PU}{r}{\9044\341}% U+24E1  
 16515 % U+24E2 CIRCLED LATIN SMALL LETTER S; scircle  
 16516 \DeclareTextCompositeCommand{\textcircled}{PU}{s}{\9044\342}% U+24E2  
 16517 % U+24E3 CIRCLED LATIN SMALL LETTER T; tcircle  
 16518 \DeclareTextCompositeCommand{\textcircled}{PU}{t}{\9044\343}% U+24E3  
 16519 % U+24E4 CIRCLED LATIN SMALL LETTER U; ucircle  
 16520 \DeclareTextCompositeCommand{\textcircled}{PU}{u}{\9044\344}% U+24E4  
 16521 % U+24E5 CIRCLED LATIN SMALL LETTER V; vcircle  
 16522 \DeclareTextCompositeCommand{\textcircled}{PU}{v}{\9044\345}% U+24E5  
 16523 % U+24E6 CIRCLED LATIN SMALL LETTER W; wcircle  
 16524 \DeclareTextCompositeCommand{\textcircled}{PU}{w}{\9044\346}% U+24E6  
 16525 % U+24E7 CIRCLED LATIN SMALL LETTER X; xcircle  
 16526 \DeclareTextCompositeCommand{\textcircled}{PU}{x}{\9044\347}% U+24E7  
 16527 % U+24E8 CIRCLED LATIN SMALL LETTER Y; ycircle  
 16528 \DeclareTextCompositeCommand{\textcircled}{PU}{y}{\9044\350}% U+24E8  
 16529 % U+24E9 CIRCLED LATIN SMALL LETTER Z; zcircle  
 16530 \DeclareTextCompositeCommand{\textcircled}{PU}{z}{\9044\351}% U+24E9  
 16531 % U+24EA CIRCLED DIGIT ZERO  
 16532 \DeclareTextCompositeCommand{\textcircled}{PU}{0}{\9044\352}% U+24EA

### 50.2.21 Box Drawing: U+2500 to U+257F

16533 % U+25E6 WHITE BULLET; \*openbullet, whitebullet  
 16534 \DeclareTextCommand{\textopenbullet}{PU}{\9045\346}% U+25E6  
 16535 % U+25EF LARGE CIRCLE; largecircle  
 16536 \DeclareTextCommand{\textbigcircle}{PU}{\9045\357}% U+25EF

### 50.2.22 Miscellaneous Symbols: U+2600 to U+26FF

16537 % U+266A EIGHTH NOTE; musicalnote  
 16538 \DeclareTextCommand{\textmusicalnote}{PU}{\9046\152}% U+266A  
 16539 % U+26AD MARRIAGE SYMBOL  
 16540 \DeclareTextCommand{\textmarried}{PU}{\9046\255}% U+26AD  
 16541 % U+26AE DIVORCE SYMBOL  
 16542 \DeclareTextCommand{\textdivorced}{PU}{\9046\256}% U+26AE

### 50.2.23 Miscellaneous Mathematical Symbols-A: U+27C0 to U+27EF

16543 % U+27E6 MATHEMATICAL LEFT WHITE SQUARE BRACKET  
 16544 \DeclareTextCommand{\textlbrackdbl}{PU}{\9047\346}% U+27E6  
 16545 % U+27E7 MATHEMATICAL RIGHT WHITE SQUARE BRACKET  
 16546 \DeclareTextCommand{\textrbrackdbl}{PU}{\9047\347}% U+27E7

### 50.2.24 Alphabetic Presentation Forms: U+FB00 to U+FB4F

16547 % U+FB01 LATIN SMALL LIGATURE FI; fi  
 16548 \DeclareTextCommand{\textfi}{PU}{\9373\001}% U+FB01  
 16549 % U+FB02 LATIN SMALL LIGATURE FL; fl

```
16550 \DeclareTextCommand{\textfl}{PU}{\9373\002}% U+FB02
```

### 50.2.25 Miscellaneous

```
16551 \DeclareTextCommand{\SS}{PU}{SS}
```

### 50.2.26 Aliases

Aliases (german.sty)

```
16552 \DeclareTextCommand{\textglqq}{PU}{\quotedblbase}
16553 \DeclareTextCommand{\textgrqq}{PU}{\textquotedblleft}
16554 \DeclareTextCommand{\textglq}{PU}{\quotesinglbase}
16555 \DeclareTextCommand{\textgrq}{PU}{\textquoteleft}
16556 \DeclareTextCommand{\textflqq}{PU}{\guillemotleft}
16557 \DeclareTextCommand{\textfrqq}{PU}{\guillemotright}
16558 \DeclareTextCommand{\textflq}{PU}{\guilsinglleft}
16559 \DeclareTextCommand{\textfrq}{PU}{\guilsinglright}
```

Aliases (math names)

```
16560 \DeclareTextCommand{\textneg}{PU}{\textlogicalnot}
16561 \DeclareTextCommand{\texttimes}{PU}{\textmultiply}
16562 \DeclareTextCommand{\textdiv}{PU}{\textdivide}
16563 \DeclareTextCommand{\textpm}{PU}{\textplusminus}
16564 \DeclareTextCommand{\textcdot}{PU}{\textperiodcentered}
16565 </puenc>
```

## 50.3 PU encoding, additions for VnTeX

This file is provided by Han The Thanh.

```
16566 <*puvnenc>

16567 \DeclareTextCommand{\abreve}{PU}{\81\003}
16568 \DeclareTextCommand{\acircumflex}{PU}{\80\342}
16569 \DeclareTextCommand{\dj}{PU}{\81\021}
16570 \DeclareTextCommand{\ecircumflex}{PU}{\80\352}
16571 \DeclareTextCommand{\ocircumflex}{PU}{\80\364}
16572 \DeclareTextCommand{\ohorn}{PU}{\81\241}
16573 \DeclareTextCommand{\uhorn}{PU}{\81\260}
16574 \DeclareTextCommand{\ABREVE}{PU}{\81\002}
16575 \DeclareTextCommand{\ACIRCUMFLEX}{PU}{\80\302}
16576 \DeclareTextCommand{\DJ}{PU}{\81\020}
16577 \DeclareTextCommand{\ECIRCUMFLEX}{PU}{\80\312}
16578 \DeclareTextCommand{\OCIRCUMFLEX}{PU}{\80\324}
16579 \DeclareTextCommand{\OHORN}{PU}{\81\240}
16580 \DeclareTextCommand{\UHORN}{PU}{\81\257}

16581 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\341}
16582 \DeclareTextCompositeCommand{\d}{PU}{a}{\9036\241}
16583 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\340}
16584 \DeclareTextCompositeCommand{\h}{PU}{a}{\9036\243}
16585 \DeclareTextCompositeCommand{\~}{PU}{a}{\80\343}
16586 \DeclareTextCompositeCommand{\'}{PU}{\abreve}{\9036\257}
16587 \DeclareTextCompositeCommand{\d}{PU}{\abreve}{\9036\267}
16588 \DeclareTextCompositeCommand{\'}{PU}{\abreve}{\9036\261}
16589 \DeclareTextCompositeCommand{\h}{PU}{\abreve}{\9036\263}
16590 \DeclareTextCompositeCommand{\~}{PU}{\abreve}{\9036\265}
16591 \DeclareTextCompositeCommand{\'}{PU}{\acircumflex}{\9036\245}
16592 \DeclareTextCompositeCommand{\d}{PU}{\acircumflex}{\9036\255}
16593 \DeclareTextCompositeCommand{\'}{PU}{\acircumflex}{\9036\247}
```

16594 \DeclareTextCompositeCommand{\h}{PU}{\acircumflex}{\9036\251}  
16595 \DeclareTextCompositeCommand{\~}{PU}{\acircumflex}{\9036\253}  
16596 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\351}  
16597 \DeclareTextCompositeCommand{\d}{PU}{e}{\9036\271}  
16598 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\350}  
16599 \DeclareTextCompositeCommand{\h}{PU}{e}{\9036\273}  
16600 \DeclareTextCompositeCommand{\~}{PU}{e}{\9036\275}  
16601 \DeclareTextCompositeCommand{\'}{PU}{\ecircumflex}{\9036\277}  
16602 \DeclareTextCompositeCommand{\d}{PU}{\ecircumflex}{\9036\307}  
16603 \DeclareTextCompositeCommand{\'}{PU}{\ecircumflex}{\9036\301}  
16604 \DeclareTextCompositeCommand{\h}{PU}{\ecircumflex}{\9036\303}  
16605 \DeclareTextCompositeCommand{\~}{PU}{\ecircumflex}{\9036\305}  
16606 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\355}  
16607 \DeclareTextCompositeCommand{\d}{PU}{i}{\9036\313}  
16608 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\354}  
16609 \DeclareTextCompositeCommand{\h}{PU}{i}{\9036\311}  
16610 \DeclareTextCompositeCommand{\~}{PU}{i}{\81\051}  
16611 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\363}  
16612 \DeclareTextCompositeCommand{\d}{PU}{o}{\9036\315}  
16613 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\362}  
16614 \DeclareTextCompositeCommand{\h}{PU}{o}{\9036\317}  
16615 \DeclareTextCompositeCommand{\~}{PU}{o}{\80\365}  
16616 \DeclareTextCompositeCommand{\'}{PU}{\ocircumflex}{\9036\321}  
16617 \DeclareTextCompositeCommand{\d}{PU}{\ocircumflex}{\9036\331}  
16618 \DeclareTextCompositeCommand{\'}{PU}{\ocircumflex}{\9036\323}  
16619 \DeclareTextCompositeCommand{\h}{PU}{\ocircumflex}{\9036\325}  
16620 \DeclareTextCompositeCommand{\~}{PU}{\ocircumflex}{\9036\327}  
16621 \DeclareTextCompositeCommand{\'}{PU}{\ohorn}{\9036\333}  
16622 \DeclareTextCompositeCommand{\d}{PU}{\ohorn}{\9036\343}  
16623 \DeclareTextCompositeCommand{\'}{PU}{\ohorn}{\9036\335}  
16624 \DeclareTextCompositeCommand{\h}{PU}{\ohorn}{\9036\337}  
16625 \DeclareTextCompositeCommand{\~}{PU}{\ohorn}{\9036\341}  
16626 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\372}  
16627 \DeclareTextCompositeCommand{\d}{PU}{u}{\9036\345}  
16628 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\371}  
16629 \DeclareTextCompositeCommand{\h}{PU}{u}{\9036\347}  
16630 \DeclareTextCompositeCommand{\~}{PU}{u}{\81\151}  
16631 \DeclareTextCompositeCommand{\'}{PU}{\uhorn}{\9036\351}  
16632 \DeclareTextCompositeCommand{\d}{PU}{\uhorn}{\9036\361}  
16633 \DeclareTextCompositeCommand{\'}{PU}{\uhorn}{\9036\353}  
16634 \DeclareTextCompositeCommand{\h}{PU}{\uhorn}{\9036\355}  
16635 \DeclareTextCompositeCommand{\~}{PU}{\uhorn}{\9036\357}  
16636 \DeclareTextCompositeCommand{\'}{PU}{y}{\80\375}  
16637 \DeclareTextCompositeCommand{\d}{PU}{y}{\9036\365}  
16638 \DeclareTextCompositeCommand{\'}{PU}{y}{\9036\363}  
16639 \DeclareTextCompositeCommand{\h}{PU}{y}{\9036\367}  
16640 \DeclareTextCompositeCommand{\~}{PU}{y}{\9036\371}  
16641 \DeclareTextCompositeCommand{\'}{PU}{A}{\80\301}  
16642 \DeclareTextCompositeCommand{\d}{PU}{A}{\9036\240}  
16643 \DeclareTextCompositeCommand{\'}{PU}{A}{\80\300}  
16644 \DeclareTextCompositeCommand{\h}{PU}{A}{\9036\242}  
16645 \DeclareTextCompositeCommand{\~}{PU}{A}{\80\303}  
16646 \DeclareTextCompositeCommand{\'}{PU}{\ABREVE}{\9036\256}  
16647 \DeclareTextCompositeCommand{\d}{PU}{\ABREVE}{\9036\266}  
16648 \DeclareTextCompositeCommand{\'}{PU}{\ABREVE}{\9036\260}  
16649 \DeclareTextCompositeCommand{\h}{PU}{\ABREVE}{\9036\262}  
16650 \DeclareTextCompositeCommand{\~}{PU}{\ABREVE}{\9036\264}

```

16651 \DeclareTextCompositeCommand{'}{PU}{\ACIRCUMFLEX}{\9036\244}
16652 \DeclareTextCompositeCommand{d}{PU}{\ACIRCUMFLEX}{\9036\254}
16653 \DeclareTextCompositeCommand{'}{PU}{\ACIRCUMFLEX}{\9036\246}
16654 \DeclareTextCompositeCommand{h}{PU}{\ACIRCUMFLEX}{\9036\250}
16655 \DeclareTextCompositeCommand{~}{PU}{\ACIRCUMFLEX}{\9036\252}
16656 \DeclareTextCompositeCommand{'}{PU}{E}{\80\311}
16657 \DeclareTextCompositeCommand{d}{PU}{E}{\9036\270}
16658 \DeclareTextCompositeCommand{'}{PU}{E}{\80\310}
16659 \DeclareTextCompositeCommand{h}{PU}{E}{\9036\272}
16660 \DeclareTextCompositeCommand{~}{PU}{E}{\9036\274}
16661 \DeclareTextCompositeCommand{'}{PU}{\ECIRCUMFLEX}{\9036\276}
16662 \DeclareTextCompositeCommand{d}{PU}{\ECIRCUMFLEX}{\9036\306}
16663 \DeclareTextCompositeCommand{'}{PU}{\ECIRCUMFLEX}{\9036\300}
16664 \DeclareTextCompositeCommand{h}{PU}{\ECIRCUMFLEX}{\9036\302}
16665 \DeclareTextCompositeCommand{~}{PU}{\ECIRCUMFLEX}{\9036\304}
16666 \DeclareTextCompositeCommand{'}{PU}{I}{\80\315}
16667 \DeclareTextCompositeCommand{d}{PU}{I}{\9036\312}
16668 \DeclareTextCompositeCommand{'}{PU}{I}{\80\314}
16669 \DeclareTextCompositeCommand{h}{PU}{I}{\9036\310}
16670 \DeclareTextCompositeCommand{~}{PU}{I}{\81\050}
16671 \DeclareTextCompositeCommand{'}{PU}{O}{\80\323}
16672 \DeclareTextCompositeCommand{d}{PU}{O}{\9036\314}
16673 \DeclareTextCompositeCommand{'}{PU}{O}{\80\322}
16674 \DeclareTextCompositeCommand{h}{PU}{O}{\9036\316}
16675 \DeclareTextCompositeCommand{~}{PU}{O}{\80\325}
16676 \DeclareTextCompositeCommand{'}{PU}{\OCIRCUMFLEX}{\9036\320}
16677 \DeclareTextCompositeCommand{d}{PU}{\OCIRCUMFLEX}{\9036\330}
16678 \DeclareTextCompositeCommand{'}{PU}{\OCIRCUMFLEX}{\9036\322}
16679 \DeclareTextCompositeCommand{h}{PU}{\OCIRCUMFLEX}{\9036\324}
16680 \DeclareTextCompositeCommand{~}{PU}{\OCIRCUMFLEX}{\9036\326}
16681 \DeclareTextCompositeCommand{'}{PU}{\OHORN}{\9036\332}
16682 \DeclareTextCompositeCommand{d}{PU}{\OHORN}{\9036\342}
16683 \DeclareTextCompositeCommand{'}{PU}{\OHORN}{\9036\334}
16684 \DeclareTextCompositeCommand{h}{PU}{\OHORN}{\9036\336}
16685 \DeclareTextCompositeCommand{~}{PU}{\OHORN}{\9036\340}
16686 \DeclareTextCompositeCommand{'}{PU}{U}{\80\332}
16687 \DeclareTextCompositeCommand{d}{PU}{U}{\9036\344}
16688 \DeclareTextCompositeCommand{'}{PU}{U}{\80\331}
16689 \DeclareTextCompositeCommand{h}{PU}{U}{\9036\346}
16690 \DeclareTextCompositeCommand{~}{PU}{U}{\81\150}
16691 \DeclareTextCompositeCommand{'}{PU}{\UHORN}{\9036\350}
16692 \DeclareTextCompositeCommand{d}{PU}{\UHORN}{\9036\360}
16693 \DeclareTextCompositeCommand{'}{PU}{\UHORN}{\9036\352}
16694 \DeclareTextCompositeCommand{h}{PU}{\UHORN}{\9036\354}
16695 \DeclareTextCompositeCommand{~}{PU}{\UHORN}{\9036\356}
16696 \DeclareTextCompositeCommand{'}{PU}{Y}{\80\335}
16697 \DeclareTextCompositeCommand{d}{PU}{Y}{\9036\364}
16698 \DeclareTextCompositeCommand{'}{PU}{Y}{\9036\362}
16699 \DeclareTextCompositeCommand{h}{PU}{Y}{\9036\366}
16700 \DeclareTextCompositeCommand{~}{PU}{Y}{\9036\370}
16701 </puvnenc>

```

## 50.4 PU encoding, additions for Arabi

This file is provided and maintained by Youssef Jabri.

```
16702 <*puarenc>
```

16703 \DeclareTextCommand{\hamza}{PU}{\86\041}% 0621;afii57409;ARABIC LETTER HAMZA

16704 \DeclareTextCommand{\alefmadda}{PU}{\86\042}% 0622;afii57410;ARABIC LETTER ALEF WITH MADDA ABOVE

16705 \DeclareTextCommand{\alefhamza}{PU}{\86\043}% 0623;afii57411;ARABIC LETTER ALEF WITH HAMZA ABOVE

16706 \DeclareTextCommand{\wawhamza}{PU}{\86\044}% 0624;afii57412;ARABIC LETTER WAW WITH HAMZA ABOVE

16707 \DeclareTextCommand{\aleflowerhamza}{PU}{\86\045}% 0625;afii57413;ARABIC LETTER ALEF WITH HAMZA BELOW

16708 \DeclareTextCommand{\yahamza}{PU}{\86\046}% 0626;afii57414;ARABIC LETTER YEH WITH HAMZA ABOVE

16709 \DeclareTextCommand{\alef}{PU}{\86\047}% 0627;afii57415;ARABIC LETTER ALEF

16710 \DeclareTextCommand{\baa}{PU}{\86\050}% 0628;afii57416;ARABIC LETTER BEH

16711 \DeclareTextCommand{\T}{PU}{\86\051}% 0629;afii57417;ARABIC LETTER TEH MARBUTA

16712 \DeclareTextCommand{\taa}{PU}{\86\052}% 062A;afii57418;ARABIC LETTER TEH

16713 \DeclareTextCommand{\thaa}{PU}{\86\053}% 062B;afii57419;ARABIC LETTER THEH

16714 \DeclareTextCommand{\jeem}{PU}{\86\054}% 062C;afii57420;ARABIC LETTER JEEM

16715 \DeclareTextCommand{\Haa}{PU}{\86\055}% 062D;afii57421;ARABIC LETTER HAH

16716 \DeclareTextCommand{\kha}{PU}{\86\056}% 062E;afii57422;ARABIC LETTER KHAH

16717 \DeclareTextCommand{\dal}{PU}{\86\057}% 062F;afii57423;ARABIC LETTER DAL

16718 \DeclareTextCommand{\dhal}{PU}{\86\060}% 0630;afii57424;ARABIC LETTER THAL

16719 \DeclareTextCommand{\ra}{PU}{\86\061}% 0631;afii57425;ARABIC LETTER REH

16720 \DeclareTextCommand{\zay}{PU}{\86\062}% 0632;afii57426;ARABIC LETTER ZAIN

16721 \DeclareTextCommand{\seen}{PU}{\86\063}% 0633;afii57427;ARABIC LETTER SEEN

16722 \DeclareTextCommand{\sheen}{PU}{\86\064}% 0634;afii57428;ARABIC LETTER SHEEN

16723 \DeclareTextCommand{\sad}{PU}{\86\065}% 0635;afii57429;ARABIC LETTER SAD

16724 \DeclareTextCommand{\dad}{PU}{\86\066}% 0636;afii57430;ARABIC LETTER DAD

16725 \DeclareTextCommand{\Ta}{PU}{\86\067}% 0637;afii57431;ARABIC LETTER TAH

16726 \DeclareTextCommand{\za}{PU}{\86\070}% 0638;afii57432;ARABIC LETTER ZAH

16727 \DeclareTextCommand{\ayn}{PU}{\86\071}% 0639;afii57433;ARABIC LETTER AIN

16728 \DeclareTextCommand{\ghayn}{PU}{\86\072}% 063A;afii57434;ARABIC LETTER GHAIN

16729 \DeclareTextCommand{\tatweel}{PU}{\86\100}% 0640;afii57440;ARABIC TATWEEL

16730 \DeclareTextCommand{\fa}{PU}{\86\101}% 0641;afii57441;ARABIC LETTER FEH

16731 \DeclareTextCommand{\qaf}{PU}{\86\102}% 0642;afii57442;ARABIC LETTER QAF

16732 \DeclareTextCommand{\kaf}{PU}{\86\103}% 0643;afii57443;ARABIC LETTER KAF

16733 \DeclareTextCommand{\lam}{PU}{\86\104}% 0644;afii57444;ARABIC LETTER LAM

16734 \DeclareTextCommand{\meem}{PU}{\86\105}% 0645;afii57445;ARABIC LETTER MEEM

16735 \DeclareTextCommand{\nun}{PU}{\86\106}% 0646;afii57446;ARABIC LETTER NOON

16736 \DeclareTextCommand{\ha}{PU}{\86\107}% 0647;afii57470;ARABIC LETTER HEH

16737 \DeclareTextCommand{\waw}{PU}{\86\110}% 0648;afii57448;ARABIC LETTER WAW

16738 \DeclareTextCommand{\alefmaqsura}{PU}{\86\111}% 0649;afii57449;ARABIC LETTER ALEF MAKSURA

16739 \DeclareTextCommand{\ya}{PU}{\86\112}% 064A;afii57450;ARABIC LETTER YEH

16740 \DeclareTextCommand{\nasb}{PU}{\86\113}% 064B;afii57451;ARABIC FATHATAN

16741 \DeclareTextCommand{\raff}{PU}{\86\114}% 064C;afii57452;ARABIC DAMMATAN

16742 \DeclareTextCommand{\jarr}{PU}{\86\115}% 064D;afii57453;ARABIC KASRATAN

16743 \DeclareTextCommand{\fatha}{PU}{\86\116}% 064E;afii57454;ARABIC FATHA

16744 \DeclareTextCommand{\damma}{PU}{\86\117}% 064F;afii57455;ARABIC DAMMA

16745 \DeclareTextCommand{\kasra}{PU}{\86\120}% 0650;afii57456;ARABIC KASRA

16746 \DeclareTextCommand{\shadda}{PU}{\86\121}% 0651;afii57457;ARABIC SHADDA

16747 \DeclareTextCommand{\sukun}{PU}{\86\122}% 0652;afii57458;ARABIC SUKUN

Farsi

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16748 \DeclareTextCommand{\peh}{PU}{\86\176}% 067E;afi57506;ARABIC LETTER PEH
16749 \DeclareTextCommand{\tcheh}{PU}{\86\206}% 0686;afi57507;ARABIC LET-
      TER TCHEH
16750 \DeclareTextCommand{\jeh}{PU}{\86\230}% 0698;afi57508;ARABIC LETTER JEH
16751 \DeclareTextCommand{\farsikaf}{PU}{\86\251}% 06A9???;afi????;FARSI LET-
      TER KAF
16752 \DeclareTextCommand{\gaf}{PU}{\86\257}% 06AF;afi57509;ARABIC LETTER GAF
16753 \DeclareTextCommand{\farsiya}{PU}{\86\314}% 06CC;afi????;FARSI LET-
      TER YEH

16754 \DeclareTextCommand{\ZWNJ}{PU}{\9040\014}% 200C;ZWNJ%
16755 \DeclareTextCommand{\noboundary}{PU}{\86\325}% 200D;ZWJ

16756 </puarenc>
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## 51 End of file hyccheck.tex

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16757 <*check>
16758 \typeout{}
16759 \begin{document}
16760 \end{document}
16761 </check>
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